

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OIL & HAZARDOUS MATERIALS REPORT

**Spill Number:** A-170-2005

**Report Status:** Final Report

**MCD Town:** THOMASTON  
**Local Name:** THOMASTON  
**Primary Responder:** GLEN WALL  
**Primary Product:** Ammonia {76} - 6,000 gals. ACTUAL  
**Subject/Owner:** DRAGON PRODUCTS CO - -

**Spill Info**

Type Hazardous Material Incident {H}  
Source Land Transportation - Tank Truck {TT}  
Cause Mechanical Failure - Valve {07}

**Spill Date/Time**

04/19/2005 09:30

**Reporter Type/Detection Method**

Type Public Official {4}  
Method Visual Product {L}

**Reported Date/Time**

04/19/2005 10:09

**Subject/Owner (Potential Responsible Party)**

Contact --DRAGON PRODUCTS CO  
US RT 1  
PO BOX 191  
THOMASTON ME 04861 USA  
207-594-5555

Comment

**Reporter**

Contact LYNWOOD LOTHROP--KNOX, CTY OF - EMA  
62 UNION ST  
ROCKLAND ME 04841 USA  
207-594-5155

Comment

**Other Contact**

Contact --THOMASTON, TOWN OF - FIRE DEPT  
  
THOMASTON ME 04861 USA  
207

Comment

**Primary Responder and Other Employees**

GLEN WALL (Primary Responder)

No Further Response Action Expected

**Location**

Location Type Business - Industrial {ID}  
Name DRAGON PRODUCTS  
Street Address RT 1  
MCD Town THOMASTON  
Local Name THOMASTON  
State/Province ME

**Spill Point**

UTM North  
UTM East

**Wells and Media Affected**

Wells Affected 0 Wells Impacted / 0 Wells At Risk  
Media Affected Land{L}  
Inland Surface Water{I}

**Tanks Involved**

None

**Product Reported**

Ammonia {76}

**Cleanup DTREE****Products Found/Amount Spilled**

Ammonia {76}/ - 6,000 gals. ACTUAL (Primary Product)

**Material Recovered**

Contaminated Soil {CS} - 10 cu. yds. ESTIMATE

**Recovery/Treatment Method:**Excavation {G}  
Treatment in Place {I}**Disposal Information**contaminated material reused  
in cement making process

On 4-19-05, there was a spill of 6,000 gallons of aqueous Ammonium Hydroxide at the Dragon Products cement kiln in Thomaston. This Ammonium Hydroxide (AH) had a concentration of 19% and was being used in an experimental application designed to reduce emission from their stack.

The AH was being stored in a tank truck (i.e. tanker) that was being used as a bulk storage tank. There is some question as to whether or not this tank truck was road worthy. In any event, the contractors touched or loosened the clean out valve and this resulted in the sudden release of 6,000 gallons of AH through an approximate four inch pipe. These two contractors were taken to the Hospital for treatment. An internal report by Dragon indicates that the truck did not have a shutoff device. The liquid spilled onto the parking lot into a storm drain which empties into Quarry #1. Area fire departments responded. The leak could not be stopped. Sand and or crushed limestone was dumped onto the liquid on the parking lot. This material was later used in the cement making process.

The AH has a high pH and nearly all of this liquid drained into quarry #1. From a cliff overlooking the quarry we could see the plume of AH discoloring the water in the quarry. The water from this quarry eventually dumps into two constructed wetlands. From there the water flows into a nearby brook and large wetland. The level of nitrates has to be below 2 ml/l to discharge into the natural wetland. The quarry has an estimated quantity of 50,000,000 gallons. This quarry water is used as cooling water. The intake for the cooling water is ten to thirteen feet below the water surface. By continuing to use this water for cooling it will aid in the mixing process. Dragon consulted with several experts, including Woodlot Alternatives and DEP staff. An aeration pump was placed at the quarry to assist in the natural oxidation of the ammonia. Also some of this water was used as dust control and fertilizer water for the lawns.

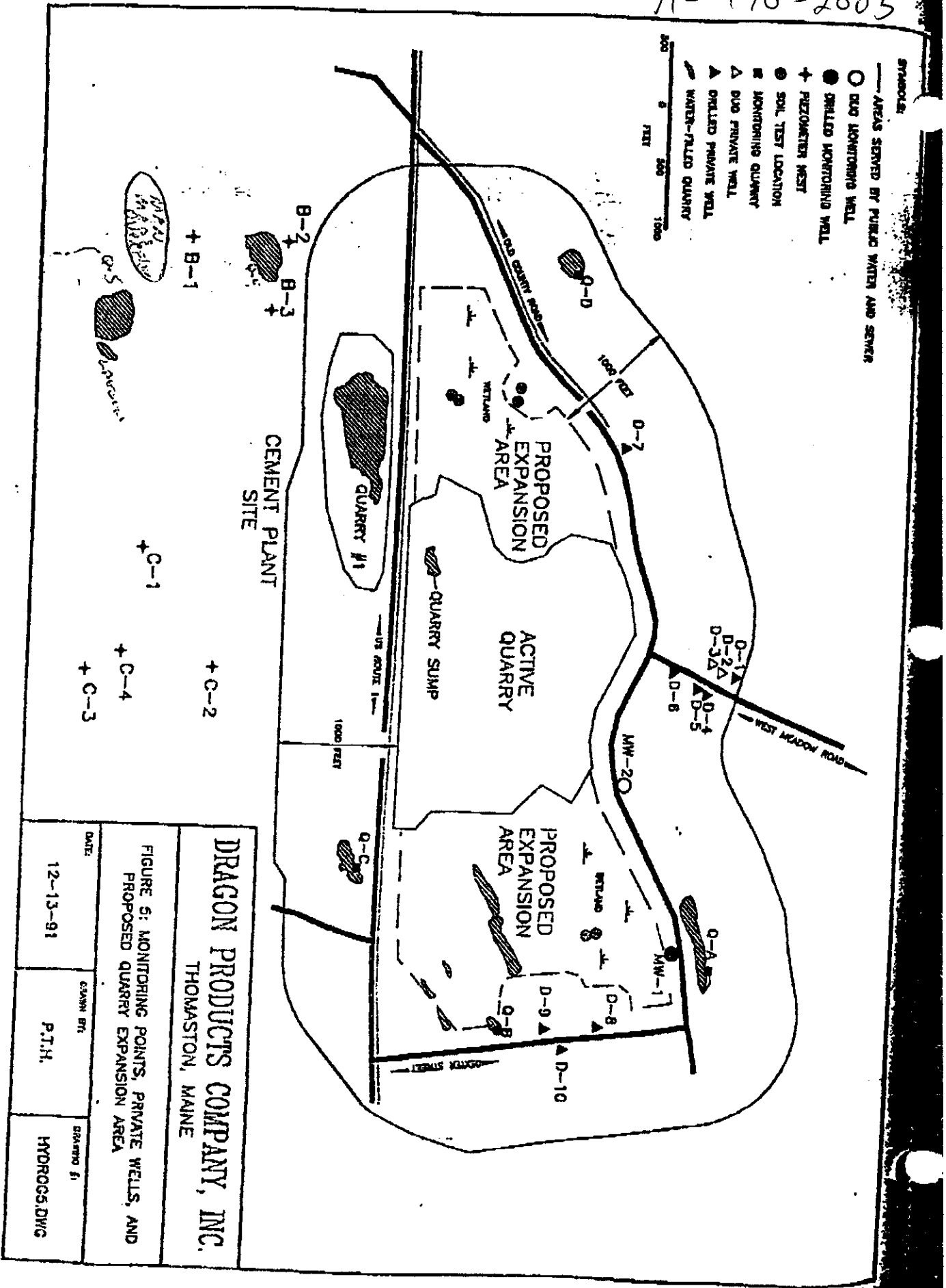
Phil Garwood of the DEP was also involved with phone conversations with Dragon concerning the nitrate emission to the wetland.

On 4-21-05, pH measurements taken at the quarry were in the 8.88 to 9.07 range. The day before the spill the pH was 8.11 to 8.4. Ammonia concentrations, collected at the quarry, on 4-20-5, were 37.2 mg/l.

Ann Thayer collected samples for the next six weeks. See attached table. It appears that over a very long time the Ammonia levels dropped in the quarry and it appears through the limited data that there was no discharge of Ammonia to the stream or natural wetland.

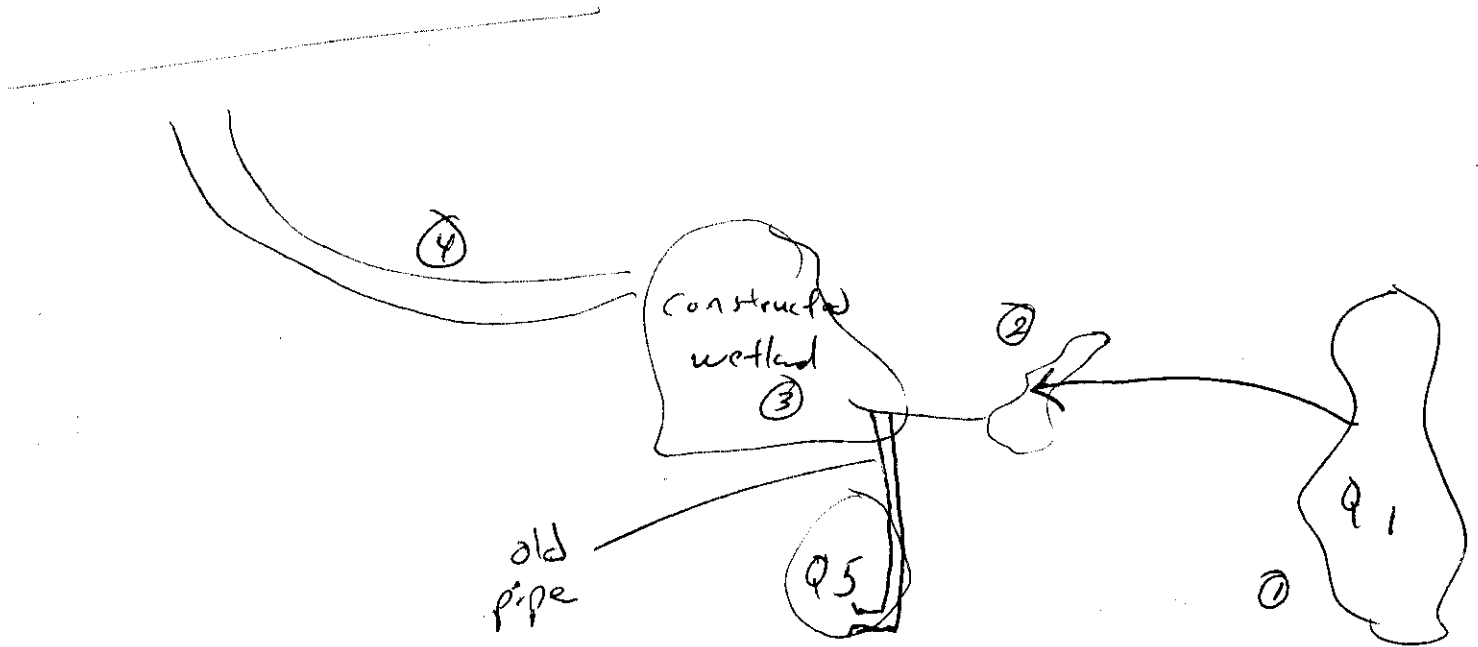
<u>Attachment Type</u>	<u>Description</u>	<u>File Name</u>
Paper Attach	Site diagram of Dragon Products by Dragon (dated 12-13-11)	
Paper Attach	E-mail transmission from Ann Thayer	
Paper Attach	Site Diagram of Manhole and drainage at SPILL Site.	
Paper Attach	DEP Initial Spill Report Form	
Paper Attach	Flash Fax from NRC..incident report # 756205	
Paper Attach	Field Notes taken by GW	
Paper Attach	Graph of ammonia concentration at Quarry No. 1, provided	
Paper Attach	sample data sheets (7 sample dates) from Maine Environme	
Paper Attach	Table One...list of sample results...by GW	
Paper Attach	A Dragon Internal Document. ref. spill report to Ann Thayer	
Paper Attach	MSDS of Aqua Ammonia (19%), from GAC Chemical Corp	

A-170-2005



wetland in (10 ug/l) ammonia } 4/26  
 out (2.3, 2.5, 2.9)

Quarry 37. — 4/20  
 Quarry 1 12.3 am ug/l = 4/25



"Woodlot Alternative"

Wall, Glen

A-170-2005

From: Ann Thayer [athayer@DragonProducts.com]  
Sent: Friday, April 22, 2005 9:57 AM  
To: Wall, Glen  
Subject: update

Glen

I got your message and here is the update.

The contaminated soil has been cleaned up and is on its way through the kiln system.

I received the results of the water sample that I collected from the quarry on Wednesday afternoon. The analysis revealed ammonia concentrations of 37.2 mg/L in the sample. Based on this concentration, we elected not to run the nitrates/nitrites as the sample would have to be diluted a lot and the lab was concerned about blowing out a column. We will collect an additional sample on Monday for analysis.

We collected some pH data from the quarry yesterday and here is a summary of the results:

4/21/05 pH measurements as of the 10:00 hour. Weather: Sunny & mild.

*	N.W. corner:	9.07
*	Old discharge pipes:	8.99 (typically 8.40ish)
*	East side of pump house:	8.93 (8.11 on Mon., 4/18)
*	Sand bar #1 (at point):	8.87
*	Sand bar #2 (at point):	8.95
*	Behind Quarry office:	9.01

We are working on setting up a spray system to aerate the quarry water in order to oxidize the remaining ammonia. We expect to have that up and running by the end of today. We are also setting up sprinklers and irrigation equipment to water the lawns and vegetation as suggested by Phil Garwood in the water bureau. We are continuing to use the Quarry 1 water for cooling water and for dust control. We have not operated the discharge pumps from Quarry 1.

FLS is the contractor conducting the testing using the ammonia. Last week, FLS did a safety briefing for key Dragon personnel (safety manager, environmental, and operations personnel) and we forwarded a copy of the MSDS to the local fire departments and let them know that we would have ammonia hydroxide on site. FLS will do the safety briefing again and we have contacted Rockland and Thomaston Fire as well as PenBay Medical Center and extended the invitation to have them send personnel to attend. I believe that all three are sending representatives.

We are taking delivery today of another 5,000 gallons of 19% aqueous ammonia in a tanker truck pre-approved by FLS. The tanker will be equipped with safety shut off valves. In addition, the chemical company, GAC, will be on site at time of delivery to guide FLS on the tanker set up, valve operation and safety shut off procedures. We will not be off loading into a staged tanker. The tanker will be bermed and we will be sealing off storm drains in the vicinity of the tanker. FLS will also have extra safety personnel on-site.

I believe that about covers everything that is new. Let me know if there is additional information that you need. In the event that you would like to view the situation at the site, in my absence, you can contact Mark Curtis, our Safety Manager or Stuart Guinther, the plant manager at 594-5555.

Glen, what is your fax number? I will ask our purchasing guy to fax you the MSDS for your reference in the unlikely event that we have a repeat performance.

Ann Thayer

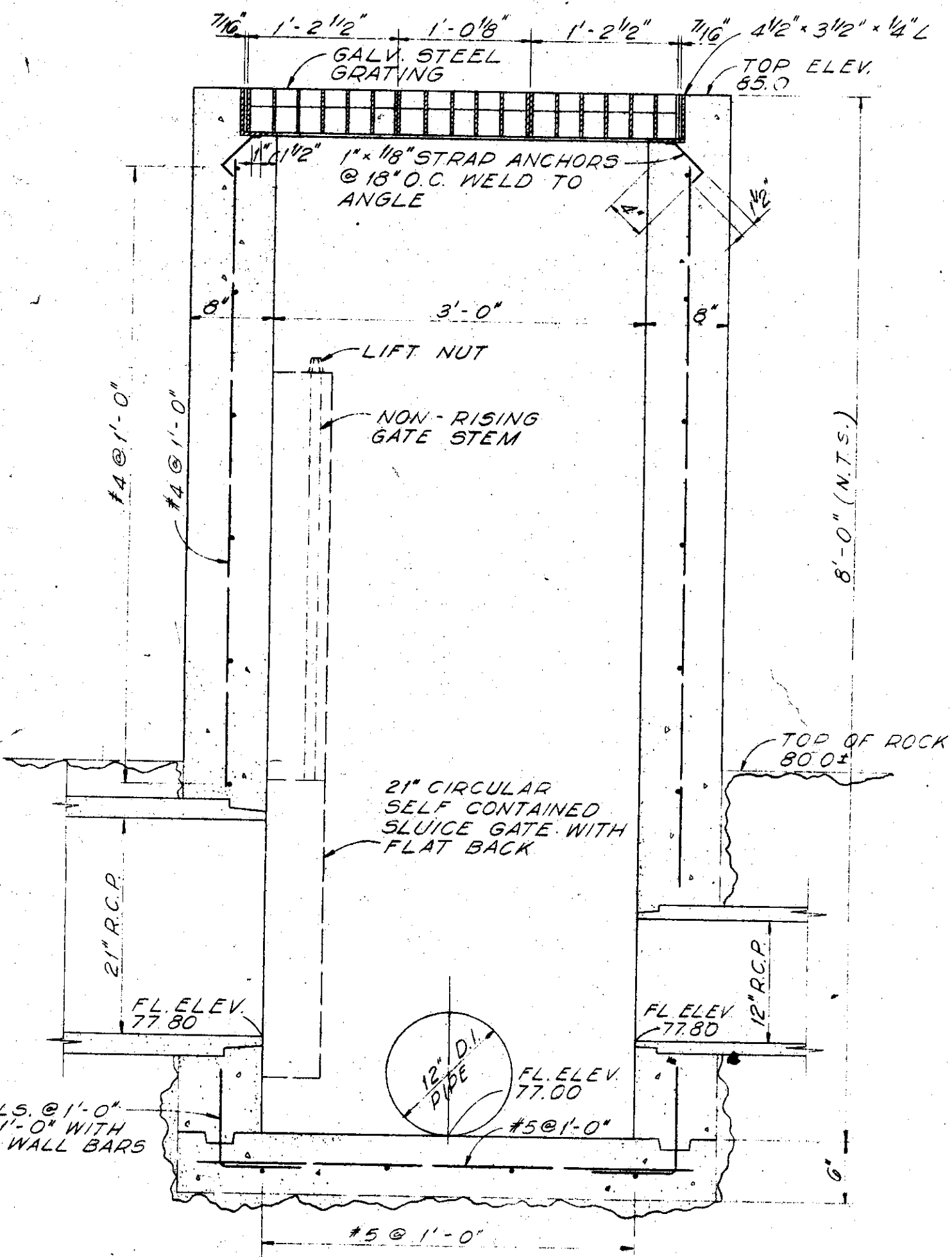
A-170-2005

-----Original Message-----

From: Wall, Glen [mailto:Glen.Wall@maine.gov]  
Sent: Thu 4/21/2005 12:15 PM  
To: Ann Thayer  
Cc:  
Subject: can you hear me now

This is just a test, do you copy?.....any further info on the water level in the quarry or lab data?

PLAN



NOTE: F  
VAU  
TWO  
AS  
PIP  
PLA

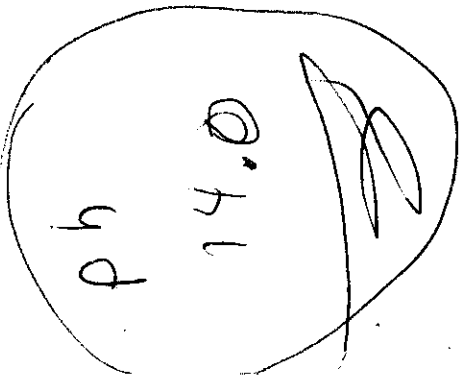
SECTION A-A

DETAIL OF BY-PASS MANHOLE

SCALE 1" = 1'-0"

	MAY 1981 CCV DRAIN. 1" WATER LINE. 10" PVC PIPE / R.R. TRACK		CHANGED WORD POTABLE TO PROCESS		ADDED 8" TEE & 8 POST INDICATOR VALVE
	DATE: _____ BY: _____ CKD: _____		DATE: 3/15/71 BY: J.A.H. CKD: J.E.R.		
	DATE: _____ BY: _____ CKD: _____		DATE: 3/11/71 BY: J.A.H. CKD: J.E.R.		

8-104 Four  
C/653-0093  
N



Quarry  
Ph  
manifolding  
N

B.ologist  
Chertland  
SP. H. R. G. B.  
new

Ann Thayer  
671-1638  
394-5555



A-170-05

MAINE DEP INITIAL SPILL REPORT FORM

Please fill in as much information as possible, using the information provided by the caller.

Date of report 4-19-05 Time 10:09  AM  PM

Date of spill/incident 4-19-05 Time 9:30  AM  PM

Name of caller Doris FOC Lynwood Luthcop

Company Name (if applicable) Knox County EMA

Telephone number of caller 594-5155

Location/address of spill \_\_\_\_\_

Town Rockland State \_\_\_\_\_ Zip Code \_\_\_\_\_

Name of other informed party (I.E.: residence of) \_\_\_\_\_

Type of product spilled Amonia

Estimated amount of spill 1,500 gals so far

Is more spillage possible?  (Y)  (N) Amount? \_\_\_\_\_

Is the situation urgent?  (Y)  (N) Is help needed?  (Y)  (N)

Nature of call/complaint (description of incident) 6,000 gallon tanker has leak - 1,500 gals on ground at time of call - still leaking

Action taken so far \_\_\_\_\_

- What resources are at risk? (Check all that apply)
- |  |   |
|--|---|
| <input type="checkbox"/> Public Safety         | <input type="checkbox"/> Surface Drainage   |
| <input type="checkbox"/> Public Water/Well     | <input type="checkbox"/> Storm Sewer        |
| <input type="checkbox"/> Private Water/Well    | <input type="checkbox"/> Sanitary Sewer     |
| <input type="checkbox"/> Atmosphere            | <input type="checkbox"/> Vapors in building |
| <input type="checkbox"/> Land/Ground           | <input type="checkbox"/> Open Water         |
| <input type="checkbox"/> None (complaint only) |   |

Specific direction to site \_\_\_\_\_

Referred to (name of responder) Glen to Thomas

Name of person taking call/complaint D. B to E. W

NATIONAL RESPONSE CENTER - FLASH FAX  
\*\*\*GOVERNMENT USE ONLY\*\*\*GOVERNMENT USE ONLY\*\*\*  
DO NOT RELEASE this information to the public without  
permission from the NATIONAL RESPONSE CENTER 1-800-424-8802

Incident Report # 756205

A-170-2005

INCIDENT DESCRIPTION

\*Report taken by: CIV JONES at 10:25 on 19-APR-05  
Incident Type: MOBILE  
Incident Cause: UNKNOWN  
Affected Area:  
The incident occurred on 19-APR-05 at 09:36 local time.  
Affected Medium: LAND GROUND / PAVEMENT

REPORTING PARTY

Name: LINWOOD LOTHROP  
Organization: KNOX EMERGENCY MGMT. AGENCY  
Address: 62 UNION ST.  
ROCKLAND, ME 04841

PRIMARY Phone: (207)5945155  
Type of Organization: LOCAL GOVERNMENT

SUSPECTED RESPONSIBLE PARTY

Name: ANN THAYER  
Organization: DRAGON CEMENT PRODUCTS  
Address: 107 NEW COUNTY RD.  
THOMASTON, ME 04861

Phone: (207)5945555  
Type of Organization: PRIVATE ENTERPRISE

INCIDENT LOCATION

107 NEW COUNTY RD. County: KNOX  
City: THOMASTON State: ME Zip: 04861

RELEASED MATERIAL(S)

CHRIS Code: NCC Official Material Name: NO CHRIS CODE  
Also Known As: AMMONIA  
Qty Released: 1500 GALLON(S)

DESCRIPTION OF INCIDENT

THE CALLER STATED THAT A 6,000 GALLON TANK TRUCK IS LEAKING  
MATERIAL.

INCIDENT DETAILS

Road Mile Marker:  
Length of Service Disruption:  
Airbag Deployed:

---MOBILE INFORMATION---

Vehicle Type: TANKER TRUCK  
Vehicle Number: UNKNOWN  
Trailer/Tanker Number:  
Vehicle Fuel Capacity:  
Cargo Capacity: 6000 GALLON(S)  
Cargo On Board: 6000 GALLON(S)

Hazmat Carrier: YES  
Carrier licensed: UNKNOWN  
Suspected Non Compliance: UNKNOWN

A-170-2005

DAMAGES

Fire Involved: NO Fire Extinguished: UNKNOWN  
INJURIES: 1 Hospitalized: Empl/Crew: Passenger:  
FATALITIES: Empl/Crew: Passenger: Occupant:  
EVACUATIONS:70 Who Evacuated:EMPLOYEES Radius/Area:  
Damages:

Closure Type Description of Closure Hours Closed Direction of Closure  
Air: N Major N Artery:  
Road: N  
Waterway: N  
Track: N

Media Interest: NONE Community Impact due to Material: NO

REMEDIAL ACTIONS

ATTEMPTING TO CONTAIN THE LEAK WITH DIKING / USING SAND AS  
ABSORBENT MATERIALS.  
Release Secured: NO  
Release Rate:  
Estimated Release Duration:

WEATHER

Weather: CLEAR, :F Wind speed: 7 MPH Wind direction: E

ADDITIONAL AGENCIES NOTIFIED

Federal:  
State/Local: STATE POLICE, SHERIFF, POLICE  
State/Local On Scene:  
State Agency Number:

NOTIFICATIONS BY NRC

AGCY TOXIC SUBST & DISEASE REGISTRY (PRIMARY)  
(404)4980120  
DOT CRISIS MANAGEMENT CENTER (PRIMARY)  
19-APR-05 10:34 (202)3661863  
EPA CRIMINAL INVEST DIV REGION 1 (PRIMARY)  
19-APR-05 10:34 (617)9182310  
FEDERAL MOTOR CARRIER SAFETY ADMIN (PRIMARY)  
19-APR-05 10:34 (202)3665373  
NATIONAL INFRASTRUCTURE COORD CTR (PRIMARY)  
19-APR-05 10:34 (202)2829201  
NOAA 1ST CLASS BB RPTS FOR ME (PRIMARY)  
19-APR-05 10:34 (206)5266344  
NTSB PIPELINE (PRIMARY)  
19-APR-05 10:34 (202)3146293  
HOMELAND SEC COORDINATION CENTER (PRIMARY)  
19-APR-05 10:34 (202)2828300  
MSO PORTLAND, ME (PRIMARY)

(207)7803251  
RSPA OFFICE HAZARDOUS MATERIALS (PRIMARY)  
(202)3661863  
RSPA OFFICE HAZARDOUS MATERIALS (RSPAOHM FAX#2)  
19-APR-05 10:34 (202)3661863  
ME DEP ATTN: BARBARA PARKER (PRIMARY)  
19-APR-05 10:34 (207)2872651  
ME EMGCY MGMT AGCY ATTN:R GARDNER (PRIMARY)  
19-APR-05 10:34 (207)6264400  
TSA MARITIME AND LAND (PRIMARY)  
19-APR-05 10:34 (703)5633236

A-170-2005

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ADDITIONAL INFORMATION  
THE CALLER HAD NO ADDITIONAL INFORMATION

---

xxx END INCIDENT REPORT 756205 xxx  
Report any problems or Fax number changes by calling 1-800-424-8802  
PLEASE VISIT OUR WEB SITE AT <http://www.nrc.uscg.mil>

Athayer@DragonProducts.com

- Anne Thayer 594-5555

2) 671-1638

- check H<sub>2</sub>O for

① Ammonia

② Nitrate  
Nitrite

DO

A-170-2005

Local Bureau...

Phil Garwood

Mary Pierce (license contact)

Air Bureau

Mark Roberts

allowable

limit

≈ 2 ml/l

- 2 employees (F.L.S.)  
MSHA on site



1.2 ppm above is dangerous to aquatic organisms

"Manson Comp" Leaking (S. Portland)

6,000

1/4

A-170-2005

Tank truck

a

Dragon Cement

Ammonia

Rt. ONE

"Thomastown"

691-3142

C)

~~691-3142~~ ~~6244~~

"on site" chief Leo

- Knox County Haz. Mat. on site

- Rockland F.D. on site

concentration

% 19

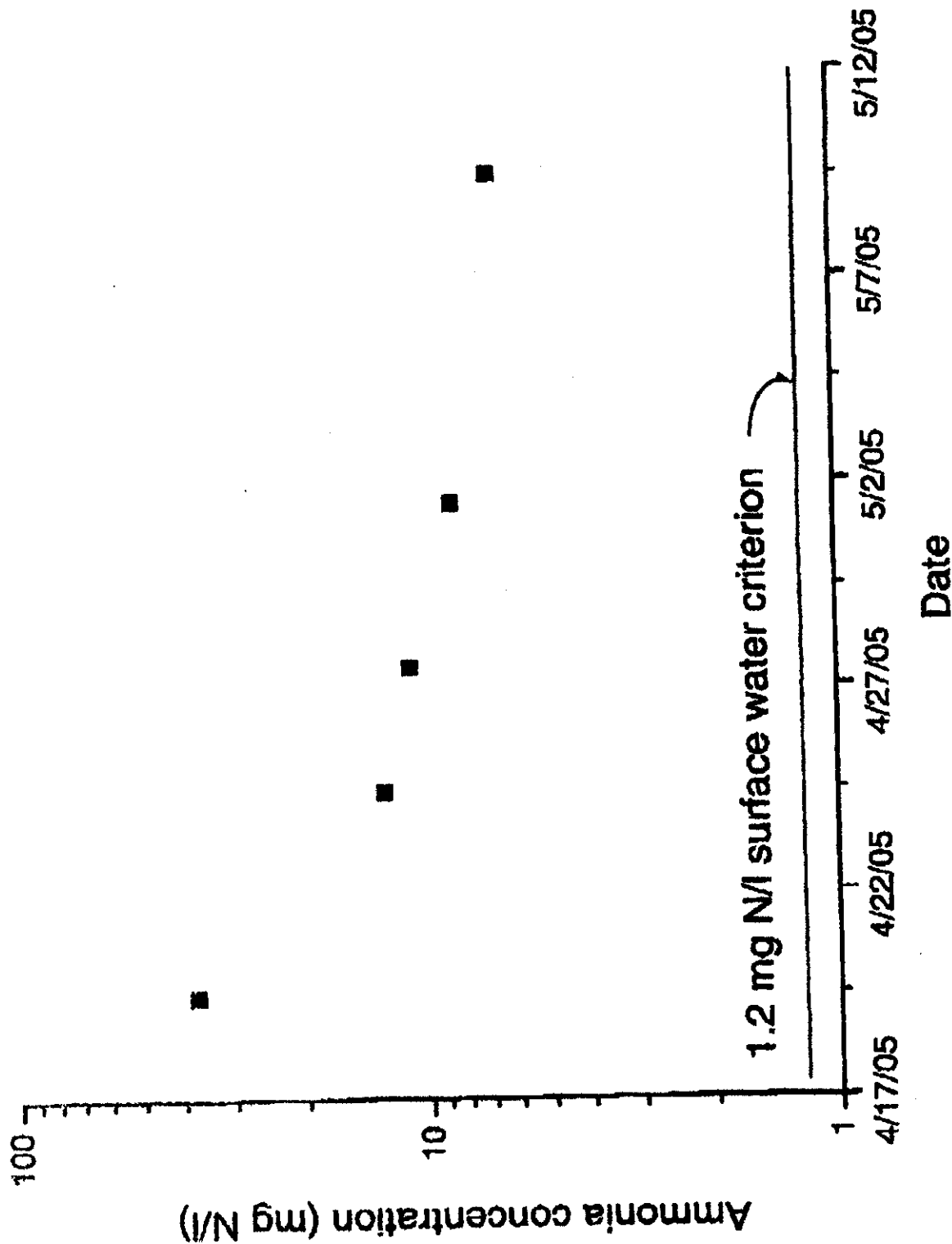
anhydrous NO

amunium hydroxide

UN

A-170-2005

### Quarry No. 1 Ammonia Concentrations



A-170-2005

# Maine Environmental Laboratory

## Report of Analyses

One Main Street Yarmouth, Maine 04096-1107

Tel (207) 846-6569

Fax (207) 846-9066

e-mail: melab@imec.net

Ann W. Thayer  
Dragon Products Company  
PO Box 191  
Thomaston, ME 04861

Page 2 of 2

April 22, 2005

Report No: DPC076-05  
Date received: 04/21/05  
Project ID: No Data  
Laboratory ID: DPC07605-01

Sampler: A. Thayer  
Sampling date: 04/20/05  
Sample matrix: Water  
Sample ID: Q-1

Parameter	Results	units	Date Analyzed	Method Detection Limit	Reporting Detection Limit	Method	Reference
Ammonia-N	37.1	mg/L	04/21/05	0.1	0.5	4500NI3B/F	STM
Ammonia-N Duplicate	37.2	mg/L	04/21/05	0.1	0.5	4500NH3B/E	STM

**NID = not detected    J = estimated    B = detected in blank    S = RDL increased due to sample matrix**





**Maine Environmental Laboratory****Report of Analyses**

One Main Street Yarmouth, Maine 04096-1107 Tel (207) 846-6569 Fax (207) 846-9066 e-mail: melab@ime.net

Ann W. Thayer  
 Dragon Products Company  
 PO Box 191  
 Thomaston, ME 04861

April 22, 2005  
 Page 1 of 2

Report No.: DPC076-05

Enclosed are the results of the analyses requested on your samples as received by the laboratory. Samples were received in acceptable condition and analyzed within method holding times with all quality control data within laboratory acceptance limits unless noted. Reporting detection limits are the minimum levels for reporting quantitative data. These limits are 3.18 times the method detection limit as defined in CFR 40 Part 136, Appendix B. Data reported between the reporting and method detection limits are J flagged as estimated. Maine Environmental Laboratory is certified by Maine, Massachusetts, New Hampshire and NELAP (cert.#2031). A list of certified parameters is available on request. The results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report. This report shall not be reproduced, except in full, without the written consent of the laboratory.

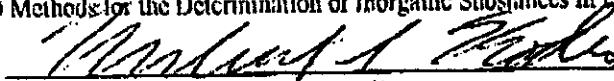
The complete report consists of the following sections:

Maine Environmental Laboratory report  
 Chain of custody form

**References**

- EPA - EPA600/4-79-020, Methods for Chemical Analysis of Water and Wastes, USEPA, Cincinnati, Ohio, March 1983.  
 SWS - SW846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, USEPA, third edition, 1986.  
 STM - Standard Methods for the Examination of Water and Wastewater, 18th edition, APHA, AWWA, WPCF, 1992.  
 HEX - EPA-821-R-98-002, Method 1664, Rev. A: N-Hexane Extractable Material by Extraction and Gravimetry, Feb. 1999.  
 EPA1 - EPA/600/R-93/100 Methods for the Determination of Inorganic Substances in Environmental Samples, Aug. 1993.

Authorized signature

  
 Herbert S. Kodis, laboratory director

A-170-2005

**Maine Environmental Laboratory**

Report of Analyses

One Main Street Yarmouth, Maine 04096-1107 Tel (207) 846-6569 Fax (207) 846-9066 e-mail: melab@ime.net

Ann W. Thayer  
 Dragon Products Company  
 PO Box 191  
 Thomaston, ME 04861

Page 2 of 3

May 02, 2005

Report No: DPC078-05  
 Date received: 04/28/05  
 Project ID: Ammonia Monitoring

Sampler: E. Greiner  
 Sample matrix: Water  
 Method: 4500NH<sub>3</sub>B/E  
 Reference: STM

**Ammonia-N**

Sample Identification	Results	units	Date Analyzed	Method Detection Limit	Reporting Detection Limit	Date Sampled	Laboratory Id
Q5-1	0.4	mg/L	04/29/05	0.1	0.5	04/28/05	DPC07805-02
SP-1	0.7	mg/L	04/29/05	0.1	0.5	04/28/05	DPC07805-03
PL	1.1	mg/L	04/29/05	0.1	0.5	04/28/05	DPC07805-04

ND = not detected    J = estimated    B = detected in blank    S = RDL increased due to sample matrix

A-170-2005

**Maine Environmental Laboratory****Report of Analyses**

One Main Street Yarmouth, Maine 04096-1107

Tel (207) 846-6569

Fax (207) 846-9066

e-mail: melab@ime.net

Ann W. Thayer  
 Dragon Products Company  
 PO Box 191  
 Thomaston, ME 04861

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May 02, 2005

Report No: DPC078-05  
 Date received: 04/28/05  
 Project ID: Ammonia Monitoring  
 Laboratory ID: DPC07805-01

Sampler: A. Thayer  
 Sampling date & time: 04/28/05-0845  
 Sample matrix: Water  
 Sample ID: Q-1

Parameter	Results	units	Date Analyzed	Method Detection Limit	Reporting Detection Limit	Method	Reference
Ammonia-N	11.1	mg/L	04/29/05	0.1	0.5	4500NH3B/E	STM
Ammonia-N Duplicate	11.0	mg/L	04/29/05	0.1	0.5	4500NH3B/E	STM
Nitrate-N	1.1	mg/L	04/29/05-1945	0.1	0.3	9056	SW8
Nitrite-N	ND	mg/L	04/29/05-1945	0.02	0.06	9056	SW8

ND = not detected J = estimated B = detected in blank S = RDL increased due to sample matrix

# Maine Environmental Laboratory - Chain of Custody

One Main Street Yarmouth, Maine 04096-6716 (207) 846-6569 fax: (207) 846-9066  
 email: melab@ime.net

Project Manager: **Ann W. Thayer** Telephone: **207-593-0100** Fax: **207-846-9066**  
 Company: **Dragon Products Company, Inc.** Purchase Order #8870

Address: **P.O. Box 191 / U.S. Route 1** **Thomaston ME 04861**

Project Name: **Ammonia Monitoring** Sampler Name: **Eric Greiner** [egreiner@dragonproducts.com](mailto:egreiner@dragonproducts.com)

Sample Identification	# Containers	Container Type	Field Filtration (Yes or No)	Sample Matrix (SW)	Composite	Method Preserved	Sampling Date/Time
Q1-1	2		No	Water		NH <sub>4</sub> <sup>+</sup> 4°C	08:45
Q5-1	1		No	Water		NH <sub>4</sub> <sup>+</sup> 4°C	11:37
SP-1	2		No	Water		NH <sub>4</sub> <sup>+</sup> 4°C	11:45
PL	1		No	Water		NH <sub>4</sub> <sup>+</sup> 4°C	13:31

Analyses	Delivered by:	Turnaround Request:	Standard	Priority	Quote #	Laboratory Identification/ Subcontractor
Ammonia; Nitrates & Nitrites				<input checked="" type="checkbox"/>		-01A/B
						-02
						-03
						-04

Received in hot time	Received in good condition	Temp. Blank °C	Samples received preserved	Retriggered by Sampler	Retriggered by:
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Comments: **Rush just with Regen 1st Volu Secc 4.5 p.m. A.T. 7:25.5 AM**

Relinquished by: *[Signature]* Date: **4/28/05** Time: **14:50** Received by: *[Signature]*  
 Relinquished by: *[Signature]* Date: **4/28/05** Time: **17:00** Received by: *[Signature]*  
 Relinquished by: *[Signature]* Date: **4/28/05** Time: **17:00** Received by: *[Signature]*

A-170-2005

**Maine Environmental Laboratory****Report of Analyses**

One Main Street Yarmouth, Maine 04096-1107

Tel (207) 846-6569

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e-mail: melab@ime.net

Ann W. Thayer  
 Dragon Products Company  
 PO Box 191  
 Thomaston, ME 04861

May 02, 2005

Page 1 of 2

Report No.: DPC078-05

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The complete report consists of the following sections:

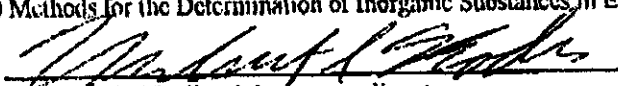
Maine Environmental Laboratory report

Chain of custody form

**References**

- EPA - EPA600/4-79-020, Methods for Chemical Analysis of Water and Wastes, USEPA, Cincinnati, Ohio, March 1983.  
 SW8 - SW846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, USEPA, third edition, 1986.  
 STM - Standard Methods for the Examination of Water and Wastewater, 18th edition, APHA,AWWA,WPCF, 1992.  
 HEX - EPA-821-R-98-002, Method 1664, Rev. A: N-Hexane Extractable Material by Extraction and Gravimetry, Feb. 1999.  
 EPA1 - EPA/600/R-93/100 Methods for the Determination of Inorganic Substances in Environmental Samples, Aug. 1993.

Authorized signature

  
 Herbert S. Kodis, laboratory director

A-170-2005

**Maine Environmental Laboratory**

**Report of Analyses**

One Main Street Yarmouth, Maine 04096-1107

Tel (207) 846-6569

Fax (207) 846-9066

e-mail: mclab@ime.net

Page 2 of 2

Ann W. Thayer  
 Dragon Products Company  
 PO Box 191  
 Thomaston, ME 04861

May 04, 2005

Report No: DPC079-05  
 Date received: 05/02/05  
 Project ID: Ammonia Monitoring  
 Laboratory ID: DPC07905-01

Sampler: E. Greiner  
 Sampling date & time: 05/02/05-1343  
 Sample matrix: Water  
 Sample ID: Q-1

Parameter	Results	units	Date Analyzed	Method Detection Limit	Reporting Detection Limit	Method	Reference
Ammonia-N	8.5	mg/L	05/03/05	0.1	0.5	4500NH3B/E	STM
Ammonia-N Duplicate	8.8	mg/L	05/03/05	0.1	0.5	4500NH3B/E	STM
Nitrate-N	4.4	mg/L	05/04/05-0611	0.1	0.3	300.0	EPA1
Nitrite-N	9.4	mg/L	05/04/05-0611	0.03	0.1	300.0	EPA1

ND = not detected    I = estimated    B = detected in blank    S = RDL increased due to sample matrix

<b>Maine Environmental Laboratory - Chain of Custody</b> One Main Street Yarmouth, Maine 04096-6716 (207) 846-6569 fax: (207) 846-9066 email: melab@imec.net		Laboratory Report # <b>D7079-05</b>	
Project Manager: <b>Ann W. Thayer</b>		Delivered by: <b>A. Thayer</b>	
Company: <b>Dragon Products Company, Inc.</b>		Turnaround Request: Standard _____ Priority _____ Code # _____	
Address: <b>P.O. Box 191 / U.S. Route 1</b>		Laboratory Identification/ Subcontractor	
Project Name: <b>Ammonia Monitoring</b>		Location: <b>Thomasston ME 04861</b>	
Sampler Name: <b>Eric Greiner</b>		Email: <b>egreiner@dragonproducts.com</b>	
Sample Identification		Sampling Date/Time	
# Containers 2	# Containers 2	Method Preserved NRO3 5°C	Sampling Date/Time 5/25/05 13:43
Filtration (Yes or No) No	Sample Matrix (SW) Water	X	Ammonia, Nitrates & Nitrites
Received in hold time yes	Received in good condition yes	Temp. Blank °C 5.0	Comments
Samples received preserved yes	Relinquished by Sampler: <b>Eric Greiner</b>	Relinquished by: <b>[Signature]</b>	Received by: <b>[Signature]</b>
Relinquished by: <b>[Signature]</b>	Relinquished by: <b>[Signature]</b>	Received by: <b>[Signature]</b>	Received by: <b>[Signature]</b>
Relinquished by: <b>[Signature]</b>	Relinquished by: <b>[Signature]</b>	Received by: <b>[Signature]</b>	Received by: <b>[Signature]</b>

A-170-2005

A-170-2005

**Maine Environmental Laboratory****Report of Analyses**

One Main Street Yarmouth, Maine 04096-1107

Tel (207) 846-6569

Fax (207) 846-9066

e-mail: mclab@imec.net

Ann W. Thayer  
Dragon Products Company  
PO Box 191  
Thomaston, ME 04861

May 04, 2005

Page 1 of 2

Report No.: DPC079-05

Enclosed are the results of the analyses requested on your samples as received by the laboratory. Samples were received in acceptable condition and analyzed within method holding times with all quality control data within laboratory acceptance limits unless noted. Reporting detection limits are the minimum levels for reporting quantitative data. These limits are 3.18 times the method detection limit as defined in CFR 40 Part 136, Appendix B. Data reported between the reporting and method detection limits are J flagged as estimated. Maine Environmental Laboratory is certified by Maine, Massachusetts, New Hampshire and NELAP (cert.#2031). A list of certified parameters is available on request. The results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report. This report shall not be reproduced, except in full, without the written consent of the laboratory.

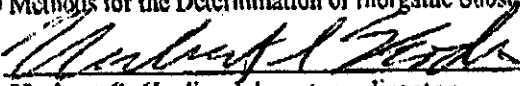
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**References**

- EPA - EPA600/4-79-020, Methods for Chemical Analysis of Water and Wastes, USEPA, Cincinnati, Ohio, March 1983.  
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EPA1 - EPA/600/R-93/100 Methods for the Determination of Inorganic Substances in Environmental Samples, Aug. 1993.

Authorized signature

  
Herbert S. Kodis, laboratory director



A-170-2005

**Maine Environmental Laboratory****Report of Analyses**

One Main Street Yarmouth, Maine 04096-1107

Tel (207) 846-6569

Fax (207) 846-9066

e-mail: mclab@jmc.net

Ann W. Thayer  
 Dragon Products Company  
 PO Box 191  
 Thomaston, ME 04861

Page 2 of 2

May 11, 2005

Report No: DPC080-05  
 Date received: 05/10/05  
 Project ID: Ammonia Monitoring  
 Laboratory ID: DPC08005-01

Sampler: E. Greiner  
 Sampling date & time: 05/10/05-1400  
 Sample matrix: Water  
 Sample ID: Q1

Parameter	Results	units	Date-Time Analyzed	Method Detection Limit	Reporting Detection Limit	Method	Reference
Ammonia-N	6.8	mg/L	05/11/05	0.1	0.5	4500NH3B/E	STM
Ammonia-N Duplicate	7.0	mg/L	05/11/05	0.1	0.5	4500NH3B/E	STM
Nitrate-N	1.4	mg/L	05/11/05-0910	0.1	0.3	300.0	EPA1
Nitrite-N	ND	mg/L	05/11/05-0910	0.03	0.1	300.0	EPA1

ND = not detected J = estimated B = detected in blank S = RDL increased due to sample matrix

# Maine Environmental Laboratory - Chain of Custody

One Main Street Yarmouth, Maine 04096-6716 (207) 846-6569 fax: (207) 846-9066

email: melab@me.net

Project Manager

**Ann W. Thayer**

Company

**Dragon Products Company, Inc.**

Address

**P.O. Box 191 / U.S. Route 1**

**Thomaston**

**ME**

**04861**

Project Name

**Ammonia Monitoring**

Sampler Name

**Eric Greiner** [egreiner@dragonproducts.com](mailto:egreiner@dragonproducts.com)

Sample Identification	# Containers	Containers	Field Filtration (Yes or No)	Sample Matrix (SW)	Sample #	Method Preserved	Sampling Date/Time
Q1	2	Yes	No	Water	X	4°C	5/10/05 14:00

Received in hold time:  yes /  no / N/A

Received in good condition:  yes /  no / N/A

Temp. Blank °C: 3.0 Frozen ice packs:

Samples received preserved:  yes

Relinquished by Sampler: **ERIC GREINER**

Relinquished by: *[Signature]*

Relinquished by: *[Signature]*

Date	Time	Received by:
5/10/05	14:25	<i>[Signature]</i>
5/10/05	16:45	<i>[Signature]</i>
5/10/05	16:55	<i>[Signature]</i>

Laboratory Report # **DPC-080-05**

Delivered by: **A. Thayer**

Turnaround Request: Standard

Priority:  

Quote #:  

Laboratory Identification/Subcontractor:  

A-170-2005

A- 170 - 2005

**Maine Environmental Laboratory****Report of Analyses**

One Main Street Yarmouth, Maine 04096-1107 Tel (207) 846-6569 Fax (207) 846-9066 e-mail: mclab@ime.net

Ann W. Thayer  
Dragon Products Company  
PO Box 191  
Thomaston, ME 04861May 11, 2005  
Page 1 of 2

Report No.: DPC080-05

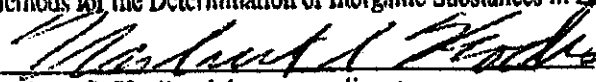
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HMX - EPA-821-R-98-002, Method 1664, Rev. A: N-Hexane Extractable Material by Extraction and Gravimetry, Feb. 1999.  
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Authorized signature

  
Herbert S. Kodis, laboratory director

A-170-2005

**Maine Environmental Laboratory****Report of Analyses**

One Main Street Yarmouth, Maine 04096-1107

Tel (207) 846-6569

Fax (207) 846-9066

e-mail: melab@unc.net

Ann W. Thayer  
 Dragon Products Company  
 PO Box 191  
 Thomaston, ME 04861

Page 2 of 2

May 26, 2005

Report No: DPC082-05  
 Date received: 05/24/05  
 Project ID: Ammonia Monitoring  
 Laboratory ID: DPC08205-01

Sampler: E. Greiner  
 Sampling date & time: 05/24/05-1243  
 Sample matrix: Water  
 Sample ID: Q1

Parameter	Results	units	Date-Time Analyzed	Method Detection Limit	Reporting Detection Limit	Method	Reference
Ammonia-N	4.9	mg/L	05/26/05	0.1	0.5	4500NH3B/E	STM
Ammonia-N Duplicate	4.8	mg/L	05/26/05	0.1	0.5	4500NH3B/E	STM
Nitrate-N	2.6	mg/L	05/25/05-1231	0.1	0.3	300.0	EPA1
Nitrite-N	0.15	mg/L	05/25/05-1231	0.03	0.1	300.0	EPA1

ND = not detected    J = estimated    B = detected in blank    S = RDL increased due to sample matrix

# Maine Environmental Laboratory - Chain of Custody

One Main Street Yarmouth, Maine 04096-6716 (207) 846-6569 fax: (207) 846-9066  
email: melab@ime.net

Telephone: 207-693-0100  
Purchase Order #/Bill To  
FAX# ME1  
Address: dragonproducts.com

**Project Manager**  
**Ann W. Thayer**  
**Company**  
**Dragon Products Company, Inc.**

**Address**  
**P.O. Box 191 / U.S. Route 1**      **Thomaston**      **ME**      **04861**

**Project Name**      **Ammonia Monitoring**      **Sampler Name**      **Eric Greiner**      **egreiner@dragonproducts.com**

Sample Identification	# Containers	Container Type	Field Filtration (Yes or No)	Sample Matrix (SW)	g/l	Compos:	Method Preserved	Sampling Date/Time	Analyses	Laboratory Report #
01	2		No	Water	X		4°C <i>HPSC-2005</i>	5/24/05 12:43	Ammonia; Nitrates & Nitrites	DPC082-05

Received in h.c.d time:  yes  no  
 Received in good condition:  yes  no  
 Temp. Blank: 2.0 if frozen ice packs:  yes  no  
 Samples received preserved:  yes  no  
 N/A  
 Requisitioned by Sampler: *[Signature]*  
 Requisitioned by: *[Signature]*  
 Requisitioned by: *[Signature]*

Date: 5/24/05 Time: 1806  
 Date: 5/24/05 Time: 1805  
 Received by Laboratory: *[Signature]*  
 Received by: *[Signature]*  
 Comments: *[Blank]*

Laboratory Report # DPC082-05  
 Delivered by: A. Thayer  
 Turnaround Request:  
 Standard:  
 Priority:  
 Quote #:  
 Laboratory Identification/ Subcontractor: DPC08205-01

A-170-2005

**Maine Environmental Laboratory****Report of Analyses**

One Main Street Yarmouth, Maine 04096-1107

Tel (207) 846-6569

Fax (207) 846-9066

e-mail: melab@ime.net

Ann W. Thayer  
 Dragon Products Company  
 PO Box 191  
 Thomaston, ME 04861

May 26, 2005

Page 1 of 2

Report No.: DPC082-05

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 EPA1 - EPA/600/R-93/100 Method for the Determination of Inorganic Substances in Environmental Samples, Aug. 1993.

Authorized signature

  
 Herbert S. Kodis, laboratory director

A-170-2005

# Maine Environmental Laboratory

## Report of Analyses

One Main Street Yarmouth, Maine 04096-1107 Tel (207) 846-6569 Fax (207) 846-9066 e-mail: mclab@ime.net

Ann W. Thayer  
 Dragon Products Company  
 PO Box 191  
 Thomaston, ME 04861

Page 2 of 2

June 09, 2005

Report No: DPC084-05  
 Date received: 06/01/05  
 Project ID: Ammonia Monitoring  
 Laboratory ID: DPC08405-01

Sampler: E. Griner  
 Sampling date: 05/28/05  
 Sample matrix: Water  
 Sample ID: SP-1

Parameter	Results	units	Date Analyzed	Method Detection Limit	Reporting Detection Limit	Method	Reference
Ammonia-N	ND	mg/L	06/01/05	0.1	0.5	4500NI13B/E	STM

ND = not detected J = estimated B = detected in blank S = RDL increased due to sample matrix

<p><b>M ; Environmental Laboratory - Chain of Custody</b>                  One Main Street Yarmouth, Maine 04096-6716 (207) 846-6569 fax: (207) 846-9065                  email: melab@emre.net</p>		<p>Labort: 12011 #                  Delivered by: <u>DRCSH-05</u>                  A Turner                  Turnaround Request: <u>Q</u>                  Standard <u>Q</u>                  Priority <u>Q</u>                  Quote #</p>	
<p>Project Manager: <u>Ann W. Thayer</u>                  Company: <u>Dragon Products Company, Inc.</u>                  Address: <u>P.O. Box 191 / U.S. Route 1</u> <u>Thomaston</u> <u>ME</u> <u>04861</u></p>		<p>Laboratory Identification/ Subcontractor: <u>DRCSH-05-01</u></p>	
<p>Project Name: <u>Ammonia Monitoring</u></p>		<p>Analyses</p>	
<p>Sample Identification:</p>		<p>Sampling Date/Time</p>	
<p>SP-1</p>	<p>Field Fraction (Yes or No) <u>No</u></p>	<p>Method Preserved <u>4°C</u></p>	<p>Ammonia</p>
<p>1</p>	<p>Sample Matrix (SW) <u>Water</u></p>	<p>4°C</p>	<p>5/28/05 11:15</p>
<p>yes</p>	<p>no</p>	<p>no</p>	<p>no</p>
<p>yes</p>	<p>no</p>	<p>no</p>	<p>no</p>
<p>yes</p>	<p>no</p>	<p>no</p>	<p>no</p>
<p>Received in hold time</p>		<p>Comments</p>	
<p>Received in good condition</p>		<p>A-170-2005</p>	
<p>Temp. Blank °C <u>3.1</u></p>		<p>Received by: <u>[Signature]</u></p>	
<p>Samples received preserved</p>		<p>Received by: <u>[Signature]</u></p>	
<p>Relinquished by: <u>[Signature]</u></p>		<p>Received by: <u>[Signature]</u></p>	
<p>Relinquished by: <u>[Signature]</u></p>		<p>Received by: <u>[Signature]</u></p>	



A-170-2005

**Maine Environmental Laboratory****Report of Analyses**

One Main Street Yarmouth, Maine 04096-1107

Tel (207) 846-6569

Fax (207) 846-9066

e-mail: melab@ime.net

Ann W. Thayer  
 Dragon Products Company  
 PO Box 191  
 Thomaston, ME 04861

June 09, 2005

Page 1 of 2

Report No.: DPC084-05

Enclosed are the results of the analyses requested on your samples as received by the laboratory. Samples were received in acceptable condition and analyzed within method holding times with all quality control data within laboratory acceptance limits unless noted. Reporting detection limits are the minimum levels for reporting quantitative data. These limits are 3.18 times the method detection limit as defined in CFR 40 Part 136, Appendix B. Data reported between the reporting and method detection limits are flagged as estimated. Maine Environmental Laboratory is certified by Maine, Massachusetts, New Hampshire and NELAP (cert.#2031). A list of certified parameters is available on request. The results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report. This report shall not be reproduced, except in full, without the written consent of the laboratory.

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Authorized signature

  
 Herbert S. Kodis, laboratory director

A-170-2005

# Maine Environmental Laboratory

## Report of Analyses

One Main Street Yarmouth, Maine 04096-1107

Tel (207) 846-6569

Fax (207) 846-9066

e-mail: melab@ime.net

Page 2 of 2

Ann W Thayer  
Dragon Products Company  
PO Box 191  
Thomaston, ME 04861

June 03, 2005

Report No: DPC085-05  
Date received: 06/01/05  
Project ID: Ammonia Monitoring  
Laboratory ID: DPC08505-01

Sampler: E. Greiner  
Sampling date: 05/31/05  
Sample matrix: Water  
Sample ID: Q1

Parameter	Results	units	Date Analyzed	Method Detection Limit	Reporting Detection Limit	Method	Reference
Ammonia-N	3.7	mg/L	06/01/05	0.1	0.5	4500NH3B/E	STM



A-170-2005

# Maine Environmental Laboratory

## Report of Analyses

One Main Street Yarmouth, Maine 04096-1107

Tel (207) 846-6569

Fax (207) 846-9066

e-mail: melab@imc.net

Ann W. Thayer  
Dragon Products Company  
PO Box 191  
Thomaston, ME 04861

June 03, 2005

Page 1 of 2

Report No.: DPC085-05

Enclosed are the results of the analyses requested on your samples as received by the laboratory. Samples were received in acceptable condition and analyzed within method holding times with all quality control data within laboratory acceptance limits unless noted. Reporting detection limits are the minimum levels for reporting quantitative data. These limits are 3.18 times the method detection limit as defined in CFR 40 Part 136, Appendix B. Data reported between the reporting and method detection limits are flagged as estimated. Maine Environmental Laboratory is certified by Maine, Massachusetts, New Hampshire and NELAP (cert.#2031). A list of certified parameters is available on request. The results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report. This report shall not be reproduced, except in full, without the written consent of the laboratory.

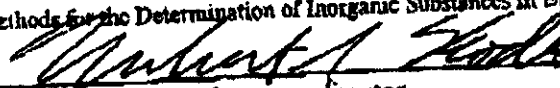
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- Maine Environmental Laboratory report
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### References

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- SW8 - SW846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, USEPA, third edition, 1986.
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Authorized signature

  
Herbert S. Kodis, laboratory director

A-170-2005

# Maine Environmental Laboratory

## Report of Analyses

One Main Street Yarmouth, Maine 04096-1107

Tel (207) 846-6569

Fax (207) 846-9066

e-mail: melab@ime.net

Ann W. Thayer  
 Dragon Products Company  
 PO Box 191  
 Thomaston, ME 04861

Page 2 of 2

June 09, 2005

Report No: DPC083-05  
 Date received: 06/01/05  
 Project ID: Ammonia Monitoring  
 Laboratory ID: DPC08305-01

Sampler: E. Griner  
 Sampling date: 05/31/05  
 Sample matrix: Water  
 Sample ID: UNS-1

Parameter	Results	units	Date Analyzed	Method Detection Limit	Reporting Detection Limit	Method	Reference
Ammonia-N	ND	mg/L	06/01/05	0.1	0.5	4500NH3B/E	STM

ND = not detected    J = estimated    B = detected in blank    S = RDL increased due to sample matrix

A-170-2005

**Maine Environmental Laboratory****Report of Analyses**

One Main Street Yarmouth, Maine 04096-1107 Tel (207) 846-6569 Fax (207) 846-9066 e-mail: melab@ime.net

Ann W. Thayer  
 Dragon Products Company  
 PO Box 191  
 Thomaston, ME 04861

June 09, 2005  
 Page 1 of 2

Report No.: DPC083-05

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 Herbert S. Kodis, laboratory director

### M. Environmental Laboratory - Chain of Custody

One Main Street Yarmouth, Maine 04096-6716 (207) 846-6569 fax: (207) 846-9066

email: melab@ime.net

Project Manager

Ann W. Thayer

Company

Dragon Products Company, Inc.

SAC 985

P.O. Box 191 / U.S. Route 1

Thomaston

ME

04861

Project Name

Ammonia Monitoring

Sample Name

Eric Greiner [egreiner@dragonproducts.com](mailto:egreiner@dragonproducts.com)

Sample Identification	Containers	Container Type	Field Filtration (Yes or No)	Sample Matrix (SW)	Sample Size	Method Preserved (How)	Sampling Date/Time	Laboratory Identification/ Subcontractor
ONS-1	1	No	No	Water	X	4°C	5/31/05 15:11	Ammonia Standing.
Q1	1	No	No	Water	X	4°C	5/31/05 15:20	Ammonia Priority

Received in hold time:  yes,  no N/A

Received in good condition:  yes,  no N/A

Temp. Blank °C: 3.7 (Frozen ice packs)

Samples received/preserved:  yes,  no N/A

Relinquished by Sampler: *Eric Greiner*

Relinquished by: *Ann W. Thayer*

Relinquished by: *Ann W. Thayer*

Received by: *Ann W. Thayer* Date: 5/31/05 Time: 1533

Received by: *Ann W. Thayer* Date: 6/1/05 Time: 0820

Received by Laboratory: *Ann W. Thayer* Date: 6/1/05 Time: 0821

Comments: A-170-2005

Laboratory Report #

SP-00-83-05

Delivered by: *A. Thayer*

Turnaround Request: \_\_\_\_\_

Standard: \_\_\_\_\_

Priority: \_\_\_\_\_

Grade: \_\_\_\_\_

Laboratory Identification/ Subcontractor: *Standing.*

TABLE ONE

DATE	SITE	RESULTS	AMMONIA, NITRITE, NITRATE
4/20/05	Q - 1	37.1 mg/l	Ammonia - N
4/28/05	Q5 - 1	0.4 mg/l	Ammonia - N
4/28/05	SP - 1	0.7 mg/l	Ammonia - N
4/28/05	PL	1.1 mg/l	Ammonia - N
5/2/05	Q - 1	8.5 mg/l	Ammonia - N
5/2/05	Q - 1	4.4 mg/l	Nitrate - N
5/2/05	Q - 1	9.4 mg/l	Nitrite - N
5/10/05	Q - 1	6.8 mg/l	Ammonia - N
5/10/05	Q - 1	1.4 mg/l	Nitrate - N
5/10/05	Q - 1	ND mg/l	Nitrite - N
5/24/05	Q - 1	4.9 mg/l	Ammonia - N
5/24/05	Q - 1	2.6 mg/l	Nitrate - N
5/24/05	Q - 1	0.15 mg/l	Nitrite - N
5/28/05	SP - 1	ND mg/l	Ammonia - N
5/31/05	UNS - 1	ND mg/l	Ammonia - N
5/31/05	Q - 1	3.7 mg/l	Ammonia - N

## Key:

- Q-1 = Quarry One
- Q-5 = Quarry Five
- UNS = Unnamed Stream
- SP-1 = Settling Pond One
- PL = Property Line

A-170-2005



P.O. Box 191, U.S. Route 1 \* Thomaston, Maine 04861 \* 207-594-5555

**SPILL REPORT  
DRAGON PRODUCTS COMPANY**

Facility Name: Dragon Products Company, Inc.  
P.O. Box 191  
Thomaston, ME 04861

Contact Name: Ann Thayer, Environmental Manager  
(207) 594-5555

Report Filed By:	<u>Eric Greiner, Environmental Technician</u>	Date:	<u>4/19/2005</u>
		Time:	<u>9:45 a.m.</u>
Product Spilled:	<u>Ammonium Hydroxide - 19%</u>	Gallons:	<u>6,000</u>

Cause of Discharge/Spill: F.L. Smidth Inc.'s (FLS) was unloading ammonium hydroxide at the Dragon Facility in Thomaston, ME with a chemical tank truck not equipped with a emergency shut-off device. While conducting an equipment inspection with the tank truck, an FLS employee noticed a problem with the extraction valve assembly at the rear of the tanker. After attempting to tighten up the valve assembly, the assembly shot out under pressure and the contents of the tanker emptied onto the ground - approximately 6,000 gallons. Two FLS employees were transported to nearby hospital for examination and were released.

Remedial Action: FLS and Dragon personnel responded initially to the release and efforts to stop the flow of the ammonium hydroxide were unsuccessful. Local emergency responders were called in and took control of the incident. The ammonium hydroxide around the tanker was contained using a dirt berm constructed by Dragon employees. Some of the ammonium hydroxide went down a storm drain and was contained in Quarry #1. The soil from the dirt berm was processed at the Dragon kiln and made into cement. The water in Quarry #1 was tested, aerated to oxidize the ammonia, and spread as fertilizer onto the plant grass.

Reported to/(MDEP): Ann Thayer, Environmental Manager reported incident to Glen Wall - MDEP Augusta Response Office on 04/19/2005.

Attached:  Facility Location Map  
 MSDS

RETURN COMPLETED FORM TO ENVIRONMENTAL DEPARTMENT





A-170-2005

## Material Safety Data Sheet

### Emergency Telephone Numbers:

GAC Chemical 207-548-2525  
 GAC Chemical 877-254-0081  
 Chemtec 800-424-9300

Date Revised: April 2005

### I. Product Identification

Product Name: Aqua Ammonia (19 %)  
 CAS Number: 7664-41-7  
 Synonyms: Aqueous Ammonia, Ammonia Solution; Ammonium Hydroxide  
 DOT Shipping Description: Corrosive, Ammonium Hydroxide, 8, UN 2672, PG III, RQ

### II. Hazards Identification/Health Hazard Data

**Hazard Overview:** DANGER! CAUSES BURNS TO EYES, SKIN AND RESPIRATORY TRACT.  
**Components:** All components of this product are on the TSCA and DSL inventories.  
**Acute Health Effects:** Inhalation: Inhalation of vapors, mists or aerosol can cause irritation and/or burns to the respiratory system. Pulmonary edema may result from inhalation.  
Ingestion: Corrosive. Can cause burns to mouth, esophagus and gastrointestinal tract. May cause nausea and or vomiting.  
Eye Contact: Severely irritating and corrosive to the eyes. Vapors, mists or aerosols may cause tearing and burning of eyes. Contact with the eyes may cause severe and permanent damage if not promptly removed.  
Skin Contact: Severely irritating and corrosive to skin. May cause burns and blistering if splashed on the skin and not promptly removed.  
**Chronic Health Effects:** Frequent or prolonged contact may cause dermatitis.

**Hazards Information:** CERCLA hazardous substance: Yes  
 Clean Air Act Section 112: Yes  
 SARA Title III, Section 302: Yes  
 SARA Title III, Section 313: Yes

	HMIS	NFPA
Health	3	3
Flammability	0	0
Reactivity	1	0

### III. First Aid

**Eye or Skin Contact:** Immediately flush with water for at least 15 minutes, while removing clothes and shoes. Rinse under eyelids. Remove contact lenses. Do not let victim rub eyes. Do not neutralize with chemical agents. Do not use oils or ointments. Get medical attention immediately.  
**Inhalation:** Move to fresh air. Oxygen may be given. If not breathing, give artificial respiration.  
**Ingestion:** DO NOT induce vomiting. Call a physician or poison control center. If conscious, give water to drink. If vomiting occurs, keep head below hips to reduce risk of aspiration. Never give anything by mouth to an unconscious or convulsing person.

### IV. Fire and Explosion Hazard Data

**Flash Point:** Not applicable.  
**Autoignition Temperature:** N/D  
**Extinguishing Media:** Use water fog or spray, dry chemical, foam or carbon dioxide.  
**Special Fire Fighting Procedures:** Ruptures or spillage of containers will release ammonia vapors.  
**Unusual Fire and Explosion Hazards:** Product is not flammable or combustible. Product can form flammable gas/air mixtures. Ammonia and oxides of nitrogen are produced by the combustion of this product.  
**Protective Fire Fighting Equipment:** Wear approved, self-contained breathing apparatus.

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**V. Storage and Handling**

- Handling: Avoid prolonged and/or repeated skin contact and eye contact when handling. Do not breathe vapor, mists or aerosol. Wash thoroughly after handling.
- Storage: Keep container closed. Suitable for any general chemical storage area. Isolate from incompatible materials. Store in cool, dry place. Keep closed until ready for use.

**VI. Accidental Release Measures/Waste Disposal**

- Spills or Leaks: Isolate spill area and restrict nonessential personnel. Dike area to prevent spill from spreading. Collect liquid and place in a suitable container. Soak up remaining liquid with a suitable absorbent such as clay, earth or sand. Sweep up absorbent material and place in a chemical waste container.
- Waste Disposal: Dispose of waste in accordance with Federal, State or Local regulations.

**VII. Applicable Control Measures**

- Engineering Controls: Provide sufficient ventilation to keep concentration below the exposure limit. Conduct work with samples in a hood.
- Personal Protection Equipment
- Eye Protection: If possibility of splashing or spraying exists, wear chemical goggles and full face shield.
- Skin Protection: Wear impervious gloves, clothing and footwear.
- Respiratory Protection: In case of insufficient ventilation, wear suitable NIOSH-approved chemical cartridge respirators with cartridge or canister providing protection against ammonia. For higher protection, use a NIOSH-approved, positive-pressure/pressure-demand, air-supplied respirator. Change cartridges or canisters frequently to assure breakthrough exposure does not occur.
- Other Protection: Eating, drinking and smoking should be prohibited in areas of potential exposure. Safety showers and eye wash fountains must be readily available.
- Exposure Limits: The IDLH concentration for ammonia is 210 mg/m<sup>3</sup> (300 ppm).

**VIII. Typical Physical Properties**

Ammonia:	19 %	Vapor Pressure:	9.9 PSIG@100° F
Appearance:	Colorless liquid with ammonia odor.	Boiling Point:	121° F
Solubility in Water:	Completely miscible	Freezing Point:	-30° F
Specific Gravity:	0.928 @ 68°	Physical Form:	Pure liquid

**IX. Reactivity Data**

- Chemical Stability: Product is stable at ambient temperatures. It is not self-reactive and is not sensitive to physical impact.
- Hazardous Polymerization: Will not occur.
- Incompatibility: Copper, copper alloys, zinc, zinc salts, silver salts, strong oxidizers, acids and halogens.
- Conditions to Avoid: Prevent creation of flammable or explosive concentrations in air.
- Hazardous Decomposition Products: Decomposition products are nitrogen oxides, ammonia and water vapor.

**X. Transportation Information**

Proper Shipping Name:	Ammonium Hydroxide	Hazard Class:	8
DOT Label:	Corrosive	Reportable Quantity:	1000 pounds
UN Number:	2672	Packaging Group:	III

Environmental Hazardous Substance: This product contains ammonia and/or ammonium hydroxide which are environmentally hazardous materials.

This information is for the specific material described only and may not be valid if the material is used in combination with any other materials or in any process. The user is responsible to determine the completeness of the information and suitability for the user's own particular use. To the knowledge and belief of GAC Chemical Corporation, the information is accurate and reliable as of the date indicated, but GAC Chemical Corporation makes no express or implied warranty of merchantability for the material or for the information. GAC Chemical Corporation makes no express or implied warranty of fitness for a purpose for the material or for the information.