Facility Adoption of Water Quality Monitoring BMP's

Val Halla has two main ponds on the property. The largest pond, located on the 11th hole, has continuous flow in from Greely Rd. The pond exits into a stream that flows through the back nine, exits the property on the 17th hole and flows towards Twin Brook. The smaller of the two ponds, located on the 9th hole, acts more as a sediment catch basin from the Hemlock, Balsam and Pinewood Drive neighborhoods. This pond only has moving water in the spring and immediately following a rain event and remains stagnant otherwise. In times of flow, water bisects the front nine, exits the property on the 6th hole and flows towards the Cumberland Crossing development.

Third Party Testing

When we first started water testing in 2016, we contracted Maine Environmental Laboratories in Yarmouth to conduct the initial testing in order to obtain a third-party, unbiased baseline. Samples were tested for numerous nutrients as well as the most pesticides which most commonly impact freshwater resources. The test results below show that not only were most of these substances undetected, but that golf course actually cleans the water as it passes through the property.



_							EAI	ID#: 15	6165
Client: Maine Environment Client Designation: CUMO									
Client Sample ID:	9 Pond								
Lab Sample ID:	156165.01								
Matrix:	aqueous								
Date Sampled:	5/16/16								
Date Sampled: Date Received:	5/17/16								
Date Received:	3/1//10		Dilution		Date /	Time	Date		
	Result	RL	Factor	Units	Analy	zed	Prepared	Method	Analys
Aldrin	< 0.05	0.05	1	ug/l	5/25/16	13:32	5/23/16	8081B	SS
alpha-BHC	< 0.05	0.05	1	ug/l	5/25/16	13:32	5/23/16	8081B	SS
beta-BHC	< 0.05	0.05	1	ug/l	5/25/16	13:32	5/23/16	8081B	SS
Lindane(gamma-BHC)	< 0.05	0.05	1	ug/l	5/25/16	13:32	5/23/16	8081B	SS
delta-BHC	< 0.05	0.05	1	ug/l	5/25/16	13:32	5/23/16	8081B	SS
Chlordane	< 0.1	0.1	1	ug/l	5/25/16	13:32	5/23/16	8081B	SS
4,4'-DDT	< 0.05	0.05	1	ug/l	5/25/16	13:32	5/23/16	8081B	SS
4,4'-DDE	< 0.05	0.05	1	ug/l	5/25/16	13:32	5/23/16	8081B	SS
4,4'-DDD	< 0.05	0.05	1	ug∕l	5/25/16	13:32	5/23/16	8081B	SS
Dieldrin	< 0.05	0.05	1	ug/l	5/25/16	13:32	5/23/16	8081B	SS
Endosulfan I	< 0.05	0.05	1	ug/l	5/25/16	13:32	5/23/16	8081B	SS
Endosulfan II	< 0.05	0.05	1	ug/l	5/25/16	13:32	5/23/16	8081B	SS
Endosulfan Sulfate	< 0.05	0.05	1	ug/l	5/25/16	13:32	5/23/16	8081B	SS
Endrin	< 0.05	0.05	1	ug/l	5/25/16	13:32	5/23/16	8081B	SS
Endrin Aldehyde	< 0.05	0.05	1	ug/l	5/25/16	13:32	5/23/16	8081B	88
Endrin Ketone	< 0.05	0.05	1	ug/ī	5/25/16	13:32	5/23/16	8081B	SS
-leptachlor	< 0.05	0.05	1	ug/l	5/25/16	13:32	5/23/16	8081B	SS
Heptachlor Epoxide	< 0.05	0.05	1	ug/l	5/25/16	13:32	5/23/16	8081B	SS
Vlethoxychlor	< 0.05	0.05	1	ug/l	5/25/16	13:32	5/23/16	8081B	SS
Foxaphene	< 0.5	0.5	1	ug/l	5/25/16	13:32	5/23/16	8081B	SS
TMX (surr)	60 %R			%	5/25/16	13:32	5/23/16	8081B	SS
DCB (surr)	62 %R			96	5/25/16	13:32	5/23/16	8081B	SS

Client: Maine Environment					-		EAI	ID#: 15	6165
Client Designation: CUMO									
Client Sample ID:	6 Stream								
Lab Sample ID:	156165.02								
Matrix:	aqueous								
Date Sampled:	5/16/16								
Date Sampled: Date Received:	5/17/16					_			
	Result	RL	Dilution Factor	Units	Date / Analy		Date Prepared	Method	Analys
Aldrin	< 0.05	0.05	1	ug/l	5/25/16	13:42	5/23/16	8081B	SS
alpha-BHC	< 0.05	0.05	1	ug/l	5/25/16	13:42	5/23/16	8081B	88
beta-BHC	< 0.05	0.05	1	ug/l	5/25/16	13:42	5/23/16	8081B	SS
Lindane(gamma-BHC)	< 0.05	0.05	1	ug/l	5/25/16	13:42	5/23/16	8081B	SS
delta-BHC	< 0.05	0.05	1	ug/l	5/25/16	13:42	5/23/16	8081B	88
Chlordane	< 0.1	0.1	1	ug/l	5/25/16	13:42	5/23/16	8081B	S
4,4'-DDT	< 0.05	0.05	1	ug/l	5/25/16	13:42	5/23/16	8081B	S
4,4'-DDE	< 0.05	0.05	1	ug/l	5/25/16	13:42	5/23/16	8081B	88
4,4'-DDD	< 0.05	0.05	1	ug/l	5/25/16	13:42	5/23/16	8081B	88
Dieldrin	< 0.05	0.05	1	ug/l	5/25/16	13:42	5/23/16	8081B	SS
Endosulfan I	< 0.05	0.05	1	ug/l	5/25/16	13:42	5/23/16	8081B	SS
Endosulfan II	< 0.05	0.05	1	ug/l	5/25/16	13:42	5/23/16	8081B	88
Endosulfan Sulfate	< 0.05	0.05	1	ug/l	5/25/16	13:42	5/23/16	8081B	88
Endrin	< 0.05	0.05	1	ug/I	5/25/16	13:42	5/23/16	8081B	SS
Endrin Aldehyde	< 0.05	0.05	1	ug/l	5/25/16	13:42	5/23/16	8081B	88
Endrin Ketone	< 0.05	0.05	1	ug/l	5/25/16	13:42	5/23/16	8081B	SS SS
Heptachlor	< 0.05	0.05	1	ug/l	5/25/16	13:42	5/23/16	8081B 8081B	SS
Heptachlor Epoxide	< 0.05	0.05	1	ug/l	5/25/16	13:42	5/23/16	8081B 8081B	S
Methoxychlor	< 0.05	0.05	1	ug/l	5/25/16		5/23/16 5/23/16	8081B	
Toxaphene	< 0.5	0.5	1	ug/l %	5/25/16	13:42	5/23/16	8081B	SS
TMX (surr) DCB (surr)	63 %R 63 %R			%	5/25/16	13:42	5/23/16	8081B 8081B	SS SS

							EAI	ID#: 15	6165
Client: Maine Environmen Client Designation: CUM0									
Client Sample ID:	11 Pond								
Lab Sample ID:	156165.03								
Matrix:	agueous								
Date Sampled:	5/16/16								
Date Sampled: Date Received:	5/17/16								
Date received.			Dilution		Date /		Date		
	Result	RL	Factor	Units	Analy	zed	Prepared	Method	Analys
Aldrin	< 0.05	0.05	1	ug/l	5/25/16	13:52	5/23/16	8081B	SS
alpha-BHC	< 0.05	0.05	1	ug/ĭ	5/25/16	13:52	5/23/16	8081B	SS
oeta-BHC	< 0.05	0.05	1	ug/l	5/25/16	13:52	5/23/16	8081B	SS
Lindane(gamma-BHC)	< 0.05	0.05	1	ug/l	5/25/16	13:52	5/23/16	8081B	SS
delta-BHC	< 0.05	0.05	1	ug/l	5/25/16	13:52	5/23/16	8081B	SS
Chlordane	< 0.1	0.1	1	ug/I	5/25/16	13:52	5/23/16	8081B	SS
1,4'-DDT	< 0.05	0.05	1	ug/ī	5/25/16	13:52	5/23/16	8081B	SS
4,4'-DDE	< 0.05	0.05	1	ug/l	5/25/16	13:52	5/23/16	8081B	SS
4,4'-DDD	< 0.05	0.05	1	ug/l	5/25/16	13:52	5/23/16	8081B	SS
Dieldrin	< 0.05	0.05	1	ug/I	5/25/16	13:52	5/23/16	8081B	SS
Endosulfan I	< 0.05	0.05	1	ug/I	5/25/16	13:52	5/23/16	8081B	88
Endosulfan II	< 0.05	0.05	1	ug/I	5/25/16	13:52	5/23/16	8081B	SS
Endosulfan Sulfate	< 0.05	0.05	1	ug/l	5/25/16	13:52	5/23/16	8081B	SS
Endrin	< 0.05	0.05	1	ug/I	5/25/16	13:52	5/23/16	8081B	SS
Endrin Aldehyde	< 0.05	0.05	1	ug/I	5/25/16	13:52	5/23/16	8081B	SS
Endrin Ketone	< 0.05	0.05	1	ug/I	5/25/16	13:52	5/23/16	8081B	SS
Heptachlor	< 0.05	0.05	1	ug/l	5/25/16	13:52	5/23/16	8081B	SS
leptachlor Epoxide	< 0.05	0.05	1	ug/l	5/25/16	13:52	5/23/16	8081B	SS
Methoxychlor	< 0.05	0.05	1	ug/l	5/25/16	13:52	5/23/16	8081B	SS
Toxaphene	< 0.5	0.5	1	ug/l	5/25/16	13:52	5/23/16	8081B	SS
FMX (surr)	69 %R			96	5/25/16	13:52	5/23/16	8081B	SS
DCB (surr)	71 %R			%	5/25/16	13:52	5/23/16	8081B	SS

700	21235				_		EAL	ID#: 15	6165
Client: Maine Environment Client Designation: CUM0									
Client Sample ID:	17 Stream								
Lab Sample ID:	156165.04								
Matrix:	aqueous								
Date Sampled:	5/16/16								
Date Sampled: Date Received:	5/17/16								
Date Received:			Dilution		Date /		Date		
	Result	RL	Factor	Units	Analy	zed	Prepared	Method	Analys
Aldrin	< 0.05	0.05	1	ug/l	5/25/16	14:01	5/23/16	8081B	SS
alpha-BHC	< 0.05	0.05	1	ug/l	5/25/16	14:01	5/23/16	8081B	SS
beta-BHC	< 0.05	0.05	1	ug/I	5/25/16	14:01	5/23/16	8081B	SS
Lindane(gamma-BHC)	< 0.05	0.05	1	ug/l	5/25/16	14:01	5/23/16	8081B	SS
delta-BHC	< 0.05	0.05	1	ug/l	5/25/16	14:01	5/23/16	8081B	88
Chlordane	< 0.1	0.1	1	ug/l	5/25/16	14:01	5/23/16	8061B	SS
4,4'-DDT	< 0.05	0.05	1	ug/l	5/25/16	14:01	5/23/16	8081B	SS
4,4'-DDE	< 0.05	0.05	1	ug/l	5/25/16	14:01	5/23/16	8081B	88
4,4'-DDD	< 0.05	0.05	1	ug/l	5/25/16	14:01	5/23/16	8081B	SS
Dieldrin	< 0.05	0.05	1	ug/l	5/25/16	14:01	5/23/16	8081B	SS
Endosulfan I	< 0.05	0.05	1	ug/l	5/25/16	14:01	5/23/16	8081B	SS
Endosulfan II	< 0.05	0.05	1	ug/l	5/25/16	14:01	5/23/16	8081B	SS
Endosulfan Sulfate	< 0.05	0.05	1	ug/l	5/25/16	14:01	5/23/16	8081B	88
Endrin	< 0.05	0.05	1	ug/l	5/25/16	14:01	5/23/16	8081B	SS
Endrin Aldehyde	< 0.05	0.05	1	ug/l	5/25/16	14:01	5/23/16	8081B	SS
Endrin Ketone	< 0.05	0.05	1	ug/l	5/25/16	14:01	5/23/16	8081B	SS
Heptachlor	< 0.05	0.05	1	ug/l	5/25/16	14:01	5/23/16	8081B	SS
Heptachlor Epoxide	< 0.05	0.05	1	ug/I	5/25/16	14:01	5/23/16	8081B	SS
Methoxychlor	< 0.05	0.05	1	ug/l	5/25/16	14:01	5/23/16	8081B	SS
Toxaphene	< 0.5	0.5	1	ua/l	5/25/16	14:01	5/23/16	8081B	88



Ana	lysis	Repo	
	4	2040	

Environmental Laboratories, Inc. 687 East Middle Tumpike, P.O.Bist, 37th, Manchester, CT 00045 Tel. (880) 945-1912 Fare (880) 945-9622 Fare (880) 945-9622 Fare (880) 945-9622 Fare (880) 945-9622 Fare (880) 945-962 Fare (88

Sample Informa	ation	Custody Inform	nation	Date	Time
Matrix:	WATER	Collected by:		05/16/16	13:15
Location Code:	EASTANAL	Received by:	LK	05/20/16	11:57
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	44527	Laboratory	<u>Data</u>	SDG ID: Phoenix ID:	GBN36343 BN36343

Project ID:

Client ID: 9 POI	4D						
Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	Ву	Reference
Extraction for Herbicide	Completed				05/23/16	R/D	SW8151A
Chlorinated Herbl	cides						
2,4,5-T	ND	1.3	ug/L	10	05/24/16	BB	SW8151A
2,4,5-TP (Silvex)	ND	1.3	ug/L	10	05/24/16	BB	SW8151A
2,4-D	ND	1.3	ug/L	10	05/24/16	BB	SW8151A
2,4-DB	ND	10	ug/L	10	05/24/16	BB	SW8151A
Dalapon	ND	1.3	ug/L	10	05/24/16	BB	SW8151A
Dicamba	ND	2.5	ug/L	10	05/24/16	BB	SW8151A
Dichloroprop	ND	1.3	ug/L	10	05/24/16	BB	SW8151A
Dinoseb	ND	2.5	ug/L	10	05/24/16	BB	SW8151A
QA/QC Surrogates							
% DCAA	75		96	10	05/24/16	BB	30 - 150 %

Phylin Skuller.
Phyling Smiller, Laboratory Director
Hay 25, 2016
Reviewed and Released by: Bobbi Afoles, Vico President

Page 1 of 4

PHOENIX 🥞

Environmental Laboratories, Inc. 7 East Middle Tumpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 845-1102 Fax (860) 845-0823

Analysis Report May 25, 2016

Sample Information

Matrix: WATER
Location Code: EASTANAL
Rush Request: Standard
P.O.#: 44527 Custody Information
Collected by:
Received by: LK
Analyzed by: see "By" below <u>Date</u> <u>Time</u> 05/16/16 13:30 05/20/16 11:57 Laboratory Data

SDG ID: GBN36343 Phoenix ID: BN36344

Project ID: Client ID: 6 STREAM

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	Ву	Reference
Extraction for Herbicide	Completed				05/23/16	R/D	SW8151A
Chlorinated Herbicides							
2,4,5-T	ND	1.3	ug/L	10	05/24/16	BB	SW8151A
2,4,5-TP (Silvex)	ND	1.3	ug/L	10	05/24/16	BB	SW8151A
2,4-D	ND	1.3	ug/L	10	05/24/16	BB	SW8151A
2,4-DB	ND	10	ug/L	10	05/24/16	BB	SW8151A
Dalapon	ND	1.3	ug/L	10	05/24/16	BB	SW8151A
Dicamba	ND	2.5	ug/L	10	05/24/16	BB	SW8151A
Dichloroprop	ND	1.3	ug/L	10	05/24/16	BB	SW8151A
Dinoseb	ND	2.5	ug/L	10	05/24/16	BB	SW8151A
QA/QC Surrogates							
% DCAA	78		%	10	05/24/16	BB	30 - 150 %

If there are any questions regarding this data, please call Phoenix Client Services at extension 200. This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllip Skuller Phyllip Shiller, Laboratory Director Hay 25, 2016 Raviewed and Released by: Bobbi Aloise, Vice President

Page 2 of 4



Environmental Laboratories, Inc. 587 East Middle Tumpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report May 25, 2016

FOR: Attn: Front Office Eastern Analytical 25 Chenell Drive Concord, NH 03301

Sample Information Custody Information Matrix: Location Code: Rush Request: P.O.#: WATER EASTANAL Standard 44527 Collected by:
Received by:
Analyzed by:
See "By" below 05/16/16 05/20/16 SDG ID: GBN36343 Laboratory Data

13:45 11:57

Project ID: Client ID: 11 POND

Units Dilution Date/Time By Reference Chlorinated Herbicides
2,4,5-T
2,4,5-TP (Silvex)
2,4-D
2,4-DB
Dalapon
Dicamba
Dichloroprop
Dinnseh Dinoseb <u>QA/QC Surrogates</u> % DCAA 05/24/16

Phyllip Mulling Phyllip Sallier, Laboratory Director Hay 25, 2018 Reviewed and Released by: Bobbi Aloisa, Vice President

8

Maine Environmental Laboratory Report of Analyses One Main Street Yarmouth, Maine 04096 Tel.: (207) 846-6569 Fax: (207) 846-9066 Email: melab@mel-lab.com

Toby Young Town of Cumberland 290 Tuttle Road Cumberland, ME 04021 Page 2 of 5 June 2, 2016

 Report No:
 CUM003-16

 Date received:
 05/16/16

 Project ID:
 Audubon

 Laboratory ID:
 CUM00316-01
 Sampler: T. Young
Sampling date & time: 5/16/16-1315
Sample matrix: Aqueous-Grab
Sample ID: 9 POND

Date-Time Parameter Results units Analyzed LOD LOQ Method Reference ND mg/L 05/27/16
0.3 mg/L 05/17/16-0839
ND mg/L 05/17/16-0839
6.70 pH units 05/16/16-1520
0.05 mg/L 05/26/16 0.5 4500NH3B/E 0.3 300.0 0.10 300.0 0.01 4500 H+B Ammonia-N Nitrate-N 0.1 STM EPA1 Nitrite-N pH * Phosphorus EPA1 STM EPA 0.03 0.01



Environmental Laboratories, Inc. 587 East Middle Turrylke, P.O.Box 370, Manchester, CT 09045 Tel. (880) 645-1102 Fax (880) 645-0823

Analysis Report May 25, 2016

FOR: Attn: Front Office Eastern Analytical 25 Chenell Drive Concord, NH 03301

Sample Information

Matrix: WATER

Location Code: EASTANAL

Rush Request: Standard

P.O.#: 44527 Custody Information
Collected by:
Received by:
Analyzed by:
See "By" below Laboratory Data Phoenix ID: BN36346

Project ID: Client ID: 17 STREAM

RL/ PQL Units Dilution Date/Time By Reference Chlorinated Herbicides 2,4,5-TP (Silvex) 2,4-D 2,4-DB Dalapon Dicamba Dichloroprop Dinoseb QA/QC Surrogates % DCAA BB 30 - 150 %

RLPCk=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level QA/CC Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results/\$\(^2\) listed in the report are not "detected" compounds.

Comments:

Phyllic Shiller, Laboratory Director May 25, 2016 Reviewed and Released by: Bobbi

Page 4 of 4

Maine Environmental Laboratory Report of Analyses One Main Street Yarmouth, Maine 04096 Tel.: (207) 846-6569 Fax: (207) 846-9066 Email: melab@mel-lab.com

Toby Young Town of Cumberland Town of Cumberland 290 Tuttle Road Cumberland, ME 04021 Page 3 of 5

June 2, 2016

Report No: CUM003-16
Date received: 05/16/16
Project ID: Audubon
Laboratory ID: CUM00316-02

Sampler: T. Young
Sampling date & time: 5/16/16-1330
Sample matrix: Aqueous-Grab
Sample ID: 6 STREAM

Date-Time Parameter Results units Analyzed LOD LOQ Method Reference Ammonia-N Nitrate-N Nitrite-N pH * Phosphorus
 ND
 mg/L
 05/27/16
 0.1

 0.2
 J
 mg/L
 05/17/16-0839
 0.1

 ND
 mg/L
 05/17/16-0839
 0.03

 6.79
 pH units
 05/16/16-1520
 0.01

 0.03
 J
 mg/L
 05/26/16
 0.01
 0.5 4500NH3B/E STM 0.3 0.10 0.01 EPA1 EPA1 STM EPA 300.0 300.0

Toby Young Town of Cumbe	rland					1	Page 4 of
290 Tuttle Road Cumberland, MI						J	ine 2, 20
Report No:	CUM003-16					T. Young	
Date received: Project ID:	05/16/16 Audubon				late & time:		
Laboratory ID:	CUM00316-03				Sample ID:		
Parameter	Results	units	Date-Time Analyzed	LOD	LOQ	Method	Referen
Ammonia-N	ND	mg/L	05/27/16	0.1	0.5	4500NH3B/E	STM
Nitrate-N	1.0	mg/L	05/17/16+0839	0.1	0.3	300.0	EPA1
Nitrite-N	ND	mg/L	05/17/16-0839	0.03	0.10	300.0	EPA1
pH * Phosphorus	6.98 0.02 J	pH units mg/L	05/16/16-1520	0.01	0.01	4500 H+B 365.3	STM EPA
* *** *** ***	fti-	. Amelinia	is sometide EDA's		aldia atima		
	5 minutes after samplir	g. Analysis	is outside EPA's i	recommended h	olding time.		

Town of Cumberland June 2, 201	One Main Street Y	armouth, Maine 040	96	Геl.: (207) 846-	6569 Fax:	(207) 846-9066	Email: melab@mel-lab.com			
Date received: 05/16/16 Sampling date & time \$716/16-1415 Sample Date Sample Date Time Date-Time D	Town of Cumbe 290 Tuttle Road							Page 5 of 5 une 2, 2016		
Parameter Results units Analyzed LOD LOQ Method Reference Ammonia-N ND mg/L 05/27/16 0.1 0.5 4500NH3B/z STM Nitrate-N 1.0 mg/L 05/17/16-6839 0.1 0.3 300.0 EPA1 Nitrite-N** ND mg/L 05/17/16-6839 0.0 0.10 300.0 EPA1 pH 6.96 pH units 05/16/16-1520 0.01 4500 H=B STM	Date received: Project ID:	05/16/16 Audubon	ı			late & time: nple matrix:	5/16/16-1415 Aqueous-Grab	,		
Nitrate-N 1.0 mg/L 68/17/16-0839 0.1 0.3 300.0 EPA1 Nitrite-N ** ND mg/L 69/17/16-0839 0.03 0.10 300.0 EPA1 PH * 6.96 PH units 05/16-16-1520 0.01 4590 H=B S2490 H=B S2490 H=B	Parameter	Results	units		LOD	LOQ	Method	Reference		
	Nitrate-N Nitrite-N ** pH *	1.0 ND 6.96	mg/L mg/L pH units	05/17/16+0839 05/17/16+0839 05/16/16-1520	0.1 0.03	0.3 0.10 0.01	300.0 300.0 4500 H+B	EPA1 EPA1 STM		

*pH holding time is 15 minutes after sampling. Analysis is outside EPA's recommended holding time.

**Nitrite-N matrix spike recovery of 42% is outside laboratory acceptance limits of 599:110%.

*ND = not detected J = estimated B = detected in blank S = DLS increased due to sample matrix.

In-House Testing

Waterbodies are tested annually, in-house in the same locations to ensure that the above results remain. We test surface temperature, water temperature, dissolved oxygen, pH, nitrate, nitrite, ammonia, phosphate and conductivity. Through the use of agronomic practices, scouting, precise weather monitoring, data collection, balanced fertility programs and conservative chemical applications; we can proudly say that Val Halla has a net-positive impact on the surrounding environment. Vegetative buffers surround all our water bodies and through our annual water testing efforts we have continually proved that the water leaving our property is cleaner and more filtered than when it enters.

