



human energy®

hot work retail remote permitting

**for use by remote permitting contractors
at NA retail and C&I petroleum facilities**

training objectives

- Overview of work which may constitute Hot Work.
- Review controls in place whenever hot work is performed.
- To understand self permit requirements when Hot work is being performed.
- To understand who is authorized to write Hot Work Permits
- To provide details on where additional information can be obtained.



hot work

- Hot work is any activity that involves a source of ignition, or where sufficient heat may be generated to ignite flammable or combustible materials.
- This includes (but is not limited to) any type of open flame (e.g. torches, etc), arc welding, arc gouging, Grinding, sand blasting or high pressure water jetting, use of electrical tools, Battery powered instruments that are not intrinsically safe.
- And, the use of any tools, etc that can produce heat sufficient to be an ignition source.
- Note: Chevron requires an atmosphere with an LEL of 0% within 50ft of proposed hot work, additionally no flammable or combustible liquid or residues should exist within 50ft of the proposed Hot Work.



typical hot work applications

- Welding
- Acetylene or gas cutting or burning
- Soldering
- Use of Jack Hammers to break concrete
- Grinding
- Metal chipping
- Use of any type of open flames
- Use of non-explosion proof electrical equipment
- Portable Heaters
- Abrasion blasting
- Or any other work capable of producing an ignition source at a Retail Petroleum/Convenience site.



Not a complete list



control measures for hot work

The following control measures must be observed whenever hot work is required in a hazardous/classified area:

- A pre-job risk assessment is required to identify potential hazards and determine controls to make the hot work safe.
- Hot work is determined to be high risk so a JSA is required.
- **Gas testing must be conducted 50ft/15m radius around hot work area by a qualified gas tester.**
- No permit form can be issued for hot work if % LEL is >0 and/or there is residue of hydrocarbons.
- Hot work must be stopped and the permit withdrawn if % LEL when gas tested is > 0%.
- **Continuous gas testing must be used for any permitted hot work .**



control measures for hot work (cont)

- The Permit Writer must hold a Safety Briefing with the workers briefing them on the potential hazards and permit condition(s)/requirement(s)
- The Permit Writers, as specified on the hot work form, shall remain on site until all hot work is completed, and the hot work permit is withdrawn.
- A qualified fire watch is required to be at the hot work site during the work and remain until 30 minutes after the hot work has been completed.
- Work shall immediately stop if conditions change resulting in the potential for flammable vapours.
- No hot work shall be performed while product transfer activities are occurring in the same area.



control measures for hot work (cont)

- Barricade around the hot work area
- All drains and sumps within 15m (50 feet) that may potentially contain hydrocarbon, or hydrocarbon vapour are to be covered **with a weighted drain cover.**
- Positively isolate all vessels or lines containing flammable or combustible
- Any combustible materials that cannot be removed from the area shall be suitably protected by wetting down, or covering with an approved combustible curtain or blanket in California only (e.g. long grass, convenience store merchandise). See Note
- Adequate fire fighting equipment shall be available at the work site while hot work is being performed.



Gas Testing for Hot Work

- Tests for flammable vapour and/or other hazardous vapours/gases must always be undertaken before
 - Any hot work is performed in a **classified hazardous area (see next slide)**
 - Before any general work is performed within a classified hazardous area where there is a high risk that a hazardous atmosphere may exist.

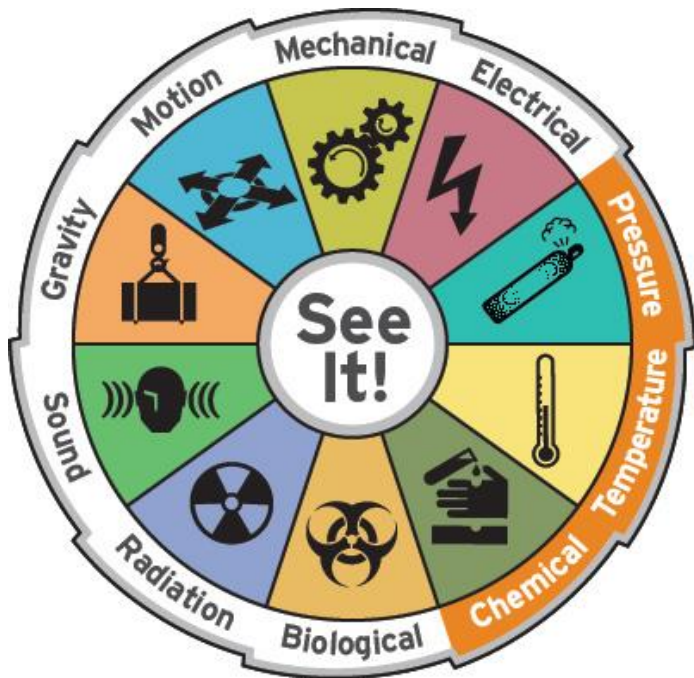
Safety Consideration

Work will not be allowed to proceed if gas levels exceed those specified in the Contractor Safety Orientation or other relevant Standards as appropriate to the work situation, e.g. confined space entry, excavation, hot work




hot work


potential significant hazards




 **Inadequate surveillance of job site conditions** (for example, not monitoring for combustible gas) may put personnel at risk.

 **Flammable gases** can be present or build up during the work and create an explosive atmosphere.

 **Flammable and combustible materials** in the work area can ignite from transfer of heat, sparks or slag.

 **Uncontrolled entry into a restricted work site** by motor vehicles or other engine-driven equipment (such as generators and welding machines) can ignite a fire or cause an explosion.

 **Explosive pockets of gas** can build up while performing underwater cutting or welding.

 **Compressed gas cylinders** may explode if hoses catch fire, or may become missiles if pressure is suddenly released.

prevention means *Always*

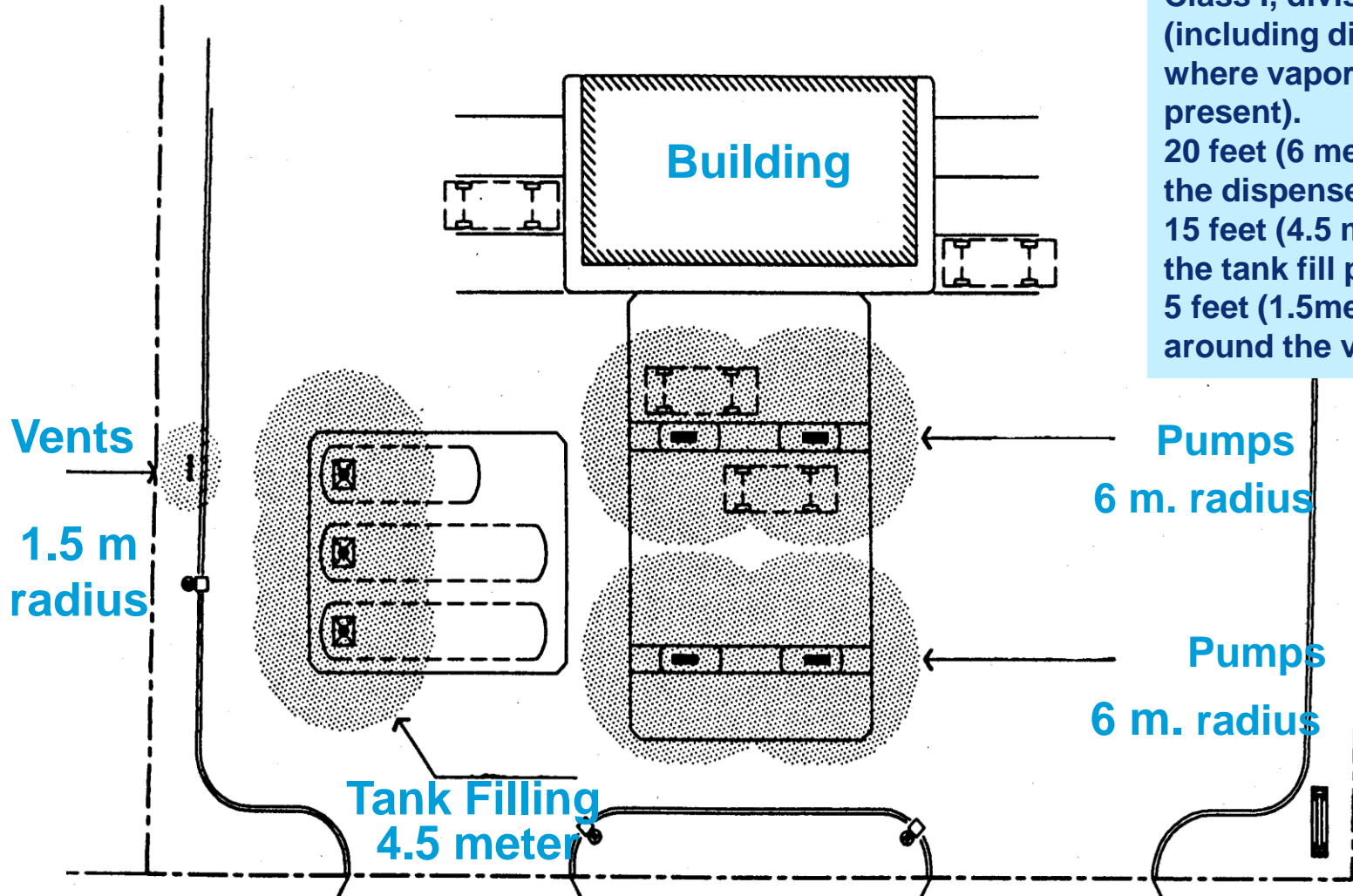
hot work

- **Ask:** Is there a **safer way to complete** the **job** with **cold work**?
- ***Comply with permitting requirements. Use of this field guide is not an equivalent.***
- **Provide** supervisory job-site **walk-through** prior to permit **approval** and **periodically during work**.
- **Complete** and **verify** the isolation **checklist** and **follow approved** isolation **procedures** before starting **work**.
- ***Make sure flammables can't be introduced during hot work operations. Seal*** drain openings, tank **vents** and pressure safety valve (PSV) **discharges**.
- **Clear** hot-work **area** of **combustibles** and **flammables**.
- **Cut vents** in underwater **equipment** where necessary to **allow flammable gases to escape**.
- **Adhere** to all gas testing **requirements**. **Test** properly to be sure there are **no pockets of flammable vapors**.
- Have a dedicated **fire watch onsite** during the **work** and for **at least 30 minutes after hot work**.
- **Inspect** all **equipment**, and follow safe handling **procedures** for compressed gas **cylinders** and **hoses**.
- **Secure** and **barricade** the work **site** to **prevent** unauthorized **access** of vehicles and personnel.
- **Enforce permits** for motorized **vehicles** operating in classified **hazardous areas**.

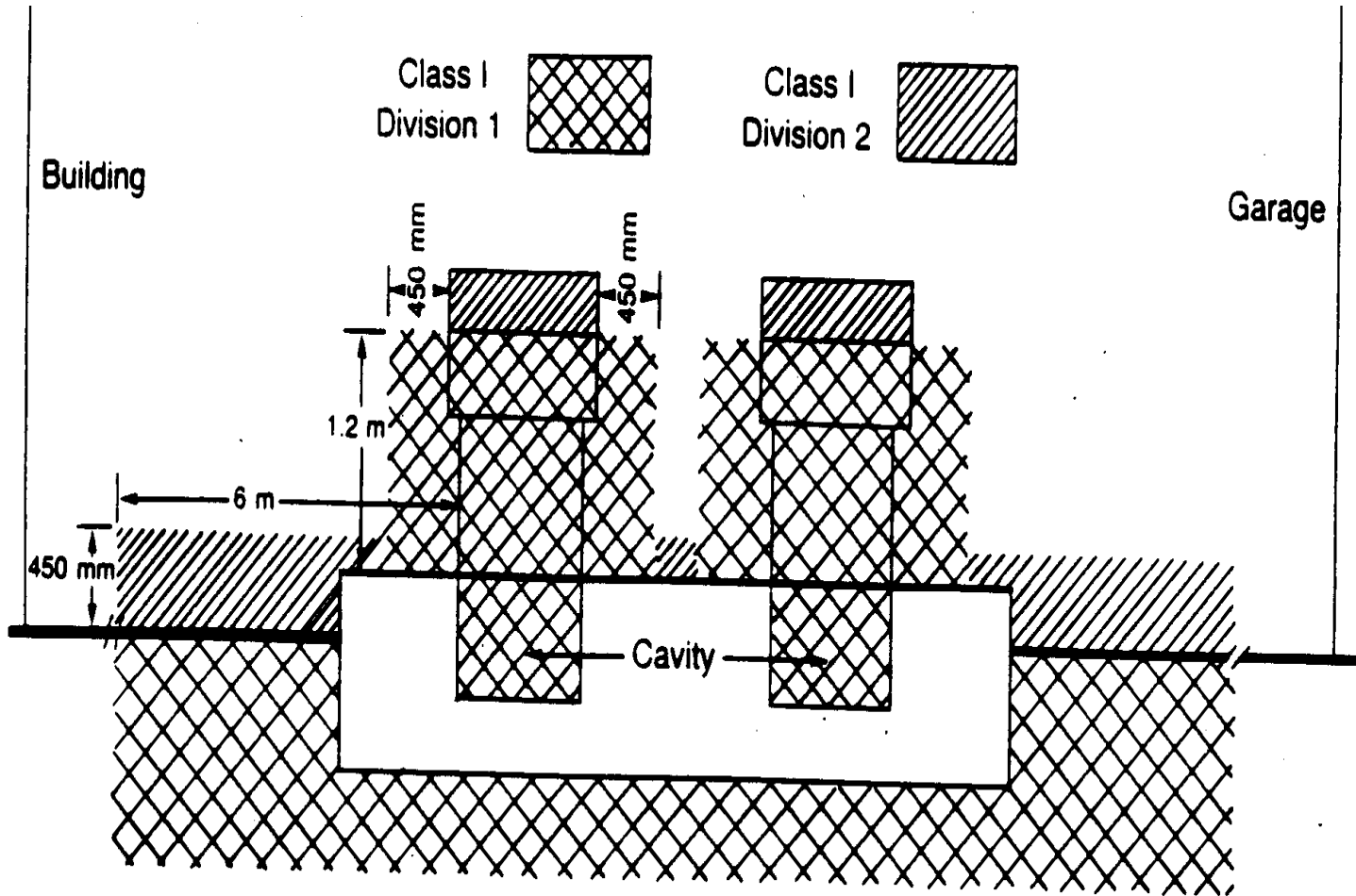


service station hazardous zone CLASS I, DIVISION 2

Reference: National Electrical Code, NFPA 70 Class I, division 2 (including division 1, where vapors COULD be present).
20 feet (6 meters) from the dispenser
15 feet (4.5 meters) from the tank fill pipe
5 feet (1.5 meters) around the vent



hazardous zone - pumps



Class I, division 1:

Space above the base of the dispenser enclosure up to 4 feet (1.2 meters)

18 inches (450 millimeters) horizontally in all directions from the dispenser.

Class I, division 2:

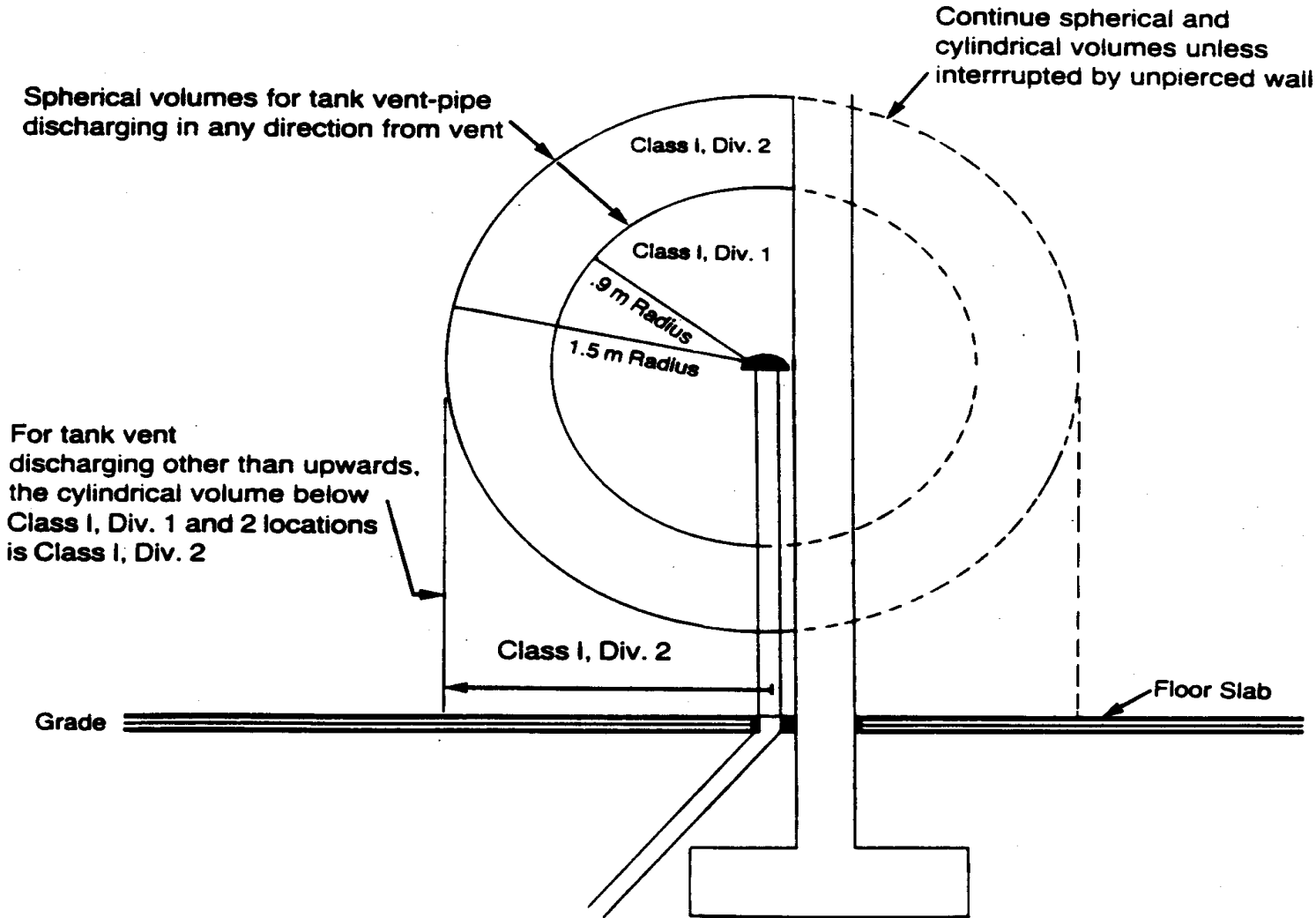
20 feet (6 meters) from the dispenser

18 inches (450 millimeters) from the pavement

At the dispensers in a service station



hazardous zone - vent



Class I, division 1:

A sphere of 3 feet (0.9 meters) radius from top of the vent

Class I, division 2:

A cylinder of 5 feet (1.5 meters) radius around the vent at the pavement level up to the top of the vent.

Around the vent at a service station



gas testing for hot work (cont)

Prior to testing for Hot Work activity:



- Cover all sewers and drains within 15 meters (50 feet) that **may potentially** contain hydrocarbon, or hydrocarbon vapours **with weighted drain cover.**
 - Cover the vents (ensure sufficient safeguards for pressure/vacuum relief if tank vents are covered)
- or
- Redirect the vent exhaust to a safe area, as appropriate.

gas testing for hot work (cont)

Gas-test all of the following locations within 15 meters (50 feet) of where Hot Work will take place:

- Drains
- Vents
- Low spots
- Flange joints
- Valve stems
- Sumps
- Suspect excavations or trenches



Gas-test at grade level in the immediate vicinity of where the Hot Work is to be performed

conduct gas tests

- Only Qualified Gas Testers are authorized to conduct gas tests
- Contractors are required to have their own gas testing equipment
- Test the work area atmosphere for the identified hazards.
- Testing should start in a known safe area and move into the work area to be tested.
- Tests should be done in the following order:
 - Oxygen
 - Flammable gases
 - Toxic vapours



permit requirements (cont)

M&C/Retail /C&I Hot Work form Version 4/1/2017

- The Hot work permit writers must conduct a pre-task hazard assessment and JSA to determine all hazards of the Hot Work and location before issuing a permit, work area must not contain any combustible or exposed flammable materials.
- All conditions, requirements and controls listed on any associated permit and forms, must be satisfied as well (e.g. General Work Permit, Confined Space Entry package, Work plan and Job Safety Analysis).
- May be extended to 16hrs maximum within a work day and renewed over 5 consecutive days.

HOT WORK FORM												
NOTE: Chevron requires 0% LEL within 50ft of where hot work is to take place. Please take the necessary precautions.												
Category of Work <input type="checkbox"/> Welding <input type="checkbox"/> Cutting <input type="checkbox"/> Drilling <input type="checkbox"/> Grinding <input type="checkbox"/> Sandblast <input type="checkbox"/> Other										Describe:		Location:
Which of the following special precautions are required? Check all that apply: <input type="checkbox"/> Inspect Excavation <input type="checkbox"/> Adequate Bonding <input type="checkbox"/> Local Rectifiers Off <input type="checkbox"/> Lock-Out Tag-Out (Supplemental EIC Form) <input type="checkbox"/> Fuel Delivery <input type="checkbox"/> Hydrocarbon soils nearby <input type="checkbox"/> Vent Stacks <input type="checkbox"/> Other vapor hazards (list):												
Initial Atmospheric Tests				O ₂ :		%LEL:		Toxicity (H ₂ S):				
Fire Watch Name (s)(if applicable)												
The following are required in addition to those requirements listed on the associated General Work Permit												
<input checked="" type="checkbox"/> Permit issuer to Check items required below and once verified as completed, the responsible party to initial this form												
<input type="checkbox"/>	Initial: Fire Extinguisher(s) located at job site											
<input type="checkbox"/>	Initial: Spark containment required											
<input type="checkbox"/>	Initial: Special PPE and/or clothing required List: _____											
<input type="checkbox"/>	Initial: Additional instructions, conditions and/or requirements listed below have been met.											
Additional hazards, equipment, site precautions, special requirements or instructions:												
GAS TEST RESULTS												
<input type="checkbox"/> Check if Gas Test is required				<input type="checkbox"/> Check if continuous Gas Testing is required throughout Job				<input type="checkbox"/> Additional gas test results form attached				
Date:	Time:	% O ₂	% LEL/LFL	H ₂ S - PPM	Other	Results	Other	Results	Gas Testing Instrument ID	Qualified Gas Tester		
Permit Requester: (signature required)										I ensure this form has been filled out completely and in conjunction with all applicable OSHA / WorkSafe BC other regulatory and Chevron requirements to provide a safe workplace for all workers and myself. I will take action to eliminate hazardous conditions or acts identified on this job site.		
Permit Issuer: (signature required)												
Company Name: _____												
Time Issued: _____ am/pm				Date: _____		Date & Time Work Completed: _____		Associated General Work Permit No. _____				
Time expires: _____ am/pm (16 hrs max.)												
Hot Work Form Renewal/Extension												
This permit may be renewed up to 5 consecutive days, but conditions must be revalidated each day.												
My signature below indicates all requirements and conditions of this Hot Work form remain in effect and the work can be performed safely.												
Notes: 1) Gas Test results (if required) to be recorded on this form or on an attached supplemental Gas Test Record Sheet. 2) Must be associated with a valid General Work Permit.												
Date	Valid From (start time)	Valid To (end time)	Permit Issuer- signature (renewal)				Extend to: (same day only)		Permit Issuer- signature (renewal extension)			



permit requirements (cont)

- Must be revalidated if site conditions change or work is stopped for more than 30 minutes and left unattended*
- Must be posted at the worksite

*** Revalidation requires the Permit Writer to verify that all conditions and requirements on the permit and form remain in effect. The work may be resumed only after the Permit Requester and Issuer have given approval to restart the permitted work.**

Chevron - NA Retail/M&C/C&I Permit-to-Work Forms to be used with a General Work Permit
For use at Chevron - NA Retail/M&C/C&I Petroleum/Convenience Sites
This form shall only be completed by an Approved, Competent, Authorized and Qualified Person!

HOT WORK FORM										
NOTE: Chevron requires 0% LEL within 50ft of where hot work is to take place. Please take the necessary precautions.										
Category of Work <input type="checkbox"/> Welding <input type="checkbox"/> Cutting <input type="checkbox"/> Drilling <input type="checkbox"/> Grinding <input type="checkbox"/> Sandblast <input type="checkbox"/> Other					Describe:			Location:		
Which of the following special precautions are required? Check all that apply:										
<input type="checkbox"/> Inspect Excavation <input type="checkbox"/> Adequate Bonding <input type="checkbox"/> Local Rectifiers Off <input type="checkbox"/> Lock-Out Tag-Out (Supplemental EIC Form) <input type="checkbox"/> Fuel Delivery										
<input type="checkbox"/> Hydrocarbon soils nearby <input type="checkbox"/> Vent Stacks <input type="checkbox"/> Other vapor hazards (list: _____)										
Initial Atmospheric Tests		O ₂ :		%LEL:		Toxicity (H ₂ S):				
Fire Watch Name (s) (if applicable):										
The following are required in addition to those requirements listed on the associated General Work Permit										
<input checked="" type="checkbox"/> Permit Issuer to Check items required below and once verified as completed, the responsible party to initial this form										
<input type="checkbox"/>	Notes	Fire Extinguisher(s) located at job site								
<input type="checkbox"/>	Notes	Spark containment required								
<input type="checkbox"/>	Notes	Special PPE and/or clothing required		List: _____						
<input type="checkbox"/>	Notes	Additional instructions, conditions and/or requirements listed below have been met.								
Additional hazards, equipment, site precautions, special requirements or instructions:										
GAS TEST RESULTS										
<input type="checkbox"/> Check if Gas Test is required		<input type="checkbox"/> Check if continuous Gas Testing is required throughout Job				<input type="checkbox"/> Additional gas test results form attached				
Date:	Time	% O ₂	% LEL/LFL	H ₂ S - PPM	Other	Results	Other	Results	Gas Testing Instrument ID	Qualified Gas Tester
Permit Requester: (signature required)							I ensure this form has been filled out completely and in conjunction with all applicable OSHA / WorkSafe BC other regulatory and Chevron requirements to provide a safe workplace for all workers and myself. I will take action to eliminate hazardous conditions or acts identified on this job site.			
Permit Issuer: (signature required)										
Company Name: _____										
Time Issued: _____ am/pm			Date: _____		Date & Time Work Completed: _____		Associated General Work Permit No. _____			
Time expires: _____ am/pm (16 hrs max.)										
Hot Work Form Renewal/Extension										
This permit may be renewed up to 5 consecutive days, but conditions must be revalidated each day.										
My signature below indicates all requirements and conditions of this Hot Work form remain in effect and the work can be performed safely.										
Notes: 1) Gas Test results (if required) to be recorded on this form or on an attached supplemental Gas Test Record Sheet. 2) Must be associated with a valid General Work Permit.										
Date	Valid From (start time)	Valid To (end time)	Permit Issuer - signature (renewal)				Extend to: (same day only)	Permit Issuer - signature (renewal extension)		



permit requirements (cont)

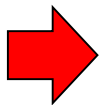
hot work form – top section

- Chevron requires 0%LEL within 50 ft/15m of where Hot Work is taking place.
- Items below in Red must be filled out or selected based on risk assessment and scope of work.

Chevron - NA Retail/M&C/C&I Permit-to-Work Forms to be used with a General Work Permit
For use at Chevron - NA Retail/M&C/C&I Petroleum/Convenience Sites
This form shall only be completed by an Approved, Competent, Authorized and Qualified Person!

HOT WORK FORM			
NOTE: Chevron requires 0% LEL within 50ft of where hot work is to take place. Please take the necessary precautions.			
Category of Work <input type="checkbox"/> Welding <input type="checkbox"/> Cutting <input type="checkbox"/> Drilling <input type="checkbox"/> Grinding <input type="checkbox"/> Sandblast <input type="checkbox"/> Other		Describe: Detail description of type of Hot Work	
Which of the following special precautions are required? Check all that apply:			
<input type="checkbox"/> Inspect Excavation <input type="checkbox"/> Adequate Bonding <input type="checkbox"/> Local Rectifiers Off <input type="checkbox"/> Lock-Out Tag-Out (Supplemental EIC Form) <input type="checkbox"/> Fuel Delivery <input type="checkbox"/> Hydrocarbon soils nearby <input type="checkbox"/> Vent Stacks <input type="checkbox"/> Other vapor hazards (list):			
Initial Atmospheric Tests	O ₂ : Initial Test Results	%LEL: Initial Test Results	Toxicity (H ₂ S): Initial Test
Fire Watch Name (s)(if applicable)		Name of Fire Watch	
The following are required in addition to those requirements listed on the associated General Work Permit			
<input checked="" type="checkbox"/> Permit issuer to Check items required below and once verified as completed, the responsible party to initial this form			
<input type="checkbox"/>	Initial	Fire Extinguisher(s) located at job site	
<input type="checkbox"/>	Initial	Spark containment required	
<input type="checkbox"/>	Initial	Special PPE and/or clothing required	List: List any special PPE or clothing
<input type="checkbox"/>	Initial	Additional instructions, conditions and/or requirements listed below have been met.	
Additional hazards, equipment, site precautions, special requirements or instructions: Additional hazards, or requirements that are site specific entered here- you can also use the back of the form if more room is needed.			

Top Section



permit requirements (cont)

hot work form – bottom section

- Follow up Gas Testing results recorded here, initial results recorded on top of Hot Work form.
- Form signed by Permit issuer, date/time issued and include associated General Work Permit number

GAS TEST RESULTS										
<input type="checkbox"/> Check if Gas Test is required			<input type="checkbox"/> Check if continuous Gas Testing is required throughout Job				<input type="checkbox"/> Additional gas test results form attached			
Date	Time	% O2	% LEL/LFL	H2S - PPM	Other	Results	Other	Results	Gas Testing Instrument ID	Qualified Gas Tester
To be completed during follow up gas testing by a competent Gas Tester									Type of equipment and Gas tester initials	
Permit Requester signature						I ensure this form has been filled out completely and in conjunction with all applicable OSHA / WorkSafe BC other regulatory and Chevron requirements to provide a safe workplace for all workers and myself. I will take action to eliminate hazardous conditions or acts identified on this job site.				
Permit Issuer signature										
Permit Requester: (signature required)										
Permit Issuer: (signature required)										
Company Name: Permit Issuer Company Name										
Time Issued: Time Issued am/pm			Date: Date of work		Date & Time Work Completed:			Associated General Work Permit No. GW number from General Work		
Time expires: Time expired am/pm (16 hrs max.)										
Hot Work Form Renewal/Extension										
This permit may be renewed up to 5 consecutive day, but conditions must be revalidated each day										
My signature below indicates all requirements and conditions of this Hot Work form remain in effect and the work can be performed safely.										
Notes: 1) Gas Test results (if required) to be recorded on this form or on an attached supplemental Gas Test Record Sheet. 2) Must be associated with a valid General Work Permit.										
Date	Valid From (start time)	Valid To (end time)	Permit Issuer- signature (renewal)				Extend to: (same day only)		Permit Issuer - signature (renewal extension)	
Complete for Hot Work that will continue past the time expired for that day or if work will extended into the next day. Gas Testing must be completed again and logged on Gas Test results form, use additional Gas Testing Results form if needed.										

Bottom Section

permit requirements (cont)

- Only **approved** Permit Writers that have had additional competency training per OSHA / Worksafe BC guidelines, API and contractor assessments completed can sign in the Permit Requestor or Permit Issuer boxes on the Permit forms.
- The workers name must also be on your companies remote permit writer list that are submitted to Chevron, this includes any work which requires permits such as the GWP and Hot Work form.

NOTE: IF ANY OF THE ABOVE ANSWERS ARE "NO", DO NOT PROCEED UNTIL CORRECTED			
Permit Requester (signature):		Permit Issuer (signature):	
Time Issued:	am/pm	Date:	Associated General Work Permit No.

- See Remote Permit Power Point for additional General Contractor guidelines and requirements for certifying Sub Contractors to Remote Permit.

hot work - additional information

For additional details on hot work requirements refer to:

- API
- Chevron M&C Safety Orientation material – Hot Work Standard
- Your local Health Environment Safety personnel
- Local rules and regulatory agencies
- OSHA/WorkSafe BC
- NFPA

