Sewer Overflow Response Plan

Louisville and Jefferson County
Metropolitan Sewer District

REVISED JULY 8, 2003

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1. Introduction

Purpose and Objectives

Purpose: The System Overflow Response Plan (SORP) identifies measures to protect public health and the environment by providing a standardized course of action to follow in the event of overflows from the MSD sewer collection system. This includes any SSO from the separate sanitary sewers and any non-permitted CSO, such as dry weather CSOs. This plan addresses mechanisms to:

1) Identify dry weather CSOs, dry weather SSOs, and wet weather SSOs;

2) Provide immediate response to investigate and mitigate the overflow event, minimizing the effect on public health and the environment;

3) Provide immediate notification to all affected, including the public, health officials, the Kentucky Division of Water (DOW), and others; and,

4) Ensure that MSD personnel are trained to implement the plan.

Objectives: MSD's objectives are to provide better customer service and environmental stewardship through this plan. This SORP is intended to be an operational document and although the plan emphasizes emergency response activities to contain, mitigate, and clean up residuals from overflows, it also addresses preventative measures taken as part of the routine maintenance procedures conducted by MSD.

MSD will update the SORP on an as-needed basis to reflect operational changes or KPDES permit requirements.

CSO and SSO Background Information

Complete background information on all known CSOs and SSOs is included in the ***MSD CSO Inventory and SSO Inventory Field Guides***. These fact books contain overflow history, access information, photographs, structural details, upstream drainage area, and other pertinent data. These documents should be considered a companion to this Plan.

MSD CSO and SSO Classifications

CSOs during wet weather are permitted overflows within the combined sewer system. Any CSOs that occur during dry weather are not permitted and are to be reported to the Kentucky Division of Water under the guidelines of this document.

According to the U.S. EPA, SSOs are discharges of raw domestic sewage from a separate sewer system before the headworks of a wastewater treatment facility. SSOs are broken down into documented and investigated categories for tracking purposes as follows.

Documented SSOs have occurred at least twice in any given reporting year. These SSOs are reported each time they occur in accordance with Section 2 of this document.

Investigated SSOs have occurred at least once in the past 3 years, no more than once in any given year, and have been reported to KDOW. These SSOs are reported in accordance with Section 2 of this Document.

2. Overflow Emergency Response Plan

This section will outline general MSD response procedures for each type of CSO and SSO.

General Information

Utility Name: Louisville and Jefferson County Metropolitan Sewer District

Applicable KPDES Permit Numbers:

Facility	Permit No.	Issue Date	Expiration Date
Morris Forman WTP	KY0022411	01-Oct-99	30-Sep-04
West County WTP	KY0078956	01-Feb-01	31-Dec-02
Floyds Fork WTP	KY0102784	01-Apr-00	31-Mar-04
Hite Creek WTP	KY0022420	01-Feb-99	30-Sep-07
Cedar Creek WTP	KY0098540	02-Feb-00	29-Feb-04
Jeffersontown WTP	KY0025194	01-Jul-00	29-Feb-04
MS4 Permit	KY000001	01-Feb-99	31-Mar-04
Ashmoor Woods WTP	KY0094374	N/A	Awaiting new permit
Bancroft WTP	KY0039021	N/A	31-Oct-07
Berrytown WTP	KY0036501	N/A	31-Mar-08
Chenoweth Hills WTP	KY0029459	N/A	29-Feb-08
English Station WTP	KY0045535	N/A	31-Mar-04
Fern Hill WTP	KY0033758	N/A	31-Dec-07
Glenview Acres WTP	KY0022462	N/A	31-Dec-07
Glenview Bluff WTP	KY0044261	N/A	30-Sep-07
Hunting Creek North WTP	KY0029106	N/A	30-Sep-07
Hunting Creek South WTP	KY0029114	N/A	01-Sep-07
KCI WTP	KY0039004	N/A	Permit obtained by state
Ken Carla WTP	KY0022497	N/A	01-Sep-07
Lake of the Woods WTP	KY0044342	N/A	29-Feb-04
McNeely Lake WTP	KY0029416	N/A	28-Feb-08
Nottingham Hills WTP	KY0029483	N/A	31-Dec-04
Polo Fields WTP	KY0093441	N/A	31-Mar-04
Running Creek WTP	KY0034134	N/A	Awaiting new permit
Silver Heights WTP	KY0028801	N/A	31-Dec-07
Starview WTP	KY0031712	N/A	Awaiting new permit
Timberlake WTP	KY0043087	N/A	30-Sep-07
Yorktown WTP	KY0036323	N/A	31-Dec-04

SORP Response Personnel

The responsibility for documenting and reporting overflows is divided among the Operations, Maintenance, and Wet Weather Water Quality teams. The delineation of responsebilty is shown on the map entitled Countywide SSO Locations in **Appendix A.**

Operations (Facilities) ○

West Region

Dave Carty	Pager: 485-5295	Mobile: 693-6241	Office: 540-6757
Rhonda Hayes	Pager: 455-6494	Mobile: 648-7432	Office: 540-6031
Bradley Phelps	Pager: 672-3525	Mobile: 552-9960	Office: 540-6039

Central Region

Debbie Newton	Pager: 455-8849	Mobile: 648-8299	Office: 239-7574
Tom Clark	Pager: 464-5592	Mobile: 523-0227	Office: 231-2224
Carl Randol	Pager: 455-1824	Mobile: 523-9965	Office: 540-6725
Dennis Thomasson	Pager: 672-5007	Mobile: 648-7829	Office: 966-3877

East Region

Eric Brady	Pager: 478-8729	Mobile: 558-6362	Office: 253-9310
Ken Eilers	Pager: 455-7440	Mobile: 648-8144	Office: 241-9310
Tommy Spalding	Pager: 485-5720	Mobile: 648-5720	Office: 969-2490
Kevin Slaughter	Pager: 455-6491	Mobile: 648-8005	Office: 243-2858

Maintenance ●

Eric Kalbhin	Pager: 473-5328	Mobile: 558-1434	Office: 540-6807

Corps of Engineers Flood Pumping Stations ●

(Refer to Appendix A for map of flood pumping locations)

Mike Humphrey	Pager: 455-6490	Mobile: 648-7419	Office: 896-6957

Wet Weather Water Quality Team (Identified Collection System SSOs) ●

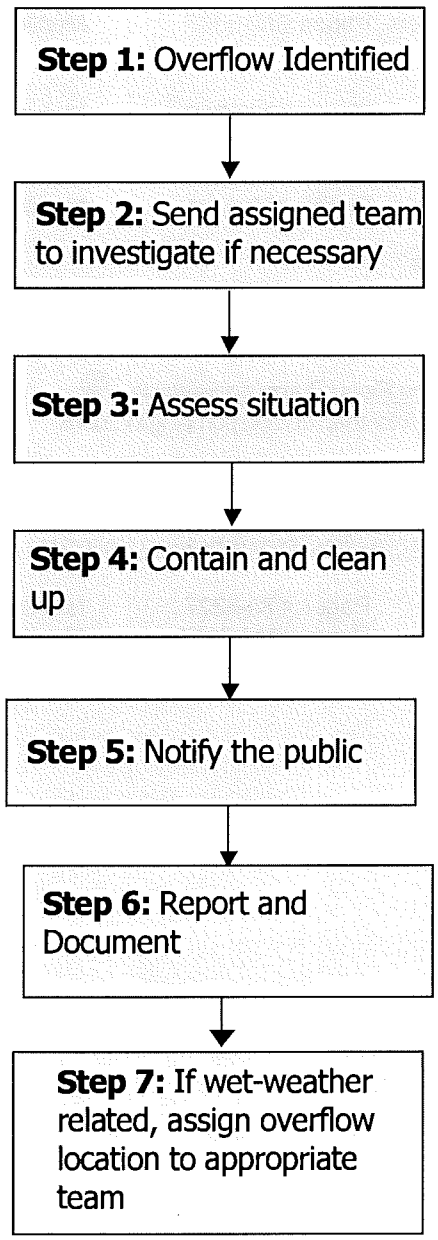
Mike Griffith	Pager: 473-5327	Mobile: 552-7654	Office: 540-6925
John Lasley	Pager: 392-3841	Mobile:	Office: 540-6933
Tim Brock	Pager: 478-6505	Mobile: 558-3365	Office: 540-6950

Response Procedures

The following pages outline the MSD overflow response procedures.

General Response Procedures

The diagram below indicates the general response procedures for a known or newly discovered CSO and SSO in the MSD collection system. The following pages discuss each step in detail.



Step 1: Overflow Identified

Notification of a Potential Sewer Overflow

Overflows are typically detected and reported in one of four ways:

- Notification by the public;
- Notification by sewer system remote monitoring alarms;
- By MSD personnel during routine inspection or response to service request; or
- Overflows created to avoid backups.

Notification by the public

The public may report and inquire about potential overflows from the wastewater collection system by contacting MSD. In this case:

- Customer Service should enter the information into the MSD asset management database, Hansen Information Management System (Hansen) as a DISCH call.
- Hansen automatically notifies Maintenance crews during the day and evening hours.

Notification by sewer system alarms

MSD Operations crews will respond to level alarms at pump stations for overflows.

Discovery during field inspection

All known documented and investigated SSO locations are included in **Appendix A**. During periods of wet weather, MSD personnel are assigned responsibility for periodically inspecting these sites for overflow activity.

MSD field staff may also discover a discharge when responding to the report of a system problem, or a customer service request such as a service connection backup.

Overflows created to avoid backups

It is sometimes necessary to place pumps at identified facilities, as well as locations in the collection system, to avoid causing backups in homes and businesses. These pumps are only turned on if flows reach levels high enough to cause backups. During average rain events, the pumps are placed at the sites but may never be turned on.

Step 2: Send Assigned Team to Investigate if Necessary

Dispatching Crews

The customer service representative receiving a call from the public or any MSD employee who discovers an overflow situation is responsible for making appropriate notifications shown in Table 1. SORP response personnel will then assume responsibility in accordance with Steps 3 through 7 of this Section.

Table 1. Operations, Maintenance, and Corps of Engineers Flood Pumping Stations Contact Information

Responsible for	Number	Contact Person	Responder
WWTPs and Pump Stations	**540-6774**	MFWTP Computer Room	On-call Operations Supervisor
Line Breaks, Discharging Manholes, Beargrass Creek, Improved Channel	**540-6812** (between 7:30 AM – 12:00 AM) **587-0603** (between 12:00 AM – 7:30 AM)	CMF Dispatch (between 7:30 AM – 12:00 AM) Customer Service (between 12:00 AM – 7:30 AM)	On-call Maintenance Supervisor
Corps of Engineers Flood Pumping Stations	**540-6774**	MFWTP Computer Room	On-call Maintenance Supervisor – Flood Pumping

Step 3: Assess situation

Preliminary Assessment of Damage

Investigation

1. The SORP personnel will confirm that an overflow has occurred.

2. Once an overflow is confirmed, the responsible party will determine the cause of the release/overflow.

   For all overflows, the observer is responsible for recording all observations, as identified in Step 6, on the discharge report form (**Appendix B**).

Only trained response personnel shall enter private property for the purpose of assessing damage and should use discretion in assisting private property owners/occupants with overflow related problems.

Response to Dry Weather Overflows

In an effort to reduce sewer overflows and backups, MSD responds to various service requests from more than 200,000 residential, commercial and industrial customers. Sewer overflows and backups can occur in the collection system from excessive debris, roots, damaged sewer lines, and excessive solids, such as grease.

In addition to responding to backup requests, MSD has a procedure for processing "Unusual Discharge Requests" to avoid causing backups and overflows during dry weather (**Appendix C**). This procedure not only allows for MSD to know when something out of the ordinary is entering the system, it also gives them an opportunity to respond proactively. MSD routinely reviews Louisville Water Company flushing requests to avoid dry weather overflows.

When the Maintenance Division receives a service request for a backup from the Customer Service Department the procedures to follow are outlined below and listed in **Appendix C**.

1. Respond to backup request.
2. Determine if main sewer is blocked.
3. Check for cleanout on property.
4. Determine if problem is private or MSD responsibility.
5. If MSD responsibility, take necessary action.

Hazardous material detection

1. If response personnel suspect the presence or release of hazardous materials, they shall immediately notify the Louisville Metro Fire Service by calling 911.

2. Response personnel shall notify the Industrial Waste Department (IWD) of any suspicious substances or odors uncommon to overflow events by calling the MFWTP Computer Room at 540-6774 and asking that the on-call IWD Emergency Response Technician (ERT) be paged to the scene. Field crews should then await further instruction.

3. Upon discovery of the presence or release of a hazardous material in a reportable quantity, the responding on-call IWD ERT shall immediately notify the Louisville Metro Fire Service by calling 911. To contact a member of ERT, MSD maintains a rotating ERT on call list.

4. The field crew shall follow the direction of the hazardous material response team or fire department until the authorities determine it is safe to proceed with clean up procedures.

Level of Overflow Impact

In the preliminary assessment, field crews should identify all affected or potentially affected areas. Crews should pay particular attention to the likelihood of the overflow reaching a waterbody and/or impacting highly public areas.

If the investigating team determines that an overflow is a most notable circumstance, such as an infrastructure failure, significant public health risk, or irate customer, the team leader shall immediately send a Response Group Page (478-6512) to notify the Wet Weather Water Quality (WWWQ) Team Leader, Executive Director and Director of Engineering/Operations of the situation. The team leader should also contact a representative on the Environmental Emergency Response List (EERL), to assess the environmental impact of the overflow.

Table 2 includes a list of emergency contact numbers.

Table 2. Emergency Points of Contact for SSOs and dry weather CSOs

Agency	Contact Person	Phone	Conditions to Contact
Emergency Management Agency (Radio Room)	On-call Emergency Reponse Person	574-3506	If hazardous material is detected
KDOW	Mike Mudd	425-4671 or 800-928-2380 after 5 PM	Discovery of overflow (See Table 3)
Louisville Water Company	LWC Radio Room (on-call Emergency Response Person)	368-0127	Impact to LWC water main, line or facility. Impact to MSD facility from water main or line break.
News Media	Local TV and radio stations		At Executive Director's discretion
Metro Louisville Health Department	On-call Emergency Response Person	574-6650	Dry weather overflows from collection system or a pump station/WTP bypass that reaches a waterbody
Metro Louisville Government Department of Inspections, Permits and Licenses	MetroCall	574-5000	Wet or dry weather backups in homes or buildings
Louisville Metro Fire Service	Dispatcher	585-1717	If hazardous material is detected
Louisville Metro Police Department	Dispatcher	574-7111	If overflow occurs in public area and causes a traffic hazard

Step 4: Contain and clean up

Containment and Cleanup

Containment

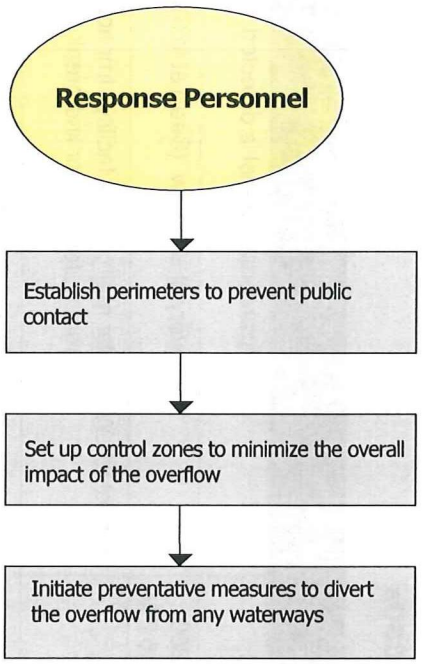
1. After an initial assessment of the overflow is completed, field crews should initiate measures to stop and contain the overflow.

2. Perimeters should be established, if needed, to prevent public contact until clean-up efforts are complete.

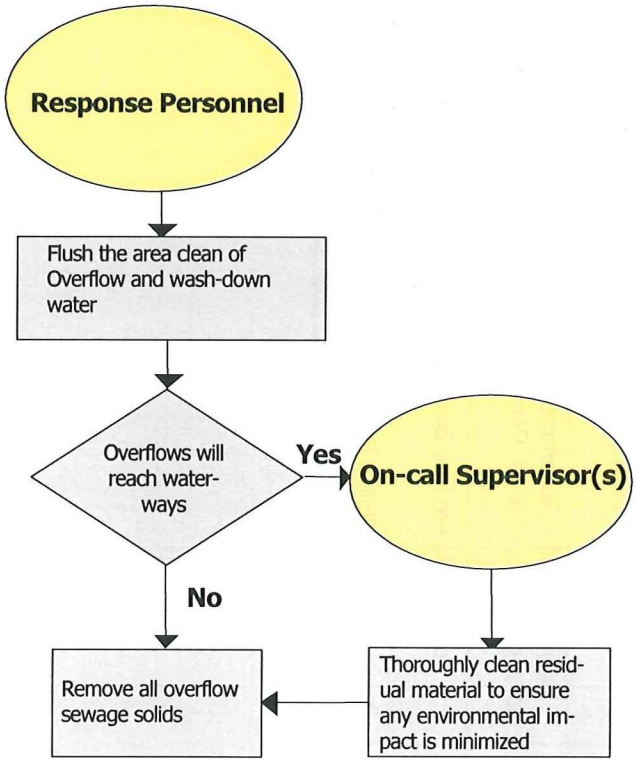
3. The immediate destination of the overflow should be determined and control zones established to minimize the overall impact.

4. Crews should always make every effort to prevent an overflow from reaching any waterways.

5. In the event of prolonged (more than 48 hours) overflow conditions due to line blockage, portable bypass pumping should be conducted around the obstruction.



Clean-up efforts



1. Areas impacted by overflows should be thoroughly cleaned of residual material deposited by system overflows in order to minimize the public health and environmental impact to the greatest degree possible.

2. All solid material should be disposed of in accordance with MSD's Wastewater Discharge Reports.

3. If the problem has resulted in a backup of sewage into the house or building, the Inspector and/or Construction Supervisor are authorized to contact a clean up crew to remediate the condition inside the house.

Step 5: Notify the public

Public Notification

General

In the event that the overflow may **imminently and substantially endanger human health**, the Health Department and other outside agencies may need to be contacted. The Executive Director will determine when to activate public service announcements and issue news releases for severe overflow events.

Documented or investigated SSOs

Known CSO and SSO locations are marked with MSD placards which notify the public of the potential risk when an overflow is active (Fig. 6-1and 6-2).

Figure 6-1: Standard MSD SSO warning placard

Figure 6-2: Standard MSD CSO warning placard

Step 6: Report and Document

Overflow Reporting and Documentation

General

There are four required reporting formats to KDOW:

1. Initial notification (phone call within 24 hours of discovery)
2. Follow-up letter or report (within 5 working days of discovery)
3. Monthly summary (submitted with each KPDES DMR)
    a. Overflow information is compiled and submitted with the monthly DMR
4. Annual summary (submitted with the WATERS Report)
    a. Overflow information in the WATERS Report summarizes the overflow reported to the KDOW over the course of the previous fiscal year.

Initial KDOW notification and documentation

The initial report must be received by phone call to KDOW within 24 hours of the overflow discovery and at a minimum include the following information:

- Location
- Start date and time
- Cause

Additional reporting information is included in tables 3 and 4.

Regardless of whether the overflow is still occurring at the end of the operations or maintenance shift, any overflow information collected is to be transmitted to the appropriate Hansen administrator by start of the following business day. This information is to be entered into Hansen daily. If the overflow continues to occur over a period of several shifts, those shifts are responsible for monitoring the overflow and completing the overflow report.

For known overflows, general site and location information is provided in a spreadsheet format to ease the reporting process. For newly discovered overflows the responding party should use the triplicate discharge reports. In both instances the observer is responsible for recording all requested information found on the discharge reports in **Appendix B**. A generalized table to aid in the assessment of volume estimates is included in **Appendix E**.

Discharges will be tracked in the Hansen asset management system. Full documentation of procedures for this methodology appears in **Appendix D**. The system has been set up in the following manner:

All static information associated with the particular asset which is discharging, will be maintained on the asset inventory record. An additional data set has been added to the record specifically to track where the facility discharges to, the receiving stream which is impacted, what type of discharge occurs, whether the discharge has happened repeatedly or is a single occurrence, and whether there is a budgeted plan in place for eliminating the discharge (if required).

Finally, reporting from the field forms has been mapped into the Hansen Asset Work Order Report for ease of data entry, tracking and outcome reporting. These forms and the documentation of this process is detailed in the procedures documentation appendix.

Table 3. Overflow Reporting Requirements

Conditions Reported	MSD Facility
Wet weather overflows equipment and process to protect MFWTP	MFWTP, Western Outfall Diversion Structure (MDS) and Southwestern Pumping Station
Overflows at Corps of Engineers flood pumping stations during storm events and/or Ohio River flooding	MFWTP sanitary/flood pumping stations (see Table 4)
Overflows/spills due to system failure (wet or dry)	MSD collection/treatment system
Overflows/spills from separate sanitary sewers during storm events	MSD separate sanitary sewer collection system
Dry weather CSOs and SSOs	MSD collection/treatment system
Scheduled non-emergency overflows *	MSD collection/treatment system (Request to DOW)
Overflows created to prevent basement flooding	MSD collection system

Reporting Method and Timeframe

- **Phone call within 24 hours of discovery to Mike Mudd at 425-4671 or 800-928-2380 (after 5pm)**
- **Written correspondence within 5 days of discovery**
- *** Request overflow at least 10 days in advance of scheduled overflow**
- **Attachment to monthly DMR**
- **Annual Report**

Table 4. Corps of Engineers Flood Pumping Stations (See Appendix A for map of Corps of Engineering Flood Pumping Station Locations)

Facility Name	Overflow Estimation Method
Bingham Way, Buchanan Street, Beargrass, 5th Street, 10th Street, 17th Street, 27th Street Shawnee, Western Parkway & Paddy's Run	Use pump run time multiplied by pump capacity
4th Street	Idle Mode: Use a long term average flow for the station
	Flood Pumping: Use pump run time multiplied by pump capacity
34th Street	Idle Mode: Use a long term average flow for the station
	Flood Pumping: Use pump run time multiplied by pump capacity

Step 7: If wet-weather related, assign overflow to appropriate team

Assign tracking responsibilities

After a newly discovered overflow has been investigated, reported, and mitigated, the MSD Wet Weather Water Quality Team Leader and OMT Team leader will assign tracking responsibilities (**Appendix A**) to the appropriate team. From that point forward, it is the responsibility of the assigned team to investigate and report the overflow until it has been eliminated.

3. Training, Review, and Update

Distribution of the Plan

A copy of this plan will be made available for all MSD personnel that have overflow response, documentation, volume estimation, mitigation, and reporting responsibilities.

Training

All MSD personnel who have overflow response, mitigation, or reporting responsibilities will receive annual training on the procedures detailed within this SORP.

Annual Review and Update

The MSD Wet Weather and Water Quality Team has responsibility for annual review and update of this plan.

Other Key Documents

MSD is currently maintaining several sources of information on investigating and remediating the impact of overflows in the MSD service area. A brief description of each document follows:

CSO Inventory Field Guide. This document is designed to be a comprehensive source of background information for each CSO in the MSD collection system. The field guide contains operational descriptions, history, location maps, as-built drawings, and other information designed to give the reader a complete background on the CSO site.

WATERS of Jefferson County. The annual WATERS report combines the former Combined Sewer Operational Plan (CSOP), Sanitary Sewer Overflow Abatement and Elimination Plan (SSOAEP), and the Municipal Separate Storm Sewer System Report (MS4) into a single comprehensive document. This document contains information on past and planned projects designed to investigate and eliminate CSOs and SSOs in the MSD collection system and can be found on MSD's website.

SSO Inventory Field Guide. This document is designed to be a comprehensive source of background information for each known SSO in the MSD collection system. The field guide contains discharge histories, severity rankings, photographs, as-built drawings, operational descriptions, history, and other information designed to give the reader a complete background on the SSO site.

References

Capacity, Management, Operation and Maintenance (CMOM) Standard Condition for Municipal Sanitary Wastewater Collection Systems (draft), U.S. EPA, Jan 2001.

Evaluating POTW Capacity, Management, Operation, and Maintenance Programs, U.S. EPA Office of Compliance and Region IV, 2001.

MSD SSO Field Guide, July 2002.

Overflow Emergency Response Plan (draft), *U.S. EPA Office of Water, 833-F-01-003b, October 2001.*

APPENDIX A

APPENDIX A: Countywide SSO Locations

Legend

SSOs
- Maintenance
- Operations
- WWWQ
- Major Roads
- Ohio River

Operations Areas
- CENTRAL
- EAST
- WEST
- Jefferson County

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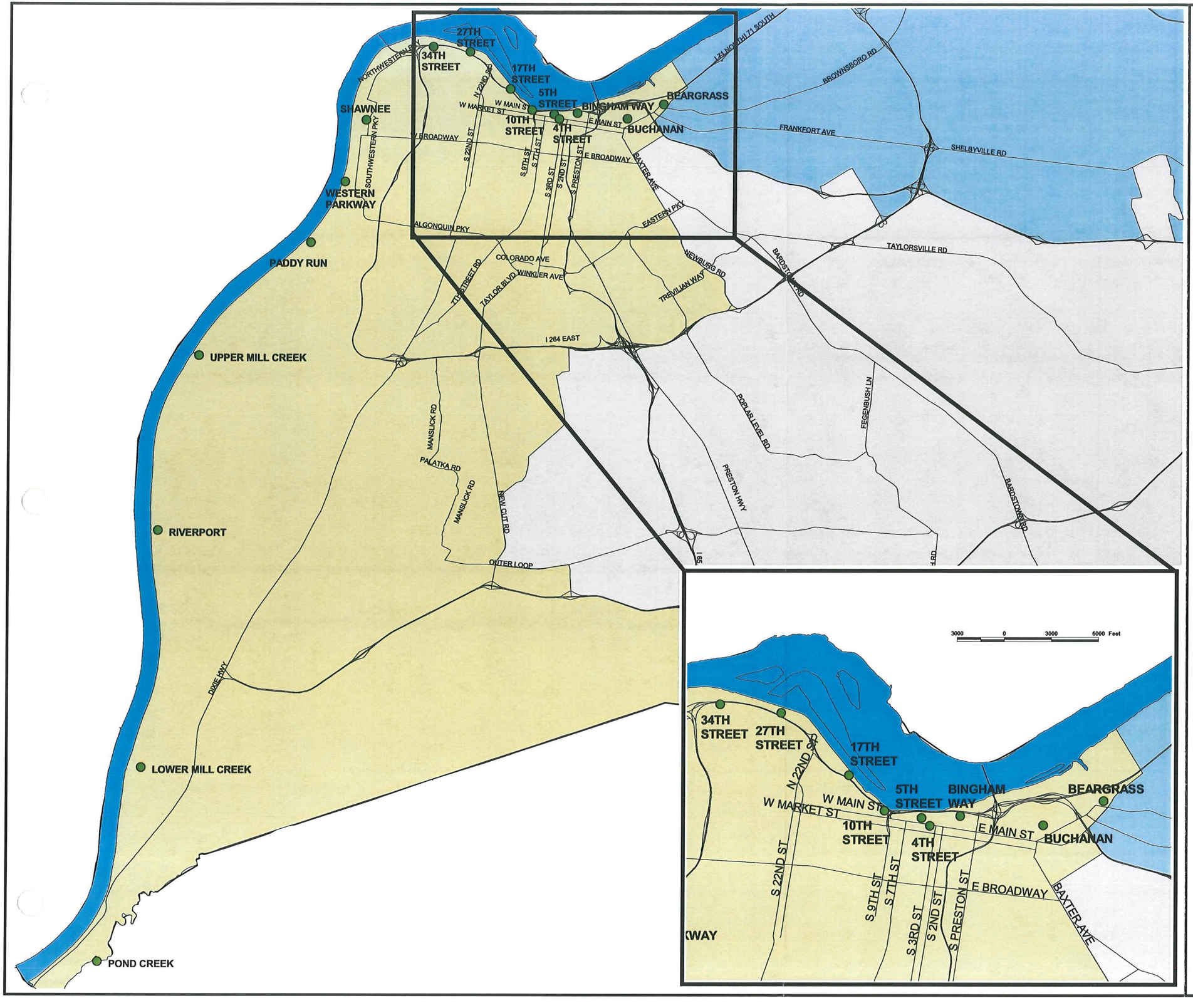
MSD

LOJIC
Louisville Jefferson County Information Consortium

TETRA TECH, INC.

APPENDIX A: Corps of Engineers Flood Pumping Station Locations



Legend

- Flood Pumping Stations
- Major Roads
- Ohio River

Operations Areas

- CENTRAL
- EAST
- WEST
- Jefferson County

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MSD

LOJIC
Louisville Jefferson County Information Consortium

TETRA TECH, INC.

Appendix

A SSO Locations and Tracking Responsibilities

Responsibility	Facility ID	Common Name	Status	Structure	Sewershed
Maintenance	21153	Biltmore Rd and Cordova Rd	Documented	Manhole	MFWTP
Maintenance	21089	Brunswick Rd	Documented	Manhole	MFWTP
Maintenance	18471	Dell Brooke Rd and Boaries Ln	Documented	Manhole	MFWTP
Maintenance	21506	Falgate Ct	Documented	Manhole	MFWTP
Maintenance	18505	Flora Ave and Ramona Ave	Documented	Manhole	MFWTP
Maintenance	18483	Rio Rita Ave and Boaries Ln	Documented	Manhole	MFWTP
Maintenance	21101	Shelbyville Rd and Marshal Drive	Documented	Manhole	MFWTP
Maintenance	21156	Shelbyville Rd and Stonehenge Rd	Documented	Manhole	MFWTP
Maintenance	21061	Tyne Rd and Cordova Rd	Documented	Manhole	MFWTP
Maintenance	17428	Vagabond Ln and Siesta Way	Documented	Manhole	WCWTP
Maintenance	18595	Wedgewood Way and Radiance Rd	Documented	Manhole	MFWTP
OMT Central	82371	7204 Preston Hwy	Documented	Manhole	WCWTP
OMT Central	MSD1048-PS	7805 Edsel Lane	Investigated	Manhole	WCWTP
OMT Central	MSD0113-LS	Avanti PS	Suspected	Manhole	CCWTP
OMT Central	17571	Carson Way and Ribble Rd	Documented	Manhole	MFWTP
OMT Central	MSD0133-PS	Caven Ave. PS	Investigated	Wetwell	WCWTP
OMT Central	MSD0289	Cedar Creek WTP	Documented	Manhole	CCWTP
OMT Central	MSD1013-PS	Cinderella PS	Investigated	Manhole	package
OMT Central	MSD0130-PS	Cooper Chapel PS	Investigated	Manhole	WCWTP
OMT Central	MSD0234	Fern Hill WTP	Documented	Wetwell	package
OMT Central	30681	Fountain Ct	Investigated	Manhole	MFWTP
OMT Central	MSD0180-PS	Government Center PS	Investigated	Wetwell	WCWTP
OMT Central	MSD0012-PS	Highgate Springs PS	Documented	Manhole	MFWTP
OMT Central	MSD0161-LS	Holly Oaks LS	Documented	Manhole	CCWTP
OMT Central	28170	Jeffersontown WTP	Documented	Manhole	J-Town
OMT Central	MSD0101-PS	Lantana PS	Investigated	Wetwell	WCWTP
OMT Central	MSD0148-PS	Marion Ct PS	Suspected	Manhole	MFWTP
OMT Central	84571	Northern Ditch Blow-off	Suspected	Manhole	WCWTP
OMT Central	41544-W	Nottinghamshire PS	Documented	Wetwell	package
OMT Central	MSD0137-PS	Picadilly PS	Investigated	Wetwell	WCWTP
OMT Central	MSD0091-PS	Pope Lick Rd PS	Suspected	Manhole	package
OMT Central	MSD0149-PS	Raintree PS	Suspected	Manhole	MFWTP
OMT Central	MSD0106-PS	Shobe PS	Suspected	Manhole	CCWTP
OMT Central	MSD0258	Silver Heights WTP	Investigated	Manhole	package
OMT Central	73345	Spring Lake Farms PS	Documented	Manhole	MFWTP
OMT Central	22275	St Gabriel Ct	Suspected	Manhole	package
OMT Central	82060-DO	Woodland Hills PS	Documented	Manhole	MFWTP
OMT Central	MSD0271	Yorktown WTP	Investigated	Manhole	package
OMT East	MSD0175-PS	Acushnet PS	Investigated	Wetwell	MFWTP
OMT East	00746	Anchor Estates PS #1	Documented	Manhole	MFWTP
OMT East	MSD0057-LS	Anchor Estatres PS #2	Documented	Wetwell	MFWTP

Responsibility	Facility ID	Common Name	Status	Structure	Sewershed
OMT East	MSD0166-PS	Ashburton PS	Investigated	Wetwell	FFWTP
OMT East	MSD0192-PS	Barbour Lane PS	Investigated	Manhole	MFWTP
OMT East	MSD0209	Berrytown WTP	Investigated	Wetwell	package
OMT East	MSD1097-PS	Camden Acres PS	Documented	Wetwell	HCWTP
OMT East	MSD0024-PS	Canoe Ln PS	Investigated	Wetwell	MFWTP
OMT East	MSD1067-PS	Covered Cove Way PS	Investigated	Manhole	package
OMT East	MSD1063-PS	Deep Creek PS	Documented	Wetwell	package
OMT East	MSD0095-PS	Derington Ct PS	Investigated	Manhole	MFWTP
OMT East	MSD0040-PS	Devondale PS	Documented	Wetwell	MFWTP
OMT East	69305B-AG	English Station WTP	Investigated	Manhole	package
OMT East	MSD0182-PS	Glenview Hills PS	Investigated	Wetwell	MFWTP
OMT East	MSD0185-PS	Goose Creek PS	Investigated	Wetwell	MFWTP
OMT East	MSD1055-LS	Gunpowder PS	Documented	Wetwell	package
OMT East	MSD0202	Hite Creek WTP	Documented	Wetwell	HCWTP
OMT East	48516-W	Hurstbourne Lane PS	Documented	Wetwell	MFWTP
OMT East	MSD0115-PS	Lanfair PS	Suspected	Manhole	MFWTP
OMT East	MSD0007-PS	Mockingbird Valley PS	Investigated	Manhole	MFWTP
OMT East	MSD0165-PS	Olde Copper PS	Investigated	Wetwell	package
OMT East	MSD1060-LS	Riding Ridge PS	Investigated	Wetwell	package
OMT East	MSD1024-PS	Saurel PS	Investigated	Manhole	MFWTP
OMT East	MSD1023-PS	South Beckley Station	Investigated	Wetwell	HCWTP
OMT East	MSD0123-PS	West Goose Creek PS	Investigated	Manhole	MFWTP
OMT East	MSD0010-PS	Winton Ave PS	Suspected	Manhole	MFWTP
OMT East	MSD0039-PS	Woodlawn Park PS	Documented	Wetwell	MFWTP
OMT West	MSD0054-PS	East Rockford PS	Investigated	Manhole	MFWTP
OMT West	MSD0047-PS	Fern Lea PS	Documented	Manhole	MFWTP
OMT West	MSD0050-PS	Garrs Lane PS	Investigated	Manhole	MFWTP
OMT West	MSD0002-PS	Hazelwood PS	Investigated	Wetwell	MFWTP
OMT West	MSD0003-LS	Melody PS	Documented	Wetwell	MFWTP
OMT West	MSD0143-PS	Park Ridge Woods PS	Documented	Manhole	WCWTP
OMT West	81814-W	Pioneer Rd PS	Investigated	Wetwell	MFWTP
OMT West	MSD0042-PS	Sonne Ave PS	Documented	Wetwell	WCWTP
OMT West	MSD0046-PS	Thurman PS	Investigated	Manhole	WCWTP
WWWQ	27821	1112 Old Cannons Lane	Investigated	Manhole	MFWTP
WWWQ	16450	1804 Round Ridge Rd	Investigated	Manhole	MFWTP
WWWQ	44397	3852 Fincastle Rd	Suspected	Manhole	MFWTP
WWWQ	32688	12700 Abbey Rd #1	Documented	Manhole	WCWTP
WWWQ	32682	12700 Abbey Rd #2	Suspected	Manhole	WCWTP
WWWQ	28984	9517 Plumwood Coll. Sys #1	Documented	Manhole	CCWTP
WWWQ	28998	9517 Plumwood Coll. Sys #2	Investigated	Manhole	CCWTP
WWWQ	70158	9517 Plumwood Coll. Sys #2	Investigated	Manhole	CCWTP
WWWQ	25676	Alcona	Documented	Manhole	MFWTP
WWWQ	49672	Bardstown Rd at Hikes Ln	Suspected	Manhole	MFWTP
WWWQ	25012	Beaver	Suspected	Manhole	MFWTP
WWWQ	28250	Charlane Pkwy	Investigated	Manhole	J-Town
WWWQ	45829	Cherokee Park #1	Suspected	Manhole	MFWTP

Responsibility	Facility ID	Common Name	Status	Structure	Sewershed
WWWQ	27010	Cherokee Park #2	Suspected	Manhole	MFWTP
WWWQ	27009	Cherokee Park #3	Suspected	Manhole	MFWTP
WWWQ	27008	Cherokee Park #4	Suspected	Manhole	MFWTP
WWWQ	45798	Cherokee Park #5	Suspected	Manhole	MFWTP
WWWQ	28415	Dell Road	Investigated	Manhole	J-Town
WWWQ	47960	Farnsley Park	Suspected	Manhole	MFWTP
WWWQ	30681	Fountain Ct	Investigated	Manhole	MFWTP
WWWQ	18299	Gerald Ct #1	Suspected	Manhole	MFWTP
WWWQ	18298	Gerald Ct #2	Suspected	Manhole	MFWTP
WWWQ	28395	Grassland	Investigated	Manhole	J-Town
WWWQ	28394	Grassland #2	Suspected	Manhole	J-Town
WWWQ	28392	Grassland #3	Suspected	Manhole	J-Town
WWWQ	28391	Grassland #4	Suspected	Manhole	J-Town
WWWQ	22370	Greenbelt Hwy	Suspected	Manhole	WCWTP
WWWQ	01793	Hurstbourne Estates	Investigated	Manhole	MFWTP
WWWQ	59169	Johnsontown Rd	Suspected	Manhole	WCWTP
WWWQ	78820	Johnsontown Rd #2	Suspected	Manhole	WCWTP
WWWQ	22385	Johnsontown Rd #3	Suspected	Manhole	WCWTP
WWWQ	08935-SM	Middle Fork @ Breckinridge Ln	Investigated	Manhole	MFWTP
WWWQ	84571	Northern Ditch Blow-off	Suspected	Manhole	WCWTP
WWWQ	51221-T	Peabody Lane	Documented	Manhole	MFWTP
WWWQ	23212	Peabody Lane #2	Suspected	Manhole	MFWTP
WWWQ	MSD1044-PS	Phoenix Hill PS	Documented	Wetwell	MFWTP
WWWQ	08430	4341 Pruitt Ct	Documented	Manhole	MFWTP
WWWQ	49647	Pruitt Ct #2	Suspected	Manhole	MFWTP
WWWQ	63779	Pruitt Ct #3	Suspected	Manhole	MFWTP
WWWQ	72571-X	SE Diversion @ Fountain Ct	Documented	Manhole	MFWTP
WWWQ	46505	Springhurst #1	Suspected	Manhole	MFWTP
WWWQ	46510	Springhurst #2	Suspected	Manhole	MFWTP
WWWQ	46504	Springhurst #3	Suspected	Manhole	MFWTP
WWWQ	63316	St. Matthews Park	Suspected	Manhole	MFWTP
WWWQ	16649	Sutherland	Investigated	Manhole	MFWTP
WWWQ	MSD0298	Watterson Woods WTP	Documented	Manhole	package
WWWQ	63319	Watterson Xwy	Suspected	Manhole	MFWTP
WWWQ	01773	Westerham	Investigated	Manhole	MFWTP
WWWQ	MSD1099-PS	Zabel PS	Documented	Wetwell	package

APPENDIX B

Appendix

B Sample Initial Overflow Report & Sample Discharge Report Spreadsheet

☐ Wet Weather Release

DISCHARGE REPORT FORM

☐ Dry Weather Release

KDOW 425-4671 or 1-800-928-2380 after 5 PM

BOH 574-6650 IPL/MetroCALL 574-5000

Asset _____ _____
TYPE (PS, TP, SMH) HANSEN ID NUMBER

Name _____
NAME, ADDRESS OR LOCATION

Release Began _____ _____ Release Stopped _____ _____
DATE Military TIME DATE Military TIME

Cause of Release

☐ POWER Power Outage
☐ MECH Mechanical Failure
☐ OBST Sewer Main Obstruction
☐ CAP Lack of System Capacity
☐ PUMP Pumped Overflow
☐ STRUC Structural Failure

Samples Taken? Yes No

Est. Volume Released _____

Add'l Cause Info _____
(EX: SHAFT BROKE IN PUMP; TRANSFORMER BLEW; GREASE BLOCKAGE IN LINE)

Cleanup Actions _____

Repair Actions _____
(EX: COMPRESSOR REPAIRED; WO #12345 SEWER MAIN REPAIR; FLUSHED AREA)

Comments _____

NOTIFICATION	PH, LTR, FAX	DATE	TIME	WHO WAS CONTACTED	INCIDENT #
☐ KDOW					
☐ BOH					
☐ Other					

Report Initiated By (ID) _____ Report Completed By (ID) _____

APPENDIX C

Appendix C Procedures

UDR Procedures

Underground Storage Tanks (USTs)/Monitoring wells/Purge waters:

1. IWD receives the UDR via fax or mail. See attached UDR form.
2. The UDR is reviewed for completeness (i.e. Analysis results, MSDS etc.).
3. If the results are above the limitations, the analysis results are reviewed for compliance with limitations for BTEX, PAH, Total Lead, Oil/Grease Hydrocarbon and Flashpoint, as well as, use of the correct laboratory methods and detection limits.

a. If the results are above the limitations, the discharge may be treated, captured and re-tested. In these cases, discharges are typically required to be treated as they are discharged through two stage carbon filtration and/or a frac-tank followed by carbon treatment.

4. An e-mail is sent to the appropriate Operations Management Team (OMT) member (East, Central or West) or Maintenance contact. It outlines the request and summarizes the analysis results/MSDS etc. The OMT/Maintenance contact may place constraints (i.e. flow rate, time of day of discharge etc) on the discharge to insure MSD assets such as treatment plants, pump stations, and flood pumping stations are protected, as well as to insure that a dry weather overflow does not occur in the Combined Sewer System (CSS) via a Combined Sewer Overflow (CSO).
5. If the discharge is to a combined sewer; the following constraint is placed on it: "No discharge during or within 72 hours of a rain event of 0.3 inch or more in a moving 24 hour window."
6. Enter the discharge information into the Industrial Waste Information System (IWIS) and file the hard copy in the UDR file.

   NOTE: IWIS is being converted to Hansen with an expected completion date of September 30, 2003.

Other discharges:

1. IWD receives the UDR via fax or mail. See attached UDR form.
2. The UDR is reviewed for completeness (i.e. Analysis results, MSDS etc)
3. If the results are above the limitations, the analysis results are reviewed for compliance with appropriate limitations (treatment plant), as well as use of the correct laboratory methods and detection limits.
4. An e-mail is sent to the appropriate Operations Management Team (OMT) member (East, Central or West) or Maintenance contact. It outlines the request and summarizes the analysis results/MSDS etc. The OMT/Maintenance contact may place constraints (i.e. flow rate, time of day of discharge etc) on the discharge to insure MSD assets such as treatment plants, pump stations, and flood pumping stations are protected, as well as to insure that a dry weather overflow does not occur in the Combined Sewer System (CSS) via a Combined Sewer Overflow (CSO).
5. If the discharge is to combined sewer; the following constraint is placed on it: "No discharge during or within 72 hours of a rain event of 0.3 inch or more in a moving 24 hour window."
6. Enter the discharge information into the Industrial Waste Information System (IWIS) and file the hard copy in the UDR file.

   NOTE: IWIS is being converted to Hansen with an expected completion date of September 30, 2003.

   NOTE: If MSD deems that the discharge should be monitored, either MSD staff will be assigned to perform the monitoring or the requestor will be required to monitor it and provide the results to MSD. In addition, MSD may elect to periodically inspect the discharge site to insure all discharge requirements/constraints are being followed.

Louisville Water Company (LWC) discharges from water main replacement/repair/construction activities

MSD worked with representatives from LWC to develop a guidance manual for use by LWC personnel (to include LWC contractors) called "Best Management Practice & Procedures for Chlorinated Water Disposal". See enclosed copy.

This manual was prepared jointly by MSD and LWC to improve discharge procedures, prevent upsets in MSD operations, and conform to Clean Water Act (CWA) requirements. The practices outlined in the manual are based on limitations determined by the receiving (sanitary or storm) system. Available dry weather capacities of wastewater treatment plants (WWTPs), pump stations and CSOs are calculated to determine the peak flow rate acceptable for each location within the sewer system. Locations of wet weather Sanitary Sewer Overflows (SSOs) are also delineated. This information, along with data on sewer pipe (i.e. diameter, slope, invert elevation, etc.) is used to insure that customers are not negatively impacted by the discharge.

UDRs from LWC are typically submitted via e-mail to MSD for review. The e-mail includes a spreadsheet with all pertinent information on the discharge. See attached Excel spreadsheet. LWC is a member of The Louisville and Jefferson County Information Consortium (LOJIC) and therefore has access to GIS information on MSD's sewer system. LWC obtains information on receiving sewer characteristics, as well as the existence of downstream treatment plants, pump stations and/or CSOs. MSD reviews LWC requests and places appropriate constraints on the discharge. In some cases, MSD personnel monitor the discharge and communicate with LWC staff in case conditions warrant its termination or temporary suspension.

All discharge information is entered into the Industrial Waste Information System (IWIS). Hard copies are filed.

NOTE: IWIS is being converted to Hansen with an expected completion date of September 30, 2003.

Procedures for Investigating a Backup Service Request

The Maintenance Division receives a service request for a backup from the Customer Service Department. The procedures are listed below:

1) Dispatch routes the Backup request to a Sewer Inspector. The Inspector is expected to respond to Backup requests immediately, or not longer than within two hours.

1) Once on site, the Inspector checks the main sewer to determine if it is blocked.
   a) If the main sewer is blocked, the Inspector immediately calls for appropriate support to remove the blockage (root cutter, vactor, etc.). An appropriate work order is issued for that activity in Hansen against that request.
   b) If the main sewer is flowing fine, the Inspector checks for either an MSD or plumber installed Clean Out. If a Clean Out is present, the Inspector checks to see if the service connection is blocked by either visually inspecting and/or running a mini camera device in the service connection. If a mini camera is used an MCI work order is issued in Hansen against the request.

2) If a Clean Out is not present, the Inspector requests a TV Inspection by either a Pan & Tilt camera or the LIS (Lateral Inspection System) camera. An appropriate work order is issued in Hansen against that request.

3) Once the problem is located, the Inspector determines if the problem is located on private property or within the MSD maintained portion of the service connection.
   a) If the problem is on private property, the Inspector informs the property owner of the determination, and requests the property owner call a plumber.
      i) If the problem has resulted in a backup of sewage into the house or building, MSD contacts the appropriate authorities and provides information as identified below in Section II.
   b) If the problem is within MSD's portion of the service connection, the Inspector issues a Service Connection Repair (PSCR) work order and assigns it to the appropriate Construction Supervisor.
      i) If the customer is totally blocked and has no use of their facilities, the Construction Supervisor is expected to return service to the customer within 24 hours.
      ii) Once the facility is repaired, subsequent Ground Restoration (GRES) and/or Paving (PAVING) work orders may be issued in Hansen against that request to complete the repair.
      iii) If the problem has resulted in a backup of sewage into the house or building, the Inspector and/or Construction Supervisor are authorized to contact a clean up crew to remediate the condition inside the house.

Grease/Blockage Procedures

I. Maintenance Department Role

When the maintenance division is working on the MSD collection system in response to a customer service call or routine maintenance to repair and/or replace a manhole or segment of sewer line pipe and evidence of grease is detected, additional departments are to be notified for further investigation.

A. Maintenance Observation

- Determine if solids present in manhole or sewer line are grease waste and assess the severity of the grease back up/blockage.
- Determine if grease sources, such as any food establishments, are upstream from the location of the backup/blockage.

B. Notify the on call IWD Emergency Response Technician (ERT) by calling the MFWTP Computer Room Operator at 540-6774 and requesting that the on call IWD ERT be paged.

- Expect an immediate response from the ERT. Leave your name and phone number to be contacted again if necessary by responding ERT. If the on call ERT is unavailable or doesn't respond within 15 minutes, contact the MFWTP Computer Room at 540-6774 page the next ERT in the on-call list.

C. Once the ERT responds

- Define the location (atlas no., segment of pipe, or street address) of the grease back up/blockage
- Provide description of the grease back up/blockage, condition of the sewer, and severity of the problem
- Review with ERT the mitigation actions taken by maintenance to correct the problem.
- Provide any evidence that may be used for future enforcement purposes such as video footage, reports or pieces/segments of broken sewer pipe.

D. Begin mitigation at the scene to minimize damage of the collection system

- Call for teleinspection of sewer line if extent of damage to be repaired cannot be determined
- Determine size and condition of downstream pipe; if grease can be flushed to larger line without causing further backups or unwarranted damages or upsetting conditions such as odors to downstream customers, call for a Flusher Truck to mitigate.
- If conditions are severe, such as no or very limited wastewater flow through channel, complete blockage of sewer or sewage back up into a customers property, call for a Vactor Truck.
- Solids from Vactor Trucks are to be sent to MSDs Central Maintenance Facility (CMF) for dewatering and hauling to landfill
-

II. Industrial Waste Department

When an IWD ERT receives a page or call regarding a grease back up/blockage from the Maintenance Division or Customer Service, the ERT contacts the requesting party with a estimated time of arrival and obtains any pertinent information regarding the scene. The IWD Pretreatment Inspector receives information regarding the grease back up/blockage in the Response Group Meetings (RGM). IWD personnel determine the appropriate enforcement action against the food establishment. Contact is made by the pretreatment inspector to the responsible party via phone call, letter or site inspection.

A. IWD Observation

- Discuss with Maintenance Crew Leader the condition of the sewer, segment of pipe effected by grease and the means of mitigation to correct the problem
- Determine size of pipe, exact location of grease backup/blockage
- Review any footage of teleinspection video available to you at time of response
- Observe the odor, color and texture of grease if available to help find a responsible party
- If Maintenance has cleared the scene, contact the crew leader and provide information about the condition of the sewer/segment of pipe affected by the grease backup/blockage and means that were taken to mitigate the sewer line

B. Determining original source of the grease back up/blockage

- Conduct back trace inspections of the effected line and observe manhole locations for evidence of grease accumulation on sewer channels and/or lines
- Determine possible food establishments that may have contributed to the effected sewer line
- Locate and inspect all likely responsible parties' grease interceptors and determine if interceptors have been maintained and serviced appropriately
- If responsible party can be determined, issue Preliminary Response Report (PRR) to designated manager or person in charge of the establishment.
- If responsible party cannot be determined, issue PRR to all contributors of the effected line

C. Sampling and Analysis

- IWD collects wastewater samples for laboratory analysis to confirm positive match of grease waste when unable to determine responsible party
- Samples are collected from MSD's collection system and from the likely responsible parties final discharge effluent
- Fatty Acid Profile (FAP) analysis are conducted by a certified contracted laboratory to measure compositions and chemical presence of commonly edible fats and oils found in food establishments wastewater discharges

D. Initial Contact with Responsible Parties

- Explain to Food Establishment representative the reasoning for MSD's response to the area to mitigate a grease backup/blockage
- Inspect Food Establishment grease interceptor(s) (indoor or outdoor)

- Conduct Florescent Dye Testing if necessary to determine Food Establishments contribution to line.
- Issue PRR to representative, explain to person that MSD will contact the establishment again by letter, phone or site inspection for further action or enforcement.
- Provide pollution prevention materials i.e., video, pamphlet, posters, etc., to representative of food establishment

E. Response Group Meeting

- Enter appropriate data information into the Industrial Waste Information System (IWIS) for discussion and follow up actions in the bi-weekly RGM.
- Communicate with IWD Pretreatment Inspector, location of grease back up/blockage, condition of sewer, segment of pipe effected, condition of food establishments grease interceptor
- If applicable, review returned FAP analysis to identify responsible party
- IWD personnel to determine enforcement action to be taken against food establishment

F. Determination of Enforcement Action

- Inspector researches any prior enforcement actions that may have been taken against the responsible party
- If applicable, inspector conducts comparison review to confirm food establishment utilizes fats and oils found in FAP analysis.
- First offense: the responsible party is issued a Notice of Violation, with recommendations on corrective measures
- Second offense: the responsible party is issued a Notice of Violation, with requirements to provide service records of maintenance/service to grease interceptor
- Third offense: the responsible party is issued a Notice of Violation with fine and requirements to provide/submit service records of maintenance/service to grease interceptor
- Fourth offense: the responsible party is issued a Notice of Violation with a fine and requirements to provide records of service or requirements to install a grease interceptor or install larger capacity grease interceptor, or signing a legal document such as a consent order with MSD to confirm corrective measures, along with a compliance schedule

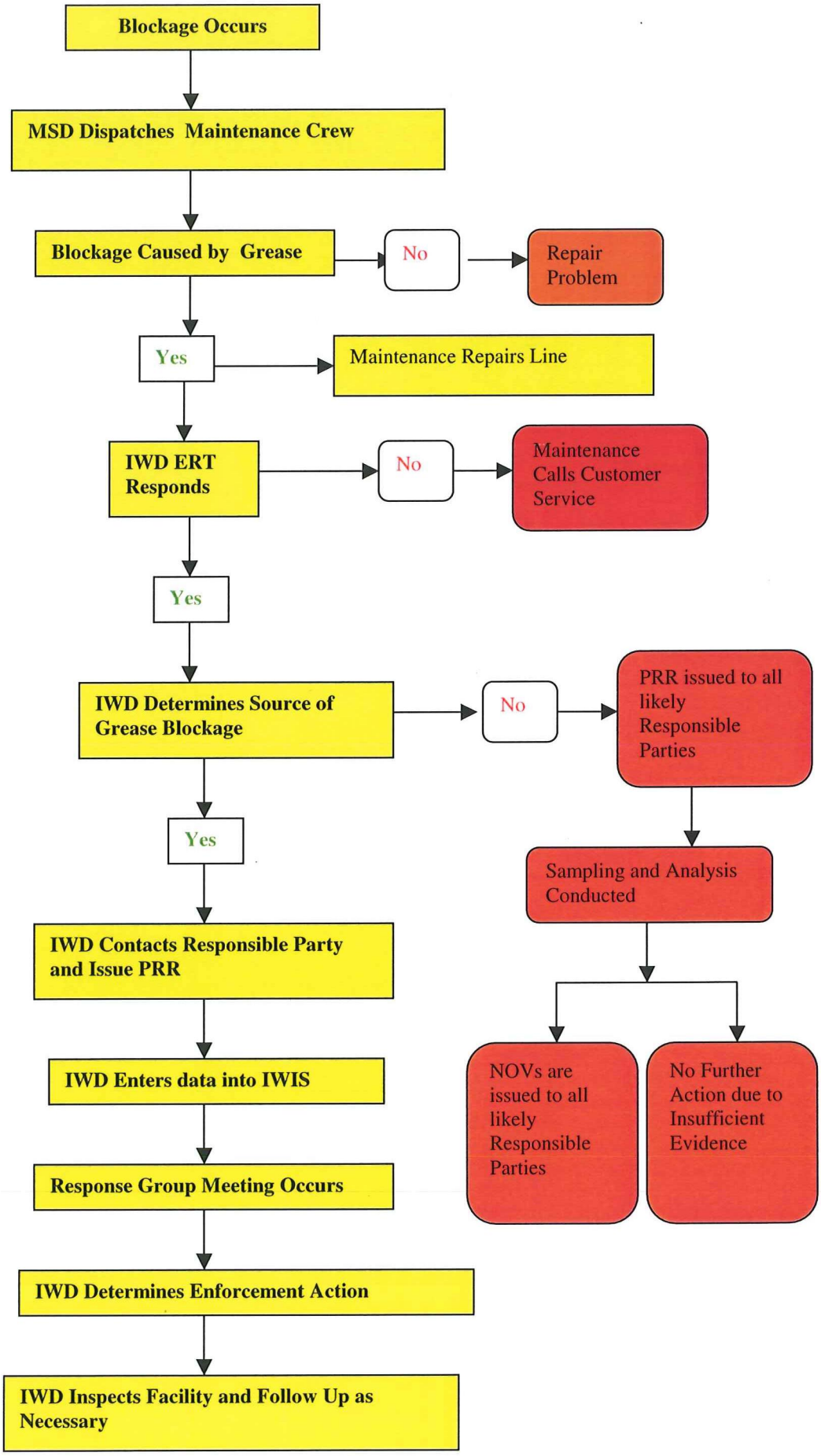
G. Pretreatment Inspection of Facility

- Conduct inspections of the responsible parties kitchen to confirm food establishment is practicing good housekeeping and proper disposal of generated grease wastes
- Confirm all greasy waste bearing fixtures are plumbed to a grease interceptor
- Inspect grease interceptor for determination that proper maintenance is being rendered
- Inspect outside/inside drains to determine evidence of improper greasy waste disposal
- Review record/manifest of services rendered to grease interceptor
- Issue pollution prevention materials such as video, pamphlet, poster

- Discuss with food establishment representative proper disposal of all grease bearing wastewater.

H. Follow Up Inspections after remedial actions

- Drive by inspections of grease interceptors to confirm corrective measures are being followed as recommended or required
- Inspection of downstream manhole and pumping stations
- Conducting winter blitz inspections to remind customer of properly maintaining the grease interceptor


Blockage Occurs
MSD Dispatches Maintenance Crew
Blockage Caused by Grease
No
Repair Problem
Yes
Maintenance Repairs Line
IWD ERT Responds
No
Maintenance Calls Customer Service
Yes
IWD Determines Source of Grease Blockage
No
PRR issued to all likely Responsible Parties
Yes
Sampling and Analysis Conducted
IWD Contacts Responsible Party and Issue PRR
NOVs are issued to all likely Responsible Parties
No Further Action due to Insufficient Evidence
IWD Enters data into IWIS
Response Group Meeting Occurs
IWD Determines Enforcement Action
IWD Inspects Facility and Follow Up as Necessary

APPENDIX D

MSD Louisville and Jefferson County Metropolitan Sewer District

SSO and Discharge Tracking and Reporting

Step – By – Step Guide

Table of Contents

Key

Bold	Title of Menu/Form
Underline	Title of Field
Italic	Button/Icon to press
ALL CAPS	Name of Tab/Sub-Tab

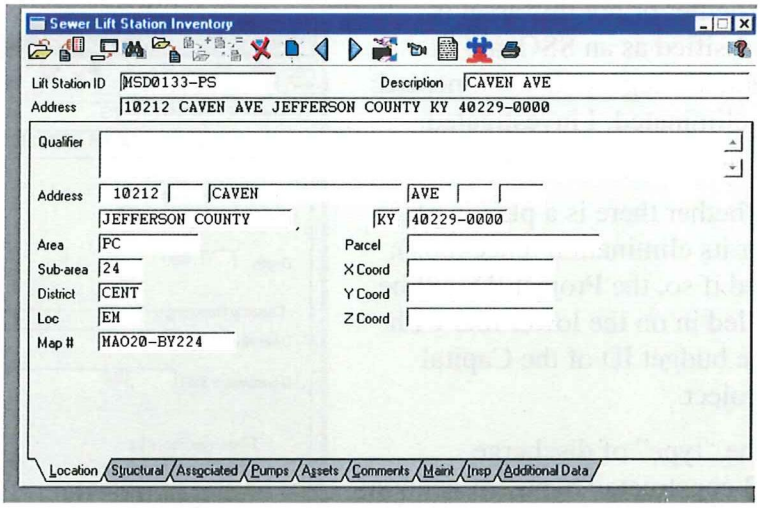
Chapter 1 Maintaining Asset Data

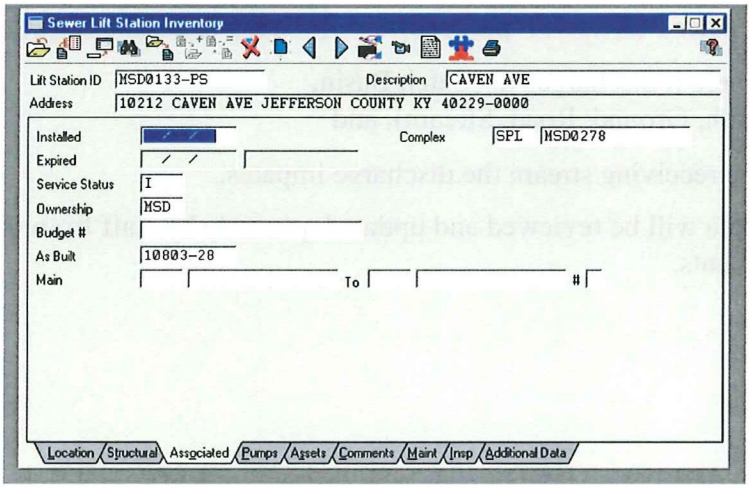
Static Data Related to each Asset will be Maintained in the Appropriate Hansen Asset Inventory

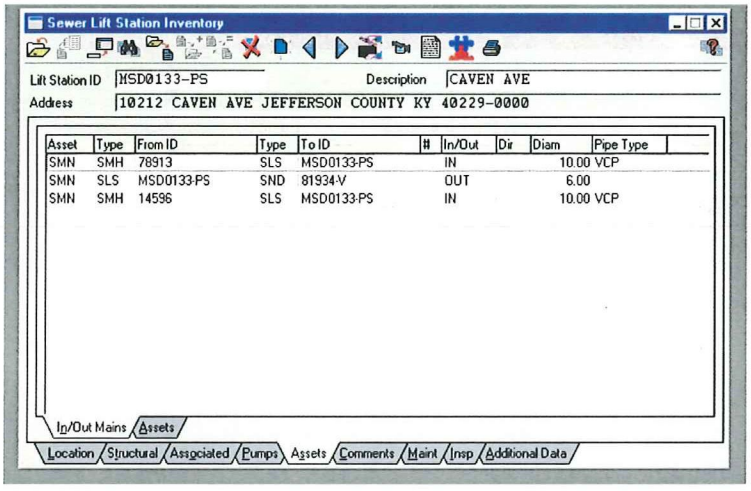
Static data related to the particular asset will be housed in the appropriate Asset Inventory Record in Hansen. This will include standard asset inventory data.

The type of asset (manhole, pump station, treatment plant) will determine which inventory to use. Standard data maintained will include:

- The Asset ID (manhole number, pump station number, treatment plant number, etc.)
- Its "name", if applicable (Highgate Springs Pump Station)
- Its assigned address in Hansen
- The asset "subtype" (wet well, submersible pump, diversion structure, etc)
- Other "location" identifiers (OMT District, Area Team, Watershed, Easement, back yard, center of road, etc.)
- Downstream Treatment Plant and/or Pump Station, if applicable
- In and Out Mains



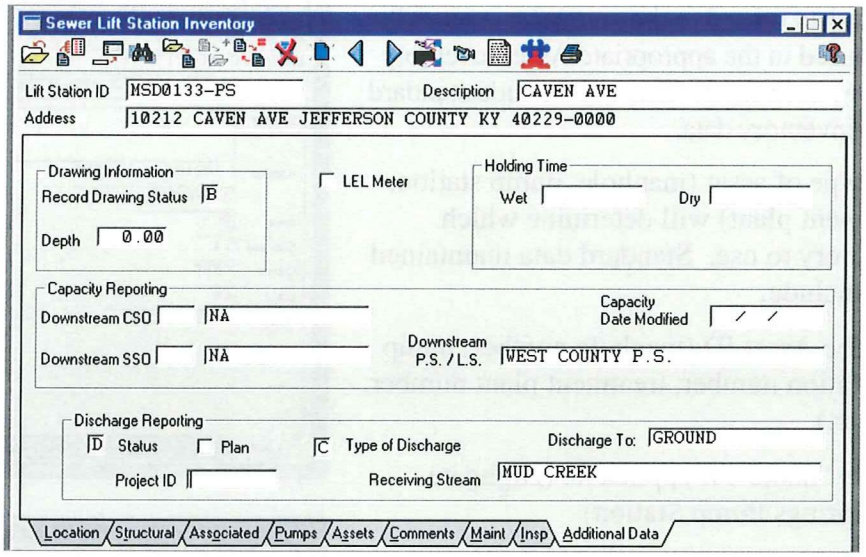




Static Data Related to each Asset will be Maintained in the Appropriate Hansen Asset Inventory

In addition, static data related to the asset's "discharge situation" will be housed on the Additional Data Tab in the inventory record, including:

- Whether or not this asset is classified as an SSO and in which category (D documented; E eliminated; I investigated; N no reported discharge)
- Whether there is a plan in place for its elimination (checkbox); and if so, the Project ID will be filled in on the lower line with the budget ID of the Capital Project.
- The "type" of discharge (B constructed bypass/diversion; C capacity overflow; D dry weather overflow; P pumped).
- Where it discharges to (Catch Basin, Ditch, Ground, Road, Stream), and
- The receiving stream the discharge impacts.



This data will be reviewed and updated quarterly by staff from the Wet Weather Area Team, or their consultants.

Chapter 2 Pump Placement Work Orders in a Rain Event

Creating Work Orders for the Placement of Pumps

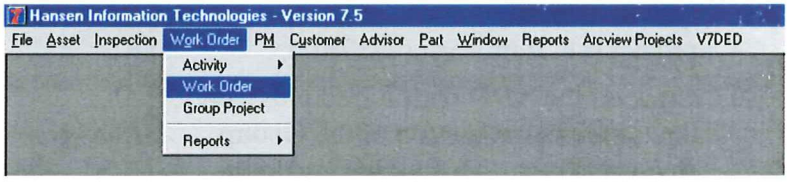
If this discharge is in response to a rain event, and pumps are being placed in the field, the first tracking action will be to issue a pump placement work order for all pumps placed in the field. The work order will be issued against the asset which is being impacted (i.e. the manhole, or possibly the lift station or treatment plant, where the pump is being placed). Two work order options are available.

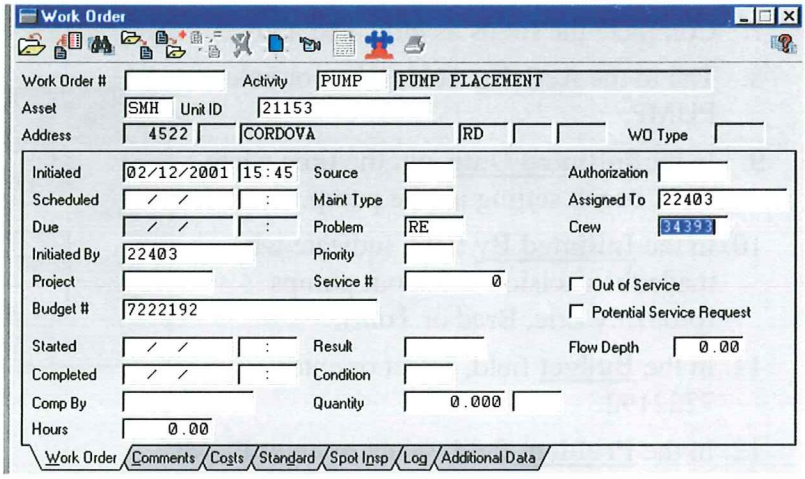
- If just one or a few pumps are being placed, then ***individual work orders*** should be initiated against the assets impacted.
- If groups of pumps are being placed, then the group project should be used, and a ***group project work order*** will be issued against all the facilities in that group. Currently, two groups of pumps have been established based on Maintenance's standard pumping locations.
  - PUMP1 includes 5 manholes: 21153, 21156, 18505, 18471, and 82371.
  - PUMP2 includes 7 manholes: 17571, 21089, 21061, 18595, 18483, 21101, and 21506.

Currently, Operations is not required to issues Pump Placement Work Orders. This could change in the future.

If you are issuing ***individual work orders***, then follow these procedures:

1. Click on the **Work Order** Menu on the top menu bar.
2. Open the **Work Order** Form.
3. Click on the **WORK ORDER** Tab.
4. Correctly identify the asset which is impacted.
5. Place your cursor in the **Asset** Field and type SMH (for Sewer Manhole).
6. Tab to the **Unit ID** Field and type in the correct Asset ID (21153).
7. Tab to the **Activity** field, select or enter PUMP.
8. In the **Initiated Date**, put the time when work began setting up the pump.
9. In the **Initiated By** field, indicate who made the decision to set out pumps (probably Eric, Brad or Tom).

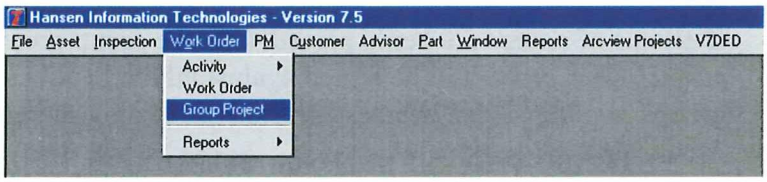




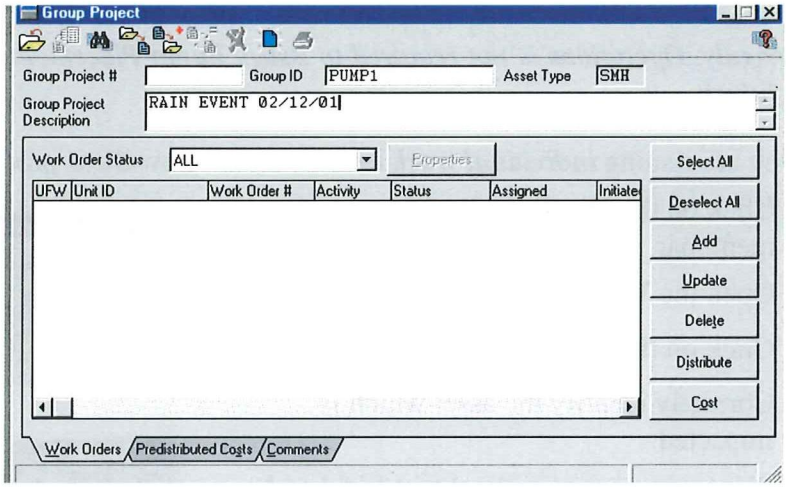
10. In the **Budget** field, select or enter 7222192.
11. In the **Problem** field, select or enter RE (rain event). ***This is optional.*** *Note that this is a different problem code than is required in the Discharge Tracking Work Orders (DISDW or DISREV).*
12. In the **Assigned** field, type in the Supervisor who is in charge (usually this will be Eric, but if he is out of town, indicate who was acting in his place).
13. In the **Crew** field, select or enter the ID of the crew leader or the person performing the work.
14. At this time, add the work order by clicking on the ***ADD button*** (red plus), on the button bar at the top of the **Work Order** screen.
15. Work Order numbers will automatically be assigned to the Work Order by the system.

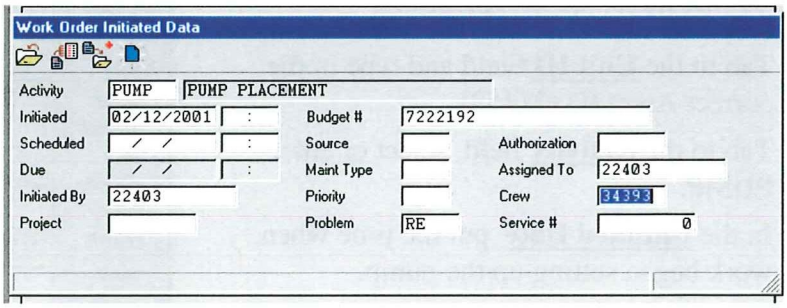
If you are placing several pumps at the same time, then you will issue a PUMP Work Order against one or both of the ***Group Assets*** identified for this procedure. To do this, follow these procedures:

1. Click on the **Work Order** Menu on the top menu bar.
2. Click on **Group Project**.
3. Click on the **WORK ORDER** tab.

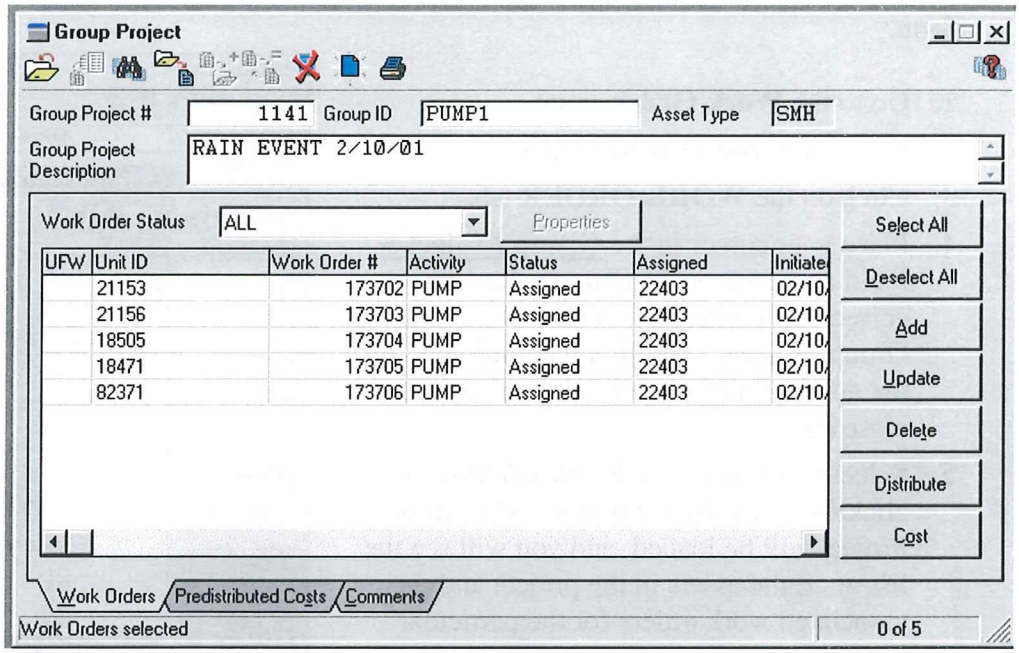


4. Select or type in the correct group asset in the **Group ID** field. This will either be PUMP1 or PUMP2, depending on which group of pumps you are placing in the field.
5. In the **Group Project Description** field, type in a description of the group project (i.e. Rain Event 2/12/01).
6. Click on the ***ADD*** button (red plus), on the button bar at the top of the **Group Project** screen. This will bring up the **Work Order Initiated Data** screen.
7. Complete the fields as indicated above:
8. Tab to the **Activity** field, select or enter PUMP.
9. In the **Initiated Date**, put the time when work began setting up the pump.
10. In the **Initiated By** field, indicate who made the decision to set out pumps (probably Eric, Brad or Tom).
11. In the **Budget** field, select or enter 7222192.
12. In the **Problem** field, select or enter PUMP.





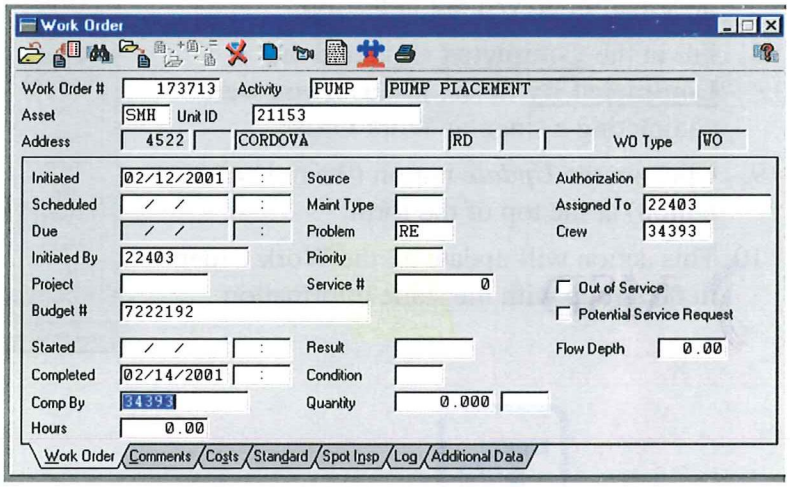
13. In the **Assigned To** field, type in the Supervisor who is in charge (usually this will be Eric, but if he is out of town, indicate who was acting in his place).
14. In the **Crew** field, select or enter the ID of the crew leader or the person performing the work.
15. Click on the ***ADD*** button (red plus) at the top of the **Work Order Initiated Data** screen. A moment or two will pass, and this screen will disappear.
16. You will be returned to the **Group Project** screen, where you will see a list of work orders issued against the assets in the Group Asset you selected.



Closing Out PUMP Work Orders for the work that has been performed

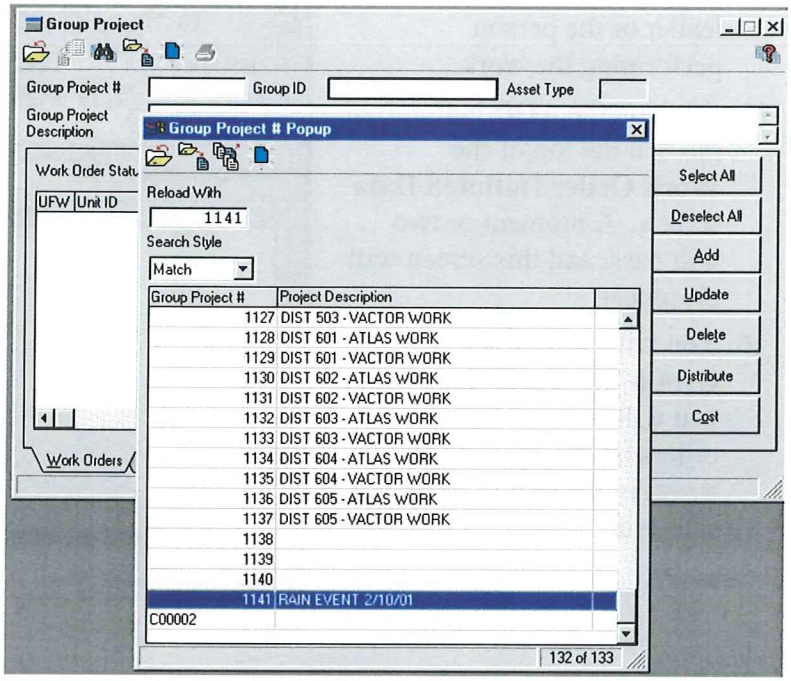
Closing Out PUMP Work Orders. When pumps are removed from the field, you will need to come back to the PUMP work orders and close them out with the relevant information. Only two fields need to be filled in:

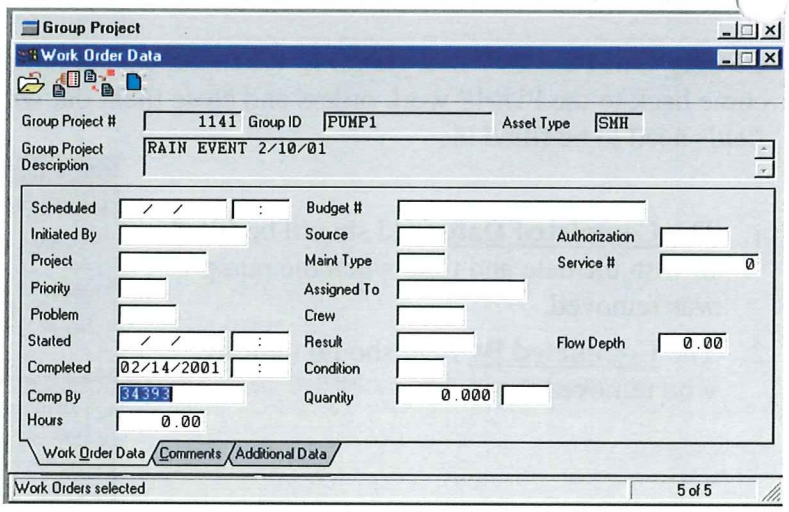
1. The **Completed Date** field should be filled in with the date and time when the pump was removed.
2. The **Completed By** field should indicate who removed the pump.



Closing Out Group Project PUMP Work Orders. You can close the work orders issued through a group project all at once, just like when you initiated them, by working through the **Group Project** form.

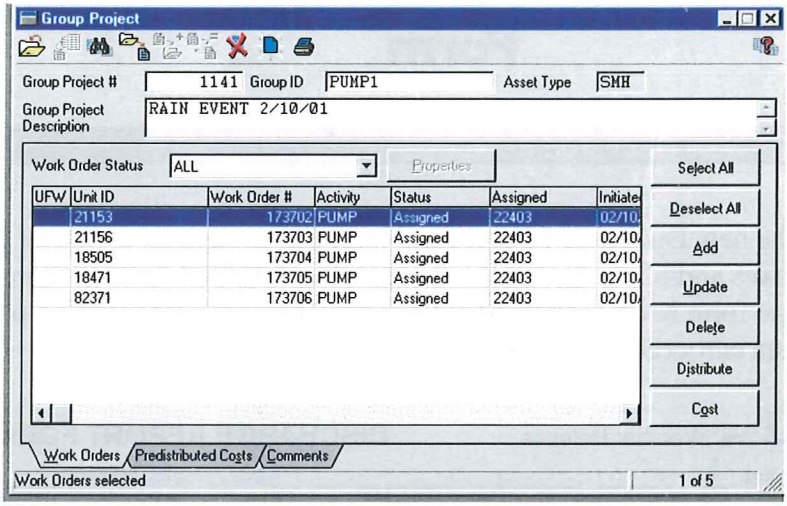
1. Go to the **Work Order** menu.
2. Open the **Group Project** Form.
3. Click on the **WORK ORDER** tab.
4. Place your cursor in the **Group Project #** Field and click on ***PopUp*** to select the correct Group Project. You will see a list of Group Projects. Scroll down until you see the description for the event you need to close out.
5. Select that Project by double clicking or clicking on the ***Select*** button. The Group Project will be loaded, and you will see the list of all the assets in the project and the associated work orders for the particular event.
6. Click on the ***Select All*** button on the right side of the screen. All of the entries in the Group Project will become highlighted.
7. Click on the ***Update*** button on the right side of the screen. This will take you to a **Work Order** form that has the Group Project information greyed out at the top.
8. Fill in the **Completed Date** and the **Completed By** fields, just as if you were completing a singular Work Order.
9. Click on the ***Update*** button (the red "=" sign button) at the top of the form.
10. This action will update all the Work Orders in the group with the same information.





If something is different about the individual work orders (a different crew retrieved each of the pumps, for instance; or they were brought in at different times), you can update each work order individually by:

1. Highlighting the individual asset and its related Work Order on the **Group Project** form.
2. Clicking on the ***Update*** button on the right of the screen.
3. Filling in the **Completed Date** and **Completed By** fields on that particular Work Order.
4. Clicking on the ***Update*** button on the top of the Work Order form.
5. Each individual Work Order can then be updated in this way.



Chapter 3 Completing the Hardcopy Discharge Report Form

The New Discharge Report Form

The new Discharge Report form has been designed for ease of data entry into Hansen. It's check boxes and blank fields all correspond to entry fields in the Hansen Work Order as defined below. The form MUST be filled out completely, or the information provided to the person responsible for data entry (Dispatch, Support, etc.)

☐ Wet Weather Release **DISCHARGE REPORT FORM** ☐ Dry Weather Release

Asset _____ _____
TYPE (PS, TP, SMH) HANSEN ID NUMBER

Name _____
NAME, ADDRESS OR LOCATION

Release Began _____ _____ Release Stopped _____ _____
DATE Military TIME DATE Military TIME

Cause of Release

☐ POWER Power Outage
☐ MECH Mechanical Failure
☐ OBST Sewer Main Obstruction
☐ CAP Lack of System Capacity
☐ PUMP Pumped Overflow
☐ STRUC Structural Failure

Samples Taken? Yes No

Est. Volume Released _____

Add'l Cause Info _____
(EX: SHAFT BROKE IN PUMP; TRANSFORMER BLEW; GREASE BLOCKAGE IN LINE)

Cleanup Actions _____ Repair Actions _____
(EX: COMPRESSOR REPAIRED; WO #12345 SEWER MAIN REPAIR; FLUSHED AREA)

Comments _____

NOTIFICATION	PH, LTR, FAX	DATE	TIME	WHO WAS CONTACTED	INCIDENT #
☐ KDOW					
☐ BOH					
☐ Other					

Report Initiated By (ID) _____ Report Completed By (ID) _____

1. **Wet Weather Release** and **Dry Weather Release** check boxes correspond to the ***Activity*** code on the Work Order.
2. The **Asset Type** and **Hansen ID** number should correspond to the asset record in Hansen.
3. The **Name** field should indicate the name of the Treatment Plant or Pump Station. If you are reporting on a Manhole, no name is needed.
4. **Release Began** and **Release Stopped** should correspond to the release begin and end date/times. These will be entered in the ***Initiated Date*** and ***Completed Date*** fields on the Hansen Work Order.
5. One of the **Cause of Release** checkboxes MUST be checked. This will be entered in the ***Problem*** field on the Hansen Work Order.

6. **Estimated Volume Released** should be obtained using the Volume Estimation Guide, or calculation, and will be entered on the ***Spot Inspection form DISAMT*** entry.
7. **Add'l Cause Info** should specify detailed information about the cause of the release. This information will be entered on the ***Spot Inspection form DISCAU*** entry.
8. **Cleanup Actions** should specify what was done to cleanup the site after the discharge took place. This may be blank if no specific actions were taken, but also, needs to contain information if cleanup was done. This information will be entered on the ***Spot Inspection form DISCLN*** entry.
9. **Actions taken to repair and/or mitigate release** should contain information about any subsequent work that may have been required to repair or mitigate the cause of the release. This information will be entered on the ***Spot Inspection form DISREP*** entry.
10. **Notifications** should be specified, and initialed if the call or notification was made by someone other than who is initiating or completing the form. These entries will be made in the ***Work Order Log form with a DISNOT*** entry.
11. **Report Initiated By** should be signed by the person who first observed the discharge. This should correspond to the ***Assigned To*** field on the Work Order screen and will be filled in with the ***employee's ID***.
12. **Report Completed By** should be signed by the person who noted that the discharge had ended. This should correspond to the ***Completed By*** field on the Work Order screen and will be filled in with the ***employee's ID***. If the Initiated By and Completed By person are the same, then only one name needs to be indicated on the form. But the entry needs to be made both places on the Hansen Work Order.
13. **Samples Taken? Box** should be completed be indicated by circling either Yes or No. If No, then nothing needs to be entered into Hansen. If Yes, then an additional entry needs to be made on the ***Spot Inspection form***. See instructions on Page 13.

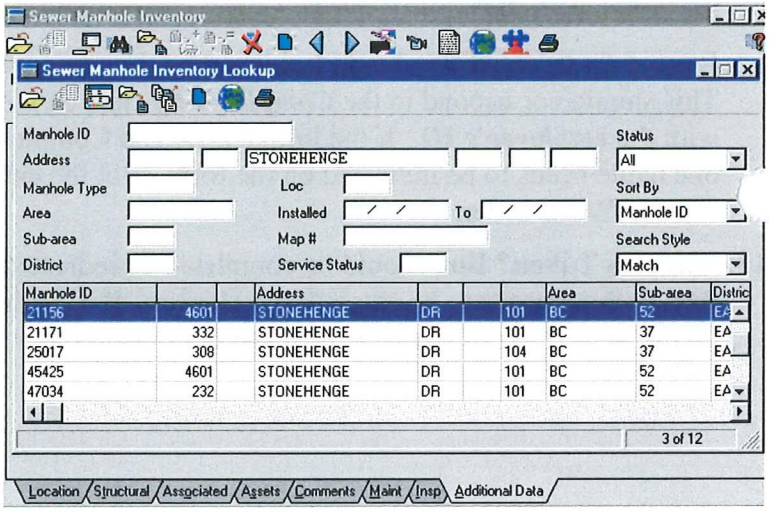
Chapter 4 Data Entry for Reporting Discharges from th Sewer System

Creating Work Orders for the work to be performed

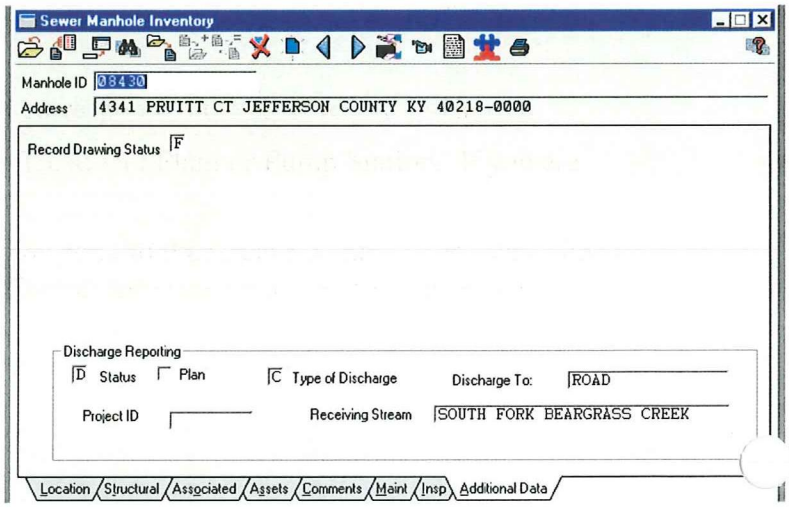
Tracking discharges from the sanitary sewer system will be done by creating a Work Order against the asset from which the discharge occurs. ***Remember:*** A pump station facility has a different asset record than the wet well just outside. If the wet well is where the discharge is coming from, you should attach the work order to the wet well asset record. You must be specific in choosing the correct Asset.

To execute a Discharge Work Order, complete the following procedures:

1. Identify the correct asset by locating its inventory record in the correct Asset Inventory. If a manhole is discharging, go to the **Sewer Manhole inventory**. If it is a Pump Station, go to the **Sewer Lift Station inventory**. If it is a Treatment Plant, go to the **Sewer Treatment Plant inventory**. If the discharge is coming from a wet well prior to the pump station, its record will be found in the **Manhole Inventory**. If it is a service connection backup issue, select the appropriate record in the **Sewer Service Line (SSL) Inventory**.



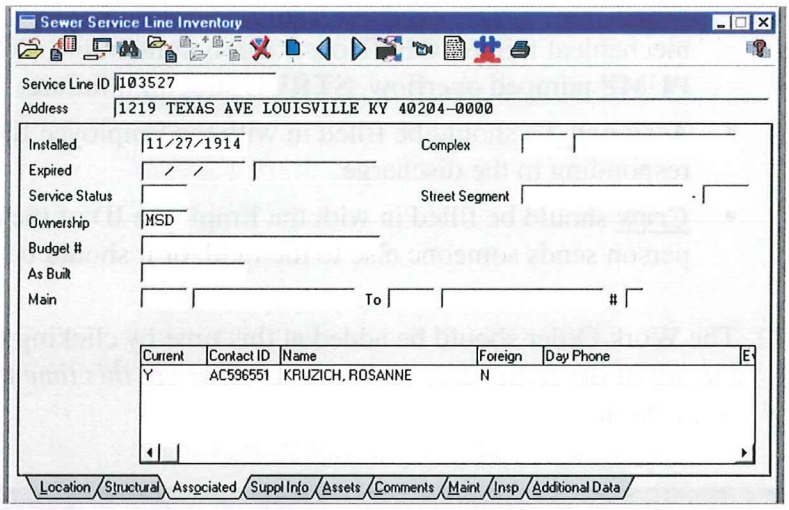
2. Either type in the Asset ID number in the **Unit ID** field and click on the ***Load*** button, or click on the ***binoculars*** to go to the **Lookup** form to find the asset by an address.
3. If you have gone to the **Lookup** screen, type in the Street Name in the proper **Address** field. Click on the ***Load*** button, and all assets from that particular inventory that have an address on that street will load in the screen.
4. Scroll down the list until you find the correct asset. Double click on the record, or click on the ***Select*** button on the menu bar. This will load the asset record in the inventory.



Take a moment to verify data on the **ADDITIONAL DATA** tab. For reporting purposes, each Manhole, Pump Station or Treatment Plant facility where discharges occur

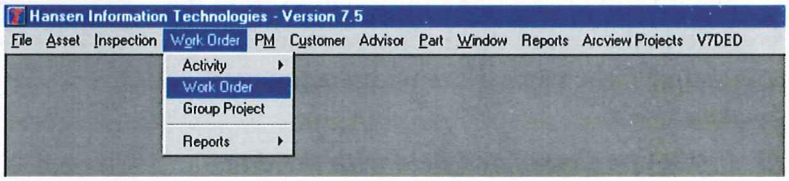
should have the data fields filled in on the **ADDITIONAL DATA** tab.

Also, if the incident is Backup related, please check on the Sewer Service Line Inventory record whether the Service Line is associated to a specific Sewer Mainline on the Associated Tab. If these fields are blank, then enter the correct Sewer Main ID in the corresponding fields.



Now, click on the **Work Order** Menu on the top menu bar.

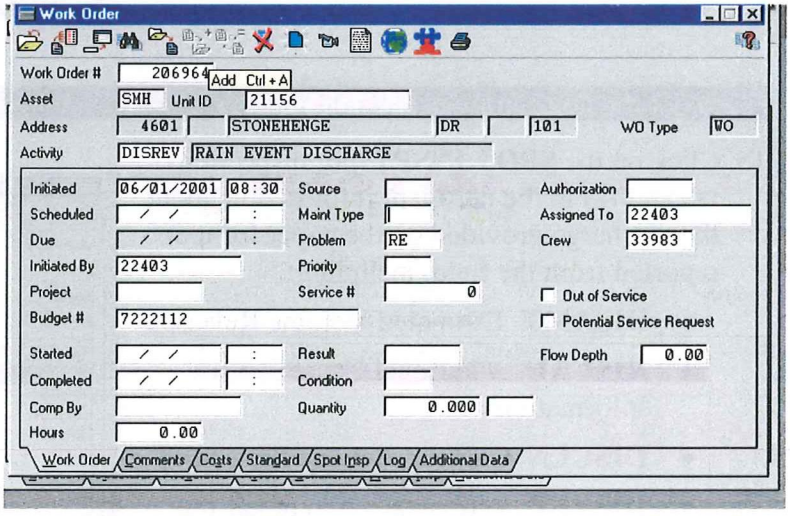
5. Click on the **Work Order** Form.
6. Click on the **WORK ORDER** Tab.
7. Place your cursor in the **Asset** Field and type the correct code for the type of asset you have identified (SMH for Sewer Manhole; SLS for Sewer Lift Station; SPT for Sewer Treatment Plant, etc.).



8. Tab into the **Unit ID** Field and the asset you previously selected will automatically load.

Using information observed in the field, reported over the phone or radio, or provided on the report forms:

9. Tab into the **Activity** Field. Enter one of two codes:
   - **DISREV** for discharges which happen during a rain event; or
   - **DISDW** for discharges which happen in dry weather due to obstruction or system failure.



10. Fill in the following fields:
    - ***Initiated Date* should be filled in with the date and time the discharge started.**
    - **Initiated By** should be filled in with the Employee ID of the person entering the Work Order.
    - **Budget ID** should be filled in with the appropriate cost center.
    - **Problem** should be filled in with the general cause of the release as checked on the paper form, or identified as one of the following: **CAP** lack of system capacity; **MECH**

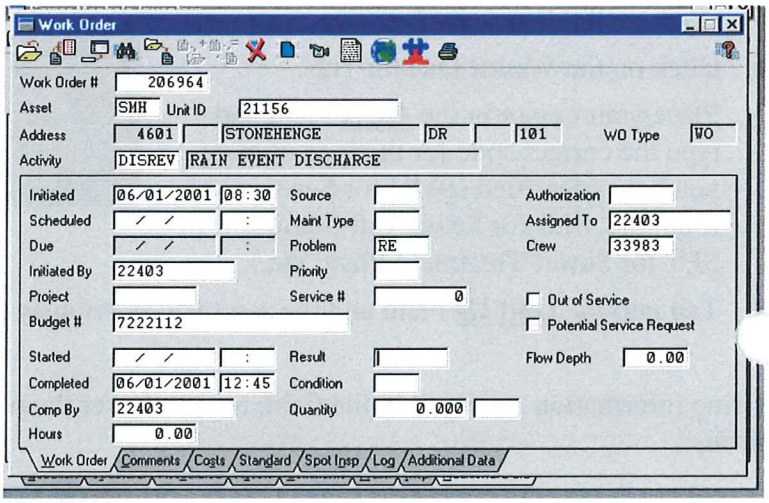
mechanical failure, **OBST** obstruction in mainline, **POWER** power outage caused by LG&E, **PUMP** pumped overflow, **STRUC** structural failure.

- **Assigned To** should be filled in with the Employee ID of the person who is responsible for responding to the discharge.
- **Crew** should be filled in with the Employee ID of the responding person, if the "Assigned" person sends someone else to the field, or it should be left blank.

11. The Work Order should be added at this time by clicking on the ***Add*** button on the button bar at the top of the form. *This action is necessary at this time to activate required fields in the Spot Inspection.*

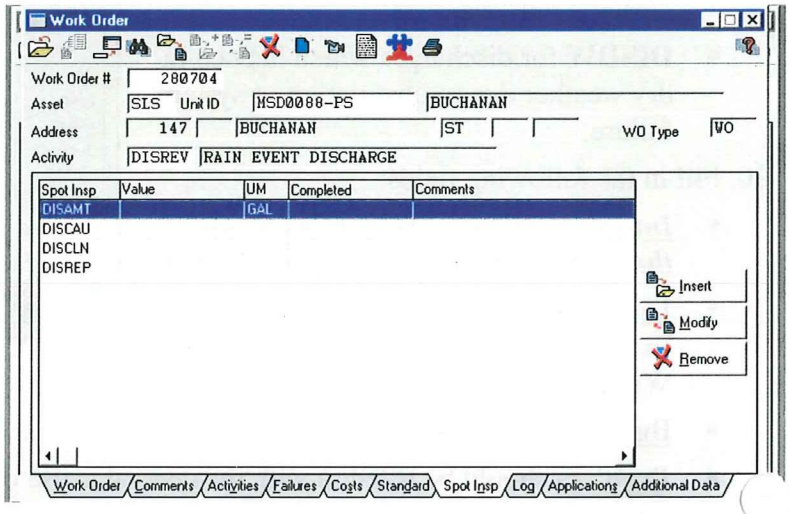
Updating/Completing the Work Order

12. If you are filling out the **Work Order** from a paper form or receiving information from the field at the end of the discharge event, complete the work order with the required data.
13. ***Fill in the Completed field with the date and time the discharge ended.***
14. Fill in the **Comp By** field with the person who was in charge of overseeing the discharge and resulting actions.

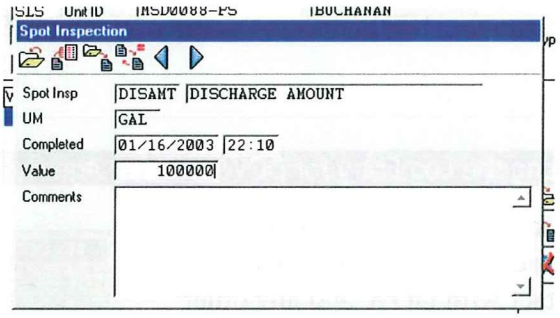


Filling out the Discharge-Specific Information

15. Click on the **SPOT INSP** (Spot Inspection) tab and fill in the pertinent information about the discharge provided on the paper form or reported from the field, including:
    - **DISAMT** Estimated Volume Released
    - **DISCAU** Additional Cause Information
    - **DISCLN** Cleanup Actions Performed
    - **DISREP** Actions taken to repair the facility and/or mitigate the release



16. Insert this information by highlighting the first entry (DISAMT) and clicking on the ***Modify*** button. An entry screen will appear.

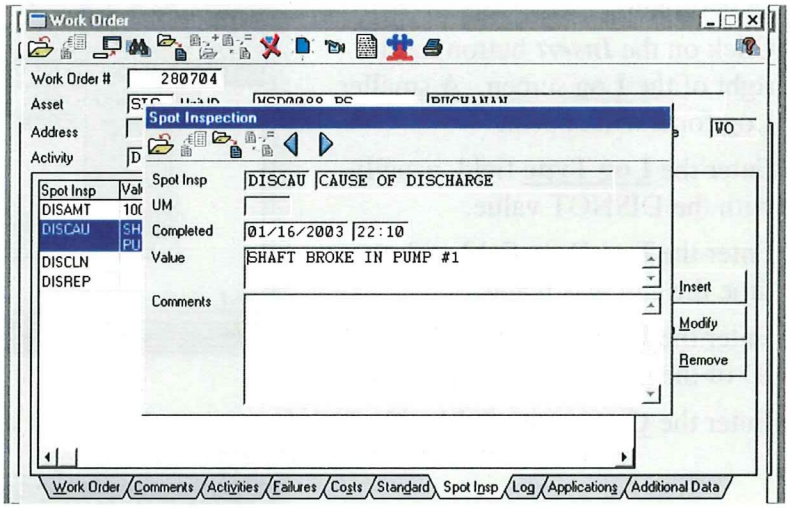


17. Enter the Estimated Volume Released in the **Value** field. Click on the ***Update*** button, and then click on the ***Right Arrow***.

18. The entry screen for the next code on the **SPOT INSPECTION** will appear.

19. Enter the same **Completed Date** from the **WORK ORDER** tab. In the **Value** field, enter any information provided as Additional Cause Info from the form or field observation.

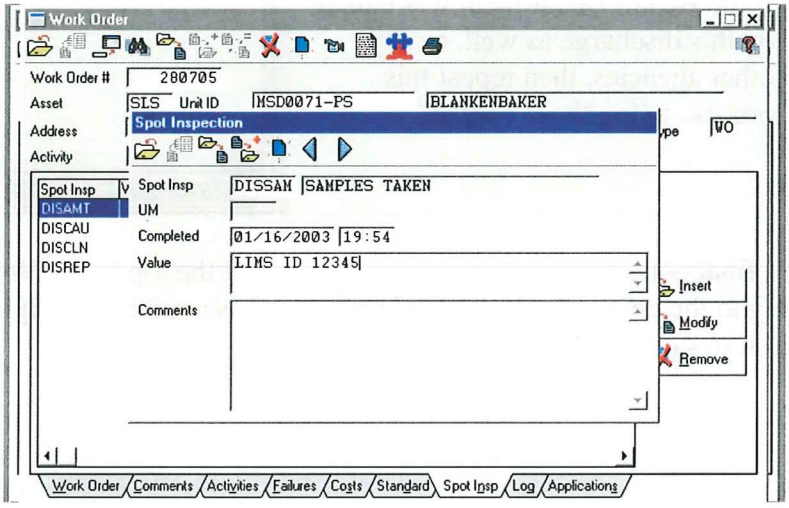
    - *Example*: You might have noted a Pump Failure, or Heavy Rain, or Compressors for injector pump failed. This data should both match and provide more explanation about what happened than is indicated by the Problem Code.
    - *Note*: You ***do not*** need to fill in the **Comments** field, unless there are other notations you would like to make, other than what will appear in the report. Data from the **Value** field will appear in the report.



20. Click on the ***Update*** button to update that screen, and then again click on the ***Right Arrow*** button, and the next entry will automatically come up.

21. Proceed in that way to complete all defined fields in the **SPOT INSPECTION**.

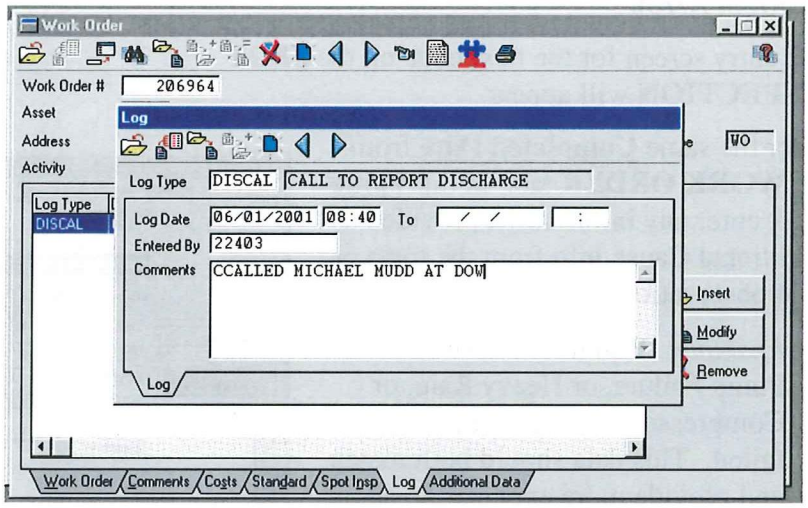
22. If the hardcopy form indicates that Samples were taken, you will need to execute an additional process on the **SPOT INSPECTION**. Click on the ***Insert*** button to the right of the **SPOT INSPECTION** screen. In the **Spot Insp** type field, click on the ***Popup*** button and select DISSAM Samples Taken code.



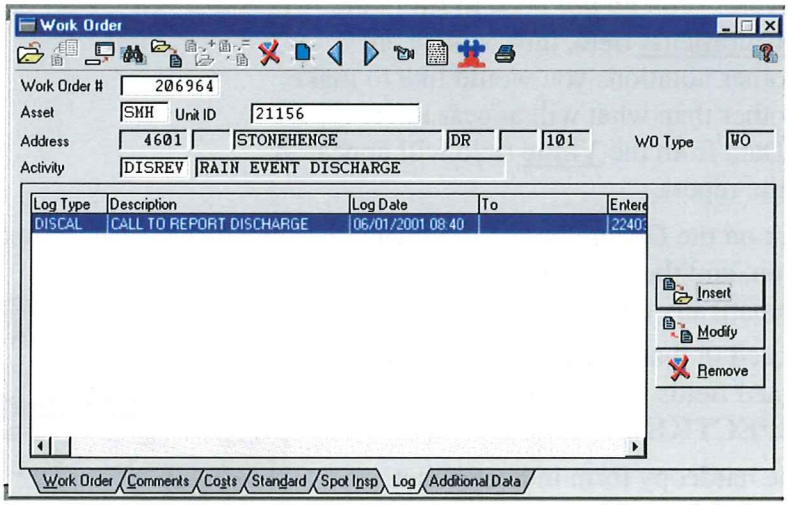
23. Enter the **Completed** field with the same Completed by time and the Work Order, and in the **Value** field, indicate the LIMS ID of the sample if you know it.
24. Click on the ***Add*** button at the top of the **SPOT INSPECTION** form.

Completing the Log Entry for DOW or Other Agency Notification

25. Click on the **LOG** tab and fill in the pertinent information about the contact with DOW and any other agencies, such as the Health Department.
26. Click on the ***Insert*** button to the right of the **Log** screen. A smaller **Log** form will appear.
27. Enter the **Log Type** field, usually with the DISNOT value.
28. Enter the **Log Date** field with the time the call was made.
29. Enter the **Entered By** field with the ID of the person who made the call.



30. Enter the **Comments** field with the information about who was contacted.
31. Click on the ***Add*** button at the top of the Log form to add this entry. Then close this form by clicking on the ***Folder*** button at the top left of the **LOG** form.
32. If the Health Department was called on this discharge as well, or any other agencies, then repeat this process to log those contacts.



As a final note, make sure the ***Update*** button at the top of the **Work Order** form is grey before going to the next task. If the ***Update*** button has a red equals sign (=), then click on the ***Update*** button to save all changes.

Appendix E SSO Field Volume Estimate Guide

Manhole Overflow Condition [1,3]

Rim/Casting On

	1 Hour	3 Hours	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours
Water Seeping Out	2300	6,800	14,000	27,000	54,000	81,000	110,000
Water Pouring Out	11,000	34,000	68,000	140,000	270,000	410,000	540,000

Rim/Casting 1/4 Off

Avg. Depth of Water Above Rim/Casting (Ft)	1 Hour	3 Hours	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours
0.5	27,000	81,000	160,000	320,000	650,000	970,000	1,300,000
1	81,000	240,000	490,000	970,000	1,900,000	2,900,000	3,900,000
2	180,000	540,000	1,100,000	2,200,000	4,300,000	6,500,000	8,600,000
3	220,000	660,000	1,300,000	2,600,000	5,300,000	7,900,000	11,000,000
4	260,000	770,000	1,500,000	3,100,000	6,200,000	9,200,000	12,000,000
5	280,000	850,000	1,700,000	3,400,000	6,800,000	10,000,000	14,000,000

Rim/Casting 1/2 Off

Avg. Depth of Water Above Rim/Casting (Ft)	1 Hour	3 Hours	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours
0.5	54,000	160,000	320,000	650,000	1,300,000	1,900,000	2,600,000
1	160,000	470,000	950,000	1,900,000	3,800,000	5,700,000	7,600,000
2	360,000	1,100,000	2,200,000	4,300,000	8,600,000	13,000,000	17,000,000
3	440,000	1,300,000	2,600,000	5,300,000	11,000,000	16,000,000	21,000,000
4	510,000	1,500,000	3,100,000	6,100,000	12,000,000	18,000,000	24,000,000
5	570,000	1,700,000	3,400,000	6,900,000	14,000,000	21,000,000	27,000,000

Rim/Casting Completely Off

Avg. Depth of Water Above Rim/Casting (Ft)	1 Hour	3 Hours	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours
0.5	110,000	340,000	680,000	1,400,000	2,700,000	4,100,000	5,400,000
1	320,000	960,000	1,900,000	3,800,000	7,700,000	12,000,000	15,000,000
2	720,000	2,200,000	4,300,000	8,600,000	17,000,000	26,000,000	35,000,000
3	890,000	2,700,000	5,300,000	11,000,000	21,000,000	32,000,000	43,000,000
4	1,000,000	3,100,000	6,100,000	12,000,000	25,000,000	37,000,000	49,000,000
5	1,100,000	3,400,000	6,900,000	14,000,000	27,000,000	41,000,000	55,000,000

Pumps

Portable Pumps	1 Hour	3 Hours	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours
6" Silent Knight Pumps @ Idle (1,100 GPM)	66,000	200,000	400,000	790,000	1,580,000	2,380,000	3,170,000
4" Pumps @ full throttle (600 GPM)	36,000	110,000	220,000	430,000	860,000	1,300,000	1,730,000
3" Pumps @ full throttle (300 GPM)	18,000	50,000	110,000	220,000	430,000	650,000	860,000
2" Pumps @ full throttle (150 GPM)	9,000	30,000	50,000	110,000	220,000	320,000	430,000

Highgate Springs Pump Station	1 Hour	3 Hours	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours
1 Pump Bypassing (3,100 GPM)	190,000	560,000	1,120,000	2,230,000	4,460,000	6,700,000	8,930,000
2 Pump Bypassing (6,200 GPM)	370,000	1,120,000	2,230,000	4,460,000	8,930,000	13,390,000	17,860,000
3 Pump Bypassing (9,300 GPM)	560,000	1,670,000	3,350,000	6,700,000	13,390,000	20,090,000	26,780,000

Siphon	*J-Town WWTP Siphon*	500,000	1,500,000	3,000,000	5,900,000	12,000,000	18,000,000	24,000,000

	Bypass Structures [2,3]	1 Hour	3 Hours	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours
Central	Woodland Hills	9,000	27,000	54,000	110,000	220,000	320,000	430,000
	Holly Oaks PS	9,000	27,000	54,000	110,000	220,000	320,000	430,000
	Cooper Chapel	9,000	27,000	54,000	110,000	220,000	320,000	430,000
	Pope Lick Rd PS	9,000	27,000	54,000	110,000	220,000	320,000	430,000
	Shobe	9,000	27,000	54,000	110,000	220,000	320,000	430,000
	Avanti	9,000	27,000	54,000	110,000	220,000	320,000	430,000
	Marion Ct.	9,000	27,000	54,000	110,000	220,000	320,000	430,000
	Raintree	9,000	27,000	54,000	110,000	220,000	320,000	430,000
East	Mockingbird Valley PS	72,000	220,000	430,000	860,000	1,700,000	2,600,000	3,500,000
	Lanfair	1,000	3,000	6,000	12,000	24,000	36,000	48,000
	Winton Ave	4,500	14,000	27,000	54,000	110,000	160,000	220,000
WWWQ	Middle Fork @ Breckinridge	72,000	220,000	430,000	860,000	1,700,000	2,600,000	3,500,000
	ND Blow Off	1,500,000	4,500,000	8,900,000	18,000,000	36,000,000	53,000,000	71,000,000
	Peabody Lane	110,000	340,000	680,000	1,400,000	2,700,000	4,100,000	5,400,000
	SE Diversion	250,000	740,000	1,500,000	3,000,000	5,900,000	8,900,000	12,000,000
	Sutherland	23,000	68,000	140,000	270,000	540,000	810,000	1,100,000

[1] $Q = A_c \times [2gh]^{0.5}$

[2] $Q = 1.49 / 0.013 \times A_o \times R^{2/3} \times S_0^{0.5}$

[3] 75% of Calculated Potential Flow

All volumes should be estimated per site.