

River Tyne

Drinking Water Intake

Risk Assessment



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Contents

Executive Summary

1 Introduction

- 1.1 Background
- 1.2 Risk Assessment

2 Tyne Risk Assessment Campaign

- 2.1 Aim of the Campaign
- 2.2 Scope of the Campaign

3 Industrial and Commercial Premises

- 3.1 Strategy
- 3.2 Data Processing
- 3.3 Computer Modelling

- 3.4 Site Inspections
 - 3.4.1 Preparations
 - 3.4.2 Obtaining the Appointment
 - 3.4.3 The Visit
 - 3.4.4 Risk Assessment Scores
 - 3.4.5 Analysis of Scores
- 3.5 Re-visit Programme
- 3.6 Conclusions

4 Agriculture

- 4.1 Area Covered
- 4.2 Number of Farms
- 4.3 Methodology
- 4.4 Site Visits

- 4.5 Results
 - 4.5.1 General Overview
 - 4.5.2 Total Risk Scores
 - 4.5.3 Analysis of Highest Scores

- 4.6 Recommendations
- 4.7 Common Problems
- 4.8 Remedial Work
- 4.9 Conclusions

5 Transport Infrastructure

- 5.1 Roads
 - 5.1.1 Background
 - 5.1.2 Powers of the Environment Agency
 - 5.1.3 Approach
 - 5.1.4 Results
 - 5.1.5 HGV/Tanker Markings
 - 5.1.6 Conclusions

- 5.2 Railways
 - 5.2.1 Background
 - 5.2.2 Train Movement Information
 - 5.2.3 Loads and Fuel Capacity
 - 5.2.4 Conclusions

6 Other Potential Sources of Pollution

- 6.1 Review

7 Recommended Future Work

- 7.1 Industrial & Commercial Premises
- 7.2 Farms
- 7.3 Highways
- 7.4 Railways

Appendices

- Appendix 1 Water Pollution Risk Assessment Form
- Appendix 2 Industrial/Commercial Sites Visited
- Appendix 3 Confirmation of Appointment Letter
- Appendix 4 Farm Pollution Risk Assessment Form
- Appendix 5 Press Release

Index of Maps

- Map 1 River Tyne Catchment

Index of Tables

- Table 1 Industrial Sites Ranked According to Risk Assessment Score
- Table 2 Changes in Pollution Risk Scores
- Table 3 Total Risk Scores for each Farm
- Table 4 Farm Improvements Requested
- Table 5 Remedial Works Implemented

Executive Summary

The River Tyne provides a major source of public drinking water via an abstraction point at Ovingham, near Prudhoe. Northumbrian Water Ltd, (NWL) operates the intake and the associated water treatment works at Horsley.

Contamination of rivers used for water supply generally requires the closure of the abstraction point as a preventative measure. This can be very costly to the Water Company and cause great inconvenience to their customers. Protection of these essential assets prompted NWL to collaborate with the Environment Agency in undertaking risk assessment studies for all their major river supply sources.

The Tyne Risk Assessment commenced in September 1998 and provides a quantitative evaluation of the risk from industrial and agricultural premises within the catchment. This was achieved by a comprehensive programme of pollution prevention inspections, which resulted in the collection, processing, and storage of a large amount of data. In total 149 industrial sites and 80 farms were inspected. A numerical scoring system has been employed to quantify the pollution risk from each site. Operators were provided with recommendations to reduce the potential risk of water pollution and given advice on best environmental practice. Approximately twelve months after the initial visits follow-up action was undertaken to review any changes at the sites.

In addition, this project has provided a more qualitative assessment of other potential sources of pollution, which may affect the intake at Ovingham. In particular, an assessment of the risk from road and rail traffic has been carried out. This involved a survey of potentially polluting loads, moving through the catchment.

In summary, the Tyne Intake Risk Assessment has achieved the following:

- Reduced the potential risk to the Ovingham abstraction via demonstrable improvements at industrial and agricultural premises.
- Provided a good example of pro-active regulation. This type of pollution prevention work should result in a reduction in the number of pollution incidents in the area.
- Enabled the targeting of future resources. The high-risk sites will be subject to future pollution risk assessment visits.
- Raised the profile of the Environment Agency, and environmental matters in general, with business in the area. The project has enabled contact with companies and farmers not regulated by the Agency on a routine basis. It is hoped that this has projected a positive image of the Agency with the site operators involved.
- Provided an opportunity to promote the work of the Agency with the local community and the public in general, via press coverage. (See **Appendix 5** - Press release.)
- A successful partnership project with a major stakeholder, Northumbrian Water Ltd. The promotion of this project may be used to encourage the co-funding of similar projects in the future.

1 Introduction

1.1 Background

One of the major responsibilities of the Environment Agency is the control of water pollution, with the duty to prevent, minimise, remedy or mitigate pollution. In particular the Agency must seek to protect the quality of rivers used for drinking water.

The River Tyne and its tributaries are a major source of public water supply. Northumbrian Water Ltd (NWL) operates a Water Treatment Works that abstracts raw water from the River Tyne at Ovingham, near Prudhoe (See Map 1).

The Environment Agency, in collaboration with NWL, has undertaken a risk assessment project with the aim of reducing the number of pollution incidents that could potentially contaminate the River Tyne. Reducing pollution in the drinking water catchment area will not only safeguard public health, but also have significant benefits towards enhancing the natural water environment.

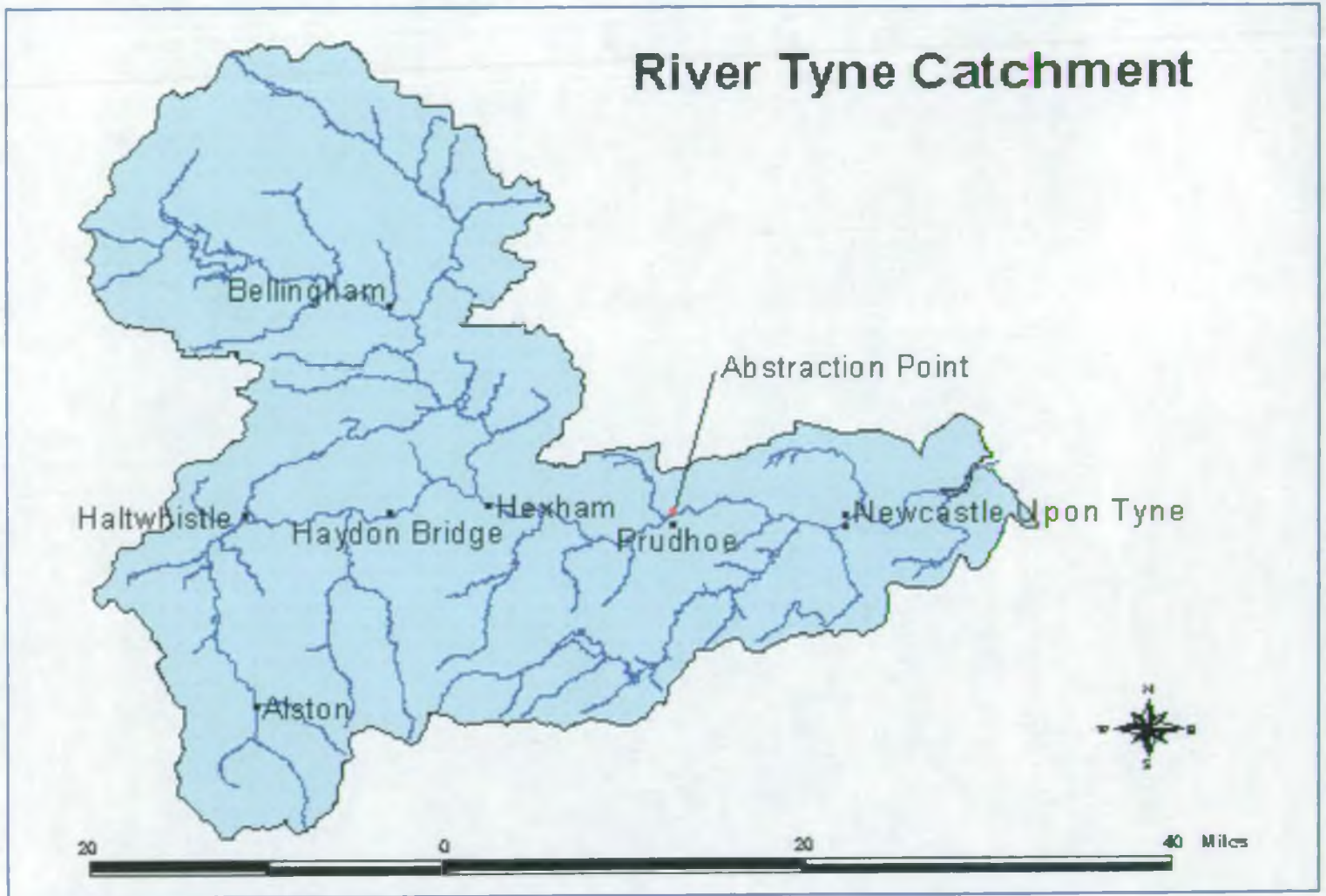
1.2 Risk Assessment

Accidental contamination of rivers used for drinking water supplies can present a major health risk. Furthermore, the closure of a water treatment plant, as a preventative measure, can be very costly to the water supply company and inconvenient to its customers.

In the North East Region, this has resulted in a history of close co-operation between Northumbrian Water Ltd and the Agency, with the aim of reducing the number of pollution incidents that could potentially contaminate public drinking water supplies.

A pro-active approach to pollution prevention, involving the assessment and management of environmental risks, has been taken. This is in contrast to a reactive approach in which remedial action is taken after an incident has occurred. The targeting of resources to real risks will help to provide a safer environment, both for people and aquatic life.

Map 1.



2 Tyne Risk Assessment Campaign

2.1 Aim of the Campaign

The aim of the Tyne Risk Assessment Campaign is to provide a risk assessment of the River Tyne catchment, and to identify and prioritise the pollution hazards that pose a threat to the Ovingham intake. The study provides a preliminary pollution risk assessment for the intake and does not consider the risk or consequences of contaminated water passing through the intake and into the treatment works or public supply.

In addition the campaign aims to minimise the risks to the water environment by providing advice and information to potential polluters and to request that remedial works are undertaken, where necessary, to prevent pollution.

2.2 Scope of the Campaign

To achieve the aims of the project the following actions have been carried out:

- Identification of the nature of the catchment and the potential hazards in the catchment;
- Preparation of a programme of site inspections to determine the significance of industrial, commercial and agricultural premises within the catchment.
- In depth site inspections and collection of data about storage of chemicals, liquid processes, and site procedures.
- Provision of written recommendations to site operators where deemed necessary.
- Data recording and analysis to establish a quantitative assessment of risk for each site.
- Provisional ranking of these sites in order to establish an ongoing programme of inspections and risk assessment.
- Production of a 'Catchment Inventory' of stored chemicals to enable future modelling of release consequence using POLLUX or similar computer package.
- A study of road and rail traffic, to provide some indication of the type of materials being transported within the catchment and the associated risks.

In addition, a limited review of other potential pollution sources has been carried out.

3 Industrial and Commercial Premises

3.1 The Strategy

The objective of the project was to assess the risks associated with sites and activities within the catchment. In particular, efforts have been concentrated on quantifying the risks from the operation of industrial and commercial premises.

An environmental audit, including a comprehensive site inspection, has been carried out at a large number of these sites, throughout the catchment area. Pollution risks were evaluated based on the following criteria:

- Operational processes & procedures
- Storage facilities
- Drainage systems
- Waste disposal procedures .
- Emergency contingency plans

In addition, inventories of the types and quantities of chemicals used or stored on site have been produced.

Site operators/farmers were then advised on precautionary measures necessary to alleviate any risks identified.

Common precautionary measures included:

- Improved bunding
- Revised site drainage
- Reduction in the quantity of materials stored
- Improved site management

3.2 Data Processing

The data collected during site inspections was recorded by the use of standard forms. The intention has been to achieve an objective and consistent assessment of risks over a wide variety of sites. An example of the form can be seen in **Appendix 1**.

The information collected was then entered into the PC based database IDEA (Integrated Database for Environmental Assessments) which was developed by the Northumbria Area Campaigns Team of the Agency. The database quantifies the risks associated with each site, producing an overall Risk Score. The Risk Score can be used to rank the sites and contributes to the selection of a site for inclusion in an ongoing programme of inspections.

It was hoped that where remedial measures have been recommended and are implemented, a quantifiable reduction in the risk associated with a particular site could be demonstrated.

3.3 Computer Modelling

The pollution risk management tool **POLLUX**, developed by Safege (subsidiary of Lyonnaise des Eaux), may be used to determine the acceptability of quantities of chemicals at a particular location.

Assuming the worst-case scenario, dilution, dispersion and the time of travel can be evaluated in the event of an incident. This will enable the quantities of chemicals, which can exceed selected toxicity thresholds at the abstraction point, to be calculated.

3.4 Site Inspections

3.4.1 Preparations

Initially 198 companies were identified within the project catchment. This information was obtained from a number of sources including previous pollution prevention initiatives, business directories and the employment census database.

This list was used to prepare a programme of site inspections, with the result that **149** industrial and commercial sites were visited between September 1998 and March 1999. The remaining sites, (**49**) were found not necessary to visit, or no longer operational.

An alphabetical list of the sites visited is shown in Appendix 2.

3.4.2 Obtaining the Appointment

In most cases, initial contact was made by telephone to locate the appropriate person within the company and arrange a suitable time for a site visit. This was then verified by a confirmation letter (see *Appendix 3*). Some of the smaller sites were visited without prior contact.

The larger and more complex site visits were attended by two officers to ensure the presence of the required skills and expertise needed identify and assess the significance of any risks encountered.

3.4.3 The Visit

On arrival at the site, the officer(s) introduced themselves and provided a brief explanation regarding the Risk Assessment campaign and the purpose of the visit. This was followed by an inspection of the site and a discussion of the operations undertaken as part of the business activities.

Prior to leaving the site the company representative was advised on the site performance with regard to compliance with the relevant legislation, given advice on best practice and informed of any significant risks posed by the company's operations.

Where appropriate, the officer stated that a written schedule of recommendations would follow. The company's representative was advised that a revisit would be undertaken to assess progress against these recommendations. Finally, the company was offered additional information or advice on a number of environmental topics.

A follow up letter, advising of the particular recommendations and providing any requested information, was forwarded to the relevant company representative.

3.4.4 Risk Assessment Scores

On completion of the site inspection, the details of each company were entered into the database. Where chemicals or oils were present on-site, a chemical inventory and Risk Assessment Score have been produced, (114 sites).

The overall risk assessment score for each site is made up of the following components:

- **Bulk Storage** - Bunding, overflow alarms, underground pipes, drainage specification, valve security.
- **Drum Storage** - Spillage containment.
- **Liquid Processes** - Drainage destination, monitoring.
- **Site details** - Security, vandalism, delivery procedure, emergency planning, chemical inventory.

The addition of all of these components gives an overall risk assessment score for each site.

Table 1 represents the sites ranked according to their overall Risk Assessment Scores:

Table 1 Sites Ranked According to Total Risk Assessment Score

Company Name	BULK	PROCESS	SITE	DRUM	TOTAL SCORE
AGMA PLC	2702040	318780	3612840	17710	6651370
HAMMERITE PRODUCTS LTD	1507896	44226	3007368	105462	4664952
POINTING LTD	787968	103680	1175040	9600	2076288
EGGER (UK) LTD	471240	50490	323136	6732	851598
AKZO NOBEL DECORATIVE COATINGS	562400	5700	159600	1900	729600
SCA HYGIENE PRODUCTS UK LTD	124600	12600	403200	8100	548500
KILFROST LTD	228928	1680	228480	420	459508
CAMPACT LTD	189696	11232	119808	9984	330720
FOURSTONES PAPER MILL CO LTD	103992	4536	148176	3360	260064
TARMAC QUARRY PRODUCTS	55440	0	162540	2646	220626
J.M.JACKSON	76120	4950	116820	2640	200530
TYNEDALE DISTRICT COUNCIL	73120	0	112560	980	186660
FOREST ENTERPRISE	29744	0	92400	308	122452
G.R. WARDLE & SON	50400	0	53136	1728	105264
PATTERSONS FORD	43520	0	41280	1280	86080
THOMPSONS OF PRUDHOE	48384	0	25704	1008	75096
ARRIVA – NORTHUMBRIA SECTION	24840	0	44064	1728	70632
JOYCE DRAINAGE	27468	0	37800	1008	66276
TYNE MILLS MOTOR CO. LTD	26240	0	27840	1280	55360
HI-Q TYRES	29120	0	24780	266	54166
HADRIAN PMC INTERNATIONAL LTD	24080	420	28560	266	53326

Company Name	BULK	PROCESS	SITE	DRUM	TOTAL SCORE
NORTHUMBRIAN ROADS LTD	24080	0	22848	672	47600
F. HANDCOCK & SONS	22848	0	20664	672	44184
RMC AGGREGATES	18600	1200	20400	100	40300
NORTHUMBERLAND CONTRACTING	17280	0	17496	432	35208
NORTHUMBERLAND COUNTY COUNCIL	19272	0	13068	1584	33924
MATHEW CHARLTON & SONS(BUILDERSMERCHANTS)LTD	20000	0	13056	0	33056
JOHN HOGG (HAULAGE)	12480	0	18144	48	30672
TYNEDALE DISTRICT COUNCIL	17976	0	11844	238	30058
J D CRAWFORD LTD	11676	0	17136	336	29148
BXL PLASTICS LTD	15120	450	6120	156	21846
WCF FUELS LTD	11392	0	9792	192	21376
TYNE VALLEY COACHES	6624	0	13824	256	20704
DAVISON TYNE METAL LTD	5640	0	12240	240	18120
EVERITT & MARSHALL AGRICULTURAL ENGINEERS	5640	0	11340	240	17220
BISHOPS GARAGES LTD	0	0	14688	0	14688
HEXHAM EXHAUST AND SERVICE CENTRE	5440	0	8160	160	13760
RICKERBY LTD	6840	0	6120	240	13200
HEXHAM MOTOR SERVICES	5440	0	7080	160	12680
NORTHERN ELECTRIC HEXHAM DEPOT	6240	0	6120	180	12540
NORTHUMBRIAN WATER LTD	7128	0	5184	108	12420
NORTH OF ENGLAND WOOLS	4560	0	7080	80	11720
L DAVISON VEHICLE BODY REPAIR	2040	0	9000	0	11040
NORTHUMBRIAN WATER LTD	5400	0	5160	160	10720
CARRS AGRICULTURE	5760	0	4080	160	10000
MILL VOLVO	4560	0	4500	240	9300
NICHOL & LAIDLOW	2544	0	6624	12	9180
WINGROVE MOTOR COMPANY LTD	4104	0	3186	0	7290
DAVID DIXON	0	240	6528	128	6896
PANTHER MOTORS LTD	0	672	5952	128	6752
R&R HANDS	2256	0	4248	96	6600
TYNE VALLEY TYRES	0	0	6372	60	6432
ROWELL COACHES	4032	0	2124	48	6204
EXCEL LOGISTICS	3168	0	2232	96	5496
HEXHAM AUCTION MART	1512	135	3672	0	5319
MOTOR BODIES(HEXHAM)LTD	2160	0	2412	0	4572
AUTOBAHN	1800	0	2448	48	4296
LORD HIRE	0	0	4224	44	4268
HEXHAM TOOL AND MOULDING	0	0	3672	72	3744
ARMSTRONG & NICHOLL	1272	0	2448	6	3726
ROCON PLASTICS LTD	0	0	3264	64	3328
SWIFT BRAKE & CLUTCH LTD	0	0	3186	72	3258
T DOODY & CO LTD	696	0	2448	48	3192

Company Name	BULK	PROCESS	SITE	DRUM	TOTAL SCORE
PETER LOWERIE & CO LTD	0	0	2850	200	3050
J E NIXON & SON	1312	0	1608	32	2952
CJL FENWICK	0	0	2700	72	2772
HENDERSON FENCING	960	60	1632	0	2652
MULTICHEM LTD	0	90	2448	6	2544
PLENMELLER OCCS	624	0	1536	128	2288
BLENKINSOPP COLLIERIES - CASTLE DRIFT	0	0	2214	30	2244
ROBSON PRINT LTD	0	0	1632	32	1664
GREENLINE ENGINEERING	0	0	1632	32	1664
MAL- PEN ENGINEERING LTD	0	0	1632	16	1648
LOGIC MANUFACTURING	0	0	1632	4	1636
GLADSTONE PACKAGING	832	0	708	16	1556
BEED PRINTING	0	72	1392	24	1488
MATT CLARK LTD	528	0	816	2	1346
HEXHAM TYRE & BATTERY	0	0	1056	32	1088
DAVID HENDERSON	136	0	816	16	968
D E PHARMACEUTICALS INTERNATIONAL	432	0	498	0	930
DENTACARE TECHNOLOGY LTD	0	36	816	8	860
BLENKINSOPP COLLIERIES LTD - WRYTREE DRIFT	344	0	492	2	838
PRINCESS HOUSE LTD	152	0	480	0	632
J.P. WESTALL & SON	136	0	492	0	628
NORTHUMBRIA AMBULANCE	264	0	300	16	580
TEN CATE PERMESS (UK) LTD	360	0	204	0	564
GILESGATE LTD	216	0	300	0	516
NICHOLSON SEALS LTD	0	0	456	32	488
KATTAN DISPOSABLES	68	0	408	0	476
TYNE VALLEY GLAZIERS	0	15	408	8	431
AVONMIRE(WATERFORD)	0	0	408	8	416
HEXHAM AUTO SPARES	0	0	408	8	416
DIRECT FENCING SUPPLIES	0	0	408	8	416
L & J BATY	0	0	408	1	409
KENNETH WILSON (FORMERLY A.F. NORTHERN)	304	0	72	8	384
CHANGES CATERING SERVICES	0	18	354	1	373
LORRAINE'S CATERING	0	0	336	32	368
NEWCASTLE FINE ART PRINTERS	0	0	354	8	362
BRITISH GAS TRANSCO	0	0	354	8	362
LAMCO TECHNICAL PRODUCTS LTD	0	0	348	8	356
BURLINSON PRINT	0	0	270	72	342
PETER HOLMES	0	0	288	32	320
GILLIGAN ENGINEERING SERVICES	0	15	258	8	281
BICYCLE REPAIR MAN	0	0	264	8	272

Company Name	BULK	PROCESS	SITE	DRUM	TOTAL SCORE
SGS TIMBER HAULAGE LTD	0	0	264	8	272
BRIAN ORD CRASH REPAIRS	0	60	120	32	212
DOWN TO EARTH	144	0	66	0	210
D J HUTCHINSON	0	0	0	200	200
ARC NORTHERN - HOWFORD QUARRY	72	0	108	0	180
GEORGE BERNARD SHAW	0	0	72	24	96
SCOTTS COACHES	0	0	0	8	8
DICKINSONS CARPETS	0	0	0	8	8

3.4.5 Analysis of Scores

The total risk assessment scores for each of the sites can be summed to produce an overall score for the whole of the catchment. This catchment score can be analysed to give an indication of which components are contributing most to the potential pollution risk:

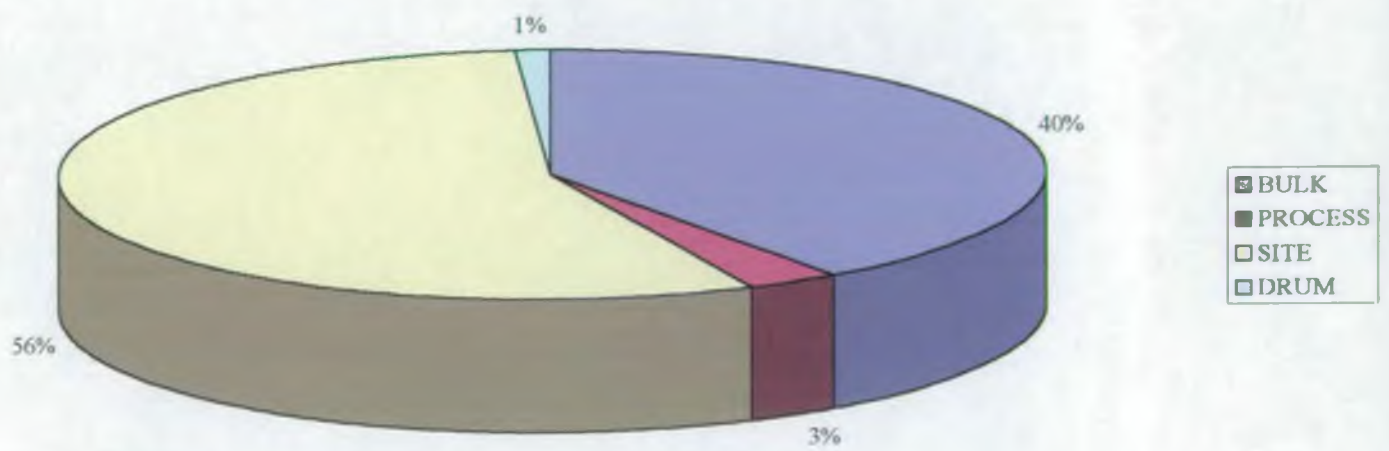
- Site 56%
- Bulk Storage 40%
- Processes 3%
- Drum Storage 1%

Chart 1 illustrates the proportion of the catchment pollution risk attributed to each of the above components.

It can be seen from the chart that the majority of the score is produced by the nature of the site (56%). The size of the chemical inventory contributes significantly to this component of the score. The larger sites therefore score more heavily. This is a measure of potential risk from the nature and quantities of materials stored and does not necessarily reflect on the site's storage facilities or operational procedures. Many of the high-scoring sites had few or no recommendations following the initial visit, the high scores merely reflecting the potential risk from the presence of materials stored on site. The risk score for such sites will only be significantly reduced by a change in the nature of the activities or procedures on site, that results in an overall reduction in the size of the chemical inventory.

The second most significant component, bulk storage (40%), also reflects the bias in the scoring system towards the storage of large quantities of potentially polluting materials. Again this type of risk is generally inherent to the type of business and can only be managed, not removed completely.

Chart 1 - Pollution Risk Assessment Scores





3.5 Re-visit Programme

Following the initial visits and recommendations an assessment of any reduction in pollution risk was required. Approximately twelve months after the original visits, those sites where the most significant potential risk had been identified, or recommendations had been made, were contacted again.

Initially 42 sites were identified as requiring some form of follow-up action. Of these 21 were found necessary to revisit to assess and verify any changes. Some of these changes were physical works (bunds, spill trays, etc.) while others were operational or procedural.

A new record for each of the sites was entered into the database. The database is capable of holding multiple records for a site, which enables an on-going history of inspections to be recorded. Where appropriate a new risk score was generated.

3.6 Conclusions

Not all aspects of the sites that were inspected and recorded contribute to the risk score. This is a legacy of the system inherited from previous risk assessment projects. Therefore, whilst achieving a general reduction in potential pollution risk, not all of the recommended actions would bring about a change in the numeric risk score.

Table 2 records the sites at which a change in the pollution risk score was achieved.

Table 2. Changes in Pollution Risk Scores

Co Name	Bulk	Process	Site	Drum	Total Change
Carrs Agriculture	-420	0	0	0	-420
D E Pharmaceuticals	-408	0	0	0	-408
Hadrian PMC Int.Ltd (Site Closed)	-24080	-420	-28560	-266	-53326
Hammerite	-132192	-1458	-99144	-486	-233280
J M Jackson	0	0	0	-672	-672
Northumberland Contracting	-2592	0	-17496	0	-20088
Panther Motors Ltd.	0	-672	0	-32	-704
Tynedale DC (Hexham)	-1920	0	0	0	-1920
WCF Fuels Ltd.	-1424	0	-1224	-150	-2798
R H Pattersons	+21280	0	+42312	+808	+64400

An increase in the overall risk score was recorded at one site, (R H Pattersons & Co Ltd.). This occurred, despite the company having partially implemented the recommendations from the first visit, due to an increase in the number of bulk tanks and drums at the site.

4 Agriculture

4.1 Area Covered

The whole catchment was covered for industrial and commercial premises but this was not possible for farms, as this would have involved several hundred site inspections. It was decided, in conjunction with NWL, to concentrate effort on all those sites located within 4 hours river travel time, based on average river flow conditions. This equated to all of the main river catchment downstream of the North – South Tyne confluence, just west of Hexham, plus the equivalent distances up any tributaries.

4.2 Number of Farms

A number of campaigns had been undertaken in parts of this sub-catchment in the past and based on this old information it was estimated that between 70 and 90 farms would be involved. In the event, 80 steadings were inspected, which was the equivalent of 69 holdings, as some occupiers had two, sometimes three, steadings registered under one MAFF holding number. Four farms were not visited, as repeated attempts to contact their occupiers by telephone, and personal visits to the farms themselves failed to establish contact. In addition, one farmer refused to co-operate.

4.3 Methodology

The risk assessment system developed for the Farm Risk Assessment Project was used, although some small amendments have been made to the database and forms. A copy of the form is shown in Appendix 4.

NB. a different scoring system from the Pollution Risk Assessment database is used in the Farm Survey database. This is due to fundamental differences between the activities on farms and those carried out on industrial premises.

4.4 Site Visits

The farms were all visited between November 1998 and March 1999, when, in pollution terms, farms tend to be at their worst and problems are most easily detected. Each farmer was sent a letter following his or her farm inspection, which outlined any improvements thought to be necessary. Relevant information leaflets were also included with the letter.

4.5 Results

4.5.1 General Overview

A summary of the scores for each farm is shown in Table 3. The vast majority of farms were mixed, with both livestock and arable operations. Only 4 farms had no livestock.

Table 3 TOTAL SCORES AND RISK FOR EACH FARM

Prod. No.	Farm Name	Distance from abstraction	Total Score	Score/dist
063180	Mount Huly & High Barns (2 farms run as one)	1.25	42.5	34.0
062190	Eltringham Farm	2.25	61	27.1
063160	Hall Farm	3.5	53.9	15.4
062510	Whittle Farm	4	49	12.3
062050	Nafferton Farm	4.5	45.5	10.1
062200	Peepy Farm	7	51	7.3
062100	Shaw House	8.5	55	6.5
062560	Harlow Hill Farm	8	50	6.3
062000	Laker Hall	8	50	6.3
063150	Lodge Farm	3	18.5	6.2
062130	Mickley Grange	7.5	44.9	6.0
062040	Styford High Barns	10	51	5.1
062160	Hindley Farm	8.5	43	5.1
062140	Wheelbirks Farm	10	49	4.9
062540	Welton Hall (& East Moorhouses & Welton Town Farm)	7.5	36	4.8
063040	West Minsteracres	8	38	4.8
062520	West Moorhouses	12	54	4.5
062010	Well House Farm	9	37.5	4.2
062120	North Acomb	9.5	38	4.0
062710	Thornbrough Kiln House (& High Barns & Newton Fell)	11	44	4.0
062550	South Clarewood	12	44	3.7
062700	Prospect Hill Farm (& East Farm, Temperley)	14.5	50	3.4
062920	Anick Grange Farm	17	56.9	3.3
063030	High Shilford	9	30	3.3
062990	Healy Home Farm & Red Hemmels	15	47	3.1
062170	Hedley West Riding	9	27.9	3.1
062570	Matfen High House	10	31	3.1
062530	Ouston Farm	10.5	32	3.0
063170	Fairley Farm	11.5	35	3.0
062210	Heathery Edge	11.5	34	3.0
062060	The Stelling	6.5	19	2.9
062720	Dilston Haugh Farm	16.5	48	2.9
063010	High Fotherley	13	35	2.7
062020	Jubilee Buildings	9	24	2.7

Prod. No.	Farm Name	Distance from abstraction	Total Score	Score/dist
062410	Marley Cote Walls & Woodnook Hill	16.5	39	2.4
062400	Todburn	14	33	2.4
062690	Chantry Farm	19.5	43.9	2.3
062880	Beaufront Red House	15.5	33.2	2.1
062030	Brockbushes	10.5	21	2.0
062330	White House	20	40	2.0
062360	Comb Hills (& Blackburn)	18	34	1.9
062670	Dilston Park	16.5	31	1.9
062080	Bank Foot	9	16	1.8
063000	Lingeyfield	12.5	22	1.8
062930	Old Bridge End Farm	21	36.9	1.8
062730	Aydon North (Green Leighton)	18.5	32	1.7
062070	Pasture House	9	15	1.7
062320	Peel Flatt Farm	16.5	27	1.6
062890	Newbiggin House Farm	21.5	33	1.5
063020	Gallow Hill	9.5	14	1.5
062840	The Birks & Houtley Farm	21	30	1.4
062860	Channel Well	25	34	1.4
062680	Aydon Castle	18.5	24	1.3
062370	South Farm	18.5	24	1.3
062090	West Oak	8	9	1.1
062310	Palm Strothers	27	30	1.1
062150	Kipper Lynn	10.5	11	1.0
062380	The Flothers	15.5	16	1.0
062870	Dotland Park	21.5	22	1.0
062350	Pry Farm	18	17	0.9
062110	Bridges Farm	10.5	9	0.9
062830	Newbiggin Hill Farm	21	14	0.7
062340	Townfoot Farm	15	10	0.7
062900	Loadman Farm	26	15	0.6
062910	Windy Hill	25	14	0.6
062420	Rye Hill Farm	26.5	13	0.5
062390	West Woodfoot	16	4	0.3
062850	Portgate Farm	21.5	5	0.2
062180	Apperley Farm	9.5	2	0.2

4.5.2 Total Risk Scores

Generally speaking, the mixed and arable-only farms have the highest scores, while the livestock-only farms have lower scores.

The mean score is 3.9, whilst the median score is lower at only 2.4, a reflection of the top-heavy nature of the distribution of the scores. This effect is caused by the significant influence of the distance factor.

Looking at the situation in terms of the number of actual pollution problems found, there were very few of these. Most of the farms visited had been subject to inspections during previous campaigns in the early 1990's, although these earlier visits were biased very much towards identifying organic pollution. The lack of such problems during this campaign reflects the success of the earlier work. Most of the issues highlighted to farmers this time related to management practices. The notable exception was bunding of (especially diesel) tanks. Very few farmers had heeded the advice to bund tanks following earlier campaigns.

4.5.3 Analysis of highest scores

The first step towards this exercise is to decide how to define this category. A sensible solution is to look at everything above the mean score – 3.9, rounded up to 4 for the sake of simplicity. A total of 18 farms score more than 4, representing 26% of the total number of holdings surveyed. Only one of these 18 was more than 10 km from the abstraction (the exception being only a little more, at 12km). The other factor that they all share is that they all have an arable operation.

4.6 Recommendations

The required improvements fell into two categories: firstly, the need to physically upgrade structures or installations; secondly, the need for better management procedures. The first can usually be checked, and any improvements seen at any time. However, it is difficult, and quite often impossible, to gauge whether advice on improved management practices has been heeded.

Table 4 Improvements requested at the 18 highest scoring farms

Farm Name	Total Score	Improvements required	Rectifiable or intrinsic risk
Mount Huly	34	Management only – not structural	Intrinsic risk
Eltringham	27.1	a)Unbunded tanks b)High risk mobile sheep dip site c)Potential for back siphoning d)70% light land	a) to c) – rectifiable d) - intrinsic risk
Hall Farm	15.4	a)Unbunded diesel tank and liquid fertiliser tank b)Sprayer fill adj. yard drains c)100% light land	a) & b) rectifiable c) – intrinsic risk
Whittle Farm	12.3	Unbunded diesel tank and molasses tank Sprayer fill adj. yard drains	All rectifiable
Nafferton Farm	10.1	Low level risk to sw drain from sprayer fill point Unbunded liquid fert. tank Diesel tank bund damaged	All rectifiable
Peepy Farm	7.3	Unbunded diesel tank and molasses tank	Both rectifiable

Farm Name	Total Score	Improvements required	Rectifiable or intrinsic risk
Shaw House	6.5	Unbunded diesel and liquid fert. tank	Both rectifiable
Harlow Hill Farm	6.3	Open drain adj. dirty yard Unbunded diesel, molasses and liquid fert. tanks	All rectifiable
Laker Hall	6.3	Silage bales stored too close to drain	Rectifiable
Lodge Farm	6.2	No problems	Intrinsic risk
Mickley Grange	6.0	a) Unbunded diesel tank b) 100% light land	a) – rectifiable b) – intrinsic risk
Styford High Barns	5.1	No problems but 80% light land	Intrinsic risk
Hindley Farm	5.1	Unbunded diesel tank Sprayer fill next to sw drains	Both rectifiable
Wheelbirks Farm	4.9	Unbunded diesel tanks Unbunded chemical store	Both rectifiable
Welton Hall	4.8	No problems	Intrinsic risk
West Minsteracres	4.8	Unbunded diesel tank	Rectifiable
West Moorhouses	4.5	Unbunded diesel tank Potential for back siphoning	Both rectifiable
Well House Farm	4.2	Unbunded diesel tank	Rectifiable

4.7 Common Problems

By far the most common problem is the lack of bunding for fuel oil tanks. The same is also true to a lesser extent for liquid fertiliser and molasses tanks. Although there are relatively few liquid fertiliser and molasses tanks they are often very large and an escape of these materials to a watercourse could have a significant environmental impact. One or two farmers were asked to change their crop sprayer filling arrangements. Very few problems relating to the storage of silage or slurry were found.

Many farming operations carry an intrinsic risk to the environment, despite the implementation of best practice. The management of this risk must be balanced against the continued economic viability of farming.

4.8 Remedial Work

All farmers in the above list whose farms had rectifiable problems, 13 in total, were written to in early October 1999, to establish what, if any, progress had been made towards implementing the suggested remedial work.

The response to this exercise was quite good, with nine responses having been received by the end of the month. Table 5 below shows the responses received.

It can be seen that a number of improvements have been carried out, both to structures and to management practices. There is now less risk associated with chemical stores and sprayers, but the bunding of tanks is still not recognised by farmers as being a worthwhile exercise to reduce risk – they simply do not regard diesel or molasses tanks as being a risk. This is an area where the Agency may need to resort to more formal action if significant improvements are to be achieved.

Table 5 Remedial Work Implemented Since Original Visit

Farm Name	Total Score	Improvements required	Response to letter
Eltringham	27.1	a)Unbundled tanks b)High risk mobile sheep dip site c)Potential for back siphoning d)70% light land	a) future intent b) no longer using mobile dip c) no change
Hall Farm	15.4	a)Unbundled diesel tank and liquid fertiliser tank b)Sprayer fill adj. yard drains c)100% light land	a) no change b) sprayer filling point moved to undrained area
Whittle Farm	12.3	a) Unbundled diesel tank and molasses tank b)Sprayer fill adj. yard drains	a) diesel tank being moved then bunded. Molasses tank - no change b) new, safe site

Farm Name	Total Score	Improvements required	Response to letter
Nafferton Farm	10.1	Low level risk to sw drain from sprayer fill point Unbunded liquid fert. tank Diesel tank bund damaged	Protection provided for sw drain Liquid fertiliser – no change Diesel tank bund repaired.
Peepy Farm	7.3	Unbunded diesel tank and molasses tank	No response
Shaw House	6.5	Unbunded diesel and liquid fert. tank	No change
Harlow Hill Farm	6.3	Open drain adj. dirty yard Unbunded diesel, molasses and liquid fert. tanks	Drain - in process No more liquid fertiliser Diesel & molasses – no change
Mickley Grange	6.0	Unbunded diesel tank 100% light land	No response
Hindley Farm	5.1	Unbunded diesel tank Sprayer fill next to sw drains	No change New, safe site
Wheelbirks Farm	4.9	Unbunded diesel tanks Unbunded chemical store	No change Work completed
West Minsteracres	4.8	Unbunded diesel tank	No response
West Moorhouses	4.5	Unbunded diesel tank Potential for back siphoning	No response
Well House Farm	4.2	Unbunded diesel tank	No change

4.9 Conclusions

The work done on farms as part of the Tyne Risk Assessment Project has resulted in some significant improvements being made in terms of risk reduction. Farmers were generally receptive to the message being promoted and accepted that they had a responsibility to minimise the possibility of pollution arising from their steadings and practices. This is something of an achievement at a time when farm incomes are at their lowest for years, and there is little money to invest in improvements.

5 Transport Infrastructure

5.1 Roads

5.1.1 Background

The River Tyne, and its tributaries, are crossed by major roads in a number of locations throughout the drinking water catchment. In addition, the general route of the most significant road (the A69) follows the course of the river for much of its length.

Road accidents at any of the river crossings, or on any length of road draining to a watercourse, have the potential to release polluting materials into the water environment. It was decided that a study was needed to quantify the extent of the risk to the abstraction from highway incidents.

5.1.2 Powers of the Environment Agency

There are particular sections within the Water Resources Act 1991 concerning highway drainage. It is an offence under Section 85 to discharge poisonous, noxious or polluting material into any controlled waters either deliberately or accidentally. However, under Section 89 a Highway Authority or other person entitled to keep open a drain by virtue of section 100 of the Highways Act 1980 shall not be guilty of an offence unless the discharge is made in contravention of a prohibition imposed under section 86.

The Environment Agency has the power to consent discharges to controlled waters and therefore regulate their quality. However, it would be impractical to determine a consent for every surface water discharge from a highway. In certain circumstances where the receiving water was designated as being "sensitive", the Agency might require pollution prevention or remediation structures to be installed. With new roads, the Agency would hope to achieve this through consultation at the planning stage. Existing roads can be addressed via liaison and co-operation with the Highways Agency and other bodies involved.

5.1.3 Approach

The chemical inventory produced as a result of the site inspections gave some indication of the type of materials being transported within the catchment. The type and quantities of chemicals moving through the catchment, which are not associated with the resident industries, had yet to be established. It was therefore proposed that a limited traffic survey be carried out to provide a 'snapshot' of all bulk movements of materials within the catchment.

A number of trial traffic counts, (1 hour), were carried out at locations in different parts of the catchment. The purpose of these was to assess the feasibility of recording road tanker and other heavy goods vehicle movements along the major roads. In addition to a simple count, the UN numbers displayed on vehicle Hazchem plates were recorded where possible. Further information, such as "Foodstuffs Only", "Non Hazardous" or "Flammable" was also recorded.

Following the five trial counts, more extensive surveys were carried out at two of the locations. These two sites were chosen as best representing the flow of traffic throughout the catchment. The counts were over periods of 4 hours and were intended to provide a more accurate picture of traffic movements.

5.1.4 Results

The results of the 1-hour trial traffic counts are detailed below:

Road	Location	Direction	NGR	Date	Time	HGV	Tanker	Coach/Bus
A69(T)	Whittle Farm	East	NZ 076 657	26/07/99	09:35-10:35	71	7	5
		West				100	5	6
A68	Riding Mill	North	NZ 032 618	01/07/99	14:25-15:25	12	1	1
		South				20	0	0
A68	Fox & Hounds	North	NY 987 678	30/06/99	15:10-16:10	11	0	2
		South				8	0	1
A69(T)	West of Hexham	East	NY 924 656	01/07/99	11:50-12:50	69	4	5
		West				49	10	2
A69(T)	West of Haltwhistle	East	NY 672 642	01/07/99	10:25-11:25	57	4	2
						62	8	7

Total movements extrapolated to a 24-hour period are as follows:

A69 (T) @ Whittle Farm

HGV 4104
 Tanker 288
 Coach/Bus 264

A68 @ Riding Mill

HGV 768
 Tanker 24
 Coach/Bus 24

A68 @ Fox & Hounds

HGV 456
 Tanker 0
 Coach/Bus 72

A69 (T) @ West of Hexham

HGV 2832
 Tanker 336
 Coach/Bus 168

A69 (T) @ west of Haltwhistle

HGV 2856
 Tanker 288
 Coach/Bus 216

The results of the 4-hour surveys were as follows:

Road	Location	Direction	NGR	Date	Time	HGV	Tanker	Coach/Bus
A69(T)	Whittle Farm	West	NZ 076 657	03/09/99	09:35-13:35	313	30	19
		East				291	25	11
A69(T)	West of Haltwhistle	West	NY 672 642	02/09/99	12:10-16:10	210	16	6
		East				242	18	7

Total movements extrapolated to a 24-hour period are as follows:

A69 (T) @ Whittle Farm

HGV 3624
 Tanker 330
 Coach/Bus 180
Total 4134

A69 (T) @ west of Haltwhistle

HGV 2712
 Tanker 204
 Coach/Bus 78
Total 2994

It is accepted that the intensity of traffic will vary quite widely throughout the day, however this gives some indication of the possible total numbers of vehicle movements.

5.1.5 HGV/Tanker Markings

Problems were encountered in identifying and recording all the Hazchem markings on passing vehicles. These included the plate being partly obscured by dirt, ladders or other structures on the tanker, or by other vehicles following too closely behind. In addition, not all loads require Hazchem plates to be displayed. Where possible any other markings or indications of the load being carried were recorded.

Examples of this type of information are as follows:

Orcol - Fuel Oil
Food Products Only
Low Hazard
Flammable
Milk
Calor Gas
Non Hazardous
Mac Gas
Agma
Cement Mixer
Un- marked military vehicles with Police escort
Bulk powders
No markings

It is important to note that just because the load didn't require a Hazchem marking or was designated Non-Hazardous, it may still be transporting material with a high potential for causing pollution if released to a watercourse, e.g. milk.

The UN Numbers identified during the surveys are listed below. There was a degree of duplication as some of the loads carried the same number.

UN Number	Description
1017	Chlorine
1073	Oxygen, refrigerated liquid
1170	Ethanol (Ethyl Alcohol)
1202	Diesel fuel or Gas Oil
1203	Motor Spirit (includes Gasoline or Petrol)
1223	Kerosene
1230	Methanol
1824	Sodium Hydroxide soln. (Caustic Soda Liquor, Sodium Hydrate)
1978	Propane
1992	Flammable Liquid, Toxic, n.o.s.
2187	Carbon Dioxide, Refrigerated Liquid
2188	

UN Number	Description
2672	Ammonia Solution
2920	Corrosive Liquid, Flammable, n.o.s.
3065	Alcoholic Beverages
3257	Elevated temperature liquid n.o.s. at or above 100°C and below its flash point
3295	Hydrocarbons, Liquid, n.o.s.

(n.o.s. "not otherwise specified")

5.1.6 Conclusions

It is clear from these surveys that the A69 is heavily used by Heavy Goods Vehicles and by tankers, carrying liquids and powders, which would be highly polluting were they to enter a watercourse. In addition, some of the loads would be damaging to human health should they enter public water supplies via the abstraction at Ovingham.

The studies indicate that there is a significant potential for an extremely serious pollution incident if any of these vehicles were to be involved in a major road traffic accident. The worst possible scenario would be a RTA involving two or more road tankers, each carrying a full load and each suffering sufficient damage to release their entire contents. If this was to occur on a stretch of road draining directly to the river, the consequences could be significant. That this type of accident can occur is borne out by a major incident on the A19 on Teesside in 1996, when two tankers collided head-on, contaminating a significant stretch of Stainsby Beck with nitrobenzene and diesel.

The presence of containment structures, such as interceptors, on the road drainage would afford some protection from general highway run-off and provide a degree of retention in the event of a serious chemical spillage. The retention capacity would be greatly increased by the installation of closeable outlets on the interceptors or cut-off valves at drainage outfalls. These could be operated by the Emergency Services in the event of major spillage. The results of these surveys add weight to the argument for the provision of such facilities in the Tyne catchment, and careful consideration should now be given as to their location.

The Agency's response to incidents would be greatly improved by the provision of accurate highway drainage maps for the area. This would allow the identification of vulnerable stretches of road and their associated discharge points. Proper consideration could then be given towards the design and capacity of the interceptors or other retention systems, including the capacity of the drains backing up from any structure. The involvement and co-operation of the responsible bodies, including the Highways Agency, will be necessary to achieve any progress in this matter.

The Highways Agency is responsible for the design, building, finance and operation of the A69 throughout the Tyne Valley. The Environment Agency has already begun a liaison process with the Highways Agency and one of their major contractors (Halcrow) in another part of the Region. It is hoped that the Agencies can extend this liaison to include the Tyne catchment and stress the importance of pollution control structures to protect the Ovingham intake from highway incidents.

Once the status of the highway drainage has been identified and assessed, locations for the installation of pollution control measures can be prioritised. A basic scheme for this type of prioritisation is already established. This involves the use of a number of parameters including:

- Distance from the abstraction point;
- Size of the receiving watercourse;
- Conservation value (SSSI, Nature Reserves etc.);
- Amenity value (including bathing).

The potential for a discharge to affect an abstraction is dependent on the distance between the two and the capability to carry out temporary physical preventative works at the time of the incident.

Distance from the abstraction is an indication of the time of travel for any potential pollutant. The worst scenario is that the pollution reaches the point of abstraction before any notification can be given, or temporary controls put in place. In addition, polluting discharges tend to become more dilute as they travel downstream. Consequently, the closer the points of discharge to the point of abstraction then the higher the concern over possible effects.

The ability to carry out any temporary pollution prevention works in response to an incident is significantly affected by the size of the receiving waters. Generally, the smaller the watercourse the easier it is to construct physical works; dams, scum boards, over pumping etc. As the watercourse becomes larger then the degree to which pollutants, especially those that are soluble, can be contained and removed reduces markedly.

When ranking sites there comes a point when the risk to a nearby site of conservation or amenity interest will outweigh the risk to a remote potable intake.

5.2 Railways

5.2.1 Background

The Newcastle to Carlisle railway runs in close proximity to and crosses the River Tyne in a number of places. This line carries both passenger and freight trains on a daily basis.

As with highway drainage the majority of track-side drains discharge either to soakaways or directly to watercourses. Railway accidents therefore have a similar potential to road accidents to release polluting materials into the water environment.

In order to gain some indication of the scale of possible risk from rail traffic a limited 'desk top' study was carried out.

5.2.2 Train Movement Information

The average numbers of trains per week (including Sunday) are as follow:

Operating Company	Type	Average trains per week
English, Welsh & Scottish Railways	Freight	148
ScotRail	Passenger	37
Northern Spirit	Passenger	328

These are the current figures as supplied by RailTrack. The company was unable to predict traffic volume expansion in the future as these depend on the plans of individual train operators.

5.2.3 Loads and Fuel Capacity

It was reported that the main freight loads are inert solids such as coal and limestone, with very few bulk liquids being carried.

While this type of freight does not pose a significant pollution threat, the engines themselves each carry a fuel load of up to 1000 gallons, (4500 litres), of diesel.

If this figure is multiplied by the total number of trains, both passenger and freight, the overall maximum amount of fuel carried on the line in one week is 513,000 gallons, (2,308,500 litres).

5.2.4 Conclusions

There is therefore a potential risk from a ruptured fuel tank resulting from a derailment, collision, or an object on the line. The worst possible scenario is likely to be a derailment, or similar incident, involving more than one train, leading to the total loss of fuel from the engines. This would probably result in at least several hundred gallons of diesel entering the track-side drainage and subsequently the local watercourse.

6 Other Potential Pollution Sources

6.1 Review

The following is a list of potential pollution sources that have been identified but remain outside the scope of this project:

- Sewage Treatment Works - Majority are operated by Northumbrian Water Ltd, (NWL), and therefore the company is probably best able to assess the potential risk themselves.
- Combined Sewer Overflows (CSO's) and sewage pumping station overflows - mostly operated by NWL and historically have not been perceived to have a significant impact on the quality of the water abstracted at Ovingham.
- Illegal Waste Disposal – Very hard to predict when and where such activity takes place.
- Licensed Waste Disposal Sites – Regular inspections and regulatory controls should minimise any potential risk.
- Contaminated Land – There are currently no known contaminated land problems affecting the quality of the water abstracted at Ovingham. Any future problems arising from currently contaminated land are likely to arise over a significant period and should be identified through routine monitoring programmes. It is thought unlikely that contaminated land could lead to an isolated discharge of sufficient magnitude to affect the intake.
- Disused Mines – Rising ground water in mines is subject to separate extensive investigations.
- Aircraft Flight Paths – The catchment is used by both civil and military aircraft, however the risk from this source was thought too minor to attempt to quantify.
- Domestic Properties (in particular the storage of heating oil) – Large numbers and widespread distribution prevent quantitative risk assessment. Individual properties thought to be of minor risk due to relatively small quantities of materials stored.

7 Recommended Further Work

7.1 Industrial & Commercial Sites

A ranking of sites according to pollution risk assessment score has been achieved. These records will be used to produce a programme of future inspections. This will allow the targeting of resources to 'risky' sites. The re-visits to high-risk sites will be carried out by relevant Environment Protection Officers as part of an on-going workload, as agreed with Northumbrian Water.

It is intended to further develop the IDEA database and widen the scope of the risk assessment scoring system. In particular, it is hoped to relate the score to the distance from the abstraction.

7.2 Farms

The highest scoring farms are all quite close to the abstraction and there are five, which should, despite improvements having been made, be inspected at least annually to make sure that standards are maintained. The lack of money available to invest in improvements and even routine maintenance raises the spectre of increasing structural failure of storage facilities on farms. Routine inspections of the most sensitive sites may help to address this potential problem.

Where 'No Change' was recorded in response to requests for remedial work, in particular with regard to the bunding of fuel tanks, an annual revisit is recommended. More formal action, including the use of 'Anti-Pollution Works Notices', may be considered where appropriate.

7.3 Highways

Future progress in this area is dependent on maintaining and consolidating links with the Highways Agency. Where new road schemes or improvement works are planned, the Environment Agency will use its role in the planning process to influence the levels of pollution control on road drainage.

The installation of pollution control measures on existing road drainage could be addressed in the future. A working group has been established for an adjacent Highways Agency area. This group meets to discuss, amongst other topics, the prioritisation of sites to be considered for the installation of pollution control equipment. So far there have been few demonstrable achievements, however it is hoped that any positive results from this group can be used to demonstrate the benefits of extending the liaison to include the Tyne catchment.

The main priority now is to obtain highway drainage maps for the A69 in the drinking water catchment. Vulnerable stretches of road and their associated discharge points could then be identified and a list of priority sites for the installation of pollution control structures produced.

7.4 Railways

An annual review of rail movements and loads should be carried out to enable an updated assessment of the risk to be made. Further liaison with RailTrack is required to identify the most vulnerable stretches of track and the discharge points for trackside drainage.

Appendix 1

Water Pollution Risk Assessment Form

Northumbria Area (Tyneside House)
Water Pollution Risk Assessment Form



ENVIRONMENT
AGENCY

DATA PROTECTION: The Environment Agency will process the information provided under the Environment Act 1995. The information will not be disclosed to any third parties other than to allow the Environment Agency to fulfil its statutory obligations. Your right of access to the information held and right to apply for rectification of the information are as prescribed in current data protection legislation.

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CONFIDENTIAL INFORMATION

date	time	duration	reason for visit	producer number	visit no
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
SIC code	catchment	district/unitary authority		officer A	officer B
<input type="text"/>	<input type="text"/>	<input type="text"/>		<input type="text"/>	<input type="text"/>
date entered	officer C	actions complete	future visit date		
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		

Part 1 Company Site Details

company name	<input type="text"/>																						
group name	<input type="text"/>																						
address	<input type="text"/>																						
	<input type="text"/>																						
post code	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	NGR	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
contact name	1	<input type="text"/>										2	<input type="text"/>										
positions	1	<input type="text"/>										2	<input type="text"/>										
telephone no	<input type="text"/>										fax no	<input type="text"/>											

nature of business	<input type="text"/>														
	<input type="text"/>														

number of forms	one of	<input type="text"/>	overall site plan available Y/N	<input type="text"/>	no of f.t.e	<input type="text"/>
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site security	24 hour security guards/ high security fencing	<input type="text"/>
	other	<input type="text"/>

site vandalism	< 5 incidents in last 5 years	<input type="text"/>
	> 5 incidents in last 5 years	<input type="text"/>

site deliveries	supervised in bunded area	<input type="text"/>
	supervised in unbunded area/unsupervised in bunded area	<input type="text"/>
	unsupervised in unbunded area	<input type="text"/>

emergency plan	written emergency plan and training	<input type="text"/>
	written emergency plan, no training evident	<input type="text"/>
	no plan	<input type="text"/>
	maintenance plan	Y <input type="text"/> N <input type="text"/>

Part 2 Trade Effluent Information

trade effluent discharge: Y/N, and number of discharges ?		
trade effluent discharge consent: Y/N, and number of consents ?		
consent by: EA/NWL or both ?		
discharge to: watercourse/foul/ surface/ combined sewer to treatment/ crude sewer direct to river/ soakaway ?		
effluent description and source ?		
treatment facilities description ?		

Part 3 Site Drainage Information ?

aware of site drainage system layout ?	
is a site drainage plan available ?	
general site drainage, separate/ combined/ soakaway ?	
interceptors on foul system: Y/N	
interceptors on surface system: Y/N	
bund rainwater disposal to foul / surface	

Part 4 Bulk Storage

storage site plan available Y/N	
---------------------------------	--

delivery and usage records retained Y/N	
---	--

site gauges regularly checked Y/N and frequency	
---	--

chemical description & form	type, size & number of containers	location of stored chemicals	tank bunding (codes a-d)	overflow alarms (codes e-g)	underground pipes (codes h-j)	drainage specification (codes k-l)	tank security (codes m-n)
comments							

codes for use in the above table

a - banded to recommendations	e - audible overflow alarms	h - no underground pipes/underground pipes comply to recommendations	k - no direct path to SW drain	m - tank valves locked
b - banded	f - visual overflow alarms	i - underground pipes protected with grating covers	l - direct path to SW drain	n - tank valves unlocked
c - unbanded	g - no alarms	j - unprotected underground pipes with no grating covers		
d - open to SW drain				

Part 5 Drum Storage

drum storage plan available Y/N	
---------------------------------	--

delivery and usage records retained Y/N	
---	--

maintenance programme for drum checks Y/N	
---	--

chemical description & form	size & number of containers	location of stored chemicals	drums in banded areas	drums on spill tray	drums with no containment
comments					

Part 6 Water Treatment

boiler house plan available Y/N	
---------------------------------	--

is boiler house internally drained Y/N	
is the system oil fired Y/N	
fuel lines above/ below ground ?	
date of last fuel line testing ?	
additives used in system Y/N	
additive description ?	
steam blow down / cooling water condensate discharge point ?	
cooling water system discharge ?	

Part 7 Liquid Processing Areas

	process 1 description	process 2 description	process 3 description
process drainage contained			
process drainage open to foul drain			
process drainage open to surface water interceptor			
process drainage open to surface water drain			
automatic/manual monitoring			

Part 8 Sewerage Systems

treatment plant or foul sewer ?	
gravity flow on all areas of site ?	
sumps/ pumps/ overflows/ screens ?	
any evidence of wrong connections ?	

Part 9 Surface Water Systems

sediment traps, number & size ?	
interceptors, number & size ?	
maintenance arrangements ?	

Part 10 Vehicle Wash Areas

pressure/ jet/ hose/ steam ?	
detergent used Y/N ?	
detergent description ?	
discharge to foul or surface water ?	
oil interceptor Y/N ?	
designated drained area Y/N ?	

Part 11 Solid Waste Storage

type, size & number of containers ?				
covered/ uncovered ?				
banded/unbanded ?				
contents description ?				
evidence of leaks/ground contamination ?				
nearest drain < 10 metres ?				
nearest drain > 10 metres ?				

Part 12 How can we help?

Would you like more information on :

information provided	√				√			
	interview	posted	no		information provided	interview	posted	no
duty of care					waste minimisation			
Special Waste					waste exchange			
packaging regulations					PPG Nos			
recycling facilities					other			

notes/comments/recommendations:

	√
letter sent and date	
information sent and date	

Appendix 2

Industrial and Commercial Premises Visited

Company Name	Location
A. C. CURTIS	HEXHAM
AGMA PLC	HALTWHISTLE
AKZO NOBEL DECORATIVE COATINGS	HALTWHISTLE
ANALYTICAL AND ENVIRONMENTAL SERVICES	HORSELEY
ARC NORTHERN - HOWFORD QUARRY	ACOMB
ARMSTRONG & NICHOLL	ACOMB
ARRIVA - NORTHUMBRIA SECTION	HEXHAM
ASTRAL TEXTILES	PRUDHOE
ATS (ASSOCIATED TYRE SPECIALISTS)	HEXHAM
AUTOBAHN	HEXHAM
AVONMIRE(WATERFORD)	HEXHAM
BEED PRINTING	PRUDHOE
BICYCLE REPAIR MAN	PRUDHOE
BISHOPS GARAGES LTD	CORBRIDGE
BLENKINSOPP COLLIERIES - CASTLE DRIFT	GREENHEAD
BLENKINSOPP COLLIERIES LTD - WRYTREE DRIFT	GREENHEAD
BORDER WIND	HEXHAM
BRIAN ORD CRASH REPAIRS	HEXHAM
BRIDGE END CARPETS	HEXHAM
BRITISH GAS TRANSCO	HEXHAM
BURLINSON PRINT	PRUDHOE
BXL PLASTICS LTD	HALTWHISTLE
CAMPACT LTD	HEXHAM
CARRS AGRICULTURE	HEXHAM
CHANGES CATERING SERVICES	HEXHAM
CITY ELECTRICAL FACTORS LTD	HEXHAM
CJL FENWICK	PRUDHOE
D E PHARMACEUTICALS INTERNATIONAL	PRUDHOE
D I HUTCHINSON	PRUDHOE
DAVID DIXON	HEXHAM
DAVID HENDERSON	ACOMB
DAVISON TYNE METAL LTD	HEXHAM
DENTACARE TECHNOLOGY LTD	HEXHAM
DICKINSONS CARPETS	HEXHAM
DIRECT FENCING SUPPLIES	LOW PRUDHOE
DOWN TO EARTH	HEXHAM
EGGER (UK) LTD	HEXHAM
EVERITT & MARSHALL AGRICULTURAL ENGINEERS	HEXHAM
EXCEL LOGISTICS	PRUDHOE
F. HANDCOCK & SONS	HEXHAM
FLEET FACTORS	HEXHAM
FOREST ENTERPRISE	BELLINGHAM
FOREST ENTERPRISE	BELLINGHAM
FOURSTONES PAPER MILL CO LTD	HEXHAM
G.R. WARDLE & SON	HALTWHISTLE
GEORGE BERNARD SHAW	HEXHAM

Company Name	Location
GILESGATE LTD	HEXHAM
GILLIGAN ENGINEERING SERVICES	PRUDHOE
GLADSTONE PACKAGING	LOW PRUDHOE
GREENLINE ENGINEERING	ACOMB
HADRIAN PMC INTERNATIONAL LTD	ALLENDALE
HAMMERITE PRODUCTS LTD	PRUDHOE
HENDERSON FENCING	HEXHAM
HEXHAM AUCTION MART	HEXHAM
HEXHAM AUTO ELECTRICS	HEXHAM
HEXHAM AUTO SPARES	HEXHAM
HEXHAM EXHAUST AND SERVICE CENTRE	HEXHAM
HEXHAM MOTOR SERVICES	HEXHAM
HEXHAM POWER EQUIPMENT	HEXHAM
HEXHAM TOOL AND MOULDING	HEXHAM
HEXHAM TYRE & BATTERY	PRUDHOE
HI-Q TYRES	HEXHAM
J D CRAWFORD LTD	HALTWHISTLE
J E NIXON & SON	BELLINGHAM
J M JACKSON	HEXHAM
J S HUBBUCK LTD	HEXHAM
J T DOVE	HEXHAM
J.P. WESTALL & SON	HEXHAM
JOHN HOGG (HAULAGE)	PRUDHOE
JOYCE DRAINAGE	HEXHAM
JUSTIN S SMART	HEXHAM
KATTAN DISPOSABLES	HAYDON BRIDGE
KENNETH WILSON (FORMERLY A.F. NORTHERN)	HEXHAM
KILFROST LTD	HALTWHISTLE
L & J BATY	HEXHAM
L DAVISON VEHICLE BODY REPAIR	HEXHAM
LAMCO TECHNICAL PRODUCTS LTD	PRUDHOE
LOGIC MANUFACTURING	HEXHAM
LORD HIRE	HEXHAM
LORRAINE'S CATERING	PRUDHOE
M WILSON PLUMBING & HEATING	HEXHAM
MAL- PEN ENGINEERING LTD	PRUDHOE
MARMAX MEMORIALS	PRUDHOE
MATHEW CHARLTON & SONS(BUILDERSMERCHANTS)LTD	HEXHAM
MATT CLARK LTD	HEXHAM
MILL VOLVO	HEXHAM
MKG FOOD PRODUCTS (LTD)	HEXHAM
MOTOR BODIES(HEXHAM)LTD	HEXHAM
MULTICHEM LTD	HEXHAM
NCC ADULT TRAINING CENTRE	HEXHAM
NEWCASTLE FINE ART PRINTERS	PRUDHOE
NICHOL & LAIDLAW	HEXHAM
NICHOLSON SEALS LTD	HEXHAM
NORTH OF ENGLAND WOOLS	HEXHAM

Company Name	Location
NORTHERN ELECTRIC HEXHAM DEPOT	HEXHAM
NORTHERN INSULATIONS	PRUDHOE
NORTHUMBERLAND CONTRACTING	HEXHAM
NORTHUMBERLAND COUNTY COUNCIL	HEXHAM
NORTHUMBRIA AMBULANCE	HEXHAM
NORTHUMBRIAN LEISURE	HEXHAM
NORTHUMBRIAN ROADS LTD	PRUDHOE
NORTHUMBRIAN WATER LTD	HORSLEY
NORTHUMBRIAN WATER LTD	HEXHAM
ORCHARD CAR DISMANTLERS	HEXHAM
PANTHER MOTORS LTD	PRUDHOE
PATTERSONS FORD	HEXHAM
PETER HOLMES	HALTWHISTLE
PETER LOWERIE & CO LTD	HEXHAM
PLENMELLER OCCS	PLENMELLER COMMON, HALTWHISTLE
PLUNKETT TILING LTD	LOW PRUDHOE
POINTING LTD	PRUDHOE
PRINCESS HOUSE LTD	HEXHAM
R&R HANDS	LOW PRUDHOE
RICKERBY LTD	HEXHAM
RMC AGGREGATES	CAPHEATON
ROBSON PRINT LTD	HEXHAM
ROBSON WALKER	HEXHAM
ROCON PLASTICS LTD	PRUDHOE
ROOFLIGHT SYSTEMS CO LTD	LOW PRUDHOE
ROOM SERVICE	PRUDHOE
ROWELL COACHES	LOW PRUDHOE
ROYAL MAIL	PRUDHOE
RYLEC LTD	LOW PRUDHOE
RYT - ON -CABLEWAYS LTD	PRUDHOE
SCA HYGIENE PRODUCTS UK LTD	PRUDHOE
SCOTTS COACHES	ACOMB
SGS TIMBER HAULAGE LTD	STONEHAUGH, WARK
SIMPLE WAY	LOW PRUDHOE
SLATER DRIVE SYSTEMS	LOW PRUDHOE
STAN DAWSON STEEL AND TIMBER	LOW PRUDHOE
STREETWISE	HALTWHISTLE
SWIFT BRAKE & CLUTCH LTD	HEXHAM
T DOODY & CO LTD	HALTWHISTLE
TARMAC QUARRY PRODUCTS	HEXHAM
TEN CATE PERMESS (UK) LTD	PRUDHOE
THE PLUMB CENTRE	HEXHAM
THOMPSONS OF PRUDHOE	LOW PRUDHOE
TRILLIUM FACILITIES MANAGEMENT	HEXHAM
TURNERS MARINE TRADING	HEXHAM
TYNE MILLS MOTOR CO. LTD	HEXHAM
TYNE TRONICS LTD	PRUDHOE
TYNE VALLEY COACHES	ACOMB
TYNE VALLEY GLAZIERS	HEXHAM

Company	Location
TYNE VALLEY TYRES	HEXHAM
TYNEDALE DISTRICT COUNCIL	HEXHAM
TYNEDALE DISTRICT COUNCIL	LOW PRUDHOE
VAU DE	HALTWHISTLE
WCF FUELS LTD	HEXHAM
WINGROVE MOTOR COMPANY LTD	HEXHAM

Appendix 3

Visit Confirmation Letter

Date:

Dear

RIVER TYNE ABSTRACTION RISK ASSESSMENT SURVEY

Further to our recent telephone conversation I confirm that I will be visiting your site on
at accompanied by Mr from the Tyne West, Environmental Protection Team.

This is part of an ongoing survey of risk assessment to the River Tyne drinking water abstraction at Ovingham.

The Environment Agency was formed in April 1996, as the successor to the National Rivers Authority, Waste Regulation Authorities and Her Majesty's Inspectorate of Pollution and one of its main functions is to undertake pollution prevention and waste minimisation campaigns.

To ensure that it is comprehensive, the survey will include a general site inspection and will require the following information to be made available:

- Quantities of raw materials stored;
- Process details;
- Drainage plans (if available);
- Emergency contingency plans;
- Quantities, types and nature of waste generated;
- Arrangements for waste storage;
- Methods of waste disposal with relevant documentation (transfer/consignment notes).

The visit will be beneficial to you in identifying areas of risk and also for the free advice on pollution prevention, waste management and environmental legislation.

Please do not hesitate to contact me if you require any further information.

Yours sincerely

Area Campaigns Officer

Appendix 4

Farm Pollution Risk Assessment Form



DATA PROTECTION: The Environment Agency will process the information provided under the Environment Act 1995. The information will not be disclosed to any third parties other than to allow the Environment Agency to fulfil its statutory obligations. Your right of access to the information held and right to apply for rectification of the information are as prescribed in current data protection legislation.

TE DE

CONFIDENTIAL INFORMATION

date	time	duration	reason for visit	producer number	visit no
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
SIC code	catchment	district/unitary authority		officer A	officer B
<input type="text"/>	<input type="text"/>	<input type="text"/>		<input type="text"/>	<input type="text"/>
date entered	officer C	actions complete	future visit date	sites covered	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	

Part 1 Farm Site Details

farm name	<input type="text"/>																	
group name	<input type="text"/>																	
address	<input type="text"/>																	
post code	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	NGR	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
contact name	1	<input type="text"/>				2	<input type="text"/>											
position	1	<input type="text"/>				2	<input type="text"/>											
telephone no	<input type="text"/>				fax no	<input type="text"/>												
type of farming	dairy / beef / pigs / sheep / poultry / arable / other – (please circle)																	

Part 2 General Farm Site Details (OPTIONAL)

2.1	distance from abstraction point (km)	<input type="text"/>
	name of sheep dip used	<input type="text"/>
	is there a Groundwater Regulations authorisation?	<input type="text"/>
	location of any private water supply, NGR or map	<input type="text"/>
	any other springs / wells / boreholes on site, NGR or map	<input type="text"/>
	location of farm tip, NGR or map	<input type="text"/>

Part 3 Organic Waste

3.1	<input checked="" type="checkbox"/>	SILAGE / EFFLUENT
		none
		bales, low risk
		bales, high risk
		clamp and tank = SSAFO
		clamp and tank not SSAFO
		field heap
		ag - bag

3.2	<input checked="" type="checkbox"/>	SLURRY STORAGE / DIRTY WATER
		none (unnecessary)
		SSAFO complies + > 4 months
		SSAFO < 4 months
		none SSAFO / < 4 months – reasonable condition
		none SSAFO / < 4 months – poor condition
		none but necessary
		to public foul sewer

3.3 ✓

FARM YARD MANURE	
none	
field heap, low risk	
field heap, high risk	
no midden – spread direct	

3.4 ✓

DISPOSAL SYSTEMS	
none	
low rate irrigation – 4 mm / hour or less	
high rate irrigation – over 4 mm / hour	
vacuum tanker	
injection	

3.5 ✓

WASTE MANAGEMENT PLAN	
yes	
no	
not applicable	

3.6 Land Spreading of Organic Nitrogen
(Please see guidance notes for calculation)

ACREAGE USED FOR MUCK / SLURRY DISPOSAL	
---	--

✓

DOES APPLICATION EXCEED 250 KG / HA / YEAR? OR 100 KG / ACRE / YEAR?	
yes	
no	
not applicable	

3.7 ✓

LIQUID FEED (eg.molasses etc)	
none	
banded to SSAFO standard	
unbanded, no drains etc	
unbanded, drains etc present	
banded, not SSAFO	

3.8 ✓

CARCASS DISPOSAL	
all taken off site, e.g. knackerman	
burned	
buried – to COGAP standard	
buried – not to COGAP standard	
not applicable	

Part 4 Miscellaneous Details

4.1 ✓

YARD DRAINS	
none	
to collection system	
to surface soakaway	
'sub surface' soakaway	
to dry or blind ditch	
direct to stream	
land drains	

4.2 ✓

OIL / FUEL STORAGE	
none	
banded to SSAFO	
unbanded, no drains etc (inc land drains)	
unbanded, drains etc present	
banded, not to SSAFO standard	
drains to sealed store	

4.3 ✓

FERTILIZER STORAGE	
none	
solid & bagged, > 10m from watercourse	
solid & bagged, < 10m from watercourse	
liquid & banded to SSAFO	
liquid & unbanded, no drains etc	
liquid & unbanded, drains present	
liquid & banded, not to SSAFO	

4.4 ✓

RESIDUAL WEEDKILLERS (use around buildings etc)	
none	
on soils	
on gravel, hardcore etc	
on concrete, kerbs , gullies etc	

WHICH OF THESE PRODUCTS DO YOU USE?

Active Ingredient	Product Example	Crop	✓ if used	Score
Herbicides Residual				
Atrazine	Gesaprim 500 sc	Maize		7
Simazine	Gesatop 500 sc	Beans		6
Isoproturon (IPU)	Tolkan, Auger, Arelon	Cereals		5
IPU + Diflufenican	Panther, Javelin	Cereals		7
IPU + Pendimethalin	Stomp + IPU, Encore, Jolt	Cereals		7
Trifluralin	Treflan, Tristar	Cereals, Roots		7
Tri-allate	Avadex	Most Crops		7
Pendimethalin	Stomp	Potatoes, Peas		7
Propyzamide	Kerb, Rapier	Oil Seeds		5
Chlorotoluron	Toluron 500, Dicurane 700 SC	Cereals		6
Metribuzin	Sencorex WG	Potatoes		5

Active Ingredient	Product Example	Crop	✓ if used	Score
Herbicides Contact				
Asulam	Asulox	Grass		1
MCPA	MCPA	Grass, Cereals		2
2,4-D	2,4-D	Grass, Cereals		2
Paraquat	Gramoxone 100	Grass, Cereals		4
Mécoprop	CMPP, Duplosan, Astix, Optica	Grass, Cereals		2
Metsulfuron Methyl	Ally, Logran 20 DF	Cereals		2
Bromoxynil + Ioxynil	Deloxil, Oxytril CM	Cereals, Grass		3
Fluroxypyr	Starane 2	Cereals		2
Fluazifop - P - butyl	Fusilade	Oilseeds, Roots		3
Fenoxaprop - P - ethyl	Cheetah R (Cheetah Super)	Cereals		2
Glyphosate	Roundup, Sting, Muster	Grass, Cereals		3
Diquat	Reglone	Potatoes, Peas		4
Chlormequat	Cycocel	Cereals		2
Chloroethyl Phosphonic Acid + Mepiquat Chloride	Terpal	Cereals		2

Active Ingredient	Product Example	Crop	✓ if used	Score
Insecticides / Pesticides				
Aldicarb	Temik 10G	Potatoes, Roots		10
Pirimicarb	Aphox	Most Crops		3
Carbofuran	Yaltox	Brassicas, Roots		10
Cypermethrin	Ambush	Most Crops		4
Deltamethrin	Decis	Most Crops		4
Alpha Cypermethrin	Fastac	Cereals, Brassicas		4
Gamma HCH	Gammacol	Cereals, Grass, Brassicas		4
Dimethoate	Rogor	Most Crops		3
Chlorpyrifos	Dursban	Most Crops		4
Methiocarb	Draza, Club	Most Crops		5
Metaldehyde	Escar - Go, Metarex	Most Crops		4

Active Ingredient	Product Example	Crop	✓ if used	Score
Fungicides				
Fenpropimorph	Corbel, Mistral	Cereals, Brassicas		1
Fenpropidin	Patrol, Tern	Cereals		1
Propiconazole	Tilt, Radar	Cereals, Grass, Rape		2
Prochloraz + mixtures	Sportak, Sportak Delta	Cereals, Oilseeds		3
Cyproconazole	Alto + mixtures	Cereals		3
Tebuconazole	Folicur, Silvacur	Cereals, Rape		2
Chlorothalonil	Bravo	Most Crops		3
Carbendazim	Bavistin, MBC	Most Crops		4
Vinclozolin	Ronilan FL	Rape, Legumes		2
Cymonxanil + Mancozeb	Fytospor	Potatoes		2

Score Page 1	
Score Page 2	
Total Score	

General Comments:

4.5 ✓

MAINS WATER (OPTIONAL)	
direct connection to sheep dip and / or crop sprayer tanks	
no direct connection to sheep dip and / or crop sprayer tanks	
not applicable	

4.6 ✓

WHERE / HOW ARE USED PESTICIDE CONTAINERS DISPOSED OF?	
off site	
on site / COGAP	
farm tip	
burned	
not applicable	
re - used on site	

Part 5 Sheep Dip

5.1 ✓

SECURITY OF DIP STORAGE FACILITIES	
secure	
not secure	
not applicable	

5.2 ✓

TYPE OF DIP USED	
flumethrin	
cypermethrin	
diazinon	
propetamphos	

5.3 ✓

HOW OFTEN DO YOU DIP PER ANNUM?	
X1	
X2	
X3	

5.4 ✓

STRUCTURE OF DIPPER	
bath & pens sound / conform to code	
minor modifications required	
major modifications required	

5.5 ✓

DISTANCE (M) OF DIPPER FROM WATERCOURSE/SPRING/BOREHOLE	
> 50	
10 - 50	
< 10 contamination unlikely	
< 10 contamination quite possible	

5.6 ✓

DIP DISPOSAL (ON SITE)	
none	
dip diluted / spread by vac tank on grass	
dip not diluted or not spread by vac tank	
bucketed over wall etc	
soakaway used	
to stream	
spent dip treatment	

5.7 ✓

MOBILE DIPPER	
dip disposal off site & safe dipping location	
moderate dipping location	
risky location, i.e. drained etc	

5.8 ✓

POST DIP FLOCK MANAGEMENT	
compliant with best practice	
non-compliant with best practice	

Part 6 Crop Protection

6.1 ✓

CROPPED AREAS	
Ha up to 40, Acres up to 100	
Ha 40 - 200, Acres 100 - 500	
Ha > 200, Acres > 500	

6.2 ✓

WHICH OF THE FOLLOWING CROPS ARE GROWN ?	
cereals	
oilseeds, linseed	
peas, beans	
potatoes	
maize	
vegetables	
stubble, turnips etc	
sugar beet	

6.3

PERCENTAGE OF FARM ON LIGHT LAND, SAND OR SANDY LOAM	
percentage	

6.4 √

APPLICATION OF AUTUMN HERBICIDES	
yes	
no	

6.5 √

HAS THE SPRAY OPERATOR A COC (A LEGAL REQUIREMENT FOR CONTRACTORS) OR BEEN ON A SPRAY USERS COURSE?	
yes	
no	

6.6 √

IS THE CHEMICAL STORE BUNDED AND SECURE?	
yes – or sprays supplied by contractor	
no	

6.7 √

WHERE IS THE SPRAYER FILLED WITH CHEMICALS?	
in field	
on gravel or concrete with sump	
on concrete with yard drains	
on gravel or concrete no drains	
on earth / made ground	

6.8 √

DOES SPRAYER TRAVEL ON	
public highway?	
farm roads only?	

6.9 √

DO YOU SPRAY WITHIN 6M OF A WATERCOURSE?	
no	
yes – ditch	
yes – stream	
yes – river	

6.10 √

WHERE DO YOU EMPTY SPRAY TANK WASHINGS?	
on crop	
on sacrifice area	
in yard	

6.11 √

USE OF BUFFER ZONES	
none	
temporary	
permanent	

How can we help ?

Would you like more information on : √ √ √ √ √ √ √

information provided	interview	posted	no	information provided	interview	posted	no
duty of care				oil storage			
Special Waste				general			
arable farming				PPG Nos			
sheep dipping				other			

notes/comments/recommendations :

letter sent and date		
information sent and date		

Appendix 5

Press Release

December 8, 1999

SUCCESSFUL COLLABORATION PREVENTS POLLUTION

SUCCESSFUL collaboration between the Environment Agency, local businesses and Northumbrian Water has reduced the chances of pollution in the River Tyne.

Together, the Agency and Northumbrian Water assessed potential pollution risks to local water sources. Over seven months, visits were made to 150 industrial sites and 80 farms around Prudhoe, Hexham and Haltwhistle.

Detailed inspections examined industrial processes, business procedures and chemical storage arrangements. Farmers and site operators were then advised on the precautions needed to minimise pollution risks, including improving procedures, storage facilities and drainage.

The work will safeguard drinking water supplies by protecting Northumbrian Water's treatment works at Horsley, near Prudhoe. The Environment Agency says the programme will also produce general environmental improvements.

Such risk assessments are pro-active, aiming to prevent pollution before it happens. The Environment Agency says the approach is far more effective than facing real incidents, with possibly serious environmental damage, contaminated water and heavy clean-up costs.

"Applying risk assessment techniques to preventing accidental industrial or agricultural pollution benefits public health, the environment and site operators' own businesses," said Richard Harris, Environment Agency area campaigns officer.

The programme highlights the benefits forthcoming from working partnerships and collaboration with all those whose work and operations can affect or be affected by pollution in rivers such as the Tyne, Richard Harris added.

MEDIA ENQUIRIES: 0 113 244 0191