Procedure for Resolving DNA Profile Interpretation Differences of Opinion

1 Purpose

The purpose of this procedure is to describe the approach to resolving differences in scientific opinions associated to DNA profile interpretations.

2 Scope

This procedure shall apply to situations where there is a difference in scientific opinion related to DNA profile interpretations. This could be at item-reporting stage (initial DNA profile interpretation) or at statement stage (collating results for a case into a court statement).

3 Definitions

Nil

4 Actions

The workflows in the appendices are for situations where the difference in scientific opinion is at the Profile Data Analysis (PDA) stage (Appendix 2) and at statement stage (Appendix 3). The guidelines (Appendix 1) are to be read in conjunction with Appendices 2 and 3.

The Line Manager Checklist (Appendix 4) is to be used by the Line Manager to guide them in providing assistance to the resolution of the particular difference of opinion.

The templates in the appendices are to record the Interpretation summary by the independently selected scientists (Appendix 5), and the outcome summary by the Team Leader (Appendix 6).

5 Records

Appendices 5 and 6 are templates for recording independent interpretations and Team Leader summaries. These should be added to the Forensic Register (FR) as sample notations against the barcode for the DNA profile under discussion.

6 Associated Documentation

QIS: 17117 – Procedure for Case Management

QIS: 33773 – Procedure for Profile Data Analysis using the Forensic Register

QIS: 34006 – Procedure for the Release of Results Using the Forensic Register

QIS: 34322 - Technical and Administrative Review of Records Created in the Forensic Register

7 References

ISO/IEC 17025 Application Document: Legal (including Forensic Science) – Appendix. Effective February 2020. Section 7.7

Forensic Science Regular Guidance, Cognitive Bias Effects Relevant to Forensic Science Examinations FSR-G-217

8 Amendment History

Version	Date	Updated By	Amendments
1	Aug 2021	J Howes	First version

9 Appendices

1 Guideline to approaching differences of scientific opinion in DNA Profile Interpretation
2 Workflow for Dealing with Differences of Scientific Opinion in DNA Profile Interpretation: PDA Stage
3 Workflow for Dealing with Differences of Scientific Opinion in DNA Profile Interpretation: Statement Stage
4 Line Manager Checklist
5 Independent Profile Interpretation – Instructions and Findings
6 Team Leader Summary

9.1 Guideline to approaching differences of scientific opinion in DNA Profile Interpretation

Date	19 August 2021
References	This information is to be read in conjunction with the QHFSS Forensic DNA Analysis Approach to Dealing with Differences of Profile Interpretation Workflow diagram
	• QIS 34322: Technical and Administrative Review of Records Created in the Forensic Register, Forensic and Scientific Services • ISO/IEC 17025 Application Document: Legal (including Forensic Science) – Appendix. Effective February 2020. Section 7.7 • Forensic Science Regular Guidance, Cognitive Bias Effects Relevant to Forensic Science Examinations FSR-G-217
Background	In the end-to-end Forensic DNA Interpretation and reporting process, there are a number of points where scientists may have differing interpretations of the DNA Profiles obtained. These points create junctures in the process. How these differences are handled are not specifically covered in the current Standard Operating Procedure. (34322V2). To date, these junctures had been handled inconsistently.
Purpose	To provide a consistent approach to working through the differences of scientific opinion for the interpretation and review of DNA Profiles
Applicable to	All Forensic DNA Analysis staff who are required to perform interpretation and review of DNA Profiles.
Requirements	A scientist performing the: • interpretation of the DNA profile must be competent in this task, including the use of relevant statistical software • technical review must be competent to perform the process that they are reviewing and to interpret mixtures using the relevant statistical software.
Time considerations	The end-to-end process of obtaining and reporting a DNA profile should be completed within 10 working days. All staff are required to perform their sections of the process within the recommended time frames to ensure a 10-day turnaround.

Role title	Function
Profile Data Analysis (PDA) Entry	The individual who performs the interpretation of the DNA profile and statistical analysis for result entry to the FR.
PDA Review	The individual who independently interprets the results from PDA Entry. Performs an administration and technical review of the results and validates the result for release to the client. This is a quality step undertaken prior to release of the results to the client.
Line Manager	Assist in the resolution of differences of opinion, utilising the check list to ensure a standardised approach is taken. Note: This role is a management role, to guide the process forward. It is not an interpretation role.
Team Leaders	Enters the process if the PDA Entry and Reviewer's interpretations do not align and the Line Managers are not able to resolve it at level. The Team Leaders role is: • **For differences of interpretation:** to authorise the 3 independent interpretations

	• **For Unusual Profiles**: to set up a Round Table discussion for unusual profiles to decide on a process for interpretation, • **For Finalised Unusual Profiles**: to decide how to share knowledge and if any SOPs, guidelines or workflows need updating.

Process overview	Stages	Comments
	DNA Recovery	The Evidence Recovery Team conducts the DNA Recovery Process
	DNA Profile Creation	The Analytical Team creates the DNA Profile
	DNA Interpretation	Competent staff within the Forensic DNA Analysis Team undertake DNA profile interpretation and review. Conducted in a two-stage verification process: • Initial Assessment, called *PDA Entry* • Validation step, called *PDA Review*
	FR Profile Finalisation	The profile is finalised in FR and distributed according to standard distribution processes
	DNA Statement Writing	The Reporting Team conducts a two-stage verification process: • Statement writing • Statement review
	Court Reporting	The Reporting Scientist may be called to provide expert testimony.

Process by Stages and Steps

Process	Steps	Comments
DNA Recovery		
DNA Recovery	1. Receive evidence 2. Processes evidence	
DNA Profile Generation		
DNA Profile Creation	3. Generation of a DNA Profile/s 4. DNA profile is made available to Case Managers	
DNA Interpretation		
PDA Entry	5. The initial scientist conducts the PDA Entry (Initial assessment)	If the profile is *new,* something not previously seen, raise it with your Line Manager to be considered as approach as new and emerging practice.
PDA Review	6. The reviewing scientist conducts the PDA Review (Validation Step) IF the interpretations: 6.1 align – profile is validated, and it may go to Statement Writing process 6.2 don't align - the PDA Reviewer informs the PDA Entry of their view as a first/initial step.	The PDA Review is required to communicate face to face that they have a different interpretation within 24 hours of conducting their PDA Review.

Differences of Opinion	Steps	Comments
Communicate the difference of opinion	7. PDA Entry and Reviewer meet to discuss the different interpretations	If the differences are: *straight forward:* initial feedback can be done via email; or, *unusual:* this communication should progress to in person/phone /MS Teams.
Capture the different scientific interpretations	8. PDA Entry and Reviewer use the FR Free Text field to *capture* their comments on their different interpretations.	

Seek guidance from the Line Manager(s)	9. PDA Entry and Reviewer discuss their interpretations with the PDA Entry's Line Manager. They should reference their captured differences of opinion.	The LM role is to Guide the Scientists through the process (not to do an interpretation) to ensure that each aspect has been captured. A check list is developed to create consistency at this stage.
Request an Independent Review Process	10. IF a resolution path is not visible, THEN the Independent Review Process is to be requested of the other Team Leader (Not the Team Leader of the PDA Entry person)	
Authorise an Independent Review Process	11. Team Leader organises the Independent Review Process during from a roaster system including deidentifying the Profile	
Conduct an Independent Review Process	12. Three scientists conduct their own interpretations and provide them to the Team Leader. OUTCOME: Three independent interpretations provided to the nominated Team Leader	
Summaries Independent Review	13. Team Leader writes a summary report and distributes it to the: • PDA Entry • PDA Reviewer • PDA Entry's Line Manager Note: The Summary Report must go to those listed at the same time.	
Distribute the findings	14. Team Leader, Line Manager and PDA Entry and Reviewer read the summary report.	
Acting on the findings	15. Based on the report findings; IF the independent interpretations: 15.1 align - THEN validate the result and it may go to Statement Writing 15.2 align however differ to either the PDA Entry or PDA Reviewer either person can request their role is reassigned.	.

	15.3 don't align THEN how to move forward is reviewed on a case-by-case bases. Most likely establishing a round table to decide how to move forward.
Considerations	16. Next actions will be based on a case-by-case basis.
Statement Writing Process	
THE END	

Additional considerations and guidelines

Differences of opinions
Differences of opinion are to be expected. It is also expected that the different views are identified and recorded throughout the review process.

This is important because it:

- is a requirement through NATA
- shows consideration of various possibilities
- shows process transparency

When can a PDA Entry or PDA Review Scientist withdraw from the process?
Each individual should be able to withdraw from the process if they disagree with the interpretation or approach undertaken. There are two likely stages that an individual may want to withdraw from the process:

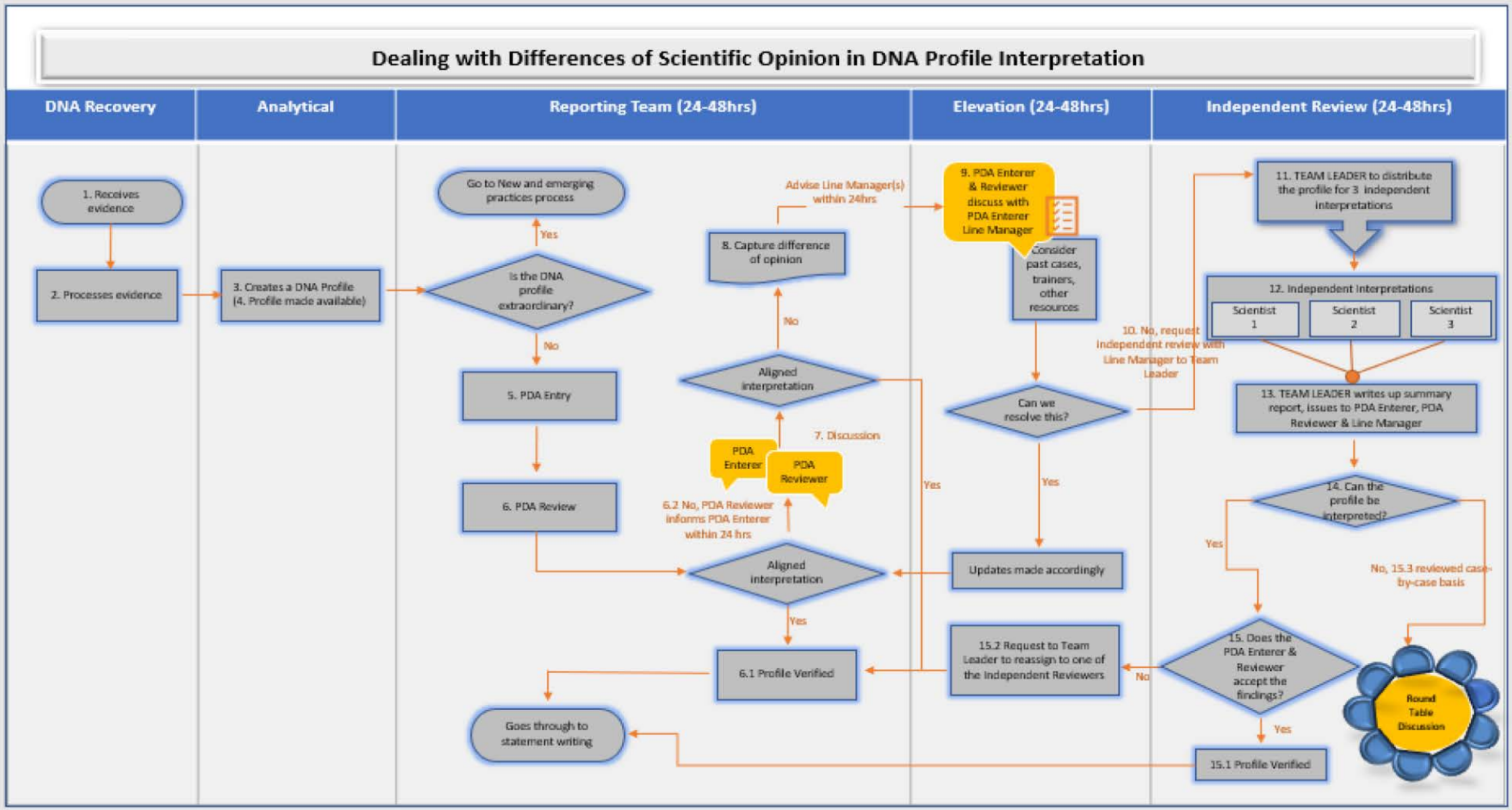
1. Discussion with the Line Managers when exploring how to move forward.
2. After the Team Leader Summary Report has been shared back to the PDA Entry and Reviewing scientists.

It is highly recommended that the latter is the most appropriate point to withdraw as the independent review process will indicate the individual/s who will be able to be assigned to the DNA profile interpretation.

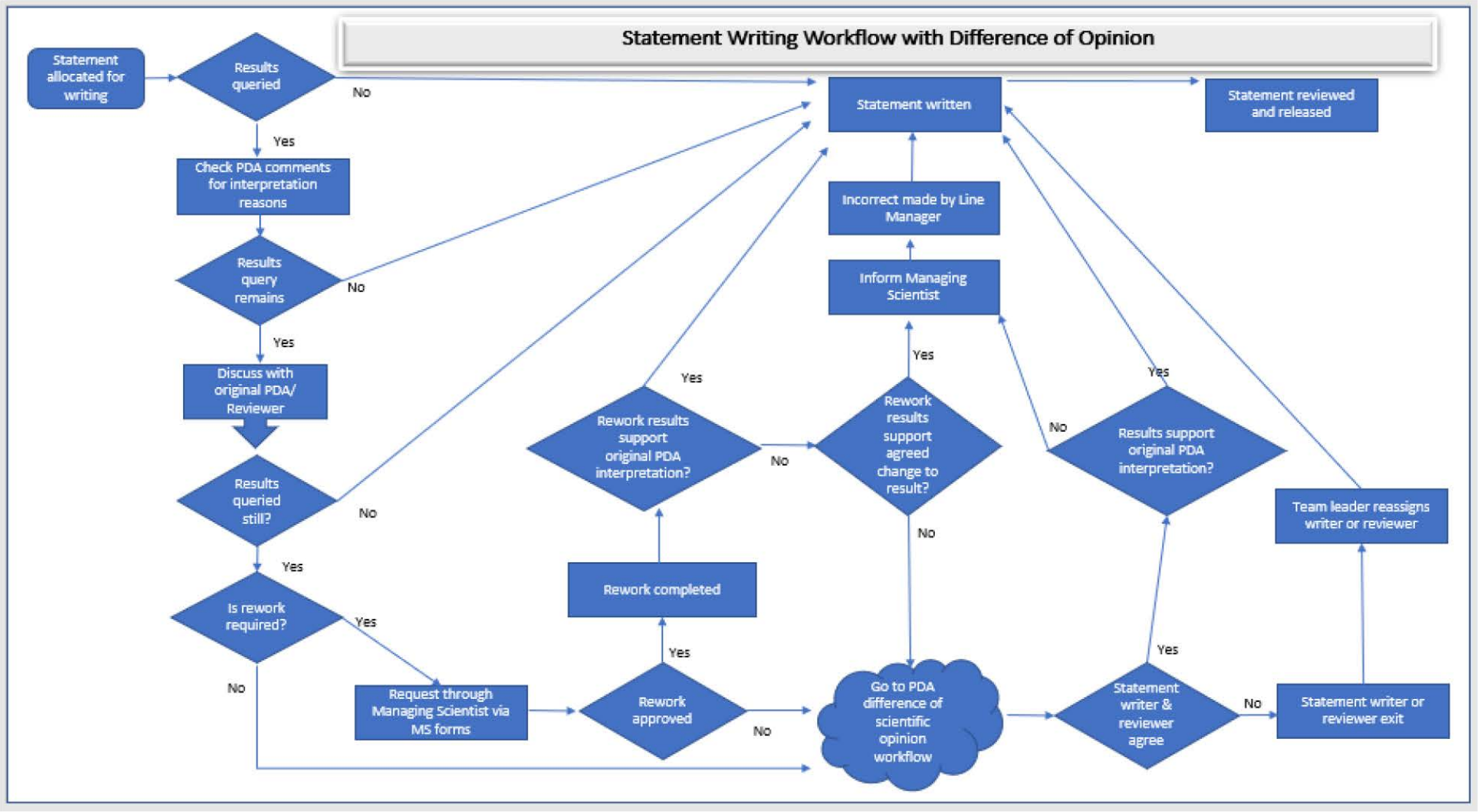
Key Elements
The process is intentionally designed to:

- Provide consistency in how we approach our differences
- Create space at different points in the process for scientific discussion to exist
- Create efficiencies in the process
- Promote discussion between PDA Entry and Reviewing scientists prior to engaging Line Managers, or other internal and external individuals.
- Provide time guidelines to ensure the end-to-end processes are completed within the recommended turnaround times.
- Reduce the number of people who are engaged at the PDA Entry and Review stage if there is a difference of interpretation. This allows for the availability of three independent reviewers later in the processes if required
    - NB. A technical review must not be performed such that it 'shifts the perceived responsibility of the scientific findings from the examiner to the reviewer'[1].

9.2 Workflow for Dealing with Differences of Scientific Opinion in DNA Profile Interpretation: PDA Stage



9.3 Workflow for Dealing with Differences of Scientific Opinion in DNA Profile Interpretation: Statement Stage



9.4: Line Manager Checklist

Role

The role of the line manager is not to look at the profile to give their opinion. The role of the manager is to facilitate the discussion between the two parties to ensure that each one understands each other's reasoning and considers the alternate opinion.

The aim is to talk both parties through the opinions of each other to help them assess the most likely explanation of the evidence and to come to an agreement. Such a discussion may require the line manager to ask each to reconsider new information and to reconvene. Alternatively, the line manager may also try to facilitate a view to compromise given the noted risks.

Checklist to assist discussion

- Have you discussed the result and the reason behind your chosen interpretation?
- Do you understand the reasoning behind each other's point of view?
- Have you documented the reasons behind your interpretation?
- What are the differences between the interpretations?
- What are the risks associated with reporting in each way?
- Is it covered in the SOP? If so, does it support one interpretation over the other?
- Is there any other supporting literature that should be read and considered in the interpretation?
- Which interpretation would be more consistent with the remainder of the case?
- Has this result been reported to the QPS? If so, does the result need to be corrected? Will the client need to be informed?

9.5: Independent Profile Interpretation – Instructions and Findings

Details

Independent Reviewer's Name: Ima Person A
Date Required: DD / MM / YYYY
Date completed: DD / MM / YYYY

Instructions

You have been provided with a Crime Scene profile for review. This includes copies of all amplifications and may include Reference Samples and STRmix outputs if appropriate. Inferences should not be made from the number of amplifications and presence or absence of a STRmix analysis.

You are requested to perform an independent interpretation of this DNA profile. You are instructed to do this without discussion with colleagues, and without viewing any information within the FR.

If you require any information that has not been provided, you are to e-mail the Team Leader (or delegate) who has requested you perform this review.
Return your findings to the requesting Team Leader (or delegate).

Profile details

FR number	QP number	Exhibit barcode
FR1234567	QPYY12345678	1234567890

Category	Description and Located / Owner
Swab Blood	Of something from somewhere

Quant value (ng/uL)	Amp 1 volumes	Amp 2 volumes	Amp 3 volumes
0.XXXX	SV1 TV1 SV2 TV2 Y-quant: Deg Index:	SV1 TV1 SV2 TV2 Y-quant: Deg Index:	SV1 TV1 SV2 TV2 Y-quant: Deg Index:

Other relevant profile information (e.g. if diluted, microcon, SFRAC etc.):

Independent Findings

Please answer the following questions:

Is the profile interpretable? (Y/N)

Reason(s) for profile not interpretable (if applicable)

Number of Contributors assessment (1 – 4)

Is conditioning appropriate? (Y/N)

Reasons for not conditioning (if applicable)

For each reference barcode, please state whether it should be an assumed contributor (AC), requires comparison (LR) or can be intuitively excluded (Excl)

Are there any risks associated with any particular interpretations (e.g. false exclusion? Incorrect NCIDD upload), if so why? Can these be mitigated against? (explain)

Further comments:

9.6 Team Leader Summary

Details

Report prepared by: Person A – Team Leader, Team X
Date: DD / MM / YYYY

Profile details

FR number	QP number	Exhibit barcode
FR1234567	QPYY12345678	1234567890

Independent Findings

Independent Reviewer 1

[Copy in Independent Reviewer's assessments and findings]

Independent Reviewer 2

[Copy in Independent Reviewer's assessments and findings]

Independent Reviewer 3

[Copy in Independent Reviewer's assessments and findings]

Summary

Do all three reviewers agree on an interpretation?
(If so, what is that interpretation. If not, on what points do they agree or disagree?)

Have all risks been considered and appropriately mitigated against?