



# Integrated Management System

Contractor Management Guidance Document

Breaking Ground (Locating Underground Services)

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## 1. INTRODUCTION

Contractor Guidance Documents (CGD) are designed ensure that Contractors, Subcontractors and Service Providers working at the Company's Petrol Filling Stations are aware of the hazards associated to working at these locations and the Company's basic requirements for specific types of work that have been identified as involving significant risk (**Major Work**).

The Company requires Contractors, Subcontractors and Service Providers to ensure that the Safe Methods of Working and Risk Assessment and Method Statements (RAMS) produced for an assigned scope of work include relevant aspects from the guidance provided to ensure that:

- Work site and task specific risks are identified risks
- Suitable and sufficient risk reduction measures (i.e., controls) are identified and detailed in the work control documents; and
- Assigned work activities are:
  - Effectively described; and
  - Performed safely

**Note 1.1:** For the purpose of this Contractor Guidance Document, Contractors, Subcontractors and Service Providers will be referred to collectively as **Contractors**.

Contractor Guidance Documents are considered a useful guide to Contractors regarding Company expectations for the safe performance of work, as they take account of the potential hazards present at a Petrol Filling Station and set minimum standards for the performance of work tasks that the Company is not sufficiently knowledgeable of, or experienced in, to allow the development of suitable and sufficient Risk Assessment and Method Statements (RAMS).

The responsibility for ensuring work tasks are performed safely remains with the Contractor who must ensure that working practices are critically assessed, with due consideration given to the information provided in the Contractor Guidance Documents.

**Note 1.2:** Contractor Guidance Documents **DO NOT** override or relieve Contractors of their statutory obligations under applicable legislation.

## 2. PURPOSE

This Contractor Guidance Document details MFG's minimum expectations regarding breaking ground activities (**Locating Underground Services**) at Company Petrol Filling Stations to ensure that Contractors are aware of the expectation place on them both by the Client (i.e., MFG) and applicable legal obligations and are able to safely perform assigned work tasks.

**Note 2.1:** If clarification or further understanding of the content of this Contractor Guidance Document is required, Contractors must contact the HSE Manager (MFG) via [HSE\\_Team@Motorfuelgroup.com](mailto:HSE_Team@Motorfuelgroup.com).

## 3. GENERAL GUIDANCE

### 3.1 INTENT

The document is designed to provide guidance to Contractors who are awarded contracts for a specific work scope at a Company Service Station, that includes a requirement to perform breaking ground activities (i.e., Excavations & Trenches) which has been identified as potentially involving significant risk (**Major Works**). This guidance document details expectations for **Locating Underground Services** prior to breaking ground.

### 3.2 WORK CONTROL

Work tasks assigned to Contractors will be assessed to identify potential hazards and the associated risk. Work identified as involving significant risk will be categorised as **Major Works**, requiring a **Work Control Permit (WCP)** to be prepared, authorised and issued.

Contractors will conduct a work site inspection to identify the risks associated to the proposed work tasks and determine the risk reduction measures (i.e., controls) required to reduce risk to an acceptable level.

### 3.3 LOCATING UNDERGROUND SERVICES

Whether excavations are to take place on public or private land, applicable legal obligations require the location of all buried facilities to be identified and marked, prior to work involving excavation (including trenching) starting. The designated MFG Representative will be assigned specific responsibilities relating to the planning of excavation activities, including the identification of buried facilities.

**Note 3.3.1:** For the purpose of this procedure the role of designated MFG Representative may be assigned to:

- An MFG Employee
- The Principal Contractor; and
- Subject Matter Expert (SME)

### 3.4 OBTAINING INFORMATION ON SERVICES

Prior to work involving excavation taking place the designated MFG Representative will ensure that relevant information regarding underground services and installations is obtained and accurately recorded. The following actions (as applicable) are effectively implemented:

- Obtain plans or other suitable information about underground services or installations in the area
- If possible, consult owners or operators of the underground services or installations and obtained relevant information, for example:
  - Use
  - Status
  - Capacity and
  - Location
- Service owners should provide either up-to-date, readable plans, which show the recorded line and depth (where known) of all their known services buried in the proposed work area, or other suitable information which achieves the same aim

**Note 3.4.1:** There are several “One-Call” services available that can simplify the process of identifying who may have underground services or installations in the work area and can arrange for copies of plans and service records to be provided.

- Review site drawing to identify underground services or installations, for example:
  - Electrical cables
  - Communication cables; and
  - Service pipelines
- Where necessary contract the relevant body or organisation to determine, or confirm, the present of underground services of installations, for example:
  - Distribution Network Operator (DNO)
  - Public Gas Transporters (PGTs)
  - Telecommunication Companies
  - Local Authority; and
  - Relevant Government Agency
- Underground services and installations must be determined, documented, and clearly identified
- If it is not possible to obtain relevant information, for example when emergency work must be undertaken, any work must be carried out as though there are underground services in the area
- Overhead hazards should be removed or supported to eliminate hazards to personnel

**Note 3.4.2:** Where it is not possible to remove or support overhead hazards, arrangement should be put into place to either barricade or install warning notices in the work area beneath.

- Information related to underground services or installation should be shared between affected parties, and the applicable legal obligations or other requirements (e.g., stakeholder) must be complied with

### 3.5 SERVICE IDENTIFICATION SURVEY

The level of survey needed will depend on the nature of the work site, specifically congested locations will require a more detailed survey than some brown and green field sites. The decisions as to the type of survey required should be determined by an assessment of the likelihood of underground services or installations being present, based on the information obtained for the work site. Specific requirements related the survey should include but may not be limited to:

- Those doing the survey need to have sufficient knowledge and experience in the use of survey equipment and techniques, specifically they should understand and appreciate:
  - The limitations of the equipment
  - The effect of differing ground conditions on the survey results
  - How to survey a given area effectively; and
  - The limitations of plans and drawings provided by the service owners
- Those selecting detection tools and survey methods should understand the range of methods and tools and their limitations, specifically they need to be aware of the potential for false readings or signals in certain techniques as they may lead to inaccurate information being included in the plan of work
- The results of the survey should be:
  - Recorded in a usable format on working drawings issued to those working on the site; and
  - Where possible, marked out on site
- The position of any services or installations in or near the proposed work area, should be pinpointed as accurately as possible using a detecting device in conjunction with:
  - Up-to-date service plans; and
  - Information which provides a guide to the possible location of services or installations, and helps to interpret the signal
- Taking account of any indications that underground services exist, for example the presence of:
  - Lamp posts
  - Illuminated traffic signs
  - Gas service pipes entering buildings
  - Pipeline marker posts; and
  - Evidence of reinstated trenches

### 3.6 DETECTION DEVICES & LOCATORS

The main types available can be classed as follows:

- **Hum Detectors:**

Instruments that detect the magnetic field radiated by electricity cables which have a current flowing through them. They do not respond to:

- Cables where there is little or no current flowing, for example, service connection cables to unoccupied premises or street lighting cables in the daytime
- Direct current cables

- some well-balanced high-voltage cables, where these generate relatively little field (which in turn may be further screened by the cable sheathing)
- Pot-ended cables
- **Radio Frequency Detectors:**  
Instruments that respond to low-frequency radio signals, which may be picked up and re-emitted by long metallic pipes and cables.
- **Transmitter / Receiver Instruments:**  
A small portable transmitter or signal generator can be connected to a cable or pipe or placed very close to it so that the signal is introduced into it. The receiver, typically the same radio frequency detectors identified above, can then detect this signal.
- **Metal Detectors:**  
Conventional detectors, which will usually locate flat metal covers, joint boxes etc., but may well miss round cables or pipes.
- **Ground Probing Radar:**  
A system capable of detecting anomalies in the ground. When these anomalies can be plotted into a continuous line it may indicate a cable, duct, or pipe. However, this technique alone would not determine the precise nature of the service, and it should be supported by information available about the services present and also, preferably, by the use of other more conventional forms of detecting device.
- **Radio Frequency Identification (RFID):**  
A system used to mark or **tag** new services. These markers can be Programmed with information about the particular service and its depth, and this information can be read by detecting devices.

### 3.7 USING DETECTING DEVICES

The accuracy of the information obtained by detecting devices is dependent on a range of factors, for example:

- The training, skill, hearing, and experience of the operator
- The characteristics of the device being used
- The calibration and reliability of the detecting device
- The type, length, and depth of the service
- For cables, the magnitude of the current being carried
- The effects of other nearby services
- The nature of the:
  - Surface conditions, (e.g., reinforced concrete); and
  - Ground conditions
- Whether or not a signal generator is being used

Those assigned responsibility to use a detection device should:

- Have received appropriate training in its use and limitations
- Use detection devices in accordance with the manufacturer's instructions
- Inspect and calibrate the device regularly; and
- Maintain the device in good working order

### 3.8 RISK ASSESSMENT & METHOD STATEMENT

Contractors will carry out a hazard inspection of the work site to determine the risk reduction measures (i.e., controls) required when breaking ground (i.e., excavation). Consideration will be given to:

- The scope of work and associated tasks, for example:
  - Breaking ground (i.e., excavation and trenching)
  - Identification of underground services, for example:
    - Electrical
    - Water
    - Gas; and
    - Communication
  - Access and egress
  - Mechanical plant to be used, for example:
    - 360 Excavator
    - Dumper truck; and
    - Roller / Compactor
  - Mechanical equipment to be used, for example:
    - Handheld mechanical breaker
    - Stihl saw
    - Cable Avoidance Tool (CAT); and
    - Genny (i.e., Signal Generator)
  - Hand tools, including access ladders
- Location of the work activity (i.e., workplace hazards)
  - Traffic movement
  - Flammable liquids and vapours
  - Infrastructure (i.e., dispensers, valeting, LPG, retail building and Fo to Go)
  - Activities of other (i.e., customers, visitors, etc.); and
  - Overhead hazards (i.e., powerlines)

**Note 3.8.1:** The presence of overhead electrical cables presents a risk of electrocution, for 230 kV cables the recommended minimum safe working distance is four (4) metres (13.1 feet) and for 50kV cable the minimum safe working distance is three (3) metres (9.8 feet).

- Duration of the work
- Condition and stability of existing surfaces, including ground conditions
- Physical capabilities of the workers; and
- Emergency procedures required in the event of an incident

Contractors will formally record the assessment findings as part of the task-specific Risk Assessment and Method Statement, which will include as a minimum:

- Hazards
- Associated risks to people, the environment and assets
- Risk ranking for existing risks (e.g., High, Medium or Low)
- The risk reduction measures (i.e., controls) required to reduce the existing risks
- A residual risk ranking following implementation of controls(e.g., High, Medium or Low); and
- Step by step description of how work tasks will be performed safely, including safe use of the Mobile Elevated Work Platform

**Note 3.8.2:** If residual risk is determined after implementation of additional risk reduction measures (i.e., controls) to remain **High Risk**, work cannot begin. Further assessment is required to identify other controls that, following implementation, will residual reduce to an acceptable level.

#### 4. PREPARING TO LOCATE UNDERGROUND SERVICES PRIOR TO BREAKING GROUND

The Contractor (i.e., Job Supervisor) will:

- Review current Site Survey Drawing(s) and other site-specific drawings, to identify the potential location of any underground services, for example:
  - Electric cables
  - Fuel lines
  - Gas lines
  - Water lines; and
  - Communication lines
- Refer to the Construction Drawing (i.e., Site Layout) to identify the location of the breaking ground activities (i.e., excavations and trenches)
- Confirm that a **Line Search Before U Dig** has been completed (<https://lsbud.co.uk/>)  
**Note 4.1:** If unable to confirm information regarding underground services has been obtained, the Contractor will not proceed with the work. Contact will be made with the designated MFG Representative and/or HSE Manager to requires guidance or further instructions.
- Review the Risk Assessment and Method Statement (RAMS) for the work, to:
  - Ensure full understanding
  - Confirm suitable for the proposed work; and/or
  - Identify and record any required amendments to the RAMS
- Review the Work Control Permit (WCP) if required with the designated MFG Representative
- Prepare a Clearance Certificate
- Communicate the content of the Work Control Permit and Clearance Certificate to the Job Crew and other affected personnel (i.e., Pre-Job Safety Brief) and confirm mutual understanding of:
  - Risk Assessment and Method Statement (RAMS)
  - Work Control Permit (WCP) if required; and
  - Clearance Certificate
- Verify that the:
  - Risk reduction measures (i.e. controls) regarding underground services locating activities are implemented; and
  - Inspection and test equipment (e.g., CAT, Signal Generator, etc.) is available for use, and suitably calibrated
- Supervise the Job Crew while they:
  - Identify the proposed location of breaking ground activities (i.e., the work site)
  - Clearly mark the location, for example:
    - Paint, flags, string; and/or
    - Other suitable means
  - Identify the location of potential underground services in the work site, specifically:
    - Carry out a visual inspection of the work site; and
    - Use drawings and information to identify locations and routes of any known underground services
  - Clearly mark the location and routes of underground services, for example:
    - Paint, flags, string; and/or
    - Other suitable means
- Confirm that all known underground services are clearly identified in the work site

## 5. LOCATING UNDERGROUND SERVICES

The Contractor (i.e., Competent Person) will:

- Carry out a physical inspection of the work site using a suitably calibrated detection device for example:
  - Cable Avoidance Tool (CAT Scanner) or Signal Generator (Genny); and
  - Ground Penetrating Radar (GPR)
- Scan along the route of travel and within 500 mm either side of the centre line
- Perform sufficient inspections and tests (scans) to determine the actual location and route of known underground services
- Ensure that the actual location of all known underground services within the work site are:
  - Identified
  - Marked on the surface; and
  - Identified on the Site Survey Drawing if different to the marked location and route
- Where unknown underground services are identified:
  - Perform sufficient inspections and tests (scans) to determine the actual location and route of unknown underground services
  - Mark the location and route of the unknown underground service on the surface; and
  - Record the location and route of unknown underground service on the Site Survey Drawing

The Contractor (i.e., Job Supervisor) will:

- Review the findings of the inspection and test (scans results) with the Competent Person
- Confirm mutual understanding of the scan results
- Notify the designated MFG Representative of the following:
  - Failure to locate known underground services as indicated on relevant drawings
  - Discrepancies regarding the location and route of known underground services; and
  - The location and route of unknown (not marked on site drawings) underground services
- Where unknown underground services have been identified confirm:
  - Sufficient inspections and tests (scans) have been performed to determine:
    - The actual location; and
    - Route of unknown underground services
  - The location and routes of the unknown underground service are:
    - Marked on the surface; and
    - Clearly identified the relevant site drawings (e.g., Site Survey Drawing)

**Note 5.1:** The Contractor will notify the Principal Designer (i.e., CDM Projects) of the following findings:

- Failure to locate known underground services as indicated on relevant drawings
- Discrepancies regarding the location and route of known underground services; and
- The location and route of unknown (not marked on site drawings) underground services

The Principal Designer will ensure appropriate action is taken in response to these concerns.

## 6. MONITORING WORK PERFORMANCE & WORK COMPLETION

The Contractor (i.e., Job Supervisor) will:

- Monitor work activities related to locating underground services prior to performing braking ground activities
- Confirm that:

- Activities are carried out in accordance with the work control documentation
- Any required field checks (e.g., alignment, etc.) are performed and recorded
- On completion of the work activities:
  - Confirm and verify:
    - All waste and/or excess materials are removed from the work site
    - All handheld tools are removed and stored securely
    - Barriers, warning tape, flagging, signage, and floodlighting are removed; and
    - The work site is left in a safe condition
  - Sign-off the relevant work control documents, for example:
    - Clearance Certificate; and
    - Work Control Permit (WCP) if required