

Professional Licensee Work Experience Record Guide

Professional Licensee Eligibility

P.L. (Eng./Geo.) applications are evaluated in accordance with section 77(1) of the General Regulations of the *Engineering and Geoscience Professions Act*. Applicants who have academic qualifications other than a university engineering or geoscience degree and meet the following:

- 2 years of post-secondary education acceptable to the Board of Examiners in areas relate to the practice of engineering or geoscience
- 6 years of referenced experience in the work of an engineering or geoscientific nature that is acceptable to the Board of Examiners
- Minimum 2 years of experience in defined scope of professional practice under the supervision and control of a Professional Member

Completing the Work Experience Record

Please use this checklist to complete your Work Experience Record. Please fill out the form using font Calibri (Body), size 11 pt. Any errors on the submitted WER will delay the processing of your application.

Summary Tab	✓
Provide at least six (6) years of experience of an acceptable engineering nature, supported by at least three (3) references . At least two (2) years of the referenced experience must be within a Defined Scope of Practice (DSOP). A minimum total of 6 years needs to be referenced. This must include a sufficient number of references who are registered as a Professional Member (P.Eng., P.Geo., P.Geol., P.Geoph.) with a Canadian engineering and/or geoscience licensing body, that can reference a total minimum of 2 years of your proposed DSOP; for which your work was under their direct supervision and control. Your experience outside of your DSOP may be referenced by a registered Professional Member, Licensee, Professional Licensee, or an equivalent senior practitioner. Experience that is not referenced by a Professional Member or equivalent senior practitioner is subject to acceptability by APEGA's Board of Examiners. It is to the benefit of the applicant to enter as much referenced experience information as they can. APEGA will only contact references using non-generic email addresses or full mailing addresses (i.e. Yahoo, Gmail, Hotmail, etc. will not be accepted).	
The experience must be entered in reverse chronological order (without overlaps), separated by job title or employer. This includes holding different position titles consecutively (if applicable) within one employer.	
If applicable, list all gaps in employment, unrelated employment, and parental leave. Do not include detailed descriptions of the gaps. Please do not enter any pre-grad experience.	
In the "Summary of Engineering Experience" section, list only brief details of the engineering work that was performed.	

SCOPE and Work Details Form		✓
Scope Development Guidelines The format of the proposed scope of practice should consist of the following: <ul style="list-style-type: none"> - Discipline of Practice - Field of Practice - Limitations within the Field of Practice (engineering tasks) - Scope Exclusions if applicable <p>The purpose of the "DSOP WER Details Form" is to develop your Defined Scope of Practice (DSOP) and to demonstrate at least two (2) years of engineering practice under this proposed scope. If you require another DSOP WER Details Form to demonstrate engineering for another structure, work or process under the same discipline and field of practice, please email professionallicensee@apega.ca.</p>		
1. DISCIPLINE Please choose your discipline from the drop-down menu.		
2. FIELD OF PRACTICE <p>Field of practice is the subset of the discipline in which you wish to offer professional services and is the specific industry or area within which you have practiced engineering; AND does not include the word, "engineering". <i>The wording of the Field of Practice is not intended to be a drawn-out sentence, but merely a brief few words.</i></p> <p>If you are unsure as to what your area of practice, please consult the person(s) who are currently taking professional responsibility for your engineering work, as they will be attesting to your competence in the proposed field of practice.</p> <p>For instrumentation applicants. There is no instrumentation engineering discipline recognized in the APEGA engineering syllabus. If you have been practicing instrumentation, you must pick the main discipline that best suits your engineering practice and specify instrumentation as the field of practice.</p>		
3. ENGINEERING TASKS <p>Engineering tasks make up your scope of practice, as indicated in the EGP Act. Please only select the engineering task(s) that apply to your scope by using the drop-down. You must select the engineering task (licencing activity) starting from #LA1. If applicable, you may choose more than one engineering task that may apply to a single structure, work or process.</p> <p><i>Each licenced engineering task needs to have (and supported references for) a minimum of two years of experience which were completed under the direct supervision and control of a professional member.</i></p> <p>Please note the engineering task (licencing activity) must require the professional application of math, chemistry, physics or a related subject.</p>		
4. STRUCTURE, WORK, OR PROCESS <p>List the specific components or processes that relate to the engineering task(s) you are proposing for licensure.</p> <p>Examples: <i>"... testing procedures to facilitate high pressure testing of hydraulic fracturing equipment used in oil & gas wells"</i> <i>"... PLC and SCADA systems used in oil and gas facilities"</i></p> <p>This section is not intended to be a long paragraph, nor a job description summary. This area should be a LIST of the specific components, structures or processes to which the engineering tasks from Item 3 apply. Please do not enter any engineering tasks in this area.</p>		

Numerical limitations (voltage levels, pressure, temperature building size, etc.) should be specified if applicable.

5. EXCLUSIONS

Exclusions are not required for all scopes. Typical exclusions can be numerical (e.g. drilling rig systems exceeding 150T), OR code or standard specific (e.g. Systems governed by the Boiler and Pressure Vessel Safety Act', 'applications outside the scope of National Fire Protection Association Codes & Standards') or descriptive ('retaining walls')

6. DETAILS OF ENGINEERING WORK PERFORMED

Only type in the space provided. *Do not go past the cell limits.* If you require more room type in the next cell below. Failure to comply will result in lost information when converting your work record into PDF format.

In this section, your engineering work should be written in first person explaining how you performed the engineering task(s) that you have listed AND how you used engineering principles and theory to accomplish the engineering task(s). Focus on technical engineering details.

For example: *"I determined XXX by doing YYY type calculations. I prepared engineering specifications by calculating XXX"*

7. REFERENCE LIST

In this section of the form you must list all your applicable references. As previously stated in the summary section:

- A sufficient number of references, must reference a total minimum of 2 years of your proposed DSOP; for which your work was under their direct supervision and control. These references must be registered as a Professional Member (P.Eng., P.Geo., P.Geol., P.Geoph.) with a Canadian engineering and/or geoscience licensing body,
- Experience outside of your DSOP may be referenced by a registered Professional Member, Licensee, Professional Licensee, or an equivalent senior practitioner.

When filling out the Reference List form, please indicate the supervisor's name and designation (if applicable) as well as an acceptable reference for each Work Record. The form allows you to provide multiple references for each Work Record. If your reference *is not* your supervisor, you must provide a reason why the supervisor is not indicated as a reference, even if the reason is trivial (eg. supervisor not a P.Eng., lost contact with supervisor, supervisor retired, deceased).

PLEASE REFER TO THE SAMPLE WER DOCUMENTS ON THE FOLLOWING PAGES FOR EXAMPLES AND FOR ADDITIONAL INFORMATION.

Examples

Fig. 1: Samples of the WER Summary form filled out (a minimum of 6 years must be submitted, and the earliest time submitted must be after graduation from the qualifying education). To be completed in reverse chronological order, with no gaps or overlaps.

1	WORK EXPERIENCE RECORD SUMMARY			
2	Applicant Legal Surname	Person Legal Last Name	Date (MM/DD/YYYY)	3-Aug-2017
3	Applicant First Name	Person First Name	APEGA ID#	000000
4	PLEASE FILL IN POSITIONS IN REVERSE CHRONOLOGICAL ORDER FROM THE MOST RECENT.			
5	WORK RECORD 1			
6	Employer	Company A	Country	Canada
7	Job Title	Mechanical Engineering Technologist		
8	Start Date (mmm-YYYY)	Sep-10		
9	Finish Date (mmm-YYYY)	Nov-15		
10	Total Months	62		
11	Summary of Engineering experience.			
12	Design upgrades to downhole tool assemblies to facilitate automated high pressure testing of equipment between 5000 psi to 10,000 psi.			
13	Evaluated NCRs for components and assemblies that did not conform to the product design and manufacturing specifications to use the part as is, rework part OR scrap the part.			
14	Developed manufacturing specification documents outlining procedures for secondary finishing processes (eg. nickel plating) for components.			
15	WORK RECORD 2			
16	Employer	Company B	Country	Canada
17	Job Title	Mechanical Designer		
18	Start Date (mmm-YYYY)	Jan-09		
19	Finish Date (mmm-YYYY)	Sep-10		
20	Total Months	20		
21	Summary of Engineering experience.			
22	Mechanical and structural design of automated material handling equipment for oilfield drilling packages requiring 3D CAD layout, development of assembly and fabrication drawings, stress analysis of structural members, loading analysis to select and size machine components (eg. bearings, gears, cylinders) and weld strength and sizing calculations, force and motion analysis.			
25	WORK RECORD 3			
26	Employer	Company C	Country	Canada
27	Job Title	Mechanical Designer		
28	Start Date (mmm-YYYY)	Apr-06		
29	Finish Date (mmm-YYYY)	Dec-08		
30	Total Months	32		
31	Summary of Engineering experience.			
32	Mechanical and structural design of workcell stations used for the assembly and testing of control valves and actuators requiring 3D CAD layout, design/development of assembly and test fixtures, stress analysis, loading analysis machine component section.			

In the details section of the WER summary, it is not expected to put significant details of the work performed (like the DSOP WER details form). However, it is highly recommended to indicate some high-level points of the engineering work performed at each position (e.g. structural analysis, FEA analysis, arc flash studies, process simulation)

Fig. 3: Sample of SCOPE & Work Details Form 1 (for visibility only a portion of the form is shown)

Your proposed scope will be a combination of the LA items and the items listed on Line 11 on the SCOPE Work Details Form. Here is an example of a Defined Scope of Practice:

Within the discipline of Mechanical Engineering in the field of oil and gas operations:

-- Evaluating and preparing plans and specifications for hydraulic fracing equipment with burst and collapse ratings not exceeding 15, 000 psi.

-- Designing material handling equipment used in oilfield drilling packaged equipment.

This scope excludes: Cementing equipment, limited entry equipment.

For the above proposed scope, Lines 5, 6, 8-10, 11, 12, 13 would be completed **exactly as shown below**:

Mechanical Engineering is the **discipline** and it is chosen from the dropdown on **Line 5**

Oil and gas operations is the **field of practice**, it is entered on **Line 6**

Evaluating and **preparing plans and specifications** and **designing** are the engineering tasks and are chosen from the **LA Items**.

Hydraulic fracing equipment with burst and collapse ratings not exceeding 15, 000 psi and **material handling equipment used in oilfield drilling packaged equipment** are the **structures to which the engineering tasks apply**, and are entered on **Line 11**. **Please do not enter any engineering tasks (LA items) on Line 11.**

Cementing equipment, limited entry equipment are the exclusions and are entered on Lines 12 and 13.

SCOPE DEVELOPMENT AND DETAILS OF ENGINEERING WORK			
1			
2	Applicant Legal Surname	Person Legal Last Name	Date (DD-MMM-YYYY)
3	Applicant First Name	Person First Name	Applicant APEGA ID
4	SCOPE DEVELOPMENT		
5	In the discipline of:	Mechanical Engineering	
6	In the field of:	Oil and Gas Operations	
7	Engineering Task(s)		
8	LA1 Evaluating,	LA4	LA7
9	LA2 Preparing Plans and Specifications for,	LA5	LA8
10	LA3	LA6	LA9
11	Structure, Work, or Process	hydraulic fracing equipment with burst and collapse ratings not exceeding 15,000 psi	
12	Exclusions	Cementing equipment	
13		Limited entry equipment	
14	Company Information for validating at least 24 months demonstrating each licencing activity specified for the Defined Scope of Practice		
15	Company Name:	Company A	Start (mmm-YYYY)
16			End (mmm-YYYY)
17			Total Months
18	Company Name:		Start (mmm-YYYY)
19			End (mmm-YYYY)
20			Total Months
21	Company Name:		Start (mmm-YYYY)
22			End (mmm-YYYY)
23			Total Months
24	Company Name:		Start (mmm-YYYY)
25			End (mmm-YYYY)
26			Total Months
27	Company Name:		Start (mmm-YYYY)
28			End (mmm-YYYY)
29			Total Months
30	DETAILS OF THE ENGINEERING WORK PERFORMED FOR THE ABOVE ENGINEERING TASKS		
	<p>I prepared the following plans and specifications for hydraulic fracing equipment, Technical Assembly Procedures, work instructions, and test procedures. For technical assembly procedures (TAPs) I would determine the most feasible way to assemble the equipment by conducting a technical review of the design drawings to ensure proper assembly steps would not comprimize the design and function of the assembly. Referring to the thread manufacturer's data sheets, I would note the thread lubricant and optimal torque rating of the thread to calculate the RPM required from the custom automated assembly machine to make up the thread connection. This data would be noted into the technical assembly procedure. Furthermore, from the design of the equipment, if it involved custom assembly tooling, I would perform qualification testing of the assembly tooling to determine if we were getting reproducible and repeatable results. This could (depending on the application) require myself to develop an experiment to collect and analyze force measurement data to determine optimal push forces to install sleeve components. Based on analyzing the data (e.g. install forces vs. the wear rate of sleeve and port), the optimal install force was selected and noted in the TAP document for assembly.</p> <p>I also developed work instructions to outline and inspect finishing processes for components that required precise surface finishes and thicknesses (e.g. nickel plating). This required research and knowledge of the actual process and reviewing the machining tolerances of the component to determine critical surfaces and desired fits. I also had to design a test coupon and develop a bend experiment to apply a bend load to the test coupon. I then analyzed the component after testing to assess the surface finish and to determine if there was any flaking and/or other surface deterioration. Once it was determined what thickness was optimal from a manufacturing point of view, I developed experiments on the downhole tool assembly to determine through function testing to assess the surface damage due to operation of the component. Once all trials were analyzed I determined the suitable thickness of nickel plating to be noted in the written specification taking into consideration the testing results I developed (eg. coating thickness, surface damage and finish, design of the equipment and</p>		

You must have a minimum of **24 months** of experience (under the direct supervision and control of a P.Eng. or P.Geo) **for each item in the scope** (ie., **for each LA item, and for each item listed on Line 11**). If you have less than 24 months of experience for any item, you cannot propose that item in the scope.

Lines 15-29: The SCOPE/Details page is only for listing companies and time periods where the work was completed within the proposed scope **and** under the direct control and supervision of a P.Eng. or P.Geo. All other experience (ie., which is not within the scope and/or not under the direct control and supervision of a P.Eng. or P.Geo.), would only be included on the Summary page.

Fig. 3: Sample of SCOPE and Work Details Form 2

1	SCOPE DEVELOPMENT AND DETAILS OF ENGINEERING WORK			
2	Applicant Legal Surname	Person Last Name	Date (DD-MMM-YYYY)	3-Aug-2017
3	Applicant First Name	Person Legal First Name	Applicant APEGA ID	
4	SCOPE DEVELOPMENT			
5	In the discipline of:	Mechanical Engineering		
6	In the field of:	Oil and Gas Operations		
7	Engineering Task(s)			
8	LA1 Designing,	LA4	LA7	
9	LA2	LA5	LA8	
10	LA3	LA6	LA9	
11	Structure, Work, or Process	material handling equipment used in oilfield drilling packaged equipment		
12	Exclusions			
13				
14	Company Information for validating at least 24 months demonstrating each licencing activity specified for the Defined Scope of Practice			
15	Company Name:	Company A	Start (mmm-YYYY)	Sep-10
16			End (mmm-YYYY)	Nov-15
17			Total Months	62
18	Company Name:		Start (mmm-YYYY)	
19			End (mmm-YYYY)	
20			Total Months	0
21	Company Name:		Start (mmm-YYYY)	
22			End (mmm-YYYY)	
23			Total Months	0
24	Company Name:		Start (mmm-YYYY)	
25			End (mmm-YYYY)	
26			Total Months	0
27	Company Name:		Start (mmm-YYYY)	
28			End (mmm-YYYY)	
29			Total Months	0
30	DETAILS OF THE ENGINEERING WORK PERFORMED FOR THE ABOVE ENGINEERING TASKS			
	<p>I prepared the following plans and specifications for hydraulic fracing equipment, Technical Assembly Procedures, work instructions, and test procedures. For technical assembly procedures (TAPs) I would determie the most feasible way to assemble the equipment by conducting a technical review of the design drawings to ensure proper assembly steps would not comprimize the design and function of the assembly. Referring to the thread manufacturer's data sheets, I would note the thread lubricant and optimal torque rating of the thread to calculate the RPM required from the custom automated assembly machine to make up the thread connection. This data would be noted into the technical assembly procedure. Furthermore, from the design of the equipment, if it involved custom assembly tooling, I would perform qualification testing of the assembly tooling to determine if we were getting reproducible and repeatable results. This could (depending on the application) require myself to develop an experiment to collect and analyze force measurement data to determine optimal push forces to install sleeve components. Based on analyzing the data (e.g. install forces vs. the wear rate of sleeve and port), the optimal install force was selected and noted in the TAP document for assembly.</p> <p>I also developed work instructions to outline and inspect finishing processes for components that required precise surface finishes and thicknesses (e.g. nickel plating). This required research and knowledge of the actual process and reviewing the maching tolerances of the component to determine</p>			

DSOP WER Details Form 2 is only required if you are performing different licencing activities for a different "Structure, Work, or Process". Please contact APEGA if you require Form 2 in your application (see above for contact information).

Fig. 4: Sample of Reference List filled out

REFERENCE LIST			
WORK RECORD 1			
Employer	Company A	Start Date:	Sep-10
Supervisor's Name & Designation (if applicable)	Person_A Surname, P.Eng.	End Date:	Nov-15
		Total Months:	62
Reference's Name & Designation (if applicable)	Reference Contact information (email OR post mailing address)		
Person_A Surname, P.Eng.	Person_A@companyA.ca		
Additional References (list up to 3 with designation if necessary)			
Name	Contact Information (Email OR post mail address)		
If supervisor is not used as the reference, please explain why in the space below.			

Adding additional references on a single Work Record is optional

WORK RECORD 2			
Employer	Company B	Start Date:	Sep-08
Supervisor's Name & Designation (if applicable)	Person_B Surname	End Date:	Sep-10
		Total Months:	24
Reference's Name & Designation (if applicable)	Reference Contact information (email OR post mailing address)		
Person_C Surname, P.Eng.	Person_C@companyB.ca		
Additional References (list up to 3 with designation if necessary)			
Name	Contact Information (Email OR post mail address)		
Person_D Surname, P.Geo.	Person_D@companyB.ca		
If supervisor is not used as the reference, please explain why in the space below.			
Supervisor is not a P.Eng. and/or P.Geo.			

You must provide a reason why a supervisor is not being used as a reference, even if trivial.