



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER RESOURCES DIVISION
PERMIT

Permit No.: WRP001528
Submission No: 2C6-TNM2-HBTC
Issued: July 13, 2016
Extended:
Revised:
Expires: July 13, 2018

Issued To:

Grand Traverse County
Attn: Mr. Tom Menzel
400 Boardman Avenue
Traverse City, MI 49684

This permit is being issued by the Michigan Department of Environmental Quality (DEQ), Water Resources Division (WRD), under the provisions of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), and specifically:

- Part 31, Water Resources Protection (Floodplain Regulatory Authority)
- Part 301, Inland Lakes and Streams
- Part 303, Wetlands Protection
- Part 315, Dam Safety
- Part 323, Shorelands Protection and Management
- Part 325, Great Lakes Submerged Lands
- Part 353, Sand Dunes Protection and Management

Permission is hereby granted, based on permittee assurance of adherence to State of Michigan requirements and permit conditions, to:

Permanently drawdown the impoundment formed by the Boardman Dam, Dam ID No. 512, located on the Boardman River in Grand Traverse County, by a maximum elevation of 25 vertical feet; remove the dam's existing powerhouse and spillway structure; remove portions of the dam's earthen embankment; construct temporary sediment traps; and restore the natural river channel through the former impoundment along its original alignment. Excavate approximately 283,970 cubic yards of material, including 158,360 cubic yards from below the Ordinary High Water Mark (OHWM) of the Boardman River and placement of approximately 64,665 cubic yards of fill, including 2,222 cubic yards below the OHWM of the Boardman River. Excavate approximately 88,989 cubic yards of material from a total of 6.36 acres of wetland and place approximately 66,791 cubic yards of fill material in a total of 4.14 acres of wetland. Place 18-inch diameter equalization culverts every 200 feet and in seep areas, where the permanent access road impacts wetland. Drawdown rate from the current impoundment elevation to elevation 624.0 feet NAVD88 shall not to exceed 1 vertical foot per 24-hour period. Drawdown from elevation 624.0 feet NAVD88 to the restored channel elevation shall occur at a rate that does not negatively impact the downstream receiving water, habitat, or structures. Stream flows shall be maintained throughout the entire construction process.

Watercourse Affected: Boardman River

Property Location: Grand Traverse County, City of Traverse City

Town/Range/Section 26N11W03, Property Tax No. 28-05-034-009-00

Authority granted by this permit is subject to the following limitations:

- A. Initiation of any work on the permitted project confirms the permittee's acceptance and agreement to comply with all terms and conditions of this permit.
- B. The permittee, in exercising the authority granted by this permit, shall not cause unlawful pollution as defined by Part 31, Water Resources Protection, of the NREPA.
- C. This permit shall be kept at the site of the work and available for inspection at all times during the duration of the project or until its date of expiration.
- D. All work shall be completed in accordance with the approved plans and specifications submitted with the application and/or plans and specifications attached to this permit.
- E. No attempt shall be made by the permittee to forbid the full and free use by the public of public waters at or adjacent to the structure or work approved.
- F. It is made a requirement of this permit that the permittee give notice to public utilities in accordance with Act No. 174 of the Public Acts of 2013 and comply with each of the requirements of Act 174.
- G. This permit does not convey property rights in either real estate or material, nor does it authorize any injury to private property or invasion of public or private rights, nor does it waive the necessity of seeking federal assent, all local permits, or complying with other state statutes.
- H. This permit does not prejudice or limit the right of a riparian owner or other person to institute proceedings in any circuit court of this state when necessary to protect his rights.
- I. Permittee shall notify the DEQ within one week after the completion of the activity authorized by this permit, by completing and forwarding the attached preaddressed postcard to the office addressed thereon.
- J. This permit shall not be assigned or transferred without the written approval of the DEQ.
- K. Failure to comply with conditions of this permit may subject the permittee to revocation of permit and criminal and/or civil action as cited by the specific state act, federal act, and/or rule under which this permit is granted.
- L. All dredged or excavated materials shall be disposed of in an upland site (outside of floodplains, unless exempt under Part 31 of the NREPA, and wetlands).
- M. In issuing this permit, the DEQ has relied on the information and data that the permittee has provided in connection with the submitted application for permit. If, subsequent to the issuance of a permit, such information and data prove to be false, incomplete, or inaccurate, the DEQ may modify, revoke, or suspend the permit, in whole or in part, in accordance with the new information.
- N. The permittee shall indemnify and hold harmless the State of Michigan and its departments, agencies, officials, employees, agents, and representatives for any and all claims or causes of action arising from acts or omissions of the permittee, or employees, agents, or representative of the permittee, undertaken in connection with this permit. The permittee's obligation to indemnify the State of Michigan applies only if the state: (1) provides the permittee or its designated representative written notice of the claim or cause of action within 30 days after it is received by the state, and (2) consents to the permittee's participation in the proceeding on the claim or cause of action. It does not apply to contested case proceedings under the Administrative Procedures Act, 1969 PA 306, as amended, challenging the permit. This permit shall not be construed as an indemnity by the State of Michigan for the benefit of the permittee or any other person.
- O. Noncompliance with these terms and conditions and/or the initiation of other regulated activities not specifically authorized shall be cause for the modification, suspension, or revocation of this permit, in whole or in part. Further, the DEQ may initiate criminal and/or civil proceedings as may be deemed necessary to correct project deficiencies, protect natural resource values, and secure compliance with statutes.

- P. If any change or deviation from the permitted activity becomes necessary, the permittee shall request, in writing, a revision of the permitted activity from the DEQ. Such revision request shall include complete documentation supporting the modification and revised plans detailing the proposed modification. Proposed modifications must be approved, in writing, by the DEQ prior to being implemented.
- Q. This permit may be transferred to another person upon written approval of the DEQ. The permittee must submit a written request to the DEQ to transfer the permit to the new owner. The new owner must also submit a written request to the DEQ to accept transfer. The new owner must agree, in writing, to accept all conditions of the permit. A single letter signed by both parties that includes all of the above information may be provided to the DEQ. The DEQ will review the request and, if approved, will provide written notification to the new owner.
- R. Prior to initiating permitted construction, the permittee is required to provide a copy of the permit to the contractor(s) for review. The property owner, contractor(s), and any agent involved in exercising the permit are held responsible to ensure that the project is constructed in accordance with all drawings and specifications. The contractor is required to provide a copy of the permit to all subcontractors doing work authorized by the permit.
- S. Construction must be undertaken and completed during the dry period of the wetland. If the area does not dry out, construction shall be done on equipment mats to prevent compaction of the soil.
- T. Authority granted by this permit does not waive permit requirements under Part 91, Soil Erosion and Sedimentation Control, of the NREPA, or the need to acquire applicable permits from the County Enforcing Agent.
- U. Authority granted by this permit does not waive permit requirements under the authority of Part 305, Natural Rivers, of the NREPA. A Natural Rivers Zoning Permit may be required for construction, land alteration, streambank stabilization, or vegetation removal along or near a natural river.
- V. The permittee is cautioned that grade changes resulting in increased runoff onto adjacent property is subject to civil damage litigation.
- W. Unless specifically stated in this permit, construction pads, haul roads, temporary structures, or other structural appurtenances to be placed in a wetland or on bottomland of the water body are not authorized and shall not be constructed unless authorized by a separate permit or permit revision granted in accordance with the applicable law.
- X. For projects with potential impacts to fish spawning or migration, no work shall occur within fish spawning or migration timelines (i.e., windows) unless otherwise approved in writing by the Michigan Department of Natural Resources, Fisheries Division.
- Y. Work to be done under authority of this permit is further subject to the following special instructions and specifications:
1. All dam construction shall be completed in accordance with the design plans prepared by AECOM (formerly URS Corporation) and Inter-Fluve, Incorporated, dated October 23, 2015 and most recently revised June 8, 2016.
 2. All dam construction activities must be conducted under the knowledge and supervision of a licensed professional engineer.
 3. If any change or deviation from the permitted activity becomes necessary, the permittee shall request, in writing, a revision of the permitted activity and/or mitigation plan from the DEQ. Such revision requests shall include complete documentation supporting the modification and revised plans detailing the proposed modification. Proposed modifications must be approved, in writing, by the DEQ prior to being implemented.
 4. This permit may be transferred to another person upon written approval of the DEQ. The permittee must submit a written request to the DEQ to transfer the permit to the new owner. The new owner must also submit a written request to accept transfer of the permit. The new owner must agree, in writing, to accept all conditions of the permit. A single letter signed by both parties which includes all the above information may be provided to the DEQ. The DEQ will review the request and if approved, will provide written notification to the new owner.

5. A permit may be extended for cause, however, the life of this permit may not exceed five (5) years. To request an extension of a permit, a written request must be submitted to the DEQ before the expiration date of the permit. The request must indicate the reasons for the extension. The DEQ will review the request and, if approved, provide written notification to the permittee.
6. Any modification or revision to the approved design plans and/or specifications must be approved, in writing, by the WRD, DEQ.
7. The permittee shall furnish notification of the start of construction to the WRD, DEQ, five (5) days prior to commencement of construction. Contact Mr. Lucas Trumble, P.E., at 517-420-8923 or trumblel@michigan.gov.
8. A final Monitoring and Maintenance Plan for the restored river channel, including in-stream structures, shall be submitted to, and approved by, DEQ prior to commencement of construction.
9. Prior to initiating construction, authorized by this permit, the permittee is required to provide a copy of the permit to the contractor(s) for review.
10. Prior to initiation of construction, a pre-construction meeting shall be held with the contractor, permittee or her/his representative(s), and representatives of the DEQ. To arrange the required meeting, please contact Mr. Lucas Trumble, P.E. at 517-420-8923 or by e-mail at trumblel@michigan.gov.
11. It is advised that proper cautions signs and/or buoys be placed at the upstream end of the project and near the dam to prevent endangerment of recreational users.
12. Prior to the initiation of any permitted construction activities, a siltation barrier shall be constructed immediately downgradient of the construction site. Siltation barriers shall be specifically designed to handle the sediment type, load, water depth, and flow conditions of each construction site throughout the anticipated time of construction and unstable site conditions. The siltation barrier shall be maintained in good working order throughout the project's duration. Upon project completion, the accumulated materials shall be removed and disposed of at an upland (non-wetland, non-floodplain) site. The siltation barrier shall then be removed in its entirety and the area restored to its original configuration and cover.
13. Prior to the initiation of any permitted construction activities, a "fabric" erosion control fence (straw bales are not acceptable) shall be installed immediately adjacent to the wetland boundary along the entire length of the wetland area within the construction site. This erosion barrier shall be maintained in good working order throughout the duration of the project. Upon project completion, the accumulated materials shall be removed and disposed of at an upland site. The erosion barrier shall then be removed in its entirety and the area restored to its original configuration and cover.
14. Prior to the commencement of any demolition authorized by this permit, the work areas shall be isolated by a downstream turbidity curtain to prevent off-site siltation. The turbidity curtain shall be installed to extend from the bed of the waterbody to a point above the existing water's surface. The turbidity curtain shall be maintained for the duration of the project and shall be left in place after the completion of dredging until all disturbed sediments have settled.
15. The use of explosives for removal of the structure over the waterbody, including any abutments or piers, is strictly prohibited.
16. All slurry resulting from any dewatering operation shall be discharged through a filter bag or pumped to a sump located away from wetlands and surface waters and allowed to filter through natural upland vegetation, gravel filters, or other engineered devices for a sufficient distance and/or period of time necessary to remove sediment or suspended particles. The discharge of slurry water resulting from the hydro-demolition of concrete is not allowed to enter a lake, stream, or wetland.
17. Historic artifacts could occur on or near this project site and may be impacted by your activities. If during the course of construction artifacts are encountered, immediately contact the Office of the State Archaeologist, at 517-373-6358.
18. Except as provided for in this permit, all dredge/excavated spoils, including organic and inorganic soils, vegetation, and other material removed shall be placed on upland (non-wetland, non-floodplain or non-bottomland) areas, prepared for stabilization, and stabilized with sod and/or seed and mulch in such a manner to prevent and ensure against erosion of any material into any waterbody, wetland, or floodplain.

19. All raw areas within 100 feet of a lake, stream, or wetland that is not brought to final stabilization by the end of the active growing season shall be temporarily stabilized with mulch blankets in accordance with the following dates: September 20th for the Upper Peninsula, October 1st for the Lower Peninsula north of US-10, and October 10th for the Lower Peninsula south of US-10 and in compliance with Part 91, Soil Erosion and Sediment Control, of the NREPA.
20. Drawdown of the impoundment to elevation 624.0 feet North American Vertical Datum of 1988 (NAVD88) shall not exceed 1.0 vertical foot of elevation in a 24-hour period. Drawdown of the impoundment from elevation 624.0 feet NAVD88 to the restored channel elevation shall occur at a rate that does not negatively impact the downstream receiving water, habitat, or structures.
21. The permittee shall provide passage of flow during and after construction. During periods of low flow, the permittee shall provide a minimum flow release approximately equivalent to the stream flow into the impoundment.
22. The permittee is hereby cautioned that any unlawful discharge of sediment into waters of the state is a violation of Part 31 of the NREPA. Any sedimentation caused by construction or use of the permitted structures subjects the permittee to provisions of Part 31.
23. All raw areas in uplands resulting from the permitted construction activity shall be promptly and effectively stabilized with sod and/or seed and mulch (or other technology specified by this permit or project plans) in a sufficient quantity and manner so as to prevent erosion and any potential siltation to surface waters or wetlands. Temporary stabilization measures shall be installed before or upon commencement of the permitted activity, and shall be maintained until permanent measures are in place. Permanent measures shall be in place within five (5) days of achieving final grade.
24. If the project, or any portion of the project, is stopped and lies incomplete for any length of time other than that encountered in a normal work week, every precaution shall be taken to protect the incomplete work from erosion, including the placement of temporary gravel bag riprap or other acceptable temporary protection.
25. No fill, excess soil, or other material shall be placed within the 100-year floodplain, any wetland, or surface water area not specifically authorized by this permit, its plans, and specifications.
26. Unless specifically stated under the "Permitted Activity" of this permit, construction pads, haul roads, temporary structures, or other structural appurtenances to be placed in a wetland or on bottomland of the waterbody are not authorized and shall not be constructed unless authorized by a separate permit or permit revision granted in accordance with the applicable law.
27. The pre-construction (current drawn down condition) design flood or 100-year floodplain elevation at this location on the Boardman River varies from 655.3 feet NAVD88 (655.6 feet NGVD29) at the upstream of the project work area to 613.63 feet NAVD88 (613.63 feet NGVD29) at the downstream limits of the proposed project work area. The proposed post-construction design flood or 100-year floodplain elevation at this location varies from 649.15 feet NAVD88 (649.45 feet NGVD29) at the upstream limits of the project proposed work area to 613.31 feet NAVD88 (613.61 feet NGVD29) at the downstream limits of the project proposed area. The proposed floodplain delineation is contained within the permittee's property boundaries. The 100-year floodplain elevation determination was based on the Hydraulic Analysis provided with the permit application and using approved flow discharges by the DEQ.
28. During removal of the existing structures, every precaution shall be taken to prevent debris from entering any watercourse. Any debris reaching the watercourse during the removal and/or reconstruction of the structure shall be immediately retrieved from the water. All material shall be disposed of in an acceptable manner consistent with local, state, and federal regulations.
29. All fill/backfill shall consist of clean inert material which will not cause siltation nor contain soluble chemicals, organic matter, pollutants, or contaminants. All fill shall be CONTAINED in such a manner so as not to erode into any surface water, floodplain, or wetland. All raw areas with high erosion potential associated with the permitted activity shall be STABILIZED with sod and/or seed and mulch, riprap, or technology specified by this permit or project plans as necessary to prevent erosion and in compliance with Part 91 of the NREPA.

30. Wetland fill shall consist of inert materials, which will not cause siltation nor contain soluble chemicals or organic matter, which is biodegradable. All fill shall be contained in such a manner as not to erode into any watercourse and/or wetland. All raw banks shall be stabilized with native wetland seed and lightly mulched (max. 4-inches deep) as necessary to prevent erosion.
31. Side-slopes adjacent to wetland areas shall be 3:1 or gentler. 2:1 side-slopes adjacent to wetland areas are not acceptable under any circumstances.
32. Equalization and temporary culverts shall be a minimum of 18 inches in diameter, installed at the proper elevation for the purpose of water level equalization and must be buried 20% of the culvert diameter. The culvert shall provide for the free flow of surface water or the movement of organisms between portions of a wetland system. The culvert shall not increase drainage of any existing wetland areas.
33. Excess soil materials from the project shall not be deposited in wetlands or surface water without first securing a permit under the NREPA, Part 303, Wetlands Protection, or other applicable statute. All excess soil material shall be placed on upland site, mulched, and/or seeded to prevent erosion into waters or wetlands.
34. All riprap shall be properly sized and graded based on wave action and velocity, and shall consist of natural field stone or rock (free of paint, soil, or other fines, asphalt, soluble chemicals, or organic material). Broken concrete is not allowed.
35. All dredge/excavated spoils including organic and inorganic soils, vegetation, and other material removed shall be placed in such a manner so as to prevent and ensure against erosion of any material into any waterbody, wetland, or floodplain, see permit plans.
36. Exposed streambanks resulting from this construction shall be stabilized with temporary measures in accordance with appropriate Best Management Practices based on site conditions and, if necessary, may be riprapped extending above the OHWM to provide adequate erosion protection. Temporary stabilization measures shall be maintained until permanent measures are in place.
37. All other exposed slopes, ditches, and other raw areas draining directly to the stream may be protected with riprap, sod, and/or seed and mulch as may be necessary to provide effective erosion protection. The placement of riprap shall be limited to the minimum necessary to ensure proper stabilization of side slopes and fill in the immediate vicinity of the structure.
38. All natural and engineered stabilization materials shall be firmly staked and otherwise secured using biodegradable materials to prevent movement due to wind, waves, high water, or ice. Vegetation, including plantings and other potentially viable material such as live stakes, brush bundles, or other gathered woody material, shall be comprised only of plant species native to Michigan according to the Floristic Quality Assessment for the State of Michigan and appropriate to the site. Engineered plant material such as jute and coconut fabric, shall be comprised of inert plant fiber that may be nonnative.
39. Any temporary fill placed within the 100-year floodplain shall be promptly removed upon completion of the project and pre-existing grades shall be restored.
40. The temporary easement access road fill and culverts shall be removed by the end of the easement period and the wetland restored to original grade and with native wetland seed and lightly mulched (max. 4-inches deep) as necessary to prevent erosion.
41. The permittee is responsible for acquiring all necessary easements or rights-of-way before commencing any work authorized by this permit. All construction operations relating to or part of this project shall be confined to the existing right-of-way limits or other acquired easements.
42. The permittee is cautioned that grade changes resulting in increased runoff onto adjacent property is subject to civil damage litigation.
43. Fill shall not be placed to prevent surface water drainage across the site. Site runoff shall be directed to public or natural drainage ways and not unnaturally discharged onto adjacent properties.
44. No work shall be done in the stream during periods of above-normal flows except as necessary to prevent erosion.

45. Use or placement of the spoils shall be done in such a manner to prevent nuisance conditions and control the release of fugitive dust or visible emissions as required by Part 55, Air Pollution Control, of the NREPA, or the rules promulgated under this Act.
46. The spoils shall not be mixed with other waste or materials that are not inert as defined in Part 115, Solid Waste Management, of the NREPA.
47. Within three (3) months after final placement of spoils, the permittee shall obtain a boundary survey of the area used as a disposal site, including the cover and side slopes thereof. The permittee shall enter said description on the enclosed Restrictive Covenant, have the Restrictive Covenant signed by the proper corporate officers, have the signatures properly witnessed and notarized, and record the Restrictive Covenant with the appropriate County Register of Deeds. A copy of the recorded document shall be submitted to the DEQ, P.O. Box 30028, Lansing, Michigan 48909, Attention: Mr. Duane Roskoskey, within four (4) months after final placement of spoils.
48. A licensed professional engineer of the permittee's choice shall certify to the MDEQ that the excavation and covering of contaminated soils was completed per MDEQ permit requirements. The permittee is responsible to insure the project is constructed in accordance with all drawings and specifications contained in this permit. Certification shall be provided no later than three (3) months after the spoils are placed on-site and covered.
49. The provisions of this permit do not preclude the permittee from disposal of the spoils in accordance with Part 115 at a properly licensed Type II solid waste disposal facility or at an out-of-state facility in accordance with the State's solid waste disposal regulations.
50. Within 7 days following the completion of the project, the permittee shall contact Mr. Steve Kitler, DEQ, Remediation and Redevelopment Division, Cadillac District Office, at 231-876-4455, regarding any requirements concerning the exposure of previously submerged bottomlands under Part 201, Environmental Remediation, of NREPA.
51. The permittee shall control invasive plant species in all exposed previously submerged bottomland areas planted with native plant species, using appropriate techniques and in accordance with all applicable local, state, and federal regulations, for a period of three years from the project completion. Permittee shall submit annual photo documentation of these restored bottomland areas to the DEQ's Cadillac District Office.
52. This stream falls under the authority of Part 305, Natural Rivers, of the NREPA. Authority granted by this permit does not waive permit requirements under the authority of Part 305. A Natural Rivers Zoning Permit may be required for construction, land alteration, streambank stabilization, or vegetation removal along or near the river. **Authorization under Part 305 must be obtained prior to beginning the work authorized by this permit.** For information regarding a Natural River Zoning Permit, please contact Mr. Patrick Ertel, Department of Natural Resources, Fisheries Division, Gaylord Operations Service Center, 1732 West M-32, Gaylord, Michigan 49735-8177, at 989-732-3541, ext. 5047.
53. The permittee shall furnish a written statement from a professional engineer, certifying that he has supervised the removal of the dam and that it was removed in accordance with the plans and specifications approved by the WRD, DEQ.
54. The permittee shall submit a final engineering report to the Dam Safety Program, WRD, which shall include, but not be limited to, documentation of the extent of construction, results of construction material testing, soil boring logs, test pit data collection, summaries of instrumentation monitoring for the construction, and other pertinent project information. The report shall also include a set of final project drawings documenting the extent of construction, signed and sealed by a professional engineer licensed in the State of Michigan.
55. Final approval of the dam removal will not be granted until a site inspection by the DEQ has confirmed that the dam has been removed in accordance with the approved plans and specifications.
56. The authority to conduct the activity as authorized by this permit is granted solely under the provisions of the governing act as identified above. This permit does not convey, provide, or otherwise imply approval of any other governing act, ordinance, or regulation, nor does it waive the permittee's obligation to acquire any local, county, state or federal approval, or authorizations necessary to conduct the activity.

57. Noncompliance with these terms and conditions, and/or the initiation of other regulated activities not specifically authorized by this permit shall be cause for the modification, suspension, or revocation of this permit, in whole or in part. Further, the DEQ may initiate criminal and/or civil proceedings as may be deemed necessary to correct project deficiencies, protect natural resource values, and secure compliance with statutes.
58. Authority granted by this permit does not waive compliance requirements under Part 91 of the NREPA. Any discharge of sediment into waters of the state is a violation of this permit, Part 91, and Part 31 of the NREPA. A violation of these parts subjects the permittee to potential fines and penalties.
59. In issuing this permit, the DEQ has relied on the information and data, which the permittee has provided in connection with the permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, or additional information demonstrates that the spoils are causing environmental contamination or that new State or Federal regulations are promulgated which cause this disposal to be inappropriate, the DEQ may modify, revoke, or suspend the permit, in whole or in part, in accordance with the new information.
60. The permittee shall indemnify and hold harmless the State of Michigan and its departments, agencies, officials, employees, agents and representatives for any and all claims or causes of action arising from acts or omissions of the permittee, or employees, agents, or representatives of the permittee, undertaken in connection with this permit. This permit shall not be construed as an indemnity by the State of Michigan for the benefit of the permittee or any other person.

This permit shall become effective on the date of the DEQ representative's signature. Upon signing by the permittee named herein, this permit must be returned to the DEQ's, WRD, Hydrologic Studies and Dam Safety Unit, for final execution.

Permittee hereby accepts and agrees to comply with the terms and conditions of this permit.

X Thomas F. Meuzel 7-6-2016
 Permittee Date

X Thomas F. Meuzel County Administrator 7-6-16
 Printed Name and Title of Permittee

Issued By: Lucas A. Trumble 7/13/16
 Lucas A. Trumble P.E.,
 Water Resources Division
 517-420-8923

cc: City of Traverse City Clerk
 Grand Traverse County Drain Commissioner
 Mr. Dan DeVaun, P.E., AECOM
 Mr. Paul and Ms. Marcia Ellul