Verification Report

       This form, or a similar form, is used to maintain quality assurance over the Statistical Analysis System (SAS®) or comparable program used to calculate excess cancer risks or hazard quotients for the Department of Energy Oak Ridge Operations (DOE-ORO) Environmental Management (EM) Program. Specifically, this form verifies the use of correct exposure equations, exposure parameters, and toxicity values (or ecotoxicological benchmarks) and verifies the correct calculation of exposures, excess cancer risks, and hazard quotients for all human health or ecological risk assessments that involve risk calculations or the development of Preliminary Remediation Goals (PRGs). In addition, this form presents issues identified during the verification and their resolutions.

       As Quality Assurance (QA) records, completed forms must be maintained in the project files and/or forwarded to the Risk Assessment Program (RAP) Quality Assurance Specialist (QAS), as applicable.

VERIFICATION REPORT

Instructions:
Complete the entire form. Note any issue(s) for each verification step and specify how the issue(s) was resolved. Attach additional pages as necessary. This form and all attachments must be legible and completed in nonerasable media. All signatures must be obtained for the form to be complete. If the RATL/ERATL acts as the Independent Verifier, then he/she must sign both lines.

Every page of independent verification calculations that result from Step 4 must be signed, dated, and attached to this form. All cross-outs must be initialed and dated.

Project (e.g., K-1070A): _____

Title (e.g., BHHRA for K-1070A RI/FS): _____

Document Number: _____

1.   **Verification of Exposure Equations**

Do the equations in the computer program match (e.g., identical numerical values and units) the requested equations?

        Yes   ☐   No   ☐

If no, note the specific issue(s).

_____

_____

_____

How was the issue(s) resolved?

_____

_____

_____

After resolution, do the equations in the computer program match the requested equations?

        Yes   ☐   No   ☐

Signature of Computer Programmer: _____ Date: _____

Signature of Independent Verifier: _____ Date: _____

Signature of RATL or ERATL: _____ Date: _____

VERIFICATION REPORT

Project : _____

Title : _____

Document Number: _____

2.   **Verification of Exposure Parameters**

Do the parameters in the computer program match (e.g., identical numerical values and units) the requested parameters?

          Yes   ☐   No   ☐

If no, note the specific issue(s).

_____

_____

_____

How was the issue(s) resolved?

_____

_____

_____

After resolution, do the parameters in the computer program match the requested parameters?

          Yes   ☐   No   ☐

Signature of Computer Programmer: _____ Date: _____

Signature of Independent Verifier: _____ Date: _____

Signature of RATL or ERATL: _____ Date: _____

VERIFICATION REPORT

Project : _____

Title : _____

Document Number: _____

3. **Verification of Toxicity Values or Ecotoxicological Benchmarks for Chemicals of Potential Concern**

Please note date of toxicity values or benchmarks used: _____

Do the toxicity values in the computer program match (e.g., identical numerical values and units) the latest toxicity values as specified by the RAIS? Do the ecotoxicological benchmarks in the computer program match (e.g., identical numerical values and units) the values specified by the RAIS or the benchmarks in ES/ER/TM-95/R2, 96/R2, 85/R2, 86/R3, and 126/R1 (or the latest version of these documents) for each endpoint?

        Yes   ☐   No   ☐

If no, note the specific issue(s).

_____

_____

_____

How was the issue(s) resolved?

_____

_____

_____

After resolution, do the toxicity values or ecotoxicological benchmarks in the computer program match the requested toxicity values or benchmarks?

        Yes   ☐   No   ☐

Signature of Computer Programmer: _____ Date: _____

Signature of Independent Verifier: _____ Date: _____

Signature of RATL or ERATL: _____ Date: _____

VERIFICATION REPORT

Project : _____

Title : _____

Document Number: _____

4.   Verification of Computer-Generated Exposures, Excess Cancer Risks, and Hazard Quotients

Do the exposures, excess cancer risks, and hazard quotients calculated by the computer program match (e.g., identical numerical values and units, but may need to account for rounding to the nearest significant figure) the independent verification (hand-checked or independent computer calculation) calculations?

Yes ☐   No ☐

If no, note the specific issue(s).

_____

_____

_____

How was the issue(s) resolved?

_____

_____

_____

After resolution, do the calculations from the computer program match the independent verification calculations?

Yes ☐   No ☐

Signature of Computer Programmer: _____ Date: _____

Signature of Independent Verifier: _____ Date: _____

Signature of RATL or ERATL: _____ Date: _____

Please attach the independent verification calculations to this form. Be sure to include all units.