

# DEPARTMENT OF THE ARMY HEADQUARTERS, I CORPS AND FORT LEWIS

BOX 339500 FORT LEWIS WA 98433-9500



5 March 2003

U. S. EPA Region 10 Office of Water – Attn: Storm Water Program 1200 6th Avenue (OW-130) Seattle, WA 98101



Dear Sir:

Attached is the Fort Lewis NPDES Permit application for regulated small municipal separate storm sewer systems (MS4).

Sincerely,

Paul T. Steucke, II.
Chief, Environmental and Natural
Resources Division

Enclosure as

# NPDES Permit Application for

#### Regulated Small Municipal Separate Storm Sewer Systems (MS4)

#### 5 March 2003

1. Activity: Fort Lewis, WA

2. Name and Address: Director of Public Works

PO Box 33500

Fort Lewis, WA 98433

(253) 967-3191

3. Standard Industrial Classification: 9199

4. Technical Contacts: Chief, Environmental Compliance Branch

(253) 966-1766

or

Water Team Lead (253) 967-2326

- 5. Is facility on Tribal lands? This facility is not located on tribal lands.
- 6. Other permits:
  - a. Hazardous Waste Permit under RCRA
  - b. NPDES Storm Water Construction permits
  - c. NPDES Wastewater Permit
  - d. Fort Lewis is in an attainment area under the Clean Air Act
- 7. Map: A map showing all MS4 storm water outfalls is attached as Enclosure 1.
- 8. Mission: Train and deploy soldiers of the U. S. Army and other services.
- 9. Estimated area of MS4 area: 8.3 square miles.
- 10. Best Management Practices: The best management practices for each of the six minimum control measures are listed in Appendix B of the attached MS4 Management Plan (Enclosure 2).

PCS 8/2/00D

11. Measurable Goals: The measurable goals for each BMP are listed in Appendix B of the attached MS4 Management Plan (Enclosure 2).

# 12. Person responsible for the implementing the storm water management program:

Water Team Lead (253)-967-2326

2 Enclosures as



# **Fort Lewis**

# **Municipal Separate Storm Sewer System**

**Management Plan** 

(MS4MP)



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PWE-621 ii

#### Chapter I – Introduction

#### Section 1. General

- 1-1. Purpose. To implement a Municipal Separate Storm Sewer System Management Plan (MS4MP) at Fort Lewis (FL) as required by Phase II of the National Permit Discharge Elimination System (NPDES).
- 1-2. References. Required and related publications are listed in Appendix A.
- 1-3. Explanation of Abbreviations and Terms. All abbreviations and terms are explained in the Glossary.

#### Section 2 – Responsibilities

- 1-4. Chief, Environmental and Natural Resources Division (ENRD). The Chief, ENRD is designated by the Director of Public Works as the responsible officer to sign all Notices of Intent, Notices of Termination, Stormwater Pollution Prevention Plans, reports, certifications or other similar documents required by the NPDES Stormwater Phase II permit.
- 1-5. The Chief, Environmental Compliance Branch. Responsible for the development and execution of the MS4MP and reviewing the annual reports.
- 1-6. The Water Team Lead. The Water Team Lead will:
  - a. Develop, implement and maintain the MS4MP.
  - b. Set priorities for the accomplishment of specific goals and objectives
  - c. Prepare and maintain an annual assessment of the MS4MP.
- d. Establish a Fort Lewis Water Council (FLWC) to assist in the development, revision and maintenance of the plan.
  - e. Prepare and distribute an agenda for every meeting
  - f. Chair the FLWC meetings.
- 1-7. Stormwater Specialist. The Stormwater Specialist will:
  - a. Monitor the effectiveness of the implementation of the program by periodic inspections.
  - b. Prepare a summary of all FLWC meetings.

### **Chapter 2 - Policy**

- 2-1. Vision for the MS4MP. The MS4MP will ensure the Army meets or exceeds the requirements of Phase II of the NPDES. Fort Lewis will fulfill its environmental responsibilities through the application of an innovative and flexible program to comply with all legal requirements and eliminate polluted stormwater discharges to waters of the United States.
- 2-2. Continuous Improvement. Fort Lewis will strive to achieve continuous improvement in the implementation and execution of the MS4MP. This will be accomplished by a variety of means, which will include but are not limited to, applying new technologies to prevent pollution, continuously reviewing and assessing site conditions, and applying BMPs.
- 2-3. Environmental Sustainability. Fort Lewis is fully committed to maintaining the balance between a trained and ready force and a healthy environment. The MS4MP is designed in consideration of current and future impacts of activities on the environment, the economy, and quality of life. Fort Lewis' sustainability objectives require the prevention of pollution (to all media). The goals and objectives of the MS4MP have been established to support these objectives. In addition, this plan will be reviewed and revised on an on-going basis to ensure its continuing suitability, adequacy, and effectiveness.
- **2-4. Pollution Prevention**. Pollution prevention is the Fort Lewis' preferred approach to maintaining compliance with environmental laws and regulations. Under the MS4MP, all personnel living and working on Fort Lewis will be exposed to a program aimed at reducing stormwater pollution.
- 2-5. Environmental Management System.
- **a. EMS**. The MS4MP meets the standards of the Public Works Environmental Management System (EMS).
  - b. Documents.
    - (1) Tier II.
      - (a) The MS4MP
      - (b) The Annual Assessment of the MS4MP implementation
    - (2) Tier IV.
      - (a) Any visual sampling results
      - (b) Any chemical sampling results

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### Chapter 3 – Planning

- 3-1. General. Phase II of the stormwater NPDES requires communities to develop, implement and enforce a stormwater management program designed to reduce the discharge of pollutants from the stormwater system to the maximum extent possible, thereby protecting the water quality and satisfying the appropriate water quality requirements of the Clean Water Act.
- 3-2. Environmental Aspects. The environmental aspects addressed by this plan are the human activities that occur in the family housing areas and other non-industrialized areas of Fort Lewis that impact on storm water runoff and discharges.
- **3-3. Environmental Objectives and Targets**. The environmental objectives for the MS4MP are spelled out in the U. S. Environmental Protection Agency's regulation for Phase II of the NPDES. These are the development and implementation of best management practices in the form of goals in the six areas listed below.
- a. Public Education and Outreach. Perform outreach to inform the military community about the impacts polluted storm water runoff discharges can have on our water supply.
- **b. Public Participation and Involvement.** Provide opportunities for members of the military community to participate in the FLMS4 program development and implementation, including effectively publicizing public meetings and encouraging representatives on the FLWC.
- c. Illicit Discharge Detection and Elimination. Develop and implement a plan to detect and eliminate illicit discharges to the storm sewer system (includes developing a system map and informing the community about hazards associated with illegal discharges and improper disposal of waste).
- d. Construction Site Runoff Control. Develop, implement and enforce an erosion and sediment control program for construction activities that disturb one or more acres of land.
- e. Post-Construction Runoff Control. Develop, implement and enforce a program to address discharges of post-construction storm water runoff from new development and redevelopment sites. Applicable controls may include preventive actions such as protecting sensitive areas such as wetlands or the use of structural BMPs such as grassed swales or porous pavement.
- **f. Pollution Prevention and Good Housekeeping.** Develop and implement a program with the goal of preventing or reducing pollutant runoff from garrison operations. The program must include garrison training on pollution prevention measures and techniques.
- 3-4. MS4MP BMPs and Goals. The current Fort Lewis BMPs and goals in the six areas are set forth in Appendix B.
- 3-5. Additional BMPs. The FLWC may add new BMPs or change existing BMPs as necessary to improve the effectiveness of the storm water pollution prevention program.

3-6. Storm water outfalls. The MS4 storm water outfalls are identified in Appendix C.

### Chapter 4 – Implementation and Operation

#### 4-1. Structure and Resourcing.

a. Staffing. The authority for the execution of the MS4MP lies with the Water Team Lead: specifically the Water Team Lead, assisted by the Storm Water Technician. The Water Team Lead will be assisted in the execution of the MS4MP by the Fort Lewis Water Council (FLWC).

#### b. Fort Lewis Water Council (FLWC).

- (1) Establish a FLWC to assist in the review, maintenance and implementation of the MS4MP. The Installation Water Team Lead will determine the membership of the FLWC. As a minimum the FLWC will include:
  - (a) Water Team Lead
  - (b) Installation Water Team Lead
  - (c) Installation Storm Water Technician
  - (d) One or more members from each family housing area
- (2) Current FLWC Membership. The current members of the FLWC are listed at Appendix C.
- **c. Funding.** Funding for implementation and management of the MS4MP is detailed in Table 4-1.

#### 4-2. Function of the FLWC.

- a. Purpose. The purpose of the FLWC is to:
- (1) Gather baseline information on the FLMS4 stormwater system to include outfalls and the quality of the stormwater discharges at the various outfalls.
- (2) Analyze the information and develop BMPs to focus on those areas that are identified as needing improvement to achieve pollution reduction to the maximum extend possible.
  - (3) Implement the BMPs.
- (4) Continuously check the quality of the stormwater discharges to determine the degree of improvement achieved and adjusting the BMPs as necessary to further reduce pollution to the maximum extend possible.

- (5) Review reports on the effectiveness of the Fort Lewis MS4 stormwater pollution prevention program and offer recommendations to improve the MS4MP.
- (6) Review the goals established for each of the six elements of the program at least annually. Adjust the goals as necessary to achieve the MS4MP objectives.
  - (7) Develop and recommend changes to the annual goals, as necessary
- (8) Review the FLMS4 stormwater system maintenance program and make recommendations for improvement.

#### b. Meetings.

- (1) The FLWC will meet at least quarterly at a time designated by the Water Team Lead.
- (2) An agenda will be prepared and distributed prior to each meeting. Council members may request specific items be included on the agenda.
- (3) Recommendations of the FLWC are subject to final approval by the Chief, Environmental Compliance Branch.
  - (4) The Stormwater Specialist will prepare a summary of all meetings.
- 4-3. Environmental Training. Environmental training goals are included in the sixth element of the MS4MP (Pollution Prevention and Good Housekeeping).

#### 4-4. Communications.

- **a. Internal**. Matters pertaining the implementation of the MS4MP and the function of the FLWC should be directed to the Water Team Lead or Chief, Environmental Compliance Branch, ENRD.
- **b. External.** Questions or requests form external sources (*i.e.*, media, public) will be referred to the Fort Lewis Public Affairs Office. Responses will be coordinated between the Public Affairs Office and the Water Team Lead.

#### 4-5. EMS Documentation

- **a. Document Control.** The MS4MP will be reviewed at least annually and updated as necessary.
- **b. Environmental Documents and Records.** All documents and records will be maintained in accordance with the Public Works EMS.
  - (1) Tier III Document. The MS4MP.

- (2) Tier IV Records:
  - (a) Results of visual sampling of stormwater
  - (b) Results of any chemical analysis of stormwater

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## Chapter 5 - Checking and Corrective Action

#### 5-1. Inspections and Monitoring.

- a. Visual Monitoring. Visual monitoring will be conducted at all FLMS4 outfalls quarterly. A sample of the Visual Monitoring Checklist is at Figure 1-1. Copies of the completed checklists are maintained on file. Tabulated results of the visual monitoring are at Appendix D.
- **b.** Chemical Analysis. Chemical analysis of the discharge from specific outfalls may be conducted based on the results of visual monitoring or other reports of pollutants in stormwater. Laboratory analyses are maintained on file. Tabulated results of any chemical analysis are at Appendix E.

#### 5-2. Corrective Actions.

- a. Identification of Pollutants. On the identification of a source of pollution, the Water Team Lead and Storm Water Specialist will take immediate action to remove, eliminate, or reduce the source of pollution by whatever means is appropriate.
- **b. Incidents.** All incidents requiring action by the Storm Water Team will be reviewed at the next meeting of the FLWC. The FLWC will review each incident to determine what actions may be taken to prevent future incidents of a similar nature.

### Chapter 6 – Management Review

#### 6-1. Review of MS4MP.

- a. During the first five-year term of the MS4 permit, the Water Team Lead will review the MS4MP at least annually during the first quarter of the calendar year. More frequent reviews may be conducted as needed.
- b. Recommended changes to the MS4MP will be presented to the FLWC for review and comment.
  - c. The Chief, Environmental Compliance Branch will review all revisions
- d. Final approval authority is the Chief, ENRD who will sign the EMS Controlled Document Header.

#### 6-2. Annual Report.

- a. During the first five-year term of the NPDES Phase II permit the Water Team Lead will prepare an Annual Report for submission to Region X of the Environmental Protection Agency. The report will be prepared during the first quarter of the calendar year and will address the following:
  - (1) Status of compliance with permit conditions
  - (2) Assessment of the BMPs in use
- (3) Progress toward achieving identified measurable goals for each of the required control measures.
- (4) Results of any information collected and analyzed, including any monitoring conducted.
  - (5) Summary of stormwater activities planned for the next reporting cycle.
- (6) Any change in the BMPs or measurable goals for any of the required control measures.
- b. The Annual report will be reviewed by the Chief, Environmental Compliance Division and signed by the Chief, ENRD.
  - c. Copies of the Annual Report are at Appendix F. Signed copies are maintained on file.
- 6-3. FLWC Meeting Summaries. Copies of the FLWC Meeting Summaries are at Appendix G.

## Appendix A - References

#### Section 1 - Required Publications

40 CFR Parts 9, 122, 123 and 124. National Pollutant Discharge Elimination System, Phase II (Federal Register, 8 December 1999)

U. S. Environmental Protection Agency, Reissuance of NPDES General Permits for Storm Water Discharges from Construction Activities (Federal Register, 17 February 1998)

Fort Lewis Stormwater Construction Management Plan dated 5 February 2003.

#### Section II - Related Publications

The following documents, in electronic format, are available on the PW Intranet site under ISO Document Management

National Menu of Best Management Practices for Storm Water Phase II

Public Education and Outreach

Public Involvement/Participation

Illicit Discharge Detection and Elimination

Construction Site Storm Water Runoff Control

Post-Construction Storm Water Management in New Development and Redevelopment

Pollution Prevention/Good Housekeeping for Municipal Operations

Burn Barrell Committee Com

# Appendix B -BMPs and Goals

## **Public Education and Outreach**

BMPs	When	Goals	Accomplishments
Household Hazardous Waste	Year 1	Publicize the installation household hazardous waste	
Management	ľ	disposal and recycling program	
-	Year 2	Develop educational material detailing ways to reduce	
		household hazardous waste	
	Year 3	Distribute household hazardous waste brochures to new	
		families in-processing at the housing office	
	Year 4-5	TBD	
Pet Waste Management	Year 1	Submit an article for publication focusing on pet waste	
		problems	
		Create or purchase signs for posting in high traffic pet areas	
		Initiate a "pooper scooper" regulation	
		Purchase pet waste plastic bag dispensers for the American	
		Lake area	
	Year 2	Prepare "pet waste" educational material	
		Install plastic bag dispensers at Russell Landing, American	
		Lake, or other high traffic area	
	Year 3	Distribute the "pet waste" educational material to new	
		families in-processing at the housing office	
	Year 4-5	TBD	
<b>Commercial Activities Education</b>	Year 1	Prepare a regulation requiring a spill prevention plan, spill	
		kits and proper storage of materials at commercial activities	
	Year 2	Develop educational materials for food and automotive	
		commercial activities that outline BMPs to reduce polluted	
		runoff from their activities	
	Year 3-5	TBD	

# Public Education and Outreach (continued)

BMPs	When	Goals	Accomplishments
General Public Awareness	Year 1	Develop and distribute educational material outlining the storm drain stenciling program and volunteer opportunities	
		Develop educational materials detailing storm water and non-point source pollution	
		Develop educational materials detailing conservation	
		methods	
		Submit an article detailing the storm drain stenciling program and volunteer opportunities	
		Purchase and demonstrate non-point source model at civic events	
	Year 2	Distribute educational materials detailing storm water and non-point source pollution	
		Distribute educational materials detailing conservation	
		methods	
Tailoring Outreach Programs to	Year 1	Coordinate with the Family Resource Center and Equal	
Minority and Disadvantaged Communities and Children		Opportunity Office to determine ethnic groups in need of outreach on the installation	
	Year 2	Partner with Chaplain's Office, Family Resource Center,	
	1	and spouse clubs to create a volunteer outreach for the	
		purpose of educating non-English speaking spouses about	
	l	environmental requirements and services on post	
		Develop a series of culturally appropriate public service	
		announcements and educational materials detailing waste	
	77. 0	procedures, pollution prevention, water conservation, etc.	
	Year 3	Distribute educational materials and post public service	
	<u> </u>	message on the Fort Lewis cable channel	
	Year 4-5	TBD	

# Public Education and Outreach (continued)

BMPs	When	Goals	Accomplishments
Classroom Education Year		Demonstrate an interactive Watershed Model	
		Develop a watershed guide designed for use by teachers of primary grades to complement volunteer programs	
	Year 2	Distribute the watershed guide designed for use by teachers	
	Year 3	Create an interactive watershed academy website	
	Year 4-5	TBD	
Low Impact Development Year 1		Work with Public Works Master Planning Division to ensure the incorporation of LID features in new design and development	
	Year 2-5	Continue work with Public Works Master Planning Division	

# **Public Involvement and Participation**

BMPs	When	Goals	Accomplishments
Storm Drain Stenciling	Year 1	Establish a storm drain stenciling volunteer program	
_		Purchase storm drain stenciling kits	
		Distribute educational materials detailing the storm drain	
		stenciling program and the availability of kits	
		Add the Storm Drain Stenciling program to the installation	
		list of volunteer opportunities	
_	Year 2	Increase the number of storm drain stenciling projects	
•	Year 3-5	TBD	
Water Council	Year 1	Organize an installation Water Council	
	Year 2	Consider establishing a Citizen Keeper Volunteer program	
	Year 3	Begin tracking resident complaints and resolution of calls	
	Year 4-5	TBD	
Poster Contest	Year 1	Sponsor a water conservation motto for children on-post	
	Year 2	Sponsor a water conservation poster contest for children on-	
		post	
	Year 3	Distribute winning posters at location around the	
		installation	
	Year 4-5	TBD	
Community Hotline	Year 1	Establish a community hotline	
	Year 2	Establish a link on the PW website for citizens to report	
		pollution concerns	
	Year 3-5	Continue the community hotline and website	

# **Illicit Discharge Detection and Elimination**

BMP	When	Goals	Accomplishments
Illegal Dumping	Year 1	Initiate an installation illegal dumping regulation	
		Determine problem areas that require "No Dumping" signs	
		Prepare educational material on illegal dumping of wastes	
		in the storm water system	
		Check outfalls for illicit discharges	
		Request funds to complete a storm water system atlas	
	Year 2	Purchase and post "No Dumping" signs	
	- -	Investigate sources of any pollutants found at storm water outfalls	
		Take action to eliminate any pollutant sources	
		Contract for a storm water system atlas	
		Distribute educational material on illegal dumping	
	Year 3	Complete storm water system atlas	
	Year 4-5	TBD	

## **Construction Storm Water Runoff**

BMP	When	Goals	Accomplishments
Construction Storm Water Runoff	Year 1-5	Prepare and maintain a construction storm water	Published Fort Lewis Storm Water
Compliance	ļ	management plan	Construction Management Plan (PWE-
-			620), dated 5 February 2003
Year 2-5 Include construction storm water in public outreach			
		materials and encourage concerned individuals to report	
		construction storm water pollution	

## Post Construction Storm Water Management in New and Redevelopment

BMP	When	Goals	Accomplishments
Post Construction Storm Water	Year 1-5	Work with Public Works Master Planning to incorporate	
Management in New and		low impact development principals in new construction at	
Redevelopment		Fort Lewis	
		Insure new construction plans include provisions to	
		properly manage post construction storm water	

# Pollution Prevention and Good Housekeeping

Area	When	Goals	Accomplishments
Automobiles	Year 1	Prepare regulation prohibiting automobile maintenance in housing or public areas, other than the automotive craft shop	
		Prepare a regulation prohibiting vehicle washing on the street, driveway or other impervious surface	
	Year 2-5	TBD	
	<u>.                                      </u>	T	
Lawn Care	Year 1	Develop a brochure that stresses the relationship between certain lawn care practices and undesirable water quality	
	Year 2-5	TDB	
Pest Control	Year 1	Develop a brochure that includes facts and tips on identifying pest problems and selecting environmentally friendly solutions	
	Year 2-5	TBD	
Hazardous Material Storage	Year 1	Prepare a regulation that requires all commercial activities to store hazardous materials in approved buildings with secondary containment	
	Year 2-5	TBD	
Spill Response and Prevention	Year 1	Prepare a regulation that requires all activities to maintain an updated spill control plan and an individual responsible for the implementation of the plan	
	Year 2-5	TBD	
Used Oil Recycling	Year 1	Develop a flyer listing the facilities on post that collect motor oil for recycling	
		Prepare a regulation requiring auto repair commercial activities to have an oil recycling plan/system.	
	Year 2	Distribute flyer listing facilities on past that will receive motor oil	
	Year 3-5	TBD	

# Appendix C – MS4 Storm Water Outfalls

Number	Nearest Bldg	Name	Receiving Body of Water	Notes
10*	D0603	22nd Street	Drainage canal to Puget Sound?	
10a*	D0627	23rd Street ??	Drainage canal to Puget Sound?	
10b*	D0727	24th Street ??	Drainage canal to Puget Sound?	
11*	Solo Pt Road	Solo Point Road	Drainage canal to Puget Sound?	
12	08832	Tremont Street	Elliot Marsh	Strictly residential
13	08823	Portland Steet	Elliot Marsh	Strictly residential
14	08861	American Lake Avenue	American Lake	Strictly residential
15	08867	Baltimore Street	American Lake	Strictly residential
16	08530	17th Street	Elliot Marsh (outfall not found)	Strictly residential
17	08694	Boston Street	American Lake	Strictly residential
18*	08356	Madison Avenue	Basin – no outlet	Strictly residential
19	08633	Richmond Place	Sears Lake (outfall not found)	Strictly residential
20	08496	Shoreline Beach Road	American Lake	Strictly residential
21	08089	Atlanta Drive	American Lake	Strictly residential
22	08012	San Francisco Avenue	American Lake	Strictly residential
23	08011	41st Division Drive	American Lake	Strictly residential
24	08085	American Lake Club North	American Lake	
25	08085	American Lake Club South	American Lake	
26*	09500	Tacoma Drive North	Small Basin with no outlet	
27	09500	Tacoma Drive South	Murray Creek	
28	09512	Rainer Drive	Murray Creek ?	Road and yard runoff
29*	09052	Part of Outfall 7		
30*	09052	Part of Outfall 7		
31*	09623	South L Street	Small basin ?	
32*	09617	Park Avenue	Small basin?	
33*	09660		MSGP discharge	
34	09997	Jackson Avenue	Murray Creek	Drains swimming pool
35	09997	Wilson Avenue	Murray Creek ?	Drains parking lot

Number	Nearest Bldg	Name	Receiving Body of Water	Notes
36	09997	Garfield Street West	Murray Creek ?	Parking lot, street and field
37	09986	Garfield Street East	Lynn Lake (outfall not found)	Street and parking lot
38	09781	Johnson Street	Lynn Lake (outfall not found)	Street and yard drainage
39	09011	Blaine Avenue	Murray Creek ?	School parking lot, field
40	04319	Main Street West	Drainage Channel to Puget Sound	Drains parking lot and yard
41	04319	Main Street East	Drainage Channel to Puget Sound	Street drainage
42	04319	Plant Road	Drainage Channel to Puget Sound	Street drainage
43	09999	W Johnson Street	Murray Creek (Outfall not found)	Strictly residential
44	09800	Lincoln Street East	Murray Creek	Field drainage
45	09907	Lincoln Street West	Murray Creek	Strictly residential
46	09907	Tyler Drive	Murray Creek	Strictly residential
47	09899	Washington Street (North)	Murray Creek	Strictly residential
48	09871	Washington Street (South)	Murray Creek	Strictly residential
49	09825	Coolidge Avenue	Murray Creek	Strictly residential
50	09144	Evergreen Avenue	No name Marsh	Roadway and office
51*	01451	Alder Street	Possible dry well?	
52*	03961	2nd Division Range Road	?	
53*	09160	Cramer Avenue (North)	Unknown	
54*	09162	Cramer Avenue (South)	Unknown	

<sup>\*</sup> Tentatively identified as storm water outfall. Further investigation required to make final determination

# Appendix C -FLWC Membership

Current membership in the FLWC is as follows:

# Appendix D – Tabulated Results of Visual Sampling

Appendix E- Tabulated Results of Chemical Analysis

This is an UNCONTROLLED DOCUMENT printed for reference only. The controlled document is maintained by the Water Team Lead
5 Feb 2003

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