



Connecticut Department of
Energy & Environmental Protection
Bureau of Water Protection & Land Reuse
Inland Water Resources Division



INSTRUCTIONS FOR DAM INSPECTION REPORT FORM FOR REGULATORY INSPECTION

The following instructions have been formulated to be utilized in conjunction with the “Dam Safety Program Dam Inspection Report Form – For Regulatory Inspection” for the regulatory inspection of dams. These instructions are, out of necessity, somewhat general in nature and therefore may not specifically address all features of any given dam. However, the instructions and inspection report form will be suitable for all dam sites and can be readily modified to report on features/conditions not specifically listed.

The dam inspection report must include a sketch of the plan view of the dam to aid in the description of its condition. The dam inspection report must also include photographs of all significant areas and of an overall view of the dam. These photographs will serve as a baseline for comparison of present vs. future conditions.

The inspection procedure should include a review of available information from all potential sources i.e., the DEEP Dam Safety Program files, town halls, the dam owner, previous engineers or owners. The [Guidelines for Inspection and Maintenance of Dams](#) may also be used as a reference. The engineer must contact DEEP to request an appointment to undertake a file review by submitting a completed form entitled “DEEP Dam Safety File Review Request Form” which can be found on the [Dam Safety website](#).

Upon completion of the report, the Professional Engineer Certification section and the Owner Signature section must be completed and submitted to the DEEP Dam Safety Program. Typically, each dam should have its own separate report. Do not include reports for other dams of other impoundments within the same pdf or hard copy. However, if an impoundment has multiple dams and/or dikes which have been given CT Dam ID #'s, they may all be included in a single report. When including additional structures with CT Dam ID #'s within a single report for the impoundment, be sure to include the various CT Dam ID #'s of those structures in addition to the main dam. If unsure, contact the Dam Safety Program staff.

If possible, the dam owner/operator should be present at the inspection to provide specific information about the dam and its operation.

Many of the categories of features observed for the inspection of dams and their appurtenances are very similar in nature and can be readily described and explained once, rather than being repeated throughout these instructions. Do not leave any questions blank; if a question is not applicable please write in “N/A”.

On page 2 of the form in the header please type in the dam name, dam ID number and the date of the inspection. This will become the continuous header throughout the inspection report.

PART I: SUMMARY OF DAM INSPECTION

DAM NAME: Provide the dam name listed on the notification letter.

INSPECTION DATE(S): Provide the date of the actual inspection. In instances where more than one day is necessary to perform the inspection list all dates.

ALTERNATE DAM NAME(S): It is common for a dam or impoundment to have multiple names listed. In order to eliminate confusion each dam name should be made available.

CT DAM ID #: The “CT Dam ID Number” referred to is a three to five digit number, the first number(s) correspond to the alphabetical listing of all Connecticut towns (numbers 1 through 169). The final two digits are an assigned number for a particular dam within a given town. In instances where there are separate appurtenances with multiple dam ID numbers, all are required to be listed. Nearly all dams have been assigned this three to five digit number which can be obtained from the dam inspection notification letter or by contacting the DEEP Dam Safety Program.

LOCATION (Municipality): The actual city or town that the dam component is physically located in. In certain instances some of the dam components may be located in more than one municipality. In this case, list each municipality. Occasionally a dam and its components may cross state borders.

TEMPERATURE/WEATHER: Weather conditions to be reported include temperature, cloud cover (if any) and precipitation (if occurring).

REGISTERED? Y/N: Is the dam registered with the DEEP Dam Safety Program? If yes, provide the 9 digit registration number found on the notification letter. Check with the DEEP if unsure. All dams need to be registered in accordance with Public Act 13-197 Section 4(b). Each dam needs to be registered once. If you are a new owner, first verify with the DEEP if the previous owner(s) has already registered the dam. Any change in ownership should promptly be reported to the DEEP Dam Safety Program.

POOL LEVEL: This should be expressed as the depth of flow under/at/over the principal spillway crest (in feet and tenths of feet). For example: 0.5 feet of flow over the principal spillway crest or the impoundment level is 1.2 feet below the principal spillway crest.

EMERGENCY ACTION PLAN? Y/N: Is there an existing Emergency Action Plan (EAP) for the dam? In accordance with Public Act 13-197 Section 5, High and Significant Hazard Classified dams need to have an EAP. If yes, include the date it was last updated. If more space is needed to describe the existing plan, place additional description into “Other Information” in Part II of this form.

IMPOUNDMENT USE: List all uses that the impoundment may have from the following categories: agriculture, conservation, fire protection, detention sediment basin, hydropower, public water supply, water supply, flood control, recreation, aesthetics or other.

HYDRAULIC & HYDROLOGIC ANALYSIS? Y/N: Is there an existing Hydraulic and Hydrologic Analysis for the dam? If yes, what was the conclusion of the analysis and when was it performed? Include a brief, concise conclusion, for example, “passes the 100-year storm event with 6 inches of freeboard”. If more space is needed to describe the existing analysis, place additional description into “Other Information” in Part II of this form.

STABILITY ANALYSIS? Y/N: Is there an existing Stability Analysis for the dam? If yes, what was the conclusion of the analysis and when was it performed? Include a brief, concise conclusion noting any issues with the stability identified in the analysis. If more space is needed to describe the existing analysis, place additional description into “Other Information” in Part II of this form.

OVERALL CONDITION: Recommend an overall condition for the entire dam structure, which incorporates all of the parts of this report. Use [Appendix A](#), provided at the end of the inspection form and these instructions for reference. Include an explanation for the overall condition rating. The overall condition will remain the same until the DEEP reviews and accepts the report.

PERSONS PRESENT AT THE INSPECTION: Identify all parties present during the dam inspection as well as their title/position and their affiliation.

OWNER(S)/OPERATOR(S) OF THE SUBJECT DAM: Provide the requested information on the owner(s) of the dam as well as the operator(s) of the subject dam (i.e., names, mailing address, phone number, emergency phone number and email address for each owner and operator).

PART II: GENERAL DAM INFORMATION

GENERAL DESCRIPTION: Provide an overall description of all major components of the dam and appurtenances. If there is a dike or auxiliary spillway, note their existence. For example, a particular dam may have a 100 foot long earthen embankment dam with a 30 foot concrete spillway located at the right abutment and a separate earthen dike located 500 feet to the right of the spillway.

For the following items, with the exception of hazard classification, note the source of this data, such as: field measurement, DEEP GIS database, USGS Maps, StreamStats, Phase I or Phase II report, or prior inspection report, etc.

HAZARD CLASSIFICATION: Provide the existing Hazard Classification for the dam as found on the notification letter or in the DEEP Dam Safety Records.

DAM HEIGHT (ft): The maximum vertical distance from the crest of the dam to the downstream toe of such dam, i.e. structural height as opposed to hydraulic height.

DAM LENGTH (ft): The horizontal distance from one dam abutment to the other dam abutment of such dam. If there are multiple components each should be measured and noted independently.

SPILLWAY LENGTH (ft): The horizontal distance from one spillway abutment to the other spillway abutment or the diameter, if the spillway is a pipe. If there are multiple spillway components, each should be measured and noted independently.

SPILLWAY TYPE: Describe the type of spillway configuration for each spillway component if more than one exists. For example: ogee, drop inlet, broad crested weir, etc.

NORMAL FREEBOARD (ft): The vertical distance from the principal spillway crest to the top of the lowest portion of the dam crest taking into account that the dam crest might be uneven.

DRAINAGE AREA (square miles): The total area measured in square miles that contributes to overland flow from all streams, rivers and other watercourses which contribute to the impoundment area to the point of the principal spillway crest. The drainage area may be obtained online from the USGS Streamstats website.

IMPOUNDMENT AREA (at principal spillway crest, in acres): The surface area in acres of the entire impoundment as measured with the pool at the principal spillway crest.

WATERCOURSE(S): The name of the watercourse that flows from each spillway. For example, Jones Brook flows from the left spillway and Smith River flows from the right spillway.

OTHER INFORMATION: Include in this section additional comments and information that may be pertinent to the dam's overall background. This may include: information provided by the owner(s)/operator(s), existing underwater inspections, existing Operations and Maintenance (O&M) manual(s), specific information regarding existing H&H analyses, existing stability analysis, relevant design and construction information, existing EAP manuals or key elevations such as dam crest, spillway crest, auxiliary spillway crest, top of stop logs, low level outlet invert, etc.

PART III: AERIAL PHOTOGRAPH/LOCATION MAP

AERIAL PHOTOGRAPH/LOCATION MAP: (including impoundment, dam, dike, spillway & other appurtenances) Insert an aerial photograph of the entire impoundment and highlight any dam, dike, spillway and other appurtenances. Insert a separate location map as well. Provide a title block for each map that indicates the CT Dam ID #, the dam name, the date, the scale and a north arrow.

PART IV: DAM/EMBANKMENT/DIKE INFORMATION

NUMBER OF DAMS/EMBANKMENTS/DIKES: Provide the number of dams/embankments/dikes; (if there is more than one dam/embankment/dike reproduce the empty section for each and paste it right below the previous section. Then complete the information for each.)

DAM/EMBANKMENT/DIKE NAME: Provide a unique identifier to the dam/embankment/dike, such as right or left embankment particularly in the case where there is more than one dam/embankment/dike.

GENERAL DESCRIPTION: Provide a brief general description of the dam/embankment/dike portion of the structure. Provide descriptions using left and right as well as upstream, downstream or crest descriptors with orientation based on the viewer facing the downstream direction. For example, the dam/embankment/dike consists of an upstream concrete wall, central earthen embankment and a downstream stone masonry wall.

GENERAL CONDITION: Provide a brief statement for the general condition of the dam/embankment/dike portion of the dam.

CONCRETE CONDITION: Record the condition of the concrete components. Note if there is any internal drainage system. Note if there is any settlement, alignment or movement issues with the concrete section. Note the condition of the upstream, downstream, crest or galleries if they exist. Also note any special conditions that exist within the foundation or at the toe or at the abutment areas such as cracking, movement, seepage or erosion. Describe and note the location of any spalling, scaling,

efflorescence, exposed reinforcing bars or other signs of deterioration in these areas as well. Pounding on the concrete in numerous areas with an object such as a hammer or a rock will help to determine if there are any potential hollow areas beneath the surface as evidenced by the difference in the sound and feel of a more solid area. For cracks other than surficial cracks, note the location and extent (length, width and depth) of each crack. Also describe in detail the apparent age of the crack as judged from its sharpness, presence of debris within the crack and color.

STONE MASONRY: Record the condition of the stone masonry, locating and detailing specific problems. For example displaced stones, voids, missing and/or deteriorated mortar, leaning or bulging walls, deteriorated stone or rounded stone prone to unraveling.

SETTLEMENT/ALIGNMENT/MOVEMENT: Describe quantitatively and note the location of any misalignment, settlement or differential settlement of any portions of the dam/embankment/dike. Check horizontal and vertical alignment noting the divergence from horizontal or plumb. Check the linear alignment of the top of the embankment supplying specific details of movement. Also look for undulations, sinkholes, depressions and sloughing on the crest or the embankment faces. Check for the presence of soil cracks within the embankment. Note the depth, width and length of the crack. These observations may then be used as a comparison during subsequent inspections of the structure.

SEEPAGE/FOUNDATION DRAINAGE: Record the nature, location(s) and estimated flow (in gallons per minute) of any saturated area, flowing seeps or boils. Areas of particular concern to observe are the downstream toe of the embankment, where the embankment abuts natural ground and typically within an area 50 feet downstream of the toe. Note the existence of any wetland vegetation such as phragmites, skunk cabbage or ferns growing on the downstream slope of the dam. Seepage discharging from the face of the slope may indicate a serious condition which should be accurately located and documented. Seepage flow should be carefully evaluated to determine if fine soil particles are being transported out of the embankment. Toe drain outlets should be observed for the presence of fine soil and flow through the outlet should be measured. The use of a white cup or bucket will aid in the detection of any suspended soil. The owner should be instructed to monitor this condition on a continual basis.

RIPRAP: Record the size, type and distribution with any observed displacement or deterioration noted. Also make note of any tree or brush growth or the accumulation of debris in the riprapped areas.

EROSION / BURROWS: Report the existence and record the location and extent (i.e. depth and diameter) of any observed animal burrows (i.e. woodchuck, muskrat, moles) or any eroded areas on the embankment.

VEGETATIVE COVER: Report the general condition of the vegetation on the embankments and comment on specific problem areas such as sparse cover, brush and tree growth (state the diameter(s)), etc. Note the removal of all trees and other woody vegetation on and within 25 feet of the dam is required, as indicated in the Dam Safety Regulations.

OTHER: Comment on any feature or condition observed within the dam/embankment/dike section which is not specifically covered above, such as instrumentation, piezometers and seepage collection devices.

PHOTOS/GRAPHICS/SKETCHES: Insert photos/graphics/sketches of the dam/embankment/dike in this portion of the form or in Parts XIII and XIV. Refer to the instructions under Parts XIII and XIV for details and labeling.

PART V: PRINCIPAL SPILLWAY, TRAINING WALLS, APRON

NUMBER OF PRINCIPAL SPILLWAYS: Provide the number of principal spillways, for example, if there is more than one principal spillway set at the same elevation, reproduce the empty section for each principal spillway and paste right below the previous section and then complete the information for each.)

SPILLWAY TYPE: Provide a unique identifier to the principal spillway, such as right or left spillway, or east or west, particularly in the case where there is more than one principal spillway.

GENERAL DESCRIPTION: Provide a brief general description of the principal spillway, including the training walls, crest, approach channel, stop logs, weir boards, gates and apron portions of the structure. Provide descriptions using left and right as well as upstream or downstream descriptors with orientation based on the viewer facing the downstream direction.

GENERAL CONDITION: Provide a brief statement for the general condition for the principal spillway, training walls and apron portions of the dam.

CONCRETE CONDITION: Use the description previously stated as it pertains to the principal spillway, training walls and apron.

STONE MASONRY: Use the description previously stated as it pertains to the principal spillway, training walls and apron.

SETTLEMENT/ALIGNMENT/MOVEMENT: Use the description previously stated as it pertains to the principal spillway, training walls and apron.

CRACKS: Note the location and extent (length, width and depth) of other than surficial cracking of any of the concrete sections. Also comment on the apparent age of the crack as judged from its sharpness, presence of debris within the crack and color.

SCOURING/UNDERMINING: Record the location and extent of any observed undermining resulting from erosive flow such as scouring at the spillway toe, beneath the training walls or apron. Pounding on the concrete in numerous areas with an object such as a hammer or a rock will help to determine if there are any potential hollow areas beneath the surface as evidenced by the difference in the sound or feel of a more solid area. Probe the downstream edge of the apron with a staff or rod to investigate the possibility of any scouring or undermining. Quantify/measure the extent of the undermining.

SEEPAGE/FOUNDATION DRAINAGE: Use the description previously stated as it pertains to the principal spillway, training walls and apron.

OTHER: Comment on any feature or condition observed within the principal spillway, approach channel, training walls or apron sections which are not specifically covered above. Record any detection of seepage/foundation drainage and also note the presence of any debris located within the spillway section which could obstruct flood flows and/or capture more debris. State if there are any bridges spanning the spillway, noting the distance between the spillway crest and the low chord of the bridge.

Note the presence of any fish ladders or fish screens located in the vicinity of the spillway. Comment on whether the spillway capacity is affected by these structures.

PHOTOS/GRAPHICS/SKETCHES: Insert photos/graphics/sketches of the principal spillway, training walls or apron in this portion of the form or in Parts XIII and XIV. Refer to the instructions under Parts XIII and XIV for details and labeling.

PART VI: AUXILIARY SPILLWAY, TRAINING WALLS, APRON

NUMBER OF AUXILIARY SPILLWAYS: Provide the number of auxiliary spillways (if there is more than one auxiliary spillway, reproduce the empty section for each auxiliary spillway and paste right below the previous section, and then complete the information for each.)

AUXILIARY SPILLWAY TYPE: Provide a unique identifier to the auxiliary spillway, such as right or left spillway, or east or west, particularly in the case where there is more than one auxiliary spillway.

GENERAL DESCRIPTION: Provide a brief general description of the auxiliary spillway, including the training walls, approach channel, crest, stop logs, weir boards, gates and apron portions of the structure. Note the elevation of the auxiliary spillway crest in relation to the principal spillway crest. Provide descriptions using left and right as well as upstream or downstream descriptors with orientation based on the viewer facing the downstream direction.

GENERAL CONDITION: Provide a brief statement for the general condition for the auxiliary spillway, training walls and apron.

CONCRETE CONDITION: Use the description previously stated as it pertains to the auxiliary spillway, training walls and apron.

STONE MASONRY: Use the description previously stated as it pertains to the auxiliary spillway, training walls and apron.

SETTLEMENT/ALIGNMENT/MOVEMENT: Use the description previously stated as it pertains to the auxiliary spillway, training walls and apron.

CRACKS: Use the description previously stated as it pertains to the auxiliary spillway, training walls and apron.

SCOURING/UNDERMINING: Use the description previously stated as it pertains to the auxiliary spillway, training walls and apron.

VEGETATIVE COVER: Use the description previously stated as it pertains to the auxiliary spillway, training walls and apron.

RIPRAP: Use the description previously stated as it pertains to the auxiliary spillway, training walls and apron.

SEEPAGE/FOUNDATION DRAINAGE: Use the description previously stated as it pertains to the auxiliary spillway, training walls and apron.

OTHER: Use the **OTHER** description as previously stated in Part V above, as it pertains to the auxiliary spillway, training walls and apron.

PHOTOS/GRAPHICS/SKETCHES: Insert photos/graphics/sketches of the auxiliary spillway, training walls and apron in this portion of the form or in Parts XIII and XIV. Refer to the instructions under Parts XIII and XIV for details and labeling.

PART VII: DOWNSTREAM CHANNEL

NUMBER OF DOWNSTREAM CHANNELS: Provide the number of downstream channels. If there is more than one downstream channel, reproduce the empty section for each downstream channel and paste right below the previous section. Then complete the information for each.

CHANNEL NAME(S) (WATERCOURSE NAME): Provide a unique identifier to the downstream channel(s), such as right or left channel, particularly in the case where there is more than one downstream channel, including each watercourse name.

GENERAL DESCRIPTION: Provide a brief general description of the downstream channel portion of the structure. Identify the extent of the improved/constructed channel to the confluence with the natural channel.

GENERAL CONDITION: Provide a brief statement for the general condition of the downstream channel portion of the dam.

SCOURING: Describe the extent and location of any scouring observed within the downstream channel.

DEBRIS: Note the presence of any debris which could obstruct flow such as trash, tree limbs etc. Note any large trees which are growing on the channel banks which could fall into the channel and obstruct flows.

RIPRAP: Record the size, type and distribution of riprap that is located in the downstream channel area.

OTHER: Comment on any feature or condition observed within the downstream channel area which is not specifically covered above, such as the presence of roads, culverts, stream alignment etc. that could impact flows from the dam.

PHOTOS/GRAPHICS/SKETCHES: Insert photos/graphics/sketches of the downstream channel in this portion of the form or in Parts XIII and XIV. Refer to the instructions under Parts XIII and XIV for details and labeling.

PART VIII: INTAKE STRUCTURE(S)

NUMBER OF INTAKE STRUCTURES: Provide the number of intake structures. If there is more than one intake structure, reproduce the empty section for each intake structure and paste it right below the previous section. Then complete the information for each.

INTAKE STRUCTURE TYPE: Provide a unique identifier to the intake structure, such as right or left intake structure, particularly in the case where there is more than one intake structure.

GENERAL DESCRIPTION: Provide a brief general description of the intake structure portion of the dam if it exists. Intake structures can come in a variety of forms such as a gate valve, weir boards or a penstock diversion channel. Note the location of the control mechanism. If there is an enclosed intake structure, there may be a confined space entry issue.

GENERAL CONDITION: Provide a brief statement for the general condition for the intake structure portion of the dam. Note the condition of components in regard to their state of deterioration and whether they appear operational. Provide the last known date of operation and the frequency of operation based on discussion with the owner/operator or existing records.

CONCRETE CONDITION: Use the description previously stated as it pertains to the intake structure section.

STONE MASONRY: Use the description previously stated as it pertains to the intake structure section.

SETTLEMENT / ALIGNMENT / MOVEMENT: Use the description previously stated as it pertains to the intake structure section.

CRACKS: Use the description previously stated as it pertains to the intake structure section.

OTHER: Comment on any feature or condition observed within the intake structure section which is not specifically covered above, such as trash racks, sluice gates and hoisting equipment.

PHOTOS/GRAPHICS/SKETCHES: Insert photos/graphics/sketches of the intake structure in this portion of the form or in Parts XIII and XIV. Refer to the instructions under Parts XIII and XIV for details and labeling.

PART IX: OUTLET STRUCTURE(S)

NUMBER OF OUTLET STRUCTURES: Provide the number of outlet structures (if there is more than one outlet structure, reproduce the empty section for each outlet structure and paste right below the previous section, and then complete the information for each.)

OUTLET STRUCTURE TYPE: Provide a unique identifier to the outlet structure(s), such as right or left outlet structure, particularly in the case where there is more than one outlet structure.

GENERAL DESCRIPTION: Provide a brief general description of the outlet structure portion of the dam if it exists including its location such as on the upstream or downstream side of the dam. Outlet structures can come in a variety of forms such as a weir board structure, energy dissipater or a penstock diversion channel. Note the location of the control mechanism, if applicable. If there is an enclosed outlet structure, there may be a confined space entry issue.

GENERAL CONDITION: Provide a brief statement for the general condition for the outlet structure portion of the dam. Note the condition of components in regard to their state of deterioration and whether they appear operational. Provide the last known date of operation and the frequency of operation based on discussion with the owner/operator or existing records.

CONCRETE CONDITION: Use the description previously stated as it pertains to the outlet structure section.

STONE MASONRY: Use the description previously stated as it pertains to the outlet structure section.

SETTLEMENT / ALIGNMENT / MOVEMENT: Use the description previously stated as it pertains to the outlet structure section.

SCOURING / UNDERMINING: Use the description previously stated as it pertains to the outlet structure section.

OTHER: Comment on any feature or condition observed within the outlet structure section which is not specifically covered above such as trash racks, sluice gates, hoisting equipment or the presence and condition of seepage collection features.

PHOTOS/GRAPHICS/SKETCHES: Insert photos/graphics/sketches of the outlet structure in this portion of the form or in Parts XIII and XIV. Refer to the instructions under Parts XIII and XIV for details and labeling.

PART X: MISCELLANEOUS FEATURES

ACCESS: ROADS, BRIDGES, etc.: Comment on any access features including roads, bridges, locked gates etc. or any special conditions that exist including securing access permission from the owner/operator and their contact information. The DEEP does not require an assessment of the need for providing or enhancing security at the dam site or for minimizing trespassing. Similarly an evaluation of the dam site for compliance with OSHA rules and regulations is not required in this report. The owner and professional engineer may choose to evaluate these components and report the findings in this part.

PHOTOS/GRAPHICS/SKETCHES: Insert photos/graphics/sketches of any miscellaneous features in this portion of the form or in Parts XIII and XIV. Refer to the instructions under Parts XIII and XIV for details and labeling.

PART XI: DOWNSTREAM HAZARD CLASSIFICATION REASSESSMENT

DOWNSTREAM HAZARD CLASSIFICATION:

Note any infrastructure located downstream of the dam site which exists including dwellings, highways, bridges, culverts, other dams and their hazard class*, or any significant development which may be impacted by flows from a dam breach. Record the approximate distances downstream from the dam and elevations above the streambed of bridges and culverts, including the size of the culvert opening and the amount of freeboard available at the road crossing, where relevant. Confirm the historic hazard classification if there's no change or recommend a new hazard classification and the justification for that change.

Provide recommendations for the hazard class based on the classifications as defined in the Dam Safety regulations and using best available data such as aerial photos, site visits, FEMA mapping and previously prepared inundation mapping. This part of the regulations is included in [Appendix B](#) provided at the end of the inspection form and these instructions.

Note that the hazard classification will remain the same until the DEEP reviews and either rejects or approves the recommended re-classification.

** Where the dam is so located that its failure would likely cause a downstream dam to fail, the hazard classification of this dam shall be at least as great as that of the downstream dam.*

PART XII: RECOMMENDATIONS

All deficiencies identified in the previous parts of the dam inspection report should be numbered and reported below.

Items listed here may consist of maintenance, repairs requiring an engineered design and/or studies/analyses (prepared by a licensed professional engineer). Sample recommendations may include any of the following: removing of trees and brush; clearing debris from the spillway and/or downstream channel; patching concrete in small areas; restoring ruts; restoring burrows on embankments; restoring riprap; replacing or installing a toe drain system; root removal; repairing stone masonry components; spillway alterations; dam embankment modifications; repairing the intake structure; repairing the outlet structure; investigating spillway capacity; and preparing or updating an emergency action plan (for high and significant hazard classification dams).

The DEEP will review all of the recommendations and categorize each item as maintenance or repairs requiring an engineered design. Repair items that will require a design by a licensed professional engineer shall not be undertaken until a DEEP Dam Safety Permit is obtained.

PART XIII: PHOTOGRAPHS/GRAPHICS

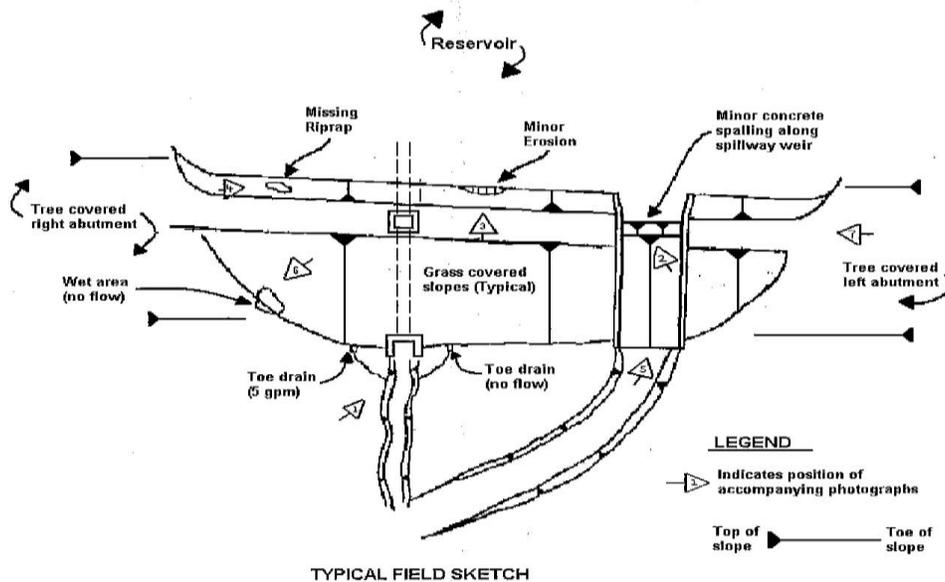
The report must include photographs of all the significant dam features including any problem areas observed. A photograph of an overall view of the dam should be taken as well. These photographs will help to serve as a baseline for the comparison of past as well as future conditions. Related photos should be referenced in each part of the report and may be inserted following each part within the report or placed in Part XIII of the form. See [Appendix C](#) for suggested photo locations to be included in the report.

Re-sizing/compressing jpg photos is recommended before inserting them into the report. Maximum recommended size for each photo is 250 Kb. Failure to resize will result in a report too large to submit by email attachment. Most emails are limited to 10 Mb in attachments. It is recommended that photos be sized to fit two per page.

The location of the photographs should also be shown on a photo location/orientation sketch as well for further clarity utilizing a number scheme. A description of the photograph should be given beneath each photo describing the viewpoint from which it is taken and the date. A date stamp on the photograph is optional.

PART XIV: SKETCHES

A profile view along the centerline of the dam is also helpful when the structure is particularly complex, such as more than one spillway or spillways with more than one crest elevation. Major deficiencies such as seepage, depressions, cracking, etc., should be located on the sketch with accompanying distances from a known point to assure accurate location. If you need to describe additional dam appurtenances, such as a separate dike or elaborate spillway, additional sketches may be added. Related sketches should be referenced in each part of the report and may be inserted following each part within the report or placed in Part XIV of the form. For additional clarity separate sketches may be included for photo reference and for plan view of the key components of the dam. Refer to the example below.



PART XV: PROFESSIONAL ENGINEER CERTIFICATION

Please submit a completed certification signed by a Professional Engineer. A Professional Engineer hired by the owner of the subject dam must complete this part.

PART XVI: OWNER SIGNATURE

Please submit a completed owner signature page for the subject dam.

Mail one copy of the completed inspection report to:

**DAM SAFETY PROGRAM
INLAND WATER RESOURCES DIVISION
CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106**

In addition, please send this completed report converted to Adobe portable document format (pdf) and using the electronic file naming convention below, including a scan of the signature page via email to: DEEP.DamSafety@ct.gov

Electronic File Naming Convention

Reports in Adobe Acrobat portable document format (pdf) for each dam must be named using the following file naming convention:

Name as follows: **##### Inspection Report YYYY-MM-DD DamName.pdf**

Where

is the CT Dam ID # (do not insert leading “0”s).
Inspection Report is the words Inspection Report
YYYY-MM-DD is the date of the visual inspection with dashes in between as shown.
DamName is the generally recognized name of the impoundment/dam.
pdf is the adobe portable document format file extension.

Do **not** use underscores (_) between the dam number or words. Use dashes in the date.

If you have any questions, please contact the Dam Safety Program at 860-424- 3706 or by email at DEEP.DamSafety@ct.gov

Appendix A: Overall Dam Condition Selection Standards

Condition	Definition
Good	Through file research and after a thorough visual inspection it has been determined that the dam is well maintained and no existing dam safety deficiencies are recognized. Only continued routine maintenance is required.
Satisfactory	Through file research and after a thorough visual inspection it has been determined that no significant deficiencies are recognized. Only minor maintenance is required and only minor flaws are noted.
Fair	Through file research and after a thorough visual inspection it has been determined that there are no critical deficiencies with the dam that would require engineering analysis with the following exception: the engineer may recommend that a hydrologic and hydraulic analysis be conducted due to the lack of adequate freeboard and/or the lack of spillway capacity documentation. A condition exists at the dam that may require some sort of additional monitoring.
Poor	Through file research and after a thorough visual inspection it has been determined that deficiencies are recognized that require engineering analysis and/or remedial action.
Unsatisfactory	Through file research and after a thorough visual inspection it has been determined that a deficiency is recognized that requires immediate or emergency action. Administrative/Enforcement action may be required as determined by the Dam Safety Program. Reservoir level restrictions may be necessary until the problem is resolved.

Appendix B - Hazard Classification of Dams

I. A Class AA dam is a negligible hazard potential dam which, if it were to fail, would result in the following:

- (i) no measurable damage to roadways;
- (ii) no measurable damage to land and structures;
- (iii) negligible economic loss.

II. A Class A dam is a low hazard potential dam which, if it were to fail, would result in any of the following:

- (i) damage to agricultural land;
- (ii) damage to unimproved roadways (less than 100 ADT);
- (iii) minimal economic loss.

III. A Class BB dam is a moderate hazard potential dam which, if it were to fail, would result in any of the following:

- (i) damage to normally unoccupied storage structures;
- (ii) damage to low volume roadways (less than 500 ADT);
- (iii) moderate economic loss.

IV. A Class B dam is a significant hazard potential dam which, if it were to fail, would result in any of the following:

- (i) possible loss of life;
- (ii) minor damage to habitable structures, residences, hospitals, convalescent homes, schools, etc;
- (iii) damage to or interruption of the use of service of utilities;
- (iv) damage to primary roadways (less than 1500 ADT) and railroads;
- (v) significant economic loss.

V. A Class C dam is a high hazard potential dam which, if it were to fail, would result in any of the following:

- (i) probable loss of life;
- (ii) major damage to habitable structures, residences, hospitals, convalescent homes, schools, etc;
- (iii) damage to main highways (greater than 1500 ADT);
- (iv) great economic loss.

Appendix C - PHOTOGRAPH INSTRUCTIONS

All photographs shall be color photographs. Photographs shall be clear and include scale references where applicable. Photographs shall include, but not be limited to the following:

- 1.** Overview of dam(s)/dike(s) from upstream
- 2.** Overview of dam(s)/dike(s) from downstream
- 3.** Overview of upstream face from right abutment
- 4.** Overview of upstream face from left abutment
- 5.** Overview of dam crest from right abutment
- 6.** Overview of dam crest from left abutment
- 7.** Overview of downstream face from right abutment
- 8.** Overview of downstream face from left abutment
- 9.** Overview of spillway(s) from upstream
- 10.** Overview of spillway(s) from downstream (tailrace or channel area)
- 11.** Overview of right training wall(s)
- 12.** Overview of left training wall(s)
- 13.** Overview of weir
- 14.** Overview of stilling basin
- 15.** Overview of downstream channel
- 16.** Overview of gatehouse exterior
- 17.** Overview of gatehouse interior
- 18.** Overview of operators
- 19.** Outlet inlets and discharge points
- 20.** Overview of reservoir area
- 21.** Areas of specific deficiencies (e.g., cracks, erosion, displacement, seeps, deterioration, etc.)