



**FREEPORT-
McMoRAN**

STUDENT GUIDE



SFT FCX1019C BLUE STAKE

APRIL / 2019
VERSION 2

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“No job will be considered so important, and no schedule so urgent, that time cannot be taken to perform work in a safe manner. Working safely is a condition of employment.”

Freeport-McMoRan, Inc.
Safety and Health Policy

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LEARNING OBJECTIVES

The provided learning objectives establish guidance and focus throughout the course.

MODULE 1: DEFINITIONS AND EXPLANATIONS

Upon completion of this module, students will be able to:

- Explain the purpose of hazard recognition
- Explain the purpose of the Blue Stake Policy

MODULE 2: PERMIT PROCESS

Upon completion of this module, students will be able to:

- Define the roles and responsibilities of all Blue Stake participants
- Explain how to begin the request for a Blue Stake permit

MODULE 3: PERMIT SPECIFICS

Upon completion of this module, students will be able to:

- Describe the basics of excavation requirements as per the Blue Stake Policy
- Describe the basics of floor, roof, ceiling, and wall penetration requirements as per the Blue Stake Policy

MODULE 4: PERMIT EXCEPTIONS

Upon completion of this module, students will be able to:

- Describe what a variance is and when to request one
- Describe what the exemptions are for using the Blue Stake permit

INTRODUCTION

This course is intended to inform employees of the basics of a Blue Stake, also known as Utility Locating, process so they can understand the necessity of the request and what happens after a Blue Stake request is submitted.

According to Freeport-McMoRan's Department of Health and Safety Policy FCX-13, a Blue Stake request must be made when there will be a penetration of the earth's surface, as well as floors, roofs, ceilings, and walls of greater than one inch (1") depth. This request begins the Blue Stake process, which includes location and marking of all buried or concealed utility lines. The ultimate goal is to keep all employees safe from concealed dangers when penetrating.

Without the correct information, operators cannot have a clear picture of the utilities buried within their work boundaries. Having the correct knowledge and communication allows workers to make sure the proper plans and controls are in place for the execution of a job. Blindly digging can potentially create situations where one or more employees is not able to return safely home after a job.

With any task, employees face direct or indirect exposure to Fatal Risks. There are no Fatal Risks with the act of requesting a Blue Stake. However, there are Fatal Risks associated with the tasks that require a Blue Stake permit. As such, consider the environment, any Fatal Risks, and whether the corresponding Critical Controls are in place. Present, accurate, and functioning Critical Controls help keep you from being killed. Continuing without them puts you and coworkers at greater risk of severe injury or death. When working conditions change, stop the job immediately, reassess the job, and implement controls before continuing.

Definitions and Explanations



MODULE 1: DEFINITIONS AND EXPLANATIONS

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MODULE 1 LEARNING OBJECTIVES

Upon completion of this module, students will be able to:

- Explain the purpose of hazard recognition
- Explain the purpose of the Blue Stake Policy

INTRODUCTION

Hazard recognition is critical to daily work. Nothing justifies someone in a crew getting hurt, seriously injured, or dying. Every employee should pay attention to their surroundings and think through job steps before acting on them to identify and control potential hazards and risks. The primary goal at work should be to have everyone go home safely.

HAZARD RECOGNITION

Hazard recognition is identifying all items and situations that can cause someone to receive an injury. If you identify it, you can mitigate, fix, or control it. In the workplace, do your best to observe the physical space where you are doing the work and the steps of a job that can create potential hazards or unintended consequences.

For example, you may find wires or hoses littering the walkways or missing knockouts needing repair, but not recognize that when you climb a ladder tools could drop. Another example is planning to dig a trench and locating all buried utilities, but forgetting to look for energized wires above you that may contact equipment. Observation of potential hazards in all directions is essential when planning a job.



Figure 1.1 Look for hazards in all directions including up

Once actual and potential hazards are identified, take steps to mitigate or control the hazards to reduce the risk of injury. Planning jobs with coworkers can help you recognize potential hazards and reduce the risks to everyone. Plan through the job thoroughly. Make every effort to use the expertise and tools available to identify the hazards that may be present under or behind the ground, roof, wall, ceiling, or floor. This course discusses how to access the correct expertise, and understand how experts use markings to communicate before surfaces are penetrated so everyone stays away from danger.

HAZARDS IN THE WORKPLACE

The hazards to look for in the workplace are the things that can hurt someone or lead to serious injury or fatality. Overlooking hazards in the workplace can have catastrophic, yet completely preventable outcomes. To prevent accidents, crews must complete adequate hazard assessments at the work site, look for potential hazards while planning a job, implement proper controls, and not skip steps.

List hazards you look for in your workplace.

HIERARCHY OF CONTROLS

One tool when looking for controls is the Hierarchy of Controls. When making a decision on the type of controls to use, consider the effectiveness of each level. In general, controls are most effective when they do not rely on individual worker behaviors as behaviors may vary from worker to worker. Controls at the bottom (such as PPE and Administrative) are less reliable because worker behaviors play a larger role than the controls at the top. The five types are shown in order from most effective (elimination) to least effective (PPE).

- Elimination – physically removing the hazard from the workplace
- Substitution – replace a chemical, substance, material, or practice with something less hazardous
- Engineering – blocks an employee’s access to a hazard with a barrier so the employee cannot contact the hazard
- Administrative – implementing rules that change the way employees do their job
- Personal Protective Equipment (PPE) – offers the body a layer of protection from hazards

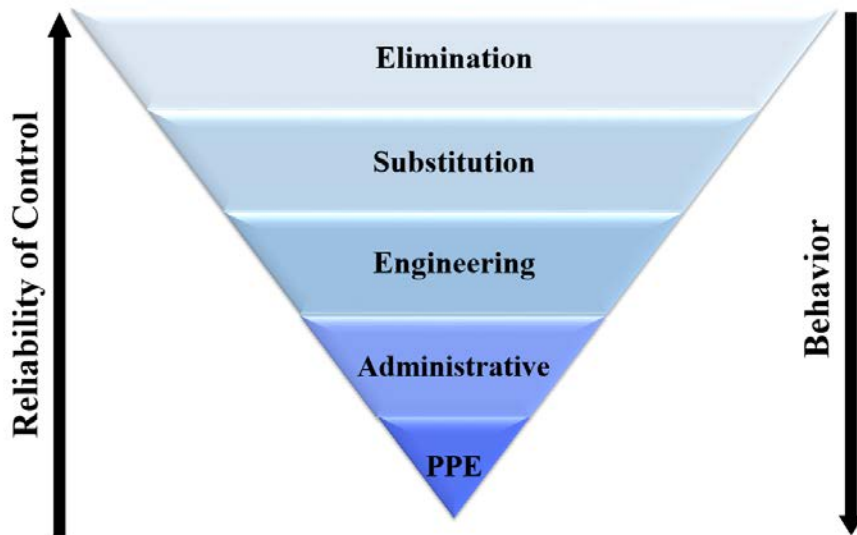


Figure 1.2 Hierarchy of Controls

Learn from Others

In 2013, a contractor ruptured a water line by placing an outrigger above a buried pipe. The weight of the crane caused pressure on that spot and resulted in an indentation in the earth greater than one inch (1”).

The crew stopped the job, contacted the Blue Stake Team, and called the appropriate department to repair the damage.



Figure 1.3 Improper placement of a crane

EXAMPLES OF CONSEQUENCES

From 2010 to 2015, Freeport-McMoRan recorded 162 near misses and property damages due to insufficient or incorrect application of the Blue Stake Policy and procedures. All Freeport-McMoRan employees must follow the Blue Stake Policy. It is an administrative control “developed to minimize risk for injuries, harm to the environment and production losses during such work.” This administrative control is entirely dependent on human behavior, including employees following the procedures and instructions.

Learn from Others

In 2010, contractors found a gas line while pot holing. The gas line did not follow a straight path, and no one had noted this situation.

Learn from Others

In 2012, an operator digging outside a Blue Stake area struck a water line unmarked on the Blue Stake permit. The production area ceased work until the completion of the repair to this line.

BLUE STAKE PERMIT PURPOSE

When penetrating or excavating a building or earth's surface, significant risk is involved. The risk is multiplied if employees do not know what is beneath the ground or behind a wall. According to FCX-13, blue staking is “the act of identifying and marking utilities such as electric, gas, water, telephone, fiber optic, etc., so that they do not pose a risk of injury to workers or a risk of being damaged during penetration, excavation, trenching, or digging activities in buildings, surface excavations and underground workings.” The company states that all employees and contractors are responsible for following the policy.

When it is determined that penetration to a floor, roof, ceiling, wall, or the earth will be one inch or less (≤ 1 ”), requesting a Blue Stake survey is not required. If penetration is determined to be at the depth of greater than one inch (1 ”), then a Blue Stake permit is required. The company policy states that employees are to “contact the site environmental representative prior to penetration of greater than one inch (1 ”) in any surface.” This task is often completed at Freeport-McMoRan sites through the Management of Change (MOC) process. If employees follow the policy and procedures, the right people look at the potential hazards, and this allows the operators to implement the correct controls to protect employees, property, and the environment.

MODULE 1 QUIZ

Complete the following quiz.

1. Due to the high level of risk during excavations and penetrations of building surfaces, what was the Blue Stake Policy developed to minimize?
 - a. Risk for injuries
 - b. Harm to the environment
 - c. Production losses
 - d. All of the above
2. How deep does an impending penetration of the earth's surface need to be in order to warrant a Blue Stake request or survey?
 - a. Greater than 1 inch
 - b. 1/2 inch or greater
 - c. It is always required no matter the depth
3. Match these items by placing the correct letter next to the corresponding description.

A. Requestor	___	Administrative control
B. Blue Stake Representative	___	Person who puts in the request
C. Excavation Operator	___	Items used to mark buried or concealed utilities
D. Temporary or Permanent Markings	___	Person who digs into the earth
E. FCX Blue Stake Policy	___	Investigates what is concealed in the walls or beneath the earth

Permit Process



MODULE 2: PERMIT PROCESS

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MODULE 2 LEARNING OBJECTIVES

Upon completion of this module, students will be able to:

- Define the roles and responsibilities of all Blue Stake participants
- Explain how to begin the request for a Blue Stake permit

INTRODUCTION

FCX-13 states when employees must follow the steps described for a job that requires a Blue Stake permit. The policy also describes the responsibilities for several participants within this process. This module explains who is involved in the process as well as their roles and responsibilities.

ROLES AND RESPONSIBILITIES

Several participants work together to ask for and receive a Blue Stake permit. Each one has their own responsibilities within this process. The participants include the Requestor, Representative, Operators, and Manager, Superintendent, or Supervisor. In the following sections, each role is described, including the groups of employees who are included within each role.

REQUESTOR

When planning jobs, it may become necessary to penetrate the surface of the earth, floor, roof, ceiling, or wall to a depth greater than 1 inch (1” or 25.4 mm). This is when the Requestor begins their responsibilities. The Requestor is responsible for initiating and properly completing the permit/request and for marking the area for the excavation or penetration using white, site-approved paint.

Before requesting a Blue Stake permit, the Requestor should make sure an MOC is completed. An MOC allows the Environmental and the Health/Safety Departments the opportunity to investigate whether material sampling of the area or other surveying should take place before the work can proceed. This is one example of how the process works. Check your own site-specific requirements. The MOC is discussed in further detail later in this module. Once the MOC is approved, the request can be initiated.

The Requestor must inform and invite several people to an initial job-planning meeting. This meeting includes the Supervisor, or their designee. It also includes the project manager (if different from the Requestor) who oversees the excavation or penetrating work. The Requestor needs to be prepared to explain to the Representative the detailed scope of work from the initial request as well as any other pertinent details.

REPRESENTATIVE

A Blue Stake Representative is an engineer, technician, or another qualified individual with the ability to review drawings or prints and mark out utilities and pipelines accordingly. Only the Representative can issue a Blue Stake permit.

In preparation for the next step, the Requestor marks the perimeter of the area in question with site-approved white spray paint (if the Requestor did not previously complete this task). The Representative gives the Requestor additional information that can be critical to the project, such as directions to call an outside agency to survey the area and issue a permit as required per lease agreement and in accordance with local laws.



Figure 2.1 Perimeter marked with approved white spray paint

Once the request has been received, the Blue Stake Representatives collect tools needed, connect with any specialists needed, such as electricians, and go to the requested location to conduct the Blue Stake survey. Upon the initial review of the request and the area to be blue staked, the Representative will determine if a permit is necessary. If the Representative, Requestor, area supervisor/superintendent, and person(s) performing the work (Operator) agree the scope of the work does not necessitate a permit, only then can they vacate the request. Exempt areas will be discussed later in this training.

The Representative and the area Supervisor determine if additional site visits are required. Additional visits could be the result of, but are not limited to, a change in conditions, a change in equipment Operator, or unclear or missing instructions on the permit. If the Operator(s) discovers unknown utilities, they must stop the job immediately, clear the area as needed, and contact the Representative and the Project Manager.

OPERATOR

For the purposes of this course, the role of Operator includes the person(s) performing the work, operating equipment, or actively involved in the penetration, excavation, trenching, or digging activities. This may include several people on a team with specific roles within the job, contractors, and other Freeport-McMoRan employees. The Representative provides markings and detailed information on the permit that guide the Operator, and leads the meeting for those involved in the job. The Operator(s) then executes the job.

Each person must view and be aware of the permit and all information pertinent to the job. Many sites require everyone involved to sign the permit showing they understand the scope, boundaries, and potential hazards of the job. It is each employee's responsibility to ask questions or stop work if something is different from the initial plan.

Learn from Others

While performing demolition work on a drywall wall, a contractor sawed through a visible live 20 Amp, 277 Volt conduit which powered emergency lights. The wall was 80% demolished and the conduit was clearly visible from one side. A Blue Stake was performed but this conduit did not show on any of the reviewed drawings.

For example, employees may discover a need to continue excavation outside the permitted area, or the Operator could discover buried utilities not documented on the Blue Stake permit. First, the Operator must stop the job, then immediately call the Project Manager and Representative for assistance. Any employee has the right and responsibility to stop the job if an unsafe situation or condition arises.

MANAGER, SUPERINTENDENT, OR SUPERVISOR

Blue Stake activities must be overseen by an approved supervisor, whether that be an area Supervisor or the Superintendent or Manager of the department requesting the Blue Stake permit. The Project Manager, who many times is the Requestor, must be appointed by either a Manager, Superintendent, or Supervisor. The Supervisor and potentially another leader or designee are part of the planning meetings and kept up to date throughout the process, including when conditions change, an emergency arises, or an extension is requested.

ACTIVITY 3: ROLES AND RESPONSIBILITIES

Directions: Use the chart below to list the responsibilities of your assigned role in the Blue Stake process. You will update this chart several times throughout the course.

Roles	Responsibilities
Manager, Superintendent, or Supervisor	
Requestor	
Operator	
Representative	

BLUE STAKE PROCESS

Steps need to be taken to safely plan and execute the work of penetrating the earth, floors, roofs, ceilings, and walls. This section explains how steps, processes, and participants come together.

MANAGEMENT OF CHANGE

The MOC is the first step in the process, and may look slightly different at each property. The MOC, a corporate initiative, is required by all Freeport-McMoRan properties, as Freeport-McMoRan is ISO 14001 certified. This process gives the Health and Safety Department and the Environmental Department sufficient opportunity to ensure changes are evaluated for potential impacts on safety, the environment, production, and quality. They need time to determine if there are specific samples to take, other permits to be obtained, land to be surveyed, endangered plants and animal studies to perform, or notifications to outside agencies to be made. All of this must be completed before work can begin. The MOC may need to be submitted before beginning any work that penetrates the earth, floor, roof, ceiling, and wall, at a depth greater than one inch (1”).

HAZARD RECOGNITION

Jobs that require a Blue Stake are non-routine. Any non-routine job requires a Job Safety Analysis (JSA). This part of the job preparation will allow the team to think forward and identify any potential hazards along with the critical controls that will assist them in completing their work safely. Before beginning the actual excavation or penetration work, a Workplace Exam for the physical location of work must be completed.

Learn from Others

A crew was trying to expand an area in the bottom of an excavation to put HDPE pipe fuser in the excavation. To do this, they made the ramp into the excavated area longer and more gradual, digging into the earth in an area that had not been blue staked. The crew failed to look at the excavation plan and the Blue Stakes map for underground utilities. In the process of digging they struck a 6” gas line causing it to rupture.

BLUE STAKE REQUEST FORM

Once all necessary departments have approved the MOC, the Requestor needs to submit the request for the Representative to begin the surveying and marking process. This includes filling in the requested details and information on the Blue Stake form. Contact supervisors and, as necessary, Safety personnel, and review site-specific Standard Operating Procedures (SOP) for additional information.

BLUE STAKE PERMIT

According to the policy, the Representative(s) determines the necessity for a permit. Completing a permit signifies that, to the best of the Representative's knowledge and available inspections and information, they have identified and marked all known utilities in the designated area. Additionally, the Representative completes a uniquely numbered permit for each excavation area within the project scope.

The completed and approved permit is valid for 30 days from the date of issue. If this is not sufficient time to complete the project, the Requestor must request a renewal from the Representative. If a Blue Stake permit expires before the renewal is granted, the work must stop until a new Blue Stake permit is issued or renewed.

The Requestor must ask for a new permit if the conditions change or the scope of the work expands outside the permitted area. The Representative(s) must approve any deviations, additions, or changes to the permit.

BLUE STAKE PERMIT STORAGE

The complete permit must be in the possession of the Operators doing the work. This practice allows them to view the specific details of, as well as any limitations to, the work that must be completed. If there are any changes to the original permit, or if there are any missing or conflicting pieces of information, Operators must call the Representatives for clarification.

COMPLETED PERMIT/FILE RETENTION

Once the Operator(s) has completed the work, they must return the permit to the Representative(s). The completed permit and any attached drawings and documents are then filed according to the FCX Records Retention Policy.

STOPPING WORK

While the Operator(s) is completing the work, situations can arise warranting stopping work. For example, the rupture or break of a utility line during excavation, or uncovering of an unknown utility line. In both situations, the Operator must stop work and clear the area as quickly as possible, then immediately contact the area Supervisor, Project Manager, and Blue Stake Representative. If any situation includes a type of spill to the ground, or if it appears asbestos is present, an Environmental Department representative, Industrial Hygienists and, as necessary, Safety Professional must also be contacted. If you are unsure of the presence of asbestos, contact your Supervisor or Environmental Representative. The Representatives bring blue prints to further investigate the situation. For further information regarding emergency work, please refer to Module 4: Permit Exceptions.

ACTIVITY 4: DIGGING DEEPER

Read the scenarios, circle the appropriate answers, and explain your answers.

Scenario 1

Bob is about to hang a heavy picture in his office with several one and a quarter inch (1 1/4") nails. Does he need to request a Blue Stake? Yes No

Explanation

Scenario 2

Jake is in charge of planning a job that will include digging a trench on the west side of the mill. Does he need to request a Blue Stake? Yes No

Explanation

Scenario 3

You are an equipment operator, and you have been told to dig a trench four feet (4') deep and six feet (6') long next to the Health and Safety building. Before transporting your equipment to the area, you decide to conduct a walk through.

What are you looking for?

Items

Explanation

What would keep you from doing this job?

Test prior knowledge

Following the Blue Stake Policy, when must a Blue Stake be requested?

- A. When a penetration is to be made in the earth's surface of greater than 1 inch
- B. When a penetration is to be made in a ceiling of greater than 1 inch
- C. When a sawing penetration is to be made in a floor
- D. All of the above

Explanation

Permit Specifics



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MODULE 3 LEARNING OBJECTIVES

Upon completion of this module, students will be able to:

- Describe the basics of excavation requirements as per the Blue Stake Policy
- Describe the basics of floor, roof, ceiling, and wall penetration requirements as per the Blue Stake Policy

INTRODUCTION

Understanding hazard recognition, the Blue Stake process, and individual roles and responsibilities helps ensure safety is a priority, and provides an overview for Blue Stake. It is also helpful to know the specifics involved in preparing and performing the penetration. This module provides basic information on what happens after a permit is issued and when work is performed. This is not intended to be formal training allowing equipment to be operated. Before using any equipment, training is required.

EXCAVATION

If there is to be a penetration of greater than one inch (1”) in the ground’s surface for a project, a Blue Stake must be requested, and the survey for concealed utilities must be performed.

MARKING UTILITIES

Requestors use site-approved white paint to mark off the perimeter of the work area. As Representatives investigate the requested area, they mark the ground, roof, wall, etc. with specific paint colors that are clearly visible to label the type of utilities located below the ground’s surface. (See Table 3.1.)

Paint Color	Utility Type
Red	Electrical Power
Yellow	Gas-Oil-Product, and Air Lines
Orange	Communication Cable
Blue	Water Systems
Green	Sanitary Sewer Systems, Drains, Slurry Pipelines
White	Perimeter of Excavation/Boundary
Purple	All Solvent Extraction, Electro Winning

Table 3.1 Paint colors and corresponding utility type

TRACERS/INDICATORS

Tracers/indicators also serve to communicate to workers and are usually placed when installing underground utilities. Tape, wire, and concrete are often used as tracers/indicators to warn workers, such as Representatives, of nearby utilities. They do not prevent contact. Operators may be asked to install them if they are part of the underground utility installation.



Figure 3.1 Tracer wire and tape indicating nearby utility pipes/conduit

Tracer/Indicator	Utility Type
Tracer wire	All new underground utilities
Yellow tape	Gas-Oil-Product, and Air Lines
Orange tape	Communications Cable
Red concrete/slurry (mortar based concrete with red dye powder spread on top)	Electric (sites and best practice)

Table 3.2 Tracers/indicators and corresponding utility type



Figure 3.2 Tracer/tracer wire on electric conduit or gas lines



Figure 3.3 Tracer wire seen taped to conduit above the ground level

PERMANENT AND TEMPORARY MARKINGS

When Representatives conduct surveys, they mark safe areas to penetrate the surface and where special techniques may be required. They use permanent or temporary markings. Both can help identify the location and direction of travel of underground utilities and may also indicate the width or diameter.

Permanent markings are designed to be left in place and withstand weather conditions for a significant amount of time. Temporary markings are not meant to last or withstand weather, and they eventually disappear.

TRENCHING REQUIREMENTS

All excavations must comply with all FCX requirements which meet and/or exceed regulatory standards. When installing, rerouting, or repairing an underground utility, the work must comply with local and regional buried utility/new installation requirements. Trenching and Excavating training provides specific information on these topics and the use of equipment, and should be taken before participating in trenching and excavation.



Figure 3.4 Trenching completed for electrical conduit installation; concrete-encased utilities showing red dye

POT HOLE PROCEDURES

Operators must hand dig, or pot hole, when working within twenty-four inches (24”) of known utilities. For proper pot holing, Operators must use processes such as hand digging, vacuum extraction, or other impact-minimizing techniques to prevent contacting and damaging underground utilities.

FLOOR, ROOF, CEILING, AND WALL PENETRATION

Beyond penetrating the earth, if there is to be a penetration of greater than one inch (1”) in the floor, roof, ceiling, and wall inside a building for a project, a Blue Stake must be requested, and the survey for concealed utilities must be performed.

SAWING

According to FCX-13, the Blue Stake permit and process must be completed before sawing into any floor. There are no exceptions to this practice.

RENOVATIONS/DEMOLITIONS

Renovations or demolition projects may require coordination with the site Environmental Department. This coordination is completed through the MOC process. The Environmental Department representative(s) determine if any material sampling or testing for airborne contaminants, such as asbestos, needs to be conducted before the project can start.

During surveying, the Representative examines both sides of wall surfaces and ceilings, when possible, to see if utilities were installed in wall joints or studs without making wall penetrations. The Requestor and Operator(s) should make sure all equipment or items are moved away from the area so as not to obstruct the surveying process.

MARKINGS

When doubt exists concerning the location of utilities within structures, drawings or prints applicable to the work areas are obtained by the Representative. The use of drawings, pictures, or prints does not take the place of a reasonable and personal assessment by the Representative. Check site procedures for types of markings used on the floor, roof, ceiling, and wall during a Blue Stake survey.



Figure 3.5 Simple marking

Learn from Others

On September 28, 2012, a contractor operating a track hoe contacted a two inch (2") electrical cable while digging a test pit. This dig was one of 60 test pits surveyed and blue staked for the project. It appeared the cables were "not live" and everyone was OK. The Project Manager instructed the crew to shut down the job and secure the area for further investigation. The Blue Stake Team and Safety On-Call were contacted and a Near Miss Report was completed.

The next morning, the Blue Stake Team confirmed to the Project Manager that the cable was not live. They also reported the operators were working outside the blue staked area by 270 feet. The Project Manager reinforced the Blue Stake Policy with the contractors, and work resumed.

SHIFT CHANGES

Sites may have specific expectations for shift change procedures that often include correctly flagging, barricading, and tagging unattended hazards. Check site-specific Blue Stake procedures for more information.

MODULE 3 QUIZ

Complete the following quiz. Explain each of your answers.

1. As the Requestor, what color paint would you use to mark the boundary of the area you are planning to dig?
 - A. Red
 - B. Yellow
 - C. Blue
 - D. White

Explanation

2. How close to a known utility must you hand dig (pot hole)?
 - A. 12"
 - B. 24"
 - C. 6"
 - D. 36"

Explanation

3. If you are not finished with the job at the end of your shift, how do you prepare the work area to be left until you and your crew return the next work day? (Choose the best answer.)
 - A. Clean up your tools and leave the area neat and organized
 - B. Post a security guard to keep people out of the area
 - C. Properly flag, barricade, and tag as needed

Explanation

Permit Exceptions



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MODULE 4 LEARNING OBJECTIVES

Upon completion of this module, students will be able to:

- Describe what a variance is and when to request one
- Describe what the exemptions are for using the Blue Stake permit

INTRODUCTION

Understanding hazard recognition, the Blue Stake process, individual roles and responsibilities, and specifics involved in preparing and performing the penetration helps maintain safety. However, mining is a dynamic environment and exceptions are sometimes necessary. This module explains some of the exceptions and the proper actions to take when exceptions are necessary.

EXTENSIONS AND EXPIRATIONS

If you are part of an excavation team, and the project requires more time than the allotted 30 days, it is the responsibility of the Requestor to contact the Representative for an additional 30-day extension. If the extension is not in hand before the first permit has expired, all work must stop until the new permit is in hand. Only one extension is allowed per permit.

The Representative may resurvey the area if the Requestor asks for an extension. Long-term permits may be issued for one year. The designated Operator(s) must be listed on the long-term permit at the time of initial request. Only the designated Operator(s) can perform the excavation in accordance with the restrictions of the permit. This documentation on the permit is necessary for renewal as well. Operator(s) must have a copy of the current permit with them while they perform work.

EXEMPTIONS

There are a few exemptions according to FCX-13. The guideline for exemptions below is only applicable to mine sites. Other non-mining units may need to call for local utility location services. Always follow your site-specific procedures.

The first has to do with emergency procedures. If an excavation must begin due to a safety, environmental, or facility operation emergency, the area supervisor must visit the site and determine if the problem is an immediate hazard. If determined to be an emergency, the area supervisor must notify the Representative(s) or a manager. They, in turn, may authorize the area supervisor to proceed with the emergency excavation. If there is any doubt, the job must be stopped immediately.

The second exemption listed is the excavation of native ground, the top surface of active leach and waste stockpiles, and active mining areas where utilities have never been present. The Blue Stake team does not issue a permit in these instances.

The third exemption is that residential and commercial lessees of Freeport-McMoRan-owned town sites will not be issued a Freeport-McMoRan Blue Stake Permit. These individuals must contact the appropriate entities per the lease agreement and per local laws.

VARIANCES

Periodically, there may be special circumstances when full compliance with the policy is not met. In such cases, the Requestor must file a Variance with Health and Safety, in accordance with the Freeport-McMoRan Variance Process Policy (FCX-21). The approved and completed variance form must be kept on file with an SOP or other work procedure established for future action. An engineer or other qualified individual must review the work to be performed, provide justification for the exemption, and give alternate safety controls to minimize or eliminate the risks. Check with your site Health and Safety Department for further information.

ACTIVITY 6: PUTTING IT ALL TOGETHER

Directions

1. Form groups of three.
2. Each group member is assigned a different job title.
3. Read your group's scenario.
4. Using the Blue Stake Policy and speaking from the view point of your job title, discuss how to complete your scenario safely.
5. Write your plan in the Student Guide below.
6. Complete the Permit at the back of the policy.
7. Give the completed permit to the Representative.
8. Discuss your plan as a class.

Job Title: _____

Plan and Job Title Responsibilities:

CONCLUSION

Serious consequences can result for those who do not follow Freeport-McMoRan's Blue Stake Policy, including potential termination of employment. More importantly, a violation could lead to death or injury. The health and safety of FMI Employees is a company core value. According to the FCX Safety and Health Policy, "Production and costs are critical to the well-being of the company, but these considerations must never take precedence over safety, employee health, or protection of the environment." If you have further questions about this process, contact your supervisor, a Blue Stake Representative, or a Health and Safety professional.



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GLOSSARY

The glossary provides an alphabetical list of words, acronyms, terms, and phrases relating to and found in this course.

Entry	Definition
Blue Staking	The act of identifying and marking utilities such as electric, gas, water, telephone, fiber optic, etc., so that they do not pose a risk of injury to workers or a risk of being damaged during penetration, excavation, trenching, or digging activities in buildings, surface excavations and underground workings.
Blue Stake Representative	A Blue Stake Representative is an engineer, technician, or other qualified individual that has the ability to review drawings or prints and mark out utilities and pipelines accordingly.
Excavation	The act of digging in the earth for purposes of creating a trench, hole, pit, trough, etc.
Flags	Small cloth on a wire or stake that is anchored in the ground; appropriately colored to match the buried utility that is being demarcated.
Hand Digging	Digging an area by hand, using a hand tool, in order to expose buried utility lines. This is a policy requirement when working within 24” of known utilities.
Hazard Recognition	Finding the things that will or could cause harm to people or property if not controlled properly before working on around them.
Hierarchy of Controls	The system used to identify controls for hazards, working from the most effective means, elimination, to the least effective means, PPE.
Long-Term Permit	Permit that is issued for longer than 30 days, usually up to a year.
Management of Change	A formalized process used to evaluate changes for potential impacts on the following areas: Safety, Environmental, Production, and Quality.
Operator	Workers using specific equipment to dig areas or to penetrate a floor, roof, ceiling, or wall.
Permanent Markings	Designed to identify the location and type of utility for a significant amount of time.

Pot Hole	Digging a test hole by hand, using a hand tool, in order to expose buried utility lines. This is a policy requirement when working within 24” of known utilities.
PPE	Personal Protective Equipment. These are items used to help protect the workers from items or situations that could cause bodily harm during their job performance. The minimum PPE in a production area is steel/hard-toe boots, ANSI approved Hardhat, and ANSI Z-87 safety glasses.
Temporary Markings	Designed to identify the location and type of utility for a short period of time.
Underground Utility Work	Installing, rerouting or repairing an underground utility. When conducting this work, it must comply with local and regional buried utility/new installation requirements.
Variance	Request process to work in a manner that is safest way possible, but may not be in alignment with company policies; request made via Health and Safety Professionals.

BIBLIOGRAPHY

Clark, Steve. "811 Number to Limit Underground Utility Strikes." *Laborers' Health & Safety Fund of North America* 3 (March, 2007) no. 10.
www.lhsfna.org/index.cfm.lifelines/march-2007/811-number-to-limit-underground-utility-strikes.

Electrical District No. 3, "Information about Blue Staking." <https://www.ed3online.org/view/47/>

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STUDENT COURSE EVALUATION

Course Title

Site

Date

Your Name (optional)

Facilitator

Directions: Circle the number that best fits your level of agreement with the statement. Then complete the short answer questions.

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. The course content was relevant to my job.	1	2	3	4
2. The course materials were clear and well written.	1	2	3	4
3. The lecture, discussions, and activities improved the quality of the course.	1	2	3	4
4. The facilitator was knowledgeable about the content.	1	2	3	4
5. The facilitator created an atmosphere that enhanced my learning.	1	2	3	4
6. I am confident I can apply the course content to my job.	1	2	3	4
7. The course met my expectations.	1	2	3	4
8. What did you find valuable in the course?				
9. What can be improved in the course?				
10. Please clarify your responses (questions 1-8) and provide any additional comments.				

Thank you for taking the time to complete this evaluation. We value your feedback.

Mail to: Mine Training Institute, Attn: Suzanne Anderson, 18550 S. La Canada Dr., Sahuarita, AZ 85629

Scan or email to: sanderso2@fmi.com

