Commonwealth of Massachusetts
Executive Office of Environmental Affairs ■ MEPA Office

ENF Environmental Notification Form

For Office Use Only
Executive Office of Environmental Affairs
EOEA No.: 14402
MEPA Analyst: Arvi Patel
Phone: 617-626- 1029

The information requested on this form must be completed to begin MEPA Review in accordance with the provisions of the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: American Optical Corporation		
Street: 100 Mechanic Street		
Municipality: Southbridge, MA 01550	Watershed: Quinebaug River	
Universal Tranverse Mercator Coordinates: 4,662,150 meters north, 746,926 meters east, Zone 19.	Latitude: 42° 04' 22" Longitude: 72° 00' 53"	
Estimated commencement date: August 2009	Estimated completion date: August 2010	
Approximate cost: $1 Million	Status of project design: 85 %complete	
Proponent: American Optical Corporation c/o David Butler		
Street: 15 Oakwood Avenue		
Municipality: Dudley	State: MA	Zip Code: 01571-3726
Name of Contact Person From Whom Copies of this ENF May Be Obtained: Michele Simoneaux		
Firm/Agency: GZA GeoEnvironmental, Inc.	Street: 1 Edgewater Drive	
Municipality: Norwood	State: MA	Zip Code: 02062
Phone: 781-278-3700 Ext: 5802	Fax: 781-278-5701	E-mail: michele.simoneaux@gza.com

Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)? ☐Yes ☒No

Has this project been filed with MEPA before? ☐Yes (EOEA No._____) ☒No

Has any project on this site been filed with MEPA before? ☒Yes (EOEA No._____) ☐No

Is this an Expanded ENF (see 301 CMR 11.05(7)) requesting:

a Single EIR? (see 301 CMR 11.06(8))	☐Yes	☒No
a Special Review Procedure? (see 301CMR 11.09)	☐Yes	☒No
a Waiver of mandatory EIR? (see 301 CMR 11.11)	☐Yes	☒No
a Phase I Waiver? (see 301 CMR 11.11)	☐Yes	☒No

Identify any financial assistance or land transfer from an agency of the Commonwealth, including the agency name and the amount of funding or land area (in acres): N/A

Are you requesting coordinated review with any other federal, state, regional, or local agency? ☐Yes(Specify_____) ☒No

List Local or Federal Permits and Approvals: 1) Water Quality Certification/401 Water Quality from DEP 2) 404 ACOE Discharge Permit 3) NPDES- Remedial General Permit 4) OOC's from Southbridge Conservation Commission (WPA) 5) NHESP review under MESA

Which ENF or EIR review threshold(s) does the project meet or exceed (see 301 CMR 11.03):

- ☐ Land
- ☐ Water
- ☐ Energy
- ☐ ACEC
- ☐ Rare Species
- ☐ Wastewater
- ☐ Air
- ☐ Regulations
- ☒ Wetlands, Waterways, & Tidelands
- ☐ Transportation
- ☐ Solid & Hazardous Waste
- ☐ Historical & Archaeological Resources

Summary of Project Size & Environmental Impacts	Existing	Change	Total
LAND			
Total site acreage	28, 750 sq. ft (work portion of total 53 acre parcel)		
New acres of land altered		0	
Acres of impervious area	0	0	0
Square feet of new bordering vegetated wetlands alteration		6000 sf MAXIMUM	
Square feet of new other wetland alteration		580 Linear Feet of Bank	
Acres of new non-water dependent use of tidelands or waterways		0	
STRUCTURES			
Gross square footage	N/A		
Number of housing units	N/A		
Maximum height (in feet)	N/A		
TRANSPORTATION			
Vehicle trips per day	N/A		
Parking spaces	N/A		
WATER/WASTEWATER			
Gallons/day (GPD) of water use	N/A		
GPD water withdrawal	N/A		
GPD wastewater generation/ treatment	N/A		
Length of water/sewer mains (in miles)	N/A		

State Permits & Approvals

- ☒ Order of Conditions
- ☐ Superseding Order of Conditions
- ☐ Chapter 91 License
- ☒ 401 Water Quality Certification
- ☐ MHD or MDC Access Permit
- ☐ Water Management Act Permit
- ☐ New Source Approval
- ☐ DEP or MWRA Sewer Connection/ Extension Permit
- ☒ Other Permits (*including Legislative Approvals*) – Specify:

- **MESA**
- **404 Water Quality Certification (Army Corps of Engineers)**
- **NPDES- Remedial General Permit**

CONSERVATION LAND: Will the project involve the conversion of public parkland or other Article 97 public natural resources to any purpose not in accordance with Article 97?

☐Yes (Specify_____) ☒No

Will it involve the release of any conservation restriction, preservation restriction, agricultural preservation restriction, or watershed preservation restriction?

☐Yes (Specify_____) ☒No

RARE SPECIES: Does the project site include Estimated Habitat of Rare Species, Vernal Pools, Priority Sites of Rare Species, or Exemplary Natural Communities?

☒Yes (Specify: Estimated Habitat of Rare Species and Priority Sites of Rare Species (two freshwater msCreeper and the Triangle Floater) ☐No

HISTORICAL /ARCHAEOLOGICAL RESOURCES: Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

☐Yes (Specify_____) ☒No

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources?

☐Yes (Specify_____) ☒No

AREAS OF CRITICAL ENVIRONMENTAL CONCERN: Is the project in or adjacent to an Area of Critical Environmental Concern?

☐Yes (Specify_____) ☒No

PROJECT DESCRIPTION: The project description should include **(a)** a description of the project site, **(b)** a description of both on-site and off-site alternatives and the impacts associated with each alternative, and **(c)** potential on-site and off-site mitigation measures for each alternative (*You may attach one additional page, if necessary.*)

Please see enclosed Project Narrative.

Project Narrative
Environmental Notification Form
American Optical Corporation
100 Mechanic Street, Southbridge
Rouge Brook Remediation and Restoration
Wetlands Protection Act (per 310 10.58(3))

GZA GeoEnvironmental, Inc. (GZA) has prepared this Environmental Notification Form (ENF) on behalf of American Optical Corporation (AO) for proposed environmental remediation work at the disposal site identified by Release Tracking Number (RTN) 2-14967, located at the former American Optical Facility, 100 Mechanic Street, in Southbridge, Massachusetts (the "Site"; see Figure 1).

The objective of this project is to implement remedial activities under the Massachusetts Contingency Plan (MCP, 310 CMR 40.0000) to remove metals-impacted sediment containing jeweler's rouge from within the banks of Rouge Brook, and to cap impacted sediment in a ditch draining into Rouge Brook, to achieve a Temporary Solution, as that term is defined by the MCP. The proposed remedial activities are described in GZA's Phase IV - Remedy Implementation Plan (RIP) submitted to the Massachusetts Department of Environmental Protection (MassDEP) on July 17, 2008. The Site remediation will be conducted in accordance with all applicable MassDEP regulations and under the guidance of a Licensed Site Professional (LSP). Remedial actions will also involve the implementation of an Activity and Use Limitation (AUL)[1] to prevent unacceptable exposures to confirmed or potentially contaminated soils, and to achieve regulatory closure under the MCP.

LIMITED PROJECT FILING

The project is being filed under the Limited Project provision (310 CMR 10.53(3)(q)) of the Wetlands Protection Act Regulations, as the proposed work is the response to a release of oil and hazardous materials (OHM) as defined by the provisions of the MCP. As specified in this provision;

"A Comprehensive Remedial Action Alternative that is selected in accordance with the provisions of 310 CMR 40.0851 through 40.0869 shall be deemed to have met the requirements of 310 CMR 10.53(3)(q)1 and such projects shall be designed, constructed, implemented, operated, and maintained to avoid or, where avoidance is not practicable, to minimize impacts to resource areas, and shall meet the {7} standards to the maximum extent practicable."

The proposed project comprises the implementation of Comprehensive Remedial Action (CRA) activities to achieve, at a minimum, a Class C-1 Response Action Outcome (RAO)

[1] An AUL is a restriction, covenant or notice concerning the use of real property which is imposed upon real property by a property owner or the department pursuant to M.G.L. c.21E, Section 2. It is intended to prevent exposure to remaining OHM.

(Temporary Solution) by reaching a level of "No Substantial Hazard," as defined by 310 CMR 40.0956(2). Pursuant to 310 CMR 40.1051(1), Class C-1 RAOs shall apply to disposal sites where, "a condition of No Substantial Hazard exists, and it is concluded that response actions to achieve a Permanent Solution are not currently feasible."

SITE OVERVIEW

The Site is located at the eastern end of the former AO waste water treatment facility (WWTF) in an undeveloped area of the property (Figure 2). The Site is an approximately 30,000-square foot area, which encompasses Rouge Brook and adjoining wetland areas, as well as an upland area located south of the former southern WWTF lagoon. The Site's coordinates are 42° 04' 22" north latitude and 72° 00' 53" west longitude. Universal Transverse Mercator (UTM) coordinates are 4,662,150 meters north, 746,926 meters east, Zone 19.

SITE HISTORY

The former AO facility operated from approximately 1870 to 2001 as a research, design and manufacturing facility for various types of lenses, eyeglasses, and other optical wear. As part of the manufacturing process, an iron oxide compound known as "jeweler's rouge" was used in the final grinding and polishing of the lenses. The lenses were then rinsed. Until the construction of the WWTF, the rinse water and spent jeweler's rouge was discharged directly into a topographic low area that intersected a small intermittent stream located along the eastern end of the AO property.

During the late 1960s, the practice of discharging untreated wastewater directly into Rouge Brook ceased when the WWTF was built to adjust the pH of the wastewater, which was then discharged into two lagoons where the solid particles would settle out of the wastewater. The water was then discharged into the brook through a system of weirs located on the northeast side of the lagoons. In 2001, AO ceased manufacturing operations; during January 2003, the WWTF was decommissioned as part of a Release Abatement Measure (RAM) performed by Rizzo Associates to address metals contamination associated with jeweler's rouge in the former settling lagoons (RTN 2-14448).

SITE CHARACTERISTICS AND JURISDICTIONAL RESOURCE AREAS

Rouge Brook is an approximately 1,200-foot long intermittent stream which originates upgradient of the former wastewater treatment lagoon areas (existing AUL area as depicted on Figure 2). The first approximately 400-feet of a tributary of this stream was man-made to accept untreated wastewater that was discharged directly into Rouge Brook (hereafter referred to as the Northern Reach Area). This portion of the stream runs eastward along the northern edge of the lagoon, and then meets a natural north-south flowing stream (hereafter referred to as Rouge Brook) that flows approximately 800-feet along the eastern edge of the lagoon area and ultimately discharges into the Quinebaug River. The section of the stream which is adjacent to the former treatment lagoons appears to have been channelized by filling along banks proximal to the former lagoons, and by excavation from the opposite banks. See Figure 2 for the locations of the Northern Reach Area and Rouge Brook.

The stream channel flows through a mixed herbaceous marsh and wooded swamp as it drains southward from the former lagoon area to its junction with the Quinebaug River. The channel through the wetland is more natural in form compared to the reach adjacent to the former lagoons. The Site also includes upland areas along the northern and eastern bank of the brook, and in the area between the former lagoons and the Quinebaug River. These upland areas are wooded with moderate to dense understory growth.

Rouge Brook has associated Bordering Vegetated Wetland (BVW) which becomes wider and delta-like closer to the confluence of Rouge Brook and the Quinebaug River. The Quinebaug has associated BVW to the east and west of Rouge Brook.

The intermittent stream has an Inland Bank associated with it, which is distinct except in the last 230-feet of Rouge Brook prior to its confluence with the Quinebaug, in the area of the delta-like emergent wetland. The Top of Bank (TOB) for the man-made portion of the stream, Rouge Brook, the Quinebaug River, and associated BVWs were delineated by a GZA Wetland Scientist in August 2008. The Quinebaug River has an associated 200-foot Riverfront Area (RA), as described in the accompanying Riverfront Alternatives Analysis. A portion of the Site is within a FEMA floodplain Zone A and does not have established Baseline Flood Elevations (BFE's).

According to the on-line MassDEP Priority Resource (21E) Map, no Zone II Wellhead Protection Areas, Interim Wellhead Protection Areas, or Potentially Productive Aquifers are located within 500-feet of the Site. There are no other mapped surface water bodies, certified vernal pools, streams, lakes, or rivers within 500-feet of the Site. There are no mapped Areas of Critical Environmental Concern (ACEC) or Sole Source Aquifers.

PROJECT SUMMARY

Based on the Phase II – Comprehensive Site Assessment (CSA) and Phase III – Identification, Evaluation, and Selection of CRA Alternative report submitted to the MassDEP on October 26, 2006, a measurable thickness of jeweler's rouge is present in Site sediments and banks over an area of approximately 28,750-square feet. Pursuant to 310 CMR 40.0995(3)(b)(1)(c), a condition of "readily apparent harm [RAH]" exists when there is "visible presence of oil, tar, or other non-aqueous phase hazardous material in soil within three feet of the ground surface over an area equal to or greater than two acres, or over an area equal to or greater than 1,000-square feet in sediment within 1-foot of the sediment surface."

The objectives of the remedial activities are to cover metals-impacted sediments over approximately 400-linear feet of wetland area, to remove elevated levels of metals-impacted sediments from within the banks of approximately 800-linear feet of Rouge Brook, and ultimately to obtain regulatory closure under the MCP.

Prior to beginning remedial activities at the Site, a staging area will be established in the cleared area located to the southwest of the former lagoons associated with the former waste-water treatment plant. This area, accessible by a paved road leading from the developed and operating portions of the former AO property, will be used to on- and

off-load equipment, to stockpile clean fill materials from off-Site that will be used to replicate areas disturbed by remedial activities, and to stockpile and treat metals-impacted sediments removed from Rouge Brook.

NORTHERN REACH AREA

The following tasks are proposed for managing the metals-impacted sediments in the Northern Reach Area (see Figure 3).

1. A temporary check dam will be placed at the eastern end of the approximately 400-linear foot Northern Reach Area (adjacent to the northwest side of the former WWTF), which formerly received flow from a discharge pipe from the AO facility (see Figure 2). The purpose of this check dam is to separate the Northern Reach Area from the naturally-occurring Rouge Brook to the east.
2. Water within the Northern Reach Area will be pumped over the check dam into the naturally-occurring Rouge Brook which flows southeastward into the Quinebaug River.
3. A silt curtain will be placed at the easternmost reach of the Northern Reach Area to prevent silt from migrating into Rouge Brook and impacting downstream locations.
4. Trucks and grading equipment will then enter the Northern Reach Area at its northwestern end where the former AO effluent was discharged into the topographic low area intersecting Rouge Brook.
5. The former reach will then be filled with one to three feet of an appropriate imported combination of hydric and granular soil to cap the jeweler's rouge and metals-impacted sediments in place (see Figure 5).
6. The fill material will be placed to form a grade sloping slightly from the western end of the drainage area to the eastern end near the confluence with Rouge Brook.
7. A channel will be constructed on the surface of the fill material in a meandering formation by using a combination of large and medium stones and 16-inch diameter coir logs (or similar product such as Filtrexx Edge Saver). The newly constructed channel will be less steep and will accept intermittent drainage from surrounding upland areas and direct it into Rouge Brook. A permanent stone check dam will be placed at the end of the reconstructed channel, at its intersection with Rouge Brook, to keep water from the upstream stretches of Rouge Brook from flowing back into the channel (see Figure 5).
8. The uppermost coir logs/Filtrexx Edge Saver logs will be pre-seeded with a wetlands mix so that a bordering vegetated wetland can be established adjacent to the newly constructed channel. The BVW will be seeded with a native wetland plant mix comprised of species that are appropriate for the hydroperiod that will be expected adjacent to the newly-constructed stream channel.

ROUGE BROOK

The following tasks are proposed for the excavation of metals-impacted sediments from within approximately 800-linear feet of the Rouge Brook channel (from the north corner of the former WWTF to the Quinebaug River) after the Northern Reach Area has been filled (see Figure 2).

1. A temporary access road will be established in the southeast corner of the Site. It will be lined with straw wattles for erosion control purposes. A minimal number of trees will have to be cut, but efforts will be taken to avoid cutting more than necessary. Trees over 4-inch diameter that will unavoidably be cut will be flagged on the Site prior to the commencement of work.
2. A temporary sand bag dam will be placed across Rouge Brook just downstream from the confluence of the Northern Reach Area and the brook (i.e., adjacent to the northern corner of the former treatment lagoons) (see Figure 2).
3. At a point approximately 50- to 75-feet downstream of the dam at the Northern Reach Area intersection, a temporary stone check dam will be placed across the brook to allow this stretch of stream to drain and to create a cell in which to conduct excavation work (see Figure 2).
4. Water from above the temporary dam will be diverted, through a fractionation treatment tank, to the streambed below the check dam.
5. The jeweler's rouge-impacted sediments will be excavated from within the Land Under Water Body (LUWB) (streambed) using a low-pressure excavator, and transported and stockpiled in the upland staging area for on-Site dewatering and treatment.
6. This stretch will then be filled with a combination of washed boulders; cobbles and granular material to replicate the former streambed (see Figure 3).
7. Upon the completion of excavation, replication, and planting activities (in areas where planting is appropriate), this process will be repeated in subsequent 50- to 75-foot long cells successively down stream to a location no closer than 100-feet of upstream of the confluence with the Quinebaug River. The vegetated island formed by sedimentation in the center of the stream will not be disturbed and will be the closest point of work in the stream and BVW to the Quinebaug River.
8. Any areas of stream bank in the lower reaches of Rouge Brook that may be inadvertently impacted during remediation activities will be reestablished using coir logs to reconstruct and form the banks.
9. BVW impacted during remediation activities will be reestablished and restored by backfilling it to its pre-excavation grade using a manufactured top soil mixture with at least 15% to 20% organic matter content and a mineral texture of loam or sandy loam. The loam will be comprised of approximately 50% loamy topsoil and 50% leaf compost.
10. The BVW will then be reseeded using a New England Wetland Mix or Marsh, Swamp and Bog Wetland Seed Mix.

11. The RA (Outer Riparian Zone) used for temporary access will then be restored and replanted with appropriate native wetland or upland plant species. The extensive Japanese Knotweed predominant in the area will be challenging to outcompete in a newly planted area but an effort will be made to establish native vegetation in the area. A fast-germinating New England Conservation/Wildlife Mix will be applied at a rate of 25 pounds per acre to revegetate the area of the temporary access road (see Appendix D).
12. An AUL will be implemented over the entire Site to prevent unacceptable future human exposures.

GENERAL MANAGEMENT OF REMEDIATION WASTE DURING IMPLEMENTATION

1. The excavated sediment will be placed on polyethylene sheeting, air dried and treated with drying agents, as necessary, in order to facilitate future handling.
2. A solution containing a low pH phosphoric acid will be added in small measures to the excavated sediments to stabilize the lead present in the material.
3. The treated material will be characterized for parameters likely to be required by recycling/disposal facilities.
4. The treated material will be removed from the Site to be disposed of properly at an appropriate disposal facility.

The treated waste material will be transported to an appropriate disposal facility by a licensed contractor under a Uniform Hazardous Waste Manifest. Documentation of off-Site disposal will be provided to the MassDEP in a Phase IV RIP Final Inspection Report and/or in six-month Phase IV RIP Status Reports, as appropriate.

MASSACHUSETTS ENDANGERED SPECIES ACT (MESA)

A filing with the Natural Heritage and Endangered Species Program (NHESP) under the Massachusetts Endangered Species Act (MESA) is required for the proposed work. The southeastern portion of the Site is within Priority Habitat of Rare Species and Estimated Habitat of Rare Wildlife (Figures 2 and 4). There are two species of freshwater mussels, the Creeper (*Strophitus undulates*) and the Triangle Floater (*Alasmidonta undulate*), that are associated with the Priority Habitat 1465 (PH1465) and Estimated Habitat 4 (EH4) polygon as indicated in the Massachusetts Natural Heritage Atlas (2008). A biologist will likely be hired to conduct a survey to assess whether the two species are actually present on the Site. The MESA filing was submitted to the NHESP on March 16, 2009 with the Notice of Intent to the Conservation Commission to take advantage of the streamlined review process.