

GRAVEL EXTRACTION PERMIT APPLICATION

HAROLD MACQUINN, INC. KITTREDGE PIT EXPANSION

Map 3 Lot 33

Map 3 Lot 31

LAMOINE, MAINE

September 17, 2012

Applicant :



Agent :



130 Oak Street, Suite 1
Ellsworth, ME 04605

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TOWN OF LAMOINE

GRAVEL ORDINANCE: PERMIT APPLICATION

Revised : November 11, 2010

PLEASE PROVIDE WRITTEN INFORMATION FOR ALL ITEMS LISTED. CONSULT SECTION 7C OF THE GRAVEL ORDINANCE FOR DETAILS.

Map # 3 Lot # 31 & 33 Size: 108 acres Fee: \$ 450
Date rec'd ___/___/___

1. Owner of record and current address:

Name: Harold MacQuinn, Inc. Ralph & Mary Miro
Address: P.O. Box 789, Ellsworth, ME 04605 905 Douglas Highway, Lamoine
Phone: (work) 667-4653 (office)

2. Operator (if not owner)

Name: Harold MacQuinn, Inc.
Address: P.O. Box 789, Ellsworth, ME 04605
Phone: (work) 667-4653 (office)

Please **attach a plot plan drawn to scale.** It must clearly show and label:

3. the location and boundaries of the site and the name and location of all abutting property owners including the owners across street;
4. the existing contours of the land within the boundaries and extending beyond the boundaries for 100 feet; the contours must be shown at no more than 10 foot intervals. The scale used to define the contours must be included on the plan;
5. maps clearly outlining (preferably in colors) the information required in Section 7C5 (see pages 3-4 of Gravel Ordinance) with the following legend:
 - 7.C.5.A.1 Extraction area active during previous three years
 - 7.C.5.A.II Area of intended extraction next three years
 - 7.C.5.A.III Area of existing pit fully restored
 - 7.C.5.A.IV Area where no further extraction anticipated (closed portion)
 - 7.C.5.B.I Areas restored last three years
 - 7.C.5.B.II Areas to be restored next three years
 - 7.C.5.B.III Area fully restored

For items 6-14, Please consult the Gravel Ordinance and **provide the following information on this form or attached to this form (Please indicate here where each attachment can be found, ie page numbers, section numbers, ect. and provide a short response on this form for each submission item).**

6. The location of all existing or proposed access roads and of any existing or proposed permanent or temporary structures. **Existing access roads lead from Route 184 into pit area. No access to the pit will be made off the Mill Road. No proposed structures. See C2.0**
7. Attach a description of the proposed provisions for drainage and erosion control. **Pit is internally drained. No unvegetated steep slopes exist, except for in the working areas. See Operations Statement page 70, Erosion control plan page 156 Stormwater management plan page 152. Final grading, C2.0 and C2.1**
8. What is the estimated longevity of this pit, based on the removal rate over the 12 months immediately past? **Indefinite.**
9. Provide proof of your financial ability to carry out restoration required by the Gravel Ordinance. **See letter of credit from The First in the amount of \$450,000. page 55.**
10. Attach a detailed landscaping and vegetation plan defining how you will restore the pit to as nearly a natural state as is practical by grading, filling, draining and/or planting. **See page 70 and page 129. New screening proposed. See page 72.**
11. Attach copies of your annual statements to the Code Enforcement Officer stating whether 200 cubic yards or more were removed from the pit during each yearly period from October 1 through September 30. One statement per year is required. **See page 47.**
12. At the request of the Planning Board, you may need to provide information that indicates any or all of the following: the hydrology, the physical characteristics of the site, the extent of your proposed operations, and compliance with the performance standards of Section 8 of the Gravel Ordinance. **Hydrology page 74, physical characteristics of the site page 70, extent of your proposed operations, page 70.**
13. If a washing operation is proposed, include any proposal to use ground water extraction from the site to provide for the washing, with a demonstration that the water extraction will not lower the ground water level at the boundaries of the area by more than two feet or will not lower the ground water level to the detriment of existing ground water use. **No washing operation is proposed.**
14. Attach a plan for monitoring separation of excavation limits from the average seasonally high water table. **Several test wells exists in and adjacent to the pit for monitoring groundwater separation. See Operations Statement, page 70 & Water Level Monitoring Report, page 48.**

Town of Lamoine
Pre-Application for Site Plan Review

Owner of Record	Ralph & Mary Miro Harold MacQuinn, Inc.	Address	907 Douglas Highway Lamoine, Maine
Applicant	Harold MacQuinn, Inc.	Address	P.O. Box 789 Ellsworth, Maine
Project Name	Kittridge Pit Expansion	Map & Lot	Map 3 Lot 31 & 33

On a separate page, list the names and addresses of all property owners within 500 feet of the property line and the Lamoine Tax Assessor’s map & lot numbers for said owners.

As part of this application, please submit the following information:

- The zoning classification including the shoreland zone of the property, and show the location of zoning district boundaries if the property is located in two or more zoning district or abuts a different district.
- The bearings and distances of all property lines of the property to be developed and the sources of this information.
- The location and size of any existing sewer and water systems, culverts and drains, fire hydrants or pond adjacent to the property to be developed and of any that will serve the development from abutting roads or land.
- Location, names and widths of existing roads and rights-of-way within or adjacent to the proposed development.
- The location of open drainage courses, wetlands, stonewalls, graveyards, fences, stands of trees and other important or unique natural areas and site features, including but not limited to, floodplains, deer wintering areas, significant wildlife habitats, scenic areas, habitat for rare and endangered plants and animals, unique natural communities and natural areas, sand and gravel aquifers, and historic and/or archaeological resources, together with a description of such features.

Also include the following information as part of this pre-application

- A description of all proposed uses of the development including specific uses of all structures to be built, converted or expanded
- The location and dimensions of all proposed buildings and structures
- All existing and proposed setback dimensions
- If a subsurface sewage disposal system is proposed, an on-site soils investigation report by a Maine Department of Human Services licensed site evaluator. This report shall identify the classification of soils, location of all test pits and proposed system location.
- The type of water supply to be used
- The type, size and location of all waste disposal or incineration devices.

(continued on back)

Signature Section

By signing this, I maintain that the information provided to the Lamoine Planning Board is true and accurate to the best of my knowledge. I understand this is a pre-application and will be informally discussed at a Lamoine Planning Board meeting and it is a public document.



Signature

AGENT

Title

SEPT 17, 2012

Date

STEPHEN R. SALSURY

Printed Name

For Planning Board Use Only

Date Received	
Date Considered at Public Meeting	
Anticipated Date of Final Submission & Hearing	
Date Reviewed by CEO	

Signature of Planning Board Chair

Date

Other Notations

Town of Lamoine
Application for Site Plan Review

Owners of Record	<i>Harold MacQuinn, Inc.</i>	Address	<i>P.O. Box 789 Ellsworth, ME 04605</i>
	<i>Ralph & Mary Miro</i>		<i>Lamoine, Maine</i>
Applicant	<i>Harold MacQuinn, Inc.</i>	Address	<i>P.O. Box 789 Ellsworth, ME 04605</i>
Project Name	<i>Kittredge Pit Expansion</i>	Map/Lot	<i>Map 3/Lot 31 Map 3/Lot 33</i>
Surveyor/Architect/ Engineer's Name	<i>Herrick & Salsbury, Inc.</i>	Reg. Number	<i>PLS 2207</i>

In accordance with the Site Plan Review Ordinance, please submit the following information as part of this application.

1. A fully executed and signed original and seven copies of the application for site plan review.
2. The site plan (drawings) shall consist of one or more reproducible, stable base transparent originals at a scale of not less than 1" = 50' to be filed at the town office. Space shall be provided on the development plan for the signatures of the board and date. *NOTE : Plans to be submitted at 1"=100'. 50 scale plans would require 6 sheets.*
3. A copy of the deed to the property, option to purchase the property or other documentation to demonstrate right, title or interest in the property on the part of the applicant and status of property tax payment.

-See Deed: Page 22, Purchase and sale agreement Page 29

Ad hoc section. This section is not part of the official application made available to applicants, but reflects the information requirements in Section I

3A Name and address of owner of record

Map 3, Lot 31 : Harold MacQuinn, Inc., P.O. Box 789, Ellsworth, ME 04605

Map 3, Lot 33 : Record owner (registry of deeds) Ralph & Mary Miro, 907 Douglas Highway, Lamoine, Maine 04605

Map 3, Lot 8 : Owner for purposes of application : Harold MacQuinn, Inc., P.O. Box 789, Ellsworth, Maine by virtue of purchase and sale agreement, Page 29.

3B The name of the proposed development : Kittridge Pit Expansion

3C Names and addresses of all owners of property within 500 feet : See page 17

3D Assessor's map and lot number : Tax Map 3, Lots 31 and 33 page 19

3E Copy of deed to the property, option to purchase or other documentation : See page 22 for deeds, Page 29 for purchase and sale, page 209 for property tax receipt.

3F Name and registration of professionals :

Land surveyor : Stephen R. Salisbury, PLS2207

Professional engineer : Mike Walsh, PE8485

Certified Geologist : Mike Deyling GE270, Stephen Marcotte, GE539

Soils scientist, Aleita "Lee" Burman, SS430

4. Existing Conditions

- a. Zoning classification(s) (including shoreland) of the property and the location of zoning district boundaries if the property is located in two or more zoning districts or abuts a different district;

Zone: Rural & Agricultural

- b. The bearings and distances of all property lines of the property to be developed and the source of this information;

-See Site Plan C1.0, C2.0 and C2.1

-See Deed Description (Source of Information): Page 22

- c. Location and size of any existing sewer and water systems, culverts and drains, fire hydrants or pond, adjacent to property to be developed and of any that will serve the development from abutting roads or land;

One 15" culvert along Douglas Highway at paved entrance to pit.

- d. Location, names and widths of existing roads and rights-of-way within or adjacent to the proposed development;

Existing Roads Adjacent to Property: Douglas Highway (66' Right of Way) / Un-named road from Mill Road (Court affirmed right of way)

-See Site Plan for Road Locations

- e. The location of open drainage courses, wetlands, stonewalls, graveyards, fences, stands of trees, and other important or unique natural areas and site features, including but not limited to, floodplains, deer wintering areas, significant wildlife habitats, scenic areas, habitat for rare and endangered plants and animals, unique natural communities and natural areas, sand and gravel aquifers, and historic and/or archaeological resources, together with a description of such features.

None of the above were found on site except aquifer.

-See Agency Letters (wildlife/plants/historic features): Page 40

-See Floodplain Map: Page 21

-For Aquifer Information; see Hydrogeological Report:Section 37

-See wetlands report, page 171.

- f. The location, dimensions and ground floor elevation of all existing buildings on the site.

No existing buildings on site.

- g. Topographical contours and the direction of existing surface water drainage across the site; and

-See Site Plan C1.0 for existing contours.

- h. If any portion of the property is in the 100-year floodplain, its elevation shall be delineated on the plan or provide a FEMA floodplain map.

Site not in 100-year floodplain.

-See Floodplain Map: Page 21

5. Proposed Development Activity

- a. Descriptions of all proposed uses of the development including specific uses of all structure to be built, converted or expanded.

Development Activity: Primary uses will include gravel extraction and the storage of sand, loam and gravel after the site is cleared and contoured as shown on the site plan. The finished grade elevation of the pit floor will be 30' (NGVD datum). See C2.0 and C2.1

- b. The location and dimensions of all proposed buildings and structures.

None

- c. The size, location, direction, and intensity of illumination of all outdoor lighting.

None

- d. All existing and proposed setback dimensions.

Proposed 50' setback line along northerly and southerly boundaries.

boundaries. Proposed 150' setback from the centerline of Douglas Highway.

10' setback line along a section of the northerly boundary (waiver).

-See Site Plan C2.0 & C2.1

-See Setback Waiver: Page 68

- e. Proposed landscaping and/or buffering.

Proposed berm and plantings in proposed buffer areas described on page 72 under "screening". Proposed screening shown on C2.0

-See Site Plan E1.0 for proposed restoration from 2013-2015.

-See Reclamation Plan: Page 129

-See Landscaping/Revegetation Plan: Page 70 and Page 129

- f. When subsurface sewage disposal is proposed, an on-site soils investigation report by a Maine Department of Human Services licensed site evaluator. The report shall identify the classification of soils, location of all test pits, and proposed location.

None Proposed

- g. The type of water supply to be used.

None Proposed

- h. The type, size, and location of all waste disposal or incineration devices.

None Proposed

- i. The type, size and location of all machinery or equipment likely to generate appreciable noise at the lot lines.

Noise Levels will not be exceeded as outlined in Section 8, subsection H of the Gravel Ordinance, Town of Lamoine.

-See Operations Statement, "Noise": Page 71

- j. The amount and type of any raw, finished or waste materials to be stored outside of roofed buildings, including their physical and chemical properties, if appropriate.

Screened or crushed aggregate and topsoil to be stored from time to time on site.

- k. A schedule of construction including anticipated beginning and completion dates.

Anticipated Begin Date: Operating under current permit.

End Date: Indefinite

- l. A description of how special features identified in subsection 4.e. will be maintained or impacts upon them minimized.

The gravel pit will not impact any special features.

-See Agency Letters (wildlife/plants/historic features): Page 40

-See Floodplain Map: Page 21

-For Aquifer Information: See Hydrogeological Report:Section 37

- m. The existing and proposed method of handling storm water run-offs.

Kittridge Pit will be internally drained.

-See Drainage Statement: Page 70

6. Additional Information. The planning board may require the following when it finds that the information required in Sections I.3 to I.5 is not sufficient, to determine that the standards in Section J. can be met.
 - a. A high intensity soils report prepared by a soil scientist certified in the State of Maine.
 - b. A storm water management and erosion control plan showing:
 - i) The direction of flow of the run-off through the use of arrows.
 - ii) The location, elevation, and size of all catch basins, dry wells, drainage ditches, swales, retention basins, and storm sewers.
 - iii) Engineering calculations used to determine drainage requirements based upon the 25-year 24-hour storm frequency, if the project will significantly alter the existing drainage pattern due to such factors as the amount of new impervious surfaces (such as paving and building area) being proposed.
 - c. A hydrogeologic assessment prepared by a ground water hydrologist/geologist for projects involving common on-site water supply or on-site sewage disposal of 2,000 or more gallons per day.
 - d. A utility plan showing, in addition to provisions for water supply and waste water disposal, the location and nature of electrical, telephone and any other utility services to be installed on the site.
 - e. A landscaping plan.
 - f. The location, width, typical cross-section, grades and profiles of all proposed roads and sidewalks.
 - g. Cost of the proposed development and evidence of financial capacity to complete it. This evidence should be in the form of a letter from a bank or other source of financing indicating the name of the project, amount of financing proposed, and interest in financing the project.
 - h. An estimate of the number of trips per day associated with the proposed development.
7. The appropriate fee must accompany this application.

This application must be submitted to the Lamoine Planning Board, 606 Douglas Highway, Lamoine, ME 04605 at least 10-days before the Board is to consider it at a regularly scheduled meeting.



HAROLD MacQUINN, INC
P.O. BOX 789 • ELLSWORTH, ME 04605

HANCOCK PLANT
TEL (207) 667-4653
FAX (207) 667-3737

HULLS COVE PLANT
TEL (207) 288-5021
FAX (207) 288-3808

September 10, 2012

Town Of Lamoine
606 Douglas Highway
Lamoine, ME 04605

Maine Department Of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017

Re : Gravel Pit Expansion

To Whom It May Concern :

Please be advised that I hereby authorize the following persons to act on our behalf as agent on all permitting and environmental issues related to the property owned by or under contract to purchase by Harold MacQuinn, Inc. located on the Douglas Highway in Lamoine, Maine which we refer to as the Kitteridge Pit.

Edmond Bearor, Esq.
Rudman & Winchell LLC
P.O. Box 1401
Bangor, ME 04101

Stephen R. Salsbury
Herrick & Salsbury, Inc.
P.O. Box 652
Ellsworth, ME 04605

Michael J. Walsh, PE
Michael Deyling, CG
Summit Environmental Consultants, Inc.
640 Main Street
Lewiston, ME 04240

Sincerely,

R. Paul MacQuinn, President
Harold MacQuinn, Inc.

NO JOB TOO LARGE OR TOO SMALL
CRUSHED STONE • SITEWORK • UNDERGROUND UTILITIES
PAVING • CONCRETE FOUNDATIONS • MASONRY • SEPTIC SYSTEMS

**KITTRIDGE GRAVEL PIT
PERMITTING HISTORY**

September 17, 2012

To : Lamoine Planning Board

From : Stephen R. Salsbury, agent for Harold MacQuinn, Inc.

January 6, 1997

According to the planning board minutes, the original Kittridge pit permit was approved, Map 3 Lot 33. Original excavation was going to take place on the east side of the property by blueberry field. At the request of the planning board, proposed extraction was later moved to the front of the lot near the highway. Conditions included that the applicant would provide a color coded map and landscaping/restoration plan.

December 6, 1999

Second Kittridge pit permit approved. Map 3 Lot 33. No conditions.

December 3, 2002

Third Kittridge pit permit approved. Map 3 Lot 33. Standard conditions for access, restoration and well monitoring.

December 1, 2003

DEP permit for 30 acres of excavation within the Kittridge Pit issued. A performance bond was posted in the amount of \$72,000.

July 6, 2004-October 27, 2004

From the planning board minutes, the gravel extraction permit approval for Miro/Kittridge lot was granted on July 6, 2004, Map [7] 3 Lot 31. Standard conditions for access, restoration and well monitoring.

Town records are fragmented regarding the site plan review application and approval. Herrick & Salsbury, Inc. was not involved in the permit application except for providing Harold MacQuinn, Inc. a black and white base map.

The facts on record:

- \$1,400 fee paid to Town of Lamoine for site plan review. See notation on checklist.
- Email from Michael Garrett to Stu Marckoon dated June 2, 2004 indicating planning board position that the **whole pit** (emphasis) is subject to planning board site plan review. The minutes to the meeting indicate that the board felt that the **entire** (emphasis) project falls within the scope of the site plan review.
- Email from Attorney Anthony Beardsley to Stu Marckoon dated July 6, 2004 with a determination that the town cannot charge for the existing MacQuinn pit, but could charge for the expansion area.

KITTRIDGE PIT
September 17, 2012
Page 2

- August 3, 2004, according to the planning board minutes, the planning board determined that the permit fee applies only to the parts designated for expansion (per town attorney). Application voted complete with conditions.
- August 31, 2004 Gravel extraction permit completeness review (from the minutes on record). Application voted complete with condition.
- October 27, 2004 Public hearing for site plan review. According to the minutes, the Planning board reviewed the performance criteria for site plan review. Board initially found in favor in all but criteria #10, groundwater protection. Board consensus that site plan permit, once granted, good for life of project. Water quality and quantity can be considered during annual inspections and at three year gravel extraction renewal. Voted 4-1 to approve site plan permit, no conditions.

Commentary:

No record found approving gravel extraction permit for Map 3 Lot 33.

Planning board did site plan review all acreage (30 acres for Miro lot and 35 acres for Kittridge lot). Site plan review is a one time permit for the life of the project.

May 31, 2005

DEP Notice of intent to comply (NOI) submitted to DEP for Miro Lot. The NOI is for extraction activities/open gravel pit between 5 to 10 acres.

May 6, 2008

Kittridge/Miro gravel extraction permit approved. Map 3 Lots 31 & 33. First Herrick & Salsbury application to planning board. No conditions. Expiration date to be September 30, 2010. Routine renewal. No discussion in minutes. No issues raised at meetings or site visit by my notes.

August 17, 2010 – January 4, 2011

Application for Kittridge Pit renewal submitted to the Town of Lamoine Planning Board. 5 meetings plus 1 meeting for a site visit were held by the Planning Board. There were discussions about the scope of the project and the 2004 site plan approval. Per the November 9, 2010 planning board minutes, :

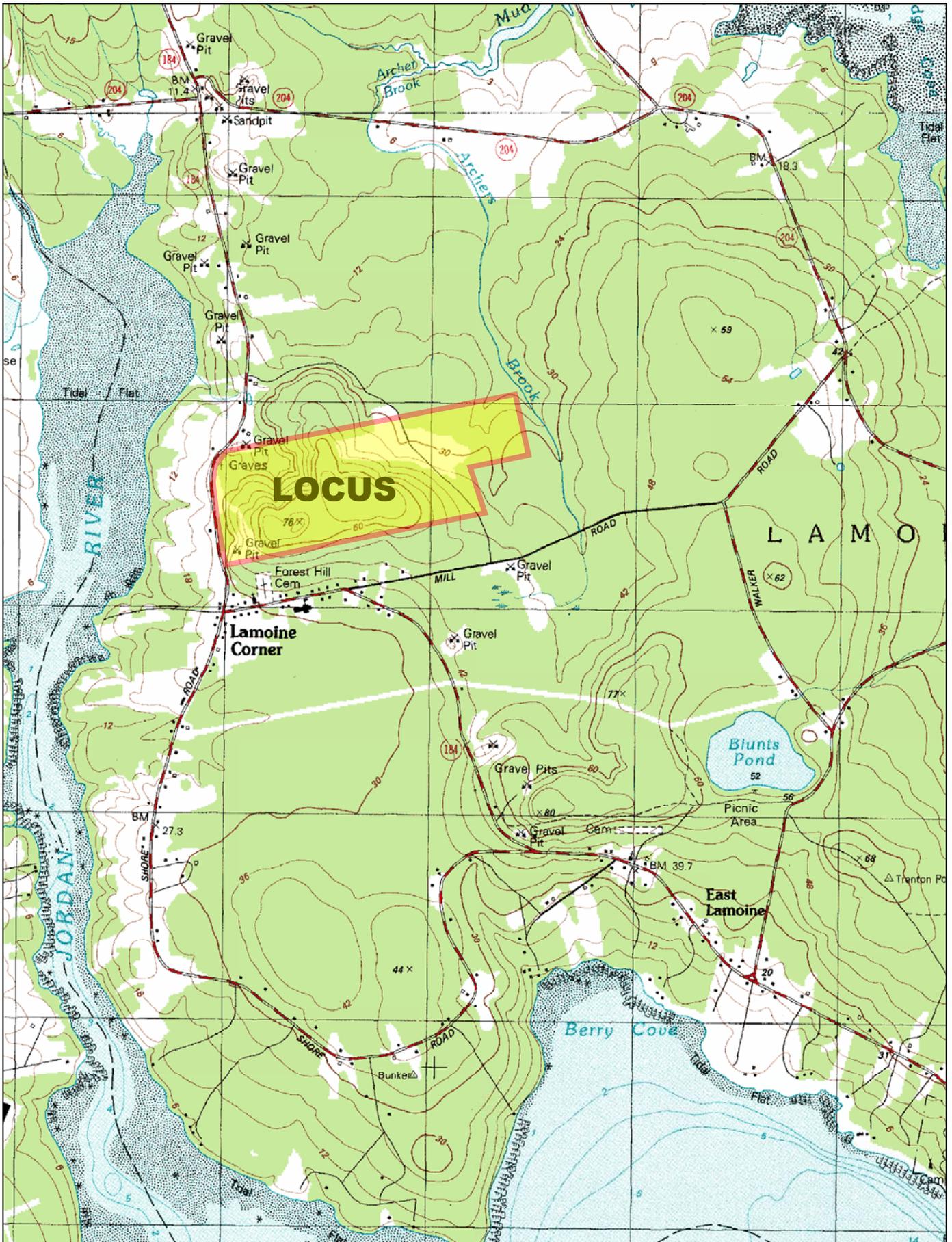
“A review of the historical record indicates the Lamoine Planning Board issued a Site Plan Review permit to H. MacQuinn & Sons for these lots by a 4 – 1 vote on October 27, 2004. J. Holt opined that, since the permit application lists only Lot 31, Lot 33 was not included and, therefore, should be subjected to Site Plan Review.

On May 6, 2008, the Board approved, as a routine renewal, a gravel extraction permit for both lots, considered as one. There was no discussion of a need for Site Plan Review of either lot at the time.

The two presently sitting Planning Board members (G. Donaldson & M. Garrett) on the Board in 2004 attempted to “reconstruct” the events of the Site Plan Review and Gravel Ordinance applications of 2004. Both agreed the Planning Board “encouraged” these lots be considered as one to facilitate deliberations both at that time and in future. Both agree a Site Plan Review was conducted for both lots being considered as one in 2004.

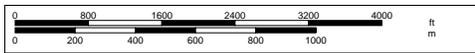
The absence of a Site Plan Review for Lot 33 in Town files is a confusing oversight. A copy of these minutes in the file should alleviate the confusion.”

Conditions of the final approval included showing 10’ buffers and repairs to the fueling pad. The current permit was granted in January 2011.



© 2001 DeLorme. XMap®. Data copyright of content owner.
 Zoom Level: 13-3 Datum: NAD27

Scale 1 : 25 000
 1" = 2083.3'

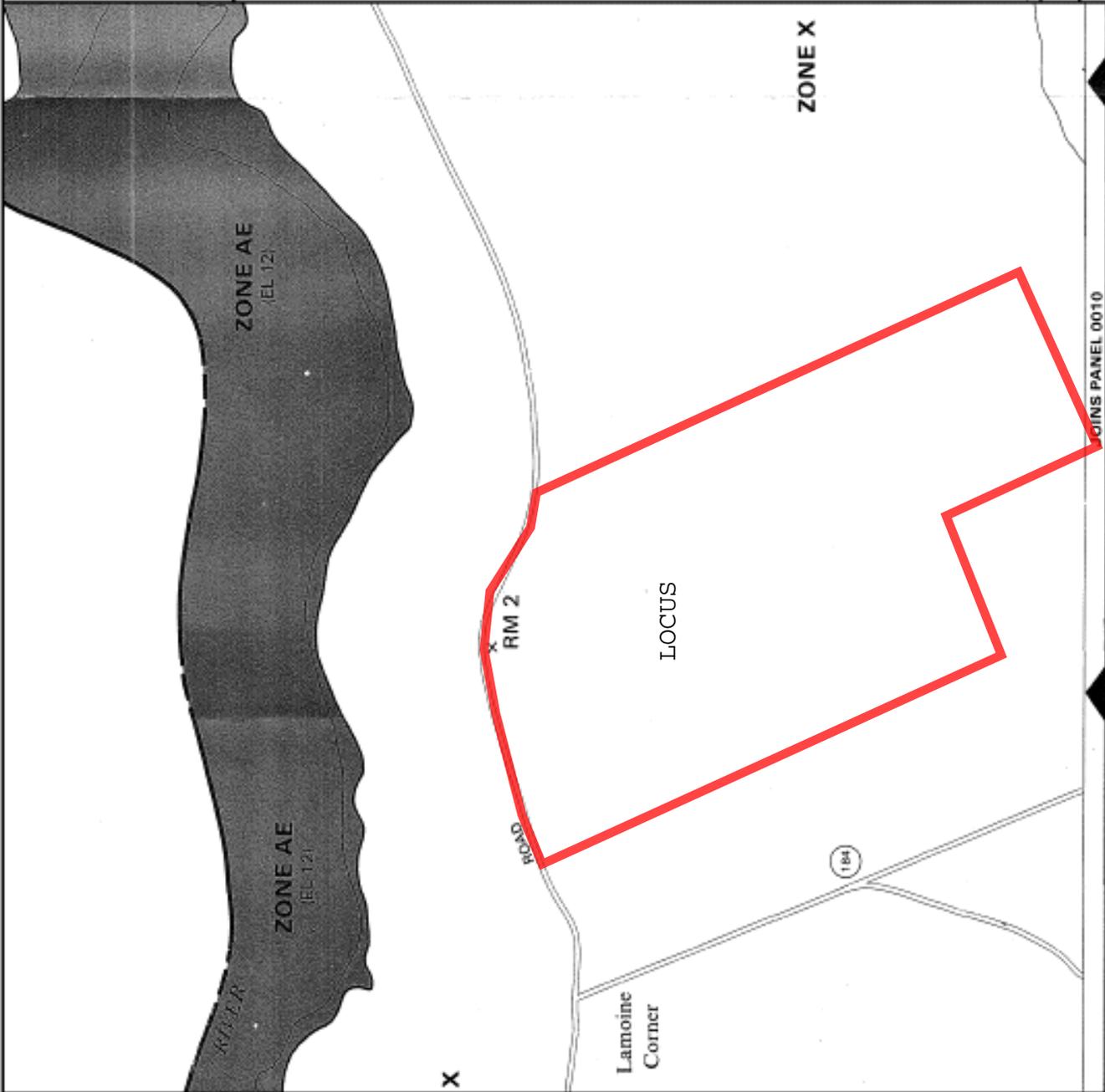


Abutter List Kittridge Pit Map 3 Lot 31 & 33

Within 500' Of Property

OWNER	ADDRESS	MAP/LOT
John L. Holt	3650 Ridge Rd. Otis OR 97368	3 30
Ralph A Miro	907 Douglas Hwy. Lamoine ME 04605	3 31
Harold MacQuinn, Inc	PO Box 789 Ellsworth ME 04605	3 33
Glenn M. Manring	838 Douglas Hwy Lamoine ME 04605	3 35
Maurice E Googins Jr	390 Douglas Hwy. Lamoine ME 04605	3 35-1
Cold Spring Water Co. c/o John S. Holt	23 Lamoine Beach Rd. Lamoine ME 04605	3 48
Christopher R. Luck	35 Woods Rd. Somesville ME 04660	4 17
George Smith	819 Douglas Highway Lamoine ME 04605	3 37
Ames Family Trust	PO Box 64142 St. Paul MN 55164	3 40-1
Paul K. McArdle	5528 Spring Meadow Dr. Dallas TX 75229	3 40-2
Paul K. McArdle	5528 Spring Meadow Dr. Dallas TX 75229	3 40-3
David H. Hodgkins	18 Woodard Rd. Walpole MA 02081	3 11
Douglas C Jones	86 Mill Road Lamoine ME 04605	3 10-6
Dianna M. Donahue	78 Mill Rd. Lamoine ME 04605	3 10-5
Ronald A. Madore	38 Mill Road Lamoine ME 04605	3 10-7
Robin Veysey	54 Mill Road Lamoine ME 04605	3 10-2
William C. Walker	30 Mill Rd. Lamoine ME 04605	3 10-8
Paul A Cirard	64 Mill Road Lamoine ME 04605	3 10-3
Leon Clark	48 Mill Road Lamoine ME 04605	3 10-1
Bruce A Gott	70 Mill Road Lamoine ME 04605	3 10-4
Charles R. Graham	22 Mill Rd. Lamoine ME 04605	3 10

OWNER	ADDRESS	MAP/LOT
Patricia M Haugh	955 Douglas Highway Lamoine ME 04605	3 28
Jeffrey R. Dow	23 Birch Ave Ellsworth ME 04605	3 29
Anthony W. Miro	190 Old Tamiami Trail Naples FL 34110	3 32-6
Gloria E. Miro	683 Clarks Woods Rd. Lynam ME 04002	3 32-3
Gloria E. Miro	683 Clarks Woods Rd. Lynam ME 04002	3 32-4
Ralph A. Miro	270 Westbrook Rd. Deep River CT 06417	3 32-5
William V. Miro	31 Old Blue Point Rd Scarborough ME 04074	3 32-7
Ralph A. Miro	907 Douglas Highway Lamoine ME 04605	3 32
Joseph Schultz	5 Watson Rd. Dover NH 03820	3 32-1
Gioia B. Schultz	5 Watson Rd. Dover NH 03820	3 32-2
John A. Baranello	857 Douglas Highway Lamoine ME 04605	3 34
Charles N. Holt	6007 Watertown Dr. San Antonio TX 78249	3 36
Kristin R. Lamont	950 Douglas Hwy. Lamoine ME 04605	15 3 15 4-1
David H. Hodgkins	18 Woodard Road Walpole MA 02081	15 4
Lamoine Baptist Church	14 Lamoine Beach Road Lamoine ME 04605	15 5 15 7
Forest Hill Cemetery Corp		15 8
Carl Crowley	44 Lamoine Beach Rd Lamoine ME 04605	15 9
Royden R Allen	52 Lamoine Beach Road Lamoine ME 04605	15 11
Kingfisher Prop LLC	69 Lamoine Beach Rd. Lamoine ME 04605	15 15
Peter R Mayo	PO Box 664 Mt. Desert ME 04660	15 19
Arnold M. James	14 Mill Road Lamoine ME 04605	15 20



NATIONAL FLOOD INSURANCE PROGRAM

FIRM FLOOD INSURANCE RATE MAP

TOWN OF LAMOINE, MAINE
HANCOCK COUNTY

PANEL 5 OF 10
(SEE MAP INDEX FOR PANELS NOT PRINTED)

PANEL LOCATION

COMMUNITY-PANEL NUMBER
230285 0005 A

EFFECTIVE DATE:
MAY 2, 1991

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-36111 CH-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program Flood maps, check the FEMA Flood Map Store at www.msc.fema.gov

— "Kittredge Pit/Land"

3 lots = ~~100+ Acres~~

69.0+ - Acres

9-15-95

13384

BK 2436 PG 164

QUITCLAIM DEED WITH COVENANT

KNOW ALL BY THESE PRESENTS That I, LEE A. BENNETT, of Hampden, County of Penobscot, State of Maine, for consideration paid, grant to HAROLD MacQUINN, INC., a Maine corporation, with a place of business in Hancock, County of Hancock, State of Maine, with QUITCLAIM COVENANT, the real estate in Lamoine, County of Hancock, State of Maine, more particularly described as follows:

Three certain lots or parcels of land situated in Lamoine, County of Hancock, State of Maine, bounded and described as follows, to wit:

FIRST LOT: A certain lot or parcel of land situated in Lamoine, County of Hancock, State of Maine, bounded and described as follows, to wit: Bounded Northerly and Easterly by the Nelson Young lot and Nathan King land; Southerly by land of Charles M. Kittredge, formerly of Joel Young; Westerly by land of Charles M. Kittredge, formerly of William H. Bragdon. Containing thirty-five acres more or less, being the North East part of the homestead of Elkanah Young, commonly known as the Judson G. Archer mill lot. Being also same premises conveyed to John F. Whitcomb et als. by Ira B. Hagan, Jr., by deed dated October 27, 1906, and recorded in Hancock County Maine Registry of Deeds in Book 433, Page 454.

Being all and the same premises described as conveyed in the deed from Whitcomb Haynes & Whitney to Charles M. Kittredge, dated April 13, 1926, recorded in Book 601, Page 236 of the Hancock County, Maine, Registry of Deeds.

SECOND LOT: A certain lot or parcel of land, situated in Lamoine, County of Hancock, State of Maine, and bounded and described as follows, to wit: Bounded on the north by land of Edward Gilpatrick; on the east by land of Whitcomb Haynes & Whitney; on the south by land of Charles M. Kittredge, and on the west by land of Henry Crane, containing fifteen acres more or less.

Being all and the same premises described as conveyed in the deed from A. C. Hagerthy to Charles M. Kittredge, dated April 13, 1926, recorded in Book 602, Page 121 of the Hancock County, Maine, Registry of Deeds.

THIRD LOT: A certain lot or parcel of land situated in Lamoine, County of Hancock, State of Maine, and bounded and described as follows, to wit: Beginning at the northwest corner of the lot herein described and the southwest corner of a lot of Lewis and Eben H. King; thence south eighty five and one-quarter degrees East but following the south line of said Lewis and Eben H. King's lot and a lot formerly of Edmund Hodgkins three hundred rods more or less to the head line of the lot and land of George E. and William R. King; thence south four and one-quarter degrees west following the west line of land of George E. King and William R. King twenty one rods more or less to the southeast corner of the lot herein conveyed; thence south eighty five and one quarter degrees west and following the north line of a lot of Heman Cousins three hundred rods more or less to the southwest corner of the lot herein conveyed; thence north four and one half degrees east and following the land of said Heman Cousins twenty one rods more or less to the place of beginning, and containing fifty acres more or less, being the same premises conveyed to the said David D. Hodgkins by William Fennelly, Deputy Sheriff, and recorded in Hancock S. S. Registry of Deeds, Volume 258, Page 221.

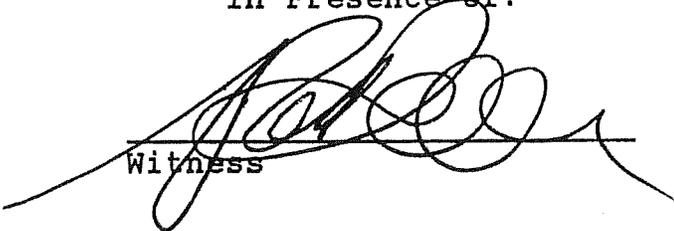
Being all and the same premises described as conveyed in the deed from David D. Hodgkins to Millard Kittredge, he being the same person as Charles M. Kittredge, dated March 1, 1909, recorded in Book 460, Page 250 of said Hancock County, Maine, Registry of Deeds."

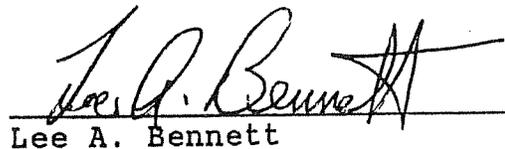
Together with the prescriptive easements set forth in Judgment and Decree of the Hancock County Superior Court, dated September 25, 1992, in the matter of the Estate of Russell M. Kittredge et al vs. Jordan River Farms of Lamoine, Inc., et al, Docket No. CV-89-63.

Being the same premises described in deed of Florence D. Kittredge to the Grantor herein of even date to be recorded.

WITNESS my hand and seal this 15th day of September, 1995.

Signed, Sealed and Delivered
in Presence of:


Witness

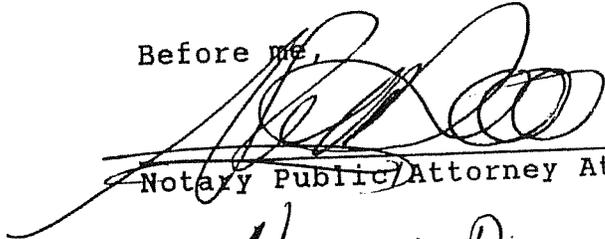

Lee A. Bennett

September 15, 1995

PENOBSCOT, ss.

Then personally appeared the above named Lee A. Bennett and acknowledged the foregoing instrument to be his free act and deed.

Before me,



Notary Public/Attorney At Law

NATHAN DUVETT
(print or type name)

NST: Nathan Duvett III

VI\F\BEN-MACW\9-95\jh

95 SEP 15 PM 1:50

REGISTER OF DEEDS
HANCOCK COUNTY SS.
Marilyn Peterson

REGISTER

8070

BOOK 1131 PAGE 625

KNOW ALL MEN BY THESE PRESENTS

That We, GIFFORD A. COCHRAN, of Palm Beach, Palm Beach County, Florida, and DOROTHY FLETCHER COCHRAN, of Oviedo, Seminole County, Florida, in consideration of one dollar and other valuable considerations, paid by RALPH A. MIRO and MARY T. MIRO, husband and wife, whose mailing address is 2030 Bridgeport Avenue, Trumbull, Connecticut, the receipt whereof we do hereby acknowledge, do hereby give, grant, bargain, sell and convey unto the said Ralph A. Miro and Mary T. Miro, as joint tenants and not as tenants in common, and their heirs and assigns, and the survivor of them, and the heirs and assigns of the survivor of them, forever, certain lots or parcels of land, together with all buildings thereon, situated in Lamoine, Hancock County, Maine, and bounded and described as follows:

FIRST: A certain lot or parcel of land, with all the buildings thereon, situated in Lamoine, County of Hancock, State of Maine, bounded and described as follows:

Beginning at the easterly shore of Jordan's River in the northerly line of the property herein conveyed and in the southerly line of land conveyed by Fred L. Mason, Administrator of the Estate of Edward F. Gilpatrick, to Maurice E. Googins and Effie M. Googins by deed dated March 9, 1934, and recorded in Hancock County, Maine, Registry of Deeds in Book 643, Page 285; thence following a fence and land of said Googins S. 77° 59' E. 50 feet, more or less, to an iron pipe driven in the ground; thence continuing along said fence and land of said Googins S. 77° 59' E. 1209.7 feet to a cedar post set in the ground; thence S. 77° 59' E. along land of said Googins 99.8 feet to a point on the northwesterly side of the traveled way of Route #184 leading from Ellsworth to Lamoine Village; thence S. 61° 13' W. 314.1 feet to a point; thence S. 43° 35' W. 252.6 feet to a point; thence S. 26° 40' W. 270.2 feet to a point; thence S. 13° 44' W. ~~730.5 feet to a point on the westerly side of~~ said traveled way which bears N. 77° 37' E. and is 81.50 feet distant from the southeast corner of the main house on the property herein conveyed, said point also bearing S. 74° 20' E. and is 71.85 feet distant from the northeast corner of said main house; thence S. 13° 30' W. 358.7 feet to a point; thence S. 8° 55' W. 266.2 feet to a point in the southerly

BOOK 1131 PAGE 626

line of the property herein conveyed (the preceding 7 points are located 4 feet, more or less, westerly of the paved surface of said Route #184); thence N. 79° 51' W. 22.0 feet to an iron pipe driven in the ground on said southerly line; thence continuing same course, N. 79° 51' W., 1318.4 feet to an iron pipe driven in the ground at the top of the bank; thence N. 79° 51' W. 30 feet, more or less, to the easterly shore of Jordan's River; thence northerly following the shore of said Jordan's River to the place of beginning, containing 61 acres, more or less. Together with all our right, title and interest in and to the tidal flats lying westerly of the above described property in accordance with the laws of the State of Maine. Excepting and reserving, however, and not conveying, that part of the above mentioned highway which lies within the above described bounds.

The above described bearings are magnetic as of December 1954, according to a survey made by C. D. Shea, Land Surveyor, in December 1954.

There is excepted from the above described premises the portion thereof conveyed by the Grantors to Clyde Lewis, et al, by deed dated June 20, 1967 and recorded with Hancock County Registry of Deeds in Book 1039, Page 351.

The Grantors acquired title to the premises herein described as FIRST by deed from Henry E. Crane, et al, to the Grantors, dated January 4, 1955 and recorded with said Deeds in Book 764, Page 458.

SECOND: Four certain lots or parcels of land situated in said Lamcoine and bounded and described as follows:

FIRST LOT: Commencing on the north line of land formerly owned by Nathan Hodgkins at the shore; thence following said line easterly three hundred and twenty rods to a stake or stones; thence at right angles northerly seven rods; thence at right angles westerly three hundred and twenty rods to the shore; thence southerly by the shore to the first mentioned bound; containing fourteen acres, more or less.

SECOND LOT: Commencing on Shepard Cousins north line at the shore; thence easterly on said line three hundred and twenty rods; thence northerly at right angles ~~twelve and one-half rods; thence at right angles~~ westerly three hundred and twenty rods to the shore; thence following the shore southerly to the first mentioned bound, containing twenty-five acres, more or less.

THIRD LOT: Commencing at the southern end of the front door of the main house owned by Heman Cousins and conveyed by him to Orvando Cousins and Wesley H. Cousins by deed dated August 14, 1879, and recorded

BOOK 1131 PAGE 627

in Hancock Registry of Deeds, Vol. 246, Page 473; thence southerly with the line of the house fifty feet; thence at right angles westerly thirty-two feet; thence at right angles northerly thirty-five feet to the southwest corner of the main house; thence at right angles easterly to the southwest corner of the southeast room in the main house; thence at right angles northerly to the northwest corner of said room; thence at right angles easterly to the first mentioned bound, containing one thousand three hundred and forty-five feet with the right of way from the town road to said land.

FOURTH LOT: Commencing on the shore on the southwest corner of land formerly owned by Adelbert W. Langley; thence easterly seventy-five rods to the old town road; thence southerly forty-two rods; thence easterly two hundred and forty-five rods; thence at right angles southerly to land formerly owned by Shepard Cousins; thence at right angles westerly to the shore; thence northerly following the shore to the first mentioned bound, containing one hundred and six acres, more or less, (excepting twenty-five acres on the south side of said lot being the second parcel described in this deed).

Portions of the above described four lots lying westerly of the Town Road from Ellsworth to Lamoine Village are included in the description of the premises above described as FIRST.

The Grantors acquired title to the premises herein described as SECOND (with the exception of the portions included in FIRST above) by deed from Henry E. Crane to the Grantors, dated July 28, 1964 and recorded with said Deeds in Book 964, Page 309.

The portion of the premises hereby conveyed lying easterly of said Town Road is further identified by survey by George W. Conary in September of 1964 as bounded and described as follows:

Beginning at an iron pipe on the easterly side of said Town Road; thence South 81° 30' West one hundred fifty-five (155) feet to an iron pipe; thence North 8° 30' West six hundred twenty-three (623) feet to an iron pipe; thence South 81° 30' West three thousand seven hundred thirty (3730) feet to an iron rod; thence North 8° 30' West nine hundred fifty-seven (957) feet to a post; thence North 81° 30' East three thousand eight hundred eighty-five (3885) feet to an iron pipe at the easterly sideline of said Town Road; thence northerly following the easterly sideline of the Town Road one thousand seven hundred fifty-four (1754) feet, more or less, to the point of beginning.

Book 1131 PAGE 628

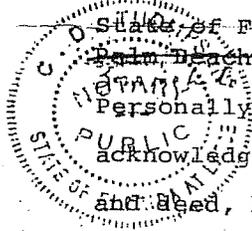
TO HAVE AND TO HOLD the aforegranted and bargained premises with all the privileges and appurtenances thereof, to the said Ralph A. Miro and Mary T. Miro, as joint tenants and not as tenants in common, and their heirs and assigns, and the survivor of them, and the heirs and assigns of the survivor of them, to them and their use and behoof forever. AND we do covenant with the said Grantees, as aforesaid, that we are lawfully seized in fee of the premises, that they are free of all incumbrances; that we have good right to sell and convey the same to the said Grantees to hold as aforesaid, and that we and our heirs shall and will WARRANT AND DEFEND the same to the said Grantees, their heirs and assigns, and the survivor of them, and the heirs and assigns of the survivor of them, forever, against the lawful claims and demands of all persons.

IN WITNESS WHEREOF, We, the said Gifford A. Cochran and Dorothy Fletcher Cochran, husband and wife, seised as joint tenants, each joining as grantor and each signing in relinquishment of all right by descent and all other rights in the above described premises, have hereunto set our hands and seals this 15th day of November in the year of our Lord one thousand nine hundred and seventy-one.

Signed, Sealed and Delivered
in Presence of

[Signature]
[Signature]

Gifford A. Cochran
[Signature]



November 15, 1971

Personally appeared the above named Gifford A. Cochran and
acknowledged the foregoing instrument to be his free act
and deed, before me,

[Signature]
Notary Public

NOTARY PUBLIC STATE OF FLORIDA AT LARGE
MY COMMISSION EXPIRES MAY 7, 1972

REAL ESTATE PURCHASE AND SALE AGREEMENT

AGREEMENT made this 20 day of August, 2012, by and between **RALPH A. MIRO and MARY T. MIRO**, husband and wife, whose mailing address is 905 Douglas Highway, Lamoine, Hancock County, State of Maine (hereinafter collectively called the "Seller") and **HAROLD MACQUINN, INC.**, whose mailing address is P.O. Box 789, Ellsworth, Maine 04605 (hereinafter collectively called the "Buyer") who agree as follows:

1. **Purchase and Sale of Property:** Seller agrees to sell to Buyer, and Buyer agrees to purchase from the Seller on the terms and conditions set forth herein, the real estate situate in Lamoine, Hancock County, Maine, more particularly described in Exhibit A attached hereto (hereinafter called the "Property").

2. **Purchase Price:** The purchase price for the Property shall be [REDACTED] which shall be payable as follows:

(a) earnest money deposit of [REDACTED] to be paid concurrently with the execution of this Agreement, the receipt of which is hereby acknowledged by the Seller;

(b) payment at closing of [REDACTED] and [REDACTED]

(c) the balance of the purchase price [REDACTED] by Seller [REDACTED]

(d) The parties agree that in the event Buyer should make any lease payment to Seller pursuant to an existing lease for a portion of the premises subject to this Purchase and Sale Agreement such payment will be credited toward the Purchase Price.

3. **Title:**

(a) Upon execution of this Agreement, Seller shall provide Buyer with any existing plans, surveys, abstract of title and title insurance policy. Buyer will assume responsibility and expense for any further title examination.

(b) If record title to the Property should prove unmarketable, Buyer shall give written notice to Seller, and Seller shall have a reasonable period of

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time to remove the title defects creating the unmarketability. If such defects cannot be removed by Seller after having made reasonable efforts, Buyer may either (i) consummate the purchase of the Property in accordance with this Agreement, or (ii) terminate this Agreement, in which case the Seller shall refund to Buyer the deposit made hereunder whereupon the parties shall have no further obligations hereunder.

4. Deed: Seller shall, on the date of closing, execute and deliver to Buyer a good and sufficient Quit Claim Deed with Covenant subject to easements, conditions, encumbrances and restrictions of record conveying the Property to Buyer or Buyer's nominee in fee simple, with good and marketable title thereto. The acceptance of the deed by Buyer shall be deemed to be a full performance and discharge of every agreement and obligation herein contained or expressed, except such as are, by the terms hereof, to be performed after the delivery of said deed or which are expressly stated to survive the Closing.

5. Closing: The closing shall take place at Rudman Winchell, 84 Harlow Street, Bangor, Maine on November 1, 2012 at 10:00 a.m., or at such other time or place as the parties may mutually agree.

6. Prorations and Fees: All real estate taxes and assessments against the Property shall be prorated between Buyer and Seller as of the date of closing over the period of the then current municipal fiscal year. Seller and Buyer shall each pay half of the real estate transfer tax in accordance with Maine statute.

7. Default: If the Buyer fails to purchase the Property for any reason other than those reasons specified herein as giving Buyer the right to terminate the Agreement, and if Seller has fully performed all of Seller's obligations hereunder, then the Seller shall retain the earnest money deposit as liquidated damages in full and complete satisfaction of all claims against Buyer.

8. Possession: Seller shall deliver possession of the Property to the Buyer at closing, free of all tenants and occupants, the Property to be then in the same condition as it is now; reasonable wear and tear thereof excepted. Also excepting the condition of that portion of the property currently under lease and control of the Buyer as tenant which shall be "as is" at the time of closing.

9. Risk of Loss: In the event of substantial loss or damage to the Property prior to the closing, Buyer shall have the election either to terminate this Agreement and receive a refund of the earnest money deposit or to complete the purchase and receive the insurance proceeds or eminent domain award received by Seller on account of the damage or loss.

10. Brokerage. Seller and Buyer each represent and warrant to the other that no brokers, agents or consultants have been employed with respect to this transaction by either of them, and Seller and Buyer agree to indemnify and hold the other harmless from any claim by any other broker or agent claiming compensation in respect of this transaction, alleging an agreement with Seller or Buyer, as the case may be.

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11. Deposit; Escrow Agent. The Deposit shall be held by Lambert Coffin (the "Escrow Agent"), in its client trust account, subject to the terms of this Agreement and shall be held and disposed of in accordance with the terms of this Agreement. By executing this Agreement, Escrow Agent agrees to hold the Deposit in its client trust account and to disburse the same in accordance with the terms hereof.

12. "AS IS" Condition; Disclaimers. SELLER MAKES NO REPRESENTATIONS OR WARRANTIES CONCERNING THE CONDITION OF THE PREMISES, INCLUDING, WITHOUT LIMITATION, THE ENVIRONMENTAL OR PHYSICAL CONDITION THEREOF, OR THE COMPLIANCE OF THE PREMISES WITH ANY LAWS, RULES, OR REGULATIONS, INCLUDING, WITHOUT LIMITATION, ENVIRONMENTAL LAWS, RULES OR REGULATIONS, OR THE SUITABILITY OF THE PREMISES FOR ITS CURRENT USE OR BUYER'S PROPOSED USE. BUYER EXPRESSLY AGREES THAT THE PREMISES ARE BEING SOLD "AS IS, WHERE IS", WITH ALL FAULTS, AND THAT BUYER IS RELYING SOLELY ON ITS OWN OPINIONS AND THE OPINIONS OF BUYER'S AGENTS AND CONSULTANTS AS TO THE CONDITION OF THE PREMISES, THE COMPLIANCE OF THE PREMISES WITH ANY AND ALL LAWS, RULES AND REGULATIONS, INCLUDING WITHOUT LIMITATION ENVIRONMENTAL LAWS, RULES AND REGULATIONS, AND THE SUITABILITY OF THE PREMISES FOR THEIR CURRENT USE AND BUYER'S PROPOSED USE. BUYER DOES HEREBY FOREVER RELEASE SELLER OF AND FROM ANY AND ALL LIABILITIES, CLAIMS, CAUSES OF ACTION, LIABILITY FOR CONTRIBUTION, AND ALL OTHER LIABILITIES ARISING OUT OF THE CONDITION OF THE PREMISES. BUYER SHALL BE RESPONSIBLE FOR SECURING ALL NECESSARY PERMITS AND LICENSES NECESSARY FOR ITS OPERATION OF THE PREMISES, INCLUDING, WITHOUT LIMITATION, AIR EMISSIONS LICENSES, IF APPLICABLE.

13. Other Conditions:

- A. Subject to Buyer securing all state and local approvals for gravel extraction operations and all appeals of such approvals having expired without such appeal from the approvals being filed.
- B. During the term that the Seller holds a mortgage over the property, Buyer agrees to maintain all applicable municipal, state and federal permits and licenses for gravel extraction, and to operate in conformance with all existing permits and permits to be obtained. This Condition shall survive the closing and shall be incorporated into and become a condition within the mortgage.
- C. During the term that Seller holds a mortgage over the property, Buyer agrees to maintain general liability insurance in an amount to be agreed upon by the Parties, naming the Seller as Mortgagee. This Condition shall survive the closing and shall be incorporated into and become a condition within the mortgage.

14. Miscellaneous. This Agreement shall be binding upon and inure to the benefit of the heirs, successors and assigns of the parties. This Agreement may not be modified, waived or amended except in a written instrument signed by the parties hereto. No waiver of any breach or term hereof shall be effective unless made in writing signed by

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the party having the right to enforce such a breach, and no such waiver shall be construed as a waiver of any subsequent breach. No course of dealing or delay or omission on the part of any party in exercising any right or remedy shall operate as a waiver thereof or otherwise be prejudicial thereto. Any and all prior and contemporaneous discussions, undertakings, agreements and understandings of the parties are merged in this Agreement, which alone fully and completely expresses their entire agreement. This Agreement shall be governed by and construed and enforced in accordance with the laws in effect in the State of Maine, without application of its conflict of laws principles. To facilitate execution, this Agreement may be executed in multiple originals which, collectively, shall constitute a single instrument. All pronouns and nouns and any variations thereof shall be deemed to refer to the masculine, feminine or neuter, singular or plural, as the identity of the parties or the context may require.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the day, month and year first above written.

WITNESSES:

U. V. Miro

U. V. Miro

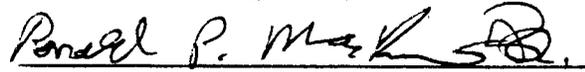
Ralph A. Miro
RALPH A. MIRO

Mary T. Miro
MARY T. MIRO

SELLERS

*MTM
PAM*

HAROLD MACQUINN, INC.



Ronald P. MacQuinn, Jr.
President

Hereunto Duly Authorized
Federal I.D. No.: 01-0236938

BUYER

EXHIBIT A
August 1, 2012

Description of Miro Lot
Lamoine, Maine

A certain LOT or PARCEL of land situated on the easterly side of Route 184, located in the Town of Lamoine, Hancock County, Maine, bounded and described as follows, to-wit:

BEGINNING at a pipe found set in the ground on the easterly side of Route 184 and on the southerly line of land as conveyed in a deed from Glenn M. Manring III and Toby M. Manring to Glenn M. Manring III, dated June 28, 2010 and recorded at the Hancock County Registry of Deeds in Book 5456, Page 201;

THENCE South 82 degrees 08 minutes 20 seconds East by and along said southerly line of land of Manring, one hundred sixty-seven and thirty-nine hundredths (167.39) feet to the northwesterly corner of land as conveyed in a deed from Lee A. Bennett to Harold MacQuinn, Inc., dated September 15, 1995 and recorded at said Registry in Book 2436, Page 164 and the northerly corner of land as conveyed in a deed from Harold MacQuinn, Inc. to Ralph A. Miro and Mary T. Miro, dated January 28, 2005 and recorded at said Registry in Book 4129, Page 153;

THENCE South 30 degrees 00 minutes 00 seconds East by and along the northeasterly line of land of said Miro, eighty-three and fifty-three hundredths (83.53) feet;

THENCE South 11 degrees 30 minutes 00 seconds West by and along the easterly line of land of said Miro, six hundred twenty-seven and thirty-six hundredths (627.36) feet to the southwesterly corner of land of said Harold MacQuinn, Inc.;

THENCE South 82 degrees 05 minutes 00 seconds East by and along the southerly line of land of said Harold MacQuinn, Inc., three thousand five hundred fifty-nine and fifty-two hundredths (3,559.52) feet to a one (1) inch iron bolt set in the ground;

THENCE continuing the same course (South 82 degrees 05 minutes 00 seconds East) by and along said southerly line of land of Harold MacQuinn, Inc., forty (40) feet, more or less, to the northwesterly corner of land as conveyed in a deed from Julius O. Luck to Christopher R. Luck, dated August 31, 2002 and recorded at said Registry in Book 4956, Page 80;

THENCE in a generally southerly direction by and along the westerly line of land of said Luck, nine hundred sixty (960) feet, more or less, to a bolt found set in the ground at the

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northeasterly corner of land as conveyed in a deed from Villa H. Tweedie to Cold Spring Water Company, dated August 21, 1978 and recorded at said Registry in Book 1329, Page 147;

THENCE in a generally westerly direction by and along the northerly line of land of said Cold Spring Water Company, four hundred ten (410) feet, more or less, to a one (1) inch iron bolt set in the ground at the northeasterly corner of land as conveyed in a deed from Mary Ann Orzel to John L. Holt, dated November 6, 2009 and recorded at said Registry in Book 5327, Page 272;

THENCE North 83 degrees 00 minutes 00 seconds West by and along the southerly line of land of said Holt, three thousand six hundred thirteen and eighty-three hundredths (3,613.83) feet to a one (1) inch iron bolt set in the ground on the easterly side of said Route 184, said bolt lying South 14 degrees 23 minutes 12 seconds West, one thousand seven hundred twenty-seven and eighty-seven hundredths (1,727.87) feet from the point of beginning;

THENCE continuing the same course (North 83 degrees 00 minutes 00 seconds West) by and along said northerly line of land of Holt, thirty-three (33) feet, more or less, to the centerline of the travelled way of said Route 184;

THENCE in a generally northeasterly direction by and along said centerline, one thousand seven hundred forty-seven (1,747) feet, more or less, to the southwesterly corner of said Manning;

THENCE South 82 degrees 08 minutes 20 seconds East by and along said southerly line of land of Manning, forty-one (41) feet, more or less, to the point of beginning and containing 97.3 acres, more or less.

BEARINGS in the above described are oriented to Magnetic North, 1974.

That portion of the above described contained within the limits of said Route 184 is SUBJECT TO the rights of the public.

The above described parcel is the compilation of two deeds:

1. A deed from Jordan River Farms of Lamoine, Inc. to Ralph A. Miro and Mary T. Miro, dated May 24, 2000 and recorded at the Hancock County Registry of Deeds in Book 2921, Page 69.

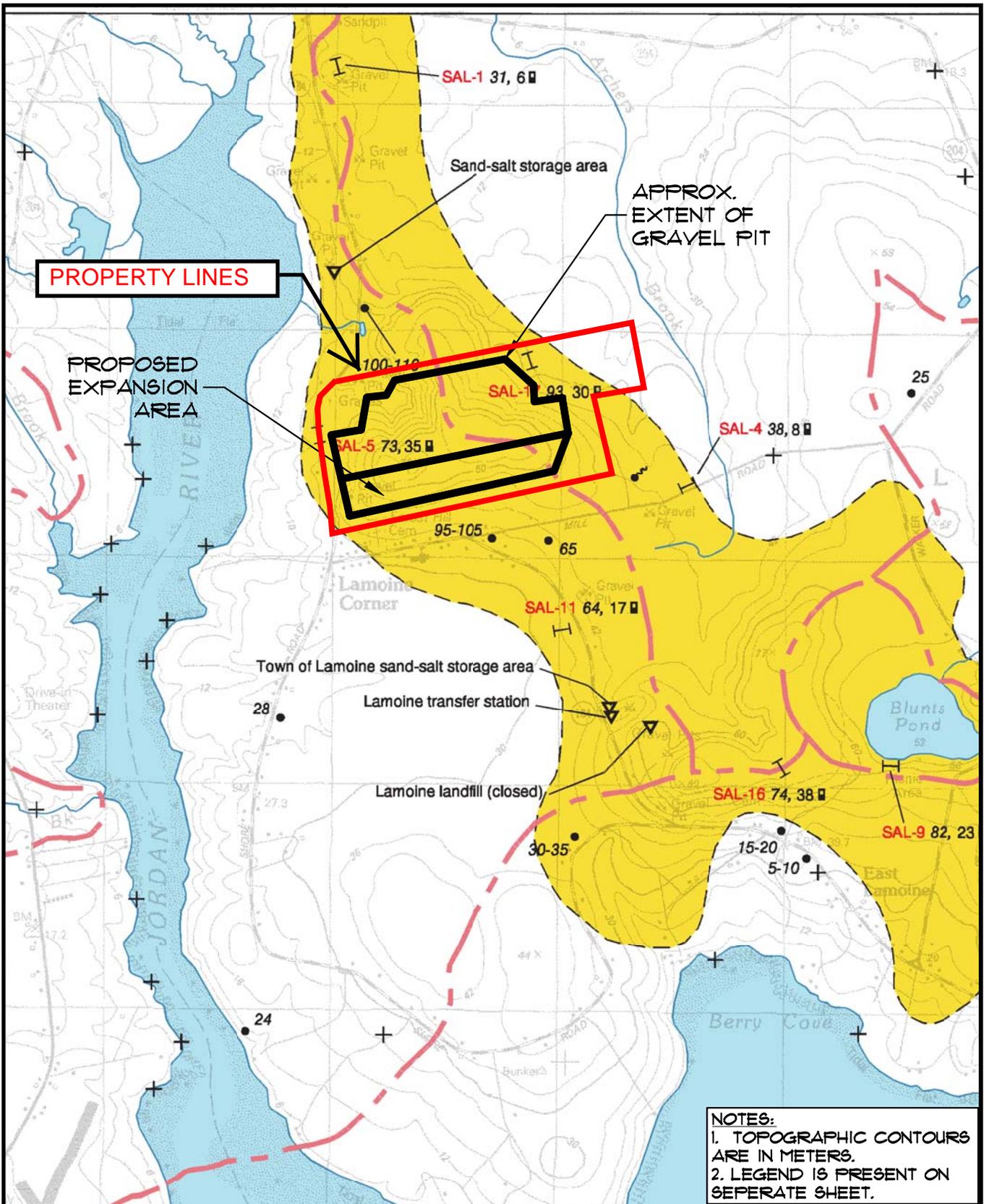
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2. A deed from Harold MacQuinn, Inc. to Ralph A. Miro and Mary T. Miro, dated January 28, 2005 and recorded at the Hancock County Registry of Deeds in Book 4129, Page 153.

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**SIGNIFICANT SAND & GRAVEL AQUIFER MAP
SALSBURY COVE 7.5-MIN. QUADRANGLE**

PREPARED FOR
HAROLD MACQUINN, INC.

FIGURE 3	DRAWN BY: SBM	CHECKED BY: MAD
JOB: 11-32405	NOT TO SCALE	DATE: SEPT. 2012



640 MAIN ST. Tel.: (207) 795-6009
LEWISTON, MAINE 04240 Fax: (207) 795-6128

Significant Sand & Gravel Aquifer Map Unit and Symbol Descriptions



Surficial deposits with good to excellent potential ground-water yield; yields generally greater than 50 gallons per minute to a properly constructed well. Deposits consist primarily of glacial sand and gravel, but can include areas of sandy till and alluvium; yield zones are based on subsurface data where available, and may vary from mapped extent in areas where data are unavailable.



Surficial deposits with moderate to good potential ground-water yield; yields generally greater than 10 gallons per minute to a properly constructed well. Deposits consist primarily of glacial sand and gravel, but can include areas of sandy till and alluvium; yields may exceed 50 gallons per minute in deposits hydraulically connected with surface-water bodies, or in extensive deposits where subsurface data are available.



Areas with moderate to low or no potential ground-water yield (includes areas underlain by till, marine deposits, eolian deposits, alluvium, swamps, thin glacial sand and gravel deposits, or bedrock); yields in surficial deposits generally less than 10 gallons per minute to a properly constructed well.

- Drilled overburden well
 Drilled bedrock well
 Quarry
- Dug well
 Driven point
 Test pit
 Bedrock outcrop

50 Depth to bedrock, in feet below land surface

≥ 13 Penetration depth of boring; ≥ symbol refers to minimum depth to bedrock based on boring depth or refusal

6 Depth to water level in feet below land surface (observed in well, spring, test boring, pit, or seismic line)

✕ Gravel pit (overburden thickness noted in feet, e.g. 5-12')

4 GPM Yield (flow) of well or spring in gallons per minute (GPM)

⋮ Spring, with general direction of flow

⬆ Observation well (project well if labeled; nonproject well if unlabeled)

⬆ Test boring (project boring if labeled; nonproject boring if unlabeled)

▽ Potential point source of ground-water contamination



Surface-water drainage-basin boundary; surface-water divides generally correspond to ground-water divides. Horizontal direction of ground-water flow generally is away from divides and toward surface-water bodies.

| **MAP-7 131, 23** Twelve-channel seismic line, with depth to bedrock and depth to water shown at the midpoint of the line, in feet below land surface.

| **69, 12** Single-channel seismic line, with depth to bedrock and depth to water shown at each end of the line, in feet below land surface.

| **MAP-E 72, 12** Unless otherwise indicated, data shown above the line-identifier box refers to the northern end of the seismic line.

**MAINE
DEPARTMENT OF TRANSPORTATION
PERMIT FOR ENTRANCE**

PERMIT NO. 96-2-4163
APPLICATION NO. 4163

TOWN: LAMOINE
COUNTY: HANCOCK
SA: _____ SH: _____
STATE ROUTE NO. 184
CULVERT #1 SIZE: 15'' x 40'
CULVERT #2 SIZE: N/A
CULVERT GAUGE: _____
DATE OF PERMIT: 11/17/96

NAME: HAROLD MACQUINN INC.

ADDRESS:
BOX 789
ELLSWORTH, ME. 04805

You are hereby granted permission to perform the necessary grading and to construct in accordance with sketch or attached plan ONE entrance(s) to a GRAVEL PIT ENTRANCE at a point 1.1 MILE NORTH of JCT. OF RTE 184 & 204 subject to the Rules and Regulations made by the Department of Transportation, and subject to the following conditions:

The grade of entrances shall in general slope away from the highway surface at a rate of not less than one-half (1/2) inch per foot, nor more than three-quarter (3/4) inch per foot for a distance of not less than the prevailing width of existing shoulder, but in no case less than four (4) feet from the edge of the pavement.

NOTES: PLEASE NOTE ALL CONDITIONS LISTED BELOW.

- ENTRANCE WIDTH = 35 FEET.
- BOTH SIDES OF ENTRANCE WILL BE CUT BACK TO OBTAIN SITE DISTANCE BY APPLICANT (*Gravel Banks*)
- TWO TRUCK ENTERING 500 FEET SIGNS WILL BE PURCHASED BY APPLICANT AND INSTALLED BY D.O.T. APPROXIMATELY 500 FEET EACH SIDE OF ENTRANCE.

(SKETCH ON BACK)

THIS PERMIT IS GRANTED ON CONDITION THAT THE OWNER:

- (1) Shall provide, erect and maintain all necessary barricades, lights, warning signs and other devices to safeguard traffic properly while the work is in progress.
- (2) Shall at no time cause the highway to be closed to traffic.
- (3) Shall, where the driveway is located in a curb, curb and gutter, and/or sidewalk section, completely remove the existing curb, curb and gutter, and/or sidewalk and replace with standard concrete or granite driveway terminal section and replace such curb, curb and gutter, and/or sidewalk as may be required.
- (4) Shall obtain and have delivered to site any culverts and/or other drainage structures which may be necessary for drainage, the size, type and length as called for in this permit. Said culverts and/or other incidentals to be installed by the Maine Department of Transportation, unless otherwise designated.
- (5) Shall in all cases notify the Division Office at least 24 hours before starting work on the driveway.
- (6) Shall construct proposed entrance within 12 months from date of issue.
- (7) Shall meet all applicable D.E.P., L.U.R.C., and municipal regulations and ordinances.

IT IS A FURTHER CONDITION OF THIS PERMIT, to which owner agrees by accepting the same, that owner shall well and truly pay all damages, fines and penalties for which he shall become liable, and shall save harmless and indemnify said Department against all suits, claims, damages and proceedings of every kind arising out of the construction and maintenance of said driveway approach, including snow removal. It is a further condition that the owner will agree to keep the right of way inviolate for public highway purposes and no signs (other than traffic signs and signals) posters, billboards, roadside stands, culvert end walls or other private installations shall be permitted within the Right of Way Limits.

SIGNED *Bruce W. Mathis*
TITLE _____ DIVISION ENGINEER _____



PAUL R. LePAGE
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
284 STATE STREET
41 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0041

CHANDLER E. WOODCOCK
COMMISSIONER

August 21, 2012

Tara Hartson
P.O. Box 652
130 Oak Street, Suite 1
Ellsworth, Maine 04605

RE: Information Request, Parcel east of Route 184, Lamoine

Dear Tara:

Per your request received August 21, we have searched current Department records for known occurrences of Rare, Threatened, and Endangered species, designated Essential and Significant Wildlife Habitats, and fisheries habitat concerns within the vicinity of the parcel located to the east of Route 184 in Lamoine.

Our records indicate no occurrences of rare, threatened, or endangered animal species within the project area. Additionally, our department has not mapped any Essential or Significant Wildlife Habitats or Fisheries Habitats that would be directly impacted by your project.

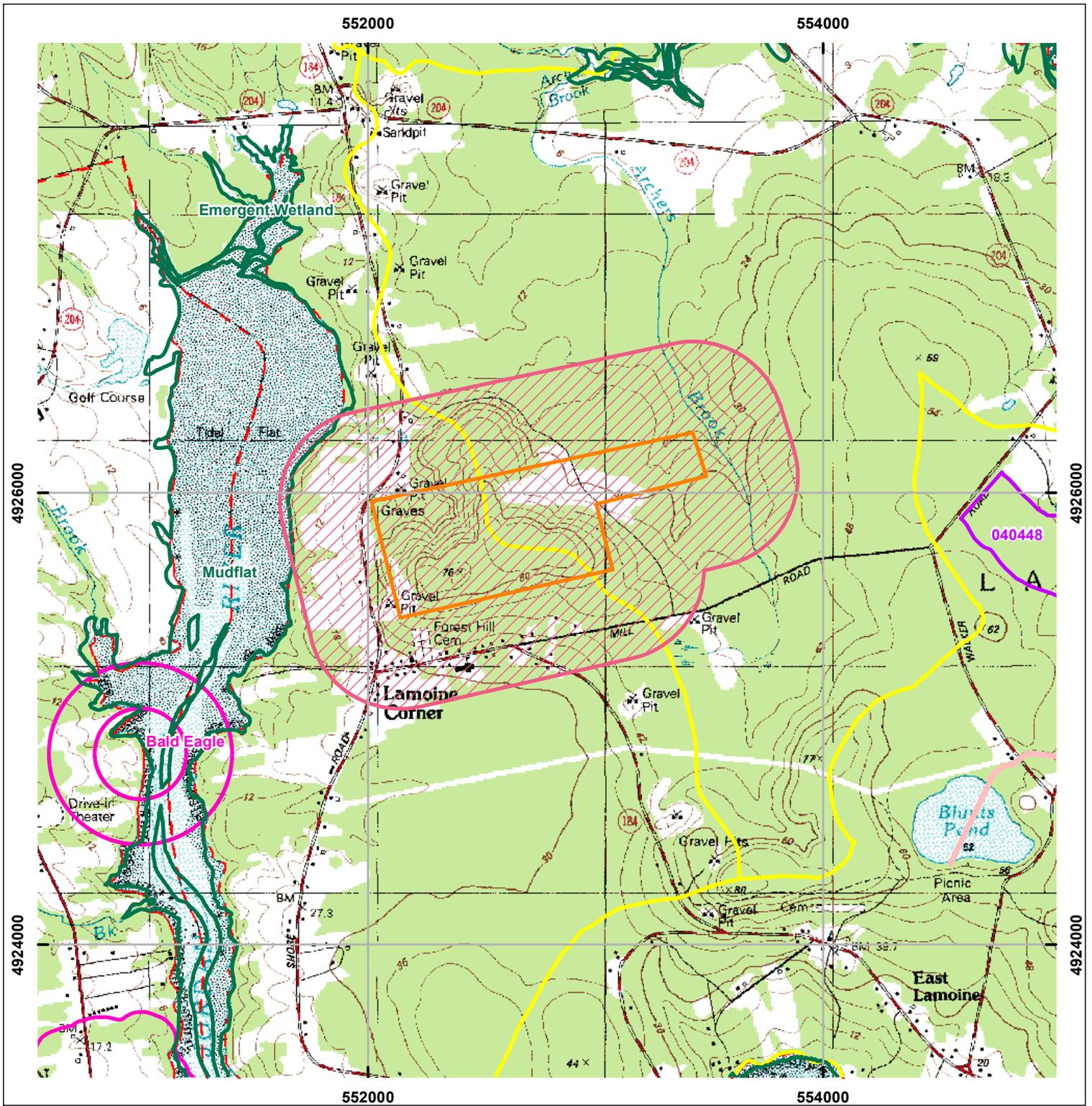
This consultation review has been conducted specifically for known MDIF&W jurisdictional features and should not be interpreted as a comprehensive review for the presence of all regulated features that may occur on site. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,

A handwritten signature in blue ink, appearing to read 'Steve Walker'.

Steve Walker
Acting Environmental Review Coordinator

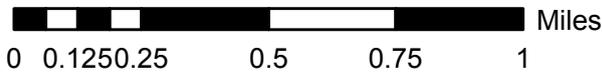


Environmental Review of Fish and Wildlife Observations and Priority Habitats

Project Name: Parcel east of Route 184, Lamoine (Version 1)



Maine Department of
Inland Fisheries and Wildlife



Projection: UTM, NAD83, Zone 19N

Date: 8/21/2012





Tan hatched area represents Deer Wintering Area.

Hatched area taken from Maine DEP: www.maine.gov/megis/catalog.
Google Earth overlay.

Website Accessed: August 14, 2012.



STATE OF MAINE
DEPARTMENT OF CONSERVATION
93 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0093

PAUL R. LEPAGE
GOVERNOR

WILLIAM H. BEARDSLEY
COMMISSIONER

August 16, 2012

Tara Hartson
Herrick & Salsbury
PO Box 652
Ellsworth, ME 04605

Re: Rare and exemplary botanical features in proximity to: Property near Route 184, Lamoine, Maine

Dear Ms. Hartson:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request received August 16, 2012 for information on the presence of rare or unique botanical features documented from the vicinity of the project site in Lamoine, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

Rare and Exemplary Botanical Features in the Project Vicinity

Documented within a four-mile radius of the Property near Route 184, Lamoine, Maine.

Feature Name	Global Rank	State Rank	State Status	EO Number	Last Seen	Habitat
Black spruce woodland	G4?	S3		1	1999-09-22	Dry barrens (partly forested, upland)
Carex adusta	G5	S2	E	5	1891-06-24	Rocky coastal (non-forested, upland)
Prenanthes nana	G5	S1	E	8	1897-08-19	Alpine or subalpine (non-forested, upland)
Sanguisorba canadensis	G5	S1	T	8	2007	Non-tidal rivershore (non-forested, seasonally wet)
Spruce - fir - northern hardwoods ecosystem	GNR	S5		21	1999	Hardwood to mixed forest (forest, upland)
Oryzopsis canadensis	G5	S2	SC	10	1897-07-14	Dry barrens (partly forested, upland)
Carex adusta	G5	S2	E	6	1898-08-17	Rocky coastal (non-forested, upland)
Brackish tidal marsh	GNR	S3		12	2009	Tidal wetland (non-forested, wetland)

Print Date 8/16/2012

For more information visit our website <http://www.maine.gov/doc/nrimc/mnap>

Page 1

STATE RARITY RANKS

- S1** Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
- S2** Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- S3** Rare in Maine (20-100 occurrences).
- S4** Apparently secure in Maine.
- S5** Demonstrably secure in Maine.
- SU** Under consideration for assigning rarity status; more information needed on threats or distribution.
- SNR** Not yet ranked.
- SNA** Rank not applicable.
- S#?** Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: **State Rarity Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

GLOBAL RARITY RANKS

- G1** Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.
- G2** Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- G3** Globally rare (20-100 occurrences).
- G4** Apparently secure globally.
- G5** Demonstrably secure globally.
- GNR** Not yet ranked.

Note: **Global Ranks** are determined by NatureServe.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered** and **Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

- E** ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.
- T** THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

NON-LEGAL STATUS

- SC** SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.
- PE** Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

Visit our website for more information on rare, threatened, and endangered species!
<http://www.maine.gov/doc/nrimc/mnap>



MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

PAUL R. LEPAGE
GOVERNOR

EARLE G. SHETTLEWORTH, JR.
DIRECTOR

September 13, 2012

Ms. Tara Hartson
Herrick & Salsbury Inc.
P.O. Box 652
Ellsworth, ME 04605

Project: MHPC# 1388-12 - Route 184 parcel
Town: Lamoine, ME

Dear Ms. Hartson:

In response to your recent request, I have reviewed the information received August 16, 2012 to initiate consultation on the above referenced project.

Based on the information provided, I have concluded that there are no National Register listed or known National Register eligible properties in the area of potential effects for this project. However, no architectural survey of the project area has ever been conducted. We would recommend soliciting comments from local historical societies or other interested parties regarding the presence of historic structures in the project area.

If this project requires federal and/or state permitting, funding, or licensing, we request that you send us photographs (keyed to a topo map) of any buildings that are 50 years or older that are adjacent to or across the street from the project site and any associated access roads, so we may determine if there are resources that may be National Register eligible.

The project area is not considered sensitive for archaeological resources.

Please contact Robin Reed of my staff if we can be of further assistance in this matter.

Sincerely,

Kirk F. Mohny
Deputy State Historic Preservation Officer



HAROLD MacQUINN, INC
P.O. BOX 789 • ELLSWORTH, ME 04605

HANCOCK PLANT
TEL (207) 667-4653
FAX (207) 667-3737

HULLS COVE PLANT
TEL (207) 288-5021
FAX (207) 288-3808

Town of Lamoine
Att: Dennis Ford, CEO
606 Douglas Highway
Lamoine, ME 04605

March 7, 2012

RE: Year 2012 Gravel Extraction Quantities

Please record the following volume quantities extracted from our pits located in Lamoine for the year ending December 31, 2011

	2010	2011
Beal Pit, Tax Map 7 Lot 7-----	400 CY-----	350 CY
Asher Pit. Tax Map 3 lot 42-----	350 CY-----	500 CY
Jones Pit, Tax Map 7 Lot 9-----	400 CY-----	350 CY
Kittridge Pit, Tax Map 3 Lot 33 -----	20,000 CY-----	15,000 CY
Higgins Pit, Tax Map 20 Lot 12 -----	50,000 CY-----	35,000 CY
Higgins Pit (Sand Pit, Tax Map 9 Lot 13 -----	400 CY-----	350CY

If you need any additional information, Please let me know.

Sincerely,

R. Paul MacQuinn
Harold MacQuinn Inc.

NO JOB TOO LARGE OR TOO SMALL
CRUSHED STONE • SITEWORK • UNDERGROUND UTILITIES
PAVING • CONCRETE FOUNDATIONS • MASONRY • SEPTIC SYSTEMS

04-1287 G

May 14, 2012

Herrick & Salsbury, Inc.
 Attention: Steve Salsbury
 P.O. Box 652
 Ellsworth, ME 04605

Subject: Hydrogeological Services
 Harold MacQuinn, Inc. Gravel Pits
 Groundwater Level Monitoring
 Lamoine, Maine

Dear Steve:

In accordance with our Agreement dated November 30, 2004, we measured the depth to groundwater at the Beal, Jones, Asher, Kittridge, and Higgins gravel pits owned by Harold MacQuinn, Inc. in Lamoine, Maine on April 04, 2012. The approximate locations of the Harold MacQuinn, Inc. gravel pits are shown on Sheet 1.

The groundwater level measurements were obtained using a Water Level Indicator, Model 51453 manufactured by Slope Indicator Company of Seattle, Washington. See Table 1 for groundwater level measurement results.

Table 1
Gravel Pit Water Level Measurements

Gravel Pit Name	Water Level Below Ground Surface ¹ (ft)	Height of Pipe Above Ground Surface (ft)	Depth of Pipe Below Ground Surface (ft)
Beal	>3.75 ²	2.10	8.40
Jones	7.30	3.60	9.55
Asher	6.36	3.75	7.30
Kittridge OW-1	Dry to 14.53	4.67	14.53
Kittridge MW-2-2010	28.12	2.80	35.00
Higgins OW-1	10.13	2.70	23.00
Higgins OW-2	71.61	2.05	85.50

Notes:

¹ Groundwater levels reflect site conditions at the time of measurement. Actual conditions will vary.

² Obstruction in well at 3.75 feet below the ground surface.



04-1287 G
May 14, 2012

Sheet 2 presents the groundwater level data we have collected to date. A graph of the groundwater level data is presented on Sheet 3.

In accordance with our Agreement, we will continue to conduct groundwater level measurements at the same locations in the spring and fall of each year until otherwise directed by you.

We appreciate the opportunity to work with you on this project. If you have any questions or need additional assistance, please do not hesitate to call us.

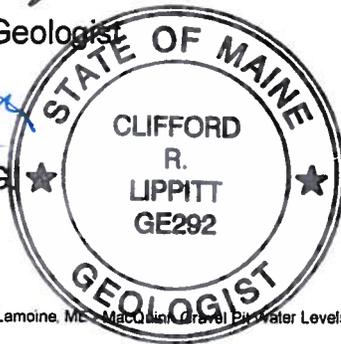
Very truly yours,

S. W. COLE ENGINEERING, INC.

Jeffrey W. McElroy, Geologist

Clifford R. Lippitt, C.G. ★

JWM-CRL:jwm/slh



P:\2004\04-1287 G - Herrick & Salsbury - Lamoine, ME - MacQuinn Dravel Pit Water Levels 2004-2006 - JWM2012\4-4-12.doc

GRAVEL PIT LOCATIONS MAP



- Notes:
1. Base map from MapTech, Inc. Terrian Navigator Pro.
 2. Map not to scale.

Sheet 1

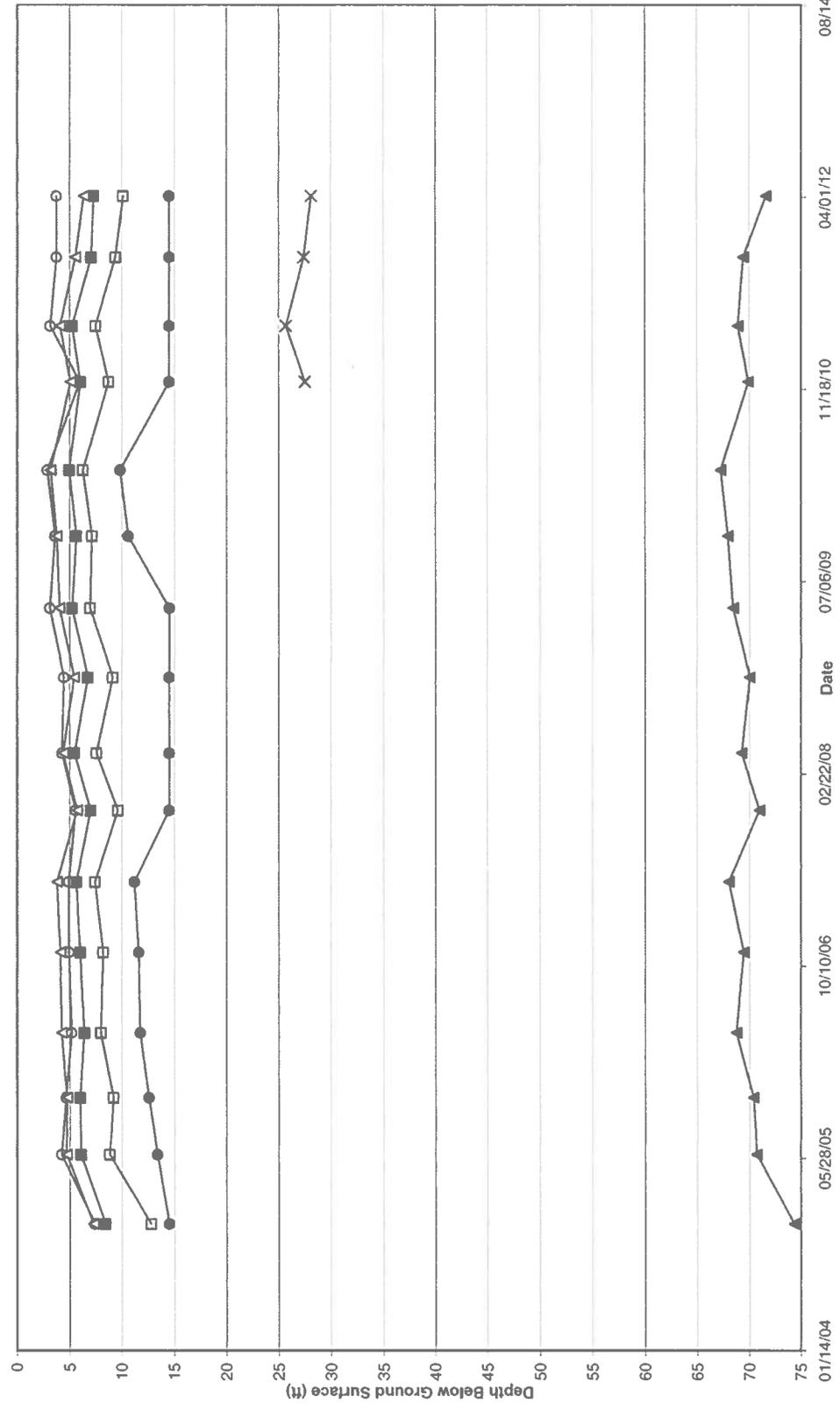
Harold MacQuinn, Inc. Gravel Pits

		GRAVEL PITS GROUNDWATER LEVEL BELOW GROUND SURFACE						
		Beal	Jones	Asher	Kittridge OW-1	Kittridge MW-2-2010	Higgins OW-1	Higgins OW-2
PVC Standpipe Height		2.10	3.60	3.75	4.67	2.80	2.70	2.05
Sampling Dates	12/09/04	7.40	8.42	DRY to 7.27	DRY to 14.53		12.75	74.37
	06/07/05	4.25	6.10	4.75	13.41		8.84	70.72
	11/02/05	4.70	6.03	4.78	12.57		9.20	70.39
	04/20/06	5.23	6.42	4.26	11.75		8.00	68.75
	11/15/06	4.95	6.02	4.12	11.58		8.20	69.42
	05/17/07	4.94	5.68	3.81	11.18		7.44	68.02
	11/19/07	5.60	7.00	5.73	DRY to 14.53		9.63	70.95
	04/16/08	4.30	5.50	4.39	DRY to 14.53		7.57	69.25
	10/30/08	4.88	6.77	5.46	DRY to 14.53		9.15	70.05
	04/28/09	3.11	5.25	4.05	DRY to 14.53		6.96	68.41
	11/02/09	3.63	5.68	3.77	10.61		7.14	67.94
	04/22/10	2.90	4.97	3.21	9.83		6.28	67.24
	12/08/10	Dry to 6.00	6.05	5.11	DRY to 14.53	27.52	8.73	69.90
	05/02/11	3.18	5.28	4.11	DRY to 14.53	25.72	7.49	68.89
	10/28/11	>3.75	7.06	5.56	DRY to 14.53	27.38	9.37	69.40
04/04/12	>3.75	7.30	6.36	DRY to 14.53	28.12	10.13	71.61	

Notes:

1. All measurements are in feet.
2. New steel pipe well installed in different location at Beal Pit sometime after 04/16/08. Old plastic standpipe was frequently vandalized.
3. Kittridge MW-2-2010 added in 2010.

Harold MacQuinn, Inc. Gravel Pits



Spill Prevention Control and Containment Plan
Harold MacQuinn, Inc.
Kittridge Pit, Lamoine

Witnesseth:

In an effort to insure that the development will be operated in a manner which will have a minimal adverse impact on the natural environment within the development and the surrounding areas and to aid in the protection, health, safety and general welfare of the community.

NOW THEREFORE, Harold MacQuinn, Inc., a Maine corporation with a principal place of business in the town of Hancock, County of Hancock, State of Maine, hereby dispose and adopt the following Spill Prevention Control and Containment Plan for the operation of their burrow pit located in the town of Lamoine, County of Hancock, State of Maine. Said property is known as the "Kittridge Pit", and is further identified as being Tax Map 3, Lot 33.

1. Anticipated Hazardous Materials: It is anticipated that the only hazardous materials to which the premises would be subject to are the petroleum products normally contained within the vehicles, loaders and/or excavators to be used on the premises.

2. Preventive Maintenance and Procedures: All operators, drivers and other personnel who operate equipment on the premises will be instructed to do a physical inspection of all tanks, hoses and reservoirs which contain petroleum products on or about their vehicles daily prior to their entrance to the development. If such an inspection reveals leakage of any fuel, hydraulic fluid or other petroleum products from the vehicle, the vehicle will not be allowed into the development area until the same has been repaired, reasonable wear and tear expected.

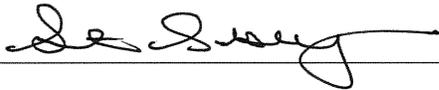
No petroleum products, fuel or other hazardous materials will ever be stored on the premises.

No vehicles other than a loader will be stored on the premises overnight.

3. Containment of Spill: In the event that a spill of any hazardous material of whatever nature occurs, in the case of minor leakage, such as broken hydraulic hoses, break hoses and radiator or coolant hoses, gas lines, etc., the contaminated soil deposited in a metal container or drums stored on the premises for such emergency. All such contaminated material shall be removed from the premises before the end of the current business day.

For any major spills, that are spills for which the Department of Environmental Protection notification is required, the contaminated soil will be immediately excavated by use of excavator, backhoe or whatever other equipment is available to the depth of contamination and the contaminated soil will be immediately removed from the premises. The Department of Environmental Protection will be notified immediately and any further action or reclamation will be conducted in accordance with their recommendations.

By: Stephen Salsbury, Agent
Harold MacQuinn, Inc.



Dated : 8/20/2010



The First, N.A
IRREVOCABLE STANDBY LETTER OF CREDIT

Letter of Credit Number: 328
Date: September 5, 2012
Effective Date: September 7, 2012
Amount: \$450,000.00

Issuing Institution:

The First, N.A.
PO Box 258,
Bar Harbor, ME 04609

Beneficiary:

State of Maine
Department of Environmental Protection
State House Station 17
Augusta, Maine 04333

Applicant/ Operator:

Harold MacQuinn, Inc.
PO Box 789
Ellsworth, ME 04605

Dear Sir or Madam:

- (1) The APPLICANT/OPERATOR wishes to engage in mining operations in the State of Maine and such excavations are subject to the provisions of the Performance Standards for Excavations, 38 M.R.S.A. §490-A to §490-L of the General Statutes of Maine. Under the Performance Standards for Excavations, 39 M.R.S.A. Section 490-C, requires that an operator file a Notice of Intent to Comply with the Maine Department of Environmental Protection (hereinafter referred to as "Department") before engaging in excavation operations, and Section 490-D allows the Department to require that a surety in favor of the State be maintained or other security be filed with the Department, in connection with said Notice.
- (2) Thus, this IRREVOCABLE LETTER OF CREDIT is issued to the Department, in lieu of the surety bond required to be filed by the APPLICANT/OPERATOR, as provided by General Statutes of Maine, 38 M.R.S.A. Section 490-D(14).
- (3) The undersigned hereby establishes its IRREVOCABLE LETTER OF CREDIT in favor of the Department, for the account of Harold MacQuinn, Inc. for the amount of Four hundred Fifty thousand Dollars (\$450,000.00) available by the Department's draft(s) drawn on sight.
- (4) This IRREVOCABLE LETTER OF CREDIT shall expire on September 7, 2013. The expiration date shall be extended automatically for a period one year on September 7, 2013 and on each successive expiration date, unless, at least ninety (90) days prior to the expiration date, the undersigned notifies the Department and the OPERATOR by certified mail, return receipt requested that the undersigned will not extend the letter of credit beyond the current expiration date. If the undersigned notifies the department that this letter of credit will not be extended, and unused portion of the credit shall be available upon presentation of the Department's sight drafts within ninety (90) days after the Department's or the OPERATOR's receipt of such notification, whichever is later.
- (5) This IRREVOCABLE LETTER OF CREDIT is non-transferable.

Draft(s) shall be marked "Drawn Under The First, N.A. Letter of Credit No. 328 and shall include the following documentation:

Bar Harbor • Blue Hill • Boothbay Harbor • Calais • Camden • Damariscotta • Eastport
Ellsworth • Northeast Harbor • Rockland • Rockport • Southwest Harbor • Waldoboro • Wiscasset

A Division of The First Bancorp • 800.564.3195 • www.thefirst.com • Member FDIC

- a. A signed certificate by the Department, referring to the effective date and Number of this IRREVOCABLE LETTER OF CREDIT, and stating that:

“In accordance with General Statutes of Maine, 38 M.R.S.A. Section 490-D, we have received a notice of forfeiture of part or all of the Bond Amount. The amount of our drawing does not exceed the amount of the forfeiture as set forth in such notice.”

OR

- b. A signed certificate by the Department, referring to the effective date and Number of this IRREVOCABLE LETTER OF CREDIT, and stating that:

“We have received from The First, N.A. written notice stating (1) that this IRREVOCABLE LETTER OF CREDIT has not been renewed; and (2) that the amount of our drawing does not exceed the Bond Amount, less any previous forfeitures thereunder, pursuant to notices received in accordance with General Statutes of Maine, 38 M.R.S.A. Section 490-D.”

OR

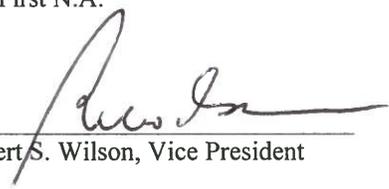
- c. A signed certificate by the Department, referring to the effective date and Number of this IRREVOCABLE LETTER OF CREDIT, and stating that:

“We have received from The First, N.A. written notice stating (1) that there exists an Event of Default under the Credit Agreement (as defined in the IRREVOCABLE LETTER OF CREDIT); (2) that a drawing should be made under this IRREVOCABLE LETTER OF CREDIT; and (3) that the amount of the drawing does not exceed the bond amount, less any previous forfeitures thereunder, pursuant to notices received in accordance with General Statutes of Maine, 38 M.R.S.A. Section 490-D.”

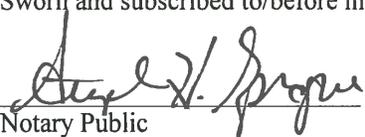
- (6) This IRREVOCABLE LETTER OF CREDIT is subject to the Uniform Customs and Practice for Documentary Credits (1993 Revision), International Chamber of Commerce Publication No. 500 and the laws of the State of Maine. In the event of any conflict, the laws of the State of Maine will control.
- (7) The First, N.A. hereby agrees with the drawers, endorsers, and bona fide holders that all drafts drawn under and in compliance with the terms of this IRREVOCABLE LETTER OF CREDIT will be duly honored upon presentation to the banking/issuing institution.

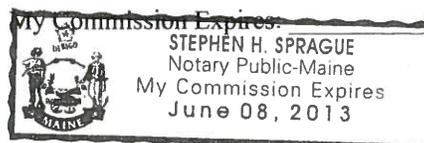
Very truly yours,

The First N.A.

BY: 
Robert S. Wilson, Vice President

Sworn and subscribed to/before me this the 5th day of September, 2012.


Notary Public



DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO COMPLY
PERFORMANCE STANDARDS FOR
EXCAVATIONS FOR BORROW, CLAY, TOPSOIL OR SILT
(For Use with 38 MRSA Section 490-C)

NOTICE OF INTENT
MAP 3 LOT 33

PLEASE TYPE OR PRINT IN INK ONLY

Name of Owner: HAROLD MACQUINN, JR.

Mailing Address: P.O. Box 789

Town/City: ELLSWORTH State: MAINE Zip Code: 04605 Tel.No.(daytime): 207-667-4653

Name of Operator: SAME FAX 667-3737

Mailing Address: SAME

Town/City: SAME State: - Zip Code: - Tel.No.(daytime): -

Name of Nearest Road and Directions to Site: JUST EAST OF STATE HIGHWAY #184,
WHICH RUNS SOUTH TO THE TOWN OF LAMONIE, 1.2 MILES
SOUTH ON 184 FROM LAMONIE TOWN HALL.

Town/City: LAMONIE County: HAWCOCK

1. Attach a check for \$250 payable to Treasurer State of Maine.
2. Attach to this form a location map with project site clearly marked (use a U.S.G.S. topo map or Maine Atlas & Gazetteer map).
3. Attach to this form a site plan drawn to scale showing property boundaries, stockpile areas, existing reclaimed and unreclaimed lands, proposed maximum acreage of all affected lands, locations of applicable private or public drinking water supplies (within 1000 feet of the limit of excavation) and all existing or proposed solid waste disposal areas.
4. Attach to this form a parcel description including size, by tax map or deed description.
5. Attach to this form the names and addresses of all abutting property owners.

I am filing my notice of intent to comply with the performance standards under 38 MRSA §490-D. I fully understand that I can be subject to enforcement action, including a stop work order, on my failure to comply with the performance standards. I authorize staff of the Department of Environmental Protection and the municipality, if it has delegated authority, to access the project site for the purpose of determining compliance with the standards. **I also understand that this permit is not valid until I receive a postal receipt. If the Department determines that a notice is not complete, the Department will notify the applicant no later than 45 days after receiving the notice.**

Signature of Applicant: Ronald MacQuinn Date: 2-15-99

Send the white copy of this form by certified mail to the **ME Dept. of Environmental Protection, State House Station #17, Augusta, ME 04333**. Send the yellow copy of this form to the ME Historic Preservation Commission, State House Station #65, Augusta, ME 04333. Send the gold copy of the form, including the exhibits listed above, to the municipality where the project site is located. **All abutting owners must receive a copy of the notification form only. The notice that is mailed to the municipality and each abutting property owner must be mailed at least 7 days prior to filing the notice with the DEP.** Retain the pink copy as a record of the permit. No further authorization by DEP will be issued after the receipt of this notification.

For Office Use Only				
Project No:	Fee Paid:	Date:	Def:	Sign Off:

PITFRM 2/97

DEP



This excavation has been permitted pursuant to the Performance Standards for Excavations (38 M.R.S.A Section 490-C) administered by the Bureau of Land and Water Quality, Department of Environmental Protection, Station 17, Augusta (287-2111 or 287-3901).

L- 345 _____
Permit Number

2/25/99 _____
Date Issued

**THIS PLACARD MUST BE POSTED VISIBLY
AT THE MINING SITE AT ALL TIMES DURING EXCAVATION.**



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

2335

DEPARTMENT ORDER

CURRENT
DEP LICENSE
MAP 3 LOT 31&33

IN THE MATTER OF

HAROLD MACQUINN, INC.) PERFORMANCE STANDARDS FOR EXCAVATIONS
Lamoine, Hancock County)
Larger Working Pit-Kittridge Pit) VARIANCE
L-21587-80-A-N (approval)) FINDINGS OF FACT AND ORDER

Pursuant to the provisions of Title 38 M.R.S.A. Section 490-D, and Section 490-E, the Department of Environmental Protection has considered the application of HAROLD MACQUINN, INC. with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. PROJECT DESCRIPTION:

A. On February 2, 1999, Harold MacQuinn, Inc. filed a "Notice of Intent to Comply" to operate a 30-acre gravel pit located on Lamoine Beach Road in the Town of Lamoine.

B. The applicant proposes to operate an area greater than 10 acres for the working pit.

2. RECLAMATION:

The existing gravel pit covers approximately 8.8 acres. The reclamation cost for grading, seeding and mulching is approximately \$2400.00 per acre. The proposed open area of the gravel pit will encompass approximately 30 acres. The gravel pit will be reclaimed according to the standards under the Performance Standards for Excavations, 38 M.R.S.A. Section 490-D(14).

Harold MacQuinn has secured the required financial assurance through a letter of credit in the amount of seventy two thousand dollars (\$72,000.00) to cover the cost of a third party to reclaim the gravel pit. The applicant must annually report to the Department an estimate of the cost of changes in financial assurance due to inflation, changed financial conditions or anticipated changes in mining activity. The financial assurance requirements stated in 06-096 CMR 378.E(5) must apply to the release of the reclamation fund.

3. OTHER CONSIDERATIONS:

The Department has not identified any other issues involving existing uses, habitat, flooding, water quality, groundwater flow, public safety, or soil erosion.

4. Based on its review of the application, the Department finds the variance request to be in accordance with all relevant Department standards set forth in 06-096 CMR 378.

BASED on the above findings of fact, and subject to the Conditions listed below, the Department makes the following conclusions in relation to the proposed variance pursuant to 38 M.R.S.A. Section 490-D and Section 490-E:

- A. The proposed activity will not unreasonably interfere with existing scenic, aesthetic, recreational, or navigational uses provided that the applicant complies with all reclamation and financial assurance requirements described in Finding 2.
- B. The proposed activity will not cause unreasonable erosion of soil or sediment.
- C. The proposed activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, aquatic habitat, travel corridor, freshwater, estuarine, or marine fisheries or other aquatic life.
- D. The proposed activity will not unreasonably interfere with the natural flow of any surface or subsurface waters.
- E. The proposed activity will not violate any state water quality law including those governing the classifications of the State's waters.
- F. The proposed activity will not unreasonably cause or increase the flooding of the alteration area or adjacent properties.
- F. The proposed activity will not adversely affect the health, safety and

THEREFORE, the Department APPROVES the application of HAROLD MACQUINN, INC., to operate a working pit larger than 10 acres, SUBJECT TO THE FOLLOWING CONDITIONS and all applicable standards and regulations:

1. The Standard Conditions of Approval, a copy attached.
2. In addition to any specific erosion control measures described in this or previous Orders, the applicant shall take all necessary actions to ensure that his activities or those of his agents do not result in noticeable erosion of soils or fugitive dust emissions on the site during the construction and operation of the project covered by this approval.

- 3. No later than March 30th of each year, the applicant shall annually report to the Department an estimate of cost of changes in financial assurance due to inflation, changed financial conditions or anticipated changes in mining activity.

THIS APPROVAL DOES NOT CONSTITUTE OR SUBSTITUTE FOR ANY OTHER REQUIRED STATE, FEDERAL OR LOCAL APPROVALS NOR DOES IT VERIFY COMPLIANCE WITH ANY APPLICABLE SHORELAND ZONING ORDINANCES.

DONE AND DATED AT AUGUSTA, MAINE, THIS 1st DAY OF December, 2003.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

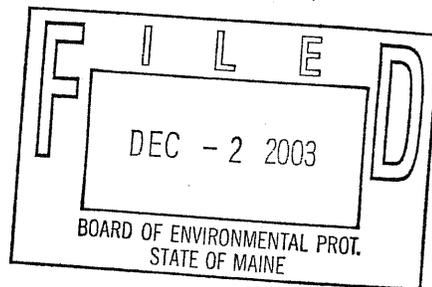
BY:  *for*
 DAWN R. GALLAGHER, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application 10/07/2003

Date application approved 10/21/2003

Date filed with Board of Environmental Protection
 MS/L21587



SITE LOCATION OF DEVELOPMENT (SITE)
STANDARD CONDITIONS

STRICT CONFORMANCE WITH THE STANDARD AND SPECIAL CONDITIONS OF THIS APPROVAL IS NECESSARY FOR THE PROJECT TO MEET THE STATUTORY CRITERIA FOR APPROVAL.

1. This approval is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. Any variation from the plans, proposals and supporting documents is subject to the review and approval of the Board prior to implementation. Further subdivision of proposed lots by the applicant or future owners is specifically prohibited, without prior approval by the Board of Environmental Protection, and the applicant shall include deed restrictions to this effect.
2. The applicant shall secure and comply with all applicable Federal, State and local licenses, permits, authorizations, conditions, agreements, and orders, prior to or during construction and operation as appropriate.
3. The applicant shall submit all reports and information requested by the Board or Department demonstrating that the applicant has complied or will comply with all conditions of this approval. All preconstruction terms and conditions must be met before construction begins.
4. Advertising relating to matters included in this application shall refer to this approval only if it notes that the approval has been granted WITH CONDITIONS, and indicates where copies of those conditions may be obtained.
5. Unless otherwise provided in this approval, the applicant shall not sell, lease, assign or otherwise transfer the development or any portion thereof without prior written approval of the Board where the purpose or consequence of the transfer is to transfer any of the obligations of the developer as incorporated in this approval. Such approval shall be granted only if the applicant or transferee demonstrates to the Board that the transferee has the technical capacity and financial ability to comply with conditions of this approval and the proposals and plans contained in the application and supporting documents submitted by the applicant.
6. If the construction or operation of the activity is not begun within two years, this approval shall lapse and the applicant shall reapply to the Board for a new approval. The applicant may not begin construction or operation of the development until a new approval is granted. Reapplications for approval shall state the reasons why the development was not begun within two years from the granting of the initial approval and the reasons why the applicant will be able to begin the activity within two years from the granting of a new approval, if granted. Reapplications for approval may include information submitted in the initial application by reference.
7. If the approved development is not completed within five years from the date of the granting of approval, the Board may reexamine its approval and impose additional terms or conditions or prescribe other necessary corrective action to respond to significant changes in circumstances which may have occurred during the five-year period.
8. A copy of this approval must be included in or attached to all contract bid specifications for the development.
9. Work done by a contractor pursuant to this approval shall not begin before the contractor has been shown by the developer a copy of this approval.

(2/81)/Revised November 1, 1979

DEPLW 148

DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF INTENT TO COMPLY
PERFORMANCE STANDARDS FOR
EXCAVATIONS FOR BORROW, CLAY, TOPSOIL OR SILT
(For Use with Article 7)

NOTICE OF INTENT
MAP 3 LOT 31

PLEASE TYPE OR PRINT IN INK ONLY

Name of Owner: RALPH A. + MARY T. MIRO

Mailing Address: 907 DOUGLAS HIGHWAY

Town/City: LAMOINE State: ME Zip Code: 04605 Tel.No.(daytime): 667-3121

Name of Operator: HAROLD MACQUINN, INC.

Mailing Address: P.O. Box 789

Town/City: ELLSWORTH State: ME Zip Code: 04605 Tel.No.(daytime): 667-4653

Name of Nearest Road and Directions to Site: ON DOUGLAS HIGHWAY (ROUTE 184) 1.2 MILES SOUTH OF LAMOINE TOWN OFFICE; 1.1 MILES SOUTH OF LAMOINE GENERAL STORE + ROUTE 204 ON EAST SIDE ROAD LOOK FOR PAVED ENTRANCE + GATE PAST FIREPOND ON LEFT.

Town/City: LAMOINE County: HANCOCK

1. Attach a check for \$250 payable to Treasurer State of Maine.
2. Attach to this form a location map with project site clearly marked (use a U.S.G.S. topo map or Maine Atlas & Gazetteer map).
3. Attach to this form a site plan drawn to scale showing property boundaries, stockpile areas, existing reclaimed and unreclaimed lands, proposed maximum acreage of all affected lands, locations of applicable private or public drinking water supplies (within 1000 feet of the limit of excavation) and all existing or proposed solid waste disposal areas.
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I am filing my notice of intent to comply with the performance standards under 38 MRSA §490-D. I fully understand that I can be subject to enforcement action, including a stop work order, on my failure to comply with the performance standards. I authorize staff of the Department of Environmental Protection and the municipality, if it has delegated authority, to access the project site for the purpose of determining compliance with the standards. **I also understand that this permit is not valid until I receive a postal receipt. If the Department determines that a notice is not complete, the Department will notify the applicant no later than 45 days after receiving the notice.**

Signature of Applicant: [Signature] Date: 5/31/05

Send the white copy of this form by certified mail to the **ME Dept. of Environmental Protection, State House Station #17, Augusta, ME 04333**. Send the yellow copy of this form to the ME Historic Preservation Commission, State House Station #65, Augusta, ME 04333. Send the gold copy of the form, including the exhibits listed above, to the municipality where the project site is located. **All abutting owners must receive a copy of the notification form only. The notice that is mailed to the municipality and each abutting property owner must be mailed at least 7 days prior to filing the notice with the DEP.** Retain the pink copy as a record of the permit. No further authorization by DEP will be issued after the receipt of this notification.

For Office Use Only				
Project No:	Fee Paid:	Date:	Def:	Sign Off:

PITFRM 4/96



LAND SURVEYORS
P.O. Box 652 • 67 Franklin Street
Ellsworth, Maine 04605

Richard C. Salsbury, P.L.S.
Stephen R. Salsbury, P.L.S.
Raymond S. Silsby, P.L.S.

Tel.: 207-667-7370
Fax: 207-667-7384
e mail: herrick.salsbury@verizon.net

NOTICE OF INTENT

Please take notice that Harold MacQuinn, Inc., P.O. Box 789, Ellsworth, Maine, 04605 is intending to file a notice of intent with the Maine Department of Environmental Protection pursuant to the provisions of performance standards for excavations, 38 M.R.S.A. SS 490 on or about June 7, 2005. The application is for the operation of a gravel pit up to 10 acres in size. The pit will be located east of the Douglas Highway on property owned by Ralph & Mary Miro, Tax Map 3, Lot 31, adjacent to what is known as the "Kittridge Pit". The Kittridge pit and the new Miro pit have been permitted by the Town of Lamoine Planning Board. This notice of intent is being filed to comply with state law.

The application will be filed for public inspection at the Department of Environmental Protection, 312 Canco Road, Portland, Maine, 04103. Questions or concerns can be directed to Mark Stebbins, Mining Coordinator, Phone 822-6367. A copy of the complete application is also being filed at the Lamoine Town Office.

Enclosed for your information is a copy of the site plan and the notice of intent form being filed with the Department. Questions regarding the notice of intent or the pit operations in general can be directed to us at any time. We would be glad to answer any questions you might have. Please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Steve Salsbury", written over a horizontal line.

Stephen R. Salsbury, PLS

SRS:bc
Enc.

TOWN OF LAMOINE
LAMOINE PLANNING BOARD
RR2 Box 53
Ellsworth, ME 04605

NOTICE OF INTENT TO RESTORE A GRAVEL PIT OR MINE

Date: 6/2/98

Owner's Name:

First _____ Last HAROLD MACQUINN, Inc.

Property Location

Town/City LAMOINE Street/Road HIGHWAY #184
JUST EAST OF STATE

Lot # 33 Map # 3 Book # 2436 Page # 164

The Gravel pit or Mine Restoration Plan specified on the attached plan has been designed to restore the land areas to their pre-existing condition, or a condition which is in compliance with the Maine State Department of Environmental Protection and the Town of Lamoine's Gravel and Mining Ordinance

The system replacement design is in accordance with Section 8, Performance Standards, Subsection D, Restoration, Items a., b., c., and d. of the Lamoine Land Use Ordinance and the State of Maine's Chapter 38 MRSA § 490-D Sec. 14A, B, C, and D.

Ret: Upon sale or transfer of property, the new owners will comply with the recorded Plan if the Gravel Pit or Mining Operations are continued. Otherwise, the new owners will restore the land in compliance with the Plan recorded within 60 (sixty) days of ownership.

R Paul MacQuinn Jr.
Land owner's Name (printed)
R Paul MacQuinn Jr.
Land owner's signature

State of Maine HANCOCK ss: _____ Date 6-2-98
(county)

Subscribed and sworn to by the above named R. Paul MacQuinn Jr.
This 2nd day of June, 1998 at Ellsworth,
Maine.

Before me, Dennis S. Damon
(Notary Public)

98 JUN -3 PM 2:25

REGISTER OF DEEDS
HANCOCK COUNTY SS.
Marilyn Stinson
REGISTER

Dennis S. Damon
my commission expires
17 March 2002

Ret: Paul MacQuinn
Harold MacQuinn Inc
PO Box 789,
Ellsworth

TOWN OF LAMOINE
LAMOINE PLANNING BOARD
606 Douglas Highway
Ellsworth, ME 04605

NOTICE OF INTENT TO RESTORE A GRAVEL PIT OR MINE

Date: September _____, 2012

Owner's Name:

To be recorded upon planning board approval

Harold MacQuinn, Inc.

Property Location

Street/Road: Route 184 – Douglas Highway Town/City: Lamoine, Maine

Map # 3 Lot # 31 Book # _____ Page # _____

The Gravel pit or Mine Restoration Plan specified on the attached plan has been designed to restore the land areas shown to their pre- existing condition, or a condition which is in compliance with the Maine State Department of Environmental Protection and the Town of Lamoine's Gravel and Mining Ordinance. This notice of intent to restore only applies to the area shown on the east side of Route 184 entitled "Leased Pit Area, 30 Acres" and not the entire property of the owners.

The proposed restoration is in accordance with Section 8, Performance Standards, Subsection D, Restoration, Items a., b., c., and d. of the Lamoine Land Use Ordinance and the State of Maine's Chapter 38 MRSA § 490-D Sec. 14A, B, C, and D.

Upon sale or transfer of property, the new owners will comply with the recorded Plan if the Gravel Pit or Mining Operations are continued. Otherwise, the new owners will restore the land in compliance with the Plan recorded within 60 (sixty) days of ownership.

Harold MacQuinn, Inc.

Land owner's Name (printed)

Land owner's signature R. Paul MacQuinn, President

State of Maine Hancock ss:
(county)

Date

Subscribed and sworn to by the above named _____

This _____ day of _____, _____ at _____,

Before me, _____
(Notary Public)

Town of Lamoine -- Gravel Pit Permit

The Lamoine Planning Board finds the owner/operator listed below to be in compliance with the Lamoine Gravel Ordinance and permits operation from this date until the expiration date listed below. The owner/operator must comply with all local, state and federal regulations regarding gravel pit extraction operations, restoration, and any conditions listed below.

Owner: Harold MacQuinn, Inc
PO Box 789
Ellsworth, ME 04605

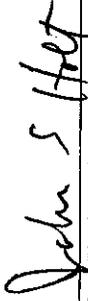
Operator: Harold MacQuinn, Inc
PO Box 789
Ellsworth, ME 04605

Map 3
Lot 31 & 33

Effective Date: January 4, 2011
Expiration Date: September 30, 2013

Conditions:

- Ordinance item 8A—Excavation. A ten-foot (10') natural buffer shall be maintained along the west, south and east boundaries of the leased area on Lot 31 (the boundaries which abut the remaining land of Miro) as well as that portion of the north boundary of the leased area which abuts the non-permitted area of MacQuinn property in Lot 33. A ten-foot (10') natural buffer shall be maintained along the west boundary of the permitted area of MacQuinn in Lot 33 (the boundary which abuts land of Miro), and along that portion of the north boundary of the permitted area of MacQuinn in Lot 33 which abuts the land of Manning (Lot 35). It is the consensus of the Planning Board that a "natural buffer" precludes the use of that 10' buffer for a road within the permitted area (other than an access road crossing over the buffer to gain access to the permitted area) and that any road currently within the natural buffer area shall be discontinued. The ten-foot (10') Authorized Signature:
buffer strip needs to be so indicated on the submitted map
- Ordinance item 8-C Groundwater protection. The fueling pad located at the northwest corner of the permitted area needs to be repaired or replaced to ensure its intended function


John Holt, Chairman
Lamoine Planning Board



HAROLD MacQUINN, INC

P.O. BOX 789 • ELLSWORTH, ME 04605

HANCOCK PLANT
(207) 667-4654

Planning Board
Town of Lamoine
Lamoine, ME 04605

December 5, 1996

Dear Planning Board Members:

We, John and Penelope Walls, give Harold MacQuinn, Inc. permission to dig on their property located on Map 3, Lot 33 in Lamoine, Maine 10 (ten) feet from our property line.

<u>John Walls</u>	<u>12/18/96</u>	<u>Penelope J. Walls</u>	<u>12/18/96</u>
John Walls	Date	Penelope Walls	Date

PRODUCER (603)224-2562 FAX (603)224-8012 The Rowley Agency, Inc. 139 Loudon Road P.O. Box 511 Concord, NH 03302-0511	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.	
	INSURERS AFFORDING COVERAGE	NAIC #
INSURED Harold Macquinn, Inc. Po Box 789 Ellsworth, ME 04605	INSURER A: Hanover Insurance Company	
	INSURER B:	
	INSURER C:	
	INSURER D:	
	INSURER E:	

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR ADD'L LTR	INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS
A		GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY CLAIMS MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> CG0001 GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC	ZBP757495208	05/01/2012	05/01/2013	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000
A		AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS	ADP756793608	05/01/2012	05/01/2013	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
		GARAGE LIABILITY <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$ OTHER THAN AUTO ONLY: EA ACC \$ AGG \$
A		EXCESS / UMBRELLA LIABILITY <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE DEDUCTIBLE <input checked="" type="checkbox"/> RETENTION \$ 0	UHP7574954	05/01/2012	05/01/2013	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000
		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? <input type="checkbox"/> Y/N (Mandatory in NH) If yes, describe under SPECIAL PROVISIONS below				WC STATU-TORY LIMITS OTH-ER E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$
A		OTHER Leased/Rented Equipment	ZBP757495208	05/01/2012	05/01/2013	Limit - \$290,000 Deductible - \$2,500

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS
 Covering operations of the Insured throughout the policy term.

*except 10 days for nonpayment of premium

CERTIFICATE HOLDER	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL <u>30*</u> DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES. AUTHORIZED REPRESENTATIVE Karen Stapley/KS
--------------------	--

OPERATIONS STATEMENT

Harold MacQuinn, Inc.

Kittridge Pit

Lamoine Tax Map 3 Lot 33

Lamoine Tax Map 3 Lot 31

Harold MacQuinn, Inc. currently operates within the Kittridge Pit (Map 3 Lots 31 & 33) under a permit that was originally granted in January 1997. In October 2004, the Lamoine Planning Board approved a site plan expanding the pit operation to 65 acres. The permit was last renewed in 2010.

The physical characteristics of the property include an elevation change of approximately 120 feet from the Douglas Highway to the highest point of land on the property. The property is partially excavated in the current working areas, forested property dominates the remainder of the property with the exception of an abandoned blueberry field towards the east side of the property. There are several roads throughout the property.

This application proposes to expand the permitted operations area by 45 acres in an area south and west of the currently permitted area. Harold MacQuinn, Inc. has a purchase and sale agreement for the entire Miro Lot east of the Douglas Highway.

Concurrent to this application to the Lamoine Planning Board, an application has been made to the Maine Department of Environmental Protection to expand the current variance license issued by the department.

Stormwater drainage

All of the active pit area will drain internally within the pit operations area. No additional amount of runoff has been or will be created onto adjoining lots, other than what currently exists. See stormwater report that is a part of this application, page 132.

Currently, Harold MacQuinn, Inc. enters the pit operations using a paved entrance onto the property from the Douglas Highway. The drainage from the entrance is split and some runs back towards the Douglas Highway and the rest of the drainage generally runs toward the gravel pit, away from the Douglas Highway.

In summary, we believe there is no impact to the drainage along the Douglas Highway or to abutting properties.

Erosion Control

There has been a significant area left undisturbed surrounding the pit operation. No significant erosion problems are evident. Soil erosion preventative measures will be maintained and are outlined in the erosion control report that is a part of this application, page 156.

Work Hours

Harold MacQuinn, Inc. will operate the gravel operation Monday through Saturday during the hours of 6 AM until 6 PM or sunset, whichever is later. There will be no Sunday work.

Crushing & Washing

No rock crushing or washing operations will take place at the Kittridge pit. A portable screener will be utilized from time to time in the working area, along with excavating equipment and loading equipment. All material that will be crushed will be done at the Hancock plant site.

Gating

Currently there is a gate serving the entrance to the Kittridge pit. The access road to the Kittridge pit will be gated during non-working hours and on Sunday.

Trucks

Trucks carrying materials from the site will have secured tailgates and the dump bodies will be tarped before exiting the site.

Noise

Equipment used in the gravel extraction operation will be:

Dump truck or dump trailer

Loader

Bulldozer

Excavator

Screener

Hydroseeder

Noise levels will not be exceeded as outlined in Section 8 subsection H of the Gravel Ordinance of the Town Of Lamoine.

Water Table Monitoring

To monitor the seasonally high water table, a test well has been established near the bottom of the gravel pit. Groundwater has been observed in the well, but the water remains at least 5 feet below the pit floors.

S. W. Cole Engineering, Inc. has been monitoring the test wells. Their report is part of this application. Monitoring will continue on a semi-annual basis and reported to the Town of Lamoine.

Screening

To screen the existing and proposed expansion of the site from public view, a buffer along the Douglas Highway will be maintained in the natural state as it now exists for a width of 150 feet as measured from the road centerline.

In addition, two areas along Route 184 will be graded, loamed, seeded and planted with 4-5 high nursery stock spruce and red pine trees. One area is shown on site plan C2.0 as 3.0 acres and the second area is shown as 0.5 acres. The trees will be planted in three rows at 20 foot intervals. The nursery tree survival rate is expected to be at or near 95%. This planting will occur within 12 months of the site plan approval by the planning board and the applicant will accept a condition as such.

Restoration

Restoration is proposed for the three year permit cycle. The area to be restored is shown on the three year phasing plan, E1.0

Topsoil that is removed from the site is generally taken to the Harold MacQuinn, Inc. Hancock Plant for processing and storage and brought back to the Kittridge Pit for restoration as needed.

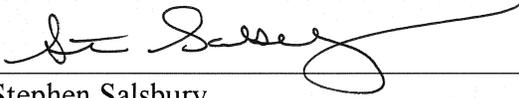
Permanent vegetation will be established using the specifications for restoration contained within this application. Within two years of establishing the permanent vegetation, spruce, red pine and/or balsam fir tree saplings will be planted within the reclaimed area in a non-symmetrical pattern with an average of 1 tree every 196 square feet. Stumps and or boulders may be spread to give some habitat diversity. A target for the survival of the ground cover is 90% or better. At least 75% of the plantings are expected to survive long term.

As required by Section 8 subsection D, an agreement to restore the existing gravel pits has been filed at the Hancock County Registry of Deeds for Map 3 Lot 33. A similar agreement for Map 3 Lot 31 will be filed upon approval of the application by the planning board.

Harold MacQuinn, Inc. has enough cash reserves on hand to complete the restoration of the entire pit. There is currently a letter of credit in the amount of \$450,000 on hand to assure that the pit can be restored.

Permission to enter

Harold MacQuinn, Inc. gives permission for the Lamoine code enforcement officer to enter the pit operation at any time to inspect the operations. Any duly appointed planning board member may accompany the code enforcement officer.

A handwritten signature in black ink, appearing to read "Stephen Salsbury", written over a horizontal line.

Stephen Salsbury
Agent

HYDROGEOLOGIC ASSESSMENT

Background

Harold MacQuinn, Inc. (MacQuinn) operates a gravel pit on two contiguous parcels of land located on the east side of Route 184 in Lamoine, Maine. The two parcels of land are identified by the Town of Lamoine as Lots 31 and 33 on Tax Assessment Map 3. The Town of Lamoine issued a permit for gravel extraction on Lot 33 in 1997. Subsequently, in 2004 the Town of Lamoine approved a southward expansion onto an adjoining 30-acre area of land on Lot 31. Collectively these two previously permitted gravel pit areas are referenced herein as the Kittridge Pit. This application proposes to expand the Kittridge pit further southward onto Lot 31. This hydrogeologic assessment was prepared in accordance with Section 8 C Groundwater Protection of the Lamoine Gravel Ordinance dated March 16, 2011 to support of the proposed Kittridge Pit southward expansion, reference herein as the expansion area. A Location Map showing the previously permitted excavation areas and the proposed expansion area is included as Figure 1.

Normal gravel pit operations consist of removing granular materials for processing to meet various sand and gravel material specifications. Processing operations may occur within the gravel pit or at an off-site location depending on material availability and project demand. Bank run sand and gravel is also excavated directly from a working face, loaded into trucks and transported to a job site.

As required by the Gravel ordinance, this Hydrogeologic Assessment demonstrates the depth to the water table underlying the Site, identifies elevations that will maintain a separation of 5 feet from the floor of the pit and the average seasonal high water table, and evaluates whether proposed operation at the pit would pose an unreasonable risk of ground water pollution or an adverse effect on nearby water supply wells or other potential receptors within the vicinity of the Site.

This hydrogeological assessment was conducted and prepared by Stephen B. Marcotte and reviewed by Michael A. Deyling, both Maine Certified Geologists.

Physical Setting

The expansion area proposed for gravel extraction is located approximate 800 feet northeast of the intersection of Route 184 and Shore Road (Lamoine Corner) as shown on Figure 1. The expansion area is accessible via private gravel roads from Route 184 and Mill Road. The expansion area is bounded by an active gravel pit on the north (Kittridge Pit), a small gravel pit on the west along Route 184 and undeveloped property to the south and east.

Hydrogeologic Setting

The Maine Geological Survey (MGS) Surficial Geology Map for the Salsbury Cove 7.5-minute Quadrangle, Maine, shows that the Kittridge Pit and the proposed expansion area is a relatively small area within a large sand and gravel deposit that extends to the north and south of the Site. A copy of the MGS Surficial Geology Map showing the site and surrounding area is presented as Figure 2.

The MGS mapped surficial materials at the site and surrounding area as esker deposits, marine delta deposits, marine deposits (Presumpscot Formation) and marine near-shore deposits. The esker deposits consist of coarse sand and gravel materials deposited by glacial meltwater streams formed at the frontal margin of a receding continental ice sheet. The marine delta deposits consist of silt, sand and gravel deposited in ocean waters at the terminus of the glacial meltwater stream (esker). The marine delta deposits were deposited simultaneously with silt and silty clay marine deposits being deposited in quiescent waters along the seaward margins of the delta deposits. Marine near-shore deposits consisting predominately of sand with lesser amount of gravel were deposited as sea level began to slowly rise relative to the ground surface following glacial retreat.

As expected, the MGS Significant Sand and Gravel Aquifer Map for the Salsbury Cove 7.5-minute Quadrangle, Maine, shows that the site is located within a mapped Significant Sand and Gravel Aquifer with moderate to good yield of water to a properly constructed water supply well completed below the water table. A copy of the MGS Surficial Geology mapping for the site and surrounding area is presented as Figure 3. The extent of the Significant Sand and Gravel Aquifer largely mirrors the sand and gravel deposits depicted on the Surficial Geology Map.

Bedrock outcrops were not observed in the Kittridge Pit or the expansion area, nor were they observed during site reconnaissance in adjoining gravel pits located to the east, north and south of the Site. According to the approximate depth to ledge measurements presented on the MGS maps, the elevation of bedrock to the south of the site along Mill Road varies from 10 feet to 65 feet mean sea level (MSL) and bedrock elevations to the north of the Site are at or below MSL.

Surface water bodies are not located with the existing or proposed extraction areas. The closest surface water bodies include the Jordan River (tidal) 1,800 feet to the west, Archer Brook 2,000 feet to the east and a large wetland area located 1,300 to the southeast that drains to Archer Brook. The Jordan River and Archer Brook are shown on Figure 1. The large wetland area is labeled as *Hw* on Figure 2.

A spring operated by the Cold Spring Water Company is located greater than 1,000 feet to the southeast of the proposed expansion area. Further discussion regarding the Cold Spring is presented below.

Site and Regional Ground Water Elevations and Direction of Ground Water Flow

The surficial geology of the site and vicinity reflects the relatively complex depositional environments at the receding margin of a continental glacier, where glacial meltwater-fed streams discharged into the Atlantic Ocean when sea level was much higher than today relative to the ground surface. These conditions resulted in the deposition of interlayered and interfingered deposits of coarse sand and gravel glacial stream deposits, finer silt/sand/gravel deltaic deposits and silty clay deposits. Following deposition of these materials, sea level lowered relative to the ground surface, exposing the higher elevations of the delta deposits to wind and water erosion, resulting in the deposition of sandy near-shore deposits. The complex layering and/or gradational contacts between these surficial materials results in the juxtaposition of materials with very different physical characteristics and relatively complex hydrogeological conditions that influence movement of ground water in the vicinity of the site.

The Town of Lamoine requires that a 5 foot separation be maintained between the bottom of the gravel pit and the average seasonal high water table elevation. The elevation of the groundwater table at the Site was evaluated using data from four monitoring wells located on the 39-acre proposed Site and the previously permitted Kittridge Pit monitoring wells. The wells included one shallow well installed with a backhoe in the bottom of the Kittridge Pit (well OW-1) and three monitoring wells installed in test borings (wells MW-1, MW-2-2010 and MW-3-2012). Well installation logs included surficial materials and well construction information for MW-1, MW-2-2010 and MW-3-2012 are presented as Attachment 1. A well installation log for OW-1 was not completed; however, this well only extends approximately 10 feet below the ground surface and it is assumed that the seasonally saturated materials at base of well OW-1 are similar to the sand and gravel materials exposed at the base of the excavation.

Water levels in OW-1 and MW-2-2010 are monitored on a semi-annual basis by S.W. Cole Engineering and a copy of their most recent report dated May 14, 2012 is presented as Attachment 2. Water level elevations are summarized in the table below.

Well MW-1 is a 100 foot deep well that was reportedly dry following installation and has not been monitored on a semi-annual basis because it is dry. Summit gauged MW-1 on September 7, 2012 and confirmed that the well remains dry.

Well MW-3-2012 is a 55 foot deep well that was installed along the southeastern margins of the 39-acre Site. Summit oversaw the installation of MW-3-2012 by Maine Test Borings of Brewer, Maine on August 28, 2012. Surficial materials encountered included approximately 20 feet of marine near-shore sand and gravel deposits, overlying 16.5 feet of silty clay marine deposits, overlying very fine sand and silt delta deposits to a depth of at least 65 feet below the ground surface. Surficial material at this location were dry. Monitoring well MW-3-2012 was installed in a 55 foot deep boring. The base of well MW-3-2012 is approximately 21 feet lower than the elevation of the top of the Cold Spring seepage face (131 feet). MW-3-2012 was found to be dry when gauged by Summit on September 7, 2012.

The average seasonal high water table elevation or “lower than” elevations for dry wells is presented in the table below and all historical data are presented in Table 1 (attached).

Well	Groundwater Elevation (feet NGVD 29)
OW-1	24.44 feet
MW-1	Lower than 141.4 feet
MW-2-2010	88.22 feet
MW-3-2012	Lower than 109.9 feet

Additional off-site investigations were completed to obtain a better understanding of the relatively complex surficial geology of the area and how groundwater in the proposed gravel extraction areas relates to the recharge area for the Cold Spring, which is located approximately 1,000 feet to the east of the proposed expansion area.

Figure 4 presents groundwater elevations from monitoring wells located at the site and the surrounding area. Additionally, the elevation of surface water features located in the vicinity of the site, including the top of the Cold Spring seepage area, Archer Brook and a large wetland area located to the south of Mill Road are shown on Figure 4. The surficial geology and groundwater elevations at the site and surrounding area indicate that a perched water table is present within the marine near-shore deposits that are underlain by silty clay. The top of the perched water table is exposed in a large wetland area to the south of Mill Road and groundwater elevations from monitoring wells around the wetland indicate that ground water flows radially away from this high point. Groundwater flowing to the west, east and south is mainly contained within the sandy overburden material above the silty clay materials. Whereas, groundwater flowing northward from the wetland area flows through somewhat thinner sandy overburden deposits and discharges to the Archer Brook and the Cold Spring where the sandy overburden deposits pinch out. Based on these data, variations in the elevation of the top of the silty clay deposits acts like a hydraulic barrier to groundwater flow resulting in groundwater flow from the wetland area to east, west and south, with flow to the north confined to the Archer Brook valley.

Based on Summit’s evaluation of the hydrogeological conditions within the vicinity of the Site, groundwater underlying the Kittridge Pit and the proposed expansion area does not contribute to the recharge zone of Cold Spring.

Water Use

Groundwater extraction for consumptive use or off-site distribution will not occur at the Kittridge Pit.

The only water supply well known to exist within 500 feet of the Site is a residential well located on the west side of Route 184 that is approximately 200 feet west of the limits of the proposed

excavation. The location of this well is shown on the Existing Conditions Plan (Sheet C1.0) included with this application.

The Cold Spring Water Company (CSWC) utilizes a spring located greater than 1,000 feet to the southeast of the Site as shown on Figure 4. The CSWC supplies water to the properties to the south of the Site along Mill Road and Route 184, including the Town of Lamoine School and Fire Department. Based on Summit's evaluation of the hydrogeological conditions at the Site and the surrounding area, the Kittridge Pit and the proposed expansion area are not located within the CSWC recharge area.

Ground Water Protection

MacQuinn will not maintain permanent facilities or fuel storage within the Kittridge Pit. Equipment maintenance occurs in an enclosed maintenance garage outside of the Site boundaries. As a result, sources of potential ground water contamination are limited to the mobile and portable equipment typically operating within the pit.

Equipment that may work within the pit consists of loaders, excavators, haul trucks and portable processing equipment. These pieces of equipment contain petroleum products (fuel, oil, hydraulic fluids) within enclosed tanks on individual pieces of equipment and pose a low risk of release. Releases that could potentially occur would result from leaking hoses, tanks and fittings. To minimize the potential for inadvertent small releases, equipment is inspected daily prior to use. Routine maintenance is conducted to keep equipment in good working order.

Spill kits are maintained at the site in the event of an inadvertent spill. Employees are aware of the location and proper use of spill kits and will respond to any unanticipated spills.

Conclusions

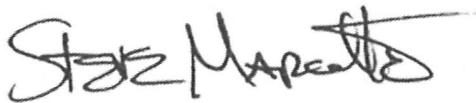
Based on the hydrogeologic setting, field observations, published data from the Maine Geological Survey and data obtained from water level monitoring at nearby wells, the following conclusions have been reached:

- The average seasonal high water table underlying the Kittridge Pit and the proposed expansion area ranges from 23.3 feet in the west to an elevation lower than 109.9 feet in the southeastern corner of the site and an elevation of 88.3 feet in the northeastern corner of the site. To maintain a separation of 5 feet between the floor of the pit and the average seasonal high water table, the base of the excavation should be five feet or more above these elevations.
- One residential water supply well is located approximately 200 feet to the west of the proposed excavation.

- The Kitteridge Pit and the proposed expansion area is not located within the recharge area for the Cold Spring.
- No permanent structures or fuel storage are planned for the Site. MacQuinn conducts daily inspections of equipment and performs routine maintenance to maintain equipment in good working order. Spill kits are available at the Site in the event of a release of petroleum products from operating machinery. As a result, the potential for ground water contamination is minimal.

Recommendations

- Monitor water level elevation in the monitoring wells on a semi-annual basis to verify that the proposed pit floor elevations maintain a minimum of 5 feet of separation from the average seasonal high water table elevation.
- Excavate test pits or install monitoring wells as pit floor elevations approach interpreted ground water table elevations to verify that a 5 feet separation to ground water will be maintained.



Stephen B. Marcotte, C.G.
Project Geologist




Michael A. Deyling, C.G., P. Hg.
President, Principal Hydrogeologist



TABLES

Table 1: Monitoring Well Groundwater Data Summary Table

**TABLE 1: Monitoring Well Groundwater Data Summary Table
Kittridge Pit - Route 184, Lamoine, Maine**

Monitoring Well Top of PVC Casing (TOC) Elevation (1) PVC Standpipe Stickup	OW-1		MW-1 (2)		MW-2-2010 (3)		MW-3-2012 (4)	
	Depth to Water Level from TOC (ft)	Groundwater Level Elevation (ft)	Depth to Water Level from TOC (ft)	Groundwater Level Elevation (ft)	Depth to Water Level from TOC (ft)	Groundwater Level Elevation (ft)	Depth to Water Level from TOC (ft)	Groundwater Level Elevation (ft)
Date of Measurement								
5/17/2004	NM	<141.4	Dry to 100.7	<141.4	NM	NM	NM	NM
12/9/2004	Dry to 14.53	<23.3	NM	NM	NM	NM	NM	NM
6/7/2005	13.41	24.39	NM	NM	NM	NM	NM	NM
11/2/2005	12.57	25.23	NM	NM	NM	NM	NM	NM
4/20/2006	11.75	26.05	NM	NM	NM	NM	NM	NM
11/15/2006	11.58	26.22	NM	NM	NM	NM	NM	NM
5/17/2007	11.18	26.62	NM	NM	NM	NM	NM	NM
11/19/2007	Dry to 14.53	<23.3	NM	NM	NM	NM	NM	NM
4/16/2008	Dry to 14.53	<23.3	NM	NM	NM	NM	NM	NM
10/30/2008	Dry to 14.53	<23.3	NM	NM	NM	NM	NM	NM
4/28/2009	Dry to 14.53	<23.3	NM	NM	NM	NM	NM	NM
11/2/2009	10.61	27.19	NM	NM	NM	NM	NM	NM
4/22/2010	9.83	27.97	NM	NM	NM	NM	NM	NM
12/8/2010	Dry to 14.53	<23.3	NM	NM	27.52	88.78	NM	NM
5/2/2011	Dry to 14.53	<23.3	NM	NM	25.72	90.58	NM	NM
10/28/2011	Dry to 14.53	<23.3	NM	NM	27.38	88.92	NM	NM
4/4/2012	Dry to 14.53	<23.3	NM	NM	28.12	88.18	NM	NM
8/8/2012	Dry to 14.53	<23.3	NM	NM	29.72	86.58	NM	NM
8/27/2012	NM	<23.3	NM	NM	NM	NM	Dry to 58	<109.9
9/7/2012	NM	NM	Dry to 100.7	<141.4	30.04	86.26	Dry to 58	<109.9
Average Seasonal High Water Table Elevation		24.44		<141.4		88.22		<109.9

NOTES:

NM = Not Measured

1. Top of PVC Casing elevations based on NGVD 29 datum. Elevations provided by Herrick and Salsbury
2. MW-1 is a dry well installed on 5/17/2004. Periodic measurement by MacQuinn personnel indicated that this well continued to be dry. Summit confirmed that the well was dry on 9/7/2012
3. MW-2-2010 was installed on 10/7/2010
4. MW-3-2012 was installed on 8/27/2012

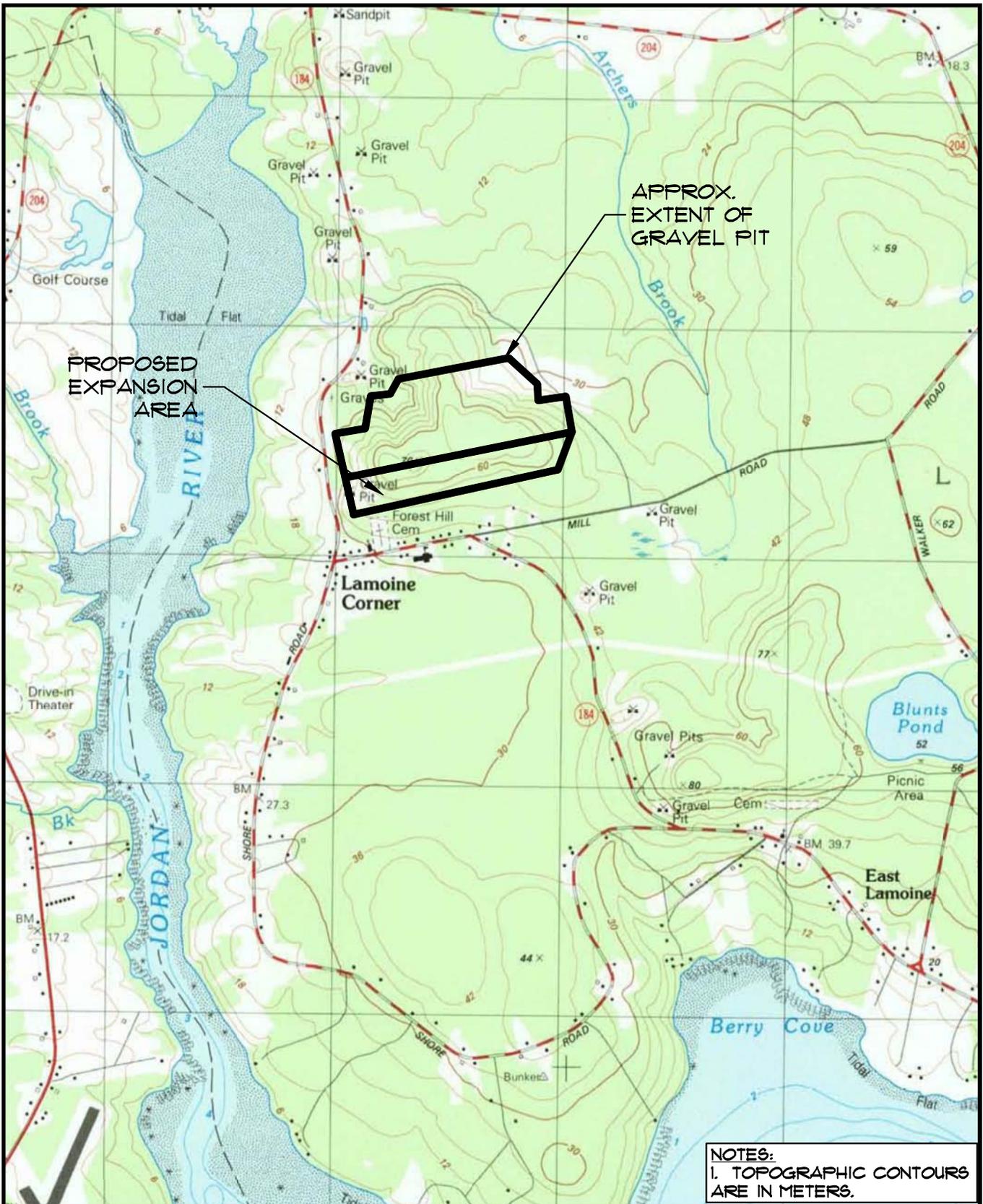
FIGURES

Figure 1: Site Location Map

Figure 2: MGS Surficial Geology Map

Figure 3: MGS Significant Sand and Gravel Aquifer Map

Figure 4: Groundwater Elevation Map



**USGS TOPOGRAPHIC MAP
SALSBURY COVE 7.5-MIN. QUADRANGLE**

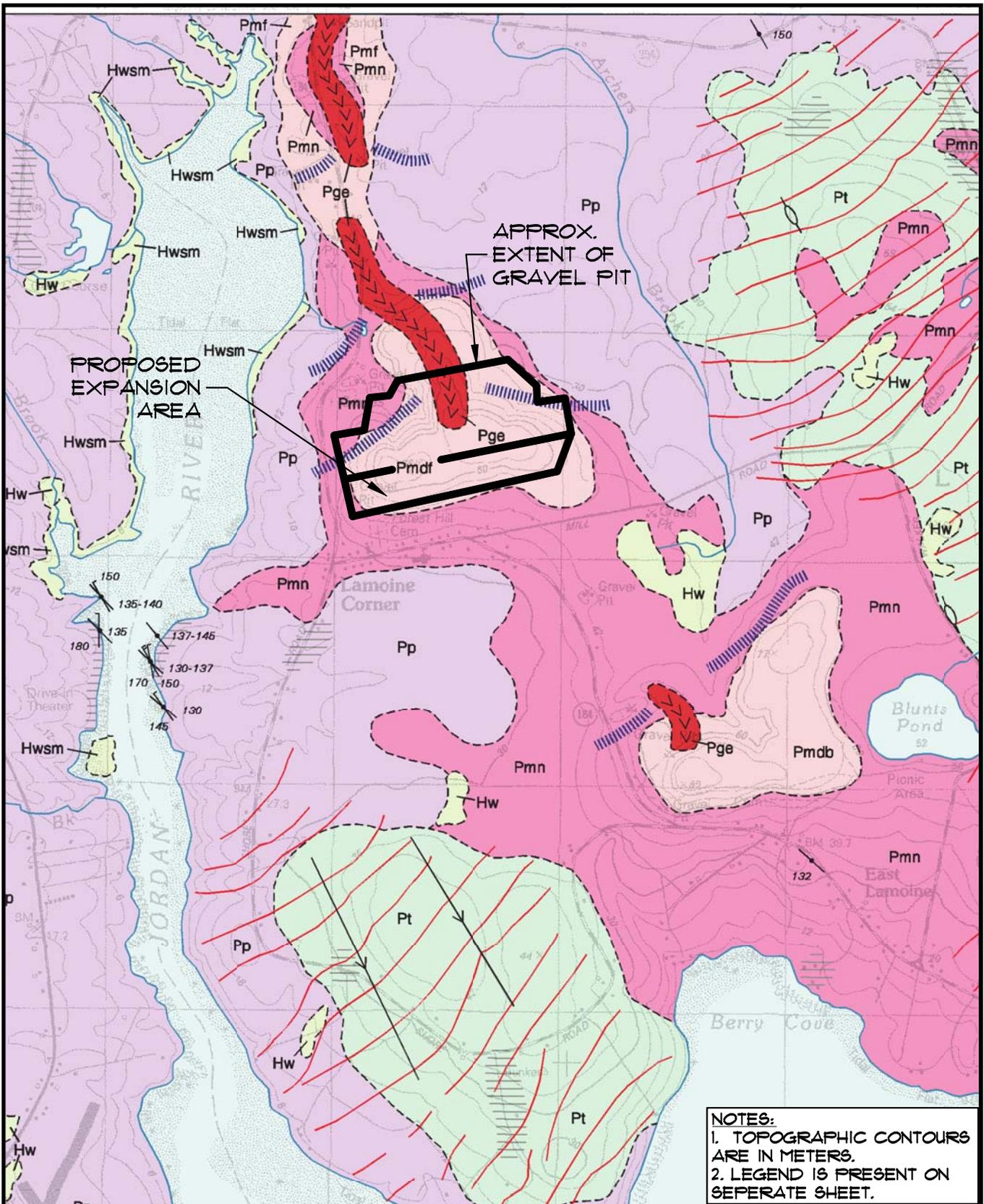
PREPARED FOR
HAROLD MACQUINN, INC.

FIGURE 1	DRAWN BY: SBM	CHECKED BY: MAD
JOB: 11-32405	NOT TO SCALE	DATE: SEPT. 2012



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**SURFICIAL GEOLOGY MAP
SALSBURY COVE 7.5-MIN. QUADRANGLE**

PREPARED FOR
HAROLD MACQUINN, INC.

FIGURE 2	DRAWN BY: SBM	CHECKED BY: MAD
JOB: 11-32405	NOT TO SCALE	DATE: SEPT. 2012



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SURFICIAL GEOLOGY LEGEND SALSBURY COVE 7.5-MIN. QUADRANGLE

PREPARED FOR
HAROLD MACQUINN, INC.

FIGURE 2 LEGEND	DRAWN BY: SBM	CHECKED BY: MAD
JOB: 11-32405	NOT TO SCALE	DATE: SEPT. 2012



Summit
Environmental Consultants, Inc

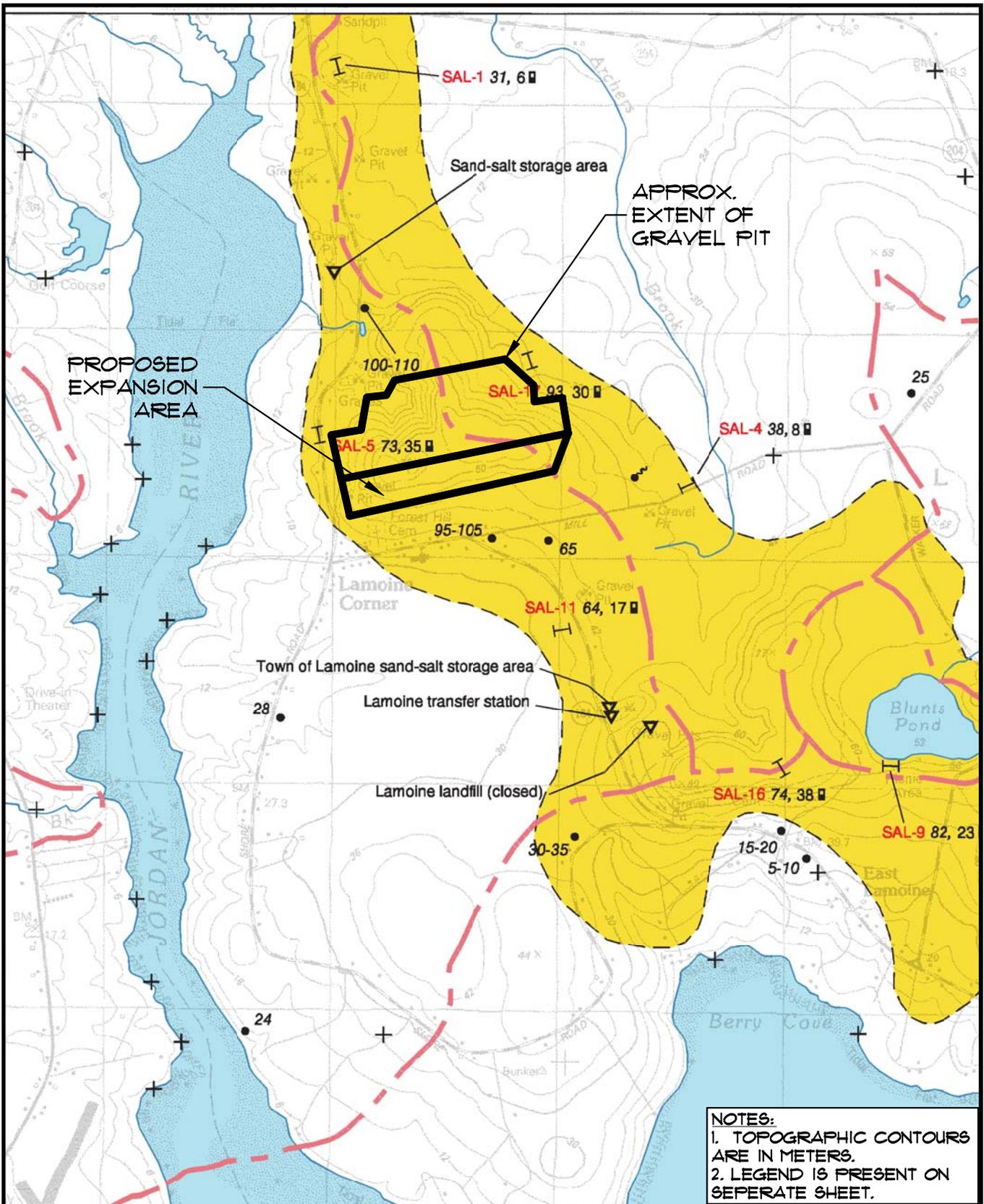
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Tel.: (207) 795-6009
Fax: (207) 795-6128

af	<p>Artificial fill - Includes landfills, highway and railroad embankments, and dredge spoil areas. These units are mapped only where they are resolvable using the contour lines on the map, or where they define the limits of wetland units. Minor artificial fill is present in virtually all developed areas of the quadrangle.</p>		
Hms	Marine shoreline - Sand and gravel on modern ocean beaches.		
Hw	Freshwater wetlands - Muck, peat, silt, and sand. Poorly drained areas, often with standing water.		
Hwsm	Saltmarsh wetlands - Peat, muck, silt, and clay. Coastal marsh, subject to tidal flooding. Thin, non-commercial peat layers are present atop a mineral substrate consisting of estuarine sands and muds.		
Pmd	Marine delta - Pleistocene marine delta formed during flooding by the sea due to isostatic emergence of the land. Very low-angle sand and silt foreset bedding is mantled by trough cross-bedded sand, deposited by braided streams which flowed over the delta top as it prograded seaward. In places, may be mantled with unmapped thin collian deposits. Two deltas have been assigned unique geographic names listed below: Pmddf - Forest Hill delta Pmdtb - Blumis Pond delta		
Pmn	Marine nearshore deposits - Pleistocene gravel, sand, and mud deposited as a result of wave activity in nearshore or shallow-marine environments; not associated with beach morphology.		
Pp	Presumpscot Formation - Massive to laminated silty clays with rare dropstones and occasional shelly horizons, which overlie rock and till, and are interbedded with and overlie end moraines and marine fan deposits; includes sand deposited as a distal unit of submarine fans.		
Pem	End moraines - Linear ridges consisting of bedded sand and gravel interbedded with Presumpscot Formation silty clays and overlain by till on the ice-proximal faces of the moraines. One moraine has been assigned a unique geographic name listed below: Pemlh - Long Heath end moraine		
Pmf	Submarine outwash fans - Thick sand and gravel accumulations formed at the mouth of subglacial tunnels along the receding late Pleistocene ice margin. The sand and gravel is interbedded with and overlain by Presumpscot Formation clays at the distal edges of the fans, and interlayered with and overlain by tills at their ice-contact faces.		
Pge	Esker - Ridges of massive to stratified, commonly interbedded, sand and gravel. Deposited by meltwater streams in subglacial and englacial conduits during retreat of the last ice sheet.		
Pt	Till - Light- to dark-gray nonsorted to poorly sorted mixture of clay, silt, sand, pebbles, cobbles, and boulders, a predominantly sandy to silty diamicton containing some gravel. Generally found under most other deposits.		

	<p>Thin drift, undifferentiated - Areas of thin patchy sediment cover on bedrock, which are unmapped or have few exposures of surficial materials. The sediments may include till, Presumpscot Formation, and/or marine nearshore deposits.</p>		
	Bedrock outcrops/thin-drift areas - Ruled pattern indicates areas where bedrock outcrops are common and/or surficial sediments are generally less than 10 ft thick. Mapped from air photos and ground observations. Actual thin-drift areas probably are more extensive than shown.		
	Areas of disturbed land - Active or inactive quarries and excavations. Topography of these areas has been obscured by mining operations.		
	Contact - Boundary between map units.		
	Striations - Observations made at dot. Number indicates azimuth (in degrees) of ice-flow direction. Where two directions are observed in the same outcrop, flags indicate older trends where discerned. Where present, arrows on striation lines indicate a unique flow direction. (Sh) after azimuth number indicates striations from Shaler, 1889. (L) after azimuth number indicates striations from Lowell and Borns, 1988.		
	Crescentic fractures - Observations made at dot. Number indicates azimuth (in degrees) of ice-flow direction. Crescent mark indicates direction of ice flow. These features are the result of friction from boulders in the base of the ice passing over the bedrock and gouging the rock surface, leaving the crescent-shaped fractures, oriented near perpendicular to ice-flow direction.		
	End moraine crests - Line shows crest of moraine ridge deposited along the retreating margin of the most recent glacial ice sheet.		
	Esker ridge - Shows trend of sand and gravel ridge deposited in a meltwater tunnel within or beneath glacial ice. Chevrons indicate direction of meltwater flow.		
	Ice-margin positions - Shows an approximate position of the glacier margin during ice retreat based on meltwater deposits, moraines, or positions of meltwater channels.		
	Drumlin - Glacially streamlined hill. Symbol shows long axis of hill or ridge shaped by flow of glacial ice, and which is parallel to former ice-flow direction.		
	Glacially grooved or fluted till - Formed beneath the glacier by erosion of till surfaces by boulders in the base of the ice scouring the till, or by obstructions on the till surface that allow for development of elongate till ridges parallel to ice-flow direction.		
	Wave-cut scarp - Formed during the recession of the glacial sea.		

Upper limit of marine submergence - Shows highest elevation of sea level immediately following recession of the last glacial ice sheet from the quadrangle. The two deltas in Lamoine in the northern half of the map are at elevations of approximately 263 ft (80 m) to 250 ft (76 m), marking the highest level of the sea to which the deltas were deposited. The blue dashed lines show the areas where islands would have been found in the glacial sea, approximately 15,000 years before the present.



**SIGNIFICANT SAND & GRAVEL AQUIFER MAP
SALSBURY COVE 7.5-MIN. QUADRANGLE**

PREPARED FOR
HAROLD MACQUINN, INC.

FIGURE 3	DRAWN BY: SBM	CHECKED BY: MAD
JOB: 11-32405	NOT TO SCALE	DATE: SEPT. 2012



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Significant Sand & Gravel Aquifer Map Unit and Symbol Descriptions



Surficial deposits with good to excellent potential ground-water yield; yields generally greater than 50 gallons per minute to a properly constructed well. Deposits consist primarily of glacial sand and gravel, but can include areas of sandy till and alluvium; yield zones are based on subsurface data where available, and may vary from mapped extent in areas where data are unavailable.



Surficial deposits with moderate to good potential ground-water yield; yields generally greater than 10 gallons per minute to a properly constructed well. Deposits consist primarily of glacial sand and gravel, but can include areas of sandy till and alluvium; yields may exceed 50 gallons per minute in deposits hydraulically connected with surface-water bodies, or in extensive deposits where subsurface data are available.



Areas with moderate to low or no potential ground-water yield (includes areas underlain by till, marine deposits, eolian deposits, alluvium, swamps, thin glacial sand and gravel deposits, or bedrock); yields in surficial deposits generally less than 10 gallons per minute to a properly constructed well.

- Drilled overburden well
 Drilled bedrock well
 Quarry
- Dug well
 Driven point
 Test pit
 Bedrock outcrop

50 Depth to bedrock, in feet below land surface

≥ 13 Penetration depth of boring; ≥ symbol refers to minimum depth to bedrock based on boring depth or refusal

6 Depth to water level in feet below land surface (observed in well, spring, test boring, pit, or seismic line)

✕ Gravel pit (overburden thickness noted in feet, e.g. 5-12')

4 GPM Yield (flow) of well or spring in gallons per minute (GPM)

⋮ Spring, with general direction of flow

⬆ Observation well (project well if labeled; nonproject well if unlabeled)

⬆ Test boring (project boring if labeled; nonproject boring if unlabeled)

▽ Potential point source of ground-water contamination



Surface-water drainage-basin boundary; surface-water divides generally correspond to ground-water divides. Horizontal direction of ground-water flow generally is away from divides and toward surface-water bodies.

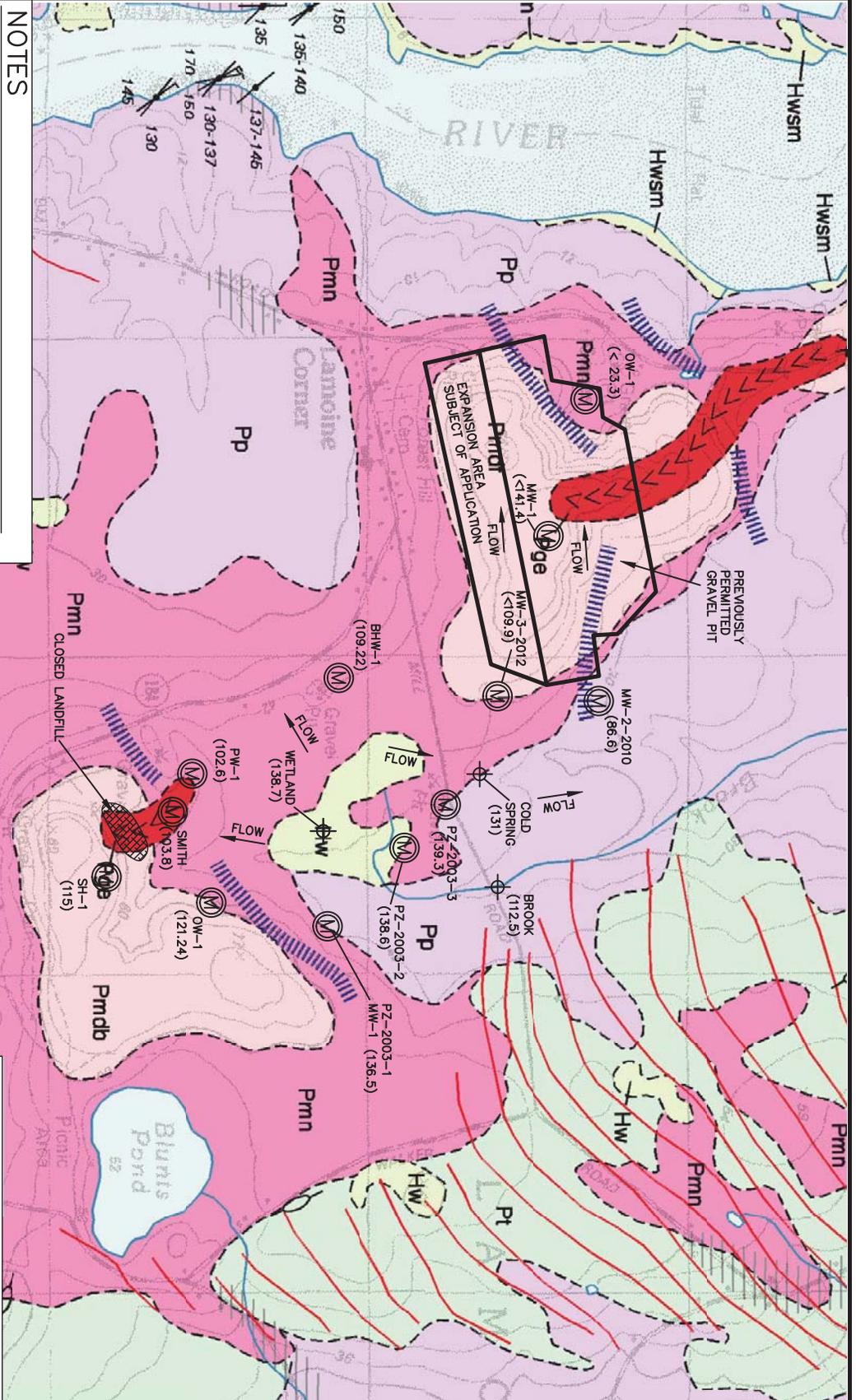
| **MAP-7 131, 23** Twelve-channel seismic line, with depth to bedrock and depth to water shown at the midpoint of the line, in feet below land surface.

| **69, 12** Single-channel seismic line, with depth to bedrock and depth to water shown at each end of the line, in feet below land surface.

| **MAP-E 72, 12** Unless otherwise indicated, data shown above the line-identifier box refers to the northern end of the seismic line.

NOTES

1. BASE PLAN IS THE MAINE GEOLOGICAL SURVEY SURFICIAL GEOLOGY MAP FOR SALSBUARY COVE 7.5-MIN. QUAD (OPEN FILE NO. 12-8 [2012]). NOTE THAT TOPOGRAPHIC CONTOURS ARE IN METERS (NOT FEET).
2. WELL LOCATIONS AND CASING OR GROUND ELEVATIONS, PROVIDED BY HERRICK AND SALSBUARY, INC. ALL ELEVATIONS IN FEET NGVD 29.
3. DEPTH TO WATER LEVELS MEASURED ON AUG. 8 AND SEPT. 7, 2012. MEASUREMENTS FROM THE SAME WELLS DO NOT INDICATE SIGNIFICANT CHANGES IN GROUNDWATER ELEVATION DURING THIS TIME PERIOD.
4. ELEVATION OF COLD SPRING IS THE TOP OF THE SEEPAGE FACE NEAR THE LOWER PUMP HOUSE.



LEGEND

- MW-2-2010 (89.8) MONITORING WELL & GROUNDWATER ELEVATION SEE NOTE #3
- PZ-2003-3 (139.3) SURFACE WATER ELEVATION
- SH-1 (115) SURFACE WATER ELEVATION
- COLD SPRING (131) DIRECTION OF GROUNDWATER FLOW
- FLOW

FIGURE 4

GROUNDWATER ELEVATION MAP
 ROUTE 184 – LAMOINE, MAINE
 PREPARED FOR
HAROLD MACQUINN, INC.

640 MAIN STREET
LEWISTON, ME 04240

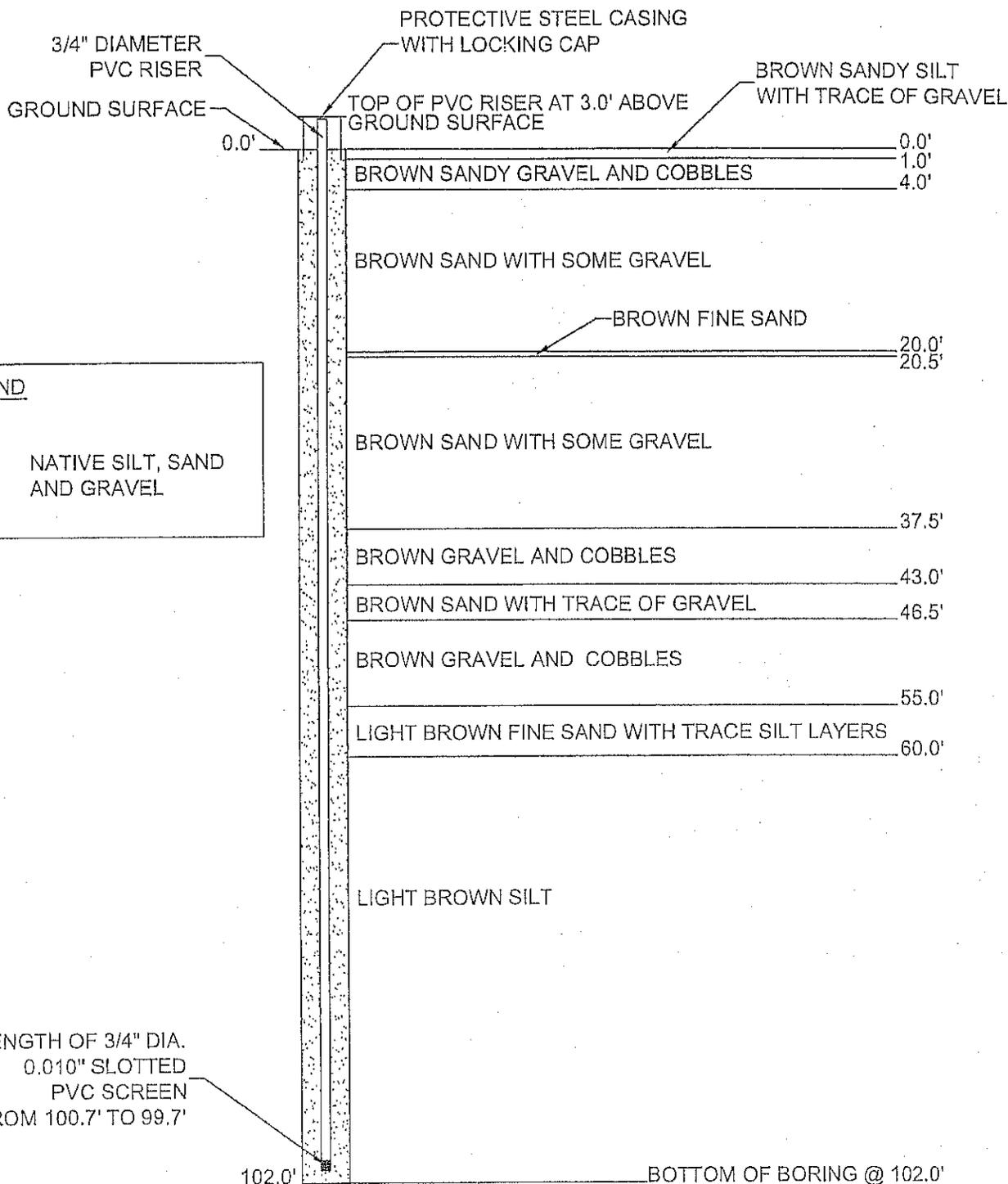
Tel.: (207) 795-6009
www.summitenv.com

DATE: SEPT. 2012	DRAWN BY: SBM	SCALE: 1 IN = 1,000 FT
JOB NUMBER: 11-3240.5	CHECKED BY: MAD	CADD: GW-CONTOURS.DWG

ATTACHMENT 1

Well Installation Logs

MW-1
WATER LEVEL
MONITORING WELL
INSTALLATION DETAIL



LEGEND

 NATIVE SILT, SAND AND GRAVEL

SCALE

VERTICAL: 1" = 15'
HORIZONTAL: NOT TO SCALE

MAINE TEST BORINGS, INC.
 BREWER, MAINE 04412

CLIENT
 MacQuinn
 Paul MacQuinn
 Hancock ME 04640

SHEET 1 OF 1
 HOLE NO. ~~OW1~~ MW-2-2010

DRILLER
 Michael Porter

PROJECT NAME
 Blueberry Field Obs Well

LINE & STATION

M.T.B. JOB NUMBER
 2010-147

LOCATION
 Lamoine ME

OFFSET

GROUND WATER OBSERVATIONS

CASING
 HSA
 2 1/2"

SAMPLER

CORE BARREL

DATE
 10/7/2010
 Start

DATE
 10/7/2010
 Finish

SURFACE ELEVATIC

TYPE
 SIZE I.D.
 HAMMER WT.
 HAMMER FALL

CASING BLOWS PER FOOT	SAMPLE					BLOWS PER 6" ON SAMPLER				VANE READING	DEPTH	STRATUM DESCRIPTION
	NO.	O.D.	PEN.	REC.	DEPTH @ BOT.	0-6	6-12	12-18	18-24			
											1.0	Brown Silty Sand w/Gravel
												Brown Fine Silty Sand
											21.3	
												Brown Silty Sandy Gravel
											35.0	Bottom of Boring @ 35.0' Water @ 28.0' w/ 30.0' Augers Caved & Dry @ 15.4' 1" PVC Well Installed @ 35.0' Using 10.0' screen

SAMPLES
 D = SPLIT SPOON. R = ROCK
 C = 2" SHELBY TUBE CORE
 S = 3" SHELBY TUBE V = VANE
 J = 3/8" SHELBY TUBE TEST

SOIL CLASSIFIED BY:
 DRILLER-VISUALLY
 SOIL TECHNICIAN-VISUALLY
 LABORATORY TESTS

REMARKS:
 No Split Spoon Samples Taken

HOLE NO. OW1
 Page 91

40

SUMMIT ENVIRONMENTAL CONSULTANTS, INC. 640 Main Street Lewiston, Maine 04240				SOIL BORING LOG			Boring #: MW-3-2012	
Project: MacQuinn - Miro Lot				Project #: 11-3240.5			Sheet: 1 of 1	
Location: Lamoine, Maine				Date started: 8/27/2012			Chkd by: MAD	
Drilling Co: Maine Test Borings				Boring Location: see location map				
Personnel: Mike Porter				Top of PVC Casing Elevation:				
Summit Staff: Steve Marcotte, CG				Date started: 8/27/2012				
DRILLING METHOD		SAMPLER		ESTIMATED GROUND WATER DEPTH				
Vehicle:	Skidder	Type:	Not Functioning	Date	Depth (ft)	Reference	Groundwater Elevation (ft)	
Model:	CME	Hammer:		See Report				
Method:	4.25" HSA	Fall:						
Depth (ft.)	SAMPLE DESCRIPTION				Stratum			
	No.	Pen/Rec (in)	Depth (ft)	Blows/6 in.				
					0 to 2.5 ft bgs - Brown Sand and Gravel	Sand and Gravel Marine Near-shore		
10					2.5 to 10 ft bgs - Yellow Brown Medium Sand 10 to 11 ft bgs - Gravel lense			
20					11 to 20 ft bgs - Yellow Brown Medium Sand			
					20 to 23 ft bgs - Moist Olive Silty Sand 23 to 26 ft bgs - Olive Clayey Sand	Marine Silt and Clay		
30					26 to 36.5 ft bgs - Olive Silty Clay Moist (balling)			
40					36.5 to 65 ft bgs Olive to Brown Silty Very Fine Sand to Silt	Silty Very Fine Sand To Silt Marine Delta		
50					Dry			
60								
70					Bottom of boring at 65 ft bgs			
80								
90								
100								
Granular Soils		Cohesive Soils		% Composition		NOTES: 1. bgs = below ground surface 2. bottom 15 feet of augers were left in the hole due to driller error MW-3-2012 was installed in second boring to 55 ft located 3 ft from this boring 3. split spoon sampler was not functioning. Materials were classified based upon cuttings and inspection of cutting bit every 10 ft		
Blows/ft.	Density	Blows/ft.	Consistency					
0-4	V. Loose	<2	V. soft	<5%	trace			
4-10	Loose	2-4	Soft	5-15	little			
10-30	Compact	4-8	Firm	15-25	some			
30-50	Dense	8-15	Stiff	>25	and			
>50	V. Dense	15-30	V. Stiff					
		>30	Hard					

SUMMIT ENVIRONMENTAL CONSULTANTS, INC. 640 Main Street Lewiston, Maine 04240		WELL COMPLETION LOG		Well #: MW-3-2012
Drilling Co: <u>Maine Test Borings</u>		Project: <u>MacQuinn - Miro Lot</u>		Project #: <u>11-3240.5</u>
Foreman: <u>Mike Porter</u>		Location: <u>Lamoine, Maine</u>		Sheet: <u>1 of 1</u>
Summit Staff: <u>Steve Marcotte, CG</u>		Well Location: <u>See Location Map</u>		Chkd by: <u>MAD</u>
		Date started: <u>8/28/2012</u> Date Completed: <u>8/28/2012</u>		
REFERENCE ELEVATIONS Surveyor: <u>Herrick and Salsbury</u> Reference (MSL or TBM): <u>NGVD 29</u> Top of Protective Casing: _____ Top of inner casing: <u>167.87</u> Ground Surface: <u>164.9</u>	GW ELEVATIONS Date Elevation <u>8/28/2012</u> <109.9 <u>9/7/2012</u> <109.9	WELL CONSTRUCTION DETAILS		
		PROTECTIVE CASING Type (Standpipe or roadbox): <u>Standpipe</u> Diameter (in.): <u>1 inch</u> Length (in.): <u>5 foot</u> Concrete Seal (gal): <u>N/A</u>		
WELL CASING AND SCREEN			Riser	Screen
Material:			<u>PVC</u>	<u>PVC</u>
Schedule:			<u>10</u>	<u>10</u>
Diameter (in.):			<u>1 inch</u>	<u>1 inch</u>
Length (ft):			<u>33.0</u>	<u>25.0</u>
Interval below ground surface (ft):			<u>+3 - 30</u>	<u>30 to 55</u>
Slot size (in.):			<u>0.01</u>	
FILTER AND SEAL MATERIALS				
Type:			<u>Sand</u>	<u>None</u>
Size:			<u>#1</u>	
Quantity (lbs.):			<u>500</u>	
Interval below ground surface (ft):			<u>31-55</u>	
GROUT				
Type (filter sand, bentonite, etc.): _____				
Quantity (gal. or lbs.): _____				
Interval below ground surface (ft.): _____				
WELL DEVELOPMENT DETAILS				
Water level from measuring point (ft): _____				
Depth of well from measuring point (ft): _____				
Total feet of water: _____				
Volume of water (gal): _____				
Volume of water evacuated: _____				
Method of development: <u>Not Developed</u>				

Depth (ft.)
 5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100

Protective Casing
 ↓
 Cuttings
 Local Sand
 9 to 31 ft. bgs
 Filter Sand
 31 to 55 ft. bgs

Stratum from soil boring log

 Medium Sand & Gravel
 Marine Near-shore

 Marine Silt & Clay

 Silt to Very Fine Sand
 Marine Delta

NOTES:

ATTACHMENT 2

**Groundwater Level Monitoring Report
(S.W. Cole Engineering, Inc., May 14, 2012)**

04-1287 G

May 14, 2012

Herrick & Salsbury, Inc.
Attention: Steve Salsbury
P.O. Box 652
Ellsworth, ME 04605

Subject: Hydrogeological Services
Harold MacQuinn, Inc. Gravel Pits
Groundwater Level Monitoring
Lamoine, Maine

Dear Steve:

In accordance with our Agreement dated November 30, 2004, we measured the depth to groundwater at the Beal, Jones, Asher, Kittridge, and Higgins gravel pits owned by Harold MacQuinn, Inc. in Lamoine, Maine on April 04, 2012. The approximate locations of the Harold MacQuinn, Inc. gravel pits are shown on Sheet 1.

The groundwater level measurements were obtained using a Water Level Indicator, Model 51453 manufactured by Slope Indicator Company of Seattle, Washington. See Table 1 for groundwater level measurement results.

Table 1
Gravel Pit Water Level Measurements

Gravel Pit Name	Water Level Below Ground Surface ¹ (ft)	Height of Pipe Above Ground Surface (ft)	Depth of Pipe Below Ground Surface (ft)
Beal	>3.75 ²	2.10	8.40
Jones	7.30	3.60	9.55
Asher	6.36	3.75	7.30
Kittridge OW-1	Dry to 14.53	4.67	14.53
Kittridge MW-2-2010	28.12	2.80	35.00
Higgins OW-1	10.13	2.70	23.00
Higgins OW-2	71.61	2.05	85.50

Notes:

- ¹ Groundwater levels reflect site conditions at the time of measurement. Actual conditions will vary.
- ² Obstruction in well at 3.75 feet below the ground surface.

37 Liberty Drive, Bangor, ME 04401-5784 • P: (207) 848.5714 • F: (207) 848.2403 • E: info@swcole.com



04-1287 G
May 14, 2012

Sheet 2 presents the groundwater level data we have collected to date. A graph of the groundwater level data is presented on Sheet 3.

In accordance with our Agreement, we will continue to conduct groundwater level measurements at the same locations in the spring and fall of each year until otherwise directed by you.

We appreciate the opportunity to work with you on this project. If you have any questions or need additional assistance, please do not hesitate to call us.

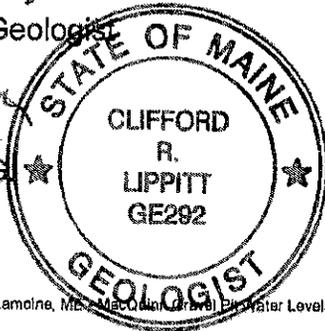
Very truly yours,

S. W. COLE ENGINEERING, INC.

Jeffrey W. McElroy, Geologist

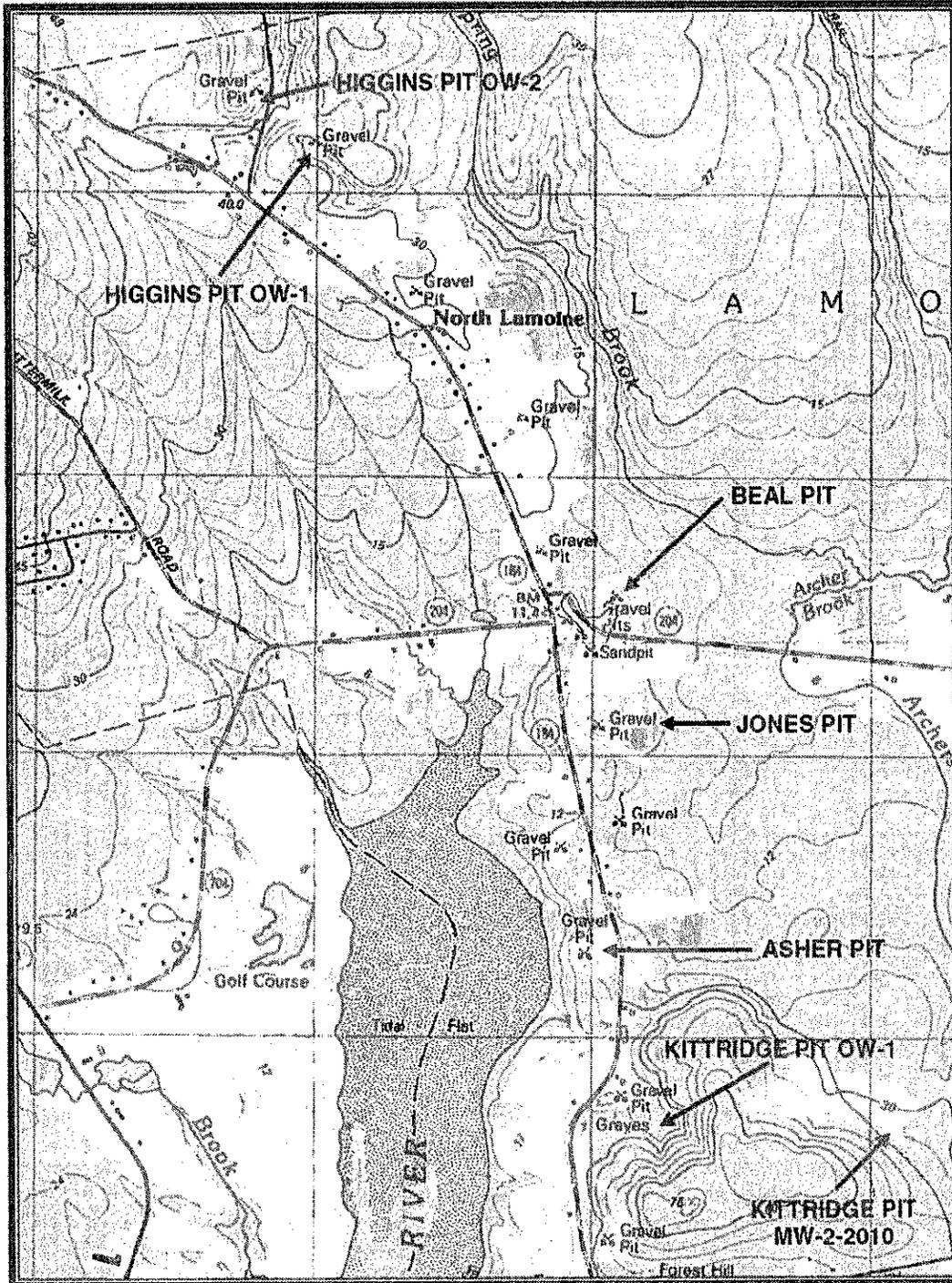
Clifford R. Lippitt, C.G.

JWM-CRL:jwm/slh



P:\2004\04-1287 G - Herrick & Salsbury - Lamolne, ME - MacOlin (Ground) Elev Water Levels 2004-2006 - JWM\2012\4-4-12.doc

GRAVEL PIT LOCATIONS MAP



- Notes:
1. Base map from MapTech, Inc. Terran Navigator Pro.
 2. Map not to scale.

Sheet 1

Harold MacQuinn, Inc. Gravel Pits

		GRAVEL PITS GROUNDWATER LEVEL BELOW GROUND SURFACE						
		Beal	Jones	Asher	Kittridge OW-1	Kittridge MW-2-2010	Higgins OW-1	Higgins OW-2
PVC Standpipe Height		2.10	3.60	3.75	4.67	2.80	2.70	2.05
Sampling Dates	12/09/04	7.40	8.42	DRY to 7.27	DRY to 14.53		12.75	74.37
	06/07/05	4.25	6.10	4.75	13.41		8.84	70.72
	11/02/05	4.70	6.03	4.78	12.57		9.20	70.39
	04/20/06	5.23	6.42	4.26	11.75		8.00	68.75
	11/15/06	4.95	6.02	4.12	11.58		8.20	69.42
	05/17/07	4.94	5.68	3.81	11.18		7.44	68.02
	11/19/07	5.60	7.00	5.73	DRY to 14.53		9.63	70.95
	04/16/08	4.30	5.50	4.39	DRY to 14.53		7.57	69.25
	10/30/08	4.88	6.77	5.46	DRY to 14.53		9.15	70.05
	04/28/09	3.11	5.25	4.05	DRY to 14.53		6.96	68.41
	11/02/09	3.63	5.68	3.77	10.61		7.14	67.94
	04/22/10	2.90	4.97	3.21	9.83		6.28	67.24
	12/08/10	Dry to 6.00	6.05	5.11	DRY to 14.53	27.52	8.73	69.90
	05/02/11	3.18	5.28	4.11	DRY to 14.53	25.72	7.49	68.89
10/28/11	>3.75	7.06	5.56	DRY to 14.53	27.38	9.37	69.40	
04/04/12	>3.75	7.30	6.36	DRY to 14.53	28.12	10.13	71.61	

Notes:

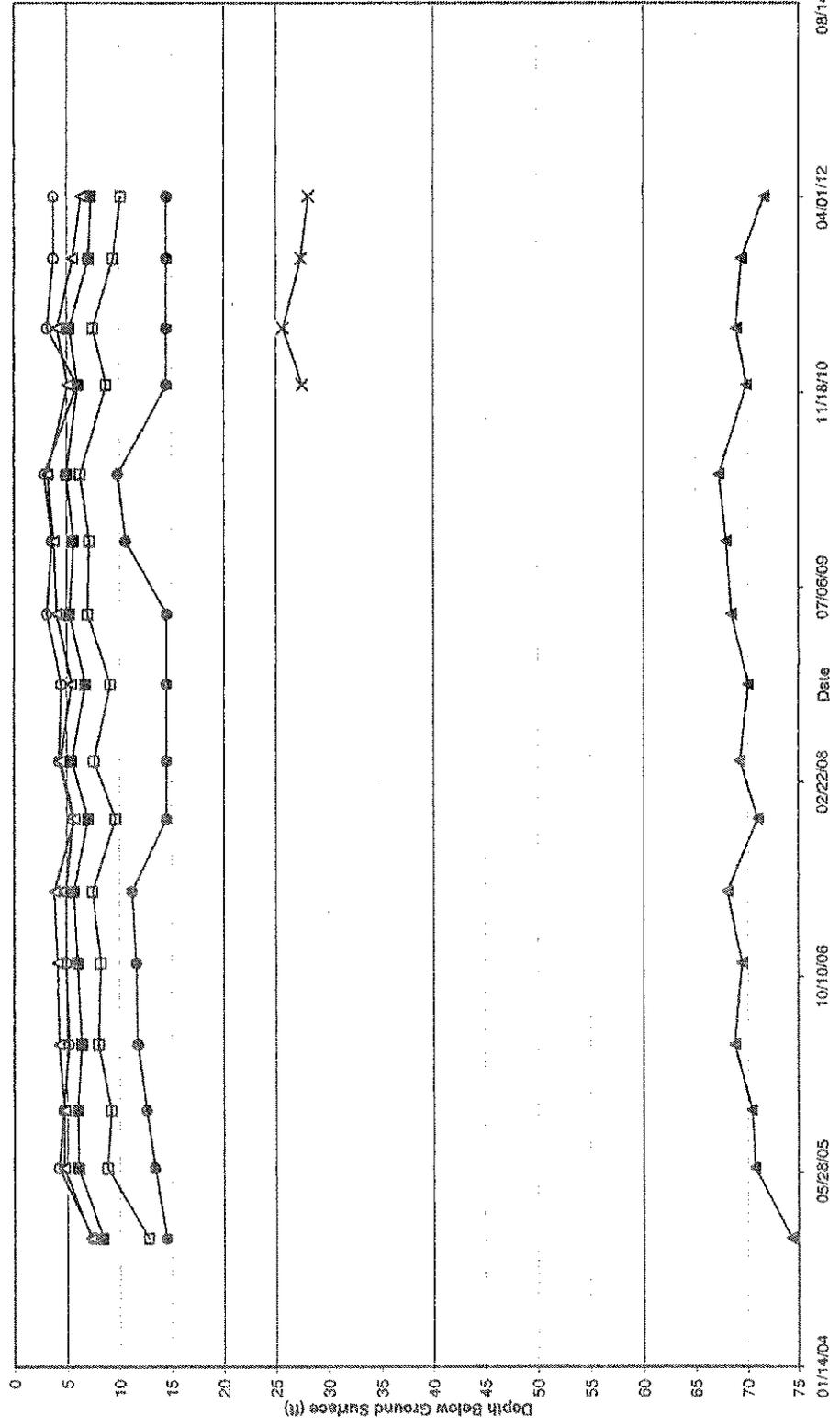
1. All measurements are in feet.
2. New steel pipe well installed in different location at Beal Pit sometime after 04/16/08. Old plastic standpipe was frequently vandalized.
3. Kittridge MW-2-2010 added in 2010.



GROUNDWATER LEVELS GRAPH

Harold MacQuinn, Inc. Gravel Pits

- Beal
- Jones
- △— Asher
- Kittridge OW-1
- Higgins OW-1
- ▲— Higgins OW-2
- X— Kittridge MW-2-2010



**Final Report
June 2006**

Can Gravel Mining and Water Supply Wells Coexist?

Prepared By:

*John M. Peckenham, Senior Research Scientist
Teresa Thornton, Graduate Student*

*Senator George J. Mitchell Center for Environmental and Watershed Research
5710 Norman Smith Hall, University of Maine, Orono, Maine 04469*

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Executive Summary
Introduction
Problem Statement
Objectives
Methods
Results (field observations, lab results, statistical associations)
Discussion
Acknowledgements
Appendices

Executive Summary

In 2002, the members of the Lamoine Conservation Commission approached researchers at the Senator George J. Mitchell Center for Environmental and Watershed Research (Mitchell Center) at the University of Maine because they were increasingly concerned about how sand and gravel mining was affecting the local aquifer. Citizens observed the activities associated with development: land being sold; new developments being established; lots getting cleared; and, sand and gravel trucks leaving the town filled with material from the aquifer. Were these activities going to harm the town's water supply? The commission worked with the Mitchell Center to design a

project to collect data about gravel pits and groundwater in the area. The project objectives were as follows:

- Inventory drinking water supplies near active pits to update existing information;
- Inventory drinking water supplies near large reclaimed pits;
- Assess changes in water quality using existing information from selected locations;
- Develop a methodology to assign risk rankings to groundwater resources;
- Assess how well current regulations protect the water resources; and,
- Provide the results of this study to towns, concerned citizens, and regulators to help them manage local resources more effectively.

This study produced answers to two main questions. The first was – How does mining affect the hydrology of the underlying sand and gravel aquifer? Based on interviews with well owners and observations of surface water features there was no evidence of significant changes in surface or groundwater hydrology. Water level measurements and observations made during the field study can now serve as a reference for future measurements. The absence of significant changes in hydrology is encouraging in that short term disruptions are seemingly rare. Repeated water level measurements in future years will address the question of long-term disruptions.

The second major question answered was – Does mining make the underlying aquifer more vulnerable to contamination? Based on the data collected, water quality has been degraded by salt and nitrate. Degradation of water quality occurs in different areas; however directly linking changes in water quality with gravel pit operations goes beyond the limits of the data. There may be an increase in nitrate in surface waters near gravel pits, but the number of samples analyzed is too small to make this a certainty.

One of the questions asked was – How does the water chemistry vary across the aquifer. We answered this question by plotting the chemistry results on a map. There are indications that there is some consistency in chemistry across the aquifer. It can also be noted that there is confirmation of the effect of salt on water quality. There is not a systematic change in the chemistry of the aquifer in any one direction. The greatest concentrations of chloride appear to occur near major roadways. Road salting in the winter is a likely source of this chloride. Elevated concentrations near the coast may reflect the influence of the nearby bay. There was not a strong spatial relationship between 'salt-affected' wells and gravel pits. There also was no statistical association between the distance from a sample point to a gravel

pit and chloride concentrations. More detailed studies are needed to understand why the chemistry changes by location.

The water quality data must be interpreted with care. Chemistry results may change in concentration by location due to seasonal precipitation amounts and transport of substances into ground water. Presently field data indicate that water quality degradation is limited in both magnitude and occurrence location. Further studies will generate more data on groundwater chemistry to demonstrate how water quality changes across the whole aquifer and surrounding towns.

Some of the gravel pits in this study have been in operation for more than eighty years. Unfortunately, there are very few documents or much institutional memory of historical activities. Activities have been inferred from field observations and interviews. Quantifying future impacts on local hydrology will be possible now that some baseline measurements have been made. The baseline water elevation data will be updated on an annual basis to map out changes over longer periods of time.

An added concern that was outside of the project scope was how pits were managed and prepared for disuse. Mining below the water table was noted in at least one pit and maintenance of separation distances above the water table was not always apparent. Old inactive pits were observed to be used for storage of a variety of construction equipment, vehicles, and debris. Some pits were obviously being used as small dumps. Former community landfill sites located in disused gravel pits have been documented to affect water quality in many towns throughout the state. Lamoine continues to experience poor water quality in some wells located near Berry Cove due to an old landfill in the aquifer. Reclamation of inactive pits is essential to prevent degradation of groundwater by illicit and unregulated debris dumping.

Introduction

Sand and gravel deposits are a legacy of the continental ice sheets that melted more than 10,000 years ago. As the ice melted fast moving rivers formed that left behind deposits of coarse sand and cobbles (called eskers). Where the rivers ran into the sea, large deltas formed with layers of sand and silt. In modern times, the ice is gone, the melt-water rivers have disappeared and sea-level has changed from where it once was. What are left, are scattered deposits of sand and gravel that have become important natural resources. Most people are familiar with the need for sand and gravel for construction material. Fewer people are aware that these same sand and gravel deposits are also prime sources of potable groundwater. Sand and gravel deposits are very porous; great amounts of water can pass easily

through this geological material making it a source of large quantities of high quality ground water. Sand and gravel aquifers are very desirable for public and private water supplies.

Problem Statement

Sand and gravel deposits and their associated aquifers are resources that cover approximately 5% of the State of Maine ([Figure 1](#)). There are competing needs for this same resource: *mining* for construction material and *pumping* for drinking water. According to the Maine Department of Environmental Protection (M. Stebbins, pers. com.), there are currently 160 active sand and gravel pits operating with permits. These pits cover areas from five to 260 acres. The pits are distributed unevenly and some towns may have up to 14 active pits within their borders. In addition there are an unknown number of smaller pits that do not require permits since they are smaller than five acres (38 MRSA §490-A). Historically, mining in rural areas was not in conflict with other uses of natural resources. However, changing demographics and development in Maine are bringing more people in contact with sand and gravel mining.

There are over 2,000 public water supply wells in Maine and many thousands of private wells. Many of the highest-yielding wells are constructed in sand and gravel aquifers. All aquifers depend upon rain and melting snow to restore water lost to consumption, or discharge to streams over the course of the year. Changes at the land surface can affect the quantity and quality of water in aquifers. Sand and gravel mining may affect aquifers in a variety of ways. One is the modification of recharge area to groundwater supplies by changing the shape of the land surface such as turning a hill into a flat area, or even a hole. Water no longer flows along its original pathways. Such changes may increase or decrease rainwater recharge to groundwater. So one question that can be asked is: How does mining affect the hydrology of the underlying sand and gravel aquifer?

Another effect of sand and gravel mining is the loss of the protection provided by soil as it filters out pollutants. Removing the highly concentrated organic layer of soil found on the surface of sand and gravel deposits decreases the soil's ability to bind up substances and thus clean water as it passes through its pores. This loss develops new avenues for contamination to enter groundwater. This type of problem was discovered when old gravel pits, that traditionally were used for dumps, contaminated soil and water in the aquifers. Some sand and gravel aquifers were impacted by dumps to the point that they became unsafe to drink. Current gravel mining regulations are intended to avoid future contamination of groundwater resources, but little is known about how well the rules work. Another question is derived

from these concerns: Does sand and gravel mining make the underlying aquifer more vulnerable to contamination?

There are also other environmental issues connected with the reclamation of former gravel pits and inappropriate land-uses at former pits. Gravel pit reclamation, or the lack of reclamation, can have an effect on water quality.

The quality of drinking water has far-reaching repercussions to personal health and other costs to society. The Maine Drinking Water Program completed the Source Water Assessment Program (SWAP) in 2004. They studied public water supplies throughout the state of Maine to determine the risks to sources of supply. Community Supply Wells were given special scrutiny because they are the sole source of drinking water for their customers. A Community Water Supply serves a community, town, trailer park, or some other facility that serves the same group of people on a daily basis. Schools and restaurants are classified differently because people come and go at these locations.

As an example of how water supplies are threatened, Figure 2 contains a summary of risks to community water supply wells compiled during the SWAP process. The risks are grouped into five categories: well type; existing chronic or acute risk; and future chronic or acute risk. Risks are defined in part by how the well was constructed and the thickness of overburden near the well. A deep well with thick overburden (such as a bedrock drilled well through thick soil with many feet of casing) will be at lower risk than a shallower well constructed in a sand and gravel deposit. Very porous overburden, as would be the case for a well constructed in sand and gravel, increases the risk of contamination from surface spills. The other types of risks are related to activities that could affect water quality in general. These risks are split into two sub-groups depending upon whether they exist now or are likely to be a concern in the future. These risk sub-groups have a time factor and are further classified as either chronic or acute. An example of a chronic risk would be the leaching of septic system wastes into the groundwater over long periods of time. An example of an acute risk might be a catastrophic oil tank spill. A key conclusion from this study is that all water supply wells will see increased acute and chronic risks in the future. The cause? Human activities related to land development and increased human presence in the area of supply wells.

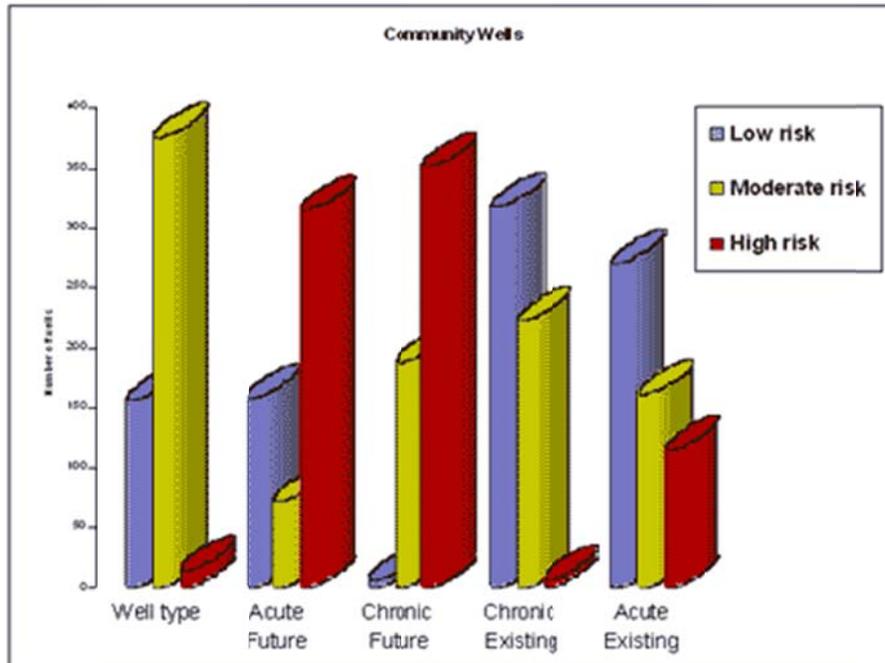


Figure 2: *The Source Water Assessment Program Study of Community Wells (from the Maine Drinking Water Program, 2004). The column heights equal the number of wells in a category. The colors refer to risk- red is high, yellow is moderate, and blue is low. A key finding of this study is that we anticipate a large number of problems in the future.*

Objectives

In 2002, members of the Lamoine Conservation Commission approached researchers at the Mitchell Center at the University of Maine because they were increasingly concerned about how sand and gravel mining was affecting the local aquifer. Citizens observed the activities associated with development: land being sold; new developments being established; lots getting cleared; and, sand and gravel trucks leaving the town filled with material from the aquifer. Were these activities going to harm the town's water supply?

Development pressure is evident in many coastal communities. The commission worked with faculty and students at the College of the Atlantic (COA) in 2004 to develop a build-out scenario for the town of Lamoine. This analysis looked at three land-use types in Lamoine: developable; sand and gravel deposits (mining); and conservation land. The class simplified the changes in the demographics by assuming that only 50 percent of the lots were developed (see Figure 3). The development scenario shown is consistent with recent findings that 400% of the United States' population has moved from inland to coastal properties in the past 20 years (Deidre

Magean, 2005 pers. comm.). This analysis looked only at land uses; water supply availability was not evaluated.

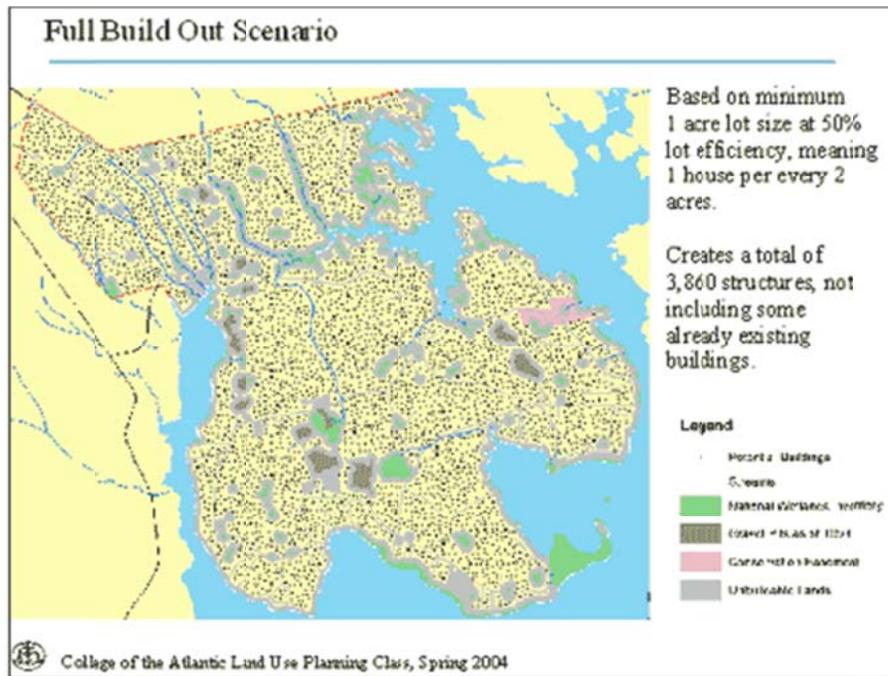


Figure 3: Full build out scenario for Lamoine developed by the College of the Atlantic Land Use Planning Class, Spring 2004.

The growth rate in the town of Lamoine and the results from the COA class project reinforced the commission's concern about there being ample water resources to supply the growing population and about how much sand and gravel could be removed from the aquifer before it was harmed.

The commission worked with the Mitchell Center to design a project to collect data about gravel pits and groundwater. Funding for the work came from several funding agencies and foundations. The project objectives were as follows:

- Inventory drinking water supplies near active pits to update existing information;
- Inventory drinking water supplies near large reclaimed pits;
- Assess changes in water quality using existing information from selected locations;
- Develop a methodology to assign risk rankings to groundwater resources;
- Assess how well current regulations protect the water resources; and,
- Provide the results of this study to towns, concerned citizens, and regulators to help them manage local resources more effectively.

One intended outcome of this study was to provide a context for evaluating how well our natural resources are being protected by state regulations and to provide information to communities to help them manage natural resources. Since the aquifer (sand and gravel deposits) studied extended through the towns of Hancock and Ellsworth, these towns were included in the study (Figure 4).

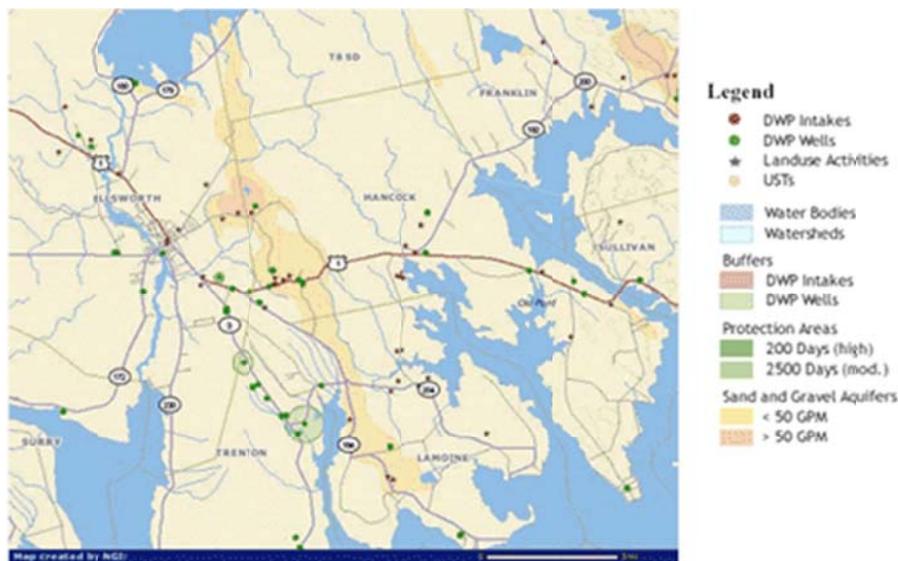


Figure 4: Location of sand and gravel aquifer (orange and red shape) in Ellsworth, Hancock, and Lamoine, Maine. Public water supply wells are shown as green dots. Map from the Maine Drinking Water Program online mapping program.

Methods

The project started with a compilation of geological maps, gravel pit locations, and well locations from published reports and State of Maine files (Department of Environmental Protection, Maine Geological Survey, and Drinking Water Program). Many of the recent data publications were georeferenced and available in a GIS format. The inventory first addressed public water supplies because of the larger number of private wells. Also, public water supplies have more consequences per supply well since many people are served from the same source. The evaluation of private wells was greatly assisted by previous work conducted by concerned citizens in Lamoine.

The objective of the well evaluation was to determine the number of wells that could be affected by gravel mining and to establish a network of monitoring points across the mapped sand and gravel aquifer. Since the limits of the aquifer are not always precisely located, all private or public

wells within 0.4 km (0.25 miles) of the mapped aquifer boundary were included. Wells were located by overlaying tax maps onto the sand and gravel aquifer maps. Owners of lots within the targeted areas were contacted by telephone, or mail, through the assistance of volunteers in the towns of Ellsworth, Hancock, and Lamoine. Land ownership was verified from local tax records.

Once land ownership and uses were determined, the lots were checked for well locations. Many rural lots were found to be undeveloped, while some lots had both older dug wells and newer drilled bedrock wells. Owners were surveyed by interviews to collect information on: well construction, well age, history of water-related complaints or concerns, and the availability of water quality testing. The actual wellhead locations were measured with a Trimble R3 GPS system, with a resolution <3 meters for differential positioning. Depth to water level was measured to the nearest 0.01 meter (0.02 feet) using a Solinst Model 101 water level meter. Two easily accessible wells were selected as reference wells so that data collected on different days could be compared.

Gravel pits located on the aquifer were also verified in the field, distinctive landmarks or pit centers were measured using the Trimble GPS system, and photographed. Owners were surveyed by interview to collect historical and current uses of gravel pits. At the time of this study, there were twenty-three active gravel pits identified and eleven separate owners in this sand and gravel-aquifer system.

The budget for water quality testing was small. In order to maximize our ability to re-sample under similar condition, water quality testing was prioritized to springs. Springs were selected as natural points of water discharge from the aquifer. Springs were located from local information sources, maps, and field exploration. A total of seven springs were located and sampled. In addition two seepage ponds located within the sand and gravel deposit (Simmons and Blunts Ponds) were included in this study. A seepage pond has now inlet and sometimes no outlet, all of its water comes from groundwater and precipitation. Streams were sampled when no other source (spring or seepage pond) was available. Water samples were collected during the winter when the ground was frozen to make sure that the water collected was groundwater and not recent precipitation. Water samples were analyzed for the following parameters:

- water temperature (measured in the field);
- pH (acidity);
- conductivity (a measure of how much matter is dissolved in the water);

- calcium (major natural ion in water);
- magnesium (major natural ion in water);
- sodium (a natural ion in water or a contaminant from either septic systems or road salt);
- chloride (a natural ion from sea salts or from road salt);
- nitrate (a nutrient from fertilizers or septic systems);
- sulfate (naturally occurring ion, may also be a pollutant); and
- dissolved organic carbon (a measure of organic matter, clean groundwater should have concentrations less than 1 to 2 ppm).

Water temperature was measured in-situ and water was collected into one pre-cleaned 500 mL HDPE bottle and two 40 mL glass VOA vials. The water samples collected were analyzed at the Watershed Research Laboratory at the University of Maine.

The water quality results were tested for an effect due to closeness to gravel pits using the non-parametric Kruskal-Wallis test. The Kruskal-Wallis test was used to determine if any of the chemical parameters were statistically different based upon sample location (defined as greater than or less than one kilometer from a gravel pit). Care must be taken in interpreting statistical test results because the number of samples analyzed was small. Significance for this study has been set at $\alpha < 0.1$ (90% level). A correlation test was used to determine how the chemical parameters varied with respect to each other. The correlation value (Pearson r) is calculated for any two variables tested. For example, if two parameters both change in the same manner they will have a high correlation r -value. In this study, two parameters were considered to correlate if greater than 50% of the variation was similar (where the Pearson correlation value, r was > 0.5).

Results

The results of this study are organized into three groupings: field observations, [laboratory results](#), and [statistical analyses](#). Field observations include surveys of gravel pits, water supply wells, and other water resources such as springs, streams, and ponds.

Field Observations

Gravel Pits. Gravel pits exist in the mapped sand and gravel aquifer that extends from the southern shore of Graham Lake in T8 SD, through Ellsworth and Hancock and terminates in the town of Lamoine ([Figure 4](#)). On average this sand and gravel deposit is 18 kilometers long and up to 2 kilometers wide (11 miles by 1.25 miles) and in excess of 30 meters thick (100 feet). The outline of the sand and gravel deposit was calculated to cover 13 square kilometers (5 square miles). At least 34 active and former

gravel pits were located, and it is likely that there are additional small abandoned pits. There were a total of 18 locations with intensive gravel mining. Eleven owners or operators of active pits were identified. Most of the owners were able to provide historical information and granted permission to sample pit sites in the future. Summary information for the gravel pits is contained in [Appendix A](#).

The gravel pits observed ranged in size from 0.8 to 34 hectares (2 to 85 acres). Pit size can be misleading because some pits may lie on adjacent land parcels and the pit sizes, although contiguous, are tallied separately. The total area covered by gravel pits, active and inactive, was estimated to be 3.4 square kilometers (1.3 square miles). This estimate means that approximately 26 per cent of the aquifer surface has been affected by gravel mining.

Most of the gravel pits were run efficiently as simple extraction and screening operations. Used vehicles and construction debris were observed in three of the larger inactive pits. Numerous small abandoned pits have been used for miscellaneous debris dumping. It was noted that gravel pit reclamation was limited. Seemingly, some pits were not abandoned, just mining at very slow rates. It should be noted that the former Lamoine landfill is surrounded by active gravel mining. This former landfill was documented by the Maine DEP to have contaminated local groundwater.

Private Wells. Approximately 200 properties were identified as being near or over the aquifer, as determined from tax maps. A total of 37 landowners allowed us access to document the location and water levels in wells. Some properties had more than one well and some properties shared a common well. It was surprising that only two properties had water quality testing documentation. Water levels were measured in 55 wells within the study area. A summary of private data is presented in [Appendix B](#).

Wells were classified into two groupings: dug wells and drilled wells. Dug wells were typically shallow (<10 m) and often were constructed in well-drained soils such as sand or sandy loam. Drilled wells were consistently deeper (10 m to 150 m) and cased through the soil to open bedrock borings.

The water levels in dug wells ranged in depth from 0.45 to 3.55 meters below the surface (1.5 to 12 feet). The water levels in drilled wells range from 11m to > 30m below the surface (36 to >98 feet) and beyond the range of the water-level gauge. Since water levels in the bedrock wells were consistently lower than in the dug wells, the bedrock aquifer is likely being recharged in part from the sand and gravel aquifer. It is not known how closely the bedrock aquifer is connected to the sand and gravel aquifer.

Nevertheless, activities that affect water quality in the sand and gravel aquifer will also affect bedrock water quality.

Surface Waters. Surface waters were sampled from ponds, streams and springs. The objective of this sampling was to develop a regional understanding of water quality. Seepage ponds lie with the sand and gravel aquifer and have no inlet streams; all of their water comes from precipitation and groundwater. The two seepage ponds sampled were Blunts Pond (outlet) in Lamoine and Simmons Pond in Ellsworth.

Several streams discharge from the lateral edges of the sand and gravel deposits. The streams are believed to be fed by water coming from the sand and gravel aquifer. Streams sampled were as follows: Blunts Pond outlet in Lamoine (same as above); Harding Stream in northeastern Lamoine (stream not named on maps); and Spring Brook, to the east of the MacQuinn pit in Lamoine and Hancock. The intent was to sample streams under baseflow conditions when the streams are being replenished by groundwater.

A total of nine springs were located, mapped using GPS, and sampled for laboratory analysis. The springs are considered to be the best indicator of aquifer water quality under natural conditions. Spring sampling was completed for six springs in Lamoine, two springs in Hancock, and one in Ellsworth. Flow rates ranged from seeps to approximately 2.5 l/s (40 gpm).

Public Supply Wells. One spring is also a public water supply, the Cold Spring Water Company. Flow from this spring was measured at 2.5 l/s (40 gpm). Overflow discharge rates varied depending upon how much water was being pumped into the distribution system. As part of this project, four groundwater-monitoring wells were installed around the source spring. The wells were sited to lie between the spring and potential areas of concern to the south-southeast and northwest. These monitoring wells are constructed from two-inch I.D. pvc pipe with locked protective steel risers. These special wells are identified as CSWC-1 through CSWC-4 in this report.

Summary data for the sampling locations are presented in [Appendix C](#). Only locations with field data are listed.

Laboratory Results

Laboratory testing results and field temperature measurements are summarized in [Table I](#). These results provide a general assessment of water quality in the sand and gravel aquifer. Concentrations for some results are reported in micro-equivalents per liter ($\mu\text{eq/L}$). Equivalents measure moles of charge and in this case, the micro-equivalent value is equal to micro-mole

quantity times its ionic charge. The results are compared to any state or federal standard for drinking water quality.

Temperature values ranged from 1° to 9°C (34° to 48°F) in springs, streams, and ponds. The water temperature is related to the depth from which the water originates. Deep groundwater tends to be at a constant temperature close to 10°C (50°F) year round. Using temperature as an indicator, these springs appear to be fed by deeper groundwater: Latona, Cold Spring Water Company, Boat Shop, and Washington Junction. The other springs were cooler and either are fed from shallower sources, mix with colder water near the surface, or flow slowly enough to be cooled down.

The **pH** of the samples ranged from 4.73 to 6.94. All of the springs had pH values within 0.5 units of 6. This range is normal for ground waters in the region. Blunts Pond had the lowest pH value. It is not unusual to see surface waters with lower pH values because organic acids and atmospheric inputs affect surface waters, but not ground waters. The drinking water standard for pH is between 6.5 and 8.5 pH units.

Conductivity is a measure of how much ionic material is dissolved in the water. It provides a simple check on the accuracy of the laboratory analyses of major ions. The water samples had conductivities ranging between 18 and 300 micro-siemens per centimeter ($\mu\text{S}/\text{cm}$). These values are reasonable for groundwater in Maine. In comparison, pure distilled water would be <1 $\mu\text{S}/\text{cm}$ and seawater exceeds 10,000 $\mu\text{S}/\text{cm}$. The drinking water standard is based on total dissolved solids and the equivalent conductivity is in the range of 500 to 700 $\mu\text{S}/\text{cm}$.

Alkalinity is a measure of how well the solution can neutralize acid. In groundwater, this is closely related to the amount of base cations (calcium, magnesium, sodium, and potassium) and bicarbonate ion. The alkalinity measured ranged from -17 to 303 micro-equivalents per liter ($\mu\text{eq}/\text{L}$). Blunts Pond is actually slightly acidic and it has no acid neutralizing capacity, hence it has a negative alkalinity. Most of the springs had values near to 200 $\mu\text{eq}/\text{L}$. There is no drinking water standard for alkalinity.

Dissolved organic carbon (DOC) is the amount of organic matter that passes through a 0.45 micrometer (μm) filter. Dissolved organic carbon in surface waters can come from decaying plants and animals. Groundwater usually contains very low concentrations of DOC because of a combination of soil organisms that consume carbon and the filtering effect of soil. Elevated concentrations of DOC in groundwater may indicate pollution from septic systems, or it may indicate that the groundwater has a close connection with surface recharge (poor filtering). Measured DOC values ranged from 0.3 to

12.6 milligrams per liter (mg/L). The deep springs and other areas of 'pristine' groundwater had DOC concentrations <1 mg/L. There is no drinking water standard for dissolved organic carbon.

Calcium and **magnesium** are usually derived from rocks through chemical weathering. The concentrations in groundwater may reflect in part how long water has been in contact with rock, as well as the solubility of the rock. Calcium was detected in the range of 31 to 577 µeq/L (approximately 0.63 to 12 mg/L). Magnesium was detected in the range of 31 to 200 µeq/L (approximately 0.38 to 2.43 mg/L). The springs had similar concentration ranges for calcium (~200 µeq/L) and magnesium (150-200 µeq/L). There is no drinking water standard for calcium or magnesium. These elements do contribute to hardness, and when the total exceeds 150 mg/L it is general considered undesirable.

Sodium is derived from rocks through chemical weathering. It can also enter into water from road salt use and the effects of being near to the ocean (known as the sea-salt effect). In natural geological settings, sodium is found in smaller concentrations than calcium. Whenever, sodium concentrations exceed calcium, some form of salt contamination is suspected. Sodium was detected in the range of 65 to 2,043 µeq/L (1.5 to 47 mg/L). Sodium concentrations were generally greater than calcium in all samples, suggesting a widespread salt effect. Even the pristine springs had sodium concentrations >100 µeq/L (>2.3 mg/L), and some exhibited unsafe concentrations of sodium. The maximum concentration for sodium in drinking water in Maine is 20,000 ppb (870 µeq/L).

Chloride is rare in rocks in Maine because it is very soluble as a mineral. Chloride compounds are not stable in our wet climate and they quickly dissolve. In this setting, chloride can only come from road salt, sea salt, and household septic systems. Chloride was detected in the range of 73 to 2,177 µeq/L (approximately 2.6 to 77 mg/L). The pristine springs all contained detectable concentrations of chloride. Elevated concentrations of chloride matched sodium, strongly suggesting local salt contamination. The maximum concentration for chloride in drinking water in Maine is 250,000 ppb (7,052 µeq/L).

Nitrate is generally found in no more than trace concentrations in groundwater. This is because nitrate is rapidly consumed by organisms in the soil. Excess nitrate in groundwater can almost always be connected to agriculture or waste disposal (e.g. septic systems). Nitrate was detected in the range of 0.1 to 342 µeq/L (approximately 0.01 to 21 mg/L). The safe limit for drinking water was exceeded in two spring samples (Boat Shop and Washington Junction) and approached in another (Cold Spring Water

Company). The maximum concentration for nitrate in drinking water in Maine is 10,000 ppb (161 µeq/L).

Sulfate is generally found in trace concentrations in groundwater in most regions of Maine. Sulfate can come from natural sources in rock, from contamination such as landfills, and even seawater. Sulfate was detected in the range of 39 to 250 µeq/L (approximately 1.9 to 12 mg/L). Most of the springs had sulfate at concentrations <100 µeq/L. The maximum concentration for sulfate in drinking water in Maine is 250,000 ppb (5,207 µeq/L).

In general, the chemistry of surface and ground waters falls within acceptable ranges for most analytes tested except for sodium, chloride, and nitrate. Two wells, three springs, and one brook sample exceeded the maximum acceptable concentration for sodium in drinking water. Two springs exceeded the maximum acceptable concentration for nitrate in drinking water. Nitrate, in a concentration below the maximum limit, was detected in the Cold Spring Water Company spring. The high sodium concentrations detected, along with elevated concentrations of chloride in the same samples, are indicators of salt contamination. The salt and nitrate detections are items of concern and the groundwater should be monitored for evidence of increases with time. The results of water levels measurements are presented in [Appendix B](#). These measures are intended to be referenced in future studies of water levels. Longer periods of time are needed to determine if there are systematic changes in the vertical location of the water table.

TABLE I. Summary of Laboratory Results for Water Analysis. Underlined values exceed safe drinking water limits.

Sample Location	Temp. °C	pH	Conductivity µS/cm	Alkalinity µeq/L	DOC mg/L
Maximum Limit	none	6.5 - 8.5	500 - 700	none	none
Blunts Pond Outlet	2	4.73	41.2	-17.5	3.7
Simmons Pond	2	5.44	18.5	2.1	3.9
Harding Brook	2	5.94	298	182	4.7
Spring Brook	2	6.94	167	303	1.3
Latona Spring	7	6.79	66.7	242	0.2
Cold Spring Water Company	6	6.49	98.1	118	0.3

Archer Brook Spring	3	4.87	34.9	-9.4	6
Town Office Spring	2	6.82	172	300	2.9
Boat Shop Spring	9	6.54	253	292	0.6
Route 184 Spring	2	5.93	75.2	275	6
Peaslee Road Spring	1	5.86	73.9	71.3	12.6
Washington Junction Spring	4	6.29	203	215	0.7
Stawbahl Road Spring	2	6.41	58.3	171	5.3
Spurling Well	--	5.65	266	48.1	1.9
CSWC-1	--	6.28	35.8	90.5	0.3
CSWC-2	--	6.3	32.4	150	0.4
CSWC-3	--	6.07	190	95	0.4
CSWC-4	--	6.23	132	178	9

TABLE I continued. Summary of Laboratory Results for Water Analysis.
Underlined values exceed safe drinking water limits.

Sample Location	Calcium $\mu\text{eq/L}$	Magnesium $\mu\text{eq/L}$	Sodium $\mu\text{eq/L}$	Chloride $\mu\text{eq/L}$	Nitrate $\mu\text{eq/L}$	Sulfate $\mu\text{eq/L}$
Maximum Limit	none	none	870	7052	161	5207
Blunts Pond Outlet	31.4	48.9	197	202	1.3	74.5
Simmons Pond	41.6	31	65.3	73.3	3.5	39.6
Harding Brook	416	183	1910	2154	0.1	74.1
Spring Brook	526	200	745	804	67.4	250
Latona Spring	227	141	277	253	35.8	67.2
Cold Spring Water Company	187	110	559	540	86	83.6

Archer Brook Spring	45	59.3	138	150	18.2	54.9
Town Office Spring	320	178	1040	1113	5.9	63.8
Boat Shop Spring	577	219	1332	1498	225	115
Route 184 Spring	255	86.4	330	282	31.5	53.5
Peaslee Road Spring	218	115	321	345	4.2	181
Washington Junction Spring	474	141	1054	1108	342	114
Stawbahl Road Spring	174	83.8	284	284	0.7	71.9
Spurling Well	174	37	2043	2177	17	56.7
CSWC-1	104	62.9	162	155	2.1	62
CSWC-2	103	59.3	139	123	0.2	50.1
CSWC-3	204	110	1256	1373	99.4	65.1
CSWC-4	158	99.4	801	886	7.7	55.3

Statistical Associations

The results of the chemical analyses were tested using the Kruskal-Wallis method to determine if samples collected near gravel pits were significantly different from other samples. The chemistry results were separated into two categories for this analysis: surface water (pond or stream) and groundwater (well or spring). Only one chemical parameter, nitrate, was found to exhibit statistical significance with closeness to gravel pits ($p < 0.1$). Nitrate concentrations were greater in surface water near gravel pits. Caution is needed in understanding the meaning of this difference because of the small number of samples analyzed. However, this effect should be re-examined with any future water sampling program.

The results of the Pearson correlation analysis give an indication of how different water chemistry variables behave. The results for associations showing correlations with $r > 0.5$ are presented in Table II. These associations

provide clues about how the water chemistry varies as pairs (i.e. two variables are compared at a time). Calcium and magnesium exhibited strong correlations with pH, so increasing these two chemical variables was related to an increase of pH. Most of the major ions correlated with conductivity; sodium and chloride (salt) had the most pronounced associations with $r > 0.9$. Calcium, magnesium, and potassium all showed some correlation with each other which suggests that they occur together. Interestingly, nitrate and sulfate also correlated with these same three elements while sodium did not. This suggests that calcium, magnesium, potassium, nitrate, and sulfate have a common source in the aquifer. The different associations determined for sodium, and especially the very strong correlation between sodium and chloride, reinforce the notion that these chemical variables are coming from a different source (i.e. salt).

TABLE II. Pearson correlation coefficients for chemical parameters.

Parameters	pH	Conductivity	Calcium	Magnesium	Sodium	Potassium
Calcium	0.692	0.696				
Magnesium	0.746	0.595	0.91			
Potassium		0.723	0.875	0.76	0.532	
Sodium		0.96				
Chloride		0.963			0.999	0.541
Nitrate		0.584	0.645	0.503		0.831
Sulfate			0.712	0.67		0.523

Discussion

This study produced answers to the two main questions. The first was – How does mining affect the hydrology of the underlying sand and gravel aquifer? Based on interviews with well owners and observations of surface water features there was no evidence of significant changes in surface or groundwater hydrology. Water level measurements and observations made during the field study can now serve as a reference for future measurements. The absence of significant changes in hydrology is encouraging in that short term disruptions are seemingly rare. Repeated water level measurements in future years will address the question of long-term disruptions.

The second question answered was – Does mining make the underlying aquifer more vulnerable to contamination? Based on the data collected,

water quality has been degraded by salt and nitrate. Degradation of water quality occurs in different areas; however directly linking changes in water quality with gravel pit operations goes beyond the limits of the data. There may be an increase in nitrate in surface waters near gravel pits, but the number of samples analyzed is too small to make this a certainty.

One of the questions asked was, how does the water chemistry vary across the aquifer? We have tried to answer this question by plotting the chemistry results on a map ([Figure 5](#)). In this figure the major ions (calcium, magnesium, sodium, sulfate, chloride, and carbonate) each form corners of a pyramid. The pyramid is folded down so that we can see each side at once. All of the results for surface water, springs, and groundwater cluster near each other. This indicates that there is some consistency in chemistry across the aquifer. It can also be noted on the figure that the points form an arc that stretches towards the chloride and sodium corners (lower right corners). This is confirmation of the effect of salt on water quality. Lines connect the points on the figure with locations on the map (aerial photograph). Notice that the lines cross over each other. This means that there is not a systematic change in the aquifer in any one direction. More detailed studies are needed to understand why the chemistry changes by location.

Since the results of the water chemistry suggest that salt is affecting water quality, the results were examined to look at the possible connection between sample locations, roads (salt use), and gravel pits (possible storage areas of salts or trucks). A geographical information system (GIS) was used to plot roads, gravel pits, sampling locations, surface water bodies, and chemistry results on a base map ([Figure 6](#)). This map shows streams near the aquifer and the surrounding watershed. Each filled red circle on the map marks a site sampled. The size of the circle corresponds to a chloride concentration with the largest circle indicating the largest result. The greatest concentrations of chloride appear to occur near major roadways. Road salting in the winter is a likely source of this chloride. Elevated concentrations near the coast may reflect the influence of the nearby bay.

The ratio of sodium to chloride has also been plotted on the same map. In road salt, the ratio of sodium to chloride is close to one (each occurs in equal concentrations). Seawater should have a sodium to chloride ratio less than one. A sodium to chloride ratio much greater than one may reflect some other type of source or interactions in the subsurface. On the map, bright green and light blue points are those sites most likely affected by road salt. Dark green points mark locations with a potential marine influence and dark blue points are grouped as complex sources. Most of the locations appear to

have sodium to chloride ratios indicative of road salt based on this simple analysis.

Gravel pits are defined by shaded areas on [Figure 6](#) and the shapes are fairly accurate representations of actual size and location. An inspection of this map shows that the samples did not cluster around gravel pits. Therefore, there is not a strong spatial relationship between 'salt-affected' wells and gravel pits. There also was no statistical association between the distance from a sample point to a gravel pit and chloride concentrations.

The water quality data must be interpreted with care. Chemistry results may change in concentration by location due to seasonal precipitation amounts and transport of substances into ground water. Presently field data indicate that water quality degradation is limited in both magnitude and occurrence location. Further studies will generate more data on groundwater chemistry to demonstrate how water quality changes across the whole aquifer and surrounding towns.

Some of the gravel pits in this study have been in operation for more than eighty years. Unfortunately, there are very few documents or much institutional memory of historical activities. Activities have been inferred from field observations and interviews. Quantifying future impacts on local hydrology will be possible now that some baseline measurements have been made. The baseline water elevation data will be updated on an annual basis to map out changes over longer periods of time.

An added concern that was outside of the project scope was how pits were managed and prepared for disuse. Mining below the water table was noted in at least one pit and maintenance of separation distances above the water table was not always apparent. Old inactive pits were observed to be used for storage of a variety of construction equipment, vehicles, and debris. Some pits were obviously being used as small dumps. Former community landfill sites in gravel pits have been documented to affect water quality in many towns throughout the state. Lamoine continues to experience poor water quality in some wells located near Berry Cove due to an old landfill in the aquifer. Reclamation of inactive pits is essential to prevent degradation of groundwater by illicit and unregulated debris dumping.

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Appendices

[Appendix A: Sand and Gravel Pit Information](#)

[Appendix B: Summary of Private Well Data](#)

[Appendix C: Sample Collection Information](#)

APPENDIX A. Sand and Gravel Pit Information.

Location	Owner or Operator	Size (estimated acres)	Project Identification Number
Ellsworth	City Line	19.4	26
Ellsworth	City Line	16.7	27
Ellsworth	Cemetery- City of Ellsworth	4.5	28
Ellsworth	RF Jordan	54.1	29
Ellsworth	Patrick Jordan	7.3	30
Ellsworth	MacFarlane	4.2	31
Ellsworth	MacFarlane	2.5	32
Ellsworth	Everett Grindle	6	33
Ellsworth	Everett Grindle	6.7	34
Hancock	MDOT	6	1
Hancock	MDOT	16.1	2
Hancock	MDOT	14.4	3
Hancock	Sargent Homes	19	5
Hancock	Lane Construction	23.3	6
Hancock	MacQuinn	34.4	8
Hancock	Berzinis	14.4	9
Lamoine	MacQuinn	119.2	7
Lamoine	Fowler- A	11.5	10
Lamoine	Goodwin	31.5	11
Lamoine	Gott	35	12
Lamoine	Abandoned pit (near King)	6.7	13
Lamoine	Miro	4.8	14
Lamoine	Abandoned pit (near King)	1.6	15
Lamoine	Pit (Corner Store)	1.4	16
Lamoine	Abandoned pit (near King)	7.4	17

Lamoine	King	22.3	18
Lamoine	East of Town Hall	7	19
Lamoine	North of Town Hall	3.5	20
Lamoine	Gott (Mary Smith)	12	21
Lamoine	Gott (near Cold Spring)	10.6	22
Lamoine	MacQuinn (Kittredge)	8.4	23
Lamoine	Fowler- B	3	24
Lamoine	Cemetery- Lane	11.6	25
Township 8	RF Jordan	23.8	4
Total Acreage		570	

Appendix B - Summary of Private Well Data.

Sample Number	Town	Well Casing Height (in)	Well Casing Height (cm)	Depth to Water From Top of Casing (cm)	Water Depth Below Ground Surface (cm)	Adjusted Water Level (cm)	Well Type and Comments	Well Casing Depth (ft)
1	Hancock	15	38.1	26	-12.1	30.4	no pump water flows above ground level	
2	Hancock	10	25.4	311	285.6	328.1	drilled	
3	Hancock	20.3	51.4	1073	1021.6	1064.1	drilled	
4	Hancock	20	50.8	113	62.2	64.2	dug -spring	
5	Hancock	19.3	48.9	1296	1247.1	1249.1	drilled next to gravel pit and near blueberry field	
6	Ellsworth	13.5	34.3	1155.5	1121.2	1123.2	drilled	
7	Hancock	35	88.9	730	641.1	643.1	drilled	
8	Ellsworth	18	45.7	960	914.3	916.3	drilled	
9	Hancock	14	35.6	1150	1114.4	1116.4	drilled	
10	Hancock	20	50.8	1988	1937.2	1939.2	drilled	
11	Hancock	16	40.6	719	678.4	680.4	drilled -has dug well too	
12	Lamoine	16.9	42.9	1311	1268.1	1313.1	drilled	
13	Lamoine	0	0	45	45	90	dug	
14	Lamoine	15.4	39.1	40.6	1.6	46.6	spring	
15	Lamoine	25	63.5	359	295.5	340.5	drilled	
16	Lamoine	9	22.9	227	204.1	249.1	drilled	

17	Lamoine	28.8	73	327.5	254.5	299.5	drilled	
18	Lamoine	0	0	30	30	75	dug	
19	Lamoine	6.3	15.9	1049	1033.1	1078.1	drilled	
20	Lamoine	17	43.2	1663	1619.8	1664.8	drilled	
21	Lamoine	0	0	0	0	45	Large cement casing over spring- new house down back has drilled well at 140 feet, not used.	
22	Lamoine	15.4	39.1	1432	1392.9	1437.9	drilled	
23	Lamoine	11	27.9	117	89.1	134.1	drilled	
24	Lamoine	22.3	56.5	1117.5	1061	1106	drilled	
25	Lamoine	15.5	39.4	470	430.6	430.6	drilled	
26	Lamoine	12	30.5	793	762.5	762.5	drilled	120
27	Lamoine	14	35.6	1686	1650.4	1650.4	drilled	300
28	Lamoine	18	45.7	1903.5	1857.8	1857.8	drilled	
29	Lamoine	5	12.7	929	916.3	916.3	Cold Spring Water Comp.	
30	Lamoine	3	7.6	635.5	627.9	627.9	drilled	
31	Lamoine	7.5	19.1	1171	1152	1152	drilled	
32	Lamoine	20	50.8	229.5	178.7	178.7	dug well never dry, 15 year old well	12
33	Lamoine	16	40.6	589	548.4	548.4	drilled well supplies five houses	110-120
34	Lamoine	7.5	19.1	212	193	193	drilled	124
35	Lamoine	3	7.6	139	131.4	131.4	drilled well and two	60

							small ponds	
36	Lamoine	10	25.4	177	151.6	151.6	dug	
37	Lamoine	11.5	29.2	147.5	118.3	118.3	dug well, didn't want drilled well sampled: area swampy in spring	290
38	Lamoine	12	30.5	729	698.5	698.5	drilled well, 10 minutes to recover after heavy use	275
39	Lamoine	8	20.3	210.5	190.2	190.2	drilled, dug pond 60 feet away	110
40	Lamoine	16.5	41.9	355	313.1	313.1	drilled, swampy in August	200
41	Lamoine	18	45.7	325	279.3	279.3	dug well, didn't hit water in the drilled well	385

Notes:

Sample Number - wells were given a sequential number for reference to protect privacy.

Well Casing Height - distance from top of steel well casing to ground surface.

Depth to Water - depth to water table measured from the top of the casing.

Water Depth Below Ground Surface - depth of water below the ground surface (casing height subtracted from measurement).

Adjusted Water Level - water levels adjusted to reference wells to compare levels measured on different dates.

Well Casing Depth - amount of casing used, equivalent to soil thickness (some values look like total well depth).

Appendix C - Sample Collection Information.

Location	Water Type	Elevation (feet above mean sea level)	Spring Discharge Rate	Water Temp (Celcius)	Terrain Description
Town Office Spring (unofficial name)	spring	103	0.5 gallons per minute	2	Silt loam soils; erosional gully formed by spring flow
Boat Shop Spring (unofficial name)	spring	55	5 gallons per minute	8	Sand and gravel; actual spring covered and piped out; eroded gully
Spring Brook (northeast of MacQuinn pit)	brook	235		4	Discharge from meadow area, one cubic feet per minute flow
Harding Stream (unofficial name, near Lamoine kennel)	stream	169		2	seep almost no flow
Stabawl Road Spring	spring	177	<0.1 gallons per minute	2	Low wet area with weak flow
Cold Spring Water Company	spring	139	40 gallons per minute	6	at bottom of hill where cistern discharges
Archer's Brook Spring (unofficial name, south of Mill Road)	brook	158	5 gallons per minute	3	Sandy depression in embankment
Blunts Pond outlet (east side)	pond	231		2	Minor outlet, boggy with weak flow
Latona Spring	spring	170	10 gallons per minute	7	Sandy area, slope to south
Simmons Pond	pond	234		3	seepage pond
Washington Junction Spring (unofficial name)	spring	181	1 gallons per minute	4	sandy, at edge of road
Peaslee Road Spring	spring	154	<0.1 gallons per minute	1	Depression spring, weak flow to stream
Cold Spring Water Company MW-1	well	136		not measured	monitoring well to north of spring installed April 2005
Cold Spring Water Company MW-2	well	132		not measured	monitoring well to north of spring installed April 2005
Cold Spring Water Company MW-3	well	132		not measured	monitoring well to south of spring installed April 2005
Cold Spring Water Company MW-4	well	130		not measured	monitoring well to southeast of spring installed April 2005
Route 184 Spring (unofficial name)	spring	101	<0.1 gallons per minute	2	Depression spring, weak flow to fire pond

TRAFFIC EVALUATION

MACQUINN KITTRIDGE GRAVEL PIT EXPANSION

This Qualitative Traffic Impact Summary has been prepared to support a Site Plan Application required by the Town of Lamoine Gravel Ordinance to permit the expansion to an existing gravel pit previously permitted by the Town of Lamoine in 1997 and 2004. Harold MacQuinn, Inc. (MacQuinn) operates a gravel pit on two contiguous parcels of owned/leased land located on the east side of Route 184 in Lamoine, Maine. The two parcels of land are identified by the Town of Lamoine as Lots 31 and 33 on Tax Assessment Map 3. The Town of Lamoine previously issued a permit for gravel extraction on Lot 33 in 1997. Subsequently, in 2004 the Town of Lamoine approved a southward expansion onto an adjoining 30-acre area of leased land on Lot 31. Collectively these two previously permitted excavation areas are referenced herein as the Kittridge Pit. At this time, MacQuinn proposes to expand the Kittridge pit further southward onto Lot 31. Previously permitted excavation areas and the proposed expansion area are shown on Drawings C1.0, C.2.0 and C.2.1.

Normal gravel pit operations consist of removing granular materials for processing to meet various sand and gravel material specifications. Processing operations occur within the gravel pit depending on material availability and project demand. Bank run sand and gravel is occasionally excavated directly from a working face, loaded into trucks and transported to a job site.

As discussed below, the expansion of the existing gravel pit as described in this application is not expected to increase from traffic volumes previously permitted by the Town. Therefore, a full Traffic Study is not warranted to address potential traffic concerns.

Access to this 110-acre Site is directly off of State Route 184 and will not utilize existing Town roads. Operationally, MacQuinn will not be adding any additional trucks to their existing fleet, nor modifying the types of materials available from this pit. Existing volume of truck traffic onto Route 184 will remain the same as current operations. Note that on many days, no truck traffic will be generated by the Site.

Conclusions

- 1) Approval of this application and operation and expansion of this Site is not expected to result in increased truck traffic on Route 184.
- 2) Route 184 is designed to support the truck traffic such as generated from the MacQuinn facility.
- 3) No additional entrances onto Route 184 will be created to access the Site.

RESTORATION PLAN

MACQUINN KITTRIDGE PIT

Background

Harold MacQuinn, Inc. (MacQuinn) owns and operates a gravel pit (the Kittridge Pit) on US Route 184 in the Town of Lamoine, Maine. The current pit is located in the northwest corner of Lot 31 as identified on the Town of Lamoine Tax Assessor's Map 3. MacQuinn intends to expand the existing operation within Lot 31 and on to the abutting parcel identified as Lot 33 on Tax Map 3. The area of the combined parcels (Lots 31 and 33) is approximately 110-acres.

Normal gravel pit operations consist of removing granular materials for processing to meet various sand and gravel material specifications. Processing operations will include onsite screening and blending of stockpiles. Occasionally, material will be excavated from a working face, loaded into trucks and transported to a job site. Permanent structures are not installed/constructed at the Site. Equipment at the Site includes excavators, bulldozers, screens, and associated portable equipment and supplies.

This Reclamation Plan addresses Section 8 of the Town of Lamoine's Gravel Ordinance for Performance Standards regarding excavation, final grading, and restoration of the Site. In addition to this narrative, this Plan includes Drawings C1.0, C2.0, C2.1, C3.0, a Stormwater Management Report (Attachment A) and an Erosion and Sediment Control Plan (Attachment B), and a Restoration Cost Estimate (Attachment C).

RESTORATION REQUIREMENTS

The Site is internally drained as a result of sand and gravel pit operations owned and operated by MacQuinn. A natural buffer strip will be maintained between limit of excavation and property boundaries. In addition, a 150-foot wide undisturbed buffer will remain between the area of proposed excavation and US Route 184. A 50-foot setback will be observed between the proposed limit of excavation and all property boundaries with the exception of the Manning property (Town of Lamoine Map 3, Lot 35). MacQuinn has obtained written permission from this property owner to allow a minimum setback of 10-feet between the property line and the limit of excavation.

The Owner is required to establish final ground levels and grades as detailed in this plan (see drawings C2.0 and C2.1) within one year of completing extraction operations. The Restoration Plan has been designed to provide site safety, establish vegetative cover in appropriate areas, and promote effective stormwater management for the Site.

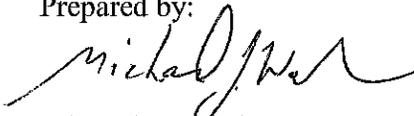
As documented in the Stormwater Management Report (see Attachment A), this Restoration Plan was developed to effectively manage a 25-year, 24-hour storm. The restored side slopes incorporate benches directing stormwater to rip rap armored downchutes and plunge pools (refer

to Drawing C3.0 for restoration details). The final base grading promotes infiltration and sheet flow of stormwater and includes a retention and infiltration area in the eastern portion of the site to provide sufficient runoff storage capacity. Gravel pit operations will be sequenced so that areas exposed during permit cycles will be restored to meet final grades and stormwater management features.

Topsoil will be placed and hydro-seeded and mulched within 30-days of final grading, dependent upon weather conditions. Within two years of restoration completion, 85 percent of planted vegetation shall result in permanent ground cover. Any areas that do not achieve the required vegetative growth requirement will be re-seeded. Onsite travelled gravel access roads will be maintained throughout the useful life of the Site.

The associated Erosion and Sediment Control Plan for the site is provided as Appendix B to this Plan.

Prepared by:

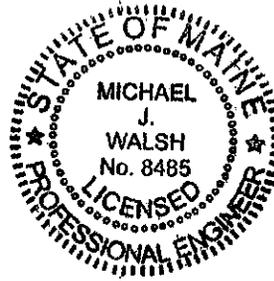


Michael J. Walsh, P.E.

Summit Environmental Consultants, Inc.

640 Main Street

Lewiston, Maine



APPENDIX A

Stormwater Management Report

**STORMWATER MANAGEMENT REPORT
MACQUINN KITTRIDGE PIT
Route 184
Lamoine, Maine
September 12, 2012**

INTRODUCTION

Harold MacQuinn, Inc. is proposing to revise their gravel pit permit for their Route 184 gravel pit in Hancock, Maine. The parcel encompasses 177± acres, of which approximately 8 acres of the northwest portion and 3 acres of the southwest portion have been and continue to be actively mined. The remaining portion of the Site remains undeveloped with deciduous and evergreen growth. The applicant is proposing the addition of approximately 110 acres of gravel pit excavation area.

This report addresses the stormwater analysis and design of quantity and quality that has been completed for the project. The proposed gravel pit is completely internally drained. Therefore stormwater quantity and quality is achieved by the infiltration of 100% of stormwater runoff back into the ground within the gravel pit. Stormwater conveyance systems have been designed to direct stormwater to an infiltration basin on the western portion of the site.

DATA COLLECTION, METHODOLOGY, AND ASSUMPTIONS

Site data was gathered from a plan entitled “Site Plan for Harold MaQuinn, Inc., Route 184 (Hancock County) Lamoine” dated August 23, 2012, prepared by Herrick and Salsbury, Inc. Land Surveyors of Ellsworth.

Calculations were performed utilizing HydroCAD stormwater modeling software, which is based on the United States Department of Agriculture’s (USDA) Technical Release 20 (TR-20) and Technical Release 55 (TR-55) hydraulic programs. Curve numbers (CN’s) assigned to differing land cover and soil types were taken from tables within the HydroCAD software, which are from the SCS TR-55 manual, revised 1986. 24-hour rainfall depths were taken from the ‘Stormwater Management for Maine: Volume III BMP’s Technical Design Manual, January 2006’.

Time of concentrations were calculated with the HydroCAD software using the TR-55 methodologies including sheet flow, shallow concentrated flow, and channel flow.

The proposed watershed subcatchments for the drainage areas used for stormwater calculations are shown on the attached drawing D1.0 Post Development Drainage Plan. Modeling assumptions are summarized in the attached HydroCAD output.

EXISTING SITE CONDITIONS

Refer to the existing conditions plan for Site features and topography. Generally, the site slopes radially from a high point at the approximate center of the property. Slopes are generally moderate to steep ranging from 3% to 45%. According to the USDA Natural Resources Conservation Service Web Soil Survey, soils at the Site consist primarily of Colton gravelly sandy loam [hydrologic soil group (HSG) A]

As the entire gravel pit excavation area is internally drained, the flooding standard does not apply to this project. Therefore, pre-development runoff rates were not calculated.

PROPOSED SITE CONDITIONS

Proposed work includes excavation into the existing grade. The existing material will be removed from the Site and the Site will be regraded to drain towards the proposed infiltration pond on the west side of the Site via overland flow. The sides of the gravel pit will be graded to a maximum slope of 2.5:1. Vegetated slope intercept swales will be installed on slopes with a vertical change of more than 75' from top of slope to toe of slope. The slope intercept swales will drain to riprap channels which will convey runoff to plunge pools at the toe of the slope, and subsequently to the infiltration basin via vegetated swales. The gravel pit floor will be graded at approximately 2% from west to east.

The entire site will be reclaimed with 4" of loam and vegetated with a conservation seed mixture. It is conservatively assumed that approximately 5% of the site will consist of gravel roads (impervious area) following reclamation.

STORMWATER QUANTITY

As the entire gravel pit excavation area is internally drained, the flooding standard is not applicable to this project.

Although the existing soils at the site are classified as HSG A, based on the depths of cut and the unknown source of reclamation material at this time, stormwater runoff calculations for post development conditions were performed assuming surficial soil will be classified as HSG B.

The stormwater infiltration basin was sized to hold the entire runoff volume from the 25-year storm. The maximum impoundment depth within the infiltration basin during the 25-year storm is 1.3'.

25-year storm runoff volume = 500,844 cubic feet

Infiltration basin volume = 796,831 cubic feet

Swales and culverts were also sized to convey the runoff volume from the 25-year storm.

STORMWATER QUALITY

As the entire gravel pit excavation area is internally drained, stormwater quality standards are not applicable to this project. However, stormwater quality is achieved through infiltration of 100% of stormwater runoff back into the ground.

EROSION CONTROL

BMPs such as vegetated swales, slope intercept swales, riprap swales, riprap pipe inlet and outlet protection, mulch, and permanent seeding, and a stabilized construction entrance will be used to prevent erosion and downstream migration of sediment during construction. The locations of temporary and permanent erosion control measures are shown on Drawings C2.0 and C2.1 Grading and Restoration Plans.

INSPECTION AND MAINTENANCE

Harold MacQuinn, Inc. will be responsible for maintaining the stormwater facilities for the proposed project. An Inspection and Maintenance Plan is included as Appendix E.

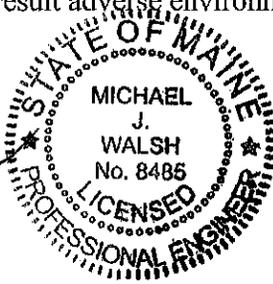
CONCLUSIONS

The proposed stormwater management system will incorporate new site grading, a new infiltration basin, and new stormwater conveyance swales, as well as long-term and short-term erosion control measures to treat stormwater runoff to the current Maine DEP required standards. Provided the project is constructed as detailed in this study, it is our opinion that the project will not result adverse environmental impacts.

Respectfully submitted,



Michael J. Walsh, PE
Summit Environmental, Inc.



SUPPORTING DATA

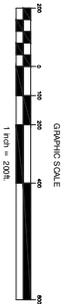
The following material presents calculations and copies of source material used during the analysis for this study.

Appendix A : Drainage Plan

Appendix B: Post-Development HydroCAD Calculations

Appendix C: Inspection & Maintenance Plan

APPENDIX A
DRAINAGE PLAN



LEGEND	
EXISTING	PROPOSED
Property Line	Property Line
Asphalt Line	Asphalt Line
Setback Line	Setback Line
Edge of Pavement	Edge of Pavement
Edge of Gravel	Edge of Gravel
Center Line	Center Line
Line of Elevation	Line of Elevation
Slope Intercept Swale	Slope Intercept Swale
Grassed Swale	Grassed Swale
Wetland	Wetland

DRAINAGE LEGEND	
	SUBDIVISION (TOTAL AREA)
	SUBDIVISION (SWALE OCCUPATIONS)
	REACH DESIGNATION
	FLOOD DESIGNATION

DRAFT 9/12/12 - FOR REVIEW ONLY

<p>640 MAIN ST. LEWISTON, MAINE 04240 Tel.: (207) 795-6009 Fax: (207) 795-6128 www.summitenv.com</p>	<p>PROJECT: MacQuinn Lamoine Gravel Pit</p> <p>ADDRESS: Route 184, Lamoine, Maine</p> <p>CLIENT: Harold MacQuinn, Inc.</p>	<p>SHEET TITLE: Post Development Drainage Plan</p> <p>SCALE: 1" = 200'</p> <p>DATE: September 2012</p>	<p>DRAWN BY: SWC</p> <p>JOB NO: 11-3240.5</p>	<table border="1"> <thead> <tr> <th>NO.</th> <th>REVISION</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO.	REVISION	DATE						
	NO.	REVISION	DATE										
<p>D10</p>	<p>PROJECT: MacQuinn Lamoine Gravel Pit</p>	<p>SCALE: 1" = 200'</p>	<p>DRAWN BY: SWC</p>	<p>Page 136</p>									

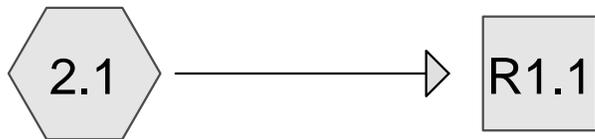
APPENDIX B

POST DEVELOPMENT HydroCAD CALCULATIONS



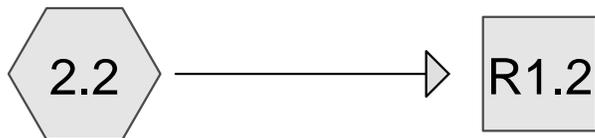
Total Area

Infiltration Pond



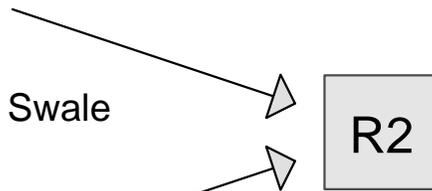
Slope Swale Area

Slope Intercept Swale

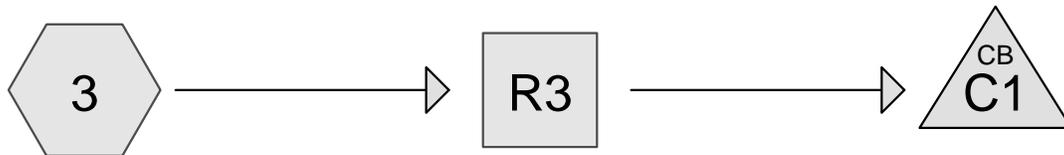


Slope Swale Area

Slope Intercept Swale



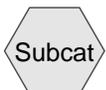
Riprap Swale



Grassed Swale Area

Vegetated Swale

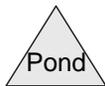
Culvert



Subcat



Reach



Pond



Link

Drainage Diagram for McQuinn Lamoine Gravel Pit - Post Dev
Prepared by Walsh Engineering Associates, Inc., Printed 9/12/2012
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McQuinn Lamoine Gravel Pit - Post Dev

Prepared by Walsh Engineering Associates, Inc.

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Fill (inches)
1	C1	34.50	33.86	40.0	0.0160	0.020	24.0	0.0	0.0

McQuinn Lamoine Gravel Pit - Post Dev

Type II 24-hr 25 Year Rainfall=4.90"

Prepared by Walsh Engineering Associates, Inc.

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: Total Area

Runoff Area=111.000 ac 0.00% Impervious Runoff Depth=1.24"
Flow Length=3,015' Tc=46.4 min CN=60 Runoff=75.57 cfs 11.499 af

Subcatchment 2.1: Slope Swale Area

Runoff Area=88,000 sf 0.00% Impervious Runoff Depth=1.11"
Flow Length=192' Slope=0.4000 '/' Tc=4.2 min CN=58 Runoff=3.97 cfs 0.188 af

Subcatchment 2.2: Slope Swale Area

Runoff Area=126,000 sf 0.00% Impervious Runoff Depth=1.11"
Flow Length=192' Slope=0.4000 '/' Tc=4.2 min CN=58 Runoff=5.68 cfs 0.269 af

Subcatchment 3: Grassed Swale Area

Runoff Area=31.570 ac 0.00% Impervious Runoff Depth=1.24"
Flow Length=1,500' Slope=0.0200 '/' Tc=35.9 min CN=60 Runoff=25.89 cfs 3.270 af

Reach R1.1: Slope Intercept Swale

Avg. Flow Depth=0.70' Max Vel=0.90 fps Inflow=3.97 cfs 0.188 af
n=0.080 L=800.0' S=0.0100 '/' Capacity=4.87 cfs Outflow=1.85 cfs 0.188 af

Reach R1.2: Slope Intercept Swale

Avg. Flow Depth=0.82' Max Vel=1.00 fps Inflow=5.68 cfs 0.269 af
n=0.080 L=800.0' S=0.0100 '/' Capacity=4.87 cfs Outflow=2.77 cfs 0.269 af

Reach R2: Riprap Swale

Avg. Flow Depth=0.23' Max Vel=7.61 fps Inflow=4.56 cfs 0.456 af
n=0.040 L=50.0' S=0.4000 '/' Capacity=75.99 cfs Outflow=4.55 cfs 0.456 af

Reach R3: Vegetated Swale

Avg. Flow Depth=1.20' Max Vel=1.98 fps Inflow=25.89 cfs 3.270 af
n=0.080 L=3,590.0' S=0.0167 '/' Capacity=47.45 cfs Outflow=15.66 cfs 3.270 af

Pond C1: Culvert

Peak Elev=35.94' Inflow=15.66 cfs 3.270 af
24.0" Round Culvert x 2.00 n=0.020 L=40.0' S=0.0160 '/' Outflow=15.66 cfs 3.270 af

Pond P1: Infiltration Pond

Peak Elev=31.27' Storage=500,884 cf Inflow=75.57 cfs 11.499 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 147.483 ac Runoff Volume = 15.225 af Average Runoff Depth = 1.24"
100.00% Pervious = 147.483 ac 0.00% Impervious = 0.000 ac

McQuinn Lamoine Gravel Pit - Post Dev

Type II 24-hr 25 Year Rainfall=4.90"

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Summary for Subcatchment 1: Total Area

Runoff = 75.57 cfs @ 12.51 hrs, Volume= 11.499 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Type II 24-hr 25 Year Rainfall=4.90"

Area (ac)	CN	Description
105.500	58	Meadow, non-grazed, HSG B
* 5.500	89	Gravel
111.000	60	Weighted Average
111.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	65	0.4000	0.53		Sheet Flow, AB Range n= 0.130 P2= 2.70"
44.4	2,950	0.0250	1.11		Shallow Concentrated Flow, BC Short Grass Pasture Kv= 7.0 fps
46.4	3,015	Total			

McQuinn Lamoine Gravel Pit - Post Dev

Type II 24-hr 25 Year Rainfall=4.90"

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Summary for Subcatchment 2.1: Slope Swale Area

Runoff = 3.97 cfs @ 11.96 hrs, Volume= 0.188 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Type II 24-hr 25 Year Rainfall=4.90"

Area (sf)	CN	Description
88,000	58	Meadow, non-grazed, HSG B
88,000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	150	0.4000	0.63		Sheet Flow, AB
					Range n= 0.130 P2= 2.70"
0.2	42	0.4000	4.43		Shallow Concentrated Flow, BC
					Short Grass Pasture Kv= 7.0 fps
4.2	192	Total			

McQuinn Lamoine Gravel Pit - Post Dev

Type II 24-hr 25 Year Rainfall=4.90"

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Summary for Subcatchment 2.2: Slope Swale Area

Runoff = 5.68 cfs @ 11.96 hrs, Volume= 0.269 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Type II 24-hr 25 Year Rainfall=4.90"

Area (sf)	CN	Description
126,000	58	Meadow, non-grazed, HSG B
126,000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	150	0.4000	0.63		Sheet Flow, AB
					Range n= 0.130 P2= 2.70"
0.2	42	0.4000	4.43		Shallow Concentrated Flow, BC
					Short Grass Pasture Kv= 7.0 fps
4.2	192	Total			

McQuinn Lamoine Gravel Pit - Post Dev

Type II 24-hr 25 Year Rainfall=4.90"

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Summary for Subcatchment 3: Grassed Swale Area

Runoff = 25.89 cfs @ 12.36 hrs, Volume= 3.270 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Type II 24-hr 25 Year Rainfall=4.90"

Area (ac)	CN	Description
30.000	58	Meadow, non-grazed, HSG B
* 1.570	89	Gravel Roads
31.570	60	Weighted Average
31.570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	150	0.0200	0.19		Sheet Flow, AB Range n= 0.130 P2= 2.70"
22.7	1,350	0.0200	0.99		Shallow Concentrated Flow, BC Short Grass Pasture Kv= 7.0 fps
35.9	1,500	Total			

McQuinn Lamoine Gravel Pit - Post Dev

Type II 24-hr 25 Year Rainfall=4.90"

Prepared by Walsh Engineering Associates, Inc.

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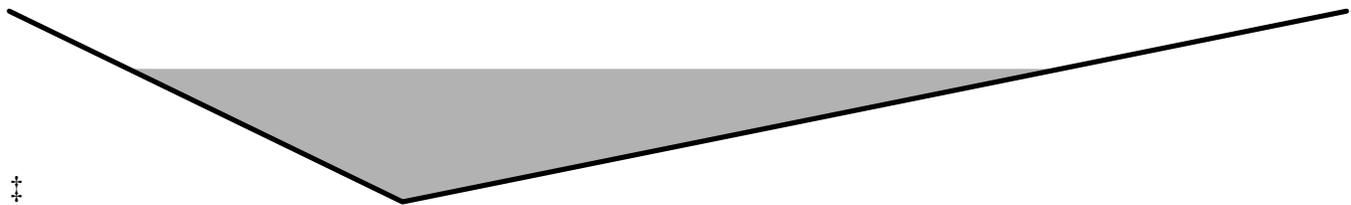
Summary for Reach R1.1: Slope Intercept Swale

Inflow Area = 2.020 ac, 0.00% Impervious, Inflow Depth = 1.11" for 25 Year event
Inflow = 3.97 cfs @ 11.96 hrs, Volume= 0.188 af
Outflow = 1.85 cfs @ 12.30 hrs, Volume= 0.188 af, Atten= 53%, Lag= 20.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.90 fps, Min. Travel Time= 14.8 min
Avg. Velocity = 0.25 fps, Avg. Travel Time= 52.5 min

Peak Storage= 1,653 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.70'
Bank-Full Depth= 1.00', Capacity at Bank-Full= 4.87 cfs

0.00' x 1.00' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 2.5 6.0 '/' Top Width= 8.50'
Length= 800.0' Slope= 0.0100 '/'
Inlet Invert= 100.00', Outlet Invert= 92.00'



McQuinn Lamoine Gravel Pit - Post Dev

Type II 24-hr 25 Year Rainfall=4.90"

Prepared by Walsh Engineering Associates, Inc.

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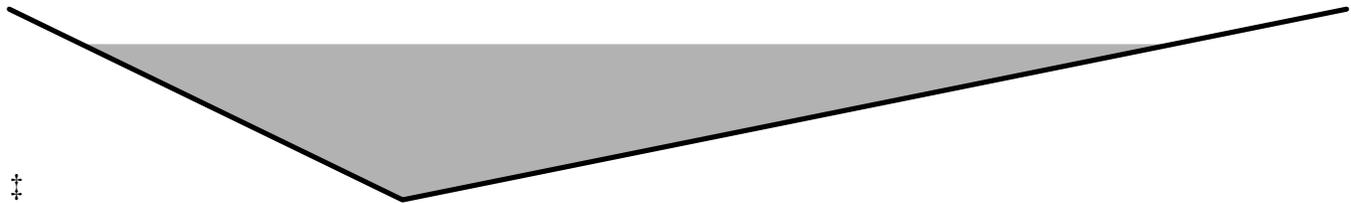
Summary for Reach R1.2: Slope Intercept Swale

Inflow Area = 2.893 ac, 0.00% Impervious, Inflow Depth = 1.11" for 25 Year event
Inflow = 5.68 cfs @ 11.96 hrs, Volume= 0.269 af
Outflow = 2.77 cfs @ 12.27 hrs, Volume= 0.269 af, Atten= 51%, Lag= 18.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.00 fps, Min. Travel Time= 13.3 min
Avg. Velocity = 0.27 fps, Avg. Travel Time= 48.8 min

Peak Storage= 2,266 cf @ 12.05 hrs
Average Depth at Peak Storage= 0.82'
Bank-Full Depth= 1.00', Capacity at Bank-Full= 4.87 cfs

0.00' x 1.00' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 2.5 6.0 '/' Top Width= 8.50'
Length= 800.0' Slope= 0.0100 '/'
Inlet Invert= 100.00', Outlet Invert= 92.00'



McQuinn Lamoine Gravel Pit - Post Dev

Prepared by Walsh Engineering Associates, Inc.

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Type II 24-hr 25 Year Rainfall=4.90"

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Summary for Reach R2: Riprap Swale

Inflow Area = 4.913 ac, 0.00% Impervious, Inflow Depth = 1.11" for 25 Year event
Inflow = 4.56 cfs @ 12.29 hrs, Volume= 0.456 af
Outflow = 4.55 cfs @ 12.29 hrs, Volume= 0.456 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.61 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.26 fps, Avg. Travel Time= 0.4 min

Peak Storage= 30 cf @ 12.29 hrs
Average Depth at Peak Storage= 0.23'
Bank-Full Depth= 1.00', Capacity at Bank-Full= 75.99 cfs

2.00' x 1.00' deep channel, n= 0.040 Earth, cobble bottom, clean sides
Side Slope Z-value= 2.5 ' Top Width= 7.00'
Length= 50.0' Slope= 0.4000 '
Inlet Invert= 90.00', Outlet Invert= 70.00'



McQuinn Lamoine Gravel Pit - Post Dev

Type II 24-hr 25 Year Rainfall=4.90"

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Summary for Reach R3: Vegetated Swale

Inflow Area = 31.570 ac, 0.00% Impervious, Inflow Depth = 1.24" for 25 Year event
Inflow = 25.89 cfs @ 12.36 hrs, Volume= 3.270 af
Outflow = 15.66 cfs @ 13.18 hrs, Volume= 3.270 af, Atten= 40%, Lag= 49.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.98 fps, Min. Travel Time= 30.2 min
Avg. Velocity = 0.56 fps, Avg. Travel Time= 107.3 min

Peak Storage= 28,433 cf @ 12.68 hrs
Average Depth at Peak Storage= 1.20'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 47.45 cfs

3.00' x 2.00' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 15.00'
Length= 3,590.0' Slope= 0.0167 '/'
Inlet Invert= 95.00', Outlet Invert= 35.00'



McQuinn Lamoine Gravel Pit - Post Dev

Type II 24-hr 25 Year Rainfall=4.90"

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Summary for Pond C1: Culvert

Inflow Area = 31.570 ac, 0.00% Impervious, Inflow Depth = 1.24" for 25 Year event
 Inflow = 15.66 cfs @ 13.18 hrs, Volume= 3.270 af
 Outflow = 15.66 cfs @ 13.18 hrs, Volume= 3.270 af, Atten= 0%, Lag= 0.0 min
 Primary = 15.66 cfs @ 13.18 hrs, Volume= 3.270 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 35.94' @ 13.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	34.50'	24.0" Round Culvert X 2.00 L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 34.50' / 33.86' S= 0.0160 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior

Primary OutFlow Max=15.64 cfs @ 13.18 hrs HW=35.94' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 15.64 cfs @ 3.23 fps)

McQuinn Lamoine Gravel Pit - Post Dev

Type II 24-hr 25 Year Rainfall=4.90"

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Summary for Pond P1: Infiltration Pond

Inflow Area = 111.000 ac, 0.00% Impervious, Inflow Depth = 1.24" for 25 Year event
Inflow = 75.57 cfs @ 12.51 hrs, Volume= 11.499 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 31.27' @ 26.65 hrs Surf.Area= 400,470 sf Storage= 500,884 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	30.00'	796,831 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
30.00	390,698	0	0
32.00	406,133	796,831	796,831

APPENDIX C
INSPECTION AND MAINTENANCE PLAN

**Inspection and Maintenance Plan
For Stormwater Management Facilities
MacQuinn Lamoine Gravel Pit
Harold MacQuinn, Inc.
Lamoine, Maine
September 2012**

Stormwater management facilities include ditches/swales, culverts, and infiltration basins. During construction activities, the maintenance of all stormwater measures will be the direct responsibility of the Contractor. After acceptance by the Owner, the maintenance of all stormwater management facilities, the establishment of any contract services required to implement the program, and the keeping of records and maintenance log book will be the responsibility of the Owner. At a minimum, the following maintenance activities for each stormwater management system shall be performed on a prescribed schedule.

DITCHES AND SWALES

Open swales and ditches shall be inspected twice per year (in spring and fall) to assure that debris and/or sediments do not reduce the effectiveness of the system. Debris and sediments shall be removed at that time. Any sign of erosion or blockage shall be immediately repaired to assure a vigorous growth of vegetation for the stability of the ditches and slopes proper function. Maintenance shall include, but not be limited to, mowing, trimming and removal vegetation in the ditches and slopes as required in order to prevent vegetation from blocking or diverting storm flows, replacement of riprap channel lining to prevent scour of the channel invert, removing vegetation and debris from the culverts.

Vegetated ditches should be mowed at least monthly during the growing season. Larger brush or trees must not be allowed to become established in the channel. Any areas where the vegetation fails will be subject to erosion and should be reseeded and mulched immediately.

Riprap ditches, aprons, and plunge pools where stone is displaced should be replaced and chinked to assure stability. With time, additional riprap may be added. Woody vegetation that is growing through riprap should be removed on an annual basis.

CULVERTS

Culverts shall be inspected on an annual basis to remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit; and to repair any erosion damage at the pipe inlet and outlet. Sediment should be removed when its level exceeds 20% of the pipe diameter. This may be accomplished by hydraulic flushing or any mechanical means; however, care should be taken to contain the sediment at the pipe outlet, and not flush the sediments into downstream environmental receptors.

INFILTRATION BASINS

Basins should be inspected semi-annually in the spring and late fall. Corrective action should be taken immediately upon identification of problems. Debris and sediment

should be removed from the basin. Basin media shall be renewed if the basin fails to drain within 72 hours after a 1 inch rainfall. Till, seed, and mulch the basin if vegetation is sparse. Repair riprap where underlying filter fabric or gravel is showing or where stones have dislodged.

Maintenance should include mowing and control of woody vegetation at least twice annually; and rodent control and erosion control and repair as needed.

Inspection and maintenance of the ponds is critical to their long term performance. Observations and volume of sediment removed should be recorded in the inspection/maintenance logs.

DISPOSAL

Any sediment or debris removed during maintenance of the stormwater system must be disposed of in accordance with the Maine Solid Waste Disposal Rules.

RECORDKEEPING

The Owner shall keep a written maintenance log that summarizes inspections, maintenance, and any corrective actions taken. The log shall include the date on which each inspection or maintenance task was performed, a description of the inspection findings or maintenance completed, and the name of the inspector or maintenance personnel performing the task. If a maintenance task requires the clean-out of any sediment or debris, the location where the sediment or debris was disposed after removal will be indicated. This log shall be made available to the Maine Department of Environmental Protection upon request.

Sample Inspection Report:

MACQUINN LAMOINE GRAVEL PIT
STORMWATER FACILITIES INSPECTION REPORT

NAME: _____ SIGNATURE: _____

TITLE: _____ COMPANY: _____

DATE: _____

OBSERVATIONS:

<u>BMP</u>	<u>Defects</u>	<u>Location(s)</u>	<u>Repair/Action Needed</u>	<u>Date/Action taken</u>
Culverts	Yes/no			
Riprap Aprons	Yes/no			
Riprap Swales	Yes/no			
Vegetated Swales	Yes/no			
Plunge Pools	Yes/no			
Infiltration Basin	Yes/no			

APPENDIX B

Erosion & Sediment Control Plan

EROSION AND SEDIMENTATION CONTROL PLAN MACQUINN KITTRIDGE PIT

INTRODUCTION

This Erosion and Sediment Control Plan (Plan) is being completed in support of a Site Plan Application required by the Town of Lamoine Gravel Ordinance to permit the expansion to an existing gravel pit perviously permitted by the Town of Lamoine in 1997 and 2004. The following plan for controlling sedimentation and erosion during gravel pit expansion and site restoration is based on conservation practices found in the Maine Erosion & Sediment Control BMP Manual, Maine Department of Environmental Protection (MEDEP), March 2003, or latest edition. The contractor who implements this Plan shall be familiar with this publication and adhere to it and the practices presented herein.

This Plan also includes measures to control dust and visual emissions at the Site.

Harold MacQuinn, Inc. (MacQuinn) operates a gravel pit on two contiguous parcels of owned/leased land located on the east side of Route 184 in Lamoine, Maine. The two parcels of land are identified by the Town of Lamoine as Lots 31 and 33 on Tax Assessment Map 3. The Town of Lamoine previously issued a permit for gravel extraction on Lot 33 in 1997. Subsequently, in 2004 the Town of Lamoine approved a southward expansion onto an adjoining 30-acre area of leased land on Lot 31. Collectively these two previously permitted excavation areas are referenced herein as the Kittridge Pit. At this time, MacQuinn proposes to expand the Kittridge pit further southward onto Lot 31. This assessment was prepared in support of the proposed Kittridge Pit southward expansion, reference herein as the “expansion area”. Previously permitted excavation areas and the proposed expansion area are shown on Drawings C1.0, C.2.0 and C.2.1.

Normal gravel pit operations consist of removing granular materials for processing to meet various sand and gravel material specifications. Processing operations occur within the gravel pit depending on material availability and project demand. Bank run sand and gravel is occasionally excavated directly from a working face, loaded into trucks and transported to a job site.

The Plan is to be used in conjunction with the Restoration Plan included in this application.

EROSION AND SEDIMENTATION CONTROL PRACTICES

General erosion control practices to mitigate erosion and sedimentation during pit expansion, operation and restoration include:

- 1) Limiting unnessary disturbance and, hence, erosion,
- 2) Correcting observed erosion problems immediately,
- 3) Regularly monitoring the implemented practices, especially after every rainfall,
- 4) Revegetation of disturbed areas as soon as possible after disturbance, and

5) Maintenance of undisturbed and vegetated buffers.

Specific erosion and sediment control measures incorporated into the Restoration Plan include the following:

Swales (Vegetated Drainageway)

Typically, grass-lined swales will collect runoff from the site. To supplement grass-lined swales in steeper areas, or where there is high discharge or sediment load potential, rip-rap lining will be used in lieu of vegetation. Riprap plunge pools will be constructed at the base (toe) of vertical swales (letdowns).

Silt Fence and/or Erosion Control Mix Sediment Barriers

Due to the pit being internally drained, there are no specific areas delineated for silt fencing, erosion control mix sediment barriers and/or haybales prior to construction, with the exception of the construction entrance detail. However, surface conditions must be evaluated during construction for erosion. If construction related erosion is observed sediment barriers are to be installed. Sediment may not leave the parcel or enter a protected natural resource (i.e., wetland) as noted on Sheet C1.0.

Outlet Protection

The outlets from the culverts shall be protected with rip-rap aprons.

Inlet Protection

Culvert inlets shall be protected with rip-rap unless otherwise noted on the drawings.

Construction Entrance

A crushed stone construction entrance shall be installed where the construction equipment will be exiting the limit of each phased work area and entering the existing site travel ways. The location and specifications for the entrance are noted on the drawings. Construction traffic will be directed over construction entrances prior to entering public roads. Areas subject to rutting will be stabilized immediately. The crushed stone construction entrance shall be maintained by the addition of more crushed stone as needed as the voids become filled.

Slope Protection

Grading will be held to a maximum 2.5:1 slope where practical. Greater slopes may be used where the banks are protected with erosion control matting or riprap. Slopes will be stabilized with permanent seeding immediately (i.e., within five (5) days) after final grading is complete.

REVEGETATION

Only active work areas will be cleared and left in an untreated or unvegetated condition. Once final grading of an area is complete, loaming, seeding and mulching shall occur immediately. If loaming, seeding and mulching cannot occur immediately, it shall be done prior to any storm event and within 15 days of completing construction in the area (within 7 days at wetland crossing).

Topsoil will be stockpiled when necessary in areas which have minimum potential for erosion and will be kept as far as possible from existing drainage areas and wetlands. All stockpiles expected to remain longer than 15 days shall be:

- A. Treated with anchored mulch (within 5 days of the last deposit of stockpiled soil).
- B. Seeded with conservation mix and mulched immediately.

Soil stockpiles expected to remain longer than 3 days shall be encircled with haybales at the toe of the pile.

The following general practices will be implemented to prevent erosion as soon as an area is ready to undergo final grading:

1. A minimum 4 inches of loam will be spread over disturbed areas and graded to a uniform depth and natural appearance.
2. If final grading is accomplished during the normal growing season (4/15 to 10/1), permanent seeding will be done as specified below. Prior to seeding, limestone shall be applied at a rate of 100 lbs/1000 sq. ft. and 10:20:20 fertilizer at a rate of 18.4 lbs/1000 sq. ft. will be applied. Broadcast seeding at the following rates:

SPECIES	VARIETY (select one)	Lb Per Acre
Switchgrass	Blackwell, Shelter, Cave-in-Rock	4.0
Big Bluestem	Niagara, Kaw	4.0
Little Bluestem	Camper, Aldous, Blaze	2.0
Sand Lovegrass	NE-27, Bend	1.5
Coastal Panicgrass	Atlantic	2.0

Note: Mix presented above assumes underlying soils with 0 to 15 percent by weight passing the No. 200 sieve. If observed underlying soil conditions do not meet this assumption, refer to MEDEP BMP I-1 Gravel Pit Reclamation for additional seed mix guidance.

If permanent seeding areas have received winter mulching, the top two inches of winter mulching should be removed.

3. Within two years of establishing the permanent vegetation, spruce, red pine and/or balsam fir tree saplings will be planted within the reclaimed area in a nonsymmetrical pattern with an average of 1 tree every 196 square feet.
4. An area shall be mulched immediately after it has been seeded. Mulching shall consist of hydro-mulch with tackifier or suitable substitute.

- A. Hydro-mulch shall consist of a mixture of asphalt, wood fibre or paper fibre and water, which is sprayed over a seeded area. Hydro-mulch shall not be used between 10/1 and 4/15.
- 4. Restoration work should be planned to eliminate the need for seeding between October 1st and April 15th. Should seeding be necessary between these dates, the following procedure shall be followed:
 - A. Only unfrozen loam shall be used.
 - B. Loaming, seeding and mulching will not be done over snow or ice cover. If snow exists, it must be removed prior to placement of seed.
 - C. Where permanent seeding is necessary, Annual Winter Rye (1.2 lbs/1000 s.f.) shall be sown instead of the previously noted seeding rate.
 - D. Where temporary seeding is required, Annual Winter Rye (2.5 lbs/1000 s.f.) shall be sown instead of the previously noted seeding rate.
 - E. Fertilizing, seeding and mulching shall be done on loam the day the loam is spread.

MONITORING SCHEDULE

MacQuinn shall be responsible for installing, monitoring, maintaining, repairing, replacing and removing erosion and sedimentation controls or appointing a qualified subcontractor to do so.

Maintenance measures will be applied as needed during the operational life of the pit. Immediately following significant rainfall, and at least once a week, a visual inspection will be made of all erosion and sedimentation controls using the attached inspection form.

Following final seeding, the site will be inspected every 30 days until 85 percent cover has been established. Any areas that do not achieve the required vegetative growth requirement will be re-seeded.

WINTER STABILIZATION

The following standards and methodologies shall be used for stabilizing soil (non-gravel or rock) areas of the site during the winter , if required.

- A. Stabilize the soil with temporary vegetation and erosion control mats – By October 1st the contractor will seed the disturbed slope with winter rye at a rate of 3 pounds per 1000 square feet and then install erosion control mats or anchored hay mulch over the seeding. The contractor will monitor growth of the rye over the next 30 days.

- B. Stabilize the slope with wood-waste compost – The contractor will place a six-inch layer of wood-waste compost on the slope by November 15th. The contractor will not use wood-waste compost to stabilize slopes having grades greater than 50 percent (2H:1V) or having groundwater seeps on the slope face.

Stabilize the slope with stone riprap – The contractor will place a layer of stone riprap on the slope by November 15th.

REMOVAL OF EROSION CONTROLS

An area is considered stable if it is paved or if 85% growth of planted seeds is established. Once an area is considered stable, the erosion control measures can be removed.

Once all the trapped sediments have been removed from the temporary sedimentation devices, the disturbed areas must be regraded in an aesthetic manner to conform to the surrounding topography. Once graded these disturbed areas must be loamed (if necessary), fertilized, seeded and mulched in accordance with the rates previously stated.

Erosion controls must be removed within 30 days of final stabilization of the site.

DUST CONTROL

Dust control methods will be employed on Site to prevent movement of dust from exposed soil surfaces that could potentially migrate from the site and create hazards to wildlife, humans, or plant life. Dust generated by activities at the Site, including dust associated with traffic to and from the Site, will be controlled by sweeping, watering or other best management practices for control of fugitive emissions.

Preventive measures will include the following, as needed:

- Traffic will be restricted to predetermined routes.
- All vehicular traffic will abide by the posted speed limit to reduce fugitive dust.
- Natural vegetation will be maintained to the extent practical.
- Excavation activities will be conducted in phases to reduce the area of land disturbed at any one time.
- Paved surfaces and roadways will be swept (e.g., mechanical sweeper) where necessary to prevent dust buildup.
- Dust control methods for onsite access roads and work areas will include placement of gravel or the application of water.

Additional information on dust control is included in Section B-5 of the Maine Erosion & Sediment Control BMP Manual.

Prepared By:

A handwritten signature in black ink that reads "Michael J. Walsh". The signature is written in a cursive style with a large initial "M" and "W".

Michael J. Walsh, PE
Summit Environmental Consultants, Inc.

Attachment A
INSPECTION FORM

Sample Inspection Report:

**MACQUINN KITTRIDGE PIT
STORMWATER FACILITIES INSPECTION REPORT**

NAME: _____ SIGNATURE: _____

TITLE: _____ COMPANY: _____

DATE: _____

OBSERVATIONS:

<u>BMP</u>	<u>Defects</u>	<u>Location(s)</u>	<u>Repair/Action Needed</u>	<u>Date/Action taken</u>
Culverts	Yes/no			
Riprap Aprons	Yes/no			
Riprap Swales	Yes/no			
Vegetated Swales	Yes/no			
Plunge Pools	Yes/no			
Infiltration Basin	Yes/no			

APPENDIX C

Restoration Cost Estimate

RESTORATION COST ESTIMATE
MACQUINN KITTRIDGE GRAVEL PIT

Background

Harold MacQuinn, Inc. owns and operates a gravel pit on US Route 184 in the Town of Lamoine, Maine. This Restoration Cost Estimate (Estimate) is being completed in support of a Site Plan Application required as part of the Town of Lamoine Gravel and Site Plan Review Ordinance. Site excavation will be conducted on an approximately 110-acre portion of two adjoining parcels (Lots 31 and 33 on Tax Map 3).

Normal gravel pit operations will consist of removing granular materials for processing to meet various sand and gravel material specifications. Processing operations will include onsite screening and blending of stockpiles. Occasionally, material will be excavated from a working face, loaded into trucks and transported to a job site.

Cost Estimate

Listed below are the assumptions used to develop the Estimate:

- Activities are consistent with the requirements of the Town of Lamoine Gravel Ordinance Section 8, Performance Standards.
- The gravel pit is internally drained and approximately 110-acres.
- Re-graded slopes not to exceed 2.5 feet horizontal to 1 foot vertical.
- Pit re-grading and restoration completed over a 55-day period using a 200 H.P. dozer, or similar, at a cost of \$185 per hour (RS Means Construction Cost Data, 2010).
- Sufficient topsoil volume is available onsite. Topsoil excavated during initial clearing and grubbing activities will be either stockpiled onsite or transported to the MacQuinn Hancock Plant for processing and storage and brought back to the Kittridge Pit for restoration, as needed.
- Topsoil to be placed at 4-inch depth to match final contours as presented on Drawings C2.0 and C2.1.

- Onsite loam hauling completed over a 42-day period with a wheel mounted front end loader (2.5 cubic yard bucket) or similar at a cost of \$98 per hour (RS Means Construction Cost Data, 2010).
- Vegetation established with hydroseed, fertilizer, mulch and tackifier across the Site at a cost of \$45.00 per thousand square feet (RS Means Construction Cost Data, 2010).
- Installation of six rip rap channels and associated plunge pools.
- Limited erosion control measures (e.g., construction entrance) required due to internally drained conditions.

The estimated cost to restore the pit is approximately **\$420,000** based upon the assumptions provided above. Please refer to Table 1 for additional information.

Prepared by:



Michael J. Walsh, P.E.
Summit Environmental Consultants, Inc.
640 Main Street
Lewiston, Maine

TABLE 1

Restoration Cost Summary

MacQuinn Kittridge Pit

TABLE 1
MacQuinn Kittridge Pit Restoration Cost Summary

Assumptions:

- Estimated 104-acre pit area to be restored
- Pit is internally drained
- Side slopes 2.5:1 or flatter
- Loam sourced from onsite stockpiles
- Pit grading with dozer (minimum 200 H.P)
- Onsite loam hauling with 2.5 c.y wheel mounted front end loader
- Typical stormwater downchute length of 150 feet (one per restoration cycle)

Task	Cost Basis	Rate	Units	No. of Units	Estimated Cost
Initial slope and base grading (dozer)	Equipment & operator ¹	\$175	hrs	438	\$76,650
Rip rap downchute and plunge pool construction	Material, equipment & labor ¹	\$82	C.Y.	212	\$17,431
Onsite loam hauling (front end loader)	Equipment & operator ¹	\$98	hrs	339	\$33,222
Loam spreading (dozer)	Equipment & operator ¹	\$185	hrs	449	\$83,065
Hydroseed, mulch & fertilizer	Material, equipment & labor ¹	\$45	M.S.F.	4,541	\$204,345
Misc. erosion controls	Material, equipment & labor	\$5,000	L.S.	1	\$5,000
				Estimated Cost:	\$419,713

Notes

¹: Source - RS Means Building Construction Cost Data, 68th Annual Edition, 2010 including overhead and profit

September 17, 2012

Stephen Salsbury, PLS
Herrick & Salsbury
P.O. Box 652
Ellsworth, ME 04605

RE: Harold MacQuinn, Inc. – Kittridge Pit Expansion

Dear Steve:

Thank you for forwarding a copy of the Gravel Extraction Permit Application and Site Plan Review Application which you will be filing shortly on behalf of Harold MacQuinn, Inc. Although I have not had an opportunity to review the application materials carefully yet, it's clear that both applications comply with the submission standards set forth in the applicable ordinances of the Town of Lamoine.

As we go through the review process I am mindful of the Planning Board's recent decision in connection with an application put forth by Mr. Gott appeal of which is pending in Superior Court. As I understand it, the Planning Board denied Mr. Gott's application on four grounds; three of which were overturned by the Board of Appeals. The fourth conclusion reached by Planning Board was upheld by the Board of Appeals. Although I cannot predict with any certainty how the Superior Court will rule on the appeal filed by Mr. Gott, I did review the Board of Appeals' decision and found the standards upon which the Planning Board denied his application to be "soft". I use the term "soft" to describe review criteria which are often found to be unenforceable. Essentially, if a standard is not quantifiable it is likely to be struck down by the courts and in the review of the Gott decision, it is pretty clear that the Planning Board's bases for denial (although three were overturned by the Board of Appeals), fell into that "soft" category. The review criteria in the Site Plan Review Ordinance that were under appeal are Section J(1) which requires, among other things, the applicant to preserve and enhance the landscape and criteria J(16) which requires that the application be in conformance with the Comprehensive Plan. The review criteria, such as those are the type that are often struck down by the court, especially the one alluding to consistency with the Comprehensive Plan.

However, I don't believe either of these standards should be problematic for Harold MacQuinn, Inc. since gravel extraction is consistent with the Comprehensive Plan as, as I understand it, is

Stephen Salsbury, PLS

September 17, 2012

Page 2

specifically referenced in the Comprehensive Plan as a use that is specifically encouraged under Section 1(G) of the current, albeit, old, Comprehensive Plan of the Town of Lamoine.

In reviewing the Gott application I am also mindful that the Planning Board needs to review and approve the application pursuant to the Town's Gravel Ordinance. Under that Ordinance, there are a couple of criteria which seem to fall in the same category of "soft" criteria such as 7D(4) which requires that the applicant demonstrate that the project will conserve natural beauty in keeping with the restoration provisions of this ordinance. In my opinion, if there is a suitable restoration or reclamation plan submitted by the applicant, the standard will be met. Obviously the extraction of sand and gravel alters the current landscape, but I believe that Section 7D(4), in its own language, contemplates that the restoration plan may suffice for meeting this standard.

Similarly, Section 7D(6) of the Gravel Ordinance sets forth a standard which is more likely than not to be struck down by the court. This specific standard requires that the proposed use will not adversely affect surrounding properties. Simply put, if the applicant meets the other standards of the ordinance it cannot be found by the Planning Board that the project would have an adverse affect on abutting properties. That is the most confounding part of the Gott review process. As I understand it, anyway, the Board of Appeals reversed the Planning Board on all but that one standard. Accordingly, it seems unlikely that the court would find that when an applicant meets all applicable standards that somehow the Planning Board can find that the proposed use is going to adversely impact the abutting properties.

Finally, it is my understanding that the Planning Board Chairman, John Holt, is also an officer of an abutting property owner, Cold Spring Water Company. Although all of our Hydrogeologic studies indicate that this extraction operation will not affect Cold Spring Water Company, it is my opinion that Chairman Holt, as the Treasurer of Cold Water Spring Company would be viewed as an abutter to the project and needs to recuse himself from the review of this application.

I hope that this brief overview of the process and the issues that I see on the horizon is helpful to you.

Sincerely,



Edmond J. Bearor
EJB/leb



R E P O R T

November 30, 2012
04-0421.1 W

Protected Natural Resources Report

Harold MacQuinn, Inc. Property
Route 184
Lamoine, Maine

PREPARED FOR:
Herrick & Salsbury, Inc.
Stephen R. Salsbury
P.O. Box 652
Ellsworth, Maine 04605
(207) 667-7370

PREPARED BY:
S. W. Cole Engineering, Inc.
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04-0421.1 W

November 30, 2012

Harold MacQuinn, Inc.
c/o Herrick & Salsbury, Inc.
Attention: Stephen R. Salsbury
P.O. Box 652
Ellsworth, ME 04605

Subject: Protected Natural Resources Report
Harold MacQuinn, Inc. Property
Route 184
Lamoine, Maine

1.0 INTRODUCTION

1.1 Scope of Work

We are pleased to present this Protected Natural Resources Report for a portion of the Harold MacQuinn, Inc. property on Route 184 in Lamoine, Maine. The purpose of our services was to conduct identification, delineation and classification of Maine Department of Environmental Protection (MDEP) Protected Natural Resources¹, including freshwater wetlands, streams, and potential vernal pools within an approximately 175± acre portion (the “site”) of a larger property.

We understand that our findings may be used to supplement other information that may be required to obtain land development permits from the MDEP, U.S. Army Corps of Engineers (Corps), and/or the Town of Lamoine. Included in this report is information about wetland-related regulations and permitting requirements as they pertain to proposed development on the property.

1.2 Summary of Findings

We identified five areas of freshwater wetlands and a stream on the site. Three of the identified wetlands are potential vernal pools and potential peatlands. The U.S. Fish

¹ State of Maine Department of Environmental Protection, Natural Resources Protection Act, Statute, 38 M.R.S.A. §§480-A to 480-BB, Revised 08/12/2010.

and Wildlife Service (USFWS) has indicated that the project is within the range of the Gulf of Maine Distinct Population Segment (GOM DPS) Atlantic Salmon, a federally-listed endangered species.

1.3 Appendices

This report is subject to the Limitations attached in Appendix A. Appendix B contains a Site Location Map, a Protected Natural Resources Plan and copies of published natural resource maps for the site. Appendix C contains state and federal Natural Resource Agency Correspondence. Appendix D contains Color Photographs. Appendix E is a Methodology.

2.0 SITE LOCATION AND DESCRIPTION

The site is located east of Route 184 in Lamoine, Maine. A Site Location Map is attached in Appendix B as Sheet B-1. The limit of our services is shown on the Protected Natural Resources Plan attached in Appendix B as Sheet B-2.

The site is dominated by a glacial outwash ridge in the central portion of the property. The ridge sideslopes include both gully and kettle hole features.

An intermittent stream flows northerly through the eastern portion of the site, and partially defines the eastern limit of our services. Archer Brook flows northerly through the eastern portion of the property, outside of the limit of our services. The western portion of the site is developed with current and historic gravel pits and the eastern portion of the site is a cleared “blueberry field”. The remainder of the property is wooded.

3.0 PUBLISHED MAPPING REVIEW

3.1 Published Mapping

We reviewed the USDI U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Map, accessed at the USFWS website on November 14, 2012. The NWI maps a PFO4E or palustrine, forested, needle-leaved evergreen wetland with a

saturated water regime on the northwestern portion of the site. No other wetlands are mapped by NWI on the site.

We reviewed the USDA Natural Resources Conservation Service (NRCS) Soil Survey of the site, accessed at the NRCS website on November 14, 2012. The NRCS maps most of the site soils as Colton soils, with areas of Sheepscot and Lamoine-Scantic-Buxton Complex on the eastern portion of the site. Colton soils are excessively drained sandy soils formed in glaciofluvial deposits. Sheepscot soils are moderately well drained soils formed in glaciofluvial deposits. Lamoine-Scantic-Buxton Complex soils are a complex of moderately well to poorly drained silty and clayey soils formed in marine and glaciolacustrine deposits. Scantic soils are classified as hydric.

We reviewed the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the Town of Lamoine, Maine, accessed from the FEMA website on November 28, 2012. FEMA maps the general area of the site as Zone X, or “areas determined to be outside 500-year flood plain”.

Copies of published mapping are included in Appendix B.

3.2 Resource Agency Correspondence/Mapping

A letter and map from the Maine Department of Inland Fisheries and Wildlife (IF&W) Wildlife division dated August 21, 2012 indicates that there are no rare, threatened, endangered or significant wildlife species and/or habitats associated with the site.

A letter from the Maine Natural Areas Program (MNAP) dated August 16, 2012 states that “*there are no rare botanical features documented specifically within the project area.*” The letter includes a database of MNAP listed species documented to occur in the vicinity of the site.

We accessed the USFWS Information Planning and Consultation (IPaC) database on November 21, 2012 to determine if federally-listed species and/or habitats are mapped on the site. According to the USFWS database, the project is within the range of mapped habitat of the Atlantic salmon (*Salmo salar*), which is a federally-listed

Endangered Species. If the project will require federal permitting, or use federal funding, the federal action agency will determine if further action or information is required regarding the Atlantic salmon habitat.

Resource agency correspondence is attached in Appendix C.

4.0 WETLAND CLASSIFICATION AND DESCRIPTION

We conducted site visits to the property on November 16 and 19, 2012 to identify and delineate field observable MDEP Protected Natural Resources. A Protected Natural Resources Plan is attached as Appendix B, Sheet B-2.

4.1 Streams

We observed one unnamed stream on the site. The stream flows northerly along the eastern limit of our services. We classified² the stream as a R4SB3, or riverine, intermittent, streambed, cobble-gravel stream.

According to the survey provided by Herrick & Salsbury, Inc., Archer Brook flows northerly through the eastern portion of the site, outside of our limit of services.

4.2 Wetlands

We identified five areas of freshwater wetlands on the site, labeled as Wetlands A through E.

Wetland A is located in the north-central portion of the site and is an isolated wetland within an apparent kettle hole land feature. We classified Wetland A as PFO4&1C or palustrine, forested, needle-leaved evergreen and broad-leaved deciduous wetland with a seasonally flooded water regime. Wetland A contains a mix of black and red spruce (*Picea mariana* and *P. rubens*), balsam fir (*Abies balsamea*), gray birch (*Betula populifolia*), tamarack (*Larix laricina*), and red maple (*Acer rubrum*) in the overstory, and

² Cowardin, Lewis M., V. Carter, F.C. Golet, E.T. LaRoe, 1979, Classification of Wetlands and Deepwater Habitats of the United States, U.S.D.I, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page. <http://www.npwr.usgs.gov/resource/1998/classwet/classwet.htm> (Version 04DEC98).

sheep laurel (*Kalmia latifolia*), leatherleaf (*Chamaedaphne calyculata*), labrador tea (*Ledum groenlandicum*), winterberry (*Ilex verticillata*) and high-bush blueberry (*Vaccinium corymbosum*) in the understory. Soils in Wetland A are greater than 24" of sapric organic matter and are hydric. Indicators of hydrology observed included free water at and above the soil surface and soil saturation within 6" of the soil surface.

Wetland B is located in the north-central portion of the site (directly west of Wetland A) and is an isolated wetland within an apparent kettle hole land feature. Wetland B continues onto the northerly adjacent property. We classified Wetland B as PFO4/PSS1C or palustrine, forested, needle-leaved evergreen and scrub-shrub, broad-leaved deciduous wetland with a seasonally flooded water regime. Wetland B contains a mix of black and red spruce, tamarack and white pine (*Pinus strobus*) in the overstory, and sheep laurel, leatherleaf, labrador tea, winterberry and high-bush blueberry in the understory. Soils in Wetland B are greater than 24" of sapric organic matter and are hydric. Indicators of hydrology observed included free water at and above the soil surface and soil saturation within 6" of the soil surface.

Wetland C is located in the northwestern portion of the site (directly east of an active gravel pit) and is an isolated wetland within an apparent kettle hole land feature. We classified Wetland C as PFO2&4C or palustrine, forested, needle-leaved deciduous and needle-leaved evergreen wetland with a seasonally flooded water regime. Wetland C contains a mix of black and red spruce, tamarack, red maple, balsam fir and gray birch in the overstory and understory, and speckled alder (*Alnus rugosa*), sheep laurel, leatherleaf, labrador tea, interrupted fern (*Osmunda claytoniana*), and meadowsweet (*Spiraea alba var. latifolia*) in the understory. Soils in Wetland C are greater than 24" of sapric organic matter and are hydric. Indicators of hydrology observed included water stained leaves and soil saturation within 10" of the soil surface.

Wetland D is located in the eastern portion of the site and partially defines the eastern limit of our services. The unnamed stream described in Section 4.1 flows northerly into Wetland D, where it flows underground through the wetland where on the site. We classified Wetland D as a PFO4&1E wetland, or palustrine, forested, needle-leaved evergreen and broad-leaved deciduous wetland with a seasonally saturated water

regime. Wetland D contains a mix of red spruce, balsam fir, and red maple in the overstory and understory. Herbaceous species observed included bunchberry (*Cornus canadensis*) and cinnamon fern (*Osmunda cinnamomea*). A test pit in Wetland D indicated hydric soils with 4" of organic matter underlain by at least 8 inches of depleted and mottled mucky fine sandy loam textured soil. Indicators of hydrology observed included soil saturation within 6" of the soil surface.

Wetland E is located in the eastern portion of the site, and is a sideslope seep that continues onto the easterly abutting property. We classified Wetland E as a PFO4&1E wetland, or palustrine, forested, needle-leaved evergreen and broad-leaved deciduous wetland with a seasonally saturated water regime. Wetland E contains a mix of balsam fir and red maple in the overstory and understory. Herbaceous species observed included grasses. A test pit in Wetland E indicated hydric soils with 4" to 6" of organic matter underlain by at least 6 inches of sandy textured soil with redoximorphic features near the surface. Indicators of hydrology observed included free water at the soil surface and soil saturation within 6" of the soil surface.

4.3 Vernal Pools

We identified Wetlands A, B and C as potential vernal pools based on observed hydrology.

4.4 Other

We identified Wetlands A, B and C as potential peatlands based on observed depth of greater than 24" of organic matter and predominance of ericaceous shrubs in the understory.

We located field-observed Protected Natural Resources using a mapping grade Trimble GPS receiver. We overlaid our GPS data onto the base map provided by Herrick & Salsbury, Inc., which was used in making the Protected Natural Resources Plan.

5.0 NATURAL RESOURCE REGULATIONS AND PERMITTING INFORMATION

5.1 Stream Regulations and Permitting

Streams are Protected Natural Resources under the MDEP Natural Resources Protection Act (NRPA). Any stream alteration, or any soil or vegetation disturbance within 25' of a stream, requires an Individual permit from the MDEP. Any soil or vegetation disturbance between 25' and 75' from a stream, or a stream crossing, requires filing of a MDEP Permit-by-Rule (PBR) Notification.

Streams are also protected by the Corps. Any direct alteration of a stream requires a permit from the Corps.

5.2 Wetland Regulations and Permitting

MDEP

The MDEP uses two categories to classify wetlands for permitting purposes: "Wetlands of Special Significance" and "Wetlands Not of Special Significance." We did not classify the wetlands on the site based on the MDEP categories due to pending further review and information collection regarding if Wetlands A, B and/or C are "peatlands" or Significant Vernal Pools.

Activities that alter greater than 4300 ft² of wetlands classified as "Wetlands Not of Special Significance" on this site require a permit, as follows: Alterations of between 4300 ft² and 15,000 ft² require a Tier 1 NRPA permit. Alterations of between 15,000 ft² and 1 acre require a Tier 2 NRPA permit. Alterations of greater than 1 acre require a Tier 3 NRPA permit. Alteration in a "Wetland of Special Significance" requires a Tier 3 NRPA permit. Tier 2 and 3 NRPA permit applications generally require further submissions, such as wetland data forms, a wetland functional assessment and a wetland mitigation plan (data for these submissions must be collected during the growing season, or about April 15 to October 15 in Maine).

Some alterations to "Wetland of Special Significance" may be reviewed under a lower permitting threshold, as determined by the MDEP.

Corps

Corps jurisdiction on a project is triggered by, among other criteria, alteration of a wetland that is connected by “significant nexus” to a stream. Most projects that involve wetland fill are permitted by the Corps through their General Permit process. If the Corps has jurisdiction, any activity that alters between 1 ft² and 15,000 ft² of wetland on this site requires filing of a Category 1 Notification Form with the Corps. The Corps will generally accept the MDEP Tier application for alterations between 15,000 ft² and 3 acres. Alterations over 3 acres require a Corps Individual Permit.

5.3 Municipal Regulations and Permitting

We did not review Town of Lamoine ordinances for regulations or permitting guidance pertaining to natural resource alteration. We suggest that you review Town of Lamoine statutes to assess zoning and potential building restrictions specific to the property/proposed project.

6.0 FINDINGS AND RECOMMENDATIONS

We identified five freshwater wetlands and a stream on the site. The wetlands will be classified as MDEP “Wetlands of Special Significance” and “Wetlands Not of Special Significance” in the future upon further review regarding the existence of vernal pools and peatland in Wetlands A, B and C.

Alterations to wetlands generally require a permit from the MDEP and Corps. Stream crossings and activities at between 25’ and 75’ of a stream require a MDEP Permit-By-Rule Notification.

The site is within the range of the Atlantic Salmon, as mapped by USFWS. The Atlantic salmon is a federally-listed endangered species. We recommend consultation with USFWS during project planning to determine if there are any project limitations due to the existence of this habitat.



04-0421.1 W
November 30, 2012

7.0 CLOSING

It has been a pleasure to be of assistance to you with this phase of your project. If you have any questions, or if we may be of further assistance, please do not hesitate to contact us.

Sincerely,

S. W. COLE ENGINEERING, INC.

A handwritten signature in cursive script, appearing to read 'Aleita M. Burman', is written in black ink.

Aleita M. Burman, Senior Wetland Scientist

AMB:amb/slh

P:\2004\04-0421.1 W - Harold MacQuinn, Inc. - Lamoine, ME - Kiltredge Pit - PNR Services - AMB\Reports and Letters\PNR Report.doc

APPENDIX A
Limitations

APPENDIX A

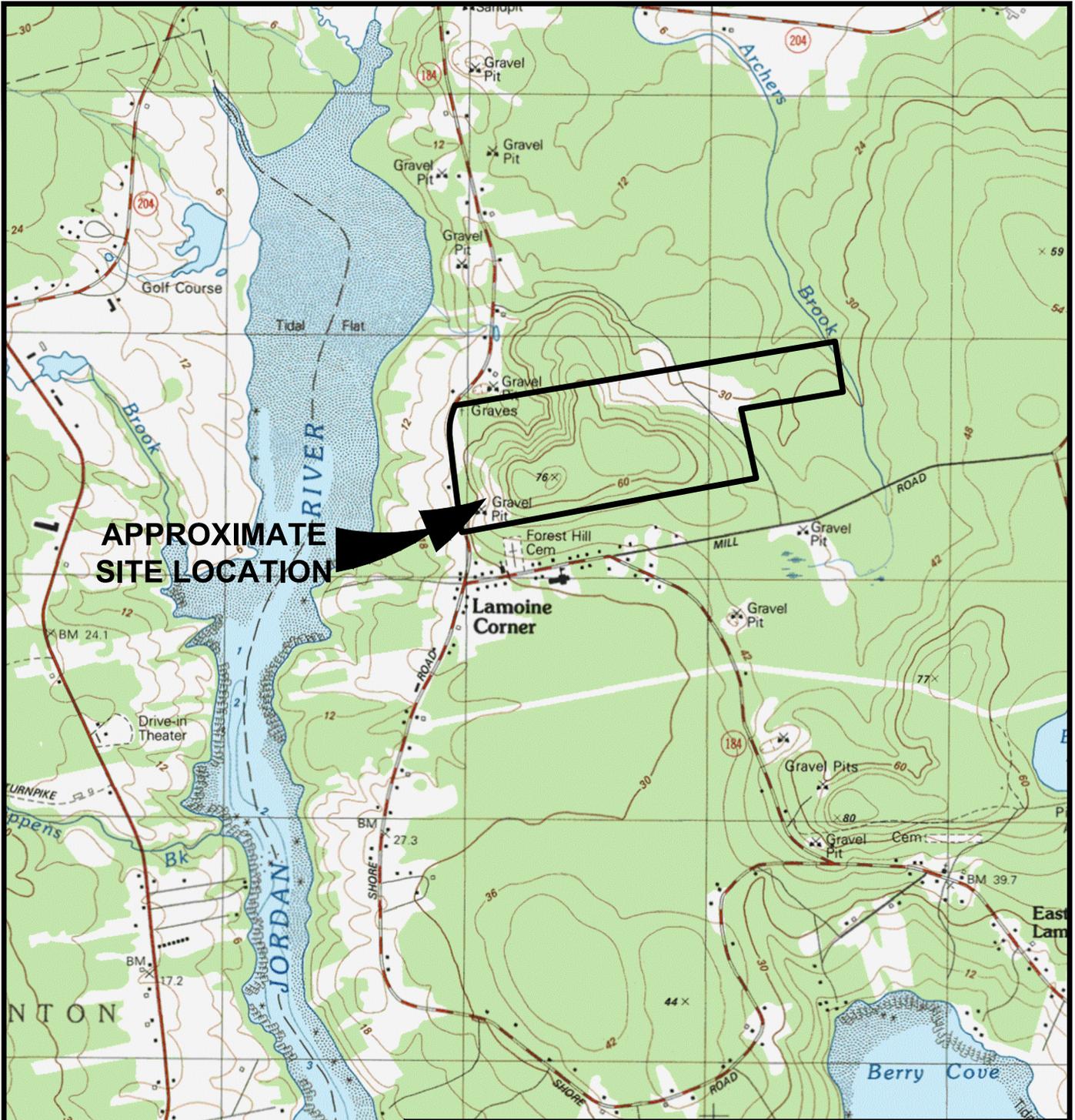
Limitations

The scope of our services has been limited to the development of a Protected Natural Resources Report. This report has been prepared for the exclusive use of Herrick & Salsbury, Inc. for specific application to the Harold MacQuinn, Inc. property on Route 184 in Lamoine, Maine. Our services were conducted, compiled and reported in general accordance with guidelines described in the 2012 Regional Supplement (Version 2) to the 1987 Corps of Engineers Wetland Delineation Manual, and the MDEP NRPA Statute, Chapter 310, and Chapter 335. No warranty, expressed or implied, is made. The conclusions and recommendations presented in this report are based upon the data obtained from the areas explored.

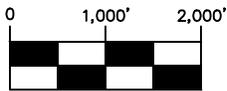
APPENDIX B

Site Location Map/ Protected Natural Resources Plan/ Published Mapping

R:\200A\04-0421.1\04-0421.1 PNRP.dwg, B-1, 11/30/2012 9:53:32 AM, D:Ray, DWG To PDF.pc3, ANSI expand A (8.50 x 11.00 Inches), 1:1



**APPROXIMATE
SITE LOCATION**



NOTE :

BASE MAP TAKEN FROM MAPTECH
TERRAIN NAVIGATOR PRO. 7.5
MINUTE SERIES USGS TOPOGRAPHIC
MAP, SALSBURY COVE, MAINE
QUADRANGLE.



S.W. COLE
ENGINEERING, INC.

HERRICK & SALSBURY, INC.
SITE LOCATION MAP

HAROLD MACQUINN, INC.
ROUTE 184
LAMOINE, MAINE

Job No. 04-0421.1 W
Date : 11/30/2012

Scale 1" = 2,000'
Sheet B-1



U.S. Fish and Wildlife Service

National Wetlands Inventory



This map is for general reference only. The U.S. Fish and Wildlife Service is not responsible for the accuracy or currency of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

Wetlands

-  Freshwater Emergent
-  Freshwater Forested/Shrub
-  Estuarine and Marine Deepwater
-  Estuarine and Marine
-  Freshwater Pond
-  Lake
-  Riverine
-  Other

Riparian

-  Herbaceous
-  Forested/Shrub



S.W. COLE
ENGINEERING, INC.

HERRICK & SALSBURY, INC.

NATIONAL WETLANDS INVENTORY MAP

HAROLD MACQUINN, INC.

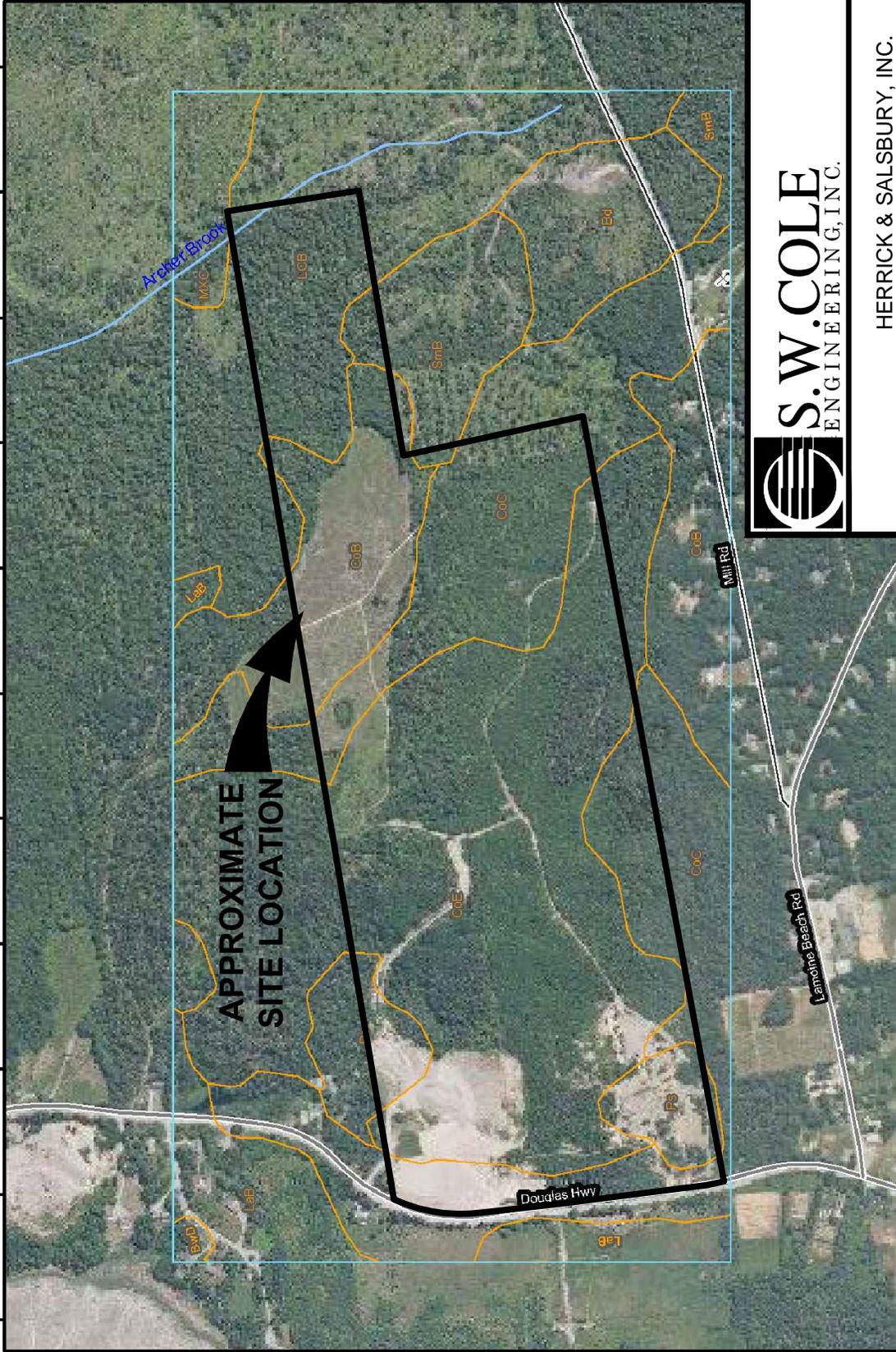
ROUTE 184
LAMOINE, MAINE

Job No. 04-0421.1 W
Date : 11/30/2012

Scale As Shown
Sheet B-3

44° 29' 25"

4926400 4926200 4926000 4925800 4925600 4925400



**APPROXIMATE
SITE LOCATION**

4926400 4926200 4926000 4925800 4925600 4925400



HERRICK & SALSURY, INC.

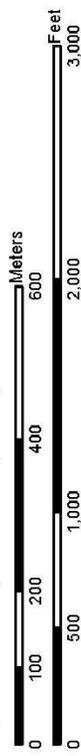
SOIL SURVEY MAP
HAROLD MACQUINN, INC.
ROUTE 184
LAMOINE, MAINE

Scale As Shown
Sheet B-4

Job No. 04-0421.1 W
Date : 11/30/2012

551800 552000 552200 552400 552600 552800 553000

Map Scale: 1:10,200 if printed on A-size (8.5" x 11") sheet.



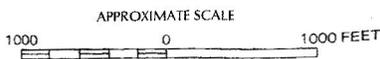
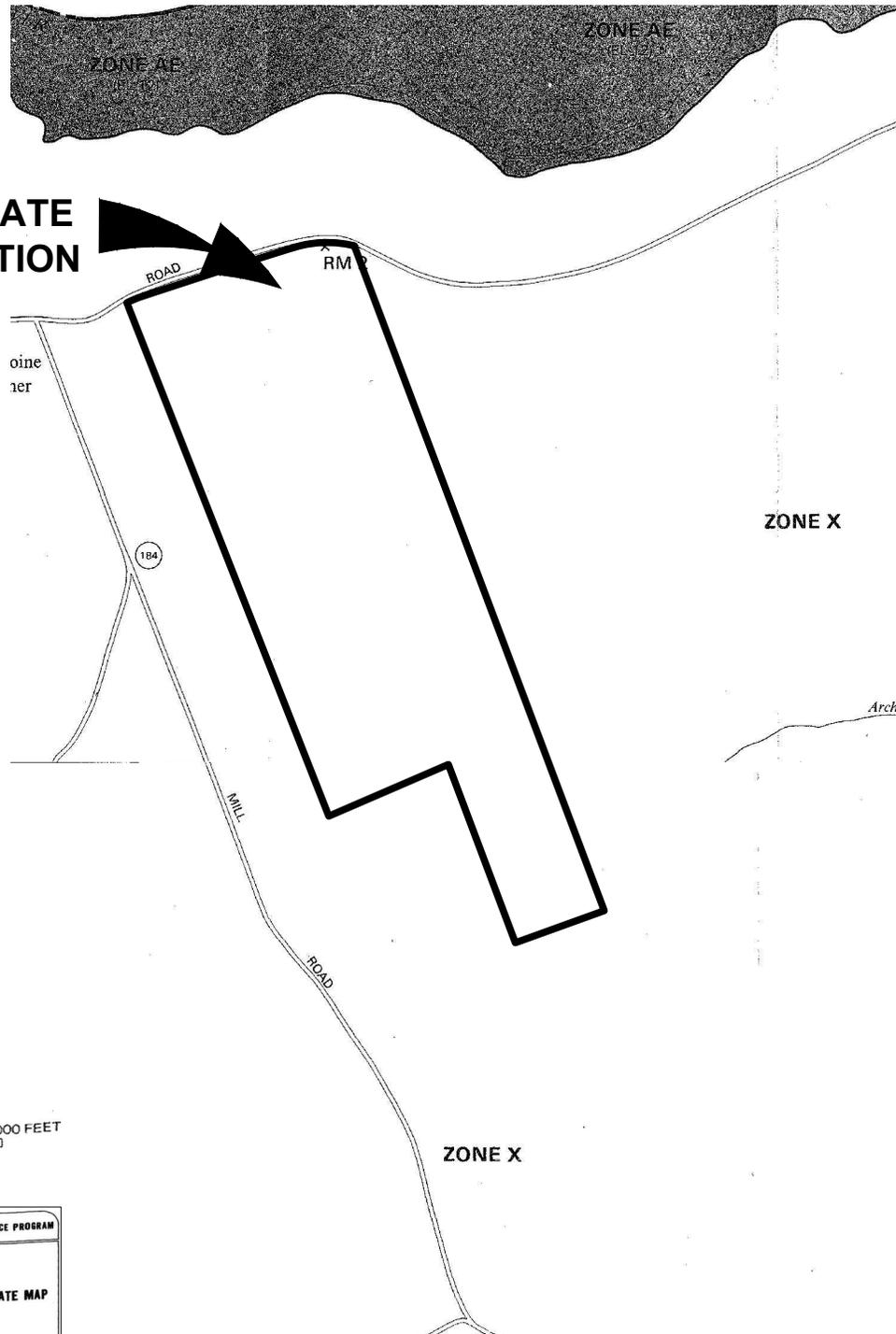
Web Soil Survey
National Cooperative Soil Survey



Map Unit Legend

Hancock County Area, Maine (ME611)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Bd	Biddeford muck	17.8	4.3%
BwD	Buxton silt loam, 15 to 30 percent slopes, eroded	0.9	0.2%
CoB	Collon gravely sandy loam, 0 to 8 percent slopes	46.9	11.4%
CoC	Collon gravely sandy loam, 8 to 15 percent slopes	94.7	23.1%
CoE	Collon gravely sandy loam, 15 to 45 percent slopes	122.1	29.7%
LaB	Lamoine silt loam, 3 to 8 percent slopes	20.7	5.0%
LCB	Lamoine-Scantic-Buxton association, gently sloping	63.1	15.4%
MXC	Monadnock-Hermon-Dixfield complex, rolling, extremely bouldery	8.6	2.1%
Ps	Pits, gravel and sand	15.6	3.8%
Smb	Sheepsfoot sandy loam, 0 to 8 percent slopes	20.1	4.9%
Totals for Area of Interest		410.6	100.0%

**APPROXIMATE
SITE LOCATION**



NATIONAL FLOOD INSURANCE PROGRAM

**FIRM
FLOOD INSURANCE RATE MAP**

TOWN OF
**LAMOINE,
MAINE**
HANCOCK COUNTY

PANEL 5 OF 10
(SEE MAP INDEX FOR PANELS NOT PRINTED)

PANEL LOCATION

COMMUNITY-PANEL NUMBER
230285 0005 A
EFFECTIVE DATE:
MAY 2, 1991

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

**FIRM
FLOOD INSURANCE RATE MAP**

TOWN OF
**LAMOINE,
MAINE**
HANCOCK COUNTY

PANEL 10 OF 10
(SEE MAP INDEX FOR PANELS NOT PRINTED)

PANEL LOCATION

COMMUNITY-PANEL NUMBER
230285 0010 A
EFFECTIVE DATE:
MAY 2, 1991

Federal Emergency Management Agency



HERRICK & SALSBUURY, INC.

FLOOD INSURANCE RATE MAP

HAROLD MACQUINN, INC.

ROUTE 184
LAMOINE, MAINE

This is an official copy of a portion of the above referenced flood map. It was extracted using F480T Ch-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps, check the FEMA Flood Map Store at www.msc.fema.gov

Job No. 04-0421.1 W
Date : 11/30/2012

Scale As Shown
Sheet B-5

APPENDIX C
Resource Agency Correspondence



PAUL R. LEPAGE
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
INLAND FISHERIES & WILDLIFE
284 STATE STREET
41 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0041

CHANDLER E. WOODCOCK
COMMISSIONER

August 21, 2012

Tara Hartson
P.O. Box 652
130 Oak Street, Suite 1
Ellsworth, Maine 04605

RE: Information Request, Parcel east of Route 184, Lamoine

Dear Tara:

Per your request received August 21, we have searched current Department records for known occurrences of Rare, Threatened, and Endangered species, designated Essential and Significant Wildlife Habitats, and fisheries habitat concerns within the vicinity of the parcel located to the east of Route 184 in Lamoine.

Our records indicate no occurrences of rare, threatened, or endangered animal species within the project area. Additionally, our department has not mapped any Essential or Significant Wildlife Habitats or Fisheries Habitats that would be directly impacted by your project.

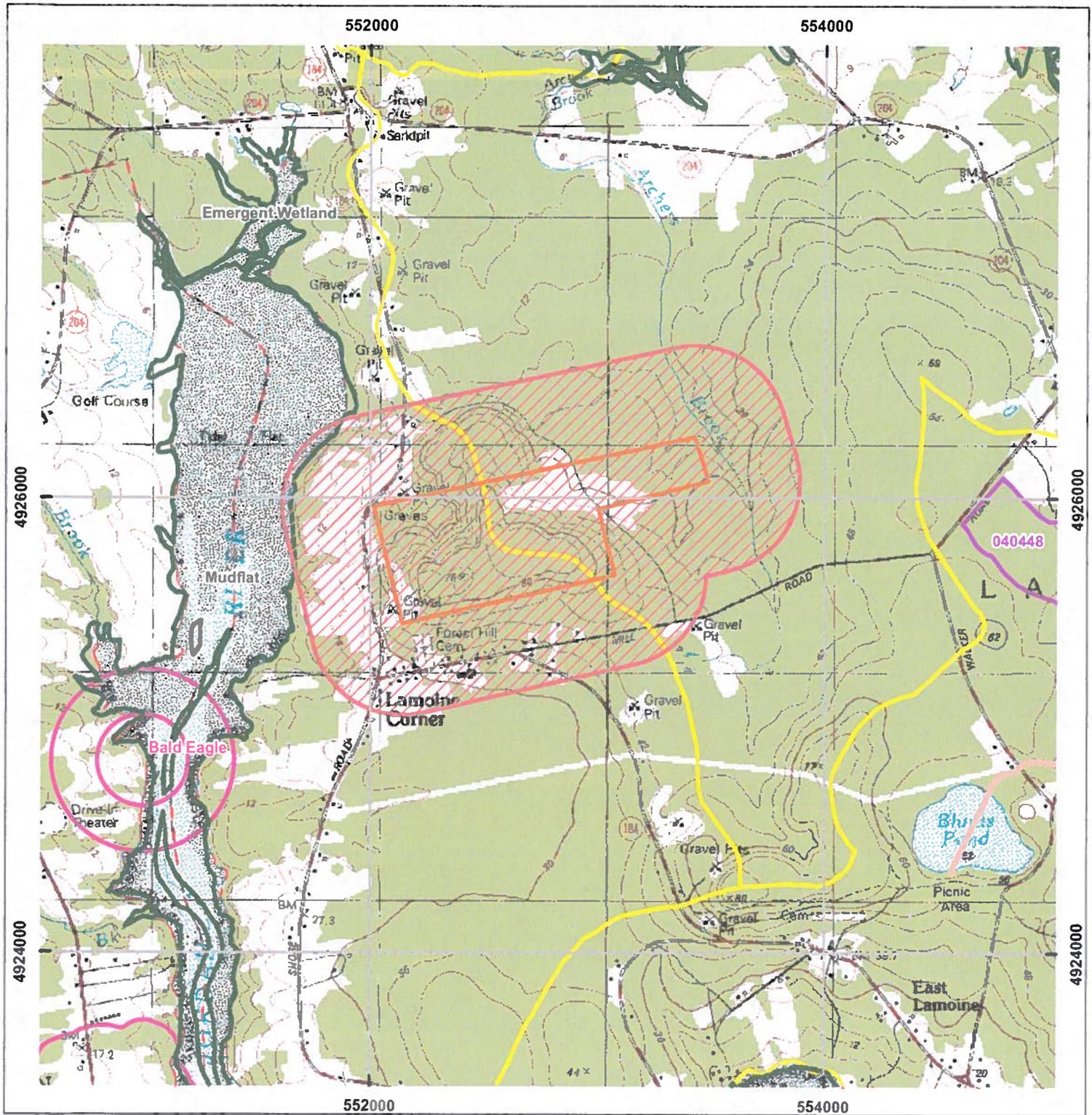
This consultation review has been conducted specifically for known MDIF&W jurisdictional features and should not be interpreted as a comprehensive review for the presence of all regulated features that may occur on site. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,

A handwritten signature in black ink, appearing to read "Steve Walker".

Steve Walker
Acting Environmental Review Coordinator



Environmental Review of Fish and Wildlife Observations and Priority Habitats

Project Name:

Parcel east of Route 184, Lamoine

(Version 1)



Maine Department of
Land Fisheries and Wildlife



Projection: UTM, NAD83, Zone 19N

Date: 8/21/2012

- | | | |
|----------------------|------------------------------|--|
| Project Points | Deer Winter Area | Roseate Tern |
| Project Lines | LURC p-fw | Piping Plover/Least Tern |
| Project Polys | Cooperative DWAs | Aquatic ETSc (2.5 mi review) |
| Project Search Areas | Seabird Nesting Islands | Rare Mussels (5 mi review) |
| | Shorebird Areas | A and B List Ponds |
| | Inland Waterfowl/Wading Bird | Arctic Charr Habitat |
| | Cherokeed Zone | E. Brook Trout Joint Venture Subwatershed Classification |





STATE OF MAINE
DEPARTMENT OF CONSERVATION
93 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0093

PAUL R. LEPAGE
GOVERNOR

WILLIAM H. BEARDSLEY
COMMISSIONER

August 16, 2012

Tara Hartson
Herrick & Salsbury
PO Box 652
Ellsworth, ME 04605

Re: Rare and exemplary botanical features in proximity to: Property near Route 184, Lamoine, Maine

Dear Ms. Hartson:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request received August 16, 2012 for information on the presence of rare or unique botanical features documented from the vicinity of the project site in Lamoine, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

Rare and Exemplary Botanical Features in the Project Vicinity

Documented within a four-mile radius of the Property near Route 184, Lamoine, Maine.

Feature Name	Global Rank	State Rank	State Status	EO Number	Last Seen	Habitat
Black spruce woodland						Dry barrens (partly forested, upland)
	G4?	S3		1	1999-09-22	
Carex adusta						Rocky coastal (non-forested, upland)
	G5	S2	E	5	1891-06-24	
Prenanthes nana						Alpine or subalpine (non-forested, upland)
	G5	S1	E	8	1897-08-19	
Sanguisorba canadensis						Non-tidal rivershore (non-forested, seasonally wet)
	G5	S1	T	8	2007	
Spruce - fir - northern hardwoods ecosystem						Hardwood to mixed forest (forest, upland)
	GNR	S5		21	1999	
Oryzopsis canadensis						Dry barrens (partly forested, upland)
	G5	S2	SC	10	1897-07-14	
Carex adusta						Rocky coastal (non-forested, upland)
	G5	S2	E	6	1898-08-17	
Brackish tidal marsh						Tidal wetland (non-forested, wetland)
	GNR	S3		12	2009	

Print Date 8/16/2012

For more information visit our website <http://www.maine.gov/doc/nrimc/mnap>

Page 1

STATE RARITY RANKS

- S1** Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
- S2** Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- S3** Rare in Maine (20-100 occurrences).
- S4** Apparently secure in Maine.
- S5** Demonstrably secure in Maine.
- SU** Under consideration for assigning rarity status; more information needed on threats or distribution.
- SNR** Not yet ranked.
- SNA** Rank not applicable.
- S#?** Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: **State Rarity Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

GLOBAL RARITY RANKS

- G1** Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.
- G2** Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- G3** Globally rare (20-100 occurrences).
- G4** Apparently secure globally.
- G5** Demonstrably secure globally.
- GNR** Not yet ranked.

Note: **Global Ranks** are determined by NatureServe.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered** and **Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

- E** ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.
- T** THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

NON-LEGAL STATUS

- SC** SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.
- PE** Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

Visit our website for more information on rare, threatened, and endangered species!
<http://www.maine.gov/doc/nrimc/mnap>



United States Department of the Interior



FISH AND WILDLIFE SERVICE
MAINE ECOLOGICAL SERVICES FIELD OFFICE
17 GODFREY DRIVE, SUITE 2
ORONO, ME 04473
PHONE: (207)866-3344 FAX: (207)866-3351
URL: www.fws.gov/mainefieldoffice/index.html

Consultation Tracking Number: 05E1ME00-2013-SLI-0032

November 21, 2012

Project Name: Gravel Pit, Lamoine, Maine

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project.

To Whom It May Concern:

The enclosed species list identifies the threatened, endangered, candidate, and proposed species and designated or proposed critical habitat that may occur within the boundary of your proposed project or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC Web site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the Endangered Species Consultation Handbook at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

This species list also identifies candidate species under review for listing and those species that the Service considers species of concern. Candidate species have no protection under the Act but are included for consideration because they could be listed prior to completion of your project. Species of concern are those taxa whose conservation status is of concern to the Service (i.e., species previously known as Category 2 candidates), but for which further information is needed.

If a proposed project may affect only candidate species or species of concern, you are not required to prepare a Biological Assessment or biological evaluation or to consult with the Service. However, the Service recommends minimizing effects to these species to prevent future conflicts. Therefore, if early evaluation indicates that a project will affect a candidate species or species of concern, you may wish to request technical assistance from this office to identify appropriate minimization measures.

Please be aware that bald and golden eagles are not protected under the Endangered Species Act but are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may require development of an eagle conservation plan:

http://www.fws.gov/windenergy/eagle_guidance.html Information on the location of bald eagle nests in Maine can be found on the Maine Field Office Web site:

<http://www.fws.gov/mainefieldoffice/Project%20review4.html>

Additionally, wind energy projects should follow the wind energy guidelines:

<http://www.fws.gov/windenergy/> for minimizing impacts to migratory birds and bats. Projects may require development of an avian and bat protection plan.

Migratory birds are also a Service trust resource. Under the Migratory Bird Treaty Act, construction activities in grassland, wetland, stream, woodland, and other habitats that would result in the take of migratory birds, eggs, young, or active nests should be avoided. Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm> and at:

<http://www.towerkill.com>; and at:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment



United States Department of Interior
Fish and Wildlife Service

Project name: Gravel Pit, Lamoine, Maine

Official Species List

Provided by:

MAINE ECOLOGICAL SERVICES FIELD OFFICE

17 GODFREY DRIVE, SUITE 2

ORONO, ME 04473

(207) 866-3344

<http://www.fws.gov/mainefieldoffice/index.html>

Consultation Tracking Number: 05E1ME00-2013-SLI-0032

Project Type: Dredge / Excavation

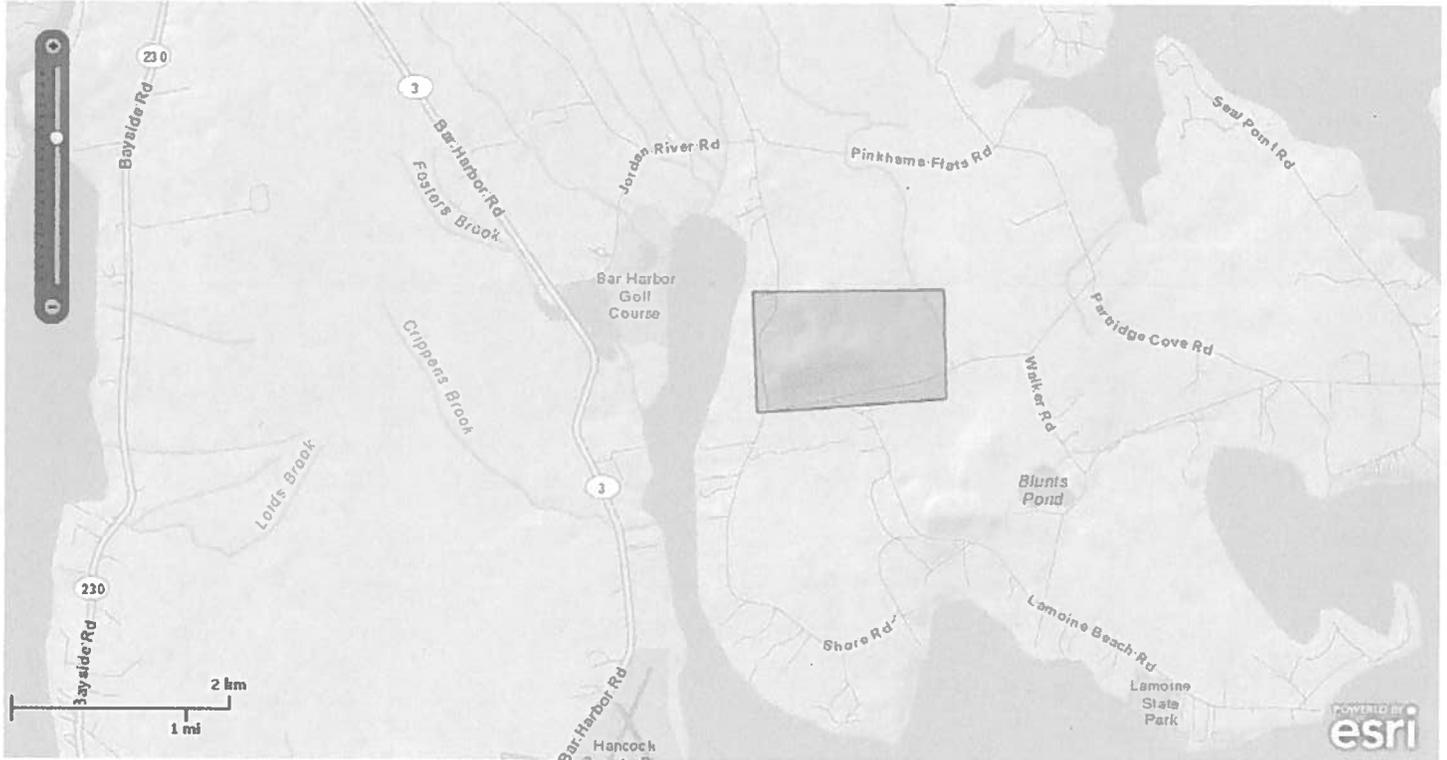
Project Description: Project is expansion of an existing gravel pit east of Route 184 and north of Mill Road in Lamoine, Maine.



United States Department of Interior
Fish and Wildlife Service

Project name: Gravel Pit, Lamoine, Maine

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-68.3472121 44.4881016, -68.3248961 44.4883465, -68.3245528 44.4792836, -68.3466971 44.4780588, -68.3472121 44.4881016)))

Project Counties: Hancock, ME



United States Department of Interior
Fish and Wildlife Service

Project name: Gravel Pit, Lamoine, Maine

Endangered Species Act Species List

Species lists are not entirely based upon the current range of a species but may also take into consideration actions that affect a species that exists in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Please contact the designated FWS office if you have questions.

Atlantic salmon (*Salmo salar*)

Population: Expanded Gulf of Maine DPS

Listing Status: Endangered

APPENDIX D
Color Photographs



Photo 1: Looking west into Wetland A, PFO4&1C wetland.

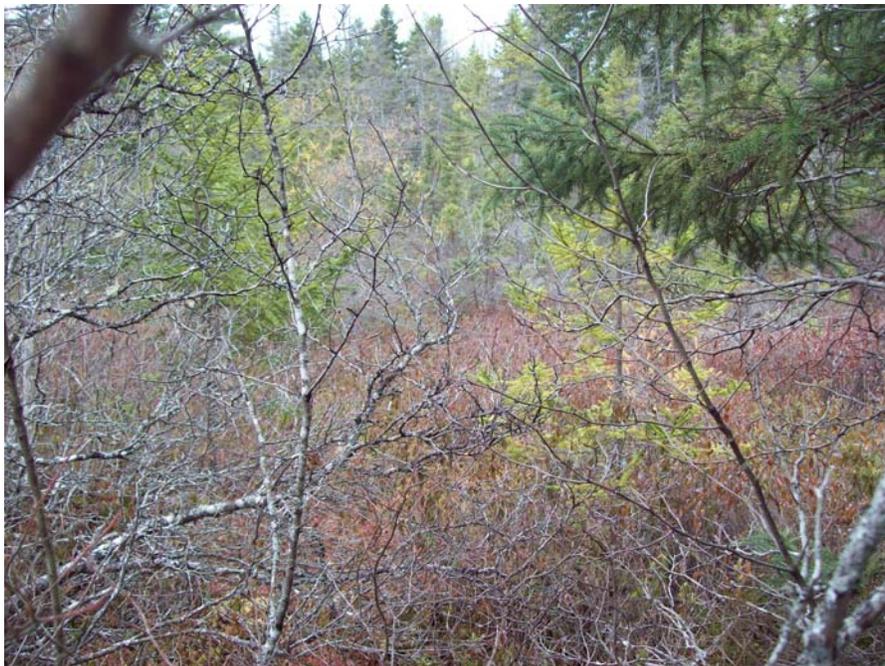


Photo 2: Looking north into Wetland B, PFO4/PSS1C wetland.

Herrick & Salsbury, Inc.
Harold MacQuinn, Inc. Property
Route 184
Lamoine, Maine

Appendix D – Color Photographs
Sheet D-1



Photo 3: Looking south into Wetland C, PFO2&4 wetland.



Photo 4: Looking east into Wetland D, PFO4&1E wetland.

Herrick & Salsbury, Inc.
Harold MacQuinn, Inc. Property
Route 184
Lamoine, Maine

Appendix D – Color Photographs
Sheet D-2



Photo 5: Looking south at unnamed stream, R4SB3 stream.



Photo 6: Looking west into Wetland E, PFO4&1E wetland.

APPENDIX E
Methodology

APPENDIX E

Methodology

E.1 Mandatory Technical Criteria - Our wetland delineation services were performed generally following the 2012 Regional Supplement (Version 2) to the 1987 Corps of Engineers Wetland Delineation Manual. The manual uses a multiple parameter approach that requires the presence of three primary components for an area to be identified as a freshwater wetland, namely: 1) Hydrophytic Vegetation; 2) Hydric Soils; and 3) Wetland Hydrology.

E.1.1 Hydrophytic Vegetation - We traversed the landscape in a pattern roughly perpendicular to the ground contours and hydraulic gradient to identify natural communities composed dominantly of vegetative species that typically grow in wetland areas (i.e., hydrophytic species). Dominant vegetation refers to species that, when ranked in descending order of abundance and cumulatively totaled, exceed at least 20% of the total dominance measure for its stratum. We referenced the US FWS publication National List of Plant Species that Occur in Wetlands: Region 1 Northeast to establish whether observed species were hydrophytic or non-hydrophytic. If we identified hydrophytic natural communities, we proceeded to observe soil conditions.

E.1.2 Hydric Soils - We observed and documented soil characteristics in hand-dug test pits at representative locations along the prospective wetland/upland boundary. Hydric soils were identified by using criteria described in the 2012 Regional Supplement (Version 2) to the 1987 Corps Manual.

E.1.3 Wetland Hydrology - We observed and documented "primary" and/or "secondary" wetland hydrology field indicators using examples listed in the 2012 Regional Supplement (Version 2) to the 1987 Corps Manual as a guide. An example of a primary wetland hydrology indicator is "drainage patterns". This indicator includes not only observed channels created by the action of moving water, but is also understood to include swales and drainages that sometimes are evident only on relatively large-scale site plans or USGS topographical maps by contour lines. Direct observation of saturated soils within 12 inches, which is generally within the rooting zone of plants, is another primary wetland hydrology indicator.

E.1.4 Wetland Plan - After we identified the wetland in the field and marked it with flagging, we located the flagging using a mapping grade Trimble GPS and overlaid the data onto the base map, or forwarded our GPS data to the project surveyor or engineer for overlay on the base map, which was used to make the Plan submitted with this report.

E.2 Classification - We classified the wetlands that we observed according to the national wetland classification method developed by Cowardin, et al., which is described in the FWS publication entitled Classification of Wetlands and Deepwater Habitats of the United States in December, 1979.

We identified and classified vernal pools according to MDEP Chapter 335.

We identified and classified streams according to the MDEP NRPA Statute.

Town of Lamoine-Property Tax Receipt



Receipt # **4429**

Received From: all lots in full

Date Rec'd **07/23/12**

Assessed Owner Harold A. MacQuinn Inc.,

Map Lot(s)
Property Tax Received ;13,357.59

Paid by Check \$13,357.59 Check # 059417

Paid by Cash
Pd by Credit Card

Interest Received

Total Rec'd \$13,357.59

Fees Received

Overpaid

Prepaid

jenn

Tax Collector

Transaction Total \$13,357.59

Town of Lamoine-Property Tax Receipt



Receipt # **5536**

Received From:

Date Rec'd **10/24/12**

Assessed Owner Miro, Ralph/Mary

Map 3 Lot(s) 31

Paid by Check \$1,591.98 Check # 1857

Property Tax Received \$1,583.78

Paid by Cash

Interest Received \$8.20

Pd by Credit Card

Total Rec'd \$1,591.98

Fees Received

Overpaid

Prepaid

Transaction Total \$1,591.98

jenn

Tax Collector

RECIPROCAL WAIVER OF SETBACK

Now comes the undersigned, Glenn M. Manring III, hereinafter referred to as "Manring" and Harold MacQuinn, Inc., hereinafter referred to as "MacQuinn", agree as follows:

Whereas Manring is the owner of a certain lot or parcel of land situated at 838 Douglas Highway, Lamoine, Maine, shown on Tax Map 3, Lot 35 and

Whereas MacQuinn is the owner of a certain lot or parcel of land situated on the Douglas Highway, Lamoine, Maine, shown on Tax Map 3, Lot 33 and

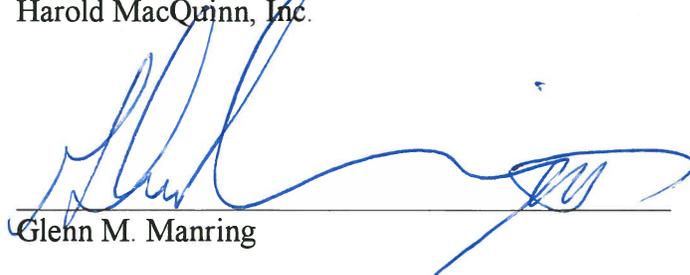
Whereas the parties are desirous of reciprocally waiving those setback and buffer requirements to the extent possible as currently set forth in Section 8(A) of the Lamoine Gravel Ordinance, Section J(6) of the Lamoine Site Plan Review Ordinance and the State of Maine Department Of Environmental Protection performance standards outlined in Article 7, Sections 6A and 7 of 38 MRSA ss 490D and any other setback or buffer requirement not specifically listed or may be adopted in the future, now therefore, in consideration of one dollar and other valuable consideration, mutual receipt of sufficiency whereof is acknowledged, the parties agree as follows:

By execution of the within waiver, Manring and MacQuinn hereby agree to waive the maintenance of any buffer strip or setback as may otherwise be required pursuant to Section 8(A) of the Lamoine Gravel Ordinance, Section J(6) of the Lamoine Site Plan Review Ordinance and the State of Maine Department Of Environmental Protection performance standards outlined in Article 7, Sections 6A and 7 of 38 MRSA ss 490D and any other setback or buffer requirement not specifically listed or may be adopted in the future by and between those properties owned by MacQuinn and property owned by Manring referred to hereinabove.

Signed this 28th day of November, 2012



Ronald Paul MacQuinn, Jr.
Harold MacQuinn, Inc.



Glenn M. Manring

STATE OF MAINE

Hancock County

November 28, 2012

Personally appeared the above named Ronald Paul MacQuinn, Jr. and acknowledged before me the foregoing instrument to be his free act and deed in his said capacity.



Notary Public

STATE OF MAINE

Hancock County

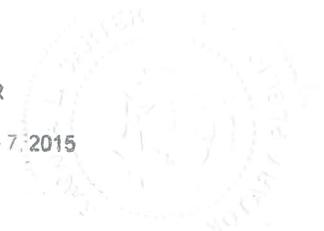
November 28, 2012

Personally appeared the above named Glenn M. Manring III and acknowledged before me the foregoing instrument to be his free act and deed in his said capacity.



Notary Public

RHONDA L. CARTER
Notary Public, Maine
My Commission Expires June 7, 2015





STATE OF MAINE
Department of Environmental Protection

PAUL R. LEPAGE
GOVERNOR

PATRICIA W. AHO
COMMISSIONER

November 2012

Harold MacQuinn, Inc.
PO Box 789
Ellsworth, ME 04605
ATTN: Paul MacQuinn

RE: Variance Application, Lamoine, #L-21587-80-B-A

Dear Mr. MacQuinn:

Please find enclosed a signed copy of your Department of Environmental Protection land use permit. You will note that the permit includes a description of your project, findings of fact that relate to the approval criteria the Department used in evaluating your project, and conditions that are based on those findings and the particulars of your project. Please take several moments to read your permit carefully, paying particular attention to the conditions of the approval. The Department reviews every application thoroughly and strives to formulate reasonable conditions of approval within the context of the Department's environmental laws. You will also find attached some materials that describe the Department's appeal procedures for your information.

If you have any questions about the permit or thoughts on how the Department processed this application please get in touch with me directly. I can be reached at (207) 822-6330 or at christina.stacey@maine.gov

Sincerely,

Christina Stacey, Project Manager
Division of Land Resource Regulation
Bureau of Land & Water Quality

pc: File

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
RAY BLDG., HOSPITAL ST

BANGOR
106 HOGAN ROAD
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769-2094
(207) 764-0477 FAX: (207) 764-3143

WEB SITE: WWW.MAINE.GOV/DEP



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION
AUGUSTA, ME 04333

DEPARTMENT ORDER

IN THE MATTER OF

HAROLD MACQUINN, INC.) PERFORMANCE STANDARDS FOR EXCAVATIONS
Lamoine, Hancock County)
INCREASE WORKING PIT AREA) VARIANCE
L-21587-80-B-A (approval)) FINDINGS OF FACT AND ORDER

Pursuant to the provisions of Title 38 M.R.S.A. Section 490-D, and Section 490-E, and Chapter 378 of Department Rules, the Department of Environmental Protection has considered the application of HAROLD MACQUINN, INC. with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. PROJECT DESCRIPTION:

A. History: On February 24, 1999, Harold MacQuinn, Inc. filed a "Notice of Intent to Comply" (NOITC) to operate a 30-acre gravel pit located on Lamoine Beach Road in the Town of Lamoine. In Department Order #L-25187-80-A-N, dated December 1, 2003, the Department approved a larger working pit area of 30 acres. Harold MacQuinn, Inc. has entered into a Purchase & Sale Agreement on an adjacent gravel pit owned by Ralph and Mary Miro, for which an NOITC was filed on June 16, 2005. The combined gravel pits would have a total area of 110 acres.

B. Summary: The applicant seeks approval for an open working pit area of 100 acres.

C. Current Use of Site: The site is used as a gravel pit.

2. RECLAMATION:

The existing open area of the gravel pit on the two parcels measures approximately 13 acres. The applicant proposes to increase the open working pit area to a total of 100 acres. The gravel pit will be reclaimed in accordance with the *Performance Standards for Excavations*, 38 M.R.S.A. §490-D(14). The total projected cost for grading, seeding, and mulching 100 acres is four hundred fifty thousand dollars (\$450,000.00). The applicant secured financial assurance through a letter of credit in the amount of four hundred fifty thousand dollars (\$450,000.00) to cover the cost of a third party to reclaim 100 acres of the gravel pit. The applicant must annually report to the Department an estimate of the change in financial assurance necessary to meet the costs of reclamation due to inflation, changed financial conditions, or anticipated changes in mining activity. The financial

assurance requirements stated in 06-096 CMR 378.E(5) apply to the release of the reclamation fund.

3. CHAPTER 378, STANDARDS FOR VARIANCES:

The Department has not identified any other issues involving water quality, groundwater flow, existing uses, public safety, flooding, soil erosion, or harm to habitat.

Based on its review of the application, the Department finds the variance request to be in accordance with all relevant Department standards set forth in 06-096 CMR 378.

BASED on the above findings of fact, and subject to the Conditions listed below, the Department makes the following conclusions in relation to the proposed variance pursuant to 38 M.R.S.A. Section 490-D and Section 490-E:

- A. The proposed activity will not violate any state water quality law including those governing the classifications of the State's waters.
- B. The proposed activity will not unreasonably interfere with the natural flow of groundwater.
- C. The proposed activity will not unreasonably interfere with existing uses.
- D. The activity will not adversely affect the health, safety and general welfare of the public.
- E. The proposed activity will not unreasonably cause or increase the flooding of the alteration adjacent properties or create an unreasonable flood hazard to any structure.
- F. The proposed activity will not cause unreasonable erosion of soil or sediment.
- G. The proposed activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic habitat, travel corridor, freshwater, estuarine, or marine fisheries or other aquatic life.

THEREFORE, the Department APPROVES the application of HAROLD MACQUINN, INC., to operate a 100-acre working pit area, SUBJECT TO THE FOLLOWING CONDITIONS and all applicable standards and regulations:

- 1. The Standard Conditions of Approval, a copy attached.
- 2. In addition to any specific erosion control measures described in this or previous Orders, the applicant shall take all necessary actions to ensure that his activities or those of his agents do not result in noticeable erosion of soils or fugitive dust emissions on the site during the construction and operation of the project covered by this approval.

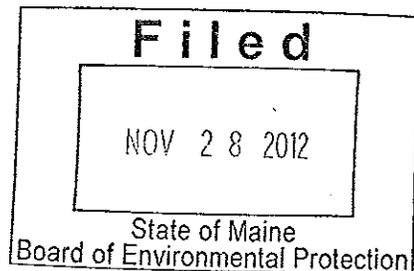
3. Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.
4. No later than March 30th of each year, the applicant shall submit an annual report to the Department that includes an estimate of the change in financial assurance necessary to meet the costs of reclamation due to inflation, changed financial conditions or anticipated changes in mining activities.

THIS APPROVAL DOES NOT CONSTITUTE OR SUBSTITUTE FOR ANY OTHER REQUIRED STATE, FEDERAL OR LOCAL APPROVALS NOR DOES IT VERIFY COMPLIANCE WITH ANY APPLICABLE SHORELAND ZONING ORDINANCES.

DONE AND DATED IN AUGUSTA, MAINE, THIS 28th DAY OF November, 2012.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Michael Kuhn for
Patricia W. Aho, Commissioner



PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES...

CCS/L21587BA/ATS#75377

Department of Environmental Protection
SITE LOCATION OF DEVELOPMENT (SITE)
STANDARD CONDITIONS

- A. **Approval of Variations from Plans.** The granting of this approval is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. Any variation from these plans, proposals, and supporting documents is subject to review and approval prior to implementation. Further subdivision of proposed lots by the applicant or future owners is specifically prohibited without prior approval of the Board, and the applicant shall include deed restrictions to that effect.
- B. **Compliance with All Applicable Laws.** The applicant shall secure and comply with all applicable federal, state, and local licenses, permits, authorizations, conditions, agreements, and orders prior to or during construction and operation, as appropriate.
- C. **Compliance with All Terms and Conditions of Approval.** The applicant shall submit all reports and information requested by the Board or the Department demonstrating that the applicant has complied or will comply with all preconstruction terms and conditions of this approval. All preconstruction terms and conditions must be met before construction begins.
- D. **Advertising.** Advertising relating to matters included in this application shall refer to this approval only if it notes that the approval has been granted WITH CONDITIONS, and indicates where copies of those conditions may be obtained.
- E. **Transfer of Development.** Unless otherwise provided in this approval, the applicant shall not sell, lease, assign or otherwise transfer the development or any portion thereof without prior written approval of the Board where the purpose or consequence of the transfer is to transfer any of the obligations of the developer as incorporated in this approval. Such approval shall be granted only if the applicant or transferee demonstrates to the Board that the transferee has the technical capacity and financial ability to comply with conditions of this approval and the proposals and plans contained in the application and supporting documents submitted by the applicant.
- F. **Time frame for approvals.** If the construction or operation of the activity is not begun within four years, this approval shall lapse and the applicant shall reapply to the Board for a new approval. The applicant may not begin construction or operation of the development until a new approval is granted. A reapplications for approval may include information submitted in the initial application by reference. This approval, if construction is begun within the four-year time frame, is valid for seven years. If construction is not completed within the seven-year time frame, the applicant must reapply for, and receive, approval prior to continuing construction.
- G. **Approval Included in Contract Bids.** A copy of this approval must be included in or attached to all contract bid specifications for the development.
- H. **Approval Shown to Contractors.** Work done by a contractor pursuant to this approval shall not begin before the contractor has been shown by the developer a copy of this approval.

(2/81)/Revised December 27, 2011



DEP INFORMATION SHEET

Appealing a Department Licensing Decision

Dated: March 2012

Contact: (207) 287-2811

SUMMARY

There are two methods available to an aggrieved person seeking to appeal a licensing decision made by the Department of Environmental Protection's ("DEP") Commissioner: (1) in an administrative process before the Board of Environmental Protection ("Board"); or (2) in a judicial process before Maine's Superior Court. An aggrieved person seeking review of a licensing decision over which the Board had original jurisdiction may seek judicial review in Maine's Superior Court.

A judicial appeal of final action by the Commissioner or the Board regarding an application for an expedited wind energy development (35-A M.R.S.A. § 3451(4)) or a general permit for an offshore wind energy demonstration project (38 M.R.S.A. § 480-HH(1)) or a general permit for a tidal energy demonstration project (38 M.R.S.A. § 636-A) must be taken to the Supreme Judicial Court sitting as the Law Court.

This INFORMATION SHEET, in conjunction with a review of the statutory and regulatory provisions referred to herein, can help a person to understand his or her rights and obligations in filing an administrative or judicial appeal.

I. ADMINISTRATIVE APPEALS TO THE BOARD

LEGAL REFERENCES

The laws concerning the DEP's *Organization and Powers*, 38 M.R.S.A. §§ 341-D(4) & 346, the *Maine Administrative Procedure Act*, 5 M.R.S.A. § 11001, and the DEP's *Rules Concerning the Processing of Applications and Other Administrative Matters* ("Chapter 2"), 06-096 CMR 2 (April 1, 2003).

HOW LONG YOU HAVE TO SUBMIT AN APPEAL TO THE BOARD

The Board must receive a written appeal within 30 days of the date on which the Commissioner's decision was filed with the Board. Appeals filed after 30 calendar days of the date on which the Commissioner's decision was filed with the Board will be rejected.

HOW TO SUBMIT AN APPEAL TO THE BOARD

Signed original appeal documents must be sent to: Chair, Board of Environmental Protection, c/o Department of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017; faxes are acceptable for purposes of meeting the deadline when followed by the Board's receipt of mailed original documents within five (5) working days. Receipt on a particular day must be by 5:00 PM at DEP's offices in Augusta; materials received after 5:00 PM are not considered received until the following day. The person appealing a licensing decision must also send the DEP's Commissioner a copy of the appeal documents and if the person appealing is not the applicant in the license proceeding at issue the applicant must also be sent a copy of the appeal documents. All of the information listed in the next section must be submitted at the time the appeal is filed. Only the extraordinary circumstances described at the end of that section will justify evidence not in the DEP's record at the time of decision being added to the record for consideration by the Board as part of an appeal.

WHAT YOUR APPEAL PAPERWORK MUST CONTAIN

Appeal materials must contain the following information at the time submitted:

1. *Aggrieved Status.* The appeal must explain how the person filing the appeal has standing to maintain an appeal. This requires an explanation of how the person filing the appeal may suffer a particularized injury as a result of the Commissioner's decision.
2. *The findings, conclusions or conditions objected to or believed to be in error.* Specific references and facts regarding the appellant's issues with the decision must be provided in the notice of appeal.
3. *The basis of the objections or challenge.* If possible, specific regulations, statutes or other facts should be referenced. This may include citing omissions of relevant requirements, and errors believed to have been made in interpretations, conclusions, and relevant requirements.
4. *The remedy sought.* This can range from reversal of the Commissioner's decision on the license or permit to changes in specific permit conditions.
5. *All the matters to be contested.* The Board will limit its consideration to those arguments specifically raised in the written notice of appeal.
6. *Request for hearing.* The Board will hear presentations on appeals at its regularly scheduled meetings, unless a public hearing on the appeal is requested and granted. A request for public hearing on an appeal must be filed as part of the notice of appeal.
7. *New or additional evidence to be offered.* The Board may allow new or additional evidence, referred to as supplemental evidence, to be considered by the Board in an appeal only when the evidence is relevant and material and that the person seeking to add information to the record can show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process or that the evidence itself is newly discovered and could not have been presented earlier in the process. Specific requirements for additional evidence are found in Chapter 2.

OTHER CONSIDERATIONS IN APPEALING A DECISION TO THE BOARD

1. *Be familiar with all relevant material in the DEP record.* A license application file is public information, subject to any applicable statutory exceptions, made easily accessible by DEP. Upon request, the DEP will make the material available during normal working hours, provide space to review the file, and provide opportunity for photocopying materials. There is a charge for copies or copying services.
2. *Be familiar with the regulations and laws under which the application was processed, and the procedural rules governing your appeal.* DEP staff will provide this information on request and answer questions regarding applicable requirements.
3. *The filing of an appeal does not operate as a stay to any decision.* If a license has been granted and it has been appealed the license normally remains in effect pending the processing of the appeal. A license holder may proceed with a project pending the outcome of an appeal but the license holder runs the risk of the decision being reversed or modified as a result of the appeal.

WHAT TO EXPECT ONCE YOU FILE A TIMELY APPEAL WITH THE BOARD

The Board will formally acknowledge receipt of an appeal, including the name of the DEP project manager assigned to the specific appeal. The notice of appeal, any materials accepted by the Board Chair as supplementary evidence, and any materials submitted in response to the appeal will be sent to Board members with a recommendation from DEP staff. Persons filing appeals and interested persons are notified in advance of the date set for Board consideration of an appeal or request for public hearing. With or without holding a public hearing, the Board may affirm, amend, or reverse a Commissioner decision or remand the matter to the Commissioner for further proceedings. The Board will notify the appellant, a license holder, and interested persons of its decision.

II. JUDICIAL APPEALS

Maine law generally allows aggrieved persons to appeal final Commissioner or Board licensing decisions to Maine's Superior Court, see 38 M.R.S.A. § 346(1); 06-096 CMR 2; 5 M.R.S.A. § 11001; & M.R. Civ. P. 80C. A party's appeal must be filed with the Superior Court within 30 days of receipt of notice of the Board's or the Commissioner's decision. For any other person, an appeal must be filed within 40 days of the date the decision was rendered. Failure to file a timely appeal will result in the Board's or the Commissioner's decision becoming final.

An appeal to court of a license decision regarding an expedited wind energy development, a general permit for an offshore wind energy demonstration project, or a general permit for a tidal energy demonstration project may only be taken directly to the Maine Supreme Judicial Court. See 38 M.R.S.A. § 346(4).

Maine's Administrative Procedure Act, DEP statutes governing a particular matter, and the Maine Rules of Civil Procedure must be consulted for the substantive and procedural details applicable to judicial appeals.

ADDITIONAL INFORMATION

If you have questions or need additional information on the appeal process, for administrative appeals contact the Board's Executive Analyst at (207) 287-2452 or for judicial appeals contact the court clerk's office in which your appeal will be filed.

Note: The DEP provides this INFORMATION SHEET for general guidance only; it is not intended for use as a legal reference. Maine law governs an appellant's rights.
