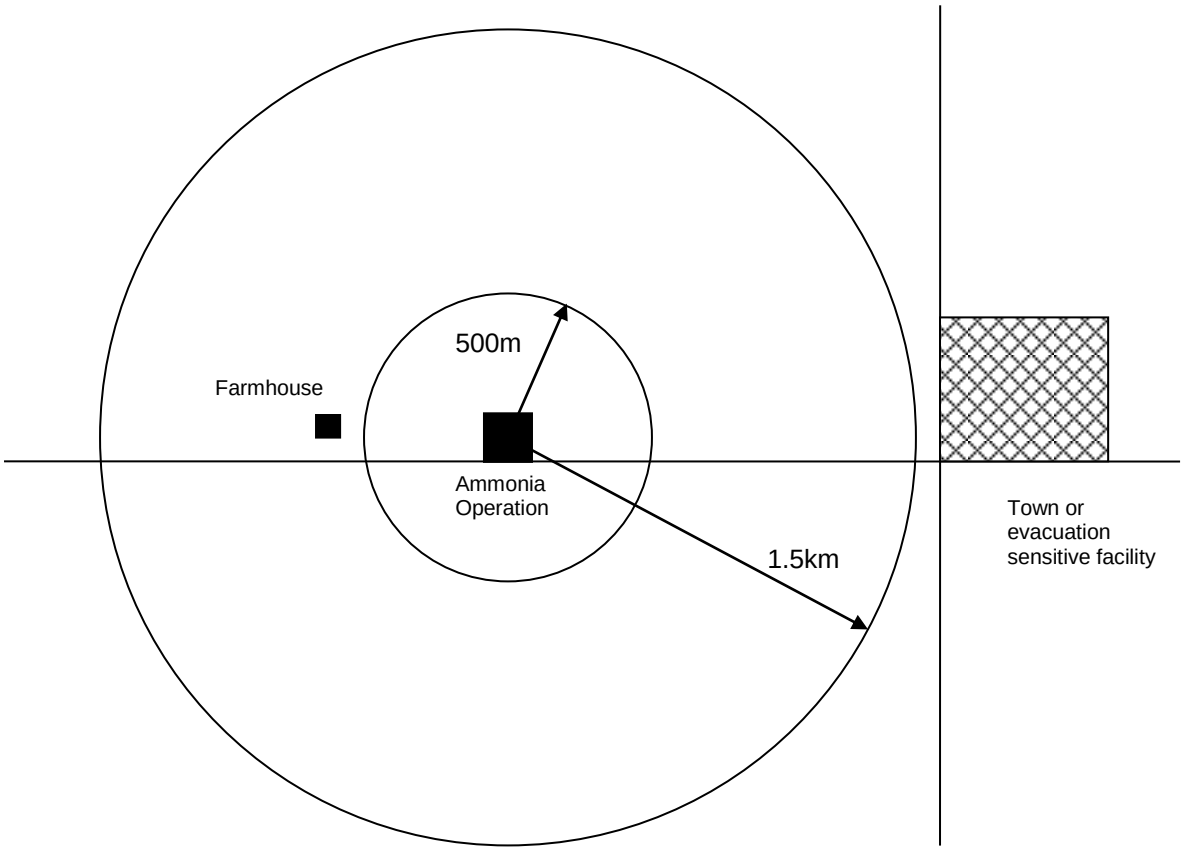
Fertilizer Safety & Security Council

Conseil de la sécurité en fertilisation

AMMONIA CODE OF PRACTICE

APPENDICES

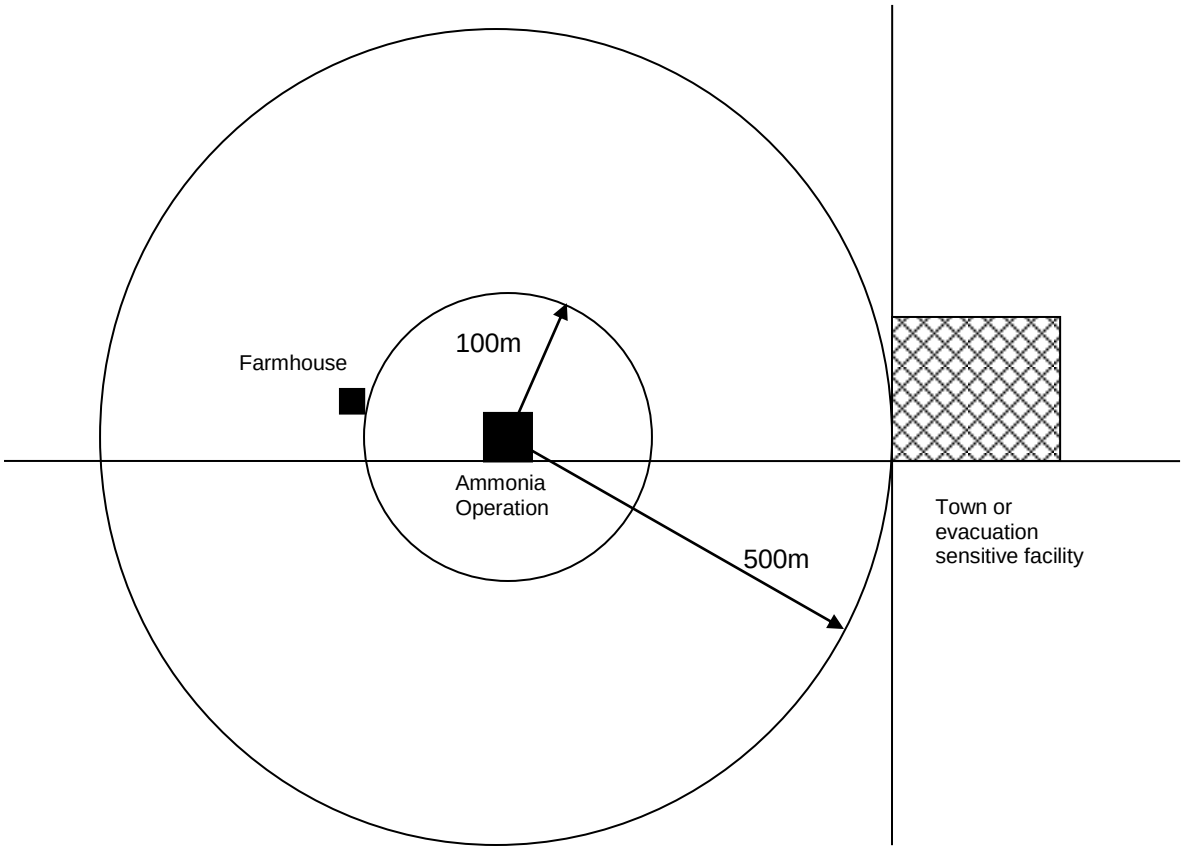
January 2012



A1.1 New Construction:

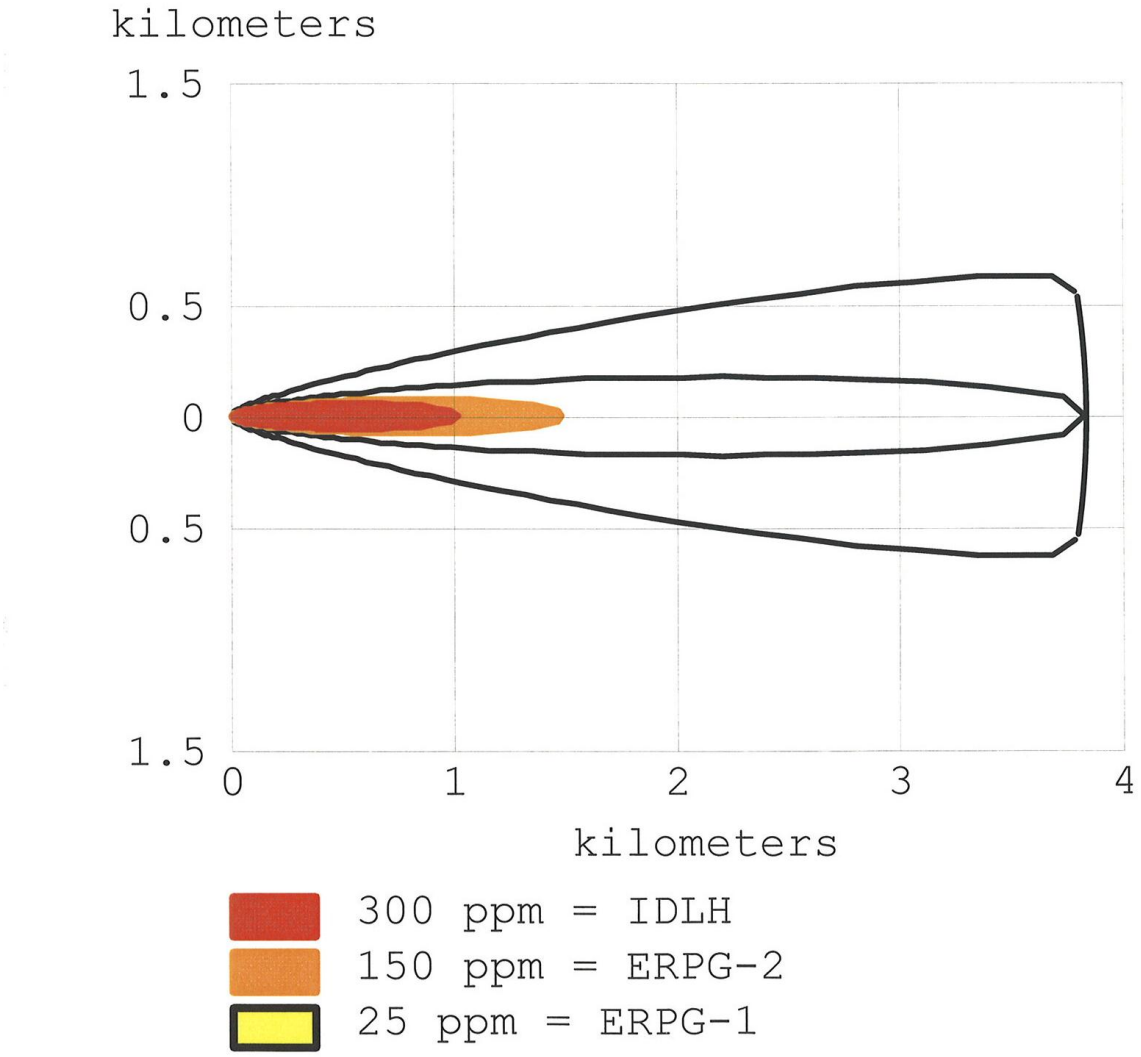
New facilities must be at least these distances from people. Distance is measured from the ammonia storage tank(s) to the boundary of a town or the building of a residence or other facility.

Note that the ammonia operation must also be 100 metres from environmentally sensitive areas, and comply with regulated setback distances from roads and railway lines.



A1.2 and A1.3 and A4.1

There are additional risk management requirements for facilities that are within 500 metres of a population concentration, or within 100 metres of any occupancy such as a farmhouse including pull away protection (A2.1a), communications with local people (A3.1), and security (A4.1).



Model of anhydrous ammonia dispersion pattern from a two inch pipe leak on a pressurized storage tank, with 15 mph wind and at 15 degrees Celsius.

IDLH = “Immediately Dangerous to Life and Health” (U.S. OSHA definition).

Concentration in each of the zones is at or above the value stated. In the red zone concentration is at or above 300 ppm. The outermost black line is the confidence limit for the 25 ppm zone only. Note that ammonia concentrations may vary significantly form those depicted here.

Note the pullaway protection cable on the hose riser which in turn is connected to the ISC valves.

Page wire is easily climbed, so must be topped with barbed wire. Chain link fencing is preferred.

Motion Sensor

Security Camera

Date, Year
Addressee
Address
Address

Dear Addressee,

Our company operates an agricultural supply & distribution facility in this neighbourhood. One of our products is anhydrous ammonia, a nitrogen fertilizer. In high concentrations, ammonia is a hazardous product, so this letter is to provide information to you about ammonia and about what to do in the unlikely event of an emergency involving ammonia. Please read the attached information.

We are committed to operating our business safely and responsibly. If an emergency did occur at our operation, you may receive a phone call from our personnel if the emergency could affect you. You will be advised of the best course of action at that time.

If you have any questions you are welcome to call us at (XXX)-XXX-XXXX.

Sincerely,

Company representative
Title
Company

Information Pack for Neighbours of Agricultural Ammonia Facilities

Ammonia or Anhydrous Ammonia

Ammonia is a naturally occurring chemical. Our bodies make it in small amounts as a waste product. Farmers use it in concentrated form as a nitrogen fertilizer. It is also used for refrigeration and to make many industrial products such as adhesives and cleaning products like Windex.

Ammonia is a hazardous product in its concentrated form, so people using ammonia take many precautions to ensure its safe use. If you are near an ammonia facility or operation, it is important that you know about ammonia and what precautions to take in the unlikely event of an emergency.

Ammonia is caustic in nature, and will cause chemical burns if it contacts your eyes or lungs in high enough concentration. Ammonia has a pungent, biting odour that you can easily smell at very low concentrations.

Ammonia fertilizer is transported and stored as a liquid in pressurized tanks. If an accident were to occur, any ammonia spilled quickly turns to vapour and blows with the wind as it dissipates.

What to do

If there is an ammonia accident nearby, you should move away across wind to get away from the ammonia vapour. In a building, it is best to shelter in place. Quickly close all the windows, doors, and vents and call for help. The smell may become strong inside, but not enough to hurt you.

Who to call

In an emergency, please call local emergency services (Police, Fire). You are also welcome to call your local ammonia fertilizer business at any time.

More information

Your local fertilizer business can provide additional information. Information on ammonia can be found in Material Safety Data Sheets (MSDS) on the internet.

Your local ammonia business:

Date, Year

Addressee
Address
Address

Dear Addressee

Our company operates an agricultural supply and distribution facility nearby. One of our products is anhydrous ammonia, a nitrogen fertilizer. In high concentrations, ammonia is a hazardous product. Our goal is to operate our business safely and responsibly, and one of our requirements is that we plan for what to do in the unlikely event of an emergency.

Because of your close proximity to our operation, we would like to invite you to participate in a short emergency preparedness information session to be held at (Address) on (Date) at (Time). We will give you information on ammonia and on what to do in an emergency, as well as details about our emergency plan. You will also have the opportunity to ask any questions you may have.

We hope you are able to attend, and look forward to meeting with you.

Sincerely,

Name
Title
Company

Saskatchewan
Corrections and
Public Safety

Protection Services
Boiler & Pressure Vessel Safety

Anhydrous Ammonia
License 2047

Capacity 90, 900 – 181,800 **Litres**

This is to certify that [redacted] of

[redacted] is hereby authorized under the provisions of The Boiler and Pressure Vessel Act 1977, to operate a storage and/or filling plant for the distribution of Anhydrous Ammonia.

Location of business [redacted]

This license is valid to Dec. 31st, 2005 unless sooner cancelled, and is to be posted on the premises of the licencee.

Fee paid $ 180.00

Account No. 146894

Accountant

Minister of
Corrections and
Public Safety

Chief Inspector

Rivers

Marshlands

Typical security gates

Page wire is easily climbed, so must be topped with barbed wire.

Valve Locks

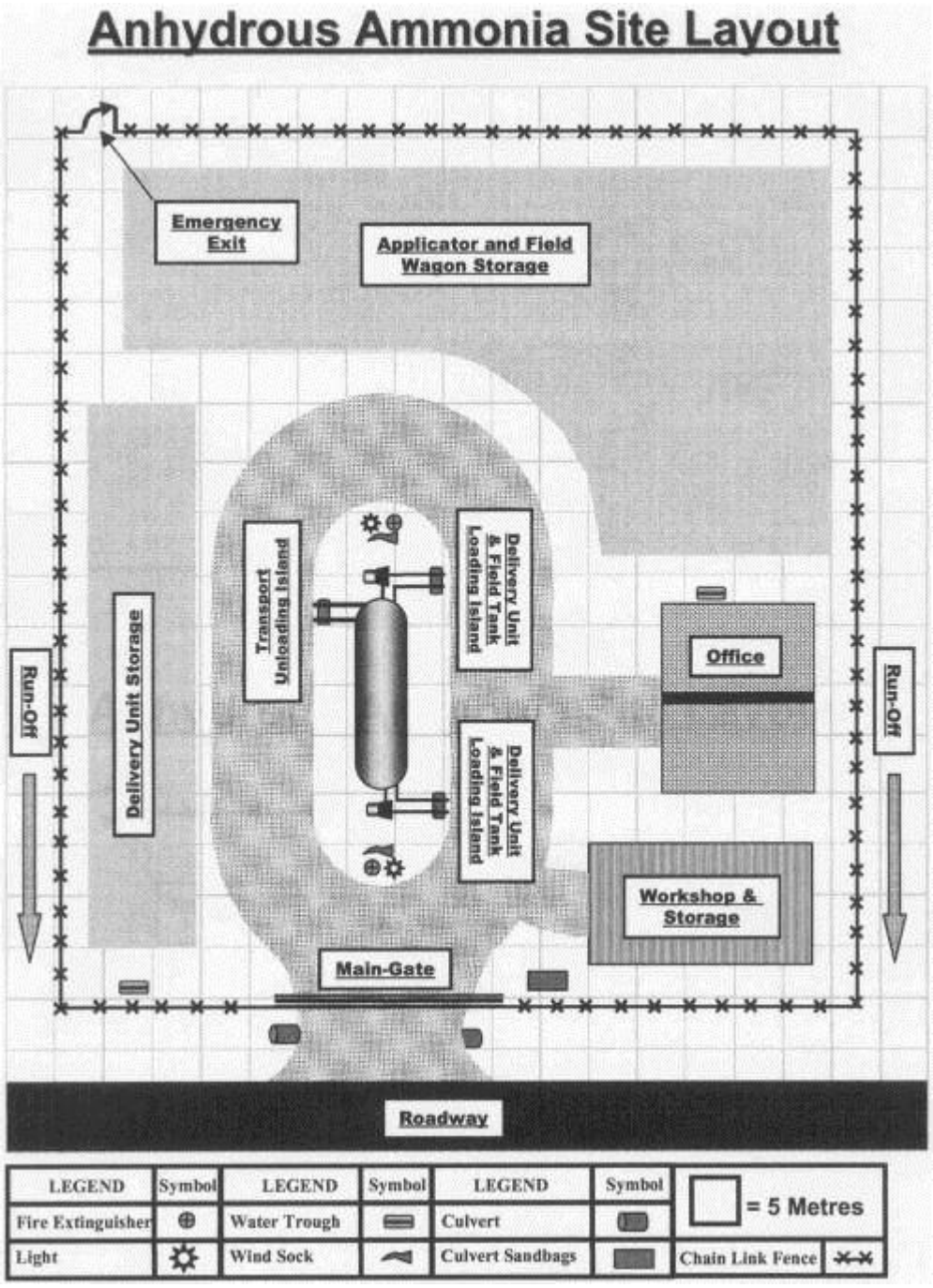
Locking Valve Covers

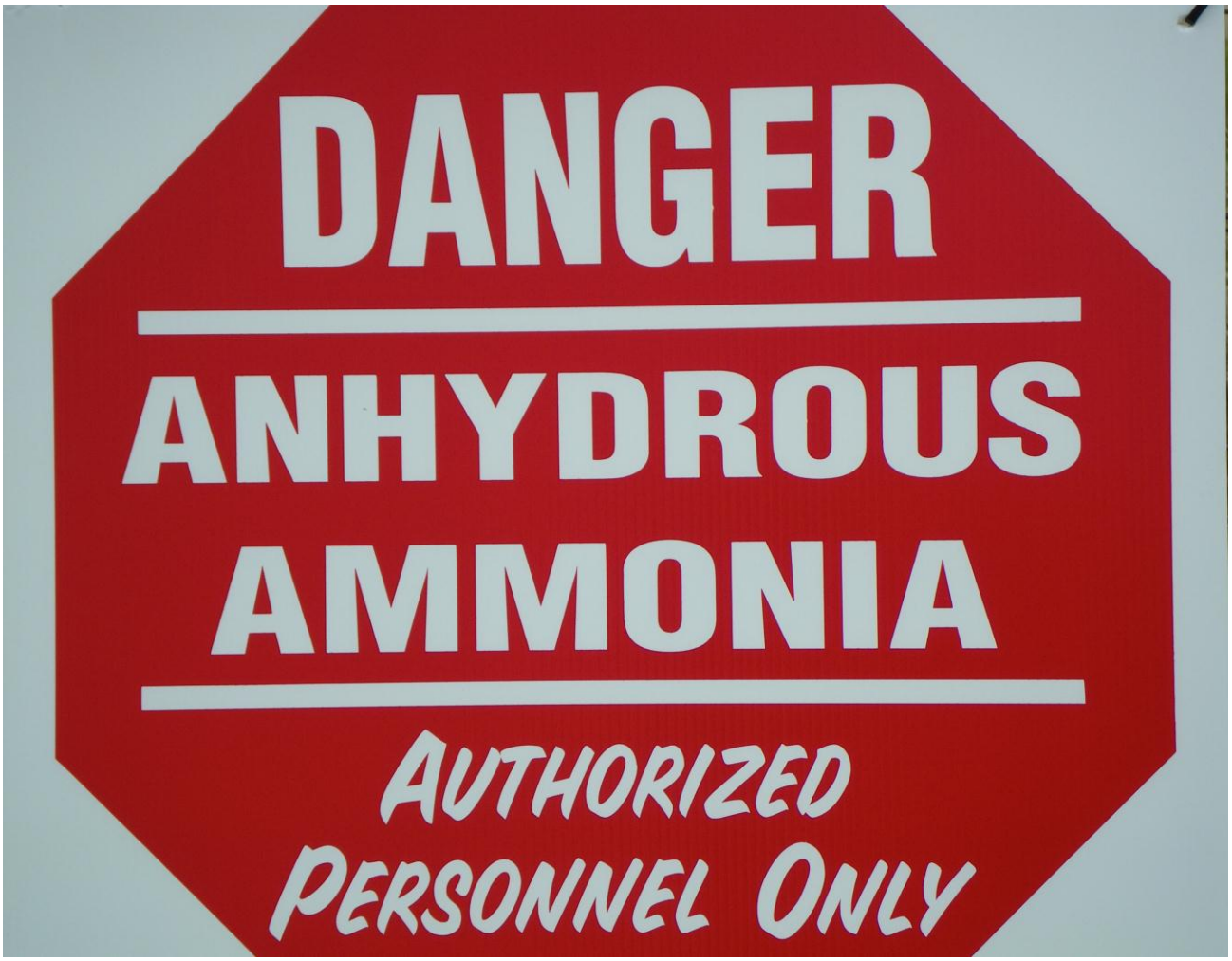

CAUTION
AMMON
Nurse wagons secured by cable.

LIGHTING

MOTION SENSOR LIGHTING

EMERGENCY EGRESS


Anhydrous Ammonia Site Layout
Emergency Exit
Applicator and Field Wagon Storage
Transport Unloading Island
Delivery Unit & Field Tank Loading Island
Delivery Unit & Field Tank Loading Island
Delivery Unit Storage
Run-Off
Run-Off
Office
Workshop & Storage
Main-Gate
Roadway
LEGEND
Symbol
LEGEND
Symbol
LEGEND
Symbol
= 5 Metres
Fire Extinguisher
Water Trough
Culvert
Light
Wind Sock
Culvert Sandbags
Chain Link Fence


DANGER
ANHYDROUS
AMMONIA
AUTHORIZED
PERSONNEL ONLY


DANGER
NO SMOKING
OR OPEN FLAME


IN CASE OF EMERGENCY
CONTACT
1-777-777-7777
NEAREST OFF-SITE PHONE:
1 1/4 Mile North On Hwy 35 - 7-11
FIRE DEPT:
000-0000
POLICE:
333-3333

Housekeeping Inspection Checklist

General Physical Conditions	
Electrical: Wiring, cords, grounds, connections	Machines: Condition of guards, exposure of moving parts, leaks, tidiness
Walking and working surfaces: Tripping hazards, clear of obstructions	Safety showers, safety tubs, eye wash stations: marked, unobstructed
Compressed gas cylinders: Storage, restraint, ventilation	Flammable material: Storage, ventilation
Chemicals: Storage, labelling, ventilation, compatibility, spills	Exits: Marked, unobstructed
Ladders, stairs & platforms: Handrails, general conditions	Temporary hazards: Tagged for information, barricades
Tools: Conditions, storage, proper use, guards, etc.	Portable ladders: Storage, condition, proper use
Lifting devices: Condition, storage, proper use, barriers	Scrap, rubbish, vegetation: Accumulation, storage, proper disposal
Aisles & storage areas: Accessibility, stacking, marking, stability, suitable location, packaging, protection	Tag & lockout: Appropriate use, condition of locks & tags
Quantities: Items present in excess, not required, left over, congestion	External environment: Potential pollution, other hazards
Illumination: Adequacy, condition	

Conditions to look for:			
Bent	Broken	Corroded	Decomposed
Excessive	Frayed	Greasy	Jagged
Kinked	Littered	Loose	Missing
Mutilated	Leaking	Noisy	Protruding
Sharp-edged	Slippery	Spilled	Splintery
Unstable	Vibrating	Worn	

Housekeeping Inspection Report

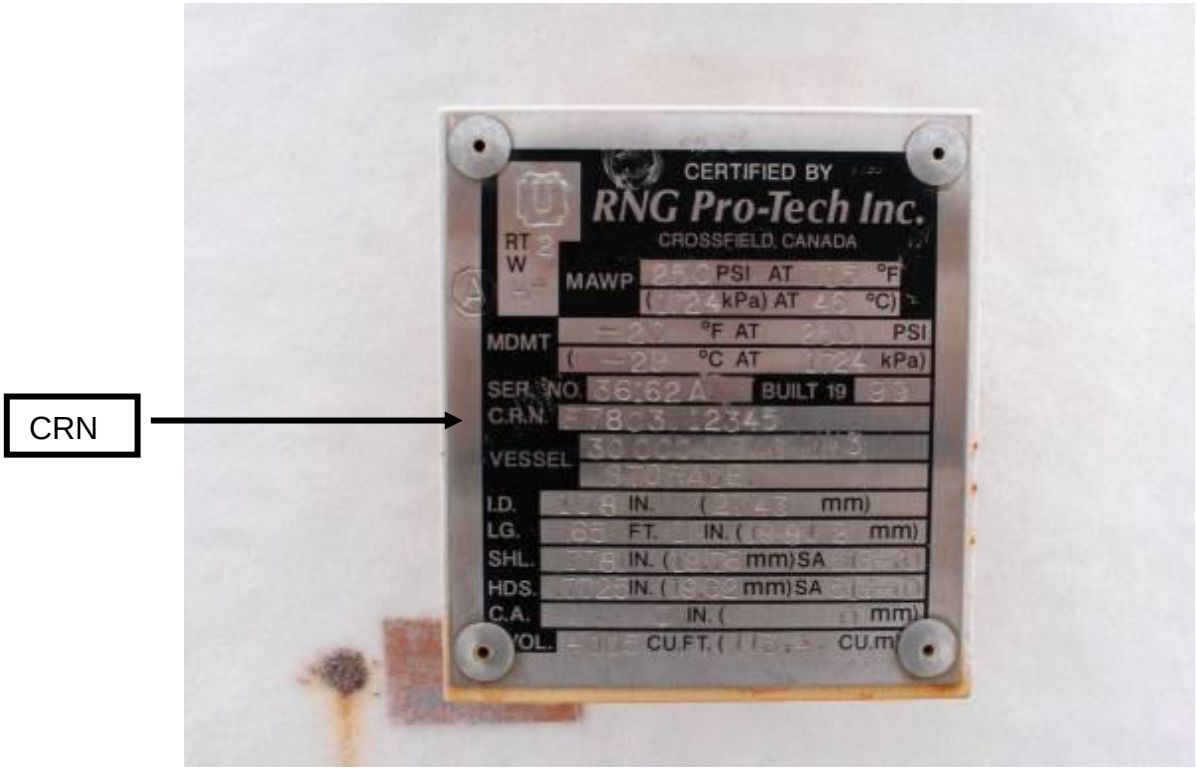
Your company name:

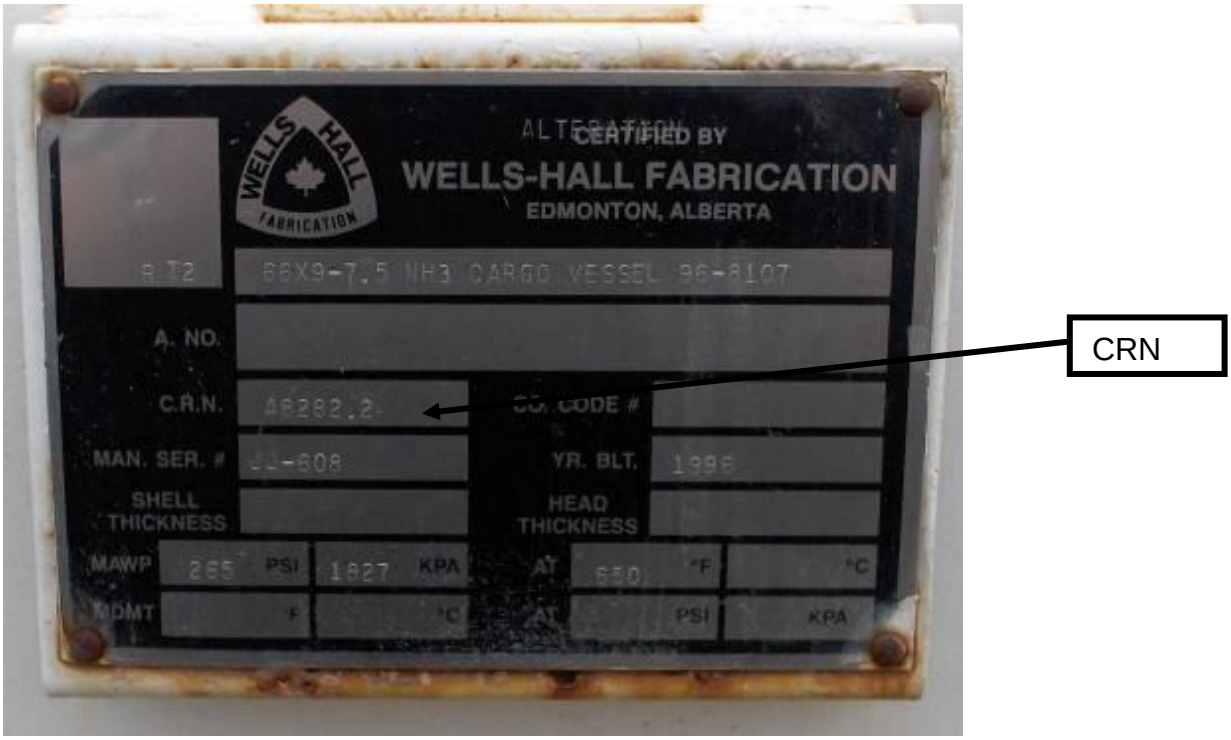
Date originally scheduled: Date of inspection:

Area:		Area Mgr:			Revised Date:	
Item	Area Location	Condition	Priority	Action Taken	Date Completed	Name of Responsible Person
1						
2						
3						
4						
5						
6						
7						
8						

Observed by:

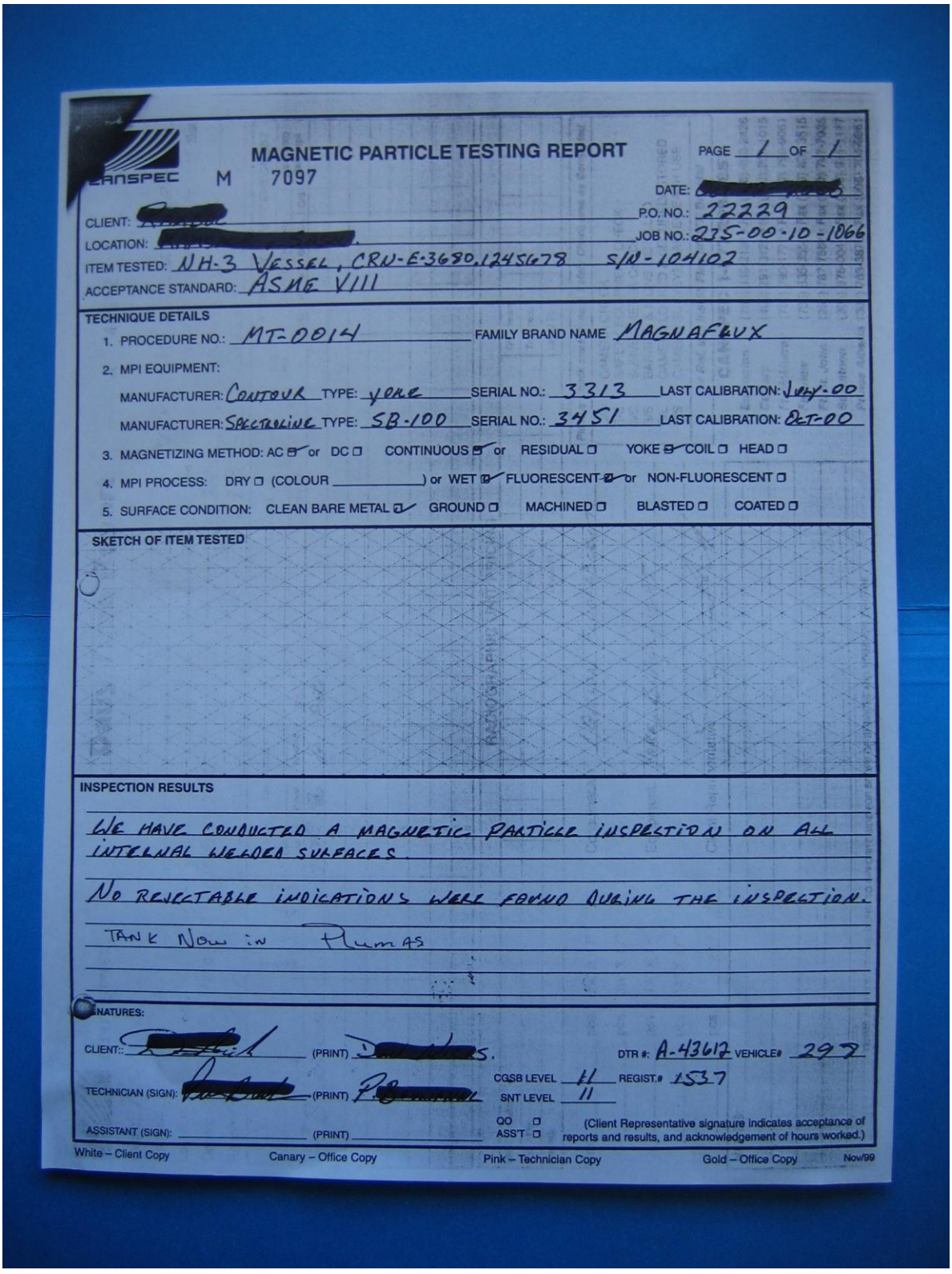
NAMEPLATE ON VESSEL





FOUNDATION & SUPPORT OF VESSEL

Solid, non-flammable support for the pressure vessel (and in this case, piping also).



MAGNETIC PARTICLE TESTING REPORT

TRANSPEC M 7097

PAGE 1 OF 1

DATE: [redacted]

CLIENT: [redacted] P.O. NO.: 22229

LOCATION: [redacted] JOB NO.: 275-00-10-1066

ITEM TESTED: NH-3 VESSEL, CRN-E-3680,1245678 S/N-104102

ACCEPTANCE STANDARD: ASME VIII

TECHNIQUE DETAILS

1. PROCEDURE NO.: MT-0014 FAMILY BRAND NAME MAGNAFLUX
2. MPI EQUIPMENT:
   MANUFACTURER: CONTOUR TYPE: YOKE SERIAL NO.: 3313 LAST CALIBRATION: JULY-00
   MANUFACTURER: SPECTROLINE TYPE: SB-100 SERIAL NO.: 3451 LAST CALIBRATION: OCT-00
3. MAGNETIZING METHOD: AC ☑ or DC ☐ CONTINUOUS ☑ or RESIDUAL ☐ YOKE ☑ COIL ☐ HEAD ☐
4. MPI PROCESS: DRY ☐ (COLOUR _____) or WET ☑ FLUORESCENT ☑ or NON-FLUORESCENT ☐
5. SURFACE CONDITION: CLEAN BARE METAL ☑ GROUND ☐ MACHINED ☐ BLASTED ☐ COATED ☐

SKETCH OF ITEM TESTED

INSPECTION RESULTS

WE HAVE CONDUCTED A MAGNETIC PARTICLE INSPECTION ON ALL INTERNAL WELDED SURFACES.

NO REJECTABLE INDICATIONS WERE FOUND DURING THE INSPECTION.

TANK NOW IN Plumas

SIGNATURES:

CLIENT: [redacted] (PRINT) [redacted] DTR #: A-43617 VEHICLE# 293

TECHNICIAN (SIGN): [redacted] (PRINT) [redacted] CGSB LEVEL II REGIST.# 1537 SNT LEVEL II

ASSISTANT (SIGN): _____ (PRINT) _____ QO ☐ ASS'T ☐

(Client Representative signature indicates acceptance of reports and results, and acknowledgement of hours worked.)

White – Client Copy Canary – Office Copy Pink – Technician Copy Gold – Office Copy Nov/99

Emergency shutoff pull station
(colour coded blue)

Emergency shutoff pull station (should be colour coded blue)

Emergency shutoff pull cord. Accessible from multiple locations

Emergency shutoff valve. Should be colour coded blue.

ANHYDROUS AMMONIA CODE OF PRACTICE
REQUIREMENTS FOR COMPLIANCE

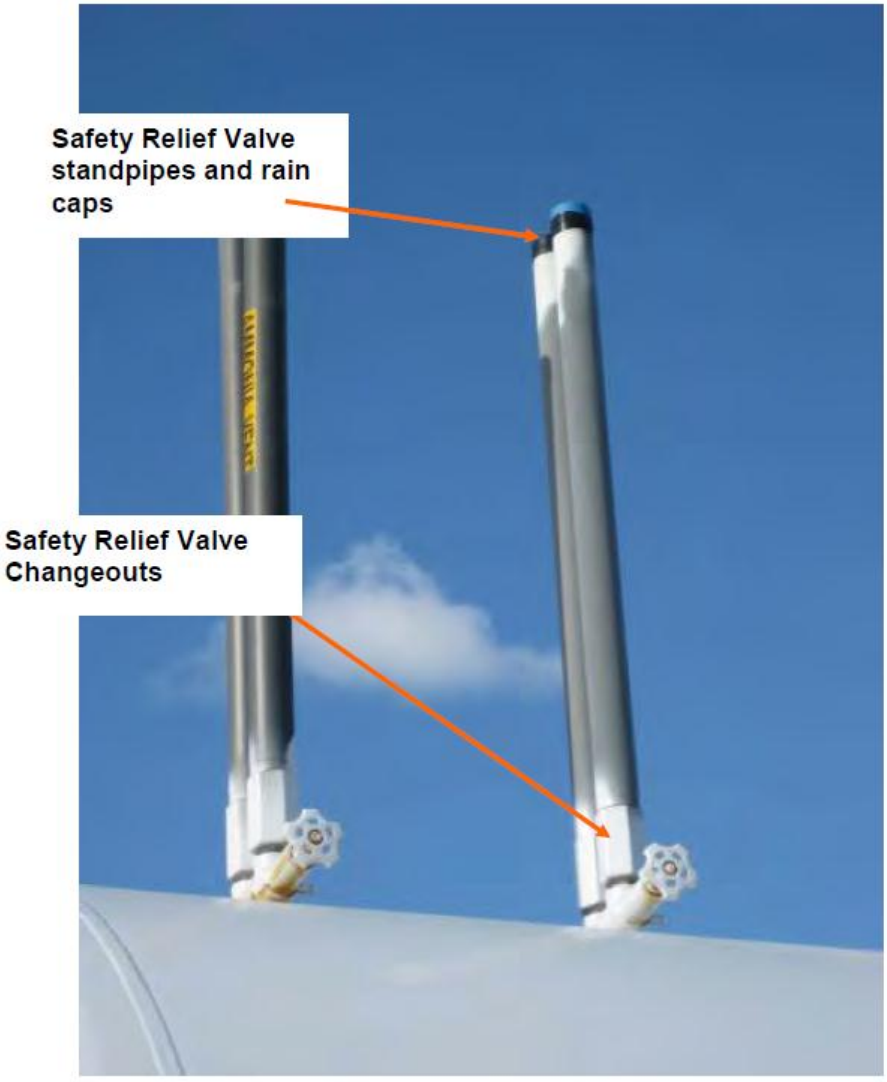
REQUIREMENT	MANAGER'S SIGNATURE	DATE
Valves on Storage Vessel		
Appropriately sized excess flow valves in the piping system.		
All valves are suitable for anhydrous ammonia service.		
Piping on Storage Vessel		
Schedule 40 pipe sections as listed below:		
Schedule 80 pipe sections as listed below:		
All pipe fittings have been sized and rated for pressures they will be exposed to in the piping system.		
No brass, galvanized or zinc fittings are used in the piping system.		
All gauges on the vessel and piping are suitable for ammonia service		
Valves on Nurse and Applicator Tanks		
Appropriately sized excess flow valves.		
All valves are suitable for anhydrous ammonia service.		
Piping on Nurse and Applicator Tanks		
Schedule 40 pipe sections as listed below:		
Schedule 80 pipe sections as listed below:		
All pipe fittings have been sized and rated for pressures they will be exposed to in the piping system.		
No brass, galvanized or zinc fittings are used in the piping system.		
Tow Vehicles		
All tow vehicles meet minimum size requirements in accordance with the size of the nurse tank being towed.		
All tow vehicles are equipped with appropriate lighting.		

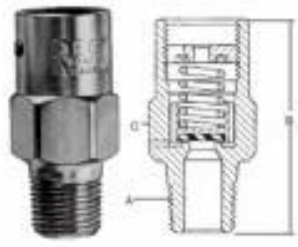
Hose-End Valves
APPENDIX B2.4

Possible hose end valve protectors which also provide a convenient way to carry the hose.

Typical hose end valve protector. Also provides convenient way to carry the hose.

Best Practice: Safety relief valve change outs (manifold to allow isolation of one safety valve at a time).



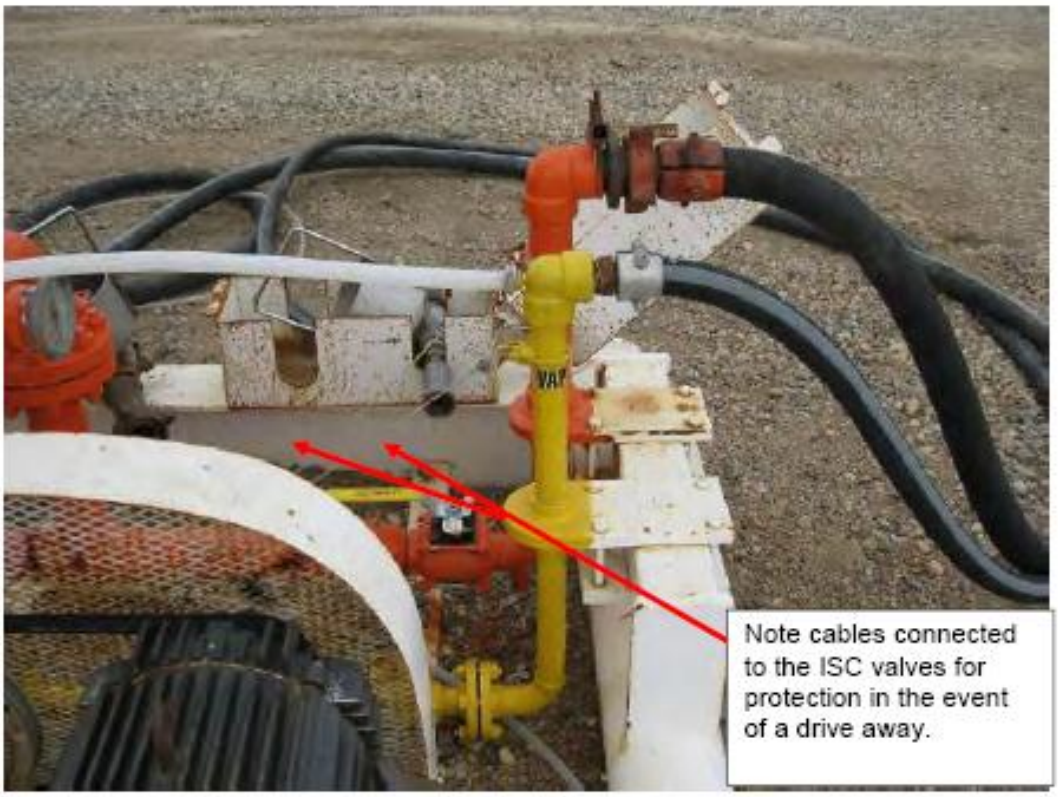


ANHYDROUS AMMONIA CODE OF PRACTICE
REQUIREMENTS FOR COMPLIANCE

REQUIREMENT	MANAGER'S SIGNATURE	DATE
Valves on Storage Vessel		
Appropriately sized excess flow valves in the piping system.		
All valves are suitable for anhydrous ammonia service.		
Piping on Storage Vessel		
Schedule 40 pipe sections as listed below:		
Schedule 80 pipe sections as listed below:		
All pipe fittings have been sized and rated for pressures they will be exposed to in the piping system.		
No brass, galvanized or zinc fittings are used in the piping system.		
All gauges on the vessel and piping are suitable for ammonia service		
Valves on Nurse and Applicator Tanks		
Appropriately sized excess flow valves.		
All valves are suitable for anhydrous ammonia service.		
Piping on Nurse and Applicator Tanks		
Schedule 40 pipe sections as listed below:		
Schedule 80 pipe sections as listed below:		
All pipe fittings have been sized and rated for pressures they will be exposed to in the piping system.		
No brass, galvanized or zinc fittings are used in the piping system.		
Tow Vehicles		
All tow vehicles meet minimum size requirements in accordance with the size of the nurse tank being towed.		
All tow vehicles are equipped with appropriate lighting.		


Emergency Shutoff is blue. Vapour is yellow. Liquid is orange.

Examples of emergency shut-off pull stations, colour coded blue



Examples of emergency shut-off pull stations, colour coded blue

Hose wired to shutoff valve

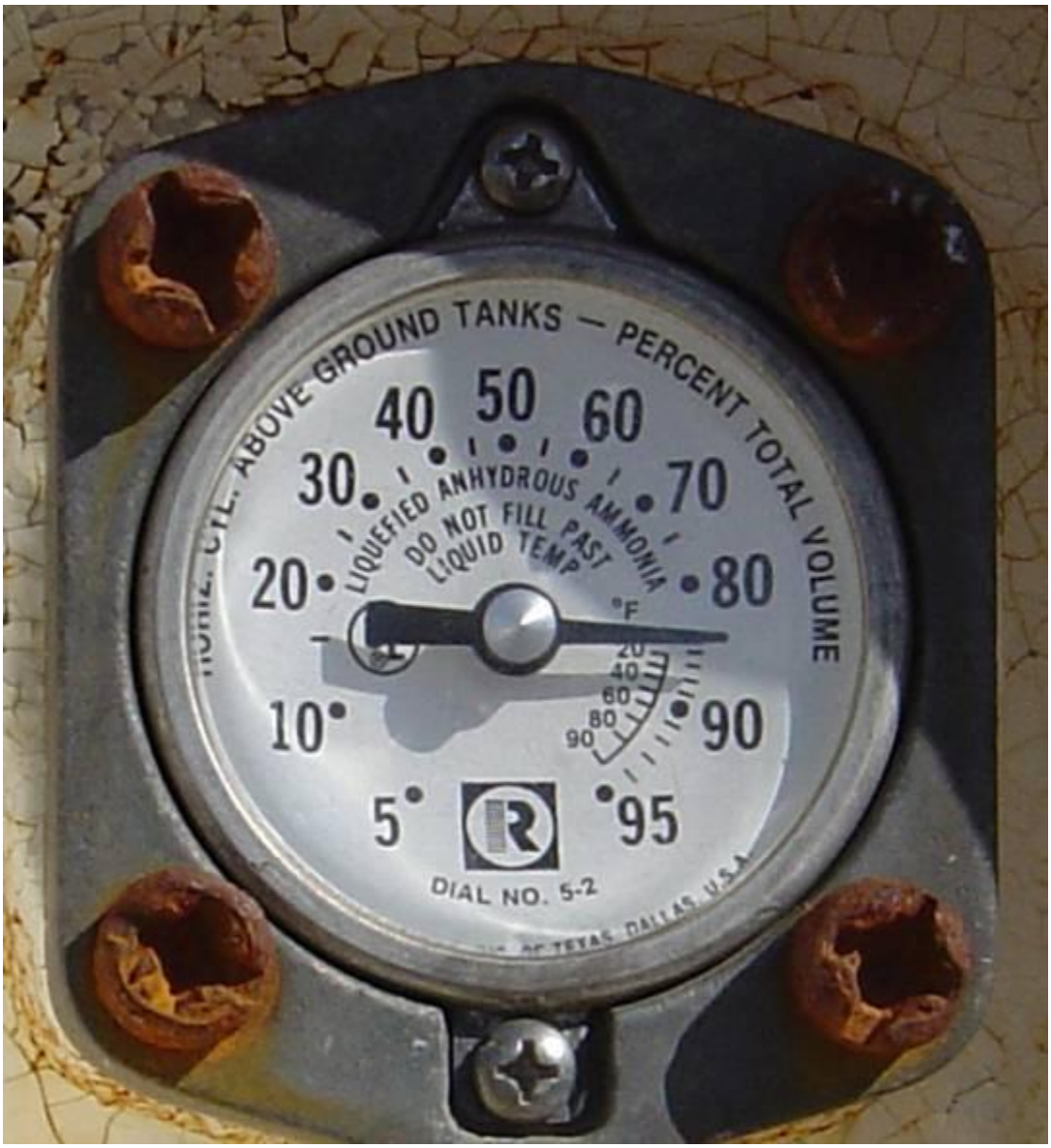
The best practice is to have piping supported to prevent damage in the event of a pull-away

Cable operated emergency shutoff valve

Example of stainless steel braided flex pipe used to absorb differential movement. Flex pipe is not designed for differential movement in the axial direction, only movement at right angles to the pipe. Piping must be supported independently such that no loads are imposed on the flex pipe. Rubber hose used for this purpose must be hydrotested annually.

This gauge is obviously suitable for ammonia service because it is marked for ammonia.

Example of an ammonia tank level gauge.



Note the temperature correction for the 85% fill point

Example of an ammonia pressure gauge.

HOSES – MARKED APPROVED FOR ANHYDROUS AMMONIA AND MAWP

HOSES MARKED REMOVED FROM SERVICE DATE

CRIMP-ON/BOLT-ON HOSE FITTINGS

Bolt on hose end fittings

Crimp on **hose end fittings**

Hose Test Record
APPENDIX B3.5

Hose Assembly Inspection and Testing/Checklist (B620-7.2.10)				
Hose Assembly Number:_____		HAWP: ( ) 350psi ( )_____		**Date tested/Inspected** _____
ITEM	**ACCEPTABLE**	**NOT ACCEPTABLE**	**NOT APPLICABLE**	**COMMENTS**
Hose was connected to tank or tank mounted accessory, used for loading or off-loading. (7.2.10.1)				
Test person has been trained in product and hose safety, inspection and test procedures, and rejection criteria. As per records. (7.2.10.3)				
Hose Assembly Inspection (7.2.10.4)				
No damage to hose cover (7.2.10.4.a)				
Kinked, flattened, or permanently deformed wire braid (7.2.10.4b)				
Soft spots when NOT under pressure, bulges when under pressure, or loose outer covering (7.2.10c)				
Damaged, slipping or excessively worn hose couplings (7.2.10d)				
Loose or missing bolts on hose coupling assemblies (7.2.10e)				
Deteriorated legibility of identification of hose (7.2.10f)				
Test pressure of 120% of the marked HAWP (7.2.10.5b)				
Pressure held for minimum 5 minutes (7.2.10.5f)				
Hose tagged with month/year of test (7.2.10.6)				
Name and Address of tester if other than indicated on page 1(7.2.10.7):		_____ _____ _____ _____		

HOSE TEST INSPECTION: ( ) PASS ( ) FAIL

Date: _____

Valve locks are one option

ONLINE CERTIFICATIONS DIRECTORY

RBCT.MH6684
Pumps, Power Operated, Anhydrous Ammonia

Page Bottom

Pumps, Power Operated, Anhydrous Ammonia

See General Information for Pumps, Power Operated, Anhydrous Ammonia

BLACKMER DIV OF DOVER RESOURCES MH6684
1809 CENTURY AVE SW
GRAND RAPIDS, MI 49525 USA

Transfer pumps, Models LDF1A, LDF1PA, LGB1E, LGB1PE, LGF1E, LGF1PE, LGL1-1/4, LGL1-1/2, LGL1.25, LGL1.5, LGRLF1.25A, LGLF1.25A, LGLF1.5A, LGLF1-1/4, LGLF1-1/2, LGRL1-1/4, LGRL1.25, TLGLF3, TLGLF3C, TLGLF4A, TLGLF4B, LGL4B, LGLD4B; Models LGL2E, LGL3E, LGLD2E, LGLD3E, LGLH2A, TLGL-2E, TLGL-3E, TLGLD2E, TLGLD3E with or without suffix E; Models LGL4A, LGLD4A.

Last Updated on 2008-06-03

Questions? Notice of Disclaimer Page Top

Blackmer Pump

See manufacture's specifications for other pump make/models.

GUARDS ON TRANSFER PUMPS/COMPRESSORS

Non-combustible mounting

VESSEL LABELS AND MARKINGS

New Product!

UN1005 Anhydrous Ammonia Placard

Transport Canada's forthcoming changes to the TDG Regulations, collectively called Amendment 6, requires that UN1005 placards be visible on all transportation vehicles carrying anhydrous ammonia. Printed on tagboard, self-stick vinyl, and rigid vinyl. Reserve now »

New Product!

Anhydrous Ammonia, Inhalation Hazard Decal

This new decal will soon be required on all packages and railway tank cars containing anhydrous ammonia, as part of the approaching changes to the Canadian TDG Regulations contained in Amendment 6. Reserve now »

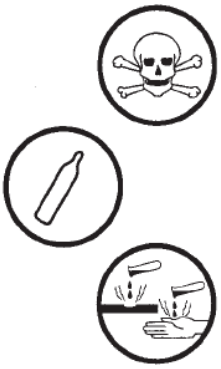
WHMIS SUPPLIER LABEL ON VESSEL

AMMONIA ANHYDROUS
AMMONIAC ANHYDRE
UN 1005

RISK
- Highly irritating to skin, eye and respiratory t
- Will cause chemical burns and frost bite

PRECAUTIONARY MEASURES
- Use full face protection
- Use respiratory protection
- Avoid skin contact
- Do not add water

FIRST AID MEASURES
- Remove victim to fresh air
- Flush affected body area with water
- Seek medical aid



PROPRIÉTÉS DANGEREUSES
- Provoque une forte irritation de la peau, des yeux et des voies respiratoires
- Provoque des brûlures chimiques et des gelures

PRÉCAUTIONS
- Porter une visiére compléte
- Porter un masque de protection
- Éviter tout contact avec la peau
- Ne pas ajouter d'eau

PREMIERS SOINS
- Transporter la victime dans un endroit bien aéré
- Laver à grande eau la région du corps affectée
- Appeler un médecin

REFER TO MATERIAL SAFETY DATA SHEET FOR FURTHER INFORMATION
POUR PLUS DE RENSEIGNEMENTS, CONSULTER LA FICHE TECHNIQUE SAINTÉ-SÉCURITÉ

SAFETY PRECAUTIONS FOR HANDLING AMMONIA

- Ammonia GLOVES and GOGGLES MUST be worn when transferring ammonia.
- Call your dealer immediately in case of leaks, malfunctions or damage. Never attempt to make repairs yourself.
- Do not tamper with valves or equipment.
- Stay upwind when filling. Sniff, don't breathe deeply, when approaching area.
- Use only approved ammonia equipment in first class condition.
- Keep out of direct line of openings on all valves and fittings.
- Before disconnecting hoses, BE POSITIVE all pressure is bled out of the system.
- Never pick up a hose by the valve handwheel or allow valve to contact the ground.
- When towing nurse tanks and/or applicators, observe safe towing speeds, secure hitch pins and fasten safety chains.

FIRST AID PROCEDURES

THE BASIC FIRST AID TREATMENT FOR AN AMMONIA BURN IS LARGE VOLUMES OF FRESH WATER

NEVER USE SALVES OR OINTMENTS

SKIN CONTACT

A. Immediately flood affected area with water for at least 15 minutes.
B. If clothing is frozen to skin, thaw with water first then remove clothing.
C. Re-flood and leave affected skin open to air.

GET MEDICAL ATTENTION AT ONCE.

EYE CONTACT

Immediately flood eyes and under eyelids with abundance of fresh water for at least 15 minutes.

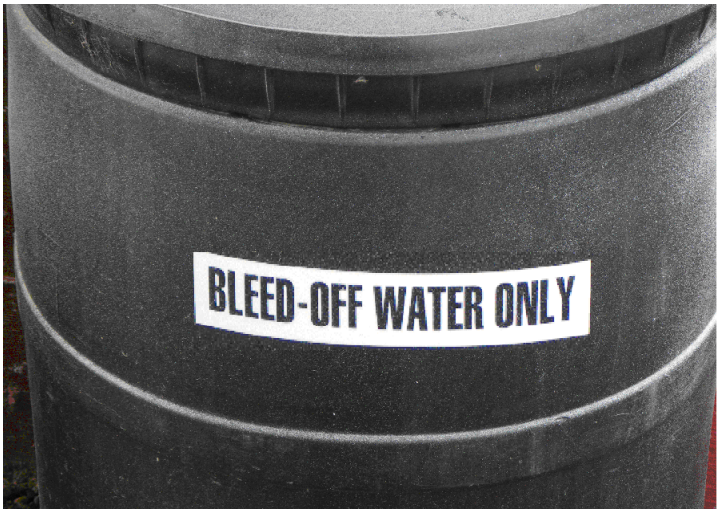
GET MEDICAL ATTENTION AT ONCE.

MOUTH-THROAT INTERNAL CONTACT

Immediately rinse, gargle and drink large quantities of water.

GET MEDICAL ATTENTION AT ONCE.

SEE PHYSICIAN IN ALL SEVERE CASES OF AMMONIA BURNS, AND BE SURE TO TELL PHYSICIAN THAT IT IS AN AMMONIA BURN



Bleed-off tank with lid and labeling to ensure it is not confused with emergency water

Bleed-off valve with tubing

Disposal Process

a) **Make sure the Bleed-Off Tank is marked with black printing three inches in height with the word, "AMMONIA BLEED-OFF WATER" on both sides of the tank.**

b) **Using a proper sized vehicle, load or connect the Bleed-Off tank to the truck and proceed to the designated land location.**

c) **Once reaching the location where the product is to be spread, install the spreading-boom onto the wagon.**

d) **Wearing all Personal Protective Equipment, open the Liquid Withdrawal Valve, the Hose End Valve, and return to the truck.**

e) **Spread the bleed water in the proper location until the tank runs empty.**

f) **Once empty, close the valves and return the unit to the site.**

FACILITY WASTE MANAGEMENT REPORT

Facility: _____ **Crop Year:** _____

Disposal Date	*Waste type	Quantity	Disposal Method

VENTED LID ON TANK

Personal Protective Equipment

Full face respirator with ammonia cartridges

Personal water bottle

Ammonia resistant gauntlet style gloves

One or two piece ammonia resistant chemical suit

CSA approved Boots. Rubber boots are ok and leather safety boots 6” upper minimum ok too

Full face respirators dedicated for emergency use only are required

Some jurisdictions require self-contained breathing apparatus (SCBA)

Ammonia resistant chemical suits dedicated for emergency use only are required

TYPICAL FIRST AID KIT SUPPLIES

1 to 5 employees	6 to 19 employees	Vehicle	Order according to number of employees at site.
1	1	1	Red Cross First Aid Manual
1	1	1	Face Mask for CPR
2	2	2	Pairs of disposable latex gloves
3	6	3	Large dressings (8” x 10”)
6	8	4	4” x 4” gauze pad
6	8		2” x 2” gauze pad
1	1	1	60 ml bottle of bactine for cuts, sunburns, insect bites
2	4	2	4” rolls of stretchy Flexomull gauze bandage
1	1	1	Roll of Leukofix tape
50	100	50	Band aids
2	4	2	Slings
2	4	2	Pins
1	1	1	Pair of scissors
1	1	1	Pair of tweezers or sliver forceps
		1	Candle (24 hour)
		1	Waterproof matches
		1	Emergency Blanket

Note that some jurisdictions specify minimum requirements for first aid kits.

Emergency Water

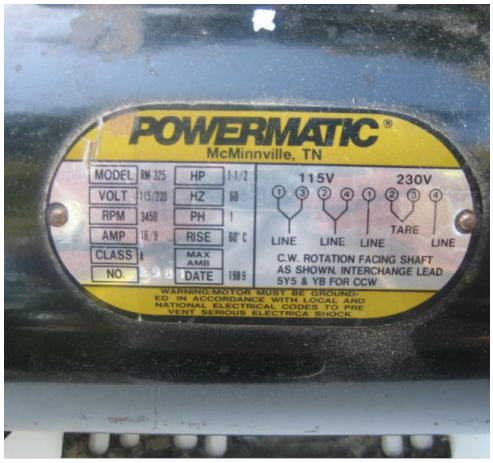
Plumbed in Safety Shower

Note that water troughs must be marked as emergency water with a red cross.
Minimum 2- 200 Gallon water troughs within 10 meters of transfer points

Emergency Eyewash should be floating in troughs during cold temperatures to keep from freezing

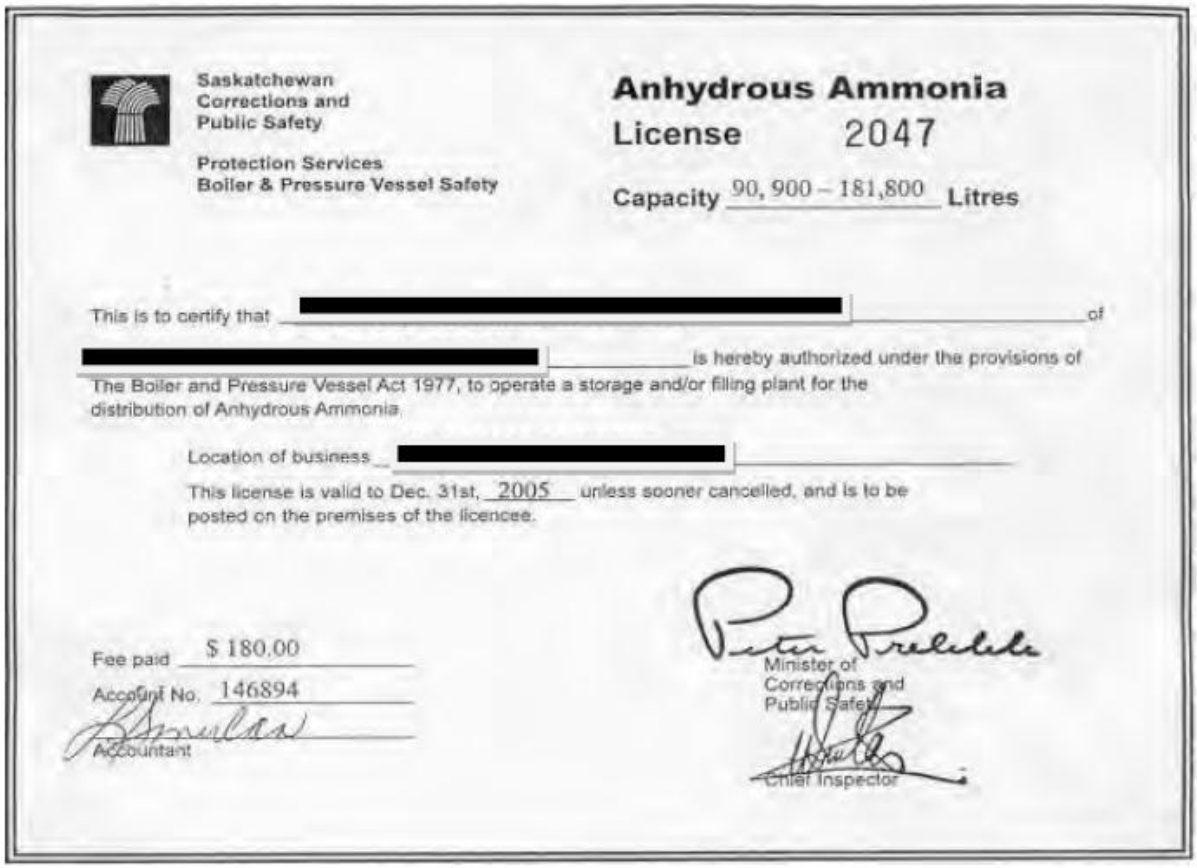
Wind Socks


9 28 1999 05:14


POWERMATIC
McMinnville, TN
MODEL RM-325
HP 1-1/2
VOLT 115/230
HZ 60
RPM 3450
PH 1
AMP 18/9
RISE 60° C
CLASS A
MAX AMB
NO.
DATE 1989
115V
230V
LINE
LINE
LINE
TARE
LINE
C.W. ROTATION FACING SHAFT
AS SHOWN. INTERCHANGE LEAD
5Y5 & YB FOR CCW
WARNING:MOTOR MUST BE GROUND-
ED IN ACCORDANCE WITH LOCAL AND
NATIONAL ELECTRICAL CODES TO PRE
VENT SERIOUS ELECTRICA SHOCK


A-B

PORTABLE GFCI



Saskatchewan
Corrections and
Public Safety

Protection Services
Boiler & Pressure Vessel Safety

Anhydrous Ammonia
License 2047

Capacity 90, 900 – 181,800 **Litres**

This is to certify that [redacted] of

[redacted] is hereby authorized under the provisions of The Boiler and Pressure Vessel Act 1977, to operate a storage and/or filling plant for the distribution of Anhydrous Ammonia.

Location of business [redacted]

This license is valid to Dec. 31st, 2005 unless sooner cancelled, and is to be posted on the premises of the licencee.

Fee paid $ 180.00

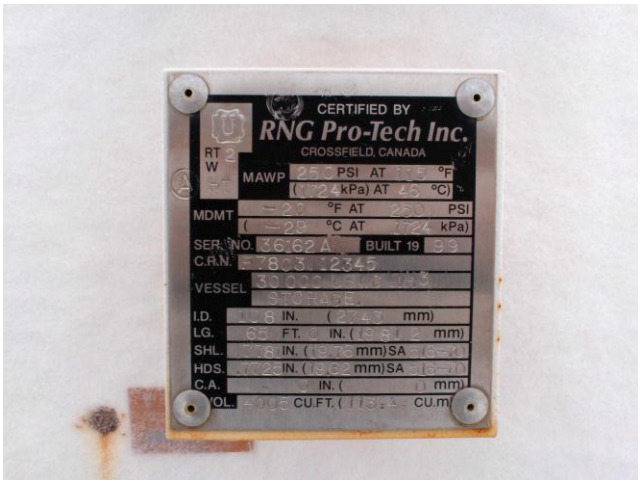
Account No. 146894

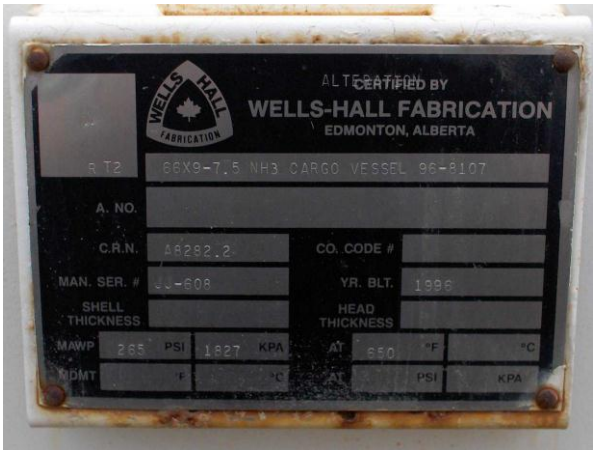
Accountant

Minister of
Corrections and
Public Safety

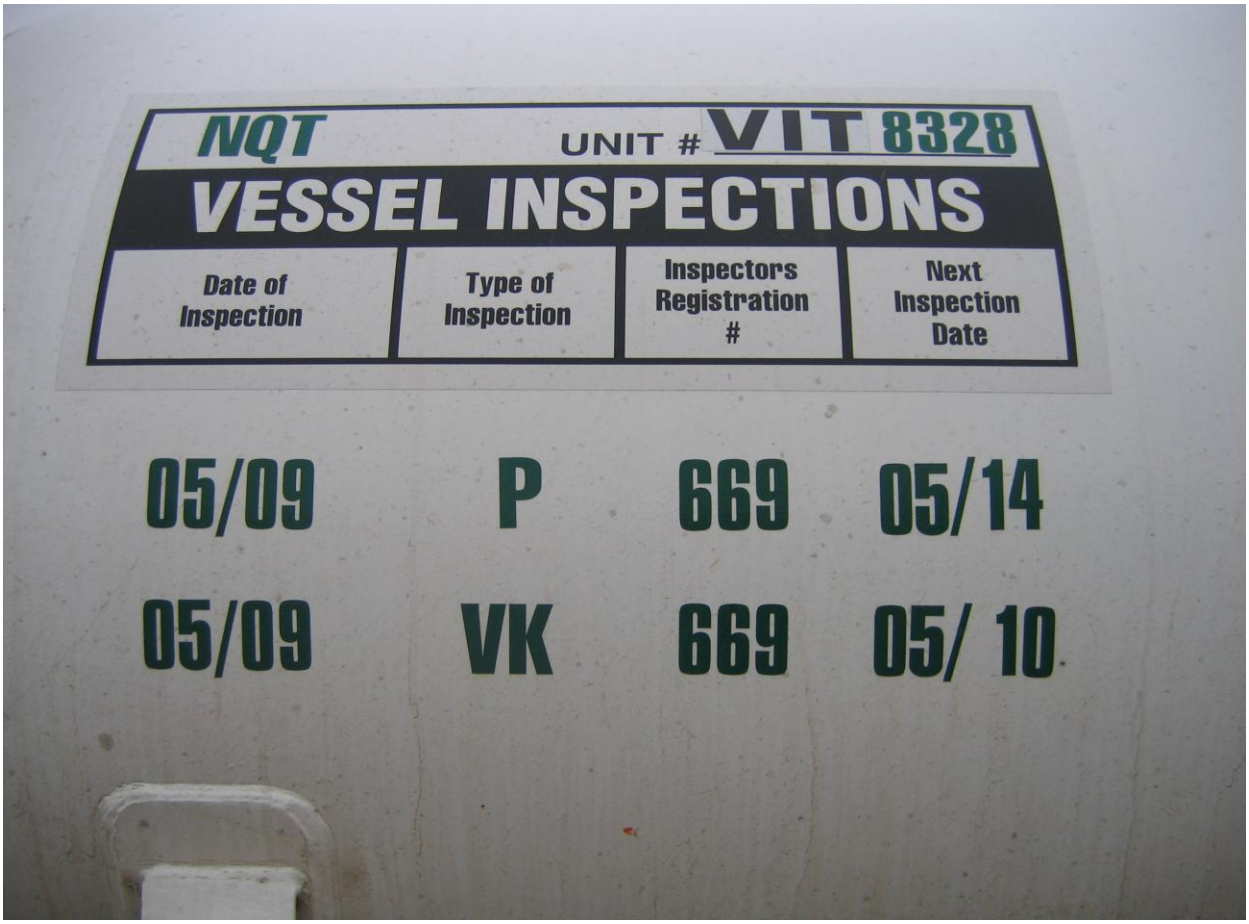
Chief Inspector

NAMEPLATE ON VESSEL





PRESSURE TEST



Transport Canada Registration Number: 25-_____ **Test Standard: B620-03**

Customer Name:		**Date:**	
Customer Contact Person:		**Phone:**	
Customer Address:		**Fax:**	
Customer Signature:		**Unit Number:**	

Testing Facility: ( ) Company
123 Any Street
Regina Sask. XXX XXX
Phone (306) XXX – XXXX

Fax: (306) XXX-XXXX

( ) _____
_____
_____
_____
_____

Tank Code: **( ) TC-51** **( ) TC-331** **( ) ASME** **( ) MC-331**

Test Performed: **( ) Visual(2,3)** **( ) Leakage(4)** **( ) Pressure(5)** **( ) Hose Test(6)**

Type of Tank: **( ) Single** **( ) Twin** **( ) Quad**

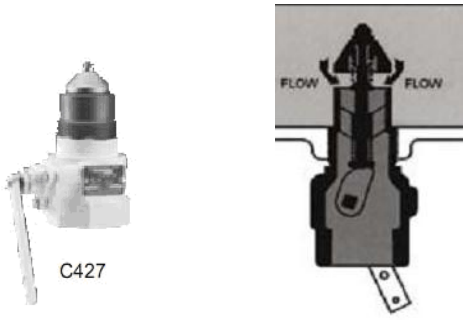
Vessel One Information		**Vessel two Information**	
U Stamp		**U Stamp**	
Serial Number		**Serial Number**	
Provincial Number		**Provincial Number**	
TCRN / CRN Number		**TCRN / CRN Number**	
MAWP		**MAWP**	
Year Built		**Year Built**	
Manufacturer		**Manufacturer**	
Altered by		**Altered by**	
Head Material		**Head Material**	
Shell Material		**Shell Material**	
Head Thickness		**Head Thickness**	
Shell Thickness		**Shell Thickness**	
Head Type		**Head Type**	
Diameter		**Diameter**	
Vessel Length		**Vessel Length**	
Expiry Date of Pressure Relief Valves		**Expiry Date of Pressure Relief Valves**	
Tank Capacity		**Tank Capacity**	

External Visual Inspection/Checklist (B-620 7.2.1)				
ITEM	**ACCEPTABLE**	**NOT ACCEPTABLE**	**NOT APPLICABLE**	**COMMENTS**
Vessel Shell and head condition (7.2.1.1a)				
Check for corrosion				
Check for dents				
Check for defects and welds				
Check for defects in piping				
Check for leakage				
Valves (7.2.1.1c)				
Check proper function of all valves				
Check emergency shutdown devices including ISC valves(7.2.9)				
Remote closure device operation				
Ensure valves are free of corrosion and distortion				
Plumbing (7.2.1.1d)				
Ensure all bolts and nuts on flanges are in place and tightened				
Ensure plumbing is correctly colour coded				
Markings (7.2.1.1e)				
Ensure specifications and other markings on the tanks are legible				
Appurtenances (7.2.1.1f)				
Check the skid(frame) for cracks and physical damage				
Check mounting brackets, tiedowns(u-bolts), stoplights and brackets, valve guards(6.4.9)				
Ensure that all major appurtenances and attachments, connecting structures are not damaged or corroded affecting safe operation of the vehicle.				
Hose Assemblies(7.2.1.1g)				
Hoses do not display any defects. (7.2.10.4)				
Have legible markings indicating they have been tested as required. (7.2.10.6,8)				

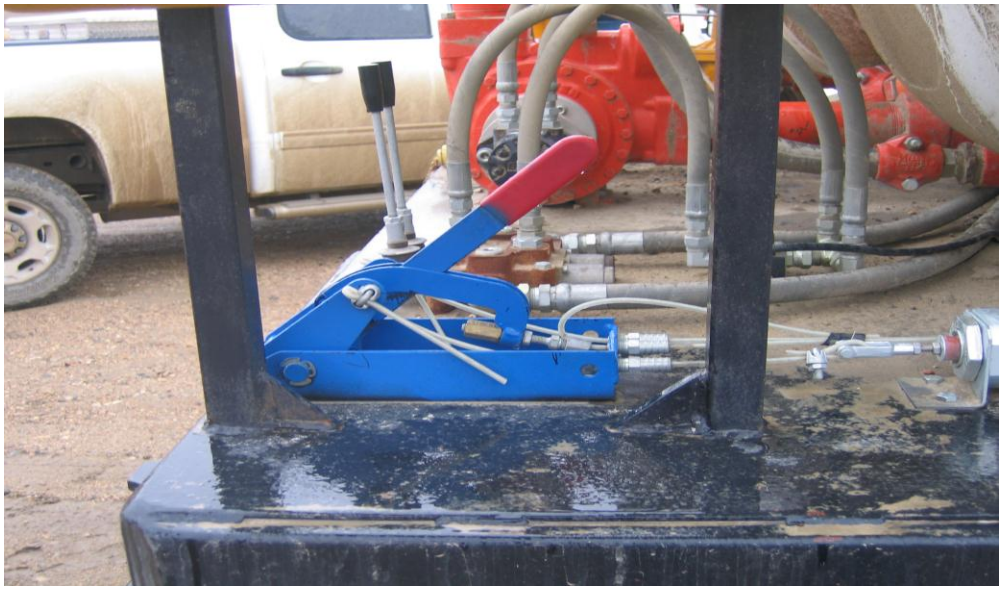
ITEM	ACCEPTABLE	NOT ACCEPTABLE	NOT APPLICABLE	COMMENTS
Pressure Relief Valves(7.2.1.4)				
Inspect for corrosion or damage				
Pressure relief valves are replaced or tested in accordance with clause 7.2.7.6b				
Tank Protection(B622 5.2.5)				
Ensure suitable protection for valves, safety devices and other devices				
Ensure rear protection can deflect 6" forward NOT contacting any container with lading				
Emergency Shutdown System(B-620 7.2.1.6)Requirements located at 5.3.2.5e,f)				
When activated, does liquid ISC stop flow.(7.2.9.4)				
When activated stops motive power to pump				
Does it operates at 150 ft				
Meter creep test: lading circulated, flow established, ISC closed, flow thru meter stops within 30 s, and the meter creep shall cease within 5 s after the flow thru the meter stops. (Appendix D1)				
Non-Meter test: Open all ISC valves, operate emergency discharge control acuator, ensure each ISC valve has closed, evacuate product in downstream piping and is at atmospheric pressure, outlet monitored for 30 s, shall be no detectable leakage. (Appendix D2)				
Inspection Marking (B620-7.4)				
Place required decals indicating type of test (7.4.1,2,3)				

EXTERNAL VISUAL INSPECTION: ( ) PASS ( ) FAIL

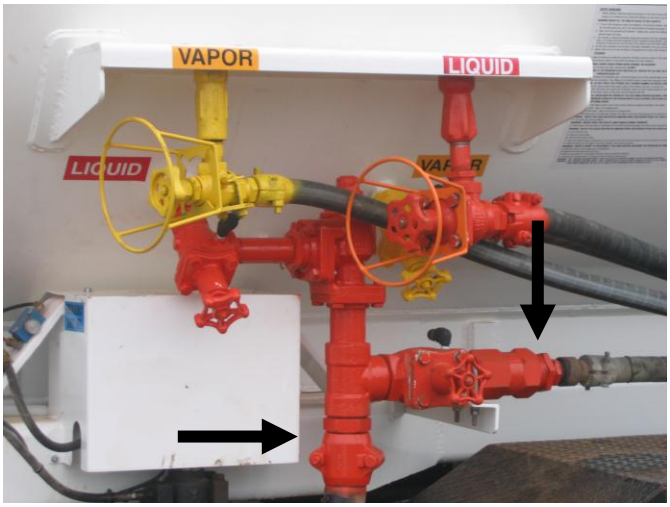
Internal shut-off valve



Emergency Shutoff Lever (Blue)



Excess Flow Valves



CERTIFICATE OF COMPLIANCE

ISSUED BY: *RNG PRO-TECH INC.*

PURCHASER: [redacted]
NAME OF CURRENT OWNER ADDRESS OF CURRENT OWNER

This certifies that the new tank identified below and all fittings, valves, piping and protective devices complies with the requirements of CSA B620-87, Cargo Tank Specification TC51 and with Section VIII, Division I of the ASME Code. This tank was Post Weld Heat Treated as per 178.245-1 (c)

Serial No.: 34598A/34599A Capacity: 1750 USWG/1750 USWG Year Manufactured: 1998

Vehicle Type: Twin LPG/NH3 Delivery Tank Set CRN: E8048.2134

Head Material: SA455/SA455 Shell Material: SA455/SA455 Original Test Date: 1998 Max Product: 5,631 Litres/5,631 Litres

Manufactured By:

RNG Pro-Tech Inc.
1026 Western Drive
Crossfield, Alberta T0M 0S0
(403)946-5678 Phone
(403)946-4358 Fax

US REG#: CT6016
CAN REG #: 25-38

Exceptions are as noted at right:

ITEMS NOT INSTALLED AT TIME OF SHIPMENT

US CT6016
CAN 25-38 [redacted]
Authorized Signature & Number — Date

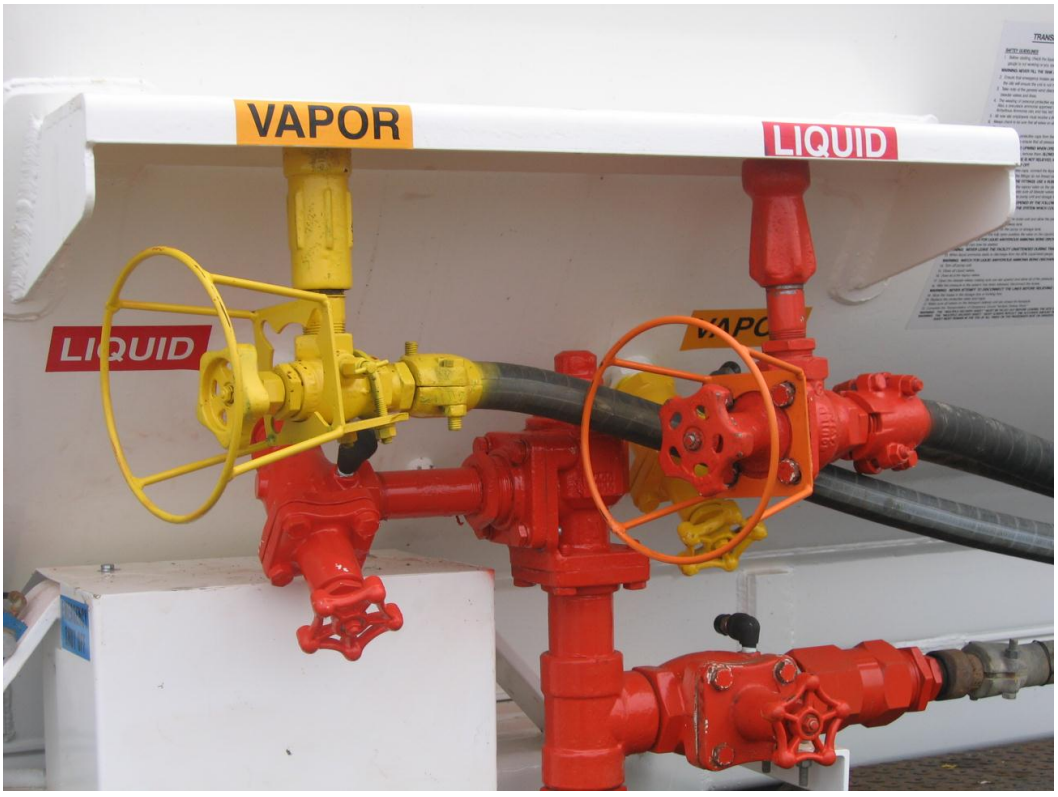
US CT6016
CAN 25-38 [redacted]
Design Certifying Engineer & Number — Date

US CT6016
CAN 25-38 [redacted]
Registered Inspection & Number — Date

This certificate is effective from the date of manufacture and is valid for the tank(s) in the original manufactured condition.

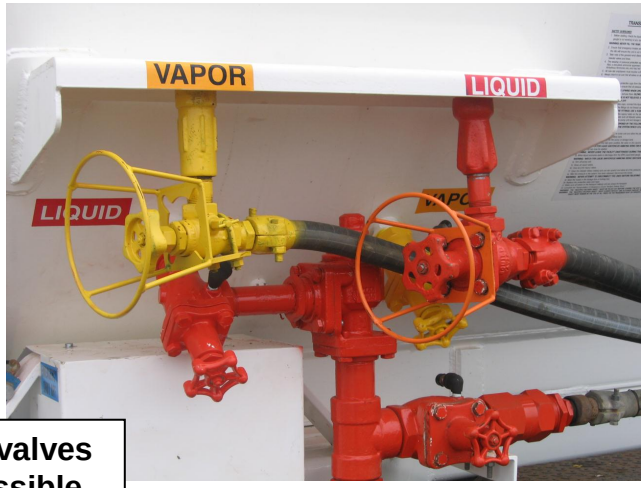
'EMERGENCY EXCESS FLOW CONTROL PERFORMANCE NOT ESTABLISHED FOR THIS UNIT'


1005
2


VAPOR
LIQUID
LIQUID

Internal Safety Relief Valve for transport vessel with rain cap

Hydrostatic Relief Valve

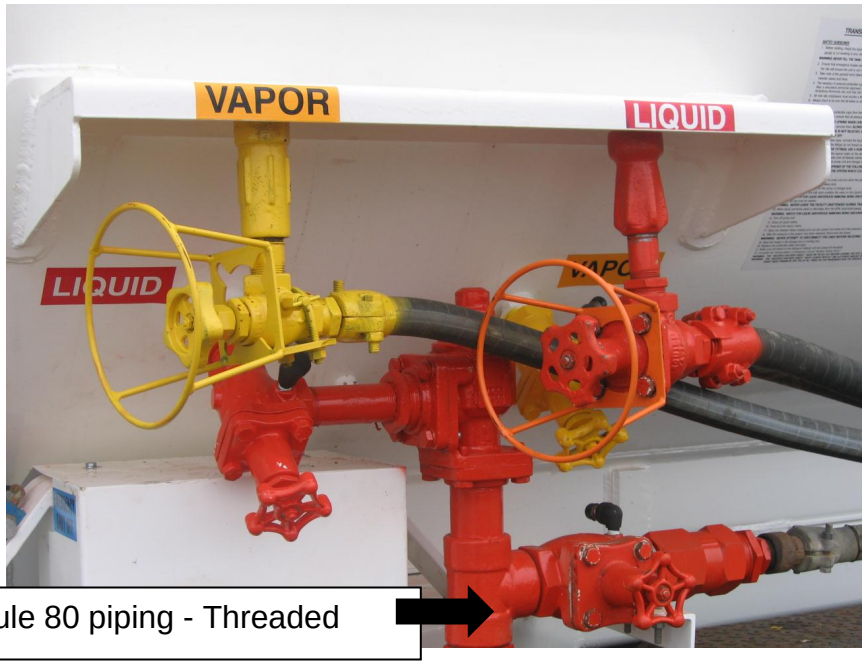


Point relief valves down if possible

Date on relief Valve
10-2009

SECURED DISCHARGE VALVES

PIPING ON TRANSPORT VESSEL



Schedule 80 piping - Threaded

Schedule 40 piping –
Welded above the pump

Ammonia Equipment and fittings


VAPOUR
LIQUID
SPRAY FILL

HOSE TEST RECORD

TC 331/TC51 TANK CERTIFICATION REPORT

Tank Serial Number: _____ Date: _____

Owner Unit Number: _____ Tank Owner: _____

Hose Assembly Inspection and Testing

NOTE: This report must be kept on file by test facility and hose assembly owner for 2 years.

Hose Markings: Hose Assembly Serial or ID # _____
HAWP: _____ Manufacture Date: _____

Hose checked for:	**Satisfactory**	**Unsatisfactory**	**N/A**	**Defect Repaired**	**See Comments**
All hose markings are legible and not worn.					
Damage to outer cover exposing reinforcement					
Kinked or flattened or deformed wire braid					
Soft spots when not under pressure					
Bulging when under pressure					
Loose outer coverings					
Damaged, loose, slipping or excessively worn hose couplings					
Loose, missing bolts on couplings					
Test medium: _____					
Test pressure shall be the greater of 75 psig or 120% HAWP NOTE: CSA certified assembly: The greater of 225 psig or 120% HAWP					
Actual test pressure: _____					
Test pressure held for minimum of 5 minutes without bulging, distortion or leaks					

Test Result: ☐ Pass ☐ Fail
Hoses marked with month/year of test and inspection with 5mm (0.2”) high letters? ☐ Yes ☐ No
Comments:

_____
_____

Inspector Name: _____ Inspector Signature: _____

Gauges suitable for Anhydrous Ammonia

Transport Vessel Level Gauge

APPROVED PRESSURE GAUGE

HOSES – MARKED APPROVED FOR ANHYDROUS AMMONIA AND MAWP

HOSES MARKED REMOVED FROM SERVICE DATE

CRIMP-ON/BOLT-ON HOSE COUPLINGS

Bolt on hose end fittings

Crimp on hose end fittings

CRIMP-ON/BOLT-ON HOSE COUPLINGS

HOSES MARKED CSA STANDARDS

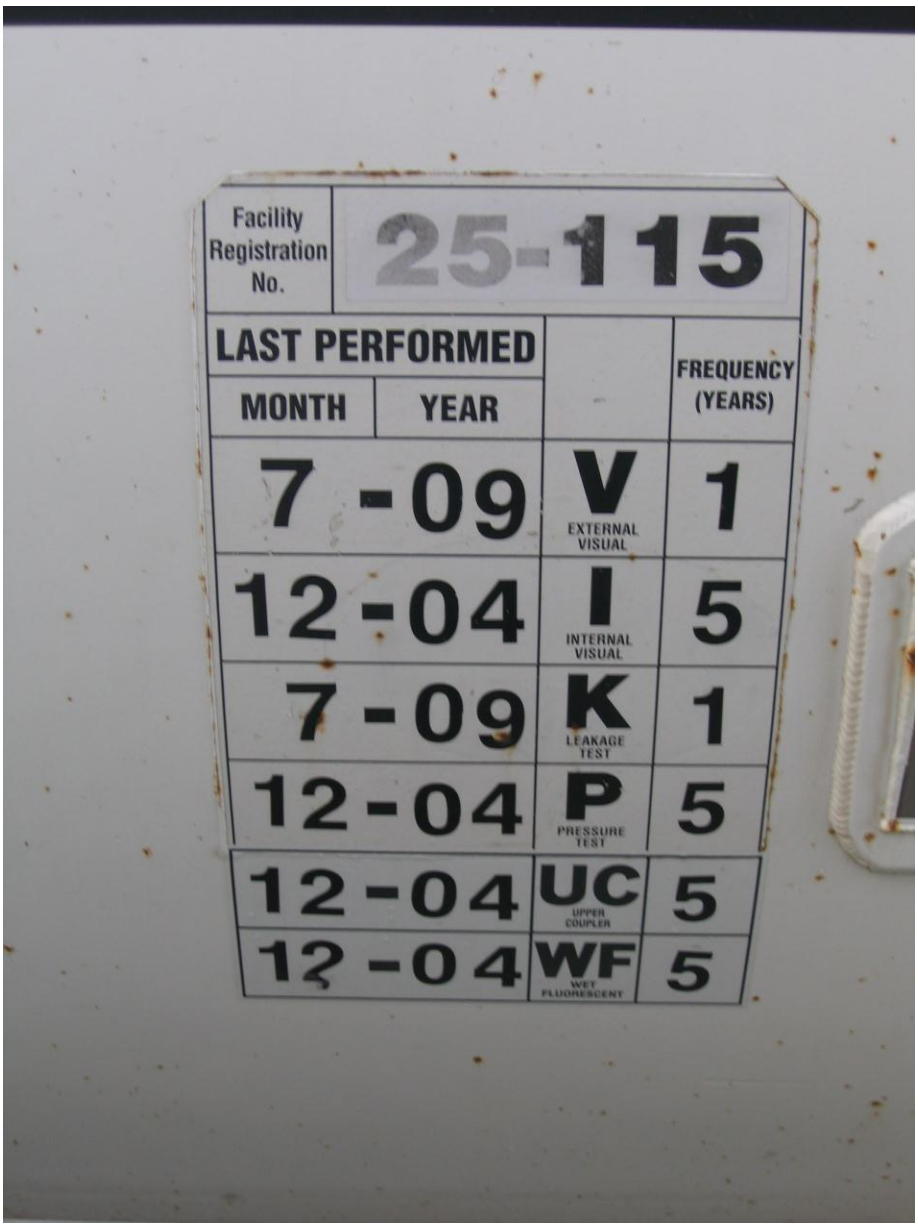
Hose Assembly Inspection and Testing/Checklist (B620-7.2.10)				
Hose Assembly Number:_____		HAWP: ( ) 350psi ( )_____		**Date tested/Inspected** _____
ITEM	**ACCEPTABLE**	**NOT ACCEPTABLE**	**NOT APPLICABLE**	**COMMENTS**
Hose was connected to tank or tank mounted accessory, used for loading or off-loading. (7.2.10.1)				
Test person has been trained in product and hose safety, inspection and test procedures, and rejection criteria. As per records. (7.2.10.3)				
Hose Assembly Inspection (7.2.10.4)				
No damage to hose cover (7.2.10.4.a)				
Kinked, flattened, or permanently deformed wire braid (7.2.10.4b)				
Soft spots when NOT under pressure, bulges when under pressure, or loose outer covering (7.2.10c)				
Damaged, slipping or excessively worn hose couplings (7.2.10d)				
Loose or missing bolts on hose coupling assemblies (7.2.10e)				
Deteriorated legibility of identification of hose (7.2.10f)				
Test pressure of 120% of the marked HAWP (7.2.10.5b)				
Pressure held for minimum 5 minutes (7.2.10.5f)				
Hose tagged with month/year of test (7.2.10.6)				
Name and Address of tester if other than indicated on page 1(7.2.10.7):		_____ _____ _____ _____		

PUMP APPROVED MANUFACTURED FOR NH3

Approved anhydrous ammonia pump, securely mounted with guards both sides of pump.

VESSEL LABELS AND MARKINGS

PRESSURE TEST & RETEST DATES – TRANSPORT



SAFE HANDLING and EMERGENCY FIRST AID PROCEDURES ON VESSEL

SAFETY PRECAUTIONS FOR HANDLING AMMONIA

- Ammonia GLOVES and GOGGLES MUST be worn when transferring ammonia.
- Call your dealer immediately in case of leaks, malfunctions or damage. Never attempt to make repairs yourself.
- Do not tamper with valves or equipment.
- Stay upwind when filling. Sniff, don't breathe deeply, when approaching area.
- Use only approved ammonia equipment in first class condition.
- Keep out of direct line of openings on all valves and fittings.
- Before disconnecting hoses, BE POSITIVE all pressure is bled out of the system.
- Never pick up a hose by the valve handwheel or allow valve to contact the ground.
- When towing nurse tanks and/or applicators, observe safe towing speeds, secure hitch pins and fasten safety chains.

FIRST AID PROCEDURES

THE BASIC FIRST AID TREATMENT FOR AN AMMONIA BURN IS LARGE VOLUMES OF FRESH WATER

NEVER USE SALVES OR OINTMENTS

SKIN CONTACT

A. Immediately flood affected area with water for at least 15 minutes.
B. If clothing is frozen to skin, thaw with water first then remove clothing.
C. Re-flood and leave affected skin open to air.

GET MEDICAL ATTENTION AT ONCE.

EYE CONTACT

Immediately flood eyes and under eyelids with abundance of fresh water for at least 15 minutes.

GET MEDICAL ATTENTION AT ONCE.

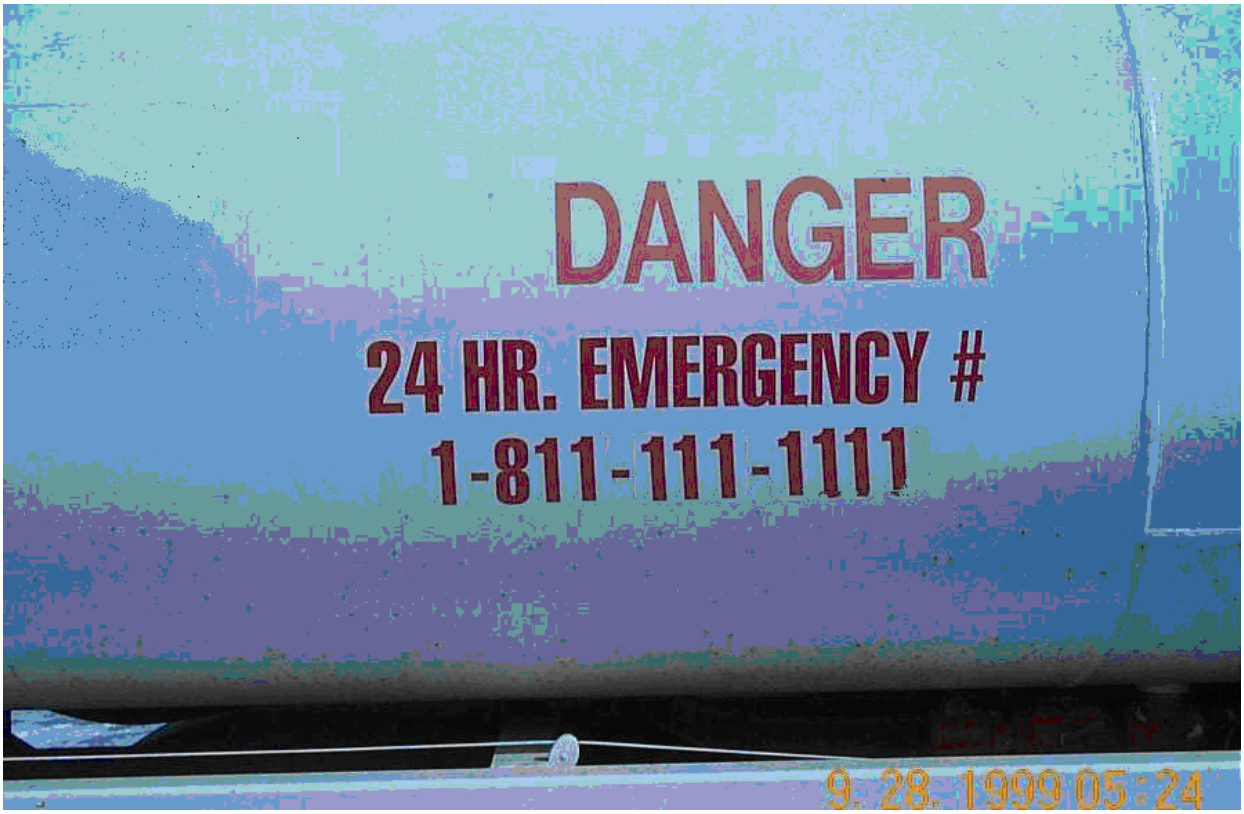
MOUTH-THROAT INTERNAL CONTACT

Immediately rinse, gargle and drink large quantities of water.

GET MEDICAL ATTENTION AT ONCE.

SEE PHYSICIAN IN ALL SEVERE CASES OF AMMONIA BURNS, AND BE SURE TO TELL PHYSICIAN THAT IT IS AN AMMONIA BURN

EMERGENCY CONTACT NUMBERS ON TANK



Emergency Equipment

Personal Protective Equipment

Full face respirator with ammonia cartridges

Personal water bottle

Ammonia resistant gauntlet style gloves

One or two piece ammonia resistant chemical suit

CSA approved Boots. Rubber boots are ok and leather safety boots 6” upper minimum ok too

SAFETY STICKER

January 30, 2012

Memorandum to All Anhydrous Ammonia Employees

Re: Anhydrous Ammonia Mobile Equipment Security

In order to improve the security of all mobile anhydrous ammonia equipment (i.e. nurse wagons, delivery units, etc.) all Drivers responsible for transportation of anhydrous ammonia can stop for short beak periods (less than1 hour) provided the following conditions are met:

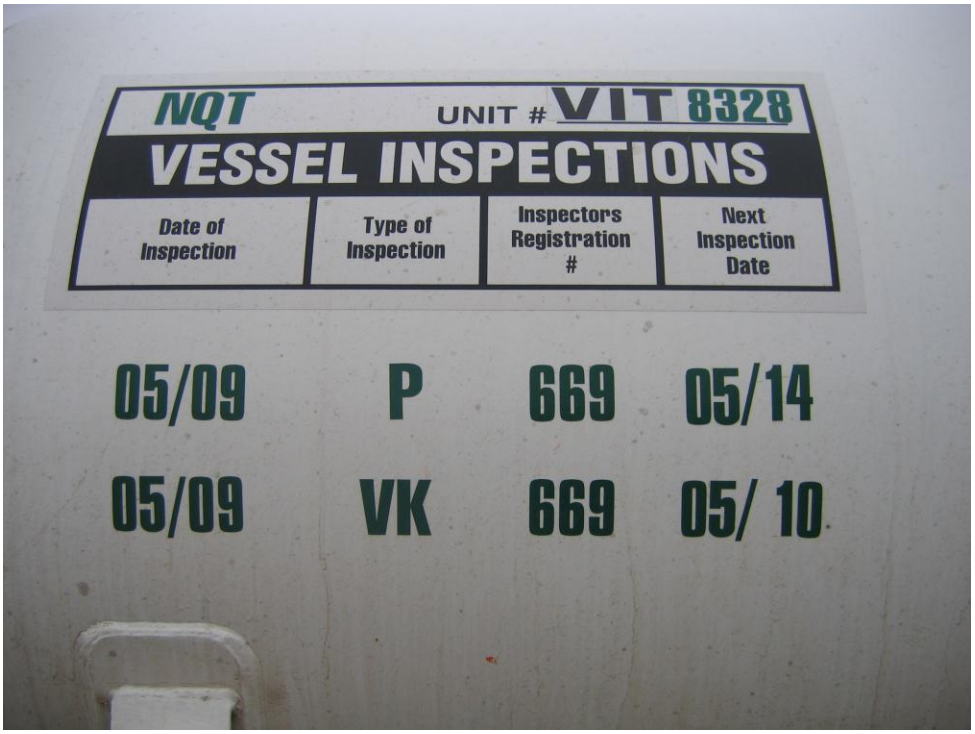
- Main access valves on ammonia vessels do not need to be secured provided the driver maintains visual contact with the vessel at all times. If visual contact cannot be maintained 100% of the time, the main access valves on the ammonia vessels must be secured.
- Mobile storage vessels cannot be parked, other than for maintenance periods not exceeding 72 hours, within city or town limits unless the vessels has been cleaned and purged. In addition, mobile anhydrous ammonia storage vessels must not be parked within 500 metres of higher occupancy facilities such as hospitals, schools, shopping malls, daycare centres and senior care facilities.
- Valves can be secured by a padlock and chains, valve locks or lockable guards that restrict access to main valves.

If you have any questions or concerns regarding these requirements, I can be reached at (xxx)-xxx-xxxx.

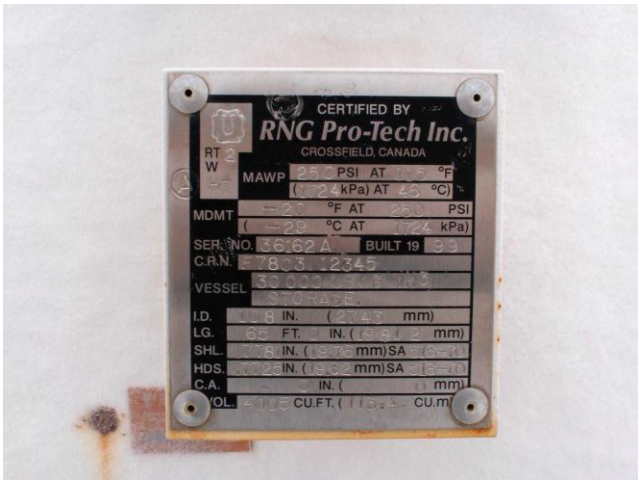
Sincerely,

John Doe
Facility Manager
A1 Fertilizer Services Ltd.

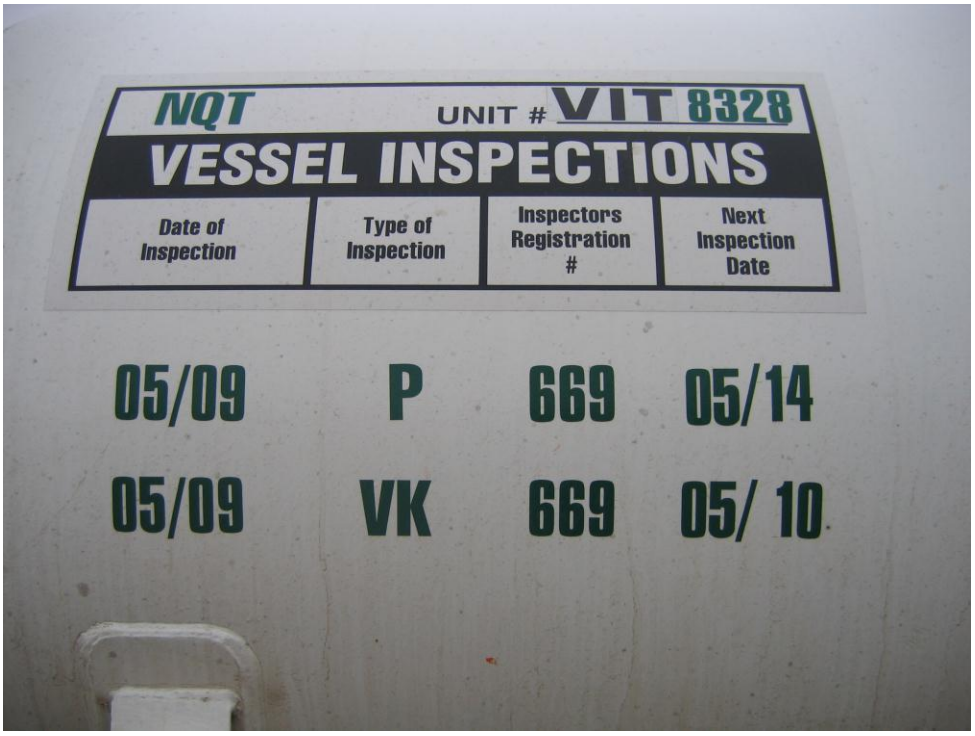
PRESSURE TEST



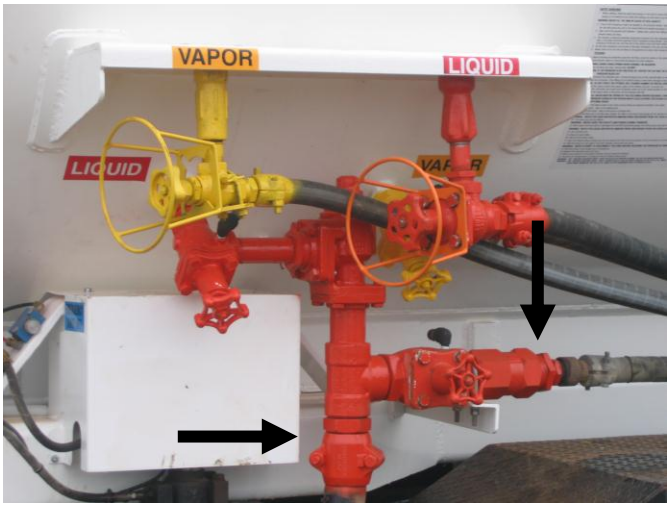
NAMEPLATE ON VESSEL



VISUAL INSPECTION

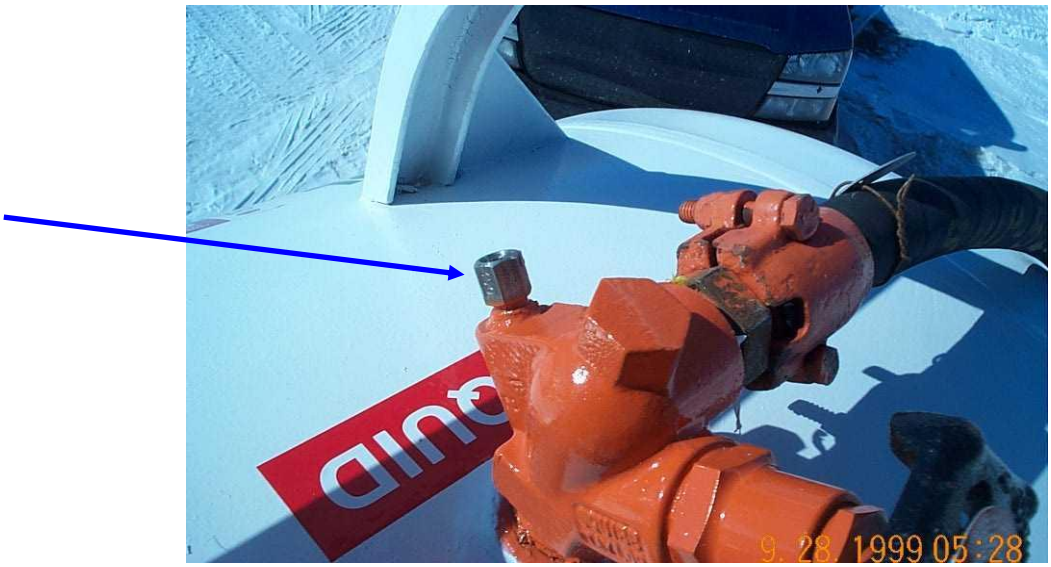


Excess Flow Valves



RAINCAPS AND ROLLOVER PROTECTION - APPLICATION

POSITIONING OF HYDROSTATIC RELIEF VALVES



Piping on Nurse Wagons

ANHYDROUS AMMONIA CODE OF PRACTICE
REQUIREMENTS FOR COMPLIANCE

REQUIREMENT	MANAGER'S SIGNATURE	DATE
Valves on Storage Vessel		
Appropriately sized excess flow valves in the piping system.		
All valves are suitable for anhydrous ammonia service.		
Piping on Storage Vessel		
Schedule 40 pipe sections as listed below:		
Schedule 80 pipe sections as listed below:		
All pipe fittings have been sized and rated for pressures they will be exposed to in the piping system.		
No brass, galvanized or zinc fittings are used in the piping system.		
Valves on Nurse and Applicator Tanks		
Appropriately sized excess flow valves.		
All valves are suitable for anhydrous ammonia service.		
Piping on Nurse and Applicator Tanks		
Schedule 40 pipe sections as listed below:		
Schedule 80 pipe sections as listed below:		
All pipe fittings have been sized and rated for pressures they will be exposed to in the piping system.		
No brass, galvanized or zinc fittings are used in the piping system.		
Tow Vehicles		
All tow vehicles meet minimum size requirements in accordance with the size of the nurse tank being towed.		
All tow vehicles are equipped with appropriate lighting.		


UR
LIQ

HOSE TEST RECORD

TC 331 TC51 TANK CERTIFICATION REPORT

Tank Serial Number: _____ Date: _____

Owner Unit Number: _____ Tank Owner: _____

Hose Assembly Inspection and Testing

NOTE: This report must be kept on file by test facility and hose assembly owner for 2 years.

Hose Markings: Hose Assembly Serial or ID # _____
HAWP: _____ Manufacture Date: _____

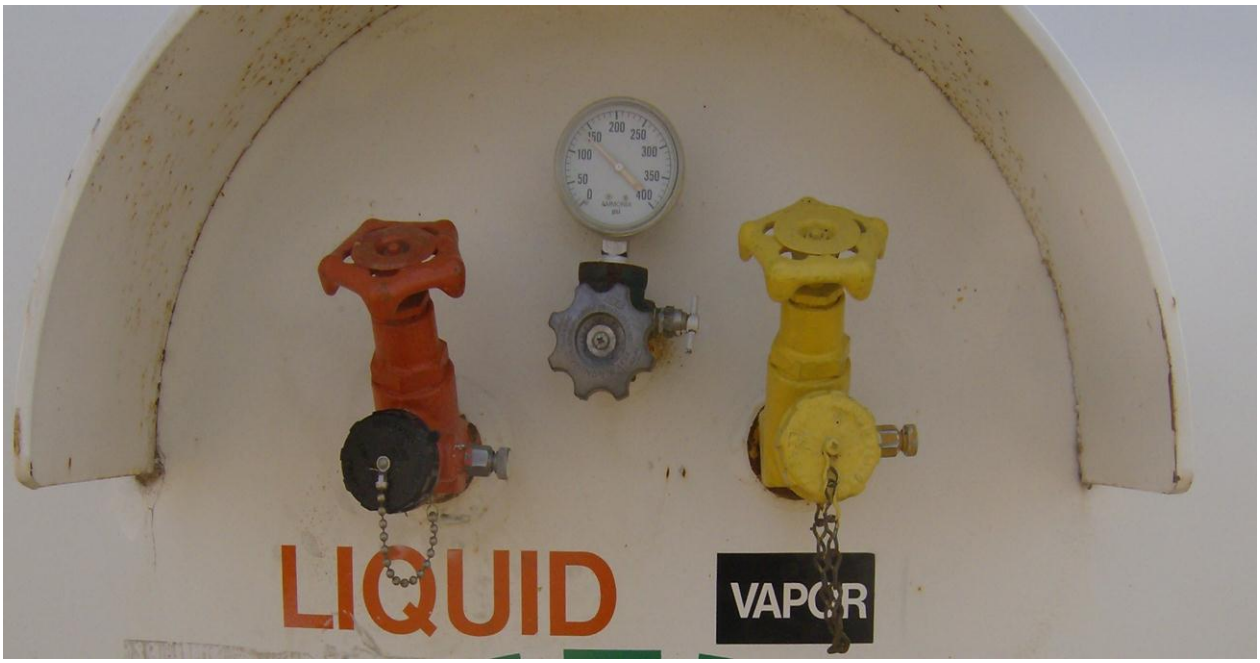
Hose checked for:	**Satisfactory**	**Unsatisfactory**	**N/A**	**Defect Repaired**	**See Comments**
All hose markings are legible and not worn.					
Damage to outer cover exposing reinforcement					
Kinked or flattened or deformed wire braid					
Soft spots when not under pressure					
Bulging when under pressure					
Loose outer coverings					
Damaged, loose, slipping or excessively worn hose couplings					
Loose, missing bolts on couplings					
Test medium: _____					
Test pressure shall be the greater of 75 psig or 120% HAWP NOTE: CSA certified assembly: The greater of 225 psig or 120% HAWP					
Actual test pressure: _____					
Test pressure held for minimum of 5 minutes without bulging, distortion or leaks					

Test Result: ☐ Pass ☐ Fail
Hoses marked with month/year of test and inspection with 5mm (0.2”) high letters? ☐ Yes ☐ No
Comments:

_____
_____

Inspector Name: _____ Inspector Signature: _____

Gauges on Nurse and Applicator Tanks



LEVEL GAUGE

APPROVED PRESSURE GAUGE

HOSES – MARKED APPROVED FOR ANHYDROUS AMMONIA AND MAWP

HOSES MARKED REMOVED FROM SERVICE DATE

CRIMP-ON/BOLT-ON HOSE COUPLINGS

Bolt on hose end fittings

Crimp on hose end fittings

CRIMP-ON/BOLT-ON HOSE COUPLINGS

HOSE TEST RECORD

TC 331 TC51 TANK CERTIFICATION REPORT

Tank Serial Number: _____ Date: _____

Owner Unit Number: _____ Tank Owner: _____

Hose Assembly Inspection and Testing

NOTE: This report must be kept on file by test facility and hose assembly owner for 2 years.

Hose Markings: Hose Assembly Serial or ID # _____
HAWP: _____ Manufacture Date: _____

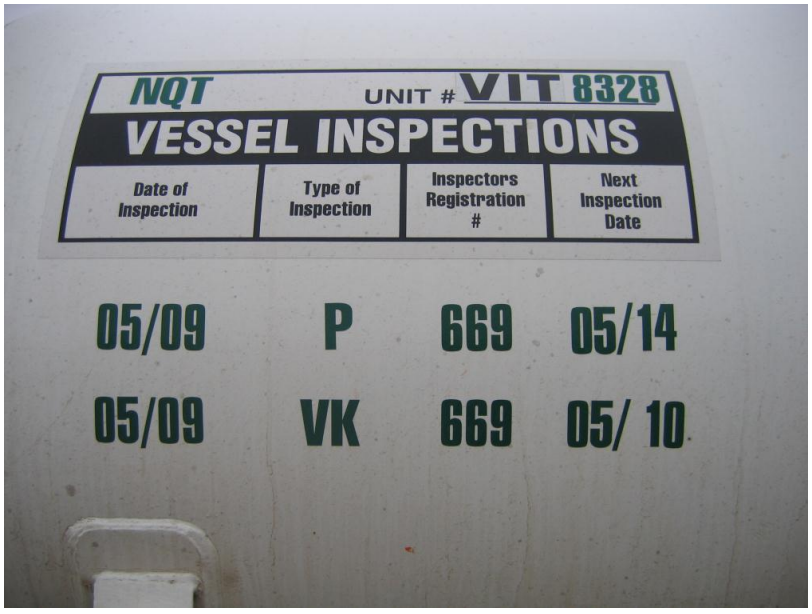
Hose checked for:	**Satisfactory**	**Unsatisfactory**	**N/A**	**Defect Repaired**	**See Comments**
All hose markings are legible and not worn.					
Damage to outer cover exposing reinforcement					
Kinked or flattened or deformed wire braid					
Soft spots when not under pressure					
Bulging when under pressure					
Loose outer coverings					
Damaged, loose, slipping or excessively worn hose couplings					
Loose, missing bolts on couplings					
Test medium: _____					
Test pressure shall be the greater of 75 psig or 120% HAWP NOTE: CSA certified assembly: The greater of 225 psig or 120% HAWP					
Actual test pressure: _____					
Test pressure held for minimum of 5 minutes without bulging, distortion or leaks					

Test Result: ☐ Pass ☐ Fail
Hoses marked with month/year of test and inspection with 5mm (0.2”) high letters? ☐ Yes ☐ No
Comments:
_____
_____

Inspector Name: _____ Inspector Signature: _____


DANGER
HAVE EMERGENCY WATER AVAILABLE
Flo-Max SAFETY COUPLER OPERATING INSTRUCTIONS
FLO-MAX

VESSEL LABELS AND MARKINGS



SAFE HANDLING and EMERGENCY FIRST AID PROCEDURES ON VESSEL

SAFETY PRECAUTIONS FOR HANDLING AMMONIA

- Ammonia GLOVES and GOGGLES MUST be worn when transferring ammonia.
- Call your dealer immediately in case of leaks, malfunctions or damage. Never attempt to make repairs yourself.
- Do not tamper with valves or equipment.
- Stay upwind when filling. Sniff, don't breathe deeply, when approaching area.
- Use only approved ammonia equipment in first class condition.
- Keep out of direct line of openings on all valves and fittings.
- Before disconnecting hoses, BE POSITIVE all pressure is bled out of the system.
- Never pick up a hose by the valve handwheel or allow valve to contact the ground.
- When towing nurse tanks and/or applicators, observe safe towing speeds, secure hitch pins and fasten safety chains.

FIRST AID PROCEDURES

THE BASIC FIRST AID TREATMENT FOR AN AMMONIA BURN IS LARGE VOLUMES OF FRESH WATER

NEVER USE SALVES OR OINTMENTS

SKIN CONTACT

A. Immediately flood affected area with water for at least 15 minutes.
B. If clothing is frozen to skin, thaw with water first then remove clothing.
C. Re-flood and leave affected skin open to air.

GET MEDICAL ATTENTION AT ONCE.

EYE CONTACT

Immediately flood eyes and under eyelids with abundance of fresh water for at least 15 minutes.

GET MEDICAL ATTENTION AT ONCE.

MOUTH-THROAT INTERNAL CONTACT

Immediately rinse, gargle and drink large quantities of water.

GET MEDICAL ATTENTION AT ONCE.

SEE PHYSICIAN IN ALL SEVERE CASES OF AMMONIA BURNS, AND BE SURE TO TELL PHYSICIAN THAT IT IS AN AMMONIA BURN

VESSEL LABELS AND MARKINGS


DANGER
24 HR. EMERGENCY #
1-811-111-1111
9. 28. 1999 05:24

PPE


CAUTION
ANHYDROUS
AMMONIA
INHALATION
HAZARD
1005
2
SAFETY KIT
Items are in safety kit
5 gallons of emergency water

NURSE TANK SIZE (U.S. GALLONS)	TOW VEHICLE SIZE	ADDITIONAL TOW VEHICLE LOAD (KGS.)
1,000	1/2 TON 2 WD	Not to exceed maximum GVW
1,200	HD ½ TON 2 WD	Not to exceed maximum GVW
1,450	HD ¾ TON 2 WD	Not to exceed maximum GVW
1,750	HD ¾ TON 4 WD	Not to exceed maximum GVW
2,000	1 TON WITH DUALS	Not to exceed maximum GVW

TOW SIGNALS

Lighting Requirements for Towing - Reflective Tape

REFLECTIVE TAPE – TOW VEHICLE

Instructions to Producers Regarding Anhydrous Ammonia Mobile Equipment Security

In order to minimize risk of injury and the potential criminal misuse of anhydrous ammonia, the following precautions are recommended for securing mobile anhydrous ammonia equipment (ie. nurse tanks & applicators):

- Mobile storage vessels must have main access valves secured while they are being stored overnight at a farm location or in the field.
- Storing the vessels inside a locked building is prohibited unless the vessel has been cleaned and purged.
- Mobile storage vessels that remain in the field overnight should be parked in a location that shields the vessel from view of main roadways and thoroughfares.
- Do not leave tanks unattended for long periods of time.
- Do not sell excess anhydrous ammonia to anyone. Return tank to retailer.
- Be alert. Keep an eye out for unfamiliar or suspicious persons.
- Immediately report any signs of tampering of the tank or related equipment to the retailer.

These precautions will go a long to improving the security of anhydrous ammonia equipment while on your property. We ask your cooperation in complying with them.

If you have any questions, please do not hesitate to call us at the following number:

A1 FARM SUPPLY
(xxx)-xxx-xxxx

Several Examples of Facility General Safety Rules

GENERAL RULES

- All work injuries, no matter how slight, must be reported for treatment immediately to your supervisor. A First Aid Treatment Log will be maintained in all First Aid Kits and all injuries must be recorded.

- Eye or skin contact with hazardous chemicals must be washed immediately with water for at least 15 minutes, then refer to MSDS for further treatment requirements.

- Dial XXX for emergency assistance within the plant or 123-4567 where posted.

- Off-the-job injuries which could become aggravated on the job must be reported to supervision immediately.

- Loose clothing, neckties, or rings shall not be worn except in office areas and on safe routes.

- Where anyone is required to work more than 1.2 meters (4 feet) above the ground or work floor, precautions must be taken to prevent falls. These precautions will include; the placement of guard rails or installation of scaffolding (Refer to Section X.Y) or the use of lanyards and full body harness and lifelines if required. A properly secured lanyard must limit the vertical free fall to less than 1.2 meters (4 feet)

- Air hoses or any compressed gas must not be used for cleaning clothes nor directed towards a person for any reason.

- The following are prohibited within the Plant:
    - horseplay and fighting
    - alcoholic beverages and illicit drugs
    - being under the influence of alcohol or illicit drugs
    - firearms, ammunition and explosives
    - smoking

- A spotter/signal person is required when using mobile equipment with a load in a congested area.

- Only competent personnel are permitted to operate plant or shop equipment.

- Flammable or corrosive liquid must be stored and transported in approved containers.

- Oily rags, solvent rags and oily waste must be placed in the proper safety can provided for these materials.

- Nails or other sharp objects protruding from any type of material must be removed or turned down immediately.

- Emergency equipment must be plainly marked and free from any obstacles that could interfere with its immediate use.

- All process visitors must first report to the control room.

- Compressed gas cylinders whether full or empty, must be kept in an upright position and be properly secured, capped and stored by type.

- Incidents that may have weakened or damaged equipment must be reported immediately to the Supervisor.

- Any leak or spill of noxious gas, corrosive or polluting liquid must be reported immediately to the Supervisor.

- Safe Routes have been established within the plant site for the use of visitors, sales personnel, administrative staff and non-operating personnel. Within safe routes, hard hats and safety glasses will be required.

COMPREHENSIVE TRAINING RECORD

ANHYDROUS AMMONIA
EMPLOYEE TRAINING RECORD TRACKING FORM

NAME: _____

Training Course	V – Verbal D – Demonstration F – Follow-up C – Certificate	Date of Training	Trainer's Name	Employee's Initials	Manager's Signature Verifying Training
1. Safe Operating Procedures					
2. Transportation of Dangerous Goods					
3. WHMIS/ OH&S Training					
4. Safe Work Permits					
5. Emergency Training – First Aid/CPR					
6. Driver Certification					
7. Emergency Response					
8. Security					
9. Contractor Safety					
10. Fire Extinguisher Training					
11. Respiratory Fit Testing					

Respirator Fit Testing

Location of Training: _____ Instructor Name (print): _____

Date of Training: _____ Instructor Signature: _____

Testing Agent: _____

Participant Name (Please Print)	Signature	Sensitivity test? Pass/Fail	Conditions affecting fit: Clean shaven, scar, glasses or other?	Negative/ Positive fit test: Pass/Fail	Qualitative test Pass/Fail	Respirator type and size

Comments:

Disclaimer: The respirator fit test was done by the instructor on persons as listed above. The results indicate the performance of the listed respirator as fitted on the employee. Fit testing as performed measures the ability of the respiratory protective device to provide protection to the individual tested. The trainer implies no guarantee that this or an identical respiratory device will provide adequate protection under other conditions as those present when the test was performed.

ANHYDROUS AMMONIA
Contractor Safety Program Checklist

All Facility Managers,

Anhydrous Ammonia – Contractor Safety Program
Managers at each facility will be responsible for meeting the contactors' training and regulatory needs.

The (company) is committed to deliver and educate quality educational training to support our contractors' safety and operational needs. This can only be achieved through ongoing safety training and education of Regulatory requirements to ensure awareness as well as satisfaction of the (company) legal obligations.

The Transportation of Dangerous Goods (TDG) Act and Regulations is a Federal Act that outlines the (company's) legal responsibilities as a supplier of Anhydrous Ammonia. The regulations require **any** person who transports Anhydrous Ammonia to have an *Operator's Certificate of Training* and that any person who has possession of the *Dangerous Goods* at the time of the accidental release must report the incident.

Anhydrous Ammonia Contractor Training Checklist

When conducting Anhydrous Ammonia awareness for contractors, review the items that are applicable: Please have the Contractors sign this sheet when the items have been reviewed. Place the completed sheet in a file at the local facility for future reference.

Contractor has viewed the Ammonia video.	**Yes**	**No**
Personal Protective Equipment recommendations. (Demonstrated)	**Yes**	**No**
First Aid Measures and Treatment. (Discussion and Video)	**Yes**	**No**
Characteristics of Ammonia. (Discussion and Video)	**Yes**	**No**
Bleed off procedures. (Demonstrate)	**Yes**	**No**
Safe Transportation of nurse tanks on road way. (Demonstrated)	**Yes**	**No**
Emergency and incident reporting. (Emergency number & reporting)	**Yes**	**No**
Breakaway Coupler maintenance. (Pioneer or Dateless) (Demonstrate)	**Yes**	**No**
Manual Flow Regulator service, screen cleaning etc. (Demonstrate)	**Yes**	**No**
Connecting a Nurse Tank to an applicator. (Demonstrate)	**Yes**	**No**
Disconnecting a Nurse Tank from an applicator. (Demonstrate)	**Yes**	**No**
Reconnecting a Nurse Tank to an applicator. (Demonstrate)	**Yes**	**No**
Clearing Applicator Shank Outlets. (Demonstrate)	**Yes**	**No**
Closing Withdrawal and Hose-end Valves after shutdown. (Discussion)	**Yes**	**No**
Storage of Equipment. (Discussion)	**Yes**	**No**
Vessel to transport Unit ammonia transfers (Practical demonstration)	**Yes**	**No**
Transport Unit to Nurse wagon transfers (Practical demonstration)	**Yes**	**No**
Valid Certificate of Training.	**Yes**	**No**

Facility Location: _____ Customer's Signature: _____

Facility Manager or (qualified designates signature): _____

ANHYDROUS AMMONIA
EMPLOYEE TRAINING RECORD TRACKING FORM

NAME: _____

Training Course	V – Verbal D – Demonstration F – Follow-up C – Certificate	Date of Training	Trainer's Name	Employee's Initials	Manager's Signature Verifying Training
12. Safe Operating Procedures					
13. Transportation of Dangerous Goods					
14. WHMIS					
15. Safe Work Permits					
16. Emergency Training – First Aid/CPR					
17. Driver Certification					
18. Emergency Response					
19. Security					
20. Contractor Safety					

SAFE OPERATING PROCEDURES

TRANSFER FROM RAILCAR TO STORAGE

UNLOAD AMMONIA TANK CAR PROCEDURE

LOCATION:

RAILWAY PROCEDURE

- CN delivers cars to outside tracks only
- Upon arrival record car line up and assure weigh bills correspond
- Do visual inspection -placard/brakes/tank testing/exterior condition

SPOTTING CAR PROCEDURE

- Open rail gates both ends
- Open all 4 derails
- Remove blue flags
- Be sure rail access bridges are in up position
- Spot car with dome in centre of rail bridge
- Apply manual rail brake
- Place wheel chock 1 per car
- Hook ground cable 1 per car
- Close derail
- Place blue flags 1 per rail line
- Do tank inspection for each car. (Inspection sheet is self explanatory and MUST be complete) If car does not meet inspection do not open seal on dome.

OFFLOADING PROCEDURE

- Lower bridge to rail dome, set weight on end
- Raise rail safety bar on dome
- Hook safety harness if no guard on bridge
- Split seal – remove pin – open dome
- With wrench **SLOWLY** open valve plugs
- Apply pipe dope to threads on connection pipes
- Place connection pipes in empty valve spots
- With wrench tighten all pipes
- Connect transfer hoses 2 – 2 ½" liquid hoses 1- 1 ½" vapor hose tighten
- Open all 3 tank valves **SLOWLY**
- Open liquid and vapor valves on end of rail bridge
- Manually start lead compressor
- Push green automatic Start offload button to activate
- Once a visual of liquid is observed through glass offload is activated
- Record on Rail Inspection sheet – start time-tank percentage-any truck loading during rail offload time.
- **NEVER FILL PAST 85%**
- OFFLOAD TIME VARIES ON EACH CAR DEPENDING ON ITS INTERNAL CONDITION AND THE OFFLOAD CIRCUMSTANCES

CAR DISCONNECTION PROCEDURE

- A low flow alarm will ring on panel to alert low flow

TRANSFER FROM RAILCAR TO STORAGE (cont.)

BE SURE car is empty by doing the following:

- Check offload time and circumstance (truck loading)
- Check bullet percentage
- Feel hoses for weight
- Check visual glass for flow

- Once car is deemed empty
- Close all valves on rail car
- Close liquid and vapor valves on rail bridge
- Push Stop load button
- Open liquid and vapor bleed valves to flare off lines
- Once flare is complete close bleed valves
- Disconnect transfer hoses return to storage position
- Remove transfer pipes and return to storage position
- Place valve plugs back into position tighten with wrench to secure
- Close dome lid and replace pin
- Record PPM reading through manhole (if reading is acceptable)
- Record seal number and seal dome
- Lower safety rail on dome
- Raise bridge access and secure
- Record final inspection on rail inspection sheet

CAR REMOVAL PROCEDURE

- Open derail
- Remove blue flag
- Disconnect ground cable
- **ONCE** Trackmobile is attached remove wheel chock
- Release hand brake
- Spot empty car on outside line
- Do release documentation and online release

IN THE EVENT THAT A CAR HAS NOT COMPLETELY OFFLOADED AT DAYS END THE DISCONNECTION PROCESS – LESS THE PPM READING AND SEAL APPLICATION APPLY. ALL VALVES MUST BE CLOSED AND HOSES DISCONNECTED BEFORE LEAVING SITE

SAFE OPERATING PROCEDURES

TRANSFER FROM TRANSPORT VEHICLE TO STORAGE TANK

The transfer of Anhydrous Ammonia from a transport vehicle to a permanent storage facility is only as safe as the procedures followed. Follow all guidelines and procedures listed below.

1. Safety Guidelines

1. Before starting, check the liquid level gauge on the tank to ensure that there is sufficient room in the tank for the load. If the liquid level gauge is not working or you doubt the reading, you will have to use the rotating indicator knob on the end of the storage vessel.

WARNING: NEVER FILL THE TANK IN EXCESS OF 85% CAPACITY.

2. Ensure that emergency brakes are applied on the transport vehicle. Block the wheels with chock blocks. Blocking the wheels on the TDU at the site will ensure the unit is not moved before the transfer procedure is complete.

3. Take note of the general wind direction. Always work upwind from fittings and lines. This is of particular importance when opening bleeder valves and lines.

4. The wearing of personal protective equipment including Full-Face Respirator and Anhydrous Ammonia approved gloves are essential. Also, a one-piece ammonia approved suit is mandatory during transfer. Ensure that a water bottle is carried at all times. Contact with Anhydrous Ammonia can, and has, led to very serious injury and even death!

5. All new site employees must receive a thorough orientation of the site and facilities before working with Anhydrous Ammonia on the site.

6. Always close all valves on the transport unit and on the storage facility after the transfer has been completed.

2. Procedure

1. Before removing the protective caps from the lines, check the valves on the system to ensure they are fully closed. Open bleeder valves to ensure all pressure has been released.

WARNING: ALWAYS STAND UPWIND WHEN OPENING THE BLEEDERS. ENSURE BLEEDER HOLE IS FACING AWAY FROM THE OPERATOR.

2. When removing the caps, remove them **SLOWLY. DON'T BE CAUGHT BY SURPRISE, THERE MAY STILL BE PRESSURE IN THE SYSTEM.**

WARNING: IF THE PRESSURE IS NOT RELIEVED, RE-TIGHTEN THE CAP AND THE VALVE. OPEN THE BLEEDERS AND LET THE PRESSURE BLEED OFF. ATTEMPT TO REMOVE THE CAPS, WHILE WATCHING FOR EXCESSIVE PRESSURE BUILD-UP.

3. After removing the protective caps, connect the liquid hose to the transport vehicle.

4. Tighten the connection. If the fittings do not thread easily, or have been damaged, have the fittings repaired.

WARNING: DO NOT FORCE THE FITTINGS. USE A RUBBER HAMMER OR WRENCH ONLY.

5. Make sure all bleeder valves are in the "closed" position.

6. Slowly open the "Liquid" valve on the storage tank or pump unit.

WARNING: ALL VALVES MUST BE OPENED BY FOLLOWING THE PROPER SEQUENCE. OPEN THE VALVES SLOWLY TO PREVENT PRESSURE SURGES IN THE SYSTEM WHICH COULD ACTIVATE THE EXCESS FLOW VALVE, BREAKING FITTINGS OR RUPTURING HOSES.

7. Open the "Liquid" valve on the transport vehicle.

WARNING: ALL VALVES IN THE SYSTEM MUST BE FULLY OPENED TO FACILITATE THE OPERATION OF THE EXCESS FLOW VALVE, SHOULD A HOSE RUPTURE OR BREAK.

8. Connect the "Vapour" hose to the "Vapour" valve on the transport vehicle.

9. Open the "Vapour" valve on the pump unit or storage tank fully.

10. Slowly open the "Vapour" valve on the transport vehicle and allow the pressure to equalize in the two tanks.

11. Run the pump until the delivery unit is empty and the flow indicator indicates ***"No Flow".***

WARNING: NEVER LEAVE THE FACILITY UNATTENDED DURING TRANSFER!

12. After the pump has been shut off, close both the "Liquid" and "Vapour" valves on the delivery vehicle and storage tank or pump unit.

Note: Following the same sequence will ensure safe operating and handling.

13. Open the “Bleeder” valves and allow all of the pressure in the connections to be released.

WARNING: IF THE PRESSURE IS NOT RELIEVED IN A REASONABLE LENGTH OF TIME, RE-TIGHTEN THE HOSE VALVE. OPEN THE BLEEDERS AND LET THE PRESSURE BLEED OFF.

14. After the pressure system has been released, disconnect the hoses.

WARNING: WHEN ATTEMPTING TO DISCONNECT THE HOSES, WATCH FOR EXCESSIVE PRESSURE BUILD-UP. DO NOT USE EXCESSIVE FORCE OR HAMMER ON THE VALVES OR THE COUPLERS AS THEY CAN BE BROKEN IF THIS PROCEDURE IS USED.

15. Be sure that all valves have been closed on the transport unit and the storage facility.

16. Store the hoses in their proper location to prevent them from being tripped over or damaged. Replace the protective caps on the open lines.

17. Before returning the personal protective equipment to its storage area, walk around the vehicle to ensure that all the lines are disconnected and the hoses are stored properly.

18. Remove the wheel chocks on the transport vehicle.

19. If the facility is to be left unattended, it must be locked up.

SAFE OPERATING PROCEDURES

TRANSFER FROM A STORAGE TANK TO A FIELD DELIVERY UNIT

Accidents caused while handling Anhydrous Ammonia can be prevented by following safe operating procedures. Taking short cuts and not wearing required personal protective equipment only invites serious accidents and personal injuries. Be sure that "Daily Inspections" of the storage site are completed to ensure the equipment is in safe operating condition. The safe operating procedure for the transfer of Anhydrous Ammonia from a storage tank to a delivery unit is as follows.

1. Safety Guidelines

1. Before starting, check the liquid level gauge on the tank to ensure that there is sufficient room in the tank for the load. If the liquid level gauge is not working or you doubt the reading, you will have to use the rotating indicator knob on the end of the storage vessel.

WARNING: NEVER FILL THE TANK IN EXCESS OF 85% CAPACITY.

2. Ensure that emergency brakes are applied on the transport vehicle. Block the wheels with chock blocks. Blocking the wheels on the TDU at the site will ensure the unit is not moved before the transfer procedure is complete.

3. Take note of the general wind direction. Always work upwind from fittings and lines. This is of particular importance when opening bleeder valves and lines.

4. The wearing of personal protective equipment including Full-Face Respirator and Anhydrous Ammonia approved gloves are essential. Also, a one-piece ammonia approved suit is mandatory during transfer. Ensure that a water bottle is carried at all times. Contact with Anhydrous Ammonia can, and has, led to very serious injury and even death!

5. All new site employees must receive a thorough orientation of the site and facilities before working with Anhydrous Ammonia on the site.

6. Always check to be sure that all valves on all equipment are closed when leaving facilities unattended. This will reduce the odds of a release occurring.

2. Procedure

1. Before removing the protective caps from the lines, check the valves on the system to ensure they are fully closed. Open bleeder valves to ensure all pressure has been released.

WARNING: ALWAYS STAND UPWIND WHEN OPENING BLEEDERS.

2. When removing caps, remove them **SLOWLY. DON'T BE CAUGHT BY SURPRISE, THERE MAY STILL BE PRESSURE IN THE SYSTEM.**

WARNING: IF PRESSURE IS NOT RELIEVED, RE-TIGHTEN CAP AND VALVE. OPEN BLEEDERS AND LET PRESSURE BLEED OFF. ATTEMPT TO REMOVE CAPS, WHILE WATCHING FOR EXCESSIVE PRESSURE BUILD-UP.

3. After removing the protective caps connect the liquid hose to the filler valve on the delivery unit.

4. Tighten the connection. If the fittings do not thread easily, or have been damaged, have the fittings repaired.

WARNING: DO NOT FORCE THE FITTINGS. USE A RUBBER HAMMER OR SPECIAL DESIGNED WRENCH ONLY.

5. Connect the vapour hose to the vapour valve on the delivery unit and/or pump unit.

6. Tighten the connection and make sure all bleeder valves are in the closed position on all hoses and lines.

7. First, open the vapour valve on the pump unit and storage tank fully.

WARNING: ALL VALVES MUST BE OPENED BY FOLLOWING THE PROPER SEQUENCE. OPEN THE VALVES SLOWLY TO PREVENT PRESSURE SURGES IN THE SYSTEM WHICH COULD ACTIVATE THE EXCESS FLOW VALVE, BREAKING FITTINGS OR RUPTURING HOSES.

8. Slowly open the Vapour-valve on the nurse unit and allow the pressure to equalize in the tanks.

9. Open the Liquid-valve on the delivery tank.

10. Fully open the Liquid-valve on the pump or storage tank.

11. Once all valves are in the fully open position, the valve on the Liquid-Level gauge can be opened on the delivery unit.

WARNING: WATCH FOR LIQUID ANHYDROUS AMMONIA BEING DISCHARGED FROM THE LIQUID-LEVEL GAUGE.

12. The pump can now be started.

WARNING: NEVER LEAVE THE FACILITY UNATTENDED DURING TRANSFER.

13. When liquid ammonia starts to discharge from the 85% Liquid-level gauge, shut off the pump and close the valve on the liquid level gauge.

WARNING: WATCH FOR LIQUID ANHYDROUS AMMONIA BEING DISCHARGED FROM THE LIQUID-LEVEL GAUGE.

14. Turn off pump unit.

15. Close all Liquid valves.

16. Close all of the Vapour valves.

17. Open the bleeder valves making sure you are upwind and allow all of the pressure in the connections to be released.

WARNING: IF PRESSURE IS NOT RELIEVED IN A REASONABLE LENGTH OF TIME, RE-TIGHTEN HOSE VALVE. OPEN BLEEDERS AND LET PRESSURE BLEED OFF. ATTEMPT TO DISCONNECT HOSES, WHILE WATCHING FOR EXCESSIVE PRESSURE BUILD-UP.

18. After the pressure in the system has been released, disconnect the hoses.

WARNING: NEVER ATTEMPT TO DISCONNECT THE LINES BEFORE RELIEVING THE PRESSURE IN THEM.

19. Store the hoses in the storage box or locking box.

20. Replace the protective valve end caps.

21. Make sure all valves on the transport delivery unit are closed for transport.

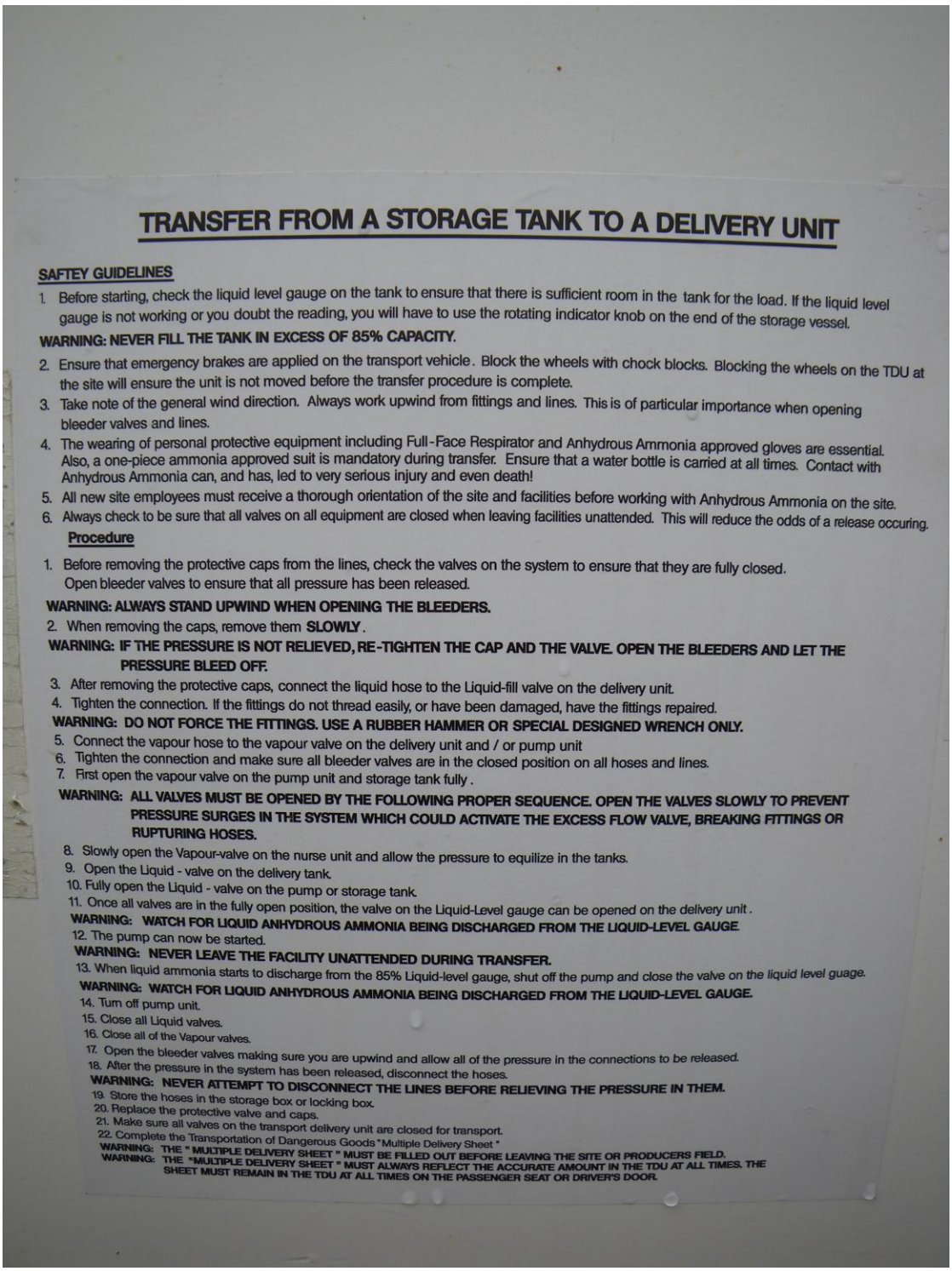
22. Complete the Transportation of Dangerous Goods "Multiple Delivery Sheet".

WARNING: THE “MULTIPLE DELIVERY SHEET” MUST BE FILLED OUT BEFORE LEAVING THE SITE OR PRODUCERS FIELD.

WARNING: THE “MULTIPLE DELIVERY SHEET” MUST ALWAYS REFLECT THE ACCURATE AMOUNT ON THE TDU AT ALL TIMES. THE SHEET MUST REMAIN IN THE TDU AT ALL TIMES ON THE PASSENGER SEAT OR DRIVERS DOOR.

SAFE OPERATING PROCEDURES

TRANSFER FROM STORAGE TANK TO NURSE WAGON



TRANSFER FROM A STORAGE TANK TO A DELIVERY UNIT

SAFTEY GUIDELINES

1. Before starting, check the liquid level gauge on the tank to ensure that there is sufficient room in the tank for the load. If the liquid level gauge is not working or you doubt the reading, you will have to use the rotating indicator knob on the end of the storage vessel.

WARNING: NEVER FILL THE TANK IN EXCESS OF 85% CAPACITY.

2. Ensure that emergency brakes are applied on the transport vehicle. Block the wheels with chock blocks. Blocking the wheels on the TDU at the site will ensure the unit is not moved before the transfer procedure is complete.
3. Take note of the general wind direction. Always work upwind from fittings and lines. This is of particular importance when opening bleeder valves and lines.
4. The wearing of personal protective equipment including Full-Face Respirator and Anhydrous Ammonia approved gloves are essential. Also, a one-piece ammonia approved suit is mandatory during transfer. Ensure that a water bottle is carried at all times. Contact with Anhydrous Ammonia can, and has, led to very serious injury and even death!
5. All new site employees must receive a thorough orientation of the site and facilities before working with Anhydrous Ammonia on the site.
6. Always check to be sure that all valves on all equipment are closed when leaving facilities unattended. This will reduce the odds of a release occuring.

Procedure

1. Before removing the protective caps from the lines, check the valves on the system to ensure that they are fully closed. Open bleeder valves to ensure that all pressure has been released.

WARNING: ALWAYS STAND UPWIND WHEN OPENING THE BLEEDERS.

2. When removing the caps, remove them **SLOWLY**.

WARNING: IF THE PRESSURE IS NOT RELIEVED, RE-TIGHTEN THE CAP AND THE VALVE. OPEN THE BLEEDERS AND LET THE PRESSURE BLEED OFF.

3. After removing the protective caps, connect the liquid hose to the Liquid-fill valve on the delivery unit.
4. Tighten the connection. If the fittings do not thread easily, or have been damaged, have the fittings repaired.

WARNING: DO NOT FORCE THE FITTINGS. USE A RUBBER HAMMER OR SPECIAL DESIGNED WRENCH ONLY.

5. Connect the vapour hose to the vapour valve on the delivery unit and / or pump unit
6. Tighten the connection and make sure all bleeder valves are in the closed position on all hoses and lines.
7. First open the vapour valve on the pump unit and storage tank fully.

WARNING: ALL VALVES MUST BE OPENED BY THE FOLLOWING PROPER SEQUENCE. OPEN THE VALVES SLOWLY TO PREVENT PRESSURE SURGES IN THE SYSTEM WHICH COULD ACTIVATE THE EXCESS FLOW VALVE, BREAKING FITTINGS OR RUPTURING HOSES.

8. Slowly open the Vapour-valve on the nurse unit and allow the pressure to equilize in the tanks.
9. Open the Liquid - valve on the delivery tank.
10. Fully open the Liquid - valve on the pump or storage tank.
11. Once all valves are in the fully open position, the valve on the Liquid-Level gauge can be opened on the delivery unit.

WARNING: WATCH FOR LIQUID ANHYDROUS AMMONIA BEING DISCHARGED FROM THE LIQUID-LEVEL GAUGE

12. The pump can now be started.

WARNING: NEVER LEAVE THE FACILITY UNATTENDED DURING TRANSFER.

13. When liquid ammonia starts to discharge from the 85% Liquid-level gauge, shut off the pump and close the valve on the liquid level guage.

WARNING: WATCH FOR LIQUID ANHYDROUS AMMONIA BEING DISCHARGED FROM THE LIQUID-LEVEL GAUGE.

14. Turn off pump unit.
15. Close all Liquid valves.
16. Close all of the Vapour valves.
17. Open the bleeder valves making sure you are upwind and allow all of the pressure in the connections to be released.
18. After the pressure in the system has been released, disconnect the hoses.

WARNING: NEVER ATTEMPT TO DISCONNECT THE LINES BEFORE RELIEVING THE PRESSURE IN THEM.

19. Store the hoses in the storage box or locking box.
20. Replace the protective valve and caps.
21. Make sure all valves on the transport delivery unit are closed for transport.
22. Complete the Transportation of Dangerous Goods "Multiple Delivery Sheet"

WARNING: THE " MULTIPLE DELIVERY SHEET " MUST BE FILLED OUT BEFORE LEAVING THE SITE OR PRODUCERS FIELD.

WARNING: THE "MULTIPLE DELIVERY SHEET " MUST ALWAYS REFLECT THE ACCURATE AMOUNT IN THE TDU AT ALL TIMES. THE SHEET MUST REMAIN IN THE TDU AT ALL TIMES ON THE PASSENGER SEAT OR DRIVER'S DOOR.

SAFE OPERATING PROCEDURES

TRANSFER FROM A FIELD DELIVERY UNIT TO A NURSE WAGON

The transfer of Anhydrous Ammonia must always be done in a safe, consistent manner whether from a storage tank to a delivery unit or from a delivery unit to a nurse tank. The transfer is most often made in the field where the injuries can be even more serious considering the distance a worker may be from assistance. Nurse Tanks require inspections prior to filling, to ensure that they are in safe operating condition and have the necessary emergency equipment available in case an accident should happen. For this inspection use **"Anhydrous Ammonia Nurse Tank Inspection Checklist."** The safe operating procedure for the transfer of Anhydrous Ammonia from a delivery unit to a nurse tank is as follows.

1. Safety Guidelines

1. Before starting, check the percentage gauge or Liquid-level gauge on the tank to determine how much room there is in the tank for product.

WARNING: NEVER FILL THE TANK IN EXCESS OF 85% CAPACITY.

2. Block the wheels on the Nurse Tank with chock blocks.

3. Take note of general wind direction. Always work upwind from fittings and lines. This is of particular importance when opening bleeder valves and lines.

4. The wearing of personal protective equipment including Full-Face Respirator and Anhydrous Ammonia approved gloves are essential. Also, a one-piece ammonia approved suit is mandatory during transfer. Ensure that a water bottle is carried at all times. Contact with Anhydrous Ammonia can, and has, led to very serious injury and even death!

5. Before loading the nurse tank, walk around the nurse tank looking for any leaking or broken valves, cuts or scrapes in hose. Push on the tires to check the condition of the wheel bearings and wheel nuts.

   If the producer has never used Anhydrous Ammonia or it is their first time this season, walk them around the nurse tank and the applicator explaining the function of the equipment and what they must do in an emergency situation (follow the "Safety and the Producer" section).

2. Procedure

1. Park the delivery unit a safe distance from the nurse tank. If the truck is too close to the nurse tank workspace the hoses may kink when connecting them.

WARNING: ALWAYS PARK THE DELIVERY UNIT UPWIND OF THE APPLICATOR.

2. Check nurse tank liquid level gauge to make sure the Nurse Tank requires filling.

3. Check to make sure the Nurse Tank to be filled is either CAAR or Transport Canada certified.

4. Record the certification number on the delivery ticket.

5. Place a delivery ticket into the meter register or scale printer.

6. Then proceed to remove the protective caps on the Nurse Tank fill valves, to do this;

   - Check liquid and vapour valves to ensure the valves are closed.
   - Open the bleeder valves.
   - Slowly remove the protective caps.
   - Close the bleeder valves.

7. Check the fittings for dirt, check for physical and thread damage, and ensure all gaskets are in good condition. If necessary replace the gaskets and clean the connectors.

8. Connect the Liquid-hose from the delivery unit to the Liquid-valve on the nurse tank.

WARNING: NEVER PICK UP THE HOSE BY THE HANDLE ON THE VALVE BODY; THE VALVE MAY OPEN AND ANHYDROUS AMMONIA WILL BE RELEASED.

9. Tighten the connection. If the fittings do not thread easily, or have been damaged, have the fittings repaired.

WARNING: DO NOT FORCE THE FITTINGS. REPAIR IF NECESSARY.

10. Connect the vapour lines from the delivery unit to the Vapour-valve on the nurse tank.

11. Tighten the connection and make sure all bleeder valves are in the **closed** position on all hoses and lines.

WARNING: ALL VALVES MUST BE OPENED BY FOLLOWING THE PROPER SEQUENCE. OPEN THE VALVES SLOWLY TO PREVENT PRESSURE SURGES IN THE SYSTEM WHICH COULD ACTIVATE THE EXCESS FLOW VALVE, BREAKING FITTINGS OR RUPTURING HOSES.

12. First open the Vapour-valve on the delivery unit fully.

13. Slowly open the Vapour-valve on the nurse tank and allow the pressure to equalize in the tanks.

14. Open the Liquid-valve on the nurse tank.

15. Check to ensure the pump by-pass valve and the pump inlet valve are fully open.

16. Open all valves fully to ensure an accurate meter reading.

17. Once all valves are in the fully open position, the valve on the liquid level gauge must be opened on the nurse tank.

WARNING: WATCH FOR ANHYDROUS AMMONIA VAPOURS FROM THE LIQUID LEVEL GAUGE.

18. Start the pump on the delivery unit and begin the transfer.

WARNING: NEVER LEAVE THE DELIVERY UNIT UNATTENDED DURING TRANSFER.

19. When liquid ammonia starts to discharge from the liquid level gauge, shut off the pump and close the valve on the liquid level gauge.

WARNING: WATCH FOR VAPOURS FROM ANHYDROUS AMMONIA LIQUID COMING FROM LIQUID LEVEL GAUGE.

20. Close all Liquid valves.

21. Close all of the Vapour valves.

22. Open the bleeder valves making sure you are upwind and allow all of the pressure in the connections to be released.

Caution: Never attempt to disconnect the lines before relieving the pressure in them. If pressure is not relieved, re-tighten hose valve, open bleeders and let pressure bleed off.

23. After the pressure in the system has been released, disconnect the hoses.

24. Return the hoses to the parking plugs on the TDU.

25. Replace the protective valve end caps and check around the vehicle before leaving the area.

26. Remove the Delivery Ticket and give the producer a copy of the ticket.

27. Complete the “Multiple Delivery Sheet”.

SAFE OPERATING PROCEDURES

TRANSFER FROM NURSE WAGON TO AN APPLICATOR

Some of the most serious accidents that have ever happened handling Anhydrous Ammonia have occurred during this operation. It is imperative that all safety procedures are followed and the operation monitored for any potential hazards.

1. Safety Guidelines

1. Take note of general wind direction. Always work upwind from fittings and lines. **THIS IS OF PARTICULAR IMPORTANCE WHEN OPENING BLEEDER VALVES AND LINES.**

2. The wearing of personal protective equipment including Full-face Respirator and Anhydrous Ammonia gloves is essential. Also, an ammonia resistant suit is required during this process. Ensure that a water bottle is carried at all times. Contact with Anhydrous Ammonia can, and has, led to very serious injury and even death. Proper footwear is essential, leather or ammonia resistant CSA approved footwear is required.

3. Never handle hoses by the valve handle, always handle them by the valve body.

2. Bleed-off Procedure

1. Close the main valve on the bottom of the nurse tank.

2. Close the hose end valve on the end of the liquid line.

3. Make sure the flow control valve switch is turned to the **off** position.

4. With all safety equipment on and the wind carrying any drift away, open the bleeders on the breakaway coupler and the hose end valve, if they have not already been opened.

WARNING: WATCH FOR VAPOURS FROM ANHYDROUS AMMONIA LIQUID COMING FROM BLEEDERS. IF THE PRESSURE IS NOT RELIEVED IN A REASONABLE AMOUNT OF TIME, RE-TIGHTEN HOSE END VALVE, OPEN THE BLEEDERS AND LET PRESSURE BLEED OFF.

5. Lift up the hose running from the breakaway coupler to the flow control regulator to ensure any pooled ammonia has been removed from the hose.

6. The system should now be completely empty of any and all product, however follow all safety guidelines listed to minimize the risks of accidents.

DANGER: THIS IS AN ABSOLUTELY CRITICAL STEP. DO NOT ATTEMPT TO CONNECT IF PRESSURE HAS NOT BEEN RELIEVED.

3. Procedure

1. Connect the nurse tank hitch to the applicator hitch.

2. Connect the safety chains.

3. Check to ensure the hose end valve is closed.

4. Check the condition of the rubber washer located in the threaded section of the Male end of the breakaway coupler.

5. Check to ensure the main withdrawal valve on the bottom of the nurse is closed.

6. Open the bleeder on the hose end valve to ensure that pressure has not been built up in the hose end valve parking-plug.

WARNING: WATCH FOR VAPOURS FROM ANHYDROUS AMMONIA LIQUID COMING FROM THE BLEEDER. IF THE PRESSURE IS NOT RELIEVED IN A REASONABLE AMOUNT OF TIME, RE-TIGHTEN THE HOSE END VALVE, OPEN BLEEDERS AND LET PRESSURE BLEED OFF.

7. Slowly turn the hose end valve to remove the hose from the hose end valve parking-plug. Support the hose with a free hand to make removal easier.

WARNING: NEVER PICK UP THE HOSE BY THE HANDLE ON THE VALVE BODY; THE VALVE MAY OPEN AND ANHYDROUS AMMONIA WILL BE RELEASED.

8. Connect the hose end valve to the breakaway coupler connection on the applicator. If the fittings do not thread easily, or have been damaged, have the fittings repaired.

WARNING: DO NOT FORCE THE FITTINGS. USE A RUBBER HAMMER OR WRENCH ONLY.

9. Carefully arrange the hose so it does not kink or drag on the ground.

10. Close the bleeder on the hose-end valve and the bleeder on the applicator breakaway coupler.

11. Standing with the wind at your back, slowly open the hose end valve to check the connection between the hose end valve and the breakaway coupler. If anhydrous ammonia begins to leak from the connection, close the hose end valve and attempt to re-tighten the connection.

WARNING: WATCH FOR VAPOURS FROM ANHYDROUS AMMONIA LIQUID COMING FROM THE CONNECTION.

12. If the leaks are not present, slowly open the main valve on the bottom of the nurse tank.

WARNING: ALL VALVES MUST BE OPENED BY FOLLOWING THE PROPER SEQUENCE. OPEN THE VALVES SLOWLY TO PREVENT PRESSURE SURGES IN THE SYSTEM THAT COULD ACTIVATE THE EXCESS FLOW VALVE, BREAKING FITTINGS OR RUPTURING HOSES.

13. Ask the producer to start moving the applicator down the field and put the application knives into the ground to test the operation of the unit.

14. Ask the producer to open the applicator flow control valve switch and check to see if all knives are working.

Note: The manifold tubes will frost indicating that product is flowing properly through the system. If there is no frost on the manifold lines re-evaluate the procedure and see what step was missed or check for a plugged flow control valve screen.

SAFE OPERATING PROCEDURES

HOT WORK

SAFE WORK PERMIT

This permit cannot be altered or transferred to another.
This permit must be returned and signed off at completion of work or end of operational shift.

HOT WORK ☐

DATE OF ISSUE	**DURATION OF PERMIT (TIME)** FROM: TO:	DEPT/CONTRACTOR DOING WORK	CREW SIZE	WORKORDER NO.

A TYPE OF WORK BEING PERFORMED

CONFINED SPACE	☐	MECHANICAL	☐
FUMIGATION	☐	WELDING	☐
TROUBLESHOOT	☐	ELECTRICAL	☐
ELEVATED WORK	☐	EXCAVATION	☐
OTHER _____	☐		

B ADDITIONAL PERSONAL PROTECTIVE EQUIPMENT N/A ☐

SAFETY HARNESS	☐	SPECIALIZED GLOVES	☐
EYE/FACE PROTECTION	☐	PROTECTIVE SUIT	☐
HEARING PROTECTION	☐	RESPIRATORY PROTECTION	☐
OTHER _____	☐		

C HAZARDOUS MATERIAL OR PRODUCT HANDLED
YES ☐ NO ☐

IF YES, WAS MSDS REVIEWED ☐

D HOT WORK REQUIREMENTS N/A ☐

FIRE EXTINGUISHER
TYPE _____
SIZE _____

E CONFINED SPACE ENTRY N/A ☐

AIR QUALITY TESTING:

MAKE/MODEL TESTER: _____

SERIAL #:_____

CALIBRATION DATE: _____

	O/2	LEL	CO
TEST 1	____%	____%	____ppm
TEST 2	____%	____%	____ppm
TEST 3	____%	____%	____ppm

TEST BY: _____
TIME: _____
SIGNATURE _____

F OTHER SAFETY REQUIREMENTS:

	Y	N
FIRE WATCH	☐	☐
DRAINS/SPOUTS COVERED or BLANKED	☐	☐
AREA BARRICADED	☐	☐
LOCKOUT PROCEDURES	☐	☐
RESCUE PLAN IN PLACE?	☐	☐
MECHANICAL VENTILATION REQUIRED?	☐	☐
OPENING SUFFICIENT TO ALLOW SAFE PASSAGE OF A PERSON USING PPE?	☐	☐

Person(s) entering the confined space are:

_____
_____
_____
_____

G DESCRIPTION OF WORK: (include hazards of each step)

H LOCATION OF WORK

I PRECAUTIONARY MEASURES

	Y	N
Is there any material/dust or other contaminants that need to be removed from work location?	☐	☐
Are there isolation valves/blanks that need to be closed, locked and tagged?.....		
Is the work being performed on energized circuits greater than 50 volts? If yes, an Energized Electrical Work Permit is required.....	☐	☐
Is electrical or mechanical forcing required? E.g. Programmable Controller functions performed by maintenance.	☐	☐
Is there equipment that needs to be locked out?	☐	☐
Are there special hazards associated with the job? E.g. Weather conditions, underground lines, overhead lines, etc.	☐	☐
Describe the necessary procedures in the Safe Work Plan. (below)	☐	☐

J SAFE WORK PLAN (include hazard control measures and if confined space the names of observer(s) and rescuers)

K I, the Issuer, have read this permit and understand the nature of the work authorized and understand the precautions that must be followed as specified in the permit and will inform all other personnel working under this permit of the hazards and precautions. I also understand that I must check the equipment to ensure these precautions are in place.

Name (Print) _____ Signature _____ Date _____
of Issuer

L I, the Facility Manager or Designate, approve of work to proceed under the conditions outlined in this permit.

Name (Print) _____ Signature _____ Date _____
of Facility Manager or Designate

M SIGN OFF

The work is complete Y ☐ N ☐ If no, describe status (E.g. Fire watch not complete.) _____

_____

Name (Print) _____ Signature _____ Date _____
of Issuer

N The work area has been inspected, left in a safe, clean and tidy manner, and may resume operation.

Name (Print) _____ Signature _____ Date _____
of Facility Manager or Designate

LOCK-OUT & TAG-OUT

Note: COMPLETE THE SAFE WORK PERMIT IF REQUIRED.

1. De-Energization of Equipment

    1.1 Inform all co-workers and Operations personnel of what equipment will be de-energized.

    1.2 Shut off the individual breaker for the piece of equipment to which the work will be performed.

    1.3 Lock the breaker in the off position with the "LOCK OUT" padlock and scissors provided.

    1.4 Place the key for the padlock in your pocket.

    1.5 Record the proper information on the LOCK OUT log.

    1.6 Shut off the disconnect switch or lock out the pushbutton at or near the motor. (A proper sized pin or bolt must be used to properly lock out pushbuttons).

2. Re-Energization of Equipment

    2.1 Upon completion of the work, care is required in the re-energization process to ensure the equipment does not start when the breaker is turned on.

    2.2 If the elevator is equipped with a control console, ask the operator to stop all operating equipment. When all machinery has stopped, turn off the control circuit key switch located at the bottom left hand corner of the console, wait two seconds and turn it on. This will effectively de-energize any control circuit that was inadvertently energized when the work was performed.

    2.3 If no control console is installed at the site, a push button will be supplied at or near the motor and should be locked out as suggested in step #1.3.

    2.4 For PLC and console equipped facilities Unlock the breaker that was locked out in step #1.3 and turn it on.

    2.5 Re-energize the equipment or have it re-energized by Operation personnel only when you are sure it is safe to do so.

Note: Facilities equipped with P.L.C. equipment should be de-energized only by a qualified Electrician. This is required to protect sensitive electronic equipment and life due to the variety of power sources used to power equipment.

LOCK-OUT TAG-OUT PERMIT

1. **Advise Facility staff of equipment being repaired.**
2. **Lockout equipment using one padlock per repairperson completed with nametag.**
3. **Fill date, time and name of equipment being removed from service.**
4. **Try to operate the equipment to ensure it is indeed locked-out.**
5. **When repairs and adjustments /alignments are complete, remove all padlocks, enter the date and the time that the equipment was returned to service.**
6. **Advise Facility Staff that repairs have been completed and for them to try operate the equipment.**
7. **Notification must be given to the operators of the next Shift with regards to an extended lockout of a piece of equipment.**

LOCK OUT LOG

DATE LOCKED OUT	TIME LOCKED OUT	NAME	EQUIPMENT LOCKED OUT	DATE UNLOCKED	TIME UNLOCKED	INITIALS

Safe Entry and Safe Work Procedures for Liquid Tanks

The Workplace Committee is to review and revise this Safe Work Procedure to ensure it is specific and applicable to the work site.

INTRODUCTION

The LIQUID TANKS can be interpreted to be a "Confined Space" under Part II of the Canada Labour Code and the COSH Regulations.

There are many types of confined spaces in and at our facilities. Our Entry Permit System is based on:

- The frequency of entry into confined space;
- The work that will be done within the space, and
- The hazards that our employees may be exposed to while working in the space.

In order to classify the confined spaces within our structures and develop safe entry procedures and permit requirements, we will identify and develop entry procedures on FREQUENTLY ENTERED work spaces and NON FREQUENTLY ENTERED work spaces. The entry permits will be issued and authorized accordingly.

The LIQUID TANK is classified as a "NON FREQUENTLY ENTERED" confined space. Entry into the LIQUID TANK is not a common and daily task performed throughout the industry, therefore entry into the LIQUID TANK will be done in accordance with this SAFE ENTRY & SAFE WORK PROCEDURE.

Permit Requirements

A Confined Space Entry Permit is REQUIRED for Entry into and Work to be performed within the LIQUID TANK.

- ALL entries into a LIQUID TANK for any reason MUST be done under an authorized entry permit authorized and signed by the facility manager and the Corporate Risk Department or Engineering and Construction Department.

Hazard Identification:	***Hazard Assessment:***
Task/Activity Hazards	
Back strain hazard	Back strain could result from lifting or removing access doors/hatches.
Heavy lifting hazard	Back or muscle strain could result from attempting to lift heavy parts.
Slip/fall hazard	Remaining liquid and sludge in the tanks could cause employees to slip and/or fall.
Lack of lighting hazard	Poor visibility/lighting conditions could lead to inability to identify potential hazards causing injury.
Machinery/Equipment Hazards	
Moving parts hazard	Agitators located within the liquid tanks could cause body parts or clothing to become entangled.
Bodily injury hazard	Serious injury could result if the proper lock-out procedures in accordance to the "Lock-Out Policy" are not implemented.
Substance Hazards	
Skin irritation hazard	Skin could become irritated if exposed to product in the tanks for extended periods of time.
Inhalation hazard	Prolonged exposure to product fumes and residue without proper personal protective equipment could result in respiratory injury. Prolonged exposure could result in serious respiratory injury.
Heat/cold weather hazard	Prolonged weather exposure could lead to heat stroke, dehydration or frost bite.
Atmospheric hazard	Enclosed space is not intended for human occupancy, therefore space could have oxygen displaced.
Drowning hazard	Excessive amounts of liquid left in the bottoms of tanks could pose a danger if an employee were to slip or fall and become submerged in product.

Eye irritation hazard	Potential eye, ear or throat irritation can result from existing ammonia odour.

PART B: Safe Entry & Procedures – Liquid Tanks – Referencing Part A, the Workplace Committees have established the following Safe Work Procedure(s) to control, minimize or eliminate the hazards identified and assessed with respect to this activity.

Check each Safe Work Procedure statement to confirm if Applicable (A) or Not Applicable (N/A) to your site. The Committee may make any revisions or additions required in the space provided after each statement.

A	N/A	Statement
		1. All entries into the Liquid tank must have a Confined Space Entry Permit authorized and signed by the facility manager and the Corporate Risk Department or Engineering and Construction Department. *Site AdditionlRevision:*
		2. A minimum of two people must be assigned to perform this task. One person entering the tank and the other person supervising the activity from outside the entry hatch. Site AdditionlRevision
		3. Ensure all pumps and product access valves are locked-out to eliminate the potential for any product or fumes to seep or flow into the tank while being occupied by an employee. *Site AdditionlRevision:*
		4. Remove hatch or access cover to bin ensuring to use proper lifting techniques to reduce back strains. It may be necessary to have another person securing the hatch while the bolts are being removed. Heavier hatches should be mechanically supported. *Site AdditionlRevision:*
		5. Allow bin to properly ventilate prior to attempting an entry. *Site AdditionlRevision:*
		6. Ensure air monitors have been recently calibrated prior to conducting any air monitoring. Site AdditionlRevision:
		7. Once tank has had ample time to ventilate, monitor the air quality in the hatch area of the tank to ensure the air quality is within the acceptable limits of 19.5%. Ensure LEL readings are within acceptable ranges. *Site AdditionlRevision:*
		8. If air monitoring deems the space is safe to enter conduct a visual inspection from the hatch for potential hazards. *Site AdditionlRevision*

PART B: Safe Entry & Procedures – Liquid Tanks continued

A	N/A	Statement
		9. If air monitor alarms during pre-entry, DO NOT ENTER. Allow tank to ventilate or force air into tank space to improve air quality. *Site AdditionlRevision:*
		10. Ensure air monitoring is conducted again to ensure air quality is safe enough to allow entry. *Site AdditionlRevision:*

11. Check to see if there are any large amounts of liquid still remaining in the tank that could pose a drowning hazard if a person were to fall and become submerged in the product.
    Site AdditionlRevision:

12. If there is more than 6 inches of liquid remaining in the bottom of the tank, product should be removed by suction pump or vacuum truck prior to attempting entry into the tank.
    Site AdditionlRevision:

13. Persons entering tank must wear the required personal protective equipment to protect against eye and skin exposure. Personal protective equipment should include rubber boots, water resistant overalls, rubber gloves and respiratory protection.
    Site AdditionlRevision:

14. Ensure the person entering the tank is wearing a full body harness and attached to a secure lifeline capable of retrieval prior to entering the tank.
    Site AdditionlRevision:

15. Person entering into the tank must also ensure they have the air monitor attached to themselves at all times while in the tank.
    Site AdditionlRevision:

16. Ensure second team member is located directly outside the hatch opening at all times supervising the safety of the person entering the liquid tank and the retrieval lifeline connected to the person entering the liquid tank.
    Site AdditionlRevision:

17. Ensure there is a clear communication strategy available between the team members.
    Site AdditionlRevision:

PART B: Safe Entry & Procedures – Liquid Tanks continued

A **N/A** Statement

18. Person entering the tank must enter and walk carefully to eliminate the possibility of slipping and failing due to slippery conditions created by product remaining in the bottom of the tanks.
    Site AdditionlRevision:

19. Perform task or activity to be completed within the liquid tank.
    Site AdditionlRevision:

20. Exit liquid tank and ensure all equipment, tools etc. are accounted for.
    Site AdditionlRevision:

PART C: Safe Entry & Procedures – Liquid Tanks – Specific to this Site and referencing Part A and Part B above, the Workplace Committees must:

1. Review and indicate any additional hazards identified;
2. Assess the potential harm to employee health and safety, and
3. Establish a Safe Work Procedure(s) to control, minimize or eliminate the additional hazards identified and assessed.

1. Hazards specific to this site:

2. Assessment of Hazard:

3. Additional Safe Work Procedures:

Signatures: Two (2) signatures are required on each Safe Work Procedure as noted below.

Management/Employer Co-chair

Employee Co-Chair or Safety Representative

Location: _____

Manager/Supervisor & Employee Record of Review and Understanding

Activity: *Safe Entry & Safe Work Procedures for Liquid Tanks*
Location: _____

Education & Training Plan - Manager may elect to complete this training form A or training Form B as attached for multiple employees.

1. Safe Work Procedure

The facility manager or delegate must review this Safe Work Procedure with each employee who undertakes the activity identified above and complete this sign-off form for confirmation.

I hereby acknowledge that instruction and training using Parts A, B and C of this Safe Work Procedure, was provided to *(employee)* _____ for the activity _____.

Manager/Supervisor: _____ Date: _____

2. Demonstration of Safe Work Procedure

I hereby acknowledge demonstrating the Safe Operation of the *(activity)* _____ _____ to _____. The demonstration was performed on the equipment, machinery or task, whereby I performed the activity and then observed the employee perform the activity.

The demonstration consisted of my supervisor, manager or trainer reviewing the:
1) identification of hazards - Part A and C;
2) assessment of the harm that the hazards can cause - Part A and C, and
3) safety precautions to be taken by the employee to safe guard from injury when undertaking the activity - Part B and C.

Manager/Supervisor: _____ Date: _____

3. Employee Comments & Confirmation of Understanding

I _____ received instruction and training of the above referenced activity _____. The review consisted of a review of the Safe Work Procedure and a hands on demonstration of the task and equipment involved. I also acknowledge that I must adhere to the Safe Work Procedure, and report to my supervisor any unsafe condition that may be hazardous to myself or to any other employee.

Employee Signature: _____ Date: _____

SAFE OPERATING PROCEDURES

CONFINED SPACE PERMIT & ELEVATED WORK (example)

SAFE WORK PERMIT

This permit cannot be altered or transferred to another.
This permit must be returned and signed off at completion of work or end of operational shift.

HOT WORK ☐

DATE OF ISSUE	**DURATION OF PERMIT (TIME)** FROM: TO:	DEPT/CONTRACTOR DOING WORK	CREW SIZE	WORKORDER NO.

A TYPE OF WORK BE PERFORMED

CONFINED SPACE	☐	ECHANICAL	☐
FUMIGATION	☐	WELDING	☐
TROUBLESHOOT	☐	ELECTRICAL	☐
ELEVATED WORK	☐	EXCAVATION	☐
OTHER _____	☐		

B ADDITIONAL PERSONAL PROTECTIVE EQUIPMENT N/A ☐

SAFETY HARNESS	☐	SPECIALIZED GLOVES	☐
EYE/FACE PROTECTION	☐	PROTECTIVE SUIT	☐
HEARING PROTECTION	☐	RESPIRATORY PROTECTION	☐
OTHER _____	☐		

C HAZARDOUS MATERIAL OR PRODUCT HANDLED
YES ☐ NO ☐
IF YES, WAS MSDS REVIEWED ☐

D HOT WORK REQUIREMENTS N/A ☐

FIRE EXTINGUISHER
TYPE _____
SIZE _____

E CONFINED SPACE ENTRY N/A ☐

AIR QUALITY TESTING:

MAKE/MODEL TESTER: _____

SERIAL #:_____

CALIBRATION DATE: _____

	O/2	LEL	CO
TEST 1	____%	____%	____ppm
TEST 2	____%	____%	____ppm
TEST 3	____%	____%	____ppm

TEST BY: _____
TIME: _____
SIGNATURE _____

F OTHER SAFETY REQUIREMENTS:

	Y	N
FIRE WATCH.....	☐	☐
DRAINS/SPOUTS COVERED or BLANKED	☐	☐
AREA BARRICADED.....	☐	☐
LOCKOUT PROCEDURES	☐	☐

	Y	N
RESCUE PLAN IN PLACE?	☐	☐
MECHANICAL VENTILATION REQUIRED?	☐	☐
OPENING SUFFICIENT TO ALLOW SAFE PASSAGE OF A PERSON USING PPE?	☐	☐

Person(s) entering the confined space are:
_____
_____
_____
_____

G DESCRIPTION OF WORK: (include hazards of each step)

H LOCATION OF WORK

I PRECAUTIONARY MEASURES

	Y	N
Is there any material/dust or other contaminants that need to be removed from work location?	☐	☐
Are there isolation valves/blanks that need to be closed, locked and tagged?	☐	☐
Is the work being performed on energized circuits greater than 50 volts? If yes, an Energized Electrical Work Permit is required	☐	☐
Is electrical or mechanical forcing required? E.g. Programmable Controller functions performed by maintenance.....	☐	☐
Is there equipment that needs to be locked out?	☐	☐
Are there special hazards associated with the job? eg Weather conditions, underground lines, overhead lines, etc.	☐	☐

Describe the necessary procedures in the Safe Work Plan. (below)

J SAFE WORK PLAN (include hazard control measures and if confined space the names of observer(s) and rescuers)

K I, the Issuer, have read this permit and understand the nature of the work authorized and understand the precautions that must be followed as specified in the permit and will inform all other personnel working under this permit of the hazards and precautions. I also understand that I must check the equipment to ensure these precautions are in place.

Name (Print) _____ Signature _____ Date _____
of Issuer

L I, the Facility Manager or Designate, approve of work to proceed under the conditions outlined in this permit.

Name (Print) _____ Signature _____ Date _____
of Facility Manager or Designate

M SIGN OFF

The work is complete Y ☐ N ☐ If no, describe status (E.g. Fire watch not complete.) _____

_____

Name (Print) _____ Signature _____ Date _____
of Issuer

N The work area has been inspected, left in a safe, clean and tidy manner, and may resume operation.

Name (Print) _____ Signature _____ Date _____
of Facility Manager or Designate

RESPIRATOR INSPECTION AND MAINTENANCE PROCEDURES

Respirators of all types must be maintained in a ready state. As part of the orientation to the company, respirators are fitted for each employee. When issued respirators, the employee is required to maintain the respirators in an acceptable manner. It is a Labour Canada requirement that documentation on all Personal Protective Equipment be completed.

Procedure

1. Use the "Respirator Inspection Record Form"

2. Complete the section entitled **"Respirator Issued to"** by printing the employee's name.

3. In the section entitled, **"Respirator Type"** print either Full-Face, Half-Mask or Canister depending on the type of respirator issued to the employee.

4. In the **"Date of Issue"** section record the date the respirator was issued and fitted for the employee.

   Note: Records are to be kept on all issued respirators for the period of time the respirator is in service and for two years after the unit is taken out of service.

5. Record the **"Date"** of the inspection.

6. Under the section entitled **"Make"** record the manufacturer and type of respirator that is to be inspected (MSA, North, etc.).

7. Record the unit number of the respirator in the **"Unit Number"** column. The units do not have serial numbers. A number may be assigned or the name of the person that has been given the respirator could be printed here.

8. In the **"General Overview"** column, the respirator needs to be inspected for general items such as rips, cuts, or any appearance of physical damage. All pieces of the respirator need to be examined for physical damage.

Note: If the respirator is intact and is in good physical condition, then place a "Checkmark" in this column. If the respirator needs attention, mark an "X" and place the unit out of service by reporting the problem to the Facility Manager.

9. Canisters, cartridges or filters must meet the following criteria:

A. Canisters:

- Must be equipped with expiration dates.
- Must not be expired.
- After opened must be replaced within one year.
- Must not be physically damaged.
- Must be the right canister for the application.

B. Cartridges and Filters:

- Must not be removed from packaging until ready for use.
- Must not be more than one year old.
- Must be kept in a clean area.
- Must be replaced when hard to inhale through or when product odour is present**.**

Note: If the canisters, cartridges and filers are "OK," place a "Checkmark" under the column identified for Main Canister. Place an "X" in this column if attention is required.

10. Spare canisters, cartridges and filters are available and ready for use meeting the same criteria as the items in #9.

Note: If the spare canister is "OK" place a "Checkmark" under the column identified for spare canister. Place an "X" in this column if attention is required.

11. Under the section entitled **"Face Piece"** these items must be checked.

- The Face Piece must be visually inspected for cuts or cracks in the lens.
- Inspect the face piece, where applicable, for cracked, very scratched or loose-fitting lenses.
- Check the head strap and harness for breaks or tears.
- The rubber parts of the face piece must also be checked for physical damage.
- Ensure the inhalation and the exhalation valves and valve seats are free from dirt and dust particles.

Note: If any part is found to be damaged or defective, the part needs to be replaced with the original replacement part immediately.

Note: Place a "checkmark" in the section entitled "Face Piece" if all of the above are OK.

Cleaned and Sanitized

12. Cleaning and sanitizing of respirators must be completed after every use.

    a) Use mild dish soap, a mild disinfectant and warm water solution to clean the face piece.

    Note: Do not use anything but the hands for cleaning the respirator, as cloth particles may gather in the exhalation valve causing it to malfunction.

    b) Remove the canister, cartridges, or filters.
    c) Submerge the whole respirator into the solution and wash thoroughly.
    d) Submerge the respirator in clean water and rinse thoroughly.
    e) Hang the respirator for air-drying.

    Note: When the "Respirator" has been cleaned, place a "checkmark" under the section entitled "Cleaned and Sanitized".

13. In the column marked **"Signature"** sign the form when the inspection is complete.

RESPIRATOR INSPECTION RECORD FORM

This inspection record has been designed to accommodate all respirators used at **. Complete this form before the respirator is used!

Respirator Issued to: _____ Respirator Type: _____ Date of Issue:_____

'✓' FOR O.K "X" FOR NEEDS ATTENTION.

DATE	MAKE	UNIT NUMBER	GENERAL OVERVIEW	MAIN CANISTER/ CARTRIDGE/ FILTER	SPARE CANISTER/ CARTRIDGE/ FILTER	FACE PIECE	CLEANED AND SANITIZED	SIGNATURE

Date Respirator was removed from service:_____

Retain this record for two (2) years after the respirator has been removed from service.

FULL FACE RESPIRATOR FIT TESTING CHECKSHEET

Respirator Fit Testing

Location of Training: _____ Instructor Name (print): _____

Date of Training: _____ Instructor Signature: _____

Testing Agent: _____

Participant Name (Please Print)	Signature	Sensitivity test? Pass/Fail	Conditions affecting fit: Clean shaven, scar, glasses or other?	Negative/ Positive fit test: Pass/Fail	Qualitative test Pass/Fail	Respirator type and size
Comments:						

Disclaimer: The respirator fit test was done by the instructor on persons as listed above. The results indicate the performance of the listed respirator as fitted on the employee. Fit testing as performed measures the ability of the respiratory protective device to provide protection to the individual tested. The trainer implies no guarantee that this or an identical respiratory device will provide adequate protection under other conditions as those present when the test was performed.

ANHYDROUS AMMONIA
PERSONAL PROTECTIVE EQUIPMENT INSPECTION PROCEDURE

Personal Protective Equipment (PPE) that is used by all employees must be maintained in a ready state. When issued to employees, Personal Protective Equipment is required to be maintained in an acceptable manner. It is a Labour Canada requirement that documentation on all Personal Protective Equipment be completed.

As part of the orientation of new employees handling Anhydrous Ammonia, PPE is fitted and provided for each employee.

1.0 General Form Completion Procedures

1. **Complete** "PPE Issued to" **by printing the name of the person that has been issued the PPE.**

2. **Complete "**Respirator Type**" by printing Full-Face in the space provided.**

3. **Complete "**Respirator Date of Issue**" with the date the Respirator was issued to the employee and put into service.**

4. Complete **"Respirator Make"** by recording the manufacturer and type of respirator that is to be inspected (eg: MSA).

5. Complete **"Respirator Unit #"** with the unit number of the respirator. The units do not have serial numbers. A number may be assigned or the name of the person that has been given the respirator could be printed here.

6. Complete **"Hard Hat Type"** by writing in the brand of the hard hat.

Note: The brand is commonly found on the label inside of the hard hat. The hard hat will likely be a MSA.

7. Record the date of issue of Safety Eyewear into the **"Safety Eyewear Date of Issue"** area.

8. Record the date of issue of Foot Protection into the **"Foot Protection Date of Issue"** area.

9. Record the date of issue of Ammonia Resistant Suit into the "**Ammonia Resistant Suit Date of Issue"** area.

10. Record the date of issue of Hard Hat into the **"Hard Hat Date of Issue"** section.

2.0 Respirator

1. Record the current date in the "**Date**" column.

2. In the **"General Overview"** column, the respirator needs to be inspected for general items such as rips, cuts, or any appearance of physical damage. All pieces of the respirator need to be examined for physical damage.

Note: If the respirator is intact and is in good physical condition, then a Checkmark is entered in this column. If the respirator needs attention mark an "X" and place the unit out of service by reporting the problem to the Facility Manager.

3. Main Canisters, Cartridges, or Filters must meet the following criteria:

C. Canisters:

- Must be equipped with expiration dates.
- Must not be expired.
- After opened must be replaced within one year.
- Must not be physically damaged.
- Must be the right canister for the application.

D. Cartridges and Filters:

- Must not be removed from packaging until ready for use.
- Must not be more than one year old.
- Must be kept in a clean area.
- Must be replaced when hard to inhale through or when product odour is present**.**

Note: If the main canister/cartridge/filter is "OK," place a Checkmark under the column identified for main canister. Place an "X" in this column if attention is required.

4. Spare Canisters, Cartridges or Filters are available and ready for use meeting the same criteria as the items in #3.

Note: If the spare canister is "OK," place a Checkmark under the column identified for spare canister. Place an "X" in this column if attention is required.

5. Under the section entitled **"Face Piece"** these items must be checked.

- The Face Piece must be visually inspected for cuts or cracks in the lens.
- Inspect the face piece, where applicable, for cracked, very scratched or loose-fitting lenses.
- Check the head strap and harness for breaks or tears.

- The rubber parts of the face piece must also be checked for physical damage.
- Ensure the Inhalation and the Exhalation valves and valve seats are free from dirt and dust particles.

Note: If any part is found to be damaged or defective, the part needs to be replaced with the original replacement part immediately.

Note: Place a checkmark in the column entitled "Face Piece" if all of the above are OK.

6. Under the column entitled **"Cleaned and Sanitized"** these items must be done.

- Cleaning and sanitizing of respirators must be completed after every use.

a) Use mild dish soap, a mild disinfectant and warm water solution to clean the Face-Piece.

Note: Do not use anything but the hands for cleaning the respirator, as cloth particles may gather in the exhalation valve causing it to malfunction.

b) Remove the canister, cartridges, or filters.
c) Submerge the whole respirator into the solution and wash thoroughly.
d) Submerge the respirator in clean water and rinse thoroughly.
e) Hang the respirator for air-drying.

Note: When the "Respirator" has been cleaned, place a Checkmark in the column entitled "Cleaned and Sanitized".

3.0 Safety Eyewear

1. A **"General Overview"** of the safety glasses is to be performed. This overview inspects the following:

   - Inspect the eyewear to ensure side-shields are in place and are in good condition.
   - Inspect the frame and arms of the eyewear for cracks, breaks, bends or shape defects.
   - The eyewear is CSA certified and labeled as such.
   - The lenses are not scratched as to interfere with vision.

Note: Prescription eyewear is replaced every two years or more frequently if required and approved by Management. Regular safety eyewear is to be available at all facilities and replaced as required.

Note: If the general condition passes the "General Overview" place a Checkmark in the column. If the eyewear does not pass this inspection, place an "X" in the column and place the safety eyewear out of service.

2. A "General Overview" of the spectacle kit safety eyewear is to be performed. This overview inspects the following:

   - Inspect the frame of the eyewear for cracks, breaks, bends or shape defects.
   - The lenses are not scratched as to interfere with vision.

Note: Prescription eyewear is replaced every two years or more frequently if required and approved by Management. These frames should last for several years if they are looked after properly.

Note: If the general condition passes the "General Overview" place a Checkmark in the column. If the eyewear does not pass this inspection, place an "X" in the column and place the safety eyewear out of service.

4.0 Safety Foot Protection

1. A "General Overview" of the safety foot protection is required on a daily basis. Examine the boots and soles for holes, cracks, gouges, and foreign objects in the sole. Footwear can be replaced annually as required. Employees are responsible to report damaged safety foot protection to management. If there is physical damage to the foot protection, have it replaced.

Note: If the safety foot protection is acceptable for use place a Checkmark in the column marked "General Overview", if it requires replacement place an "X" in the column.

Note: Record the dates that the above personal protective equipment was taken out of service and keep the inspection forms for two years after the items are removed.

5.0 One Piece Ammonia Resistant Suit

1. A "General Overview" of the Anhydrous Ammonia Resistant suit is required on a daily basis to ensure the integrity of the suit. Examine the outside of the suit for holes, rips or tears. Turn the suit inside out and examine the interior of the suit. Look for cracks in the suit where personnel bend and move.

Note: If the One Piece Ammonia Resistant Suit is acceptable for use place a Checkmark in the column marked "General Overview", if it requires replacement place an "X" in the column.

Note: Record the dates that the above personal protective equipment was taken out of service and keep the inspection forms for two years after the items are removed.

6.0 Ammonia Approved Gloves

1. A "General Overview" of the Anhydrous Ammonia Gloves is required on a daily basis to ensure the integrity of the gloves. Examine the outside of the gloves for holes, rips or tears. Turn the gloves inside out and examine the interior of the gloves. To ensure there are no leaks in the gloves, submerge the gloves in water while wearing them.

Note: If the gloves are acceptable for use place a Checkmark in the column marked "General Overview", if they require replacement place an "X" in the column.

Note: Record the dates that the above personal protective equipment was taken out of service and keep the inspection forms for two years after the items are removed.

7.0 Hard Hat

1. A **"General Overview"** of the hard hat is to be performed. This overview inspects the following:

   - A label is affixed indicating that the hard hat has been properly adjusted and secured to the head, with all components in place, in order to provide the designed protection.
   - The shell and suspension need to be visually inspected for visible damage.
   - The hard hat cannot be painted or have markings on it unless the paint and markings are approved by the manufacturer.
   - If the hard hat has received a severe blow, take it out of service.

Note: If the shell or linings are found to have a crack, dent or penetration the hard hat needs to be removed from service, and recorded as such.

Note: If the general condition of the hard hat passes the "General Overview" place a Checkmark in the column. If the hard hat does not pass this inspection, place an "X" in the column and take the hard hat out of service.

8.0 Water Bottle

1. Inspect the "Water Bottle" daily for clean water. Ensure the water bottle is in usable condition and not damaged in any way.

Note: If the general condition of the water bottle passes the "General Overview" place a Checkmark in the column. If the water bottle does not pass this inspection, place an "X" in the column and replace the water bottle.

9.0 Initial

The person completing the inspection can now place their "Initials" in the column signifying the inspection has been completed.

Note: Keep all completed forms for a period of two years after the PPE has been placed out of service.

ANHYDROUS AMMONIA PERSONAL PROTECTIVE EQUIPMENT INSPECTION FORM

This inspection form has been designed to accommodate all PPE for Anhydrous Ammonia. Complete this form before PPE is used!

PPE Issued to: _____

Respirator Type: _____
Respirator Make: _____
Respirator Unit #: _____
Hard Hat Type: _____

Respirator Date of Issue: _____
Safety Eyewear Date of Issue: _____
Foot Protection Date of Issue: _____
Ammonia Resistant Suit Date of Issue: _____
Hard Hat Date of Issue: _____

"✓" FOR O.K "X" FOR NEEDS ATTENTION.

	RESPIRATOR					SAFETY EYEWEAR		FOOT PROTECTION	ONE PIECE AMMONIA RESISTANT SUIT	AMMONIA APPROVED GLOVES	HARD HAT		
Date	General Overview	Canister/ Cartridge/ Filter Main	Canister/ Cartridge/ Filter Spare	Face Piece	Cleaned And Sanitized	Safety Glasses General Overview	Spectacle Kit (If Applicable) General Overview	CSA Boots General Overview	General Overview	General Overview	General Overview	Water Bottle	Initial

Date Respirator removed from service: _____
Date Footwear Protection removed from service: _____
Date Hard Hat removed from service: _____

Date Safety Eyewear removed from service: _____
Date Ammonia Suit removed from service: _____

Retain this record for two (2) years after the Personal Protective Equipment has been removed from service.

ANHYDROUS AMMONIA TRANSPORT DELIVERY UNIT INSPECTION

Station	Date	Facility Manager	**Site Operator**
Truck Make & Plate #	**Owned**		
Trailer Make & Plate #	Leased	**Leased From**	**Inspector**

Please mark each point with either an "X" or a "✓" indicating whether the item is in compliance or not. Action Items are to be completed in 20 working days from the date of inspection. Additional space for comments is available at the bottom of the form.

			Comments:	
1.		CVSA Mechanical Inspection.	Truck Expires	Trailer Expires
2.		Fire Extinguisher.		
3.		First Aid Kit.		
4.		Full Face Respirator & Spare Canister		
5.		Additional Safety Equipment [Goggles , gloves & water bottles for nurse wagon]		
6.		Additional Water For Nurse Tanks		
7.		Multiple Delivery Sheet Class 2.2 [8] UN 1005 CAAR# On Sheet.		
8.		Emergency Water Supply.		
9.		Safe Operating Procedures Manual .Last Publication		
10.		Line Valves Color-coded [Vapor-Yellow Liquid Orange].		
11.		Emergency Shut-Off.[Blue Handle		
12.		Hoses/Valves/Pump		
13.		Signage		
14.		Wheel Chocks.		
15.		Communication Equipment		
16.		Pressure Relief Valves.		
17.		Gauges.		
18.		Nurse Tank Inspection Form.		
19.		Transport Canada Certification. ASME , TC51 , TC331	Visual Lettering	Hydro Test Information

Tow Vehicle

20.		Fire Extinguisher.
21.		First Aid Kit.
22.		Canister Gas Mask.
23.		Signs.
24.		Additional Water for Nurse Tanks.
25.		Safe Operating Procedures Manual.
26.		Additional Safety Equipment.
27.		Wheel Chocks.
28.		Communication Equipment.
29.		Nurse Tank Inspection Form.

Truck Condition Good Fair Poor Trailer Condition Good Fair Poor

Additional Comments:

A Class 3 Operators license is required when towing a vehicle that weighs 4540kgs. Or 10,000 lbs.

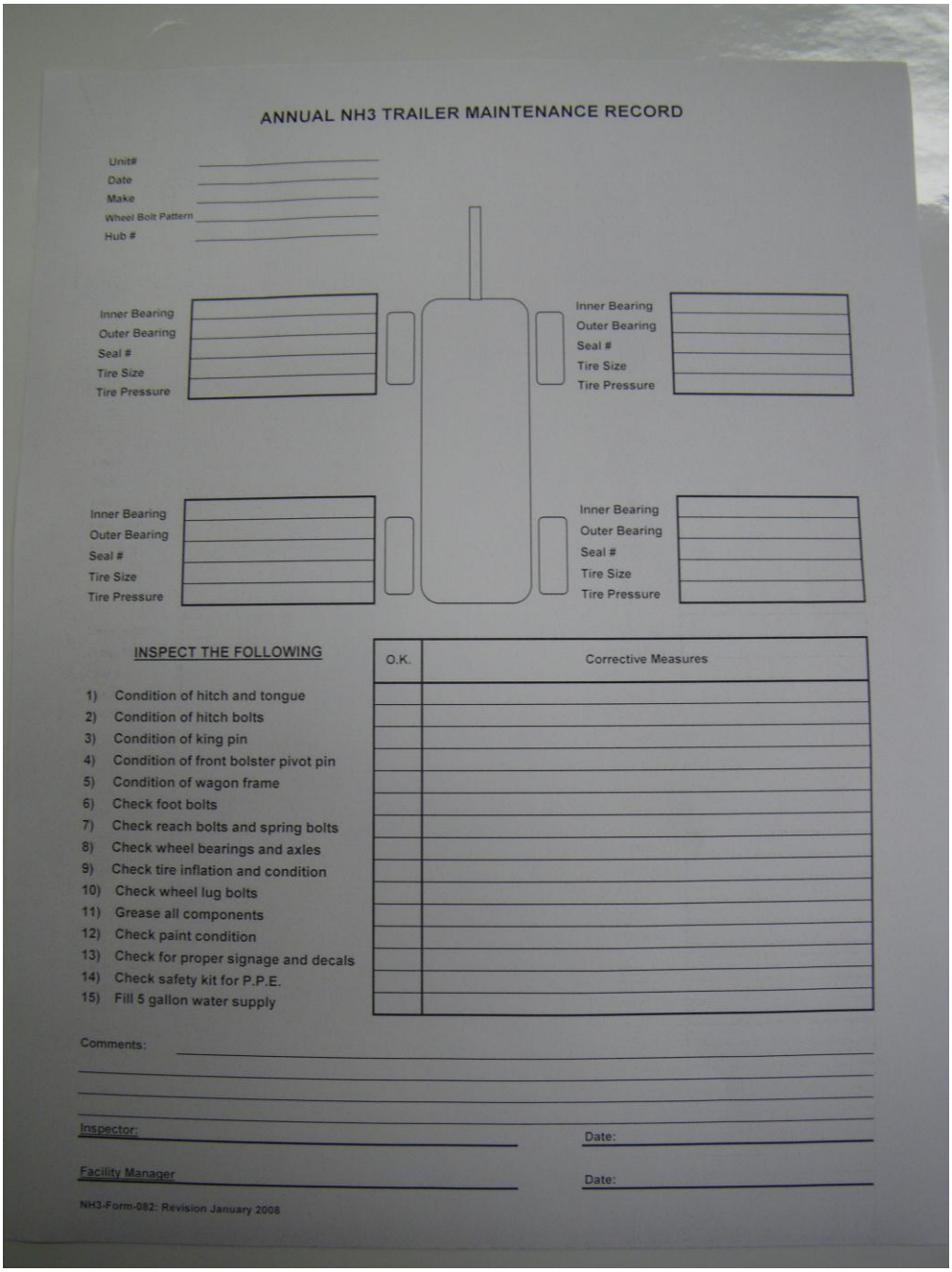
Facility Manager's Signature

Signature of Inspector

Required Compliance Date:

Hose Assembly Inspection and Testing/Checklist (B620-7.2.10)				
Hose Assembly Number:_____		HAWP: ( ) 350psi ( )_____		**Date tested/Inspected** _____
ITEM	**ACCEPTABLE**	**NOT ACCEPTABLE**	**NOT APPLICABLE**	**COMMENTS**
Hose was connected to tank or tank mounted accessory, used for loading or off-loading. (7.2.10.1)				
Test person has been trained in product and hose safety, inspection and test procedures, and rejection criteria. As per records. (7.2.10.3)				
Hose Assembly Inspection (7.2.10.4)				
No damage to hose cover (7.2.10.4.a)				
Kinked, flattened, or permanently deformed wire braid (7.2.10.4b)				
Soft spots when NOT under pressure, bulges when under pressure, or loose outer covering (7.2.10c)				
Damaged, slipping or excessively worn hose couplings (7.2.10d)				
Loose or missing bolts on hose coupling assemblies (7.2.10e)				
Deteriorated legibility of identification of hose (7.2.10f)				
Test pressure of 120% of the marked HAWP (7.2.10.5b)				
Pressure held for minimum 5 minutes (7.2.10.5f)				
Hose tagged with month/year of test (7.2.10.6)				
Name and Address of tester if other than indicated on page 1(7.2.10.7):		_____ _____ _____ _____		

HOSE TEST INSPECTION: ( ) PASS ( ) FAIL



ANNUAL NH3 TRAILER MAINTENANCE RECORD

Unit#
Date
Make
Wheel Bolt Pattern
Hub #

Inner Bearing
Outer Bearing
Seal #
Tire Size
Tire Pressure

Inner Bearing
Outer Bearing
Seal #
Tire Size
Tire Pressure

Inner Bearing
Outer Bearing
Seal #
Tire Size
Tire Pressure

Inner Bearing
Outer Bearing
Seal #
Tire Size
Tire Pressure

INSPECT THE FOLLOWING

		O.K.	Corrective Measures
1)	Condition of hitch and tongue		
2)	Condition of hitch bolts		
3)	Condition of king pin		
4)	Condition of front bolster pivot pin		
5)	Condition of wagon frame		
6)	Check foot bolts		
7)	Check reach bolts and spring bolts		
8)	Check wheel bearings and axles		
9)	Check tire inflation and condition		
10)	Check wheel lug bolts		
11)	Grease all components		
12)	Check paint condition		
13)	Check for proper signage and decals		
14)	Check safety kit for P.P.E.		
15)	Fill 5 gallon water supply		

Comments:

Inspector: Date:

Facility Manager Date:

NH3-Form-082: Revision January 2008

Transport Canada Registration Number: 25-_____ **Test Standard: B620-03**

Customer Name:		**Date:**	
Customer Contact Person:		**Phone:**	
Customer Address:		**Fax:**	
Customer Signature:		**Unit Number:**	

Testing Facility: ( ) **Company**
123 Any Street
Regina Sask. XXX XXX
Phone (306) XXX – XXXX

Fax: (306) XXX-XXXX

Tank Code: **( ) TC-51** **( ) TC-331** **( ) ASME** **( ) MC-331**

Test Performed: **( ) Visual(2,3)** **( ) Leakage(4)** **( ) Pressure(5)** **( ) Hose Test(6)**

Type of Tank: **( ) Single** **( ) Twin** **( ) Quad**

Vessel One Information		**Vessel two Information**	
U Stamp		**U Stamp**	
Serial Number		**Serial Number**	
Provincial Number		**Provincial Number**	
TCRN / CRN Number		**TCRN / CRN Number**	
MAWP		**MAWP**	
Year Built		**Year Built**	
Manufacturer		**Manufacturer**	
Altered by		**Altered by**	
Head Material		**Head Material**	
Shell Material		**Shell Material**	
Head Thickness		**Head Thickness**	
Shell Thickness		**Shell Thickness**	
Head Type		**Head Type**	
Diameter		**Diameter**	
Vessel Length		**Vessel Length**	
Expiry Date of Pressure Relief Valves		**Expiry Date of Pressure Relief Valves**	
Tank Capacity		**Tank Capacity**	

External Visual Inspection/Checklist (B-620 7.2.1)				
ITEM	**ACCEPTABLE**	**NOT ACCEPTABLE**	**NOT APPLICABLE**	**COMMENTS**
Vessel Shell and head condition (7.2.1.1a)				
Check for corrosion				
Check for dents				
Check for defects and welds				
Check for defects in piping				
Check for leakage				
Valves (7.2.1.1c)				
Check proper function of all valves				
Check emergency shutdown devices including ISC valves(7.2.9)				
Remote closure device operation				
Ensure valves are free of corrosion and distortion				
Plumbing (7.2.1.1d)				
Ensure all bolts and nuts on flanges are in place and tightened				
Ensure plumbing is correctly colour coded				
Markings (7.2.1.1e)				
Ensure specifications and other markings on the tanks are legible				
Appurtenances (7.2.1.1f)				
Check the skid(frame) for cracks and physical damage				
Check mounting brackets, tiedowns(u-bolts), stoplights and brackets, valve guards(6.4.9)				
Ensure that all major appurtenances and attachments, connecting structures are not damaged or corroded affecting safe operation of the vehicle.				
Hose Assemblies(7.2.1.1g)				
Hoses do not display any defects. (7.2.10.4)				
Have legible markings indicating they have been tested as required. (7.2.10.6,8)				

ITEM	ACCEPTABLE	NOT ACCEPTABLE	NOT APPLICABLE	COMMENTS
Pressure Relief Valves(7.2.1.4)				
Inspect for corrosion or damage				
Pressure relief valves are replaced or tested in accordance with clause 7.2.7.6b				
Tank Protection(B622 5.2.5)				
Ensure suitable protection for valves, safety devices and other devices				
Ensure rear protection can deflect 6" forward NOT contacting any container with lading				
Emergency Shutdown System(B-620 7.2.1.6)Requirements located at 5.3.2.5e,f)				
When activated, does liquid ISC stop flow.(7.2.9.4)				
When activated stops motive power to pump				
Does it operates at 150 ft				
Meter creep test: lading circulated, flow established, ISC closed, flow thru meter stops within 30 s, and the meter creep shall cease within 5 s after the flow thru the meter stops. (Appendix D1)				
Non-Meter test: Open all ISC valves, operate emergency discharge control acuator, ensure each ISC valve has closed, evacuate product in downstream piping and is at atmospheric pressure, outlet monitored for 30 s, shall be no detectable leakage. (Appendix D2)				
Inspection Marking (B620-7.4)				
Place required decals indicating type of test (7.4.1,2,3)				

EXTERNAL VISUAL INSPECTION: ( ) PASS ( ) FAIL

Leakage Test Inspection/Checklist (B620-7.2.5)					
Test Medium	**( ) Water**	**( ) Air**	**( )Normal Lading of tank (Ammonia)**		
Test Pressure	**( ) 525 p.s.i.**	**( ) 420 p.s.i.**	**( ) 398 p.s.i.**	**( ) 375 p.s.i.**	**( ) _____**
ITEM	**ACCEPTABLE**	**NOT ACCEPTABLE**	**NOT APPLICABLE**	**COMMENTS**	
Performed in conjunction with external inspection(7.2.5.1)					
Venting devices relieving at less than test pressure removed (7.2.5.1a)					
Product piping and all associated valves/accessories in place and operative (7.2.5.1b)					
Valves tested in sequence (7.2.5.1c)					
Normal Lading, water or air used as test medium (7.2.5.1e)					
Test pressure used is the maximum normal operating pressure (7.2.5.1f)					
Test pressure maintained for minimum 5 minutes (7.2.5.1g)					
Inspection Marking (B620-7.4)					
Place required decals indicating type of test (7.4.1,2,3)					

LEAKAGE TEST INSPECTION: ( ) PASS ( ) FAIL

Pressure Test Inspection/Checklist (B620-7.2.7)				
Test Medium	**( ) Water**	**( ) Air**	**( ) Normal Lading of tank (Ammonia)**	
Test Pressure	**( ) 525 p.s.i.**	**( ) 420 p.s.i.**	**( ) 398 p.s.i.**	**( ) 375 p.s.i.** **( )_____**
ITEM	**ACCEPTABLE**	**NOT ACCEPTABLE**	**NOT APPLICABLE**	**COMMENTS**
Multi-tank vehicle, tanks tested separately, adjacent tank empty and at atmospheric pressure(7.2.7.2)				
Tank(s) are level				
Remove pressure and hydrostatic relief valves(7.2.7.3)				
Remove, service and re-install liquid level gauge				
Hose(s) removed, tested and recorded as per Form 9-01(6)				
Fill tank to 100% with water (7.2.7.7a)				
Pressurize tank to 1.5X MAWP and hold for minimum 10 minutes.(Table 7.3) (7.2.7.7a)(7.2.7.4)				
Conduct External Visual Inspection(7.2.7.4b) Form 9-01(2,3)				
Reduce pressure to 80% of MAWP (7.2.7.7e)				
Check function of excess flow valves (7.2.7.7e)				
Conduct Leak test per from 9-01(4)				
Tank emptied of water				
Pressure Relief Valve Expiry Date: *Insert in comments*				
Hydrostatic Relief Valve Expirey Date: *Insert in comments.*				
Replace pressure and hydrostatic relief valves. (7.2.7.6b)				
Inspection Marking (B620-7.4)				
Place required decals indicating type of test (7.4.1,2,3)				

PRESSURE TEST INSPECTION: ( ) PASS ( ) FAIL

Hose Assembly Inspection and Testing/Checklist (B620-7.2.10)

Hose Assembly Number:_____	HAWP: ( ) 350psi ( )_____	**Date tested/Inspected** _____

ITEM	**ACCEPTABLE**	**NOT ACCEPTABLE**	**NOT APPLICABLE**	**COMMENTS**
Hose was connected to tank or tank mounted accessory, used for loading or off-loading. (7.2.10.1)				
Test person has been trained in product and hose safety, inspection and test procedures, and rejection criteria. As per records. (7.2.10.3)				
Hose Assembly Inspection (7.2.10.4)				
No damage to hose cover (7.2.10.4.a)				
Kinked, flattened, or permanently deformed wire braid (7.2.10.4b)				
Soft spots when NOT under pressure, bulges when under pressure, or loose outer covering (7.2.10c)				
Damaged, slipping or excessively worn hose couplings (7.2.10d)				
Loose or missing bolts on hose coupling assemblies (7.2.10e)				
Deteriorated legibility of identification of hose (7.2.10f)				
Test pressure of 120% of the marked HAWP (7.2.10.5b)				
Pressure held for minimum 5 minutes (7.2.10.5f)				
Hose tagged with month/year of test (7.2.10.6)				
Name and Address of tester if other than indicated on page 1(7.2.10.7):		_____ _____ _____ _____		

HOSE TEST INSPECTION: ( ) PASS ( ) FAIL

The tank(s) tested has(have) been constructed of other than quenched and tempered steel (NQT). (B620-7.3.1h)

The following marking(s) have been applied to the Vessel/hose:

_____

_____

The statements below summarize the testing results:

_____ **No defects or damage was discovered.**
_____ **Defects or damage was discovered and is explained in the comments.**
_____ **This cargo tank/hose has been returned to service.**
_____ **This cargo tank/hose has been removed from service and sent for repair/destroyed.**

Documentation has been forwarded to the appropriate personnel and filed as per the requirements of the B20-03 standard.

Comments:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Inspector Name: _____ **Inspector Signature:** _____

Title: _____ **Date:** _____

The knowledge to conduct critical tasks safely should be based on standard operating procedures. It is critical for employees at the anhydrous ammonia operation to have a working knowledge of the procedures for conducting their required duties safely.

Employees must be able to explain:

(Example list, but not limited to):

- Hazards associated with anhydrous ammonia
- Transfer procedures from all vessels and storage facilities
- Critical operating limits and Emergency procedures for equipment
- Knowledge of Transportation of Dangerous Goods
- Placard classification
- Safety marking requirements
- Emergency response plan Knowledge and explain proper procedures
- First aid treatment when dealing with anhydrous ammonia
- First aid knowledge in treating inhalation hazards
- Knowledge of the procedures for the proper care of safety equipment
- Knowledge of WHMIS
- Knowledge of critical security procedures
- Maintenance of specific emergency equipment

ANHYDROUS AMMONIA FACILITY EMERGENCY RESPONSE PLAN

PLAN HOLDERS:

1. **Facility Manager**
2. **Field location office**
3. **Head office**
4. **Blue Tube at entrance to location**

1.0 FACILITY INFORMATION

FACILITY NAME

ADDRESS

Longitude / Latitude
Land Location:
P.O. Box and Town/City:
Postal Code:

FACILITY CONTACT PERSON

NAME:
PHONE:
FACSIMILE:

EMERGENCY TELEPHONE NUMBERS

POSITION	NAME	DAY/NIGHT
Facility Manager		
Alternate Contact		
Fire Department		
Police		
Ambulance		
Poison Control Centre		
Hospital		
Environment		
Transport Canada		
Emergency Response Contact		

CANUTEC 24 HOUR SERVICE. CALL COLLECT (613) 996-6666

NOTE:

CANUTEC provides information and communications assistance in case of transport emergencies involving dangerous goods. Its product information bank has been prepared primarily for transport emergencies, but it can also provide response information for non-transport emergencies involving dangerous goods.

REPORTING:

Emergencies involving Anhydrous Ammonia must be immediately reported to the Royal Canadian Mounted Police as required by Transport Canada. Reporting to the Police will guarantee a response. The Fire Department must also be alerted and if required due to casualties, the local ambulance service must be contacted to respond.

2.0 EMERGENCY RESPONSE PLAN PRACTICES AND TESTS:

Emergency Response Plans must be tested yearly. When plans are tested they must be updated to reflect the deficiencies found in the testing process. A copy of all updated Emergency Response Plans must be distributed to:

- **Responding Fire Departments**
- **Anhydrous Ammonia Site entrance and office.**
- **The location where the Facility Manager is located.**
- **Police**

Implementation Date: _____

FACILITY MANAGER: _____ _____
(signature) (date)

FIRE DEPT. OFFICIAL: _____ _____
(signature) (date)

ERP Practice Dates

Facility Manager	Fire Chief	Date
		, 2008
		, 2009
		, 2010
		, 2011
		, 2012

The Facility Manager and Fire Chief must sign and date the above table confirming that a practice has been completed at the facility and the changes have been updated in the plan.

AGENCY NOTIFICATION: (List the names and the telephone numbers of agencies and contact persons that need to be notified should a spill or release of Anhydrous Ammonia occur. Include railroads, roads, and highways (if they may have to be blocked).

NAME	PHONE NUMBER

SURROUNDING OCCUPANCIES & LAND USE: (Describe surrounding land use in all four directions for a three kilometer radius.) List all farms within the radius. For communities, list the name of the community and the emergency contact number and the town or city office number. For other industry occupancies

including other company properties list the contact numbers. Also list the amount of pastureland and water supplies such as creeks, rivers, and lakes.

NORTH

Name	Phone Number

North Land Use:

SOUTH

Name	Phone Number

South Land use:

EAST

Name	Phone Number

East Land use:

WEST

Name	Phone Number

3.0 LOCATION OF EMERGENCY EQUIPMENT & SUPPLIES:

(Available 24 hours a day. Include phone numbers).

EARTH MOVING EQUIPMENT

PORTABLE WATER PUMPS

STREET BARRIERS

SAND BAGS

OTHER

LOCATION AND TYPES OF WATER SUPPLIES: (hydrant, ponds, irrigation canals, fresh or salt water, etc.).

4.0 EMERGENCY RESPONSE GUIDELINES, ROLES & RESPONSIBILITIES

Facility Manager or Designate will:

- Take the action necessary to protect life and property
- Notify proper authorities (Police, Fire and/or Ambulance) and implement the facility Emergency Response Plan
- Report the crisis in accordance with regulatory requirements.
- Secure and prevent disturbance of the crisis area as required
- Notify immediate Supervisor or Company Management
- Ensure actions in place to protect the safety of employees
- Ensure first responders have been contacted as required by the situation

5.0 RISK ANALYSIS

1. DATE OF ASSESSMENT

2. COMPANY –

3. OCCUPANCY: **Anhydrous Ammonia Storage facility.**

This facility stores Anhydrous Ammonia for the purpose of supplying farmers with Nitrogen fertilizer. The product is stored in all vessels and is transferred onsite into the storage vessel from a highway transport truck. The product is then transferred into Field Delivery Trucks or Nurse Wagons and delivered to the field.

4. SECURITY SYSTEM TYPE:

5. EMERGENCY ACCESS: The emergency access has been shown on the site diagram in this plan.

6. HOURS OF OPERATION:

Site Plans should be prepared at this point; one of the site specifics, and one of the surrounding areas in a 3 kilometer radius.

6. MAIN POINT OF ASSEMBLY:

Indicate the main point of assembly for all worker's after an incident has occurred.

7. Quantities of Anhydrous Ammonia found at this facility:

Storage Vessel Capacity		Truck Vessel Capacity All Trucks		Nurse Wagon Capacity All Wagons	
# of Vessels	Capacity	# of Trucks	Capacity	# of Wagons	Capacity

UN Number: 1005

Anhydrous Ammonia is in a liquid form when stored under pressure. When released to the atmosphere is becomes a gas. Transport Canada identifies the product as: Ammonia, Anhydrous Class 2.3 (8) UN 1005.

8. Common Incidents that involve this product are:

- Release due to valve failure.
- Inhalation and burns from improper use of safety equipment.
- Release from over-filling of pressure vessels.
- Bursting hose.
- Theft for use in the illegal drug trade.

OTHER MAJOR HAZARDS THAT CAN BE FOUND AT THIS SITE ARE: (consider fire, gas release, pressure build up, heat, explosion and fuel).

ON SITE EMERGENCY RESOURCES

On Site Resources	Details
Self Contained Breathing Apparatus	
Full Face Respirators	
Response Suits on site	
Water Troughs	
Duct Tape	
Rubber Gloves	
CSA Approved Response boots	
Safety Belt/Harness and Lifeline	
Site Communications	
First Aid Equipment (List is in Kits and the plan)	Kit in office and all trucks
Fire Extinguishers	
Wind Socks	
Eyewash Stations	

Emergency Response Plans are located in a blue tube on the entrance to the site or in a blue tube attached to the site Emergency Response Sign.

6.0 LOCAL PREPAREDNESS PLANNING FOR THIS FACILITY

Describe the potential consequences to the public and the environment if an accidental release of Anhydrous Ammonia occurred at this facility.
Describe the worst case scenario that could occur at this facility.
Describe the notification method that will be used to alert the public if an emergency occurs. (this decision will be made with the community and the fire department personnel using the telephone system, siren, door to door, etc.)

List the names and agencies involved in the preparation of this plan.

NAME	AGENCY

ALL ITEMS LISTED BELOW MUST BE CHECKED IN ORDER TO FULLY COMPLETE THIS E.R.P.

Emergency telephone number list (on plan) (24 hour numbers included) posted beside each phone	
Emergency telephone list (posted at site)	
24-hour phone identified on ER sign (nearest location to site)	
Water supplies identified	
Diagrams completed properly site plan with 3 kilometer radius	
Fire Chief has visited site and has received a copy of the plan	
Complete list of industries and others that could be affected by an occurrence	
List of available and alternate communication equipment	
Designated and posted emergency exits in all facilities	
Have set up meeting location for after evacuation	
Held emergency response training on procedures	
Annual review of plan	
Log of training sessions and personnel training	
Annual emergency response drill or practice	
Monthly maintenance check completed on protection equipment and first aid supplies	
Monthly check of alarms, fire extinguishers, first aid kits, and eyewash stations	
A plan is to be kept off site for alternate access: The plan is located at:	Phone #

7.0 SITE DIAGRAMS

Every E.R.P. must include two diagrams:

- A diagram of the facility site.
- A diagram of the surrounding area.

The surround area diagram must include a three kilometre radius of the facility that may be affected by an emergency. This sketch will be derived from using rural municipality maps and village or town maps. The facility site diagram must be of the specific site on which the anhydrous ammonia storage facility resides.

The surrounding area diagram must include:

- The storage facility must be clearly identified in the area drawing.
- Name and location of farms and residences for the phone numbers listed in the ERP.
- Other industries and occupancies within approximately the three kilometre radius, such as mines, salt plants, food processing plants etc.
- Direction of water flow from site.
- Location of communities within the 3 kilometre radius of the plant.

Items featured on the facility site diagram must include:

- fire hydrant locations
- gas shut off valves
- locations of wind socks
- location of ER equipment
- location of emergency shut-off valves
- location of First Aid Supplies
- location of fenced compound
- location of Emergency Response Plan sign/entrance etc.
- building exits
- gravelled areas
- containment dykes
- fields and open areas
- bulk fuel storage
- propane and bulk fuel storage
- direction of runoff
- location of water troughs
- main electrical shutoff
- furnace room location
- exits and entrances to site
- rail roads
- roads and highways
- wells, cisterns, and other water supplies etc.
- distances to communities and other industries, farms or communities

Date, Year

Addressee
Address
Address

Dear Addressee

Our company operates an agricultural supply and distribution facility nearby. One of our products is anhydrous ammonia, a nitrogen fertilizer. In high concentrations, ammonia is a hazardous product. Our goal is to operate our business safely and responsibly, and one of our requirements is that we plan for what to do in the unlikely event of an emergency.

We believe it is important to plan for emergency preparedness with local emergency responders. We would like to invite you to participate in a short emergency preparedness planning session to be held at (Address) on (Date) at (Time). The agenda will be to review our emergency response plan with you and answer any questions you may have.

We hope you are able to attend, and look forward to meeting with you.

Sincerely,

Name
Title
Company

Date, Year
Addressee
Address
Address

Dear Addressee,

Our company operates an agricultural supply & distribution facility in this neighbourhood. One of our products is anhydrous ammonia, a nitrogen fertilizer. In high concentrations, ammonia is a hazardous product, so this letter is to provide information to you about ammonia and about what to do in the unlikely event of an emergency involving ammonia. Please read the attached information.

We are committed to operating our business safely and responsibly. If an emergency did occur at our operation, you may receive a phone call from our personnel if the emergency could affect you. You will be advised of the best course of action at that time.

If you have any questions you are welcome to call us at (XXX)-123-4567.

Sincerely,

Company representative
Title
Company

Date,

Mr. John Smith
Anytown Fire Chief
1234 Main Street
Anytown, ON, T6T 7T9

Dear Chief Smith:

Please accept this letter as your invitation to participate in the annual review and update of the emergency response plan for the anhydrous ammonia storage operation located at:

6456 Storm Road
Anytown, ON

We will be holding the review on MM/DD/YYYY, at ?:?? AM/PM. Your participation and input would be very important to update our emergency response plan. Please confirm your attendance by calling (306) XXX-XXXX.

Sincerely,

John Doe
Facility Manager
A1 Fertilizer Services Ltd.

RISK ANALYSIS

1. DATE OF ASSESSMENT

2. COMPANY –

3. OCCUPANCY: **Anhydrous Ammonia Storage facility.**

This facility stores Anhydrous Ammonia for the purpose of supplying farmers with Nitrogen fertilizer. The product is stored in all vessels and is transferred onsite into the storage vessel from a highway transport truck. The product is then transferred into Field Delivery Trucks or Nurse Wagons and delivered to the field.

4. SECURITY SYSTEM TYPE:

5. EMERGENCY ACCESS: The emergency access has been shown on the site diagram in this plan.

6. HOURS OF OPERATION:

Site Plans should be prepared at this point; one of the site specifics, and one of the surrounding areas in a 3 kilometer radius.

6. MAIN POINT OF ASSEMBLY:

Indicate the main point of assembly for all worker's after an incident has occurred.

7. Quantities of Anhydrous Ammonia found at this facility:

Storage Vessel Capacity		Truck Vessel Capacity All Trucks		Nurse Wagon Capacity All Wagons	
# of Vessels	Capacity	# of Trucks	Capacity	# of Wagons	Capacity

UN Number: 1005

Anhydrous Ammonia is in a liquid form when stored under pressure. When released to the atmosphere is becomes a gas. Transport Canada identifies the product as: Ammonia, Anhydrous Class 2.3 (8) UN 1005.

9. Common Incidents that involve this product are:

- Release due to valve failure.
- Inhalation and burns from improper use of safety equipment.
- Release from over-filling of pressure vessels.
- Bursting hose.
- Theft for use in the illegal drug trade.

EMERGENCY TELEPHONE NUMBERS

Date numbers were last reviewed:
Date numbers were last verified:

POSITION	NAME	DAY/NIGHT
Facility Manager		
Alternate Contact		
Fire Department		
Police		
Ambulance		
Poison Control Centre		
Hospital		
Environment		
Transport Canada		
Emergency Response Contact		

CANUTEC 24 HOUR SERVICE. CALL COLLECT (613) 996-6666

NOTE:

CANUTEC provides information and communications assistance in case of transport emergencies involving dangerous goods. Its product information bank has been prepared primarily for transport emergencies, but it can also provide response information for non-transport emergencies involving dangerous goods.

EMERGENCY RESPONSE PLAN PRACTICES AND TESTS:

Emergency Response Plans must be tested yearly. When plans are tested they must be updated to reflect the deficiencies found in the testing process. A copy of all updated Emergency Response Plans must be distributed to:

- **Responding Fire Departments**
- **Anhydrous Ammonia Site entrance and office.**
- **The location where the Facility Manager is located.**
- **Police**

Implementation Date: _____

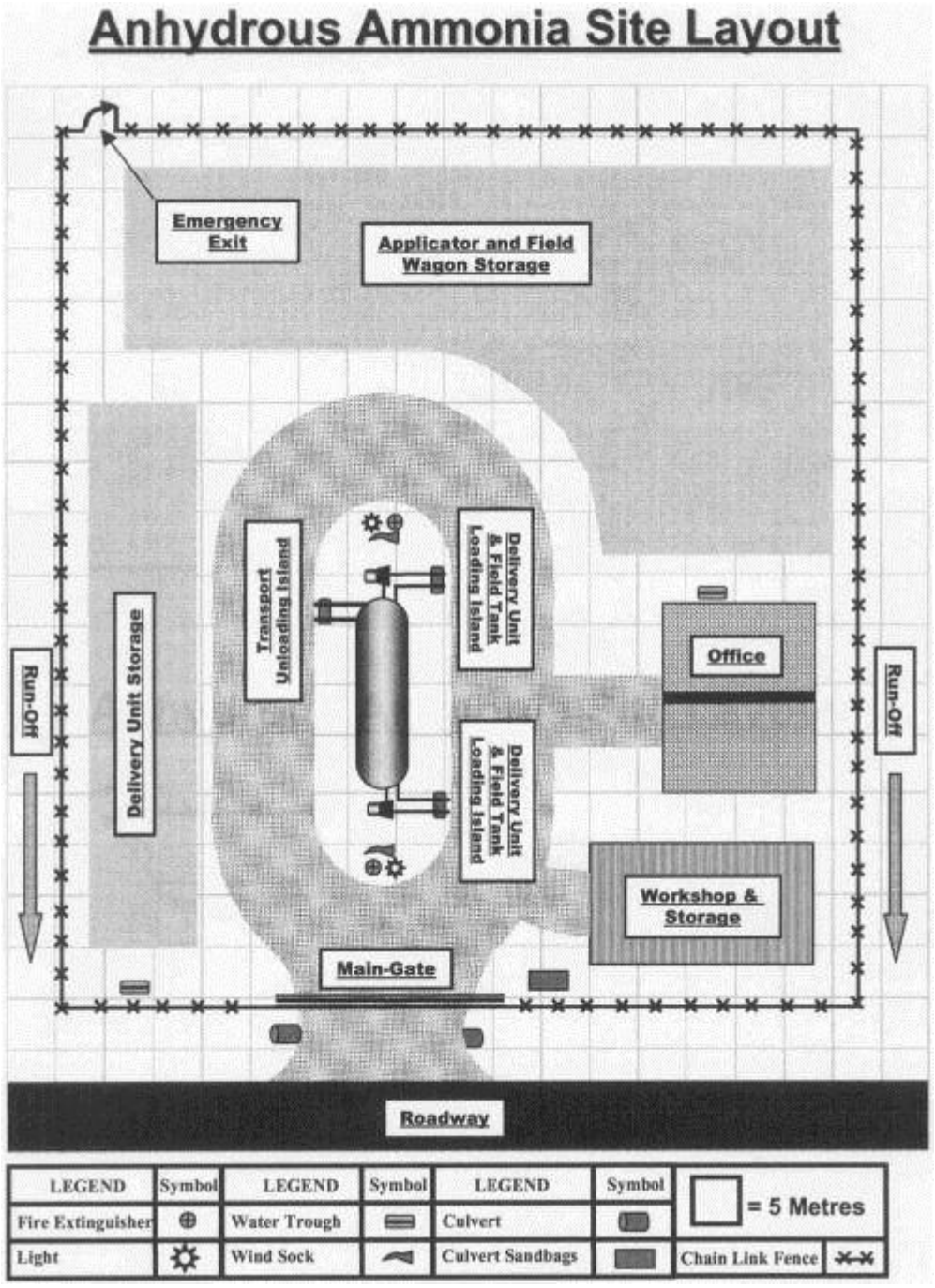
FACILITY MANAGER: _____ _____
(signature) (date)

FIRE DEPT. OFFICIAL: _____ _____
(signature) (date)

ERP Practice Dates

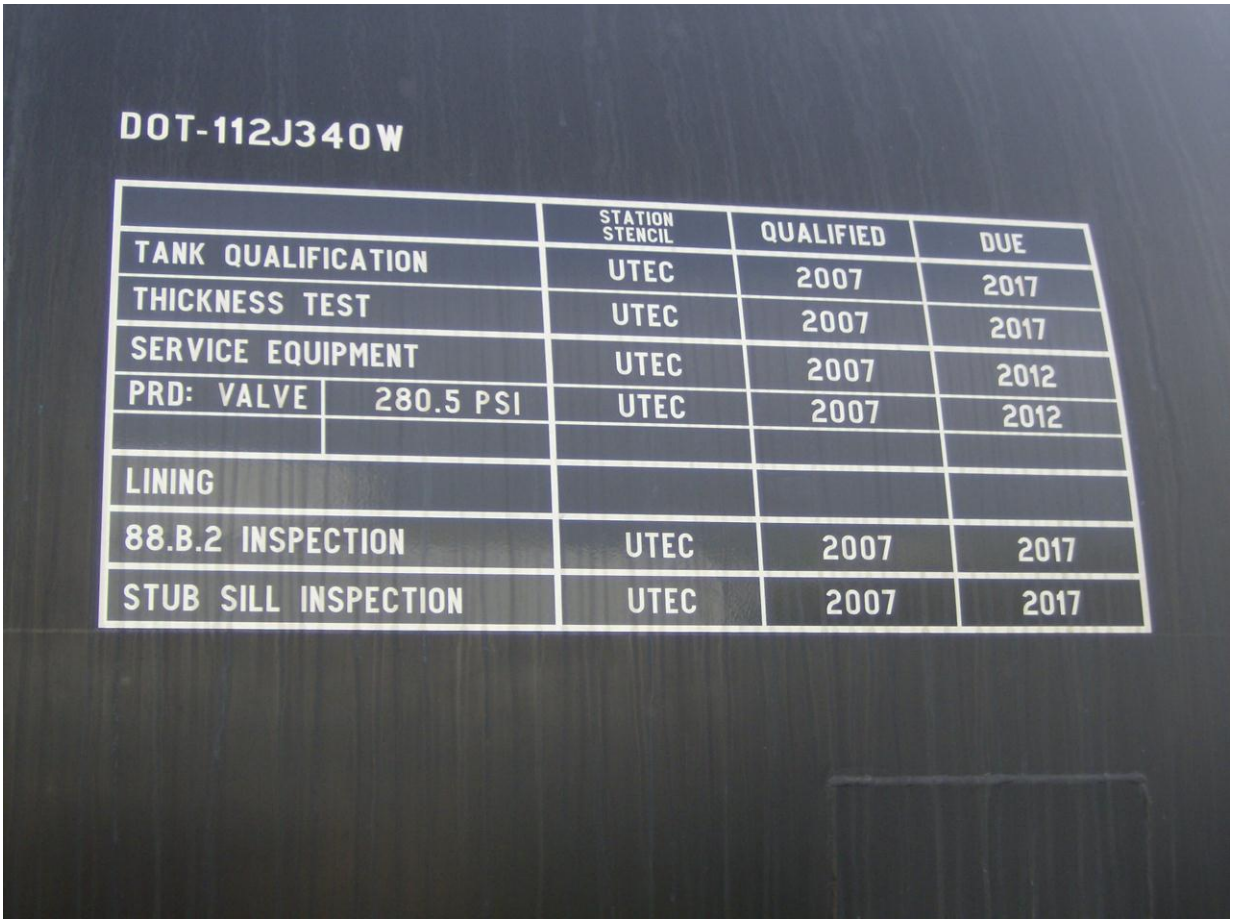
Facility Manager	Fire Chief	Date
		, 2008
		, 2009
		, 2010
		, 2011
		, 2012

The Facility Manager and Fire Chief must sign and date the above table confirming that a practice has been completed at the facility and the changes have been updated in the plan.


Anhydrous Ammonia Site Layout
Emergency Exit
Applicator and Field Wagon Storage
Transport Unloading Island
Delivery Unit & Field Tank Loading Island
Delivery Unit & Field Tank Loading Island
Delivery Unit Storage
Office
Run-Off
Run-Off
Workshop & Storage
Main-Gate
Roadway
LEGEND
Symbol
LEGEND
Symbol
LEGEND
Symbol
= 5 Metres
Fire Extinguisher
Water Trough
Culvert
Light
Wind Sock
Culvert Sandbags
Chain Link Fence

INCIDENT REPORT

General Information		
Type of Incident	Location of Incident	
Date of Incident (D/M/Y)	Date Incident Reported (D/M/Y)	Time of Incident
Personal Injury Section		
Name	Company	Notified ☐ OH&S ☐ WCB ☐ N/A
Injury		
Loss Reporting Section		
Description of loss or damage		
Incident Description		
Attach additional sheet if required		
Root Cause of the Incident		
What acts or conditions or safety system problems contributed to the incident		
Prevention		
Temporary Fix – What immediate corrective action has been taken to prevent a recurrence		Action taken by:
Permanent Solution – What corrective action has been or will be taken to eliminate the basic causes?		Action taken by:
Investigated By	Investigated By	Investigated By
Reviewed By	Reviewed By	Reviewed By

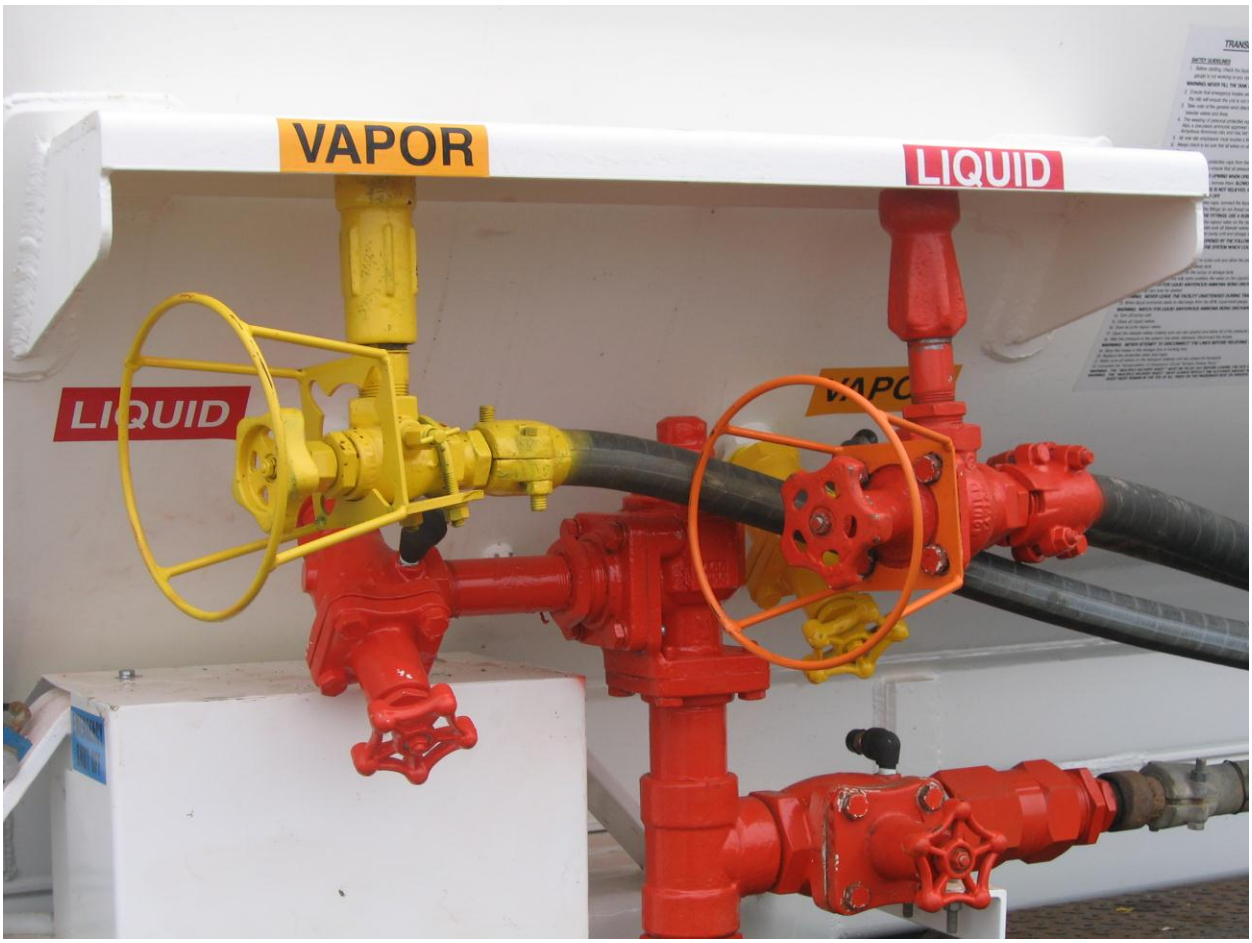


Rail tank cars in Canada must comply with Canadian General Standards Board (CGSB) Standard 43.147. This essentially means rail cars must comply with U.S. DOT CFR49 standard specifications. The rail car in this picture is marked TC112J340W, which complies with DOT specification 112J340W.

Note: Transportation of Dangerous Goods placard for anhydrous ammonia is the white 2.3 placard with a gas cylinder shown here.
http://www.tc.gc.ca/tdg/permits/htm/9283.htm

Emergency shut-off valve on a rail car.

Valves suitable for anhydrous ammonia service through a visual inspection of the equipment.



Typical hose end valve protectors.

Compliance will be indicated through a visual inspection of fall arrest or fall protection equipment or a written operating procedure.

HOSES – MARKED APPROVED FOR ANHYDROUS AMMONIA AND MAWP

Hoses must be rated for a maximum of 350 psi (2410kPa) for all ammonia rated hoses.

HOSES MARKED REMOVED FROM SERVICE DATE

CRIMP-ON/BOLT-ON HOSE COUPLINGS

Bolt on hose end fittings

Crimp on hose end fittings

Hose Test Record
APPENDIX H3.5

Hose Assembly Inspection and Testing/Checklist (B620-7.2.10)				
Hose Assembly Number:_____		HAWP: ( ) 350psi ( )_____		**Date tested/Inspected** _____
ITEM	**ACCEPTABLE**	**NOT ACCEPTABLE**	**NOT APPLICABLE**	**COMMENTS**
Hose was connected to tank or tank mounted accessory, used for loading or off-loading. (7.2.10.1)				
Test person has been trained in product and hose safety, inspection and test procedures, and rejection criteria. As per records. (7.2.10.3)				
Hose Assembly Inspection (7.2.10.4)				
No damage to hose cover (7.2.10.4.a)				
Kinked, flattened, or permanently deformed wire braid (7.2.10.4b)				
Soft spots when NOT under pressure, bulges when under pressure, or loose outer covering (7.2.10c)				
Damaged, slipping or excessively worn hose couplings (7.2.10d)				
Loose or missing bolts on hose coupling assemblies (7.2.10e)				
Deteriorated legibility of identification of hose (7.2.10f)				
Test pressure of 120% of the marked HAWP (7.2.10.5b)				
Pressure held for minimum 5 minutes (7.2.10.5f)				
Hose tagged with month/year of test (7.2.10.6)				
Name and Address of tester if other than indicated on page 1(7.2.10.7):		_____ _____ _____ _____		

HOSE TEST INSPECTION: ( ) PASS ( ) FAIL

The tank(s) tested has(have) been constructed of other than quenched and tempered steel (NQT). (B620-7.3.1h)

The following marking(s) have been applied to the Vessel/hose:

_____

_____

The statements below summarize the testing results:

_____ **No defects or damage was discovered.**
_____ **Defects or damage was discovered and is explained in the comments.**
_____ **This cargo tank/hose has been returned to service.**
_____ **This cargo tank/hose has been removed from service and sent for repair/destroyed.**

Documentation has been forwarded to the appropriate personnel and filed as per the requirements of the B20-03 standard.

Comments:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Inspector Name: _____ **Inspector Signature:** _____

Title: _____ Date: _____

PUMP APPROVED MANUFACTURED FOR NH3

ONLINE CERTIFICATIONS DIRECTORY

RBCT.MH6684
Pumps, Power Operated, Anhydrous Ammonia

Page Bottom

Pumps, Power Operated, Anhydrous Ammonia

See General Information for Pumps, Power Operated, Anhydrous Ammonia

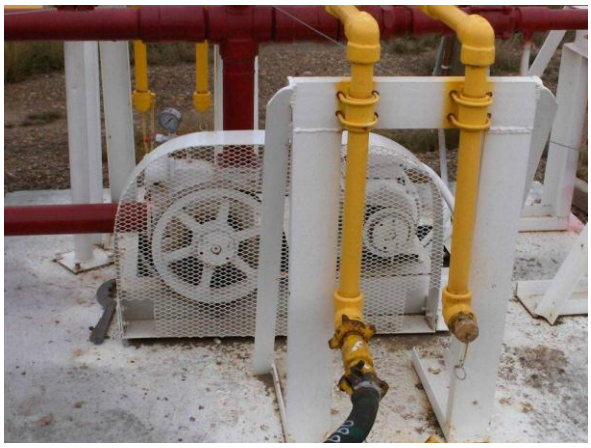
BLACKMER DIV OF DOVER RESOURCES MH6684
1809 CENTURY AVE SW
GRAND RAPIDS, MI 49525 USA

Transfer pumps, Models LDF1A, LDF1PA, LGB1E, LGB1PE, LGF1E, LGF1PE, LGL1-1/4, LGL1-1/2, LGL1.25, LGL1.5, LGRLF1.25A, LGLF1.25A, LGLF1.5A, LGLF1-1/4, LGLF1-1/2, LGRL1-1/4, LGRL1.25, TLGLF3, TLGLF3C, TLGLF4A, TLGLF4B, LGL4B, LGLD4B; Models LGL2E, LGL3E, LGLD2E, LGLD3E, LGLH2A, TLGL-2E, TLGL-3E, TLGLD2E, TLGLD3E with or without suffix E; Models LGL4A, LGLD4A.

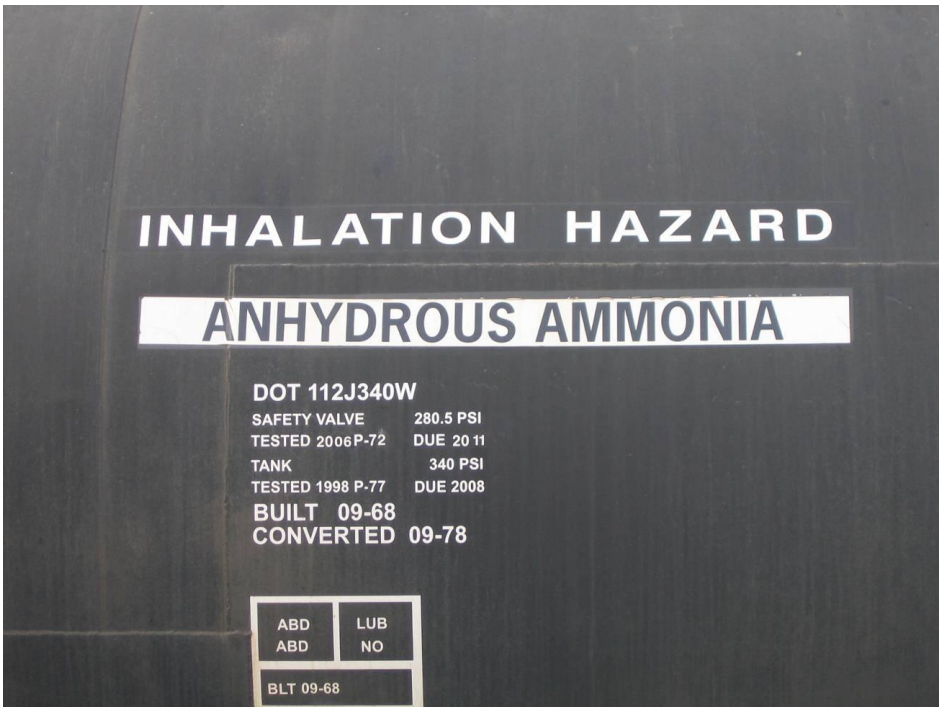
Last Updated on 2008-06-03

Questions? Notice of Disclaimer Page Top

GUARDS ON TRANSFER PUMPS/COMPRESSORS



TRANSFER PUMP/COMPRESSOR MOUNTED



Rail car “Anhydrous Ammonia” and “Inhalation Hazard” markings.
Pressure test and re-test date markings.

Note that the Transportation of Dangerous Goods placard for anhydrous ammonia is now the white 2.3 placard with a gas cylinder shown here.

http://www.tc.gc.ca/tdg/permits/htm/9283.htm

Full face respirator with ammonia cartridges

Personal water bottle

Ammonia resistant gauntlet style gloves

One or two piece ammonia resistant chemical suit

CSA approved Boots. Rubber boots are ok and leather safety boots 6” upper minimum ok too

Full face respirators dedicated for emergency use only are required

Some jurisdictions require self contained breathing apparatus (SCBA)

Ammonia resistant chemical suits dedicated for emergency use only are required

Emergency Water

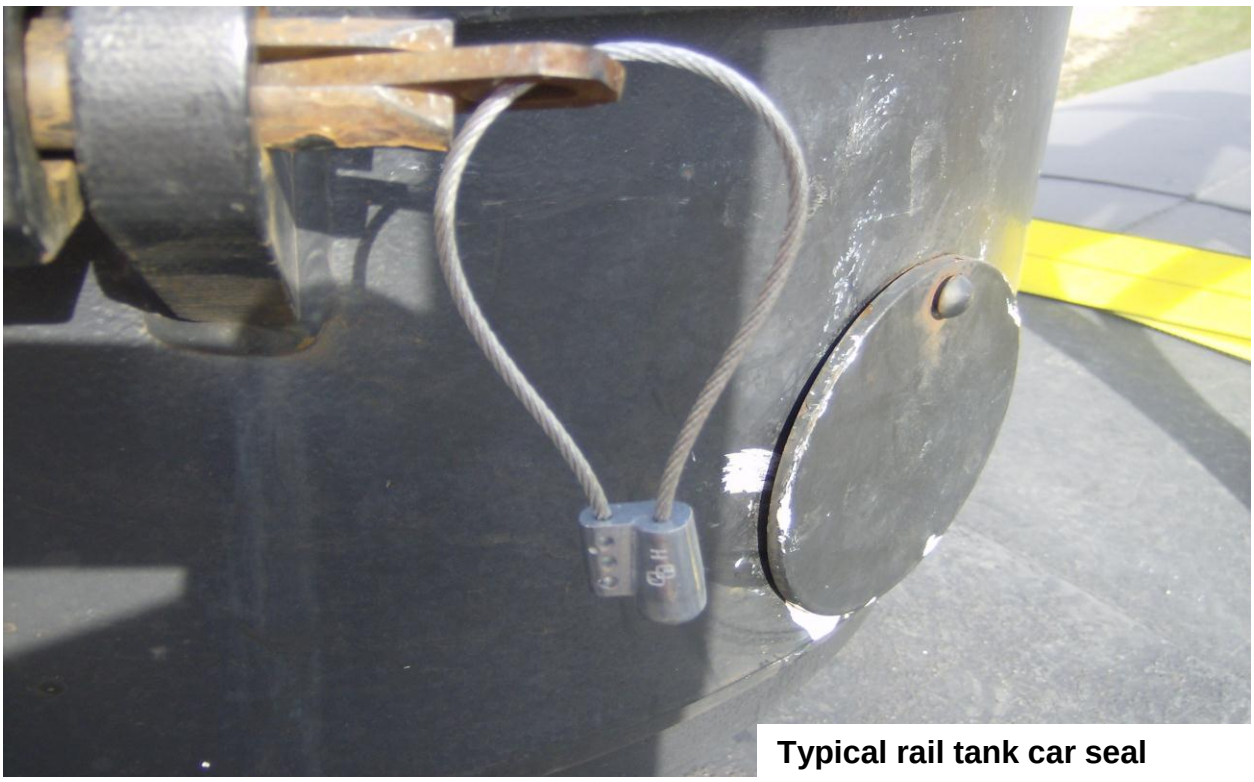
Plumbed in Safety Shower

Note that water troughs must be marked as emergency water with a red cross.
Minimum 2- 200 Gallon water troughs within 10 meters of transfer points

Emergency Eyewash should be floating in troughs during cold temperatures to keep from freezing.

Typical wind indicators

Banners & flags are also acceptable



Typical rail tank car seal

COMPANY

Pressure Tank Car Inspection and Pre-shipment Checklist

Date:				Product Description and ERAP Info:
Car No:				ANHYDROUS AMMONIA, CLASS 2.3 (8), UN1005 ERAP NUMBER XXXX
Weigh In:		KG		
Weigh out:		KG		ERAP and 24-hour PHONE (XXX) XXX-XXXX

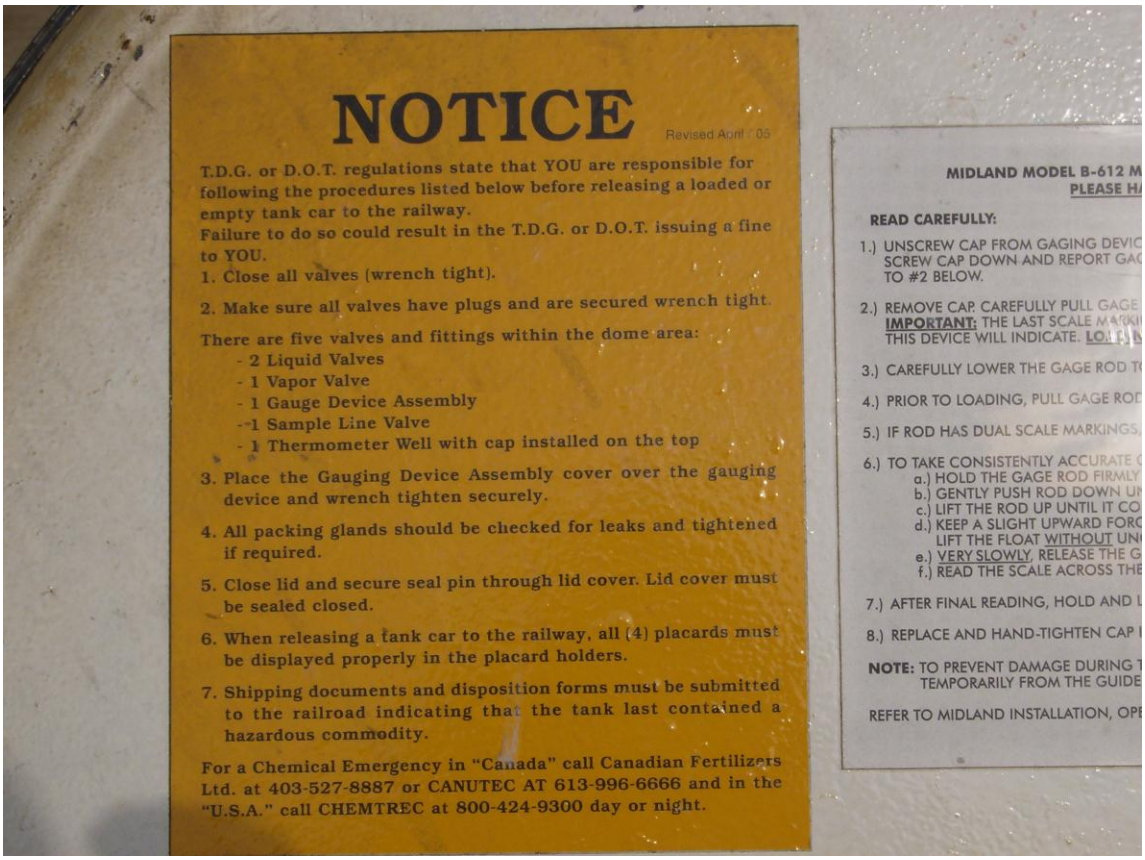
Rail Car General Inspection		**YES**	**NO**
1.	Check the defect card holder	____	____
2.	Inspect the T/C tank and/or jacket for any dents and punctures.	____	____
3.	Check car for seriously damaged or missing items. -handrail, ladders, platforms, railings, handbrakes	____	____
4.	Check trucks, brakes, and bolsters for any loose or broken parts.	____	____
5.	Check hand brake assembly for proper operation.	____	____
6.	Check car is equipped with double shelf couplers.	____	____
7.	Check stub sill for any visual cracks.	____	____
8.	Check car stenciling and paint: -'Anhydrous Ammonia' and 'Inhalation Hazard' stenciled on both sides of car	____	____
9.	Check car for 'qualification' stenciling: - (tank test date, and RV test date must be current)	____	____

Inspector Signature: _____ _____ **Date:** _____

Pre-Release Inspection		**YES**	**NO**
1.	Employ fall protection equipment	____	____
2.	Check Dome area for missing or loose bolts and dome lid, pin and chain.	____	____
3.	Check base plate bolts, that none are missing or loose.	____	____
4.	Reinstall plugs in valves and cover on gauging rod.	____	____
5.	Check all fittings inside the protective housing for leaks.	____	____
6.	Check that thermowell cap is on tight and not leaking.	____	____
7.	Check that relief valve is not passing.	____	____
8.	Check dome area for leaks.	____	____
9.	Close dome and install dome pin.	____	____
10.	Seal dome lid with wire cable seal.	____	____
11.	Final check for leaks. (Car cannot be shipped if leaking).	____	____
12.	TDG placards in place.	____	____

Inspector Signature: _____ **Date:** _____

Comments: _____



NOTICE

Revised April / 05

T.D.G. or D.O.T. regulations state that YOU are responsible for following the procedures listed below before releasing a loaded or empty tank car to the railway.
Failure to do so could result in the T.D.G. or D.O.T. issuing a fine to YOU.

1. Close all valves (wrench tight).
2. Make sure all valves have plugs and are secured wrench tight.

There are five valves and fittings within the dome area:

- 2 Liquid Valves
- 1 Vapor Valve
- 1 Gauge Device Assembly
- 1 Sample Line Valve
- 1 Thermometer Well with cap installed on the top

3. Place the Gauging Device Assembly cover over the gauging device and wrench tighten securely.
4. All packing glands should be checked for leaks and tightened if required.
5. Close lid and secure seal pin through lid cover. Lid cover must be sealed closed.
6. When releasing a tank car to the railway, all (4) placards must be displayed properly in the placard holders.
7. Shipping documents and disposition forms must be submitted to the railroad indicating that the tank last contained a hazardous commodity.

For a Chemical Emergency in "Canada" call Canadian Fertilizers Ltd. at 403-527-8887 or CANUTEC AT 613-996-6666 and in the "U.S.A." call CHEMTREC at 800-424-9300 day or night.

MIDLAND MODEL B-612 M
PLEASE HA

READ CAREFULLY:

1.) UNSCREW CAP FROM GAGING DEVIC
SCREW CAP DOWN AND REPORT GAG
TO #2 BELOW.

2.) REMOVE CAP. CAREFULLY PULL GAGE
IMPORTANT: THE LAST SCALE MARKI
THIS DEVICE WILL INDICATE. LO

3.) CAREFULLY LOWER THE GAGE ROD T

4.) PRIOR TO LOADING, PULL GAGE ROD

5.) IF ROD HAS DUAL SCALE MARKINGS,

6.) TO TAKE CONSISTENTLY ACCURATE
a.) HOLD THE GAGE ROD FIRMLY
b.) GENTLY PUSH ROD DOWN UN
c.) LIFT THE ROD UP UNTIL IT CO
d.) KEEP A SLIGHT UPWARD FORC
LIFT THE FLOAT WITHOUT UN
e.) VERY SLOWLY, RELEASE THE G
f.) READ THE SCALE ACROSS THE

7.) AFTER FINAL READING, HOLD AND L

8.) REPLACE AND HAND-TIGHTEN CAP

NOTE: TO PREVENT DAMAGE DURING T
TEMPORARILY FROM THE GUIDE

REFER TO MIDLAND INSTALLATION, OPE