

# Evaluating the Effectiveness of Using Qualified Persons in the Natural Resource Sector: Preliminary Metrics



Prepared by

Mark Hayter, RPF

Ministry of Forests, Lands and Natural Resource Operations

for

Qualified Persons Cross-Ministry Working Group

September 2014

# Contents

Acknowledgements..... i

1 Introduction ..... 1

2 Context..... 1

3 Development of the Metrics..... 3

4 Application ..... 4

5 Engagement ..... 4

6 Discussion..... 6

7 Recommendations ..... 6

Appendix I: Inventory of qualified persons in the natural resource sector.....7

Appendix II: QP metrics feedback summary.....9

Appendix III: Preliminary QP metrics .....13

# Acknowledgements

I would like to thank the following for their assistance in completing the project consultation:

- Greg Jonuk, RFT, Tenures Technician, FLNRO Prince George,
- Christine Unghy, RPF, Provincial Authorization Specialist, Integration Initiatives, FLNRO Quesnel,
- Hubert Burger, RPF, Timber Supply Forester, FLNRO Prince George,
- Angie Gold, Program Assistant, Corporate Initiatives Division, FLNRO Victoria,
- Jen Ricketts-Glassel, Communications Coordinator, Corporate Initiatives Division FLNRO Victoria
- Rachael Pollard, Manager, Organization Effectiveness, Corporate Initiatives Division, FLNRO Kamloops,
- Garth Webber Atkins for her advice and suggestions in developing this report.

## 1 Introduction

Provincial agencies responsible for the management of natural resources in British Columbia are exploring ways to improve the effectiveness and efficiency of the administration of natural resource authorizations through better utilization of qualified persons (QPs). A cross-ministry working group was established in 2011 to research and report out on key topics relating to the use of QPs in the natural resource sector (NRS). This working group was tasked with developing a common framework for the use of QPs across the sector. One of the topics assigned to the Qualified Persons Cross-ministry Working Group (QP working group) was how to evaluate the benefits and effectiveness of employing and relying on qualified persons. That topic is the focus of this report.

The QP working group defined a qualified person as one who possesses the specified knowledge, skills, training, experience and other requirements to perform a specified type of work as:

- set out in legislation
- set out in government policy, or
- required by an organization satisfactory to government that has the responsibility for specifying the requirements.

The requirements include holding an accreditation bestowed by:

- government,
- a professional association constituted under an Act,
- or other organization satisfactory to government.

Attainment of the requirements is either:

- verified through a process undertaken by government, a professional association or other organization satisfactory to government, to confirm that all requirements are met, or
- self-assessed by members of a professional association constituted under an Act, where a code of ethics requires members to operate only within their area of expertise.

The QP working group focused on the use of qualified persons in the employ of resource users, who were required by legislation or government policy to conduct activities in support of, or in lieu of, a natural resource authorization.

A list of QP types within the scope of this report is included in Appendix I.

## 2 Context

The working group, in consultation with stakeholders, developed a high-level conceptual framework to guide the effective use of QPs. The framework consists of three essential components, and a “Plan, Do, Check, Adjust” continuous improvement cycle.

The three essential components are competency, accountability and guidance. If all three components are well supported by a particular QP model or use, then the QPs involved can be reasonably relied on to provide sound advice to resource users and government decision-makers, and perform work to acceptable standards.

The “Plan, Do, Check, Adjust” cycle guides the development and continuous improvement using a QP, and is shown in Figure 1. Evaluation of the effectiveness of using a QP takes place at the “Check” stage in this cycle, and the metrics provided in this report are used at this stage.

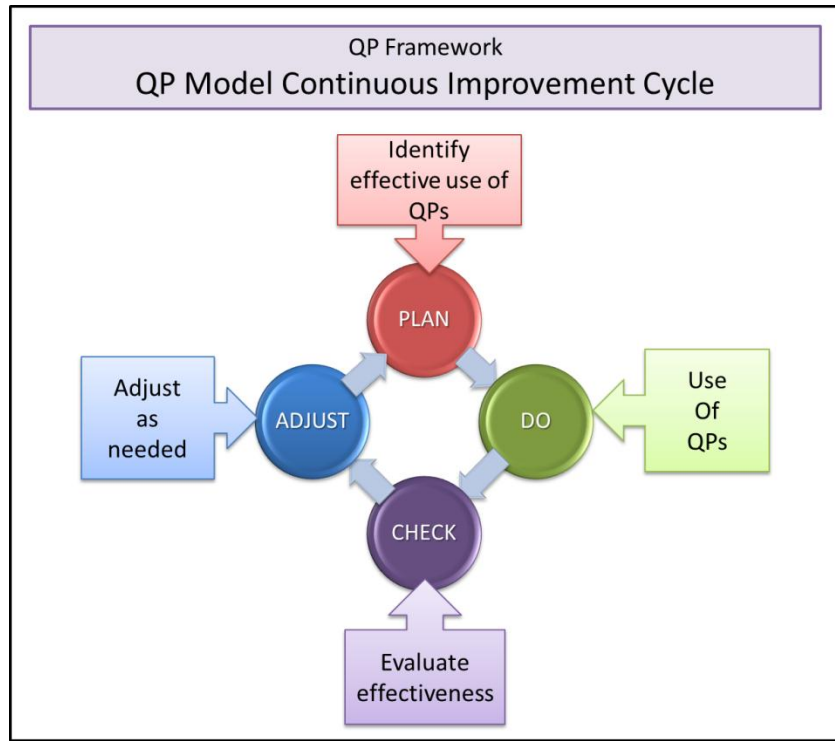


Figure 1. The QP model continuous improvement cycle

Evaluating effectiveness supports government’s role in the accountability component, thereby supporting the QP framework in the QP use.

The preliminary metrics presented here are intended to be further refined when they are used to evaluate a specific QP use, as shown in Figure 2.

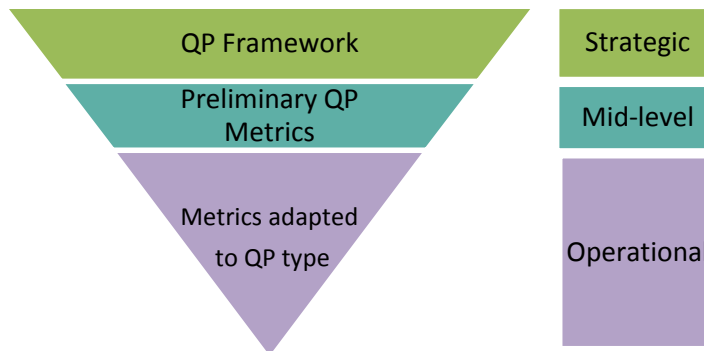


Figure 2: Levels of use of preliminary QP metrics.

### 3 Development of the Metrics

Based on research into performance management systems, and an analysis of the feedback from staff and stakeholders previously provided on the QP project, a number of criteria were identified to guide the selection or development of a performance measurement system for the use of QPs.

- The system needed to evaluate the effectiveness of the QP use overall, not just the work of individuals.
- The system needed to provide a consistency of evaluation across QP uses, yet still be able to be adapted or refined as needed for the broad range of QP uses.
- Different stakeholder groups had different expectations and concerns about the use of QPs, therefore a system needed to accommodate a variety of views about what effectiveness looks like.
- The performance measures needed to be meaningful and measurable at an operational and program level.

After reviewing a number of performance management systems, it became evident that the Balanced Scorecard approach could, with minor modification, fulfill the criteria. This approach measures success from a variety of client perspectives, hence the “balance”. A Balanced Scorecard typically measures performance from four perspectives: financial, internal business process, client, and learning and improvement. In the case of a QP use, the client perspective was expanded to include three groups of clients: resource users, qualified persons, and the general public. The former two are specifically identified in the categories of performance measures, while the interests of the general public were assumed to be met through the resource values and interests category.

Objectives were identified for each scorecard category, as well as performance measures and key performance drivers for each objective. Collectively these are referred to as “the metrics.” The categories and objectives for each are provided in Table 1. A complete set of metrics is provided in Appendix III.

Table 1: Categories of QP Metrics with Objectives.

QP Metric Category	Objective
1) Financial	Process government applications efficiently.
	Reduce remedial costs and/or risks during resource use.
2A) Resource values and interest	Maintain or enhance resource value.
	Maintain or enhance human health and safety.
2B) Stakeholder: Resource User	Improve operations.
2C) Stakeholder: QP	Best use of applying skills, experience and training.
3) Internal business process	Create QP framework.
4) Learning and improvement	Use continuous improvement principles.
<b>Evaluation outcome</b>	Measure the effectiveness of the QP use, identify barriers, gaps and opportunities.

## 4 Application

The metrics are intended to be used to evaluate the effectiveness of a particular QP use, within a particular authorization and regulatory regime. The categories and measures are a guide to selecting what factors to examine, and information to acquire, in order to be able to draw conclusions about the overall effectiveness of the QP use. It is expected that this information would be used as part of the “Plan, Do, Check, Adjust” continuous improvement cycle, and that the findings would be used to improve the operation of the QP use.

## 5 Engagement

A draft set of metrics was circulated externally to pre-identified contacts and internally to NRS staff in September 2012. These metrics were posted to the QP website with an option for detailed comment to the author anonymously using SurveyMonkey. In addition, the author’s contact information was posted to the QP website and communicated through engagement activities to encourage feedback.

Three external and three internal live meeting sessions were conducted to provide the opportunity to elaborate on each metric and enable instant and focused feedback.

External Sessions:

Target Audience	Number of attendees	Date
Various external QP consultants, industry QPs and industry associations (mainly representing forestry, environmental areas)	7	Oct. 4, 2012
Environmental non-government organizations	0	Oct. 5, 2012
QP regulatory associations and governing bodies	5	Oct. 9, 2012

Internal Sessions:

Target Audience	Number of attendees	Date
Ministry of Environment, Ministry of Agriculture	~50	Oct. 3, 2012
Ministry of Forests, Lands and Natural Resource Operations	~130	Oct. 10, 2012
Ministry of Energy and Mines, Ministry of Natural Gas Development and Ministry of Aboriginal Relations and Reconciliation	~20	Oct. 11, 2012

One face to face meeting was conducted Oct. 4, 2012 with four Ministry of Forests, Lands and Natural Resource Operations Omineca Regional staff present, with the intent of examining the metrics using specific QP activity. The utility of the metrics was explored broadly by applying them to a new process where greater reliance was being placed on QPs in Cutting Permit submission administration. The information gained was used to improve the metrics.

General observations noted from consultations (September–November 2012):

- Low attendance at live meeting sessions.
- Low uptake and familiarity with the topic.
- Low interest in providing detailed feedback (zero comments received via SurveyMonkey).

General feedback themes noted were:

- The need for examples to support and illustrate the metrics.
- Recognition of the complexity of each metric and the difficulty it may create to adequately capture appropriate and accurate information to come to an evaluation.
- The desire for more information concerning why there is a need for metrics.
- Internal staff concern about the increased use of QPs, and a concern that it will result in reduced government oversight and reduced need for government QPs.
- Concern with generalizing and categorizing a variety of separate practitioners and regulated and unregulated professionals with one term: Qualified Persons.

A summary of the feedback gathered from consultations is included in Appendix II. As a result of engagement and preliminary testing of the metrics using QP examples, the metrics were revised. The primary revisions are:

- Amalgamating financial objectives as one category and aligning to One Process as a performance driver.
- Using more risk management in the amalgamated financial category.
- Unlinking the public as a stakeholder to resource values and interests in the second category 2A and splitting values and interests into their own separate metrics.
- Changing the resource-user category 2B objective from ‘manage cost’ to ‘improve operations’ and also enabling space for specific industry performance measures.
- Changing the QP category 2C objective from ‘decrease application review time’ to ‘best use of QP skills, training and expertise,’ and adopting measures and performance drivers around the kinds of services QPs perform; for example, administrative services to risk mitigation to decision support services.

## 6 Discussion

Only a limited amount of the feedback received expressed concern with the composition or content of the metrics themselves. Much of the feedback related to the use of QPs in general.

The concerns expressed about the use of QPs reinforce the need for measuring the effectiveness of a particular QP use, and also confirm the appropriateness of some of the proposed performance measures. The benefits of a common set of performance measures and the evaluation of new and existing QP uses include:

- Providing a common lens and language to evaluate effectiveness.
- Setting the expectations for a successful QP use through the selection of categories, objectives and performance measures.
- Bringing impartial and empirical evidence to the dialogue about the use of QPs.
- Improving understanding and problem solving between government, tenure holders and QPs through the joint conduct and analysis of effectiveness evaluations.
- Reporting out of evaluation results improves transparency.
- Providing a greater understanding of the real costs and benefits of a QP use.
- Gaining knowledge which can be used to improve a QP use.

## 7 Recommendations

The preliminary metrics should be tested and refined through practical use. It is suggested that a number of natural resource sector business areas use the metrics to evaluate new or existing uses of QPs. The effectiveness evaluations should include representatives of the resource users and QP associations involved. All of these parties should meet following the completion of a few evaluations in different business areas, to discuss their findings and revise the metrics as needed.



## Appendix I

### Qualified persons working in the natural resource sector

The following information has been extracted from *Reliance on professionals in the provincial administration and management of natural resources in British Columbia: Inventory and status report* prepared in 2013 by the Qualified Person Cross Ministry Working Group.

Table 1. Legislated self-regulating professionals

<b>Qualified Person</b>	<b>BC Professional Association</b>
Registered professional forester	Association of British Columbia Forest Professionals (ABCFP)
Registered forest technologist	Association of British Columbia Forest Professionals
Professional engineer	Association of Professional Engineers and Geoscientists of British Columbia (APEGBC)
Professional geoscientist	Association of Professional Engineers and Geoscientists of British Columbia (APEGBC)
Professional agrologist	British Columbia Institute of Agrologists
Registered professional biologist	College of Applied Biology
Applied science technologist	Applied Science Technologists and Technicians of British Columbia (ASTTBC)
Certified technician	Applied Science Technologists and Technicians of British Columbia
British Columbia land surveyor	Association of British Columbia Land Surveyors
Notary public	Society of Notaries Public of British Columbia
Certified general accountant	The Certified General Accountants Association of British Columbia
Chartered accountant	Institute of Chartered Accountants of British Columbia
Certified management accountant	Certified Management Accountants Society of British Columbia

Table 2. Non-legislated self-regulating professionals

<b>Qualified Person</b>	<b>BC Professional Association</b>
Professional archaeologist	BC Association of Professional Archaeologists
Planner	Planning Institute of BC
Contaminated sites approved professional	Contaminated Sites Approved Professionals Society

Table 3. Accredited practitioners

<b>Qualified Person</b>	<b>Accrediting Body</b>
Licensed scaler	Ministry of Forests, Lands and Natural Resource Operations
Silviculture Accredited Surveyor	Ministry of Forests, Lands and Natural Resource Operations
Pesticide applicator	Ministry of Environment
Pesticide dispenser	Ministry of Environment
Accredited Timber Cruiser	ABCFP or ASSTC
Accredited Timber Evaluator	ABCFP or ASSTC
Qualified well pump installer	Ministry of Environment
Qualified well driller	Ministry of Environment
Environmental professional	Eco Canada
Blasting (Open Pit and Underground) Certificate	Ministry of Energy and Mines
Shift Boss (Open Pit and Underground)	Ministry of Energy and Mines
Mine Rescue (Open Pit Surface and Underground) Certificate	Ministry of Energy and Mines
Fire Boss Certificate	Ministry of Energy and Mines
Coal Blasting Certificate	Ministry of Energy and Mines
First Class and Second Class Underground Coal (Management) Certificate	Ministry of Energy and Mines

## Appendix II: Summary of Feedback on Draft QP Metrics

Theme	Category	Number of comments	Typical comment (summarized)
Metric Structure (Balanced scorecard approach)	Live meeting poll	-	Roughly 50% of internal staff indicated they understood metric structure whereas 50% indicated they did not understand.
Metric 1 Reduce government processing costs	Comment to improve	3	Outcomes should meet government's goals and objectives.
	Raising concerns	2	This work means reduced internal QPs, reduced government oversight.
	Raising question	10	Request examples to illustrate metrics (applies to all metrics).
	Relating to other things	1	Need for QP peer reviews (presumably internal – external.)
Metric 2 Reduce remedial costs	Comment to improve	1	Litigation and mitigation of settlement could be added as measures.
	Raising concerns	11	How to enforce poor work is problematic. This metric might mask a trend of removal or reduction of accountability. Compliance and Enforcement (C+E) measure more an indication of quantity of work being conducted, not quality of QP (interpretation: not a good measure).
	Raising question	10	Regarding C+E use, need to use a clearer approach to risk management.
	Relating to other things	3	QP peer reviews (presumably internal – external). This is passing costs to clients. What are provincial resources for C+E investigations?
Metric 3 Maintain or enhance resource values, health, safety	Comment to improve	1	Good to see this metric included, let's make sure clients are on board.
	Raising concerns	16	Should role of QP be used in this regard alone? No public presence in the process. Not realistic; currently no goals or understanding of values.
	Raising question	7	Difficult to measure resource value and assess; and how to measure public satisfaction and assess.
	Unrelated	1	What is QP job on behalf of their clients?
	Relating to other things	1	QP is not professional reliance.

Theme	Category	Number of comments	Typical comment
Metric 4 Resource user (manage costs)	Comment to improve	2	1] Reliability or quality of QP better measure. Should add in for client survey to measure on QPs: Adequate reports, timely advice, and accurate advice. Adequacy of liability coverage is another consideration if a client has been found in contravention of an act or regulation as a result of a QP's advice. 2] Has increased use of QP been beneficial for user, or have QPs increased ease of operation or complicated it?
	Raising concerns	18	Quality of service = cost. Concerned that government involved in determining QP service costs.
	Raising question	21	Limited ability for small operators to pay, cost benchmarks and need for examples to illustrate.
	Unrelated	1	Has there been an inventory of organizations that meet definition of QP?
	Relating to other things	1	QP costs vs. audit costs comparison should be included.
Metric 5 Decrease QP application processing times	Comment to improve	2	Should use surveys to stakeholders to answer questions posed on slides (ask QPs about this metric).
	Raising concerns	13	Need to understand relevance of specific application costs and why they are so. Concern for rushing decisions; ensuring due process is followed is trade off to this metric. This metric more reflective under 'resource user metric.'
	Raising question	10	
	Unrelated	1	Need QPs in Lands department.
	Relating to other things	8	Is this related to current backlog and current turnaround time metrics? Use QPs for FN consultation. How are e- applications related to this metric? A QP can on paper be qualified, but scope of practise or demonstrated skill and ability should be part of a QP metric.
Metric 6 Internal business process (QP framework)	Comment to improve	0	
	Raising concerns	10	Should separate out internal and external QPs. Need to maintain govt. mandate to manage and protect resources. QP framework flawed with using external QPs working for industry –conflict of interest.
	Raising question	4	Would like to see strategic vision that resulted in these metrics. Would like to see an example of an evolving QP group. Who makes the judgement on this metric conclusion

			(multi-stakeholder involvement)?
	Unrelated	0	
	Relating to other things	2	Who is sponsor of this initiative?

Theme	Category	Number of comments	Typical comment
Metric 7 Learning and Continuous Improvement	Comment to improve	0	
	Raising concerns	12	Internal QPs needed to determine external QPs are meeting govt objectives, protecting values. This relates to liability issues and QP use. Is govt. transferring risk to professionals?
	Raising question	2	This would need resourcing among staff, industry, QPs.
	Relating to other things	13	Govt. could train QPs, have a role in this. Is this metric related to Lean initiative? For professionals, this metric is done by associations.
General noteworthy 'summarized' comments	<p>Liked technology tools for feedback and delivery method.</p> <p>Concern about quick implementation of metrics.</p> <p>This seems like government approach to risk tolerance.</p> <p>What is the driver for this framework and this matrix?</p> <p>Making best use of resources doesn't mean processing more authorizations.</p> <p>Is not the use of QPs in the hands of the customer (best use of available human capital)?</p> <p>Is this related to what ABCFP is doing with accrediting timber cruisers, silviculture surveyors?</p> <p>Why do we need this process and metrics? If internal staff are QPs, these metrics should be governed by our professions.</p> <p>Performance drivers don't adequately measure/indicate status quo. Without status quo no benchmark to compare performance.</p> <p>Licensees or tenure holders should be recognized as QPs and can do job of cost, resource management.</p> <p>Evaluation of metrics need to be done by subsector—for example, one evaluation of forest professional for woodlot use and one for large scale industrial logging.</p> <p>Use government QPs for small scale use, e.g. in woodlot management and administration.</p> <p>Should use a different approach: four levels of QP involvement by 'event' to track and monitor advancing use (low involvement—low risk— to high involvement—high risk).</p> <p>QP technical reports should be part of public record (more open data).</p> <p>QPs should put the instructions for how to make a complaint or appeal on each document they submit.</p> <p>QP should only refer to professionals, not three categories of accredited practioner, regulated professional and unregulated professional.</p> <p>Do not like QP term.</p> <p>The market should drive QP changes, and it will be the little improvements that will have big impacts/learnings.</p> <p>This 'QP initiative' will take forestry and other advanced fields of practice backwards if a common denominator approach is used. Fears that gains made in forestry will be lost with this initiative of 'general' QP advancement.</p> <p>What about legislative harmonization in regards to giving more control to QPs? Either do this or resource govt. with more staff to move permits (industry funding model); right now not seeing improvement in professional submissions</p>		

	through the government.
Metrics missed	First Nation metric should be added through consultation with FN. Public transparency and public process metric missing.
Comments on other items missed	<p>Metrics should answer three questions:</p> <ul style="list-style-type: none"> <li>• Will the use of QPs reduce costs compared to the status quo?</li> <li>• Will QPs expedite and make more efficient the business associated with the administration of natural resources compared to the status quo?</li> <li>• Will the use of QPs improve management over the status quo?</li> </ul> <p>Metrics too focused on what QPs can do for government, than what they can do for business or the resource. Need to look at where QPs are not needed; there is motive among some stakeholders to promote QPs regardless. Need to account for other factors, e.g. level of training, staff turnover, capacity, systems, that will influence metrics and overall evaluation results. Licensees are being held accountable instead of QPs. No apportionment of accountability. The big issue is how to determine qualifications, who is qualified. Need an evaluation of QPs fully before we can do an evaluation of increased use. Need more info on what is the strategy of expanding use of QP to evaluate metrics. Need understanding of how to adapt metrics to specific use of QPs, and linkages with other projects (mechanisms and Competency and Accountability).</p>
Live meeting – what went well	<p>Use of live meeting feedback tools. Good feedback comments. Good presentation.</p>
Live meeting – what was challenging	<p>Reading and understanding slides, topic very complex. Linking the slides, ability to provide detailed feedback. Losing input on screen when accidentally erased. The to'ing and fro'ing of questions and answers.</p>
Live meeting – do differently	<p>Provide examples, put metrics in real life context. Feedback tool – font size control.</p>

### Appendix III: Preliminary QP Metrics

Category	Objective	Measures	Performance drivers	Conclusion
1) Financial	Efficient government application processing	<ol style="list-style-type: none"> <li>1. Staff Time and resources verifying applications correct and complete, e.g. Application review timeline, Application decision timeline</li> <li>2. Streamlining application or administrative process</li> <li>3. Rationalizing authorizations</li> </ol>	<ol style="list-style-type: none"> <li>1. Application submission checklists</li> <li>2. Application submission guidance</li> <li>3. Application submission standards</li> <li>4. Innovative approaches which reduces processing time/ Effective use of technology</li> <li>5. Suitable audit process for intake process monitoring</li> <li>6. Application administration is consistent with One Process and is updated</li> <li>7. Available staff time and resources</li> <li>8. Effective use of technology</li> </ol>	<p>Use of QP improved government application administration</p> <p>No difference</p> <p>Use of QP hindered government application administration</p>
	Reduce remedial costs and/or risk	<ol style="list-style-type: none"> <li>1. Risk drive inspection regime</li> <li>2. Number of decision challenges, decision amendment, litigation cases related to risk events</li> <li>3. Number of unplanned events causing significant costs over activity lifecycle</li> <li>4. Number and significance of non conformances of industry certification standards</li> <li>5. Appropriate use of QP based on risk assessment</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirming /using accountability measures if available</li> <li>2. Decision process effectiveness</li> <li>3. Suitable audit process for decision monitoring</li> <li>4. Suitable quality assurance measures in place related to risk</li> </ol>	<p>Use of QP significantly reduces remedial costs or risk</p> <p>No difference</p> <p>Use of QP adds remedial costs or risk</p>
2A) Resource values and interests	Maintain or enhance resource value	Specific resource value(s) indicators or measures	<ol style="list-style-type: none"> <li>1. Establishing and assessing against applicable resource values/thresholds</li> <li>2. Public surveys</li> <li>3. Suitable audit process</li> <li>4. Confirming /using accountability measures if available</li> </ol>	<p>Use of QP maintains or enhances selected resource values</p> <p>No impacts</p> <p>Use of QP reduces selected resource values</p>
	Maintain or enhance human health and safety	Specific human health and safety indicators or measures	<ol style="list-style-type: none"> <li>1. Establishing and assessing against applicable health and safety standards</li> <li>2. Public surveys</li> <li>3. Suitable audit process</li> <li>4. Confirming /using accountability measures if available</li> </ol>	<p>Use of QP maintains or improves human health/safety metrics</p> <p>No impacts</p> <p>Use of QP worsens human health/safety metrics</p>
2B) Stakeholder: Resource developer	Improve operations	Selected operational metrics	<ol style="list-style-type: none"> <li>1. Relative cost of QP to user</li> <li>2. Client surveys</li> <li>3. Client business performance</li> </ol>	<p>Use of QP improved operations</p> <p>No change</p> <p>Use of QP reduced operations</p>

2C) Stakeholder: QP	Best use of applying skills, experience, training	<ol style="list-style-type: none"> <li>1. Amount of time QPs used in administration</li> <li>2. Degree of QP involvement in decision recommendations</li> <li>3. Degree of QP involvement in risk management/planning</li> </ol>	<ol style="list-style-type: none"> <li>1. Level of QP skill, training, experience</li> <li>2. Amount of QP expertise available</li> <li>3. QP surveys</li> </ol>	<p>High involvement of QP skills, experience and training</p> <p>Low involvement of QP skills, experience and training</p>
3) Internal business process	Create QP framework	<p>Use the QP framework essential components:</p> <ol style="list-style-type: none"> <li>1. Competency</li> <li>2. Guidance</li> <li>3. Accountability</li> </ol>	<ol style="list-style-type: none"> <li>1. Degree of development and understanding of QP framework components by government, industry, QP, applicable regulatory bodies and other key identified stakeholders</li> <li>2. Business area specific framework development</li> <li>3. Business area procedures and practises to support framework</li> </ol>	<p>QP framework functioning</p> <p>QP framework not functioning</p>
4) Learning and improvement	Use continuous improvement principles	<ol style="list-style-type: none"> <li>1. Level and frequency of training</li> <li>2. Policy and legislation amendments</li> <li>3. Reporting out and monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Key Stakeholder surveys</li> <li>2. Identification and progress to update internal systems, procedures, legislation to support QP framework, and to address identified barriers and gaps relating to QP framework</li> </ol>	<p>Significant internal short-term and long-term fixes required</p> <p>Very few learning and improvements needed</p>
<b>Overall Conclusion</b>				<p>Evaluation outcome: A statement of QP effectiveness in new role. Identify costs and benefits, barriers and opportunities</p>