

Writing your Reflective Report for the Exposure to Professional Engineering Practice (EPEP) Logbook

The *Exposure to Professional Engineering Practice Logbook* (Version 2017-1) states that you need to write a report on your ENG, TECH, GENE and PRI experiences and it should “reflect on those aspects of professional engineering practice that you observed and experienced.”

So, what should you actually write about?

The report needs to cover three aspects of your experience:

1. A little background about the company, site, operation, your work group and role so we can understand your work and experiences in context.
2. What you personally did or experienced:
 - What activities did you actually perform? What things did you see? What skills did you learn or practice?
 - Please write in first person: “I did ...”, “I used ...”, “I saw ...”.
3. A reflection on the activities and experiences by answering questions like:
 - What lessons did you learn from each incident or job? About things like teamwork, safety awareness, self-organisation, managing people, sustainability, the business side of engineering, communication ... or a technical matter? If you wanted to pass on one important message from your experiences this week, what would it be?
 - What uncertainties do you have about your project/process/role? What will you do?
 - If you were given some flexibility in your work, or you had a problem to solve, why did you do the work in the way you did? What were the strengths and weaknesses of your approach? If you had to do the same kind of thing again, what would you do differently?
 - Has anything changed your understanding of what it means to be an engineer? Does “engineering in the real world” confirm or contradict what you expected from the course so far? Has your assessment of priorities changed?
 - Can you relate the activities you’ve undertaken or observed to what you have learnt in units to date? How might these experiences help you in your remaining units, or when you graduate? How do they help develop the [Engineers Australia Competencies](#)?

Please also include a cover page that gives your name, ID and course; the company name; your principal supervisor’s name; and the range of dates worked.

Reflective writing

The third aspect above involves reflective writing. It’s a way to record *reflective practice*, which is an important habit for professional engineers to develop. In fact, as a graduate engineer, your manager might ask you to write a reflective report each week. In addition to the prompting questions above, here’s some guidance on how to write reflectively:

- <https://www.port.ac.uk/-/media/microsite-student/files/ask-handouts/reflective-writing.pdf>
- https://www.dlsweb.rmit.edu.au/lisu/content/2_AssessmentTasks/assess_pdf/journals_technical.pdf

Report format

There are three typical report formats, but you can mix and match them if needed:

- **Chronological:** This is the most common format for people doing longer-term, block placements in which there is a reasonable variety in their work from week to week. Assuming the work is ENG-type and you are working a standard week, you would write about one page per week as you go. An example of a weekly entry from a chronological report is given on page 3.
- **Theme-based:** If your activities are more or less the same each day or each week then don't write a chronological report as that would be repetitive. Instead, organise your report by themes. The themes can be both technical and professional, and should be shown explicitly in the report by using subheadings. For example, you could write a report with this structure: Background of Company and Work Group (1 page), Safety Culture (2 pages), Daily Operations (1 page), Particle Size Analysis (1 page), Using Engineering Design Software (1 page), Personal Work Scheduling (½ page), Impact of Commercial Environment on Engineering (2 pages) and so on. See page 4 for an example from a theme-based report.
- **Project-based:** Some people work on a small number of distinct projects and prefer to write their report along those lines. For example, the report could have this structure: Company Background (1 page), Daily Lab Operations (½ page), Waste Treatment Project (5 pages), Sampling Project (3 pages), Conclusion (½ page). Within the Project sections, there could be subheadings such as: Aim, Planning, Activities, Results, Analysis, Conclusions and Recommendations.

If you are writing about experiences you had some time ago then it would be better to structure the report by themes or projects.

Confidentiality, photographs and getting approval

- Your company may have concerns about the confidentiality of your report. It will be viewed only by the administrative and academic staff needed to process and approve it. It's usually possible to write about your experiences without revealing any confidential information.
- You can include a small number of relevant photographs or diagrams in your report *provided your supervisor approves*. Please note that, aside from confidentiality concerns, there could be safety reasons that prohibit you taking photographs in the workplace.
- At the start, please let your supervisor know that you need to write a report about your experiences, and that they will be asked to read and approve it. Give them the option of reading the report in parts or all at the end.

Report example 1: Extract from a chronological style report

WORK EXPERIENCE REPORT: WEEK 2

Start date: 6 December 2021

Hours worked: 40

This week I spent time on four main activities:

- Checking pipework in the Alkali Plant
- Spent time in the Alkali Plant control room
- Familiarisation with the site lab
- Followed the process engineers on shift supervision rounds

I continued the work I was given in the first week on checking the pipework in the old Alkali Plant against Piping and Instrumentation Diagrams (P&IDs). So far I have checked about 10 of them and there are about 20 to go. I have to follow each pipe on the P&IDs and check that the connections, fittings and diameters all agree with what is actually present in the plant. It takes time and is not the most exciting work, but I have become very familiar with reading P&IDs, especially the symbols for fittings and instruments and the line designations. I think this will help with the Design Project next year. The drawings are mostly accurate, but I found a few cases where there were discrepancies – I have to mark these up on my copy of the drawings and summarise them up in a memo for Helen. Whenever I enter or leave the plant area, I have to let the operators know.

When I wasn't tracing pipes, I got to spend some time in the Alkali Plant Control Room with the operators. I observed the operations and occasionally helped them with routine duties like taking samples. It was good to sit down at a control station and flick through the screens, seeing process control in action. I've come to realise what an alarm is and to understand that processes are really never at steady state. I hadn't appreciated that before because at uni we "assume steady state" at the start in almost every problem. There are long term and short term fluctuations, and occasional step changes in operations. I also got to look through the various controller settings (gain, bias and reset time, etc.). I couldn't actually change anything, but a few times one of the operators changed the settings for a while to show what can happen if the controller parameters aren't right. You can kill off the control action or make it over-sensitive (either one is bad news!). I really enjoyed seeing the practical side of process control and wouldn't mind getting into this kind of work as a graduate. I'm going to ask Helen if I can do a project on control during my vac work.

I spent half a day in the site lab, which does all the wet chemistry and particulate analysis for the whole site. They have a range of instruments, some of which I used in chemistry labs last year. Most of the work seems to be routine, but occasionally the lab techs get called on to do analyses for special projects. I'm going to be taking part in a trial that the process engineers are organising in a few weeks' time and they want me to help with sieve analysis, so next week I'm going to learn all about practical sieving and calculating particle size distributions, which we partly covered in lectures. I've also been booked in for some extra H&S training sessions on safety tag and lockout procedures.

Each day this week I spent the first 1.5 hours following one of the process engineers around, first to their shift handover meeting and then when they walked around the plants. They didn't seem to use much chemical engineering theory, but they did need good people and communication skills.

Report example 2: Extract from a theme-based report

BACKGROUND

During December 2021 I spent three weeks working on a community project in rural WA, along with three other Curtin students, where I was involved in designing a Water Management Plan for the Shire of Westaussie. Prior to attending the site, two briefing meetings were held online in November. The first briefing focused on Health and Safety and the second introduced us to the various water issues facing the town. A project plan and timeline was generated based on the briefings and submitted to the Shire for approval. At the conclusion of the project we presented our proposal to the Shire President, Westaussie Engineering Department and relevant stakeholders within the community.



COMMUNICATION

My first communication with my workplace supervisor was when he contacted me to arrange the initial online meeting. This verbal communication was conducted in a professional manner and I was made aware of the importance of punctuality for our online briefings. The first briefing went well as I was familiar with many of the Health and Safety aspects covered as I had learnt about these in my unit, HSW2001 Health and Safety in the Workplace. I found the second briefing intimidating as a number of Shire executives were in attendance, and I realised that my theoretical knowledge was not sufficient to contribute extensively to the conversation. Meeting face-to-face on site, where I was able to observe the dimensions of the various dams and the distance between the potential rainwater collection sites, was a valuable experience and I was able to clearly verbalise my ideas. A number of emails were required to communicate my progress and these were mostly well received, although I was asked to refrain from using acronyms and other forms of abbreviation in my correspondence. The final project presentation went extremely well, which I believe is due to the many hours of preparation that went into the slideshow and handouts. I was nervous to present to such an influential group but my confidence in the proposal helped me convey the subject matter enthusiastically and I was able to answer the questions with certainty.

TEAMWORK

Working with three other students on this project was quite challenging as we each had our own ideas about how to solve the town's water issues. We held a brainstorming session where all ideas were recorded and Tim took the lead, listening to all suggestions and explaining rationally why he thought some would work better than others. There were a few arguments, and one of the main lessons I learnt is that there is nothing wrong with arguing your point of view, as long as it is done respectfully and that you listen to the other side with an open mind. I sometimes felt that one of the team wasn't contributing equally, but Tim managed to diplomatically resolve this issue by allocating roles and responsibilities for each of us. Again, this occasionally caused some friction but, on the whole, it worked well as we were able to keep tabs on who was doing what.