

Student Orientation Manual

Welcome to British Columbia Institute of Technology's (BCIT) Piping Foundation Program. It is our belief that you will be better prepared for a successful career in the piping trades with a training program that is similar to on-the-job training. The Piping Foundation Program is designed to give you the hands-on experience which you will need to be an asset to any employer.

The combination of theory and practical competencies and your instructors input and guidance will give you exposure to various facets of the trade to help you learn skills, technical knowledge, and attitudes you need to enter and advance in your occupation. This manual contains important information related to the Piping Department practices that you should know to successfully complete your program

Enrolling and successfully completing the BCIT Piping Foundation Program has many advantages. The practical component will expose the student to areas of the Plumbing, Steamfitting, Sprinklerfitting and Gasfitting trades that would not normally be available to those that have taken the traditional apprenticeship. Additionally, the BCIT Foundation Program Graduate also receives credit for more hours toward their 6,420 hours that they require to complete their apprenticeship as opposed to those that have taken level I in a traditional apprenticeship program. To see what these hours are, check the Industry Training Authority's (ITA) website.

The student will also gain insight of what life in the various trades will be like through the type of practical projects they will do and through guidance by their instructors. This will lessen the stress and anxiety that can occur when a person first shows up on the job site.

As a student of the BCIT Piping Foundation Program it is your goal to compete the program on time. The program is designed with enough time to complete this task. Those that don't complete on time will most often have a poor attendance record. There is no option of a time extension. There also is no option of doing or completing a missed project.

The BCIT Piping Department instructors are here to help you through the program and as such must be made aware of any situations that would hinder them. Any student with a recognized and recorded learning disability or a physical disability must bring this matter to the attention of an instructor as soon as possible. BCIT has councilors on staff to assist students in various areas.

Be advised that BCIT has a Privacy of Information Policy and will not divulge any student information unless written consent from the student has been obtained. If a parent, guardian or future employer is seeking any information about a student, the

student must have signed a consent form. Anyone wishing to sign a consent form should see their instructor.

It is our intention that the time you spend at BCIT is worthwhile and productive. While you are attending BCIT you are expected to observe all institute policies that can be found on the institute's website, and the Piping Department practices and to conduct yourself in a responsible manner.

Your Apprenticeship Path

You have now begun a journey that will eventually lead you to becoming a ticketed Tradesperson. There are two paths that a person can take to achieve this goal. One is the traditional four year apprenticeship route and the other is Piping Foundation training accompanied by three years of apprenticeship training.

With a traditional four year apprenticeship a person would convince an employer in one of the various piping related fields to give them a job and eventually indenture that person with their company thereby making them an "indentured apprentice". Once this person has been indentured they would then be allowed to attend the Level I schooling of the selected piping trade. This schooling at the present time is 6 weeks of training.

After successfully completing their Level I schooling, they would return to working in the field for approximately ten to twelve months before returning for their Level II in-school training session.

The Level II in-school training session is again, at the present time, is 6 weeks of training. After the person has successfully completed their Level II schooling, they will again return to working in the field for approximately ten to twelve months before returning for their Level III in-school training session.

The Level III in-school training session is also, at the present time, 6 weeks of training. After the person has successfully completed their Level III schooling, they will again return to working in the field for approximately ten to twelve months before returning for their Level IV in-school training session.

The Level IV in-school training session is, at the present time, 8 weeks of training. After the person has successfully completed their Level IV schooling, they will be eligible to write the Inter-Provincial Examination. This exam, sometimes referred to as the "Red Seal" exam, is a national examination that is recognized across Canada.

To become a ticketed tradesperson, a person must have 6,420 hours of work experience in the plumbing field. The in-school training time is included in this 6,420 hours. After a person has completed the required hours, their employer will "sign them off" and they will become a ticketed tradesperson.

The second path is through the Piping Foundation Program. A person enrolls in the BCIT Piping Foundation Program, which provides 26 weeks of training and gives the person credit for their first year of in-school training. This path is preferred by many

employers as they know the person they are hiring has had training in many areas of the Piping field. This is training that employer will not have to provide and they feel that this person shows up with “job ready skills”.

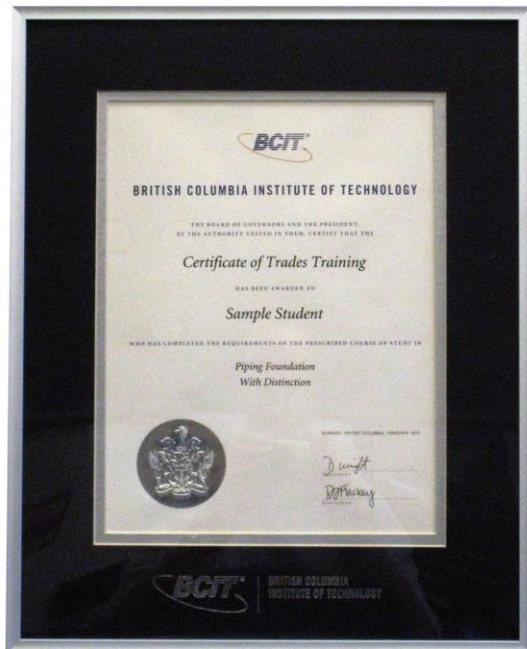
Once the person has successfully completed the BCIT Piping Foundation Program, they will solicit a Mechanical Contractor and secure employment. The employer will indenture that person with their company thereby making them an “indentured apprentice”. Once this person has been indentured they would then bypass the Level I in-school training and be allowed to attend the Level II schooling following the path of a traditional apprenticeship.

After successfully completing their Level II schooling, the apprentice would return to working in the field for approximately ten to twelve months before returning for their Level III in-school training session.

After the person has successfully completed their Level III schooling, the apprentice will again return to working in the field for approximately ten to twelve months before returning for their Level IV in-school training session.

After the person has successfully completed their Plumbing Level IV schooling, they will be eligible to write the Inter-Provincial Examination. This exam, sometimes referred to as the “Red Seal” exam, is a national examination that is recognized across Canada.

Be aware that the above information applies to apprenticeships in the Plumbing, Steamfitting and Sprinklerfitting trades. Should a person choose the path toward becoming a ticketed journeyman in the Gasfitting trade, they will only be required to complete 2 years of apprenticeship training rather than the 4 years required for the other trades.



Certificate of Trades Training

Upon completion of the BCIT Piping Foundation Program, students are eligible to apply for a certificate indicating that they have completed the program. The student must fill out a graduation completion form and send it back to student records. There is no charge to apply for this certificate and the certificate itself is free. The application form will also ask the student if they wish to attend and receive their certificate at the Convocation Ceremonies. The Piping Department strongly encourages all students to attend the Convocation Ceremonies. The certificates do not come framed but frames can be ordered and purchased at the Convocation Ceremonies or taken to any framing shop that the student chooses.



Diploma of Trades Training

Upon completion of the Apprenticeship training, students are eligible to apply for a diploma indicating that they have achieved journeyman status. The student will be required to provide proof that they have completed all their technical training and hours and are now Red Sealed. They must then fill out a graduation completion form and send it back to student records. Be sure to request the form for the Diploma and not the certificate. There is no charge to apply for this certificate and the certificate itself is free. The application form will also ask the student if they wish to attend and receive their certificate at the Convocation Ceremonies. The Piping Department strongly encourages all students to attend the Convocation Ceremonies. The certificates do not come framed but frames can be ordered and purchased at the Convocation Ceremonies or taken to any framing shop that the student chooses.

Campus Information

Campus Location:

British Columbia Institute of Technology
3700 Willingdon Avenue
Burnaby, British Columbia
V5G-3H2
604-434-5734 (main switchboard)

Program Location:

Building NE-6 is the location of the Piping Shop. Located within the Piping Department shop is the Cross Connection Lab, the Gas Lab, the Electrical Lab and the Computer Lab. Students will also have classroom instruction in Building NE-1 periodically. The telephone number for the tool crib is 604-432-8962 and the tool room attendant is Eric McKay.

Parking:

Students must park in the designated student parking areas. After 4:30 PM all parking lots on campus are open to both students and staff but parking tickets must still be purchased. Parking costs at the time of this printing are \$4.50 per day for cars, trucks or vans and \$3.50 per day for motorcycles but are subject to change. Tickets may be purchased from the ticket machines on a daily basis at the various lots or a monthly permit can be purchased. Do not park in any staff lots to avoid ticketing and/or towing.

Medical Services:

The Burnaby Campus has a walk-in clinic, staffed by Physicians and nurses, during daytime hours (8:30 AM to 4:00 PM) from Monday to Friday. Patients must have valid medical coverage. Also available are physiotherapy and referrals to specialists. The medical service's building is located in Building SE-16 and the telephone number is 604-432-8608.

Student Services:

For many students attending a program at BCIT will be their first post-secondary experience. At times students can find themselves overwhelmed with studies and adapting to post-secondary life. Add to this that life's challenges does not cease while attending school and some students will find it difficult to face these challenges on their own. To help support our students and their success in school, BCIT Student Services is available to assist students with a wide variety of inquiries and concerns. Take some time to investigate the BCIT web page under Student Services for information on tutoring, counselling, disability resources and many more services available to BCIT students.

First Aid:

The BCIT Piping Department staff are not permitted to administer to any injuries that occur to students. Any student requiring medical assistance must inform an instructor or support staff personnel (tool crib) prior to going to first aid. Should the nature of the injury restrict the student's mobility, the first aid attendant will attend on site.

Smoking:

Smoking is prohibited in any interior buildings on any BCIT campus and in the Piping Department outside yard. Smoking is allowed 6.1 metres or 20 feet from building entrances, open windows, eating areas (excluding the Burnaby Campus Student Association Pub patio), building air intakes, parkades, thoroughfares or covered walkways.

Notes:

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Program Information

Program Hours:

Class begins at 7:30 AM with roll call. All students are expected to be on time and ready to work with their coveralls, work boots and hard hat on and any other Personal Protective Equipment (PPE) with them. Any student not ready to work at 7:30 am will be marked as late. Students involved in classroom learning sessions are not required to wear PPE.

Morning coffee break is at 9:30 AM. This coffee break is for 15 minutes and **all students are expected to be back at their workstations or classrooms by 9:45 AM.**

Lunch break is at 11:30 AM. This Lunch Break is for 30 minutes and **all students are expected to be back at their workstations or classrooms by 12:00 PM.**

Students arriving back to their work stations late from coffee or lunch break will receive a Behavior Performance Contract for each offense. Repeated offences will result in the student's dismissal from the Piping Foundation Program.

Class ends at 2:00 PM. ALL students will muster in the Piping Department shop at 2:00 PM for a daily debrief and roll call. After roll call the students are dismissed for the day and can wash up and change. **Students are not allowed to wash or change prior to roll call.**

Exams:

The BCIT Piping Foundation Program is comprised of four courses designated 1100 (Safe Work Practices), 1110 (Piping Tools and Equipment), 1120 (Organize Work) and 1130 (Prepare and Assemble Piping Components). Students must achieve an average of 70% (a combination of their theory and practical competencies) in each course to receive certification. Should a student fail to receive a 70% average in any course they may complete the program but will not receive certification. The student then has the option to re-register for the failed course but will only be admitted if there is space available. Students must achieve a 70% average on course 1100 (Safe Work Practices). Any student not receiving 70% on course 1100 (Safe Work Practices) will be removed from the program and must re-register and will only be admitted when space becomes available.

All tests are scheduled in the test center and the entire group will write these exams together on the scheduled date. Students are allowed one attempt per exam. Exams may not be written out of order. Should a student miss a scheduled exam for any reason they will receive 0% for that exam.

Books & Supplies:

The following is a list of books that are needed for the Piping Foundation Program. These required texts can be found in the BCIT Bookstore and please note that all prices are estimates and are subject to change.

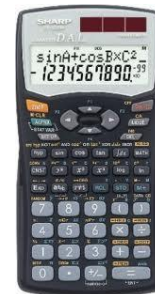
- ✓ Trades Common Core J line (Oxyacetylene Cut and Weld)
- ✓ Module 1100 (Safe Work Practices)
- ✓ Module 1110 (Piping Tools and Equipment)
- ✓ Module 1120 (Organize Work Part 1 and Organize Work Part 2)
- ✓ Module 1130 (Prepare and Assemble Piping Components)
- ✓ IPT Handbook

The students will be required to provide the following:

Calculator

(cell phones will not be allowed).

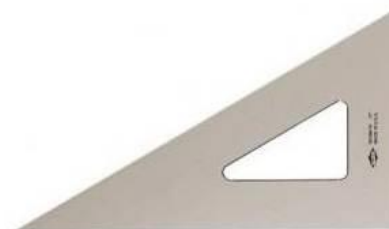
It is recommended that the student buy a Sharp EL-520 WBBK brand of calculator as this is the type that you will have to use for the Red Seal (Interprovincial) examination that you will write for Journeyperson certification.



Sharp EL-520 WBBK

30-60-90 Degree Isometric Triangle

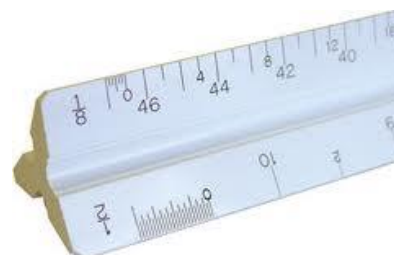
This triangle will be required when doing the isometric drawing portion of your technical training. These triangles come in a variety of sizes. Some students prefer the larger triangles while others prefer the smaller ones that come with an inexpensive mathematic set. Either one is acceptable.



30-60-90 Degree Triangle

Combination Scale Ruler

The Combination scale ruler will be used when studying the drafting portion of your technical training. These scales come in many styles, all of which are acceptable, but most students prefer the 3 sided triangular style. The Combination ruler will have measures in both the imperial scale the metric scale.



Mechanical Pencil

A pencil, not a pen, will be required for everything you do during the classroom portion of your technical training. A mechanical pencil is the pencil of choice as it does not require sharpening. These Mechanical Pencils can be bought in the student run store in the Inglis building (NE-1) at a very low cost.



Mechanical Pencil

Eraser

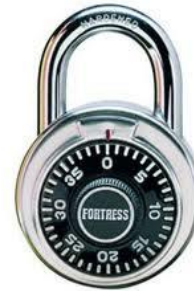
As all the work you will do during the classroom portion of your technical training will be in pencil, it is advisable to purchase an eraser. The pink style or white style are both acceptable.



Eraser

Locker lock

A lock will be required to secure your belongings in your locker in the Piping Shop Change Room. A combination lock is most common but a key lock is also acceptable. Most students will record the combination on their cell phone in case they forget the numbers.



Combination Lock

Leather Safety Boots

Steel toe and steel shank boots with a green tag are required for all shop floor learning activities. The boots should be high top for ankle support. The safety boots must have the green triangle on them. Students are encouraged to select boots that fit well as they will be spending a considerable amount of time in them.



Safety Foot Wear

Cotton Coveralls

For safety reasons, the welding department require all students to be dressed in appropriate cotton coveralls. The only acceptable style of coverall are the ones shown. Coveralls can be purchased at the BCIT book store and it is advised that students inquire for the availability of sizes immediately.



Respirator

Students are also required to purchase a respirator capable of protection from PVC and CPVC vapours. BCIT will provide enrolled students with a “fit test” on site and recommends not purchasing a respirator until then.



Notes:

Washrooms:

The women's washroom is located on the 1st floor at the Southeast end of piping shop. The men's washroom is located on the 2nd floor at the South end of piping shop.

Lockers:

The women's locker room is located on the 1st floor at the South end of piping shop. The men's locker room is located on the 2nd floor at the Southeast end of piping shop. There are additional lockers available for foundation students in Building NE-1 on the second floor.

Emergencies:

Should an emergency occur while class is in session, the students are expected to evacuate the building as quickly as possible and make their way immediately to the Southwest corner of parking lot 25 (across from the Piping Department Shop) where attendance will be taken.

Theory Component:

In addition to the practical projects that the student must do, there is also a theory component that must be completed before a student can graduate from the Piping Foundation Program. These exams are written in the test center.

Course 1100 Safe Work Practices

- Safety Midterm
- Safety Final

Course 1110 Piping Tools and Equipment

- Fire Sprinklers
- Tools Midterm
- Tools Final
- Piping Equipment Midterm
- Piping Equipment Final
- Piping Materials Midterm
- Welding

Course 1120 Organize Work

- Math Midterm
- Math Final
- Science Midterm
- Science Final
- Code Midterm

- Code Final
- Jointing Methods
- Drafting
- Piping Materials Final
- Rigging

Course 1130 Prepare and Assemble Piping Components

- Pumps and Electricity
- Manufacturers Documentation
- Valves
- Heating Systems
- Steam Systems
- Employability Skills

Classroom Conduct:

Many students have commitments such as children or work commitments and must make the best utilization of their classroom time. For this reason noise or disruptions will not be tolerated during scheduled training sessions. Quiet topic related discussions among students is acceptable but students should be aware that others in the classroom require a quiet learning environment to get the most out of their classroom time.

Students that are disrupting the learning environment will be asked to leave the classroom for the day and will be issued a Behavior Performance Contract. Repeated offenses will result in the student removed from the classroom learning activity block.

Homework:

Piping Foundation Program students will receive no time during the scheduled school day to study for exams. The preparation for exams is expected to be done at home on the students own time. Students should be prepared to do at least 1 hour of homework while involved in shop practical projects and at least 2 hours of homework when involved with classroom learning activities. Be advised that these times are approximates and could be more depending on the student's ability to grasp the concepts they are studying.

Students are required to complete all homework and assignments must be submitted on the date they are due. Late assignments will result in a loss of marks.

Cell Phones:

The use of cell phones is prohibited in the classroom. Students must turn them off or put them on vibrate and must leave the room if a call is received. Cell phones will not be allowed to be used as calculators.

Text messaging will not be tolerated at any time and cell phones should be left in the student's locker while doing practical projects to minimize damage to the phone.

Any student observed using their cell phone in the shop or in the classroom at any time other than scheduled breaks will be issued a Behavior Performance Contract. Repeated offences will result in the students dismissal from the Piping Foundation Program.

Radios, iPods, Etc.:

Radios, iPods or any similar devices are not to be used when in the shop. This is a safety issue and there will be no exceptions to this rule.

Radios, iPods or any similar devices are not to be used when in the classroom. This is a respect issue and there will be no exceptions to this rule either.

Any student observed using an iPod or radio in the shop or in the classroom at any time other than scheduled breaks will be issued a Behavior Performance Contract. Repeated offences will result in the student's dismissal from the Piping Foundation Program.

Coveralls and Shop Clothing:

While in the Piping shop students will be required to dress in appropriate attire for safety reasons. Shirts must have a sleeve (T-shirt is acceptable) and shorts are not permitted. Pants are to be cotton or denim. Any polyester clothing such as athletic clothing will not be acceptable.

Many students choose to purchase coveralls which are popular with construction based trades. They must be cotton coveralls such as Carhartt or Dickie brand. These coveralls are bibb style coveralls and do not cover the arms. This style is generally preferred by plumbers as they provide protection to clothing and are not as hot as the full coverall style. These styles of coveralls are acceptable in the Piping shop but not for the Welding shop.

When students go for welding training in the welding shop, they must use the full jump suit style of cotton coverall. The coveralls must be clean and must be worn appropriately at all times while in the welding shop.

Welding:

Students are required to attend welding training that is provided by the BCIT Welding Department in the BCIT Welding Shop. The welding times for this training will be either a 7:00 AM start time or a 1:30 PM start time. These times are determined by the Welding Department depending on availability. You will be informed of the times for your group.

Attendance and punctuality are strictly adhered to during this training session and should a student be late on the first day of welding training they will not be allowed to attend any sessions for the entire week as they will have missed the safety instruction and will have to make their own arrangements with the welding department and will have to attend the sessions on their own time. Should the student be late for any welding training sessions though the rest of the welding training week they may not be allowed to attend that days training session as they may have missed the safety instruction for that day's activities.

DO NOT BE LATE OR MISS ANY TIME DURING WELDING TRAINING WEEK**Practical Component:**

All students will be issued a Practical Projects Book. This book will contain the practical projects that the student must do to successfully complete the Piping Foundation Program. Also included are the marking sheets that the instructor will use to grade the project.

Students should be aware that the practical projects must also be done in one attempt. **There will be no 2nd attempts on any practical projects.**

As this book is the students proof that they have completed the practical project it is vital that the student ensures that the instructor records the grade and date that the project was graded and signs the mark sheet. This is the most important book that the student has in his possession and must be treated as such. The student must not lose or misplace this book. It is strongly recommended that the student keep the Practical Projects book in their toolbox when not using it for project information.

Course 1110 Piping Tools and Equipment

- B-1-1 Lifting and Carrying Pipe and Materials
- B-1-2 Flange Bolt up Project
- B-2-1 Hand Oilers, Cutting, Reaming and hand Threading
- B-2-2 Drop Head Hand Threading
- B-2-3 Drop Head Machine Threading
- B-2-4 Cast Iron Project

- B-2-5 Cast Iron Project
- B-2-6 Cast Iron Project
- B-3-1 Use Power Tools
- B-3-2 Use Core Drilling Machine
- B-3-4 Make a Nipple Chuck
- B-3-5 300's and Quick Opening Dies Project #1
- B-3-6 300's and Quick Opening Dies Project #2
- B-3-7 Grooving demo and Practice
- B-3-8 Grooving Project on the Scaffold
- B-3-9 Grooved PRV Station
- B-3-10 Fire Sprinkler Project
- B-4-1 Cutting and Grinding
- B-4-2 Welding

Course 1120 Organize Work

- C-1-1 Soldering and Brazing Practice
- C-1-2 Soldering Project #1
- C-1-3 Soldering Project #2
- C-1-4 Soldering Project #3
- C-1-6 Plastic Pipe Fusion
- C-1-7 Piping Systems Assembly
- C-1-8 CSST
- C-1-9 CPVC and PVC
- C-1-10 Residential Domestic Hot Water Tank
- C-2-1 Tie Knots, Bends and Hitches
- C-2-2 Erect ladders and Scaffolding
- C-2-3 Use Hoisting Equipment
- C-3-1 Steam Drawing
- C-3-2 House Drawing
- C-3-3 Heating Drawing

Course 1130 Prepare and Assemble Piping Components

- D-1-1 Swing Joint
- D-1-2 Hydronic Heating System
- D-1-3 Steam Heating System
- D-1-4 Pipe Wrench Project
- D-1-5 Up and Over Threading Project
- D-1-6 Install Plastic Pipe and Fixtures
- D-2-1 Pumps
- D-2-2 Electricity
- D-3-1 Schluter System
- D-3-2 Install Sleeving Project
- D-4-1 Prepare a Resume

Tools:

Students will be issued a tool box and hand tools so that they may complete the practical portion of the program. The student will use these tools throughout their program and at the end of the program will sign these tools back in to the tool crib. Students are responsible for the care of their tools and tool box. **Students that lose tools will be required to replace the missing tools before being signed out of the program.**

The student tool boxes are stored in the tool box rack in the shop and will be returned to this storage area at the end of every day.

Some specialty tools that will be required to complete certain projects will be issued from the tool crib. The tools will be scanned using a bar code system to the students BCIT identification number. These specialty tools must be returned at the end of the day and scanned back in to the tool crib. Prior to returning the tools to the tool crib, all tools must be wiped down and cleaned.

Students signing out tools from the tool crib are expected to know what they want so as not to slow down the process.

Roll Call at the End of the Day

At the end of the day, the horn will sound at 1:45 PM. At this time the students will stop working, pack up their tools and put them away. They will also return any tools they have signed out from the tool crib and police their work area. At 2:00 PM the students will muster at the West side of the piping shop, at their designated table, where their instructor will take attendance. At this time any announcements are made the students will be dismissed and can wash their hand and change. **NO STUDENT WILL WASH AND CHANGE PRIOR TO BEING DISMISSED.**

Material Handling and Jobsite Maintenance

The Piping Department Shop undergoes a major clean-up every Friday afternoon. All students that are working on the shop floor are required to participate in this clean-up.

The horn will sound at 12:45 PM and this is the signal for the students to stop working, pack up their tools, put their toolboxes away and police their work area. At 1:00 PM the students will muster at the West side of the piping shop, at their designated table, where their instructor will take attendance. Once the attendance has been taken, the students will be broken into groups and given their cleaning assignments and the instructor that they will be reporting to for the duration of the clean-up. When the clean-up has been completed the horn will sound and the students are to return any tools they have used to the proper storage area and assemble in the West side of the shop for any announcements. After any announcements, the students will congregate, with their original group and original instructor and attendance will again be taken. After the

attendance has been taken the students are dismissed and can wash their hand and change. **NO STUDENT WILL WASH AND CHANGE PRIOR TO BEING DISMISSED.** In other words, the clean-up will be done as a group and the students will be dismissed as a group.

Students that are absent from the Friday clean-up are considered to be absent for the afternoon and will receive an Attendance Performance Contract. A Behavior

Performance Contract will also be issued and the student will be required to perform some type of clean-up on the following Monday.

Piping Department Policy

Attendance:

Students are required to attend all scheduled training sessions (780 hours total) for the Piping Foundation Program. Should a student be absent for all or part of a scheduled training session, a record of this absence will be noted through an Attendance Performance Contract to a maximum of **39 hours or 6.5 days** (5% of the total allotted training time). Once the student has missed the **39 hours or 6.5 days** of training time they will be withdrawn from the program and must re-schedule at a later date when they feel the time commitment needed to complete the program can be met.

Once a student has missed 10 hours of scheduled training time they will be required to have a meeting with the Piping Foundation Program Coordinator where they will receive an Attendance Performance Contract.

Once a student has missed 20 hours of scheduled training time they will be required to have a meeting with the Chief Instructor and the Piping Foundation Coordinator where they will receive their second Attendance Performance Contract.

Once a student has missed 30 hours of scheduled training time they will be required to have a meeting with the School of Construction and Environment associate Dean, the Chief Instructor and the Piping Foundation Coordinator where they will receive their third and final Attendance Performance Contract.

Once a student has missed 40 hours of scheduled training time they will be removed from the Piping Foundation Program.

Students must not leave the Piping Department shop or yard area without permission from their instructor. Should a student have to leave early they must inform their instructor prior to leaving. This is a safety issue and no exceptions will be tolerated. If a student fails to inform their instructor prior to leaving the shop or yard area they will

receive a Safety Performance Contract. Four (4) Safety Performance Contracts will result in the student being dismissed from the Piping Foundation Program.

If a student is late they must inform their instructor prior to beginning work on the shop floor. Should a student not inform their instructor upon their arrival, The instructor will record when they first see the student and those absent hours will be recorded.

Tardiness:

One of the goals of this program is to prepare people for a successful career in the piping trades. One of the traits of a successful tradesperson is to be on time for work every day. The Piping Department Foundation Program makes every effort to mirror industry in this area. The program training sessions begin at 7:30 AM from Monday to Friday and students are expected to be on time for all training sessions. A record of all instances will be recorded and repeated tardiness will be addressed at a meeting with the student, the instructor and the Chief Instructor of the Piping Department to determine what additional action will be taken.

If a student is late they must immediately report in to their instructor prior to beginning any shop work. If the student does not check in with their instructor, the student will be marked present when the instructor first sees them and their attendance record will reflect this time.

Safety:

The practical portion of the Piping Foundation Program will be conducted in building NE-6 (Piping Department Shop). The Piping Department shop is considered a job site and as such is subject to all the safety regulations of a job site. The students will be required to wear Personal Protective Equipment (hard hat, safety footwear and safety glasses) at all times. The student will be issued a hard hat and safety glasses prior to beginning their shop activities. Any student loosing or breaking their hard hat or safety glasses will be required to replace these items at their cost prior to commencing work on the shop floor. Safety footwear is the responsibility of the student. Worksafe safety procedures will be followed at all times when in the shop. Any deviation from this practice will result in the student being issued a Safety Performance Contract and/or possible removal from the shop. Students will be required to provide their own safety footwear. Students must report all injuries to their instructor and to first aid. **Any student receiving four Safety Performance Contracts will be subject to removal from the program.**

Students are not allowed to work in the shop during coffee or lunch break as students must be supervised while in the shop at all times.

Behavior:

The mandate of the Piping Department at BCIT is to provide a safe and positive learning environment for the students and Piping Department staff. With this in mind, any instances of harassment in the form sexual, racial, bullying, fighting, threatening or abusive behavior to any student or staff member will not be tolerated. Should any of these instances occur, the student will be issued a Behavior Performance Contract. Depending on the severity of the offense, the student may be removed from the program.

Any physical altercations between students will immediately be turned over to the BCIT Safety and Security Department for review.

Alcohol and/or Drugs:

The Piping Department has a zero tolerance policy on the consumption of alcohol or drugs during any scheduled training sessions. Any student caught or suspected of consuming alcohol or using drugs during scheduled training sessions or activities will receive a Behavior Performance Contract and sent home for the day. Upon their return, the student will be required to attend a meeting with the chief instructor and the Foundation Program Coordinator to determine if additional action will be taken.

The following are examples of the various contracts and forms that are used by the BCIT Piping Department for record keeping purposes.

Notes:

Attendance Performance Contract

On *(insert day, date and year)*, I, *(insert student name)*, was absent for 6 hours of the scheduled BCIT Piping Foundation Program Activity. I am fully aware that I am allowed to be absent for a maximum of 5% (39 hours or 6.5 days) of the BCIT Piping Foundation Program learning activities and that any absence in excess of 5% (39 hours or 6.5 days) will result in my termination from the BCIT Piping Foundation Program.

This Attendance Performance Contract is being executed according to BCIT Policy 5101, Student Regulations. It is the responsibility of each student at BCIT to be aware of BCIT's policy requirements and to abide by these requirements.

I agree to meet the conditions as outlined below.

Student Initial

I agree to be in attendance and on time for all scheduled BCIT Piping Foundation Program learning activities.

Student Initial

In the case of illness or emergency, I agree to contact my instructor prior to leaving class.

Student Initial

For an illness of 3 days or more I will provide a medical certificate prior to being allowed to participate in any theory or shop competencies.

I understand that failure to meet the requirements of this attendance performance contract will result in my being withdrawn from the BCIT Piping Foundation Program.

Contract #: *(insert contract number)*

Number of hours absent to date: *(insert hours)*

Date of this contract: *(insert date)*

Students Signature: _____

(insert student name)

Instructors Signature: _____

Richard Yoo

Behaviour Performance Contract

On *(insert day, date and year)*, I, *(insert student name)*, was involved in an incident that would be deemed inappropriate behaviour.

This Behaviour Performance Contract is being executed according to BCIT Policy 5102, Student Code of Conduct (non-academic). It is the responsibility of each student at BCIT to be aware of BCIT's policy requirements and to abide by these requirements.

Incident Report:

Corrective Action:

Student Initial

I am fully aware that a student enrolls in the BCIT Piping Foundation Program in the interest in furthering their education and to better prepare themselves for work in the piping industry.

Student Initial

I understand that it is expected that students will behave towards BCIT staff, fellow students and members of the community in a manner consistent with the goals and professional demeanor of the educational institution.

Student Initial

I understand that in the event that repeated incidents of what is considered inappropriate behavior, my registration in the BCIT Piping Foundation Program may be suspended or terminated.

Contract #: *(insert contract number)*

Date of this contract: *(insert date)*

Students Signature: _____ *(insert student name)*

Instructors Signature: _____ Richard Yoo

Safety Performance Contract

On *(insert day, month and year)*, I, *(insert student name)*, was involved in an incident that would be in contravention to the safety policies set forth by the BCIT Piping Department.

This Safety Performance Contract is being executed according to BCIT Policy 5102, Student Code of Conduct (non-academic) and Policy 7512, Occupational Health and Safety. It is the responsibility of each student at BCIT to be aware of BCIT's policy requirements and to abide by these requirements.

Incident Report:

Corrective Action:

Student Initial

I am fully aware that it is assumed that a student that is enrolled in the Piping Foundation Program at the British Columbia Institute of Technology will adhere to the safety practices that have been outlined.

Student Initial

I understand that in the event that repeated incidents of what is considered inappropriate safety practices, my registration in the BCIT Piping Foundation Program may be suspended or terminated.

Contract #: *(insert contract number)*

Date of this contract: *(insert date)*

Students Signature: _____ *(insert student name)*

Instructors Signature: _____ Richard Yoo

Student Report for Cheating

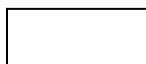
Student name: *(insert student name)*
Student number: *(insert student number)*
Program: BCIT Piping Foundation Program – Full-time
Date of this report: *(insert date)*
Location of this Interview: Building NE-6, Chief Instructors Office
Time of this Interview: June 1, 2011 at 10:00 AM

This Student Report is being executed according to BCIT Policy 5104, Academic Integrity and Appeals, Section 2.2. It is the responsibility of each student at BCIT to be aware of BCIT's policy requirements and to abide by these requirements.

Incident Report:

Corrective Action:

The incident was discussed with an instructor and the student was counselled on what is deemed appropriate and inappropriate behaviour at the British Columbia Institute of Technology and or the Piping Department. The student was informed by Dale Pfaff that any further incident of this sort would result in dismissal from the Piping Foundation Program.



Student Initial

I understand that in the event that repeated incidents of what is considered inappropriate behavior, my registration in the BCIT Piping Foundation Program may be suspended or terminated.

Contract #: *(insert contract number)*

Date of this contract: *(insert date)*

Students Signature: _____ *(insert student name)*

Instructors Signature: _____ Richard Yoo

Chief Instructor: _____ Ron Stewart

Information Consent Form

On *(insert day, month and year)*, I, *(insert student name)*, am signing this Information Consent Form which allows the Piping Department to divulge information about myself to my parent, guardian or future or current employer.

Students Signature: _____ *(insert student name)*

Instructors Signature: _____ Richard Yoo

Conflicts and Resolution

BCIT and the Piping Department in particular are committed to provide a safe learning environment where all students are valued and respected. With this in mind, BCIT and the Piping Department will not condone or tolerate any discriminating or harassing behavior which undermines the dignity, self esteem or productivity of any student. To obtain copies of BCIT Policies, go to the BCIT Website.

Should you have concerns or issues related to your program at BCIT, you should discuss them with your instructor. The Piping Department Staff believe that the resolution process begins with your instructor but when this is not possible you should be aware of the steps to take. If you and your instructor can not find a resolution to the issue, you must seek a resolution using the following order:

- ✓ Foundation Program Coordinator
- ✓ Chief Instructor
- ✓ Associate Dean
- ✓ Dean

Any physical conflict between students will immediately be referred to the BCIT Safety and Security office for further action.

Contact Information

Chief Instructor: Ron Stewart
Piping Department Shop NE-6
604-432-8420
ron_stewart@bcit.ca

Foundation Program Coordinator: Richard Yoo
Piping Department Shop NE-6
604-431-4967
richard_yoo@bcit.ca

Part time Studies: Matt Magee
604-454-2266
matt_magee@bcit.ca

Apprenticeship
Services

Erica Traynor
Building NE-25, Room
604-456-8100
erica_traynor@bcit.ca

Web Sites:

Piping Department	bcit.ca/plumbing
Piping Full and Part-time Courses	bcit.ca/construction/pipetrade
Piping Student Bursaries Info	bcit.ca/construction/pipetrade/bursaries.shtml
Admissions and Registration	bcit.ca/admission
Apprenticeship Information	bcit.ca/apprenticeship/students
Apprenticeship Training Schedules	bcit.ca/apprenticeship/students/training
BCIT Information Sessions	bcit.ca/infosessions
Counselling	bcit.ca/counselling
Financial Aid and Awards	bcit.ca/finaid
Full and Part-time Catalogues	bcit.ca/study/catalogues.shtml
Government of Canada	servicecanada.gc.ca

Notes:

Tool List

When you graduate from the BCIT Piping Foundation Program and secure your first job your employer will most likely tell you or give you a list of the tools that you will need while in his employ. If this does not happen, the following is a list of the tools you will need at some time during your working career in the piping field. Be advised that most employers will take your recent entry into the field into consideration and will not expect you to be outfitted like a journeyperson on your first day on the job. Your accumulation of tools will happen over many years. The following is a list of things you will need when entering the Piping Field.

Tool Box

The tools that you will accrue, as in any trade, will total in the thousands of dollars so it is very important that you ensure that they are not stolen or lost because without tools you have no way of making money in this trade.

While the open canvas tool bag is quite common these days you should be aware that the tools stored in this pouch are at risk of theft as this type of bag does not lock and should be kept close to you when working and should be locked in the job box during all scheduled breaks and at the end of the day. Many apprentices with the canvas tool bag also use a carpenter style tool belt so they can take the tools that they need for the job they are doing and leave the rest in the job box or storage room. These tool belts can be purchased as a stock item or bought in pieces that can be customized for your needs.

The metal or plastic tool boxes do provide more security because of their ability to lock but are more cumbersome.

Work Boots

Work boots are required on all work sites that are covered by Workers Compensation. Your work boots must have ankle support so this eliminates the low cut safety shoes that warehouse workers use and the running shoe style. The work boots must also have the green triangle on them indicating that they have a safety toe and a safety shank incorporated into their design.

Unfortunately on some residential construction sites this rule is sometimes overlooked or ignored by contractors. You should be aware that if you are injured on a worksite that is covered by Workers Compensation and you have not been wearing or using all of the recommended Personal Protective Equipment (PPE) your claim may be at risk.

It is strongly recommended that you do not buy your work boots on the basis of cost. You will spend, on average, anywhere between 8 to 12 hours in your work boots a

day and if they do not fit right or are generally uncomfortable it will make for a very long and tiring day and could even lead to back or knee pain. The rule here is do not go cheap on your work boots.

Hard Hat

Hard hats are also required on all jobsites that are covered under the Workers Compensation Act. Most commercial contactors are extremely diligent when it comes to wearing hard hats as the fines can be quite costly as can be their premiums.

Hard hats must be replaced every 5 years. You will have to replace your hard hat if you write on it with a felt pen, paint it or load it up with stickers. Any of these things will void the approval and could affect compensation claims.

Safety Glasses

Safety glasses are also required on all jobsites that are covered under the Workers Compensation Act. This piece of your PPE is extremely important as eye injuries can be devastating and permanent.

It is recommended you buy 2 sets of safety glasses, one that you will use on a constant basis and one as a back-up. If you treat your safety glasses like you would if they were prescription glasses they will last a long time.

You may also want to consider buying a tinted pair of safety glasses for those sunny days when you may have to work out outside or possibly when you are soldering.

Coveralls

While coveralls are not required, many tradespeople wear them to keep their clothes clean but they also have multiple places to put tools, pencils, note pads, etc. The most common style is the bib overalls. These are the ones with no sleeves that some feel allow more arm mobility and are cooler in the summer months.

Even though you are embarking on a career that will cause you to get dirty, your appearance is loosely monitored by your employer. This means that your coveralls should be washed at least every two weeks or sooner depending on what you are working on. If you are covered in cutting oil for months on end your employer will be reluctant to send you to certain jobsites that require interaction with the public.

Hearing Protection

While most jobsites will supply the foam plug style of hearing protection, many choose to buy custom molded ear plugs. They offer more protection and are priced around \$125.00.

Knee Pads

While it is not essential to wear knee pads it is strongly recommended that you have them. The piping trade is very hard on knees and backs and knee pads are cheap insurance against knee problems in the future.

Gloves

Some people like to wear gloves when they are working. If this is the case most prefer tight fitting gloves with cloth material on the top and rubber on the palms.

You should also have a heavier pair of gloves that are better suited for carrying pipe or handling any objects with sharp edges.

Note Pad and Pencil

As you will be in an entry level position with the company you will most likely be assisting a journeyperson that will require you to get fittings, cut pipe, etc. A note pad and pencil will likely be the most used tools for the first two months. Never be without a note pad and pencil.

Tape Measure

It is recommended that you purchase two tape measures. A good tape measure that is used on a daily basis and a cheap one that you will use for underground installations where dirt and moisture maybe present.

The most popular are 25 foot with a $\frac{3}{4}$ " or 1" blade. The advantage of having a tape measure with a 1" blade is you will be able to extend the tape measure longer distances but the disadvantage is it will be heavier.

Claw Hammer

A 20 oz. claw hammer is required. Get a good brand name like Estwing or Stanley as they have good warranties and will stand up to the abuse.

Utility Knife

A knife is essential to an apprentice as you will be unloading trucks and putting material away. A popular style is a Husky brand which uses drywall style blades that are easily replaced.

Some prefer the Ofa plastic style knives with the long blades that get broken off when they become dull. While these knives are better for cutting through deeper material, they are less durable. Many tradespeople will have both types in their toolbox.

Nut Driver

One of the jobs that you will be doing when starting out as an apprentice is working on the cast iron testing crew. You will need a 5/16" nut driver for tightening MJ clamps. The type with the rubber handle is easier on your hands.

Rather than using a nut driver, some prefer to use a 1/4" drive ratchet with a 5/16" deep socket.

Level

A torpedo level is essential to every tradesperson. The preferred type is an anodized aluminum type that has the magnets built right into the body of the level rather than have a magnetic strip glued to the bottom. Some prefer the 8" level while others choose to use a 12" level.

Once you have been in the trade awhile, you may want to purchase a 24" level. My suggestion is to spend the money to purchase a well-made one as they tend to be more accurate and durable than the less expensive ones.

Pliers

Pliers are one of the most used tools. 8" straight pliers will work for most basic applications. Some tradespeople like to have a smaller one (6") that they keep with them at all times.

Some prefer to use a Channel Lock style. This style has more adjustment and are more versatile. A combination pack is usually available that include a 6" and 10".

Screwdrivers

Rather than buying many single screwdrivers, many choose to purchase the multi-head style. Pick-quic seems to be the choice of most.

A large 12" slotted screwdriver will be handy for removing plastic sleeves from concrete. Make sure this is heavy duty as it will take lots of abuse.

Another handy tool for removing sleeves and cans is a small pinch bar. One that is 6" or 8" long is all that is required for most jobs.

Tin Snips

Tin snips are handy when working on buildings that use steel studs. Tin snips are identified by the color of the handles. Green handles are for right hand cuts, red handles are for left hand cuts and yellow handles are for straight cuts.

Adjustable Wrenches

Most people call these crescent wrenches. It is advisable to have a variety of sizes such as a 6", 8" and a 10".

If you are repeatedly working on a specific project, you may want to buy some combination wrenches (open end and box end) that will give you more control over the tightening that you have to do.

As you progress through your apprenticeship you will have the need to purchase more tools. The following is a list of the specialty tools that are used by journeypersons involved in the piping field.

Copper Tube Cutters

When working on copper tube and pipe the most efficient way to cut is with copper tube cutters. The most popular sizes are Ridgid #15 tubing cutters which are used for 1/8" to 1" copper tube and Ridgid #20 tube cutters that will cut up to 2" copper.

Additionally, most tradespeople will have a Ridgid mini tubing cutter for those tight places. These mini cutters come in a couple of sizes also.

Pipe Wrenches

When you begin working on threaded steel pipe you will have to get yourself some pipe wrenches. The most popular brand is Ridgid and they come in a variety of sizes. It is recommended that you have two 14" pipe wrenches and two 18" wrenches.

These pipe wrenches come in the traditional steel material or aluminum style can be purchased. Many prefer to get the aluminum style as they are lighter to work with but they are more expensive than the steel style.

Plumb Bob

A plumb bob is used for laying out piping systems. A brass plumb bob is recommended. Be aware that these do not come with the string. Many will buy Bricklayers line that comes with a plastic handle for wrapping the string when not being used.

Chalk Line

A chalk line is another layout tool. You can usually purchase the chalk line and a small bottle of chalk as a package deal.

Cordless Tools

Cordless tools have become an essential part of a tradespersons toolbox. There are many manufacturers of cordless tools but it recommended that you purchase a quality brand as it will stand up to the constant hard use that you will put it through. Some of the cordless tools that are used are:

Drill

Impact Driver

Circular Saw

Reciprocating Saw

Jig Saw

Plastic Cutter

Copper Cutter

The Piping Department uses and endorses Milwaukee brand cordless products but there are other brands to choose from depending on personal preference. These cordless tools will use batteries that range from 12 volt to 24 volt. The most common is the 18 volt battery but it again is a matter of personal preference.

Torch

A Turbo Torch and Regulator kit is the most common torch used in the industry as it provides a high concentrated heat. This kit comes with 2 torch tips but additional tips of different sizes can be purchased separately.

You will also need a striker to light the torch and some will also buy a small telescopic angle mirror which can come in handy when soldering in difficult places.
Concrete Insert Tool

While the company you are working with will supply the Hilti hammer drill very often the box will be missing the pin drivers. It is recommended that you buy a 3/8" and 1/2" pin setting tool.

Circuit Tester

A circuit tester comes in handy when doing service work. It can also be useful for establishing if wall plugs are live or extension cords are working.

Notes:

Contractor List

- | | | |
|----------|--------------------|--|
| 1 | Name | Dominion Mechanical Ltd. |
| | Address | 4450 Dawson Street |
| | City | Burnaby, British Columbia |
| | Postal Code | V5C-4B9 |
| | Tel. | 604-420-8721 |
| | Contact | Jim |
| | E-mail | |
|
 | | |
| 2 | Name | Phase Mechanical Ltd |
| | Address | 2351 - 154th Street |
| | City | Surrey, British Columbia |
| | Postal Code | V6P-1X4 |
| | Tel. | 604-538-0562 |
| | Contact | Trevor Hildebrant |
| | E-mail | trevor@phasemechanical.com |
|
 | | |
| 3 | Name: | Alpha Mechanical Contracting Ltd. |
| | Address | #108 - 1515 Broadway Street |
| | City | Port Coquitlam, British Columbia |
| | Postal Code | v3C-6M2 |
| | Tel. | 604-941-9296 |
| | Conact | Andrew Wong |
| | E-mail | awong@alphamechanical.ca |
|
 | | |
| 4 | Name: | Fred Welsh Ltd. |
| | Address | #3 - 720 Beatty Street |
| | City | Vancouver, British Columbia |
| | Postal Code | V6B-2M5 |
| | Tel. | 604-294-3100 |
| | Contact | Bill Cheavins |
| | E-mail | bill@fredwelsh.com |

- 5** Name: **William Kelly & Sons**
 Address #190 - 4611 - No. 6 Road
 City Richmond, British Columbia
 Postal Code V6V-2L3
 Tel. 604-278-3553
 Contact Liam Kelly
 E-mail lkelly@wkellyandsons.com
- 6** Name: **Pine Mechanical Ltd.**
 Address #206 - 1525 Cliveden Avenue
 City Annacis Island
 Postal Code V3M-6L2
 Tel. 604-520-0362
 Contact Brett Gaylard
 E-mail pinemechanical@telus.net
- 7** Name: **Benchmark Mechanical Ltd.**
 Address #305 - Progress Way
 City Delta, British Columbia
 Postal Code V4G-1M6
 Tel.
 Contact Jeff Small
 E-mail benchmec@telus.net
- 8** Name: **Dan-Jen Mechanical Ltd.**
 Address #146 - 11786 River Road
 City Richmond, British Columbia
 Postal Code V6X-1Z7
 Tel. 604-232-4545
 Contact Roni Pollard
 E-mail danjen@telus.net

- 9** Name: **Lathams**
 Address 1060 West 8th Avenue
 City Vancouver, British Columbia
 Postal Code
 Tel. 604-683-2321
 Contact Todd Pearce
 E-mail tpearce@lathams.ca
- 10** Name: **Reid Brothers Plumbing and Heating Ltd.**
 Address #102 - 6007 West Boulevard
 City Vancouver, British Columbia
 Postal Code V6M-3X2
 Tel. 604-263-9910
 Contact Bill Reid
 E-mail info@reidbrothers.ca
- 11** Name: **PPL Mechanical Ltd.**
 Address 1250 France Street
 City Vancouver, British Columbia
 Postal Code V6A-1Z5
 Tel. 604-421-9287
 Contact Michail Petrou
 E-mail petrouprojects@telus.net
- 12** Name: **Lockerbie and Hole Contracting Ltd.**
 Address 401 Salter Street
 City New Westminister, British Columbia
 Postal Code V3M-5Y1
 Tel. 604-777-5964
 Contact Mike Zaine
 E-mail mzaine@lockerbiehole.com

13 Name: **Eagle Ridge Mechanical Contracting Ltd.**
Address #117 - 1515 Broadway Street
City Port Coquitlam, British Columbia
Postal Code V3C-6M2
Tel. 604-941-1071 Cell: 604-968-5178
Contact Greg Robertson
E-mail grobertson@eagleridgemech.com

14 Name: **Lambert Plumbing And Heating Ltd.**
Address 1597 East Kent Avenue North
City Vancouver
Postal Code V5P-4Y7
Tel. 604-734-0890
Contact Vince Lambert
E-mail lambertplumbingandheating@telus.net

15 Name: **Sentrax Mechanical Contractors Ltd.**
Address #106 - 8299 - 129th Street
City Surrey
Postal Code V3W-0A6
Tel. 604-596-4468
Contact Ernest Fink (604-618-2702)
E-mail

16 Name: **Daryl Evans Mechanical Ltd.**
Address #1 - 211 Schoolhouse Road
City Coquitlam
Postal Code V3K-4X9
Tel. 604-525-3523
Contact James Wetson
E-mail jweston@daryl-evansmechanical.com

- 17** Name: **Fortis**
 Address 16705 Fraser Highway
 City Surrey
 Postal Code V3S-2X7
 Tel. 604-592-7641
 Contact Ian Turnbull
 E-mail ian.turnbull@terasengas.com
- 18** Name: **Fortis**
 Address 16705 Fraser Highway
 City Surrey
 Postal Code V3S-2X7
 Tel. 604-592-7641
 Contact Ian Turnbull
 E-mail ian.turnbull@terasengas.com
- 18** Name: **Fortis**
 Address 16705 Fraser Highway
 City Surrey
 Postal Code V3S-2X7
 Tel. 604-592-7641
 Contact Ian Turnbull
 E-mail ian.turnbull@terasengas.com
- 18** Name: **Fortis**
 Address 16705 Fraser Highway
 City Surrey
 Postal Code V3S-2X7
 Tel. 604-592-7641
 Contact Ian Turnbull
 E-mail ian.turnbull@terasengas.com
- 19** Name: **Keith Plumbing and Heating Ltd.**
 Address #1 - Gostick Place
 City North Vancouver, British Columbia
 Postal Code V7M-3G2
 Tel. 604-988-5241
 Contact Kevin Collier
 E-mail kph@keithplumbingandheatingcoltd.com
- 20** Name: **PGA Plumbing & Heating Ltd.**
 Address 2673 McGill Street
 City Vancouver, British Columbia
 Postal Code V5K-1H2
 Tel. 604-834-8899
 Contact Wayne Girvin or Sam Payne
 E-mail pgaplumbing@hotmail.com

- 21** Name: **Ridgeway Mechanical Ltd.**
 Address 942 Sherwood Avenue
 City Coquitlam, British Columbia
 Postal Code V3K-1A9
 Tel. 604-525-0238
 Contact Rob McNeice
 E-mail ridgewaymechanical@shaw.ca
- 22** Name: **Westmark Mechanical Contractors Ltd.**
 Address 1175 Kingsway
 City Vancouver, British Columbia
 Postal Code V5J-2Z2
 Tel. 604-435-2622
 Contact Mike
 E-mail westmarkmech@telus.net
- 23** Name: **KLM Mechanical Ltd.**
 Address 6942 Russell
 City Burnaby
 Postal Code V5J-1J9
 Tel. 604-437-5532
 Contact
 E-mail
- 24** Name: **Skei's Plumbing and Heating Ltd**
 Address 4860 Bluegrouse Drive
 City Sechelt, British Columbia
 Postal Code V0N-3A2
 Tel. 1-604-885-1929
 Contact Arnold Skei
 E-mail seheltpumbing@dccnet.com

- 25** Name: **Triwest Mechanical Ltd.**
 Address #112 - 20530 Langley By-pass
 City Langley, British Columbia
 Postal Code V3A-6K8
 Tel. 604-533-8686
 Contact David Temple
 E-mail
- 26** Name: **Hilltop Plumbing & Heating Ltd.**
 Address 1341 Johnston Road
 City White Rock, British Columbia
 Postal Code V4B-3Z3
 Tel. 604-536-5545
 Contact
 E-mail
- 27** Name: **E & P Enterprises 2005 Ltd.**
 Address 4530 - 197 "A" Street
 City Langley, British Columbia
 Postal Code V3A-1C6
 Tel. 604-533-7822
 Contact
 E-mail
- 28** Name: **Hillcrest Plumbing & Heating Ltd.**
 Address 7815 King George Hwy
 City Surrey, British Columbia
 Postal Code V3W-5B1
 Tel. 604-596-1077
 Contact
 E-mail

- 29** Name: **Drumoak Mechanical Services Ltd.**
 Address Suite 320 - 1122 Mainland Street
 City Vancouver, British Columbia
 Postal Code V6B-5L1
 Tel. 604-689-5556
 Contact
 E-mail
- 30** Name: **Armaur Plumbing Ltd.**
 Address #1 - 20091 - 100 "A" Avenue
 City Langley, British Columbia
 Postal Code V1M-3G4
 Tel. 604-888-1255
 Contact
 E-mail
- 31** Name: **Allstar Mechanical Ltd.**
 Address #320 - 1122 Mainland Street
 City Vancouver, British Columbia
 Postal Code V6B-5L1
 Tel. 604-689-8778
 Contact Richard Galpin
 E-mail
- 32** Name:
 Address 305 - 6th Avenue East
 City Vancouver, British Columbia
 Postal Code V5T-1J9
 Tel. 604-873-1841
 Contact
 E-mail

- 33** Name: **Knapps Mechanical Ltd.**
 Address 3422 Seaforth Drive
 City Vancouver, British Columbia
 Postal Code V5M-4C5
 Tel. 604-306-6785
 Contact
 E-mail
- 34** Name: **John Sadler Plumbing & Heating**
 Address #49 - 15133 - 29 "A" Avenue
 City Surrey, British Columbia
 Postal Code V4P-3G4
 Tel. 604-531-4355
 Contact
 E-mail
- 35** Name: **Rainbow Mechanical**
 Address RR 15118941 - 74th Avenue
 City Surrey, British Columbia
 Postal Code V4N-3G5
 Tel. 604-576-8311
 Contact
 E-mail
- 36** Name: **Campbell Plumbing and Heating Ltd.**
 Address 3621 Arthur Drive
 City Delta, British Columbia
 Postal Code V4K-3N2
 Tel. 604-946-1000
 Contact Jane Campbell
 E-mail

37 Name: **Gormley Plumbing & Heating Services**
 Address 997 Hoy Street
 City Coquitlam, British Columbia
 Postal Code V3C-4R3
 Tel. 604-942-1458
 Contact
 E-mail

38 Name: **Clairmont Mechanical**
 Address Suite 313 - 8352 - 130 Street
 City Surrey, British Columbia
 Postal Code V3W-8J9
 Tel. 604-502-8800
 Contact Sandy Hicks
 E-mail

39 Name: **Funaro Plumbing & Heating Ltd.**
 Address 3798 Union Street
 City Burnaby, British Columbia
 Postal Code V5C-2W3
 Tel. 604-298-6073
 Contact
 E-mail

40 Name: **Canadian Mechanical**
 Address Suite 160 - 6755 Graybar Road
 City Richmond, British Columbia
 Postal Code V6W-1H8
 Tel. 604-249-0107
 Contact
 E-mail

- 41** Name: **Vantage Mechanical Ltd.**
 Address 24903 - 54th Avenue
 City Aldergrove, British Columbia
 Postal Code V4W-1T3
 Tel. 604-607-6747
 Contact
 E-mail
- 42** Name: **Arete Mechanical Ltd.**
 Address #11 - 8075 Enterprise Street
 City Burnaby, British Columbia
 Postal Code V5A-1V5
 Tel. 604-421-6324
 Contact Derek ``DB`` Benson
 E-mail db_benson@aretemechanical.com
- 43** Name: **Schmidt Bros. Plumbing & Heating Ltd.**
 Address #221 - 1857 West 4th Avenue
 City Vancounver, British Columbia
 Postal Code V6J-1M4
 Tel. 604-224-7068
 Contact Roland Schmidt
 E-mail
- 44** Name: **Westrim Plumbing and Heating Ltd.**
 Address #102 - 11800 River Road
 City Richmond, British Columbia
 Postal Code V6X-1Z7
 Tel. 604-276-0887
 Contact Dave or Jake
 E-mail

- 45** Name: **CIR Mechanical Ltd.**
 Address #101 - 3070 Norland Avenue
 City Burnaby, British Columbia
 Postal Code V5B-3A6
 Tel. 604-294-0038
 Contact
 E-mail
- 46** Name: **Xpert Mechanical Ltd.**
 Address 1020 East Cordova Street
 City Vancouver, British Columbia
 Postal Code V6A-4A3
 Tel. 604-294-4540
 Contact
 E-mail
- 47** Name: **Brighter Mechanical Ltd.**
 Address #2140 - 21000 Westminster Hwy
 City Richmond, British Columbia
 Postal Code V6V-2S9
 Tel. 604-279-0901
 Contact
 E-mail
- 48** Name: **Georgia Mechanical Systems Ltd.**
 Address #120 - 4471 No. 6 Road
 City Richmond, British Columbia
 Postal Code V6V-1P8
 Tel. 604-276-9400
 Contact Rick Werning
 E-mail

49 Name:
Address 817 West 1st Street
City North Vancouver, British Columbia
Postal Code V7P-1A4
Tel. 604-988-1840
Contact
E-mail

50 Name: **Systems 1 Mechanical Limited**
Address #200 - 8208 Swenson Way
City Delta, British Columbia
Postal Code V4G-1J6
Tel. 604-951-8196
Contact HarryJassmann
E-mail hjassmann@systemsmechanical.ca

51 Name: **Creative Plumbing & Heating Ltd.**
Address #421 - 1952 Kingsway Avenue
City Port Coquitlam, British Columbia
Postal Code V3C-1S5
Tel. 604-521-4192
Contact Lois Muiselaar
E-mail creativeplumbing@telus.net

52 Name: **Dual Mechanical Ltd.**
Address 01 - 6249 - 205th Street
City Langley, British Columbia
Postal Code V2Y-1N4
Tel. 604-533-9720
Contact John
E-mail

- 53** Name: **Faria Mechanical**
 Address #103 - 137 Glacier Street
 City Coquitlam, British Columbia
 Postal Code V3K-5Z1
 Tel. 604-306-1144
 Contact Victor
 E-mail
- 54** Name: **Division 15 Mechanical**
 Address 2158 - 13353 Commerce Parkway
 City Richmond, British Columbia
 Postal Code V6V-3A1
 Tel. 604-214-8730
 Contact
 E-mail
- 55** Name: **Mainland Plumbing & Heating Ltd.**
 Address 4611 Albert Street
 City Burnaby, British Columbia
 Postal Code V5C-2G7
 Tel. 604-838-7198
 Contact Nick Bratanic
 E-mail
- 56** Name: **DMS Mechanical Ltd.**
 Address 6718 East Hastings Street
 City Vancouver, British Columbia
 Postal Code V5B-1S5
 Tel. 604-291-8919
 Contact Reno Mauro
 E-mail

57 Name: **Integrity Mechanical**
 Address 6410 Bruce Street
 City West Vancouver, British Columbia
 Postal Code V7W-2G6
 Tel. 604-921-2454
 Contact
 E-mail

58 Name: **Active Fire Sprinklers**
 Address
 City
 Postal Code
 Tel. 604-715-6774
 Contact Mike Bonvino
 E-mail mbonvino@activefire.ca

59 Name: **Ram Mechanical**
 Address 4283 Dawson Street
 City Burnaby, British Columbia
 Postal Code V5C-4B3
 Tel. 604-434-4530
 Contact
 E-mail rammechanical@telus.net

60 Name: **Paragon Mechanical**
 Address
 City
 Postal Code
 Tel. 778-593-7726
 Contact
 E-mail