

NaviGate™ Field Data Entry Module

Software Product Description

Product Summary

The standard *NaviGate* system provides a primarily read-only interface for viewing Enterprise data. The *NaviGate* Field Data Entry Module (FDE) extends and enhances *NaviGate* by providing a mechanism for updating transactional data (work orders, inspection orders, service requests, etc.) or facility attribute data (pole inspection, transformer inspection, valve surveys) in the field. The Field Data Entry Module uses the *NaviGate Field Option* to display maps in the field. FDE provides a Supervisor interface to allow suitably-authorized users to assign work orders or other tasks to field personnel using a graphical, spatial user interface. FDE also allows you to produce paper copies of your inspections or work orders, either in the office or in the field.

Product Description

The *NaviGate* Field Data Entry Module allows you to add view-and-update of transactional information to an existing *NaviGate* system. The Module provides the following specific functions:

- FDE data can be taken into the field using either commodity wireless technology or in a load-and-go disconnected model. The FDE uses the same technologies as the *NaviGate Field Option* to transmit data wirelessly to the field very efficiently.
- Data captured in the field is saved locally on the field computer and will automatically synchronize when communication is re-established. Communication with the server uses HTTP, and tolerates unreliable wireless connections.
- When used together with the *NaviGate Field Option*, mobile users can visualize FED data together with facilities maps while in the field, allowing them to pick up new work and view the data on the map while still in the field.
- Supervisors can graphically assign transactional data (work orders, service orders, inspection requests, etc.) to a crew or field worker. Field crews and supervisors alike can view and manage those assignment lists via the standard *NaviGate* user interface.
- Supervisors can sequence work graphically by clicking on icons in the map. This allows supervisors to easily communicate the desired work sequence to the field workers.
- The FDE user interface is tightly integrated with the standard *NaviGate* user interface and provides access to all of the same *NaviGate* reports and features. Configuration of the FDE is integrated with configuration of standard *NaviGate*.
- FDE can be used together with other *NaviGate* modules such as the *NaviGate AVL Module* and the *NaviGate Document Manager Module*.
- FDE data is read from and written to your enterprise systems using database exchange tables.

Data Requirements

The *NaviGate* Field Data Entry Module can be configured as part of any standard *NaviGate* application and shares data with the standard application. The *NaviGate* Field Data Entry Module requires that the data to be displayed in the Field Data Entry Module has already been configured in your standard *NaviGate* system.

Installation and Configuration

The purchase price of the *NaviGate* Field Data Entry Module includes professional installation of the software by a Gatekeeper Systems technician, integration of the Module into your existing *NaviGate* application, and assistance with configuration of your field computers and wireless network. Contact Gatekeeper Systems for more information.

Software Prerequisites

The *NaviGate* Field Data Entry Module uses the functions and features of the standard *NaviGate* application framework. To take Field Data Entry into the field with maps, you also need to purchase the *NaviGate Field Option*.

Support Options

Standard Support is available for this module, providing support via email, the Internet and telephone during normal Gatekeeper Systems business hours. Standard Support also provides product updates as new versions of this module are released.

Pricing

Refer to the *NaviGate* Price List for current pricing. Volume and package discounts are also available. Contact a Gatekeeper Systems representative for more information.

Licensing

This option is licensed using the standard Gatekeeper Systems license agreement. The license agreement grants access to the software source code for the licensed option. A copy of the standard agreement is available upon request.

Ordering

The *NaviGate* Field Data Entry Module may be ordered by contacting Gatekeeper Systems. Please specify the *NaviGate* version with which you will be using this module.

Delivery

In most cases, the *NaviGate* Field Data Entry Module can be installed in one to four weeks. Contact Gatekeeper Systems for currently available delivery times.

GKS Part Number: 5318-FD1-1

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Mobile Data Management

You can use the Field Data Entry Module to take operational data into the field and keep that data tightly coupled with the *NaviGate* database. The Field Data Entry Module includes powerful tools for efficiently synchronizing from the central database into mobile computers, providing for update in the field, and then moving the updated data back to the central database.

The Field Data Entry Module functions in a wireless network configuration (with slow-speed and unreliable network connections) or it can be used in a "load and go" manner with synchronization at the beginning and end of a trip into the field.

Sanitation Facility View - Microsoft Internet Explorer
Address: http://san.gatekeeper.com

Map: Work Orders
Search: Work Order

Ex: 02-027447-118

S06/Mony's Ponies, Dec 03, 200...

Stop	Blk	Street	Required	W/O	Asset
1	6000	HOOVER ST	10/01/02	02-032151-044	557050835570
2	600	G2ND ST	10/02/02	02-03213...	55705104...
3	600	G2ND ST	10/02/02	02-03213...	55705103...
4	700	G2ND ST	10/01/02	02-03215...	55705102...
5	500	GAGE AV	10/01/02	02-03215...	55705122...
6	600	GAGE AV	10/02/02	02-03213...	55705121...
7	600	GAGE AVE	10/02/02	02-03213...	55705120...
8	6400	BONSALLO AV	10/02/02	02-03213...	55705162...
9	800	GAGE AVE	10/02/02	02-03213...	55705135...
10	6100	HOOVER ST	10/02/02	02-03213...	55705084...
	700	G1ST ST	10/02/02	02-03213...	55705085...
	6200	HOOVER ST		02-03215...	55705101...
	7000	FIGUEROA ST		02-03213...	55705085...
	7000	FIGUEROA ST	10/02/02		55709097...
	7000	FIGUEROA ST	10/02/02		
	500	75TH ST			
	7000	FIGUEROA ST			
	7600	FIGUEROA ST			
	700	77TH ST			
	500	77TH ST			
	7800	FIGUEROA ST			
	7700	FIGUEROA ST			
	7900	FIGUEROA ST			
	7900	HOOVER ST	10/02/02		
	8000	HOOVER ST	10/02/02	02-03213	55713075

Work Orders shown in the assignment list are visible on the map, together with facilities data and a landbase.

Work Orders and similar data are downloadable from the NaviGate server either in the office or in the field via a wireless connection.

Sanitation Facility View - Microsoft Internet Explorer
Address: http://san.gatekeeper.com

Map: Work Orders
Search: Work Order

Ex: 02-0274

S06/Mony's Ponies, Dec 03, 200...

W/O 02-032151-044

W/O # 02-032151-044 Basin: S06

Loc: 6000 HOOVER ST

Desc: PREVENTIVE MAINTENANCE

Up Node: 557-05-083 Dn Node: 557-05-084

Up Str: 10+4.32 Dn Str: 8+35.97

Pipe Size: 10 Pipe Mat: CON

Pipe Len: 168.4

Start/Stop

Duration (min)

Work Subclass: HR - Hand Rodding

Warning: Applet W

HB - Hand Cleaning Debris Ba
HC - Hand Cleaning Channel
HD - Hand Cleaning Catch Bas
HY - Hydro-Flusher
MR - Mechanical Rodding
VA - Mechanical Cleaning (Stor
VC - Mechanical Cleaning Combo

Warning: Applet Window

Work order data entered in the field is captured and uploaded to the NaviGate server, which stores the data in your existing Work Management System.

Supervisors Can Assign Work Graphically

Using a simple and easy-to-use interface, work planners or supervisors can graphically assign work by building up "work lists" that correspond to tasks in your enterprise systems. The work lists link the tasks to objects on the map, and assign them to a field worker or crew for completion.

Field Automation for Sewer Trucks - Microsoft Internet Explorer

Map: Work Order
Search: Work Order

Ex: 03-003491-145

N16/374-04, Nov 18, 2003

St...	Blk	Street	Asset	W/O
<input type="checkbox"/>	300	1ST ST	5160814851608...	02-010127-0
<input type="checkbox"/>	300	1ST ST	5160810651608...	02-009965-0
<input type="checkbox"/>	300	1ST ST	5160810451608...	02-009965-0
<input type="checkbox"/>	300	2ND ST	5160827551608...	02-010127-0
<input type="checkbox"/>	300	2ND ST	5160817651608...	02-010127-0
<input type="checkbox"/>	300	2ND ST	5160814651608...	02-009965-0
<input type="checkbox"/>	300	2ND ST	5160814551608...	02-009965-0
<input type="checkbox"/>	300	2ND ST	5160814151608...	02-009965-0
<input type="checkbox"/>	300	2ND ST	5160814051608...	02-009965-0
<input type="checkbox"/>	300	2ND ST	5160813651608...	02-009965-0
<input type="checkbox"/>	300	GAREY ST	5160809251608...	02-009965-0
<input type="checkbox"/>	300	GAREY ST	5160805051608...	02-009965-0
<input type="checkbox"/>	300	JACKSON ST	5160807851608...	02-009965-0
<input type="checkbox"/>	300	JACKSON ST	5160807751608...	02-009965-0
<input type="checkbox"/>	300	JACKSON ST	5160807651608...	02-009965-0
<input type="checkbox"/>	400	1ST ST	5160814951608...	02-010127-0
<input type="checkbox"/>	400	2ND ST	5160817851608...	02-010127-0
<input type="checkbox"/>	400	2ND ST	5160817751608...	02-010127-0
<input type="checkbox"/>	400	ALAMEDA ST	5160808451608...	02-009965-0
<input type="checkbox"/>	500	ALAMEDA ST	5160804351608...	02-009965-0

7 Work Orders selected

7 'Work Order Application' selects: 1 : 3,090 1,000 x 1,150 (ft)

Field Data Capture

Each assigned work order or transaction is viewable in a form specifically designed for your field data. Users can view detailed data about the assignment in an uneditable portion of the form, and then input their work order results and other related data such as time spent and work order completion status.

All captured data is uploaded directly to the transaction database via a wireless connection. Once on the NaviGate Server, the data is written back to your work management system via system interface tables in your relational database.

W/O 03-050511-000

Toolbar provides access to map functions (e.g., locate and measure) directly from the data maintenance form.

Fixed (uneditable) assignment data from the transaction database can be taken into the field electronically.

Record time spent, completion status, and any kind of task closure data. Also capture and store comments. In this screen, the user is providing data on required follow-up work.

W/O #	03-050511-000		
Basin	A04		
Loc	5000 76TH ST		
Desc	PREVENTIVE MAINTENANCE		
Up Node	559-09-058	Down Node	559-09-057
Up Station	5+65.39	Down Station	3+3
Pipe Length	262.4	Pipe Size	10
Pipe Mat	VCP	Wye Map	7928-2
Last	/		

Asset ID:	Descr.	Comment
<input type="checkbox"/>	Mainline needs repair.	
<input type="checkbox"/>	Maintenance structure needs repair.	
<input type="checkbox"/>	Need CCTV due to possible broken line.	
<input type="checkbox"/>	Need CCTV to identify possibly blockage.	
<input type="checkbox"/>	Maintenance hole needs to be raised to grade.	
<input type="checkbox"/>	Excessive debris in maintenance hole.	
<input type="checkbox"/>	Unable to location MH.	
<input type="checkbox"/>	Unable to access MH.	
<input type="checkbox"/>	Need hydraulic assesment.	
<input type="checkbox"/>	Need follow up by Vector.	
<input type="checkbox"/>	Inventory modification required	
<input type="checkbox"/>	Other	

Status Comments Referrals

Sequence Work Assignments Graphically

A supervisor or work planner can view multiple assigned tasks on the map and click on them to sequence the work. This allows the planner to provide guidance to the field crews regarding priority, routing, or traffic planning.

As tasks are selected on the map, they are automatically re-sequenced in the tabular list to aid in visualization. The sequenced list can also be "Played Back" by the planner as a preview of the assigned sequence.

Field crews can re-sequence the work while in the office, or after they move the data to their field computer.

Field Automation for Sewer Trucks - Microsoft Internet Explorer

Map: Work Order
Search: Work Order
Go

Ex: 03-003491-145

N116/374-04, Nov 18, 2003

St...	Blk	Street	Asset	W/O
1	100	ALAMEDA ST	5160815351608...	03-050426-0
2	100	ALAMEDA ST	5160815451608...	02-009965-0
3	100	ALAMEDA ST	5160815351608...	02-009965-0
4	100	ALAMEDA ST	5160815251608...	02-009965-0
5	100	ALAMEDA ST	5160815051608...	02-009965-0
6	400	1ST ST	5160814951608...	02-010127-0
7	300	1ST ST	5160814851608...	02-010127-0
	100	ALAMEDA ST	5160811051608...	02-009965-0
	100	ALAMEDA ST	5160811051608...	02-009965-0
	100	ALAMEDA ST	5160808551608...	02-009965-0
	100	SAN PEDRO	5160808551608...	02-009965-0
	100	SAN PEDRO	5160808551608...	02-009965-0
	100	WELLER ST	5160808551608...	02-009965-0
	100	WELLER ST	5160808551608...	02-009965-0
	100	WELLER ST	5160808551608...	02-009965-0
	200	1ST ST	5160808551608...	02-009965-0
	200	2ND ST	5160808551608...	02-009965-0
	200	2ND ST	5160813551608...	02-009965-0
	200	2ND ST	5160810151608...	02-009965-0
	200	ALAMEDA ST	5160823051612...	02-009965-0
	200	ALAMEDA ST	5160823051608...	02-009965-0

Click-to-sequence allows the work planner to assign work to an Assignment List and simultaneously provide the field worker with the sequence in which the work is to be performed.

1 Work Orders selected

1 'Work Order Application' selected 1 : 3,090 1,000 x 1,150 (ft)

http://fast.san.ci.la.ca.us/scripts/redirect.pl?SCR=htmlreport.pl;RN=WorkOrderDetail;PK=02-01

Manage Assignment Lists

Via the Field Data Entry Module, field operations supervisors can use the map to spatially create work lists (assignment lists) and store those in your work management system. Using customizable Filters in the WOM, the supervisor can create a filtered list of Field Data Entry they wish to view on the map and in the tabular list of assignable tasks.

The assignment lists are then organized by type, geographical region, crew, and other categories.

Filter Properties

Match Filter Criteria

Basin: S06 (required)

Required by:

any date

Work Orders required by: Jan 13, 2003

Work Order Status:

any status

any open status

specify

Work Order Type:

any type

specify

Specific Work Orders

Work Order Nos: _____

OK Cancel

Warning: Applet Window

Select a Project

Sort by: by Basin, Crew

- E20
- E39
- H04
- H10
- S06
 - Mony's Ponies
 - 12/03 Mony's Ponies (1/...
- S16
- U24
- W10
- Z28

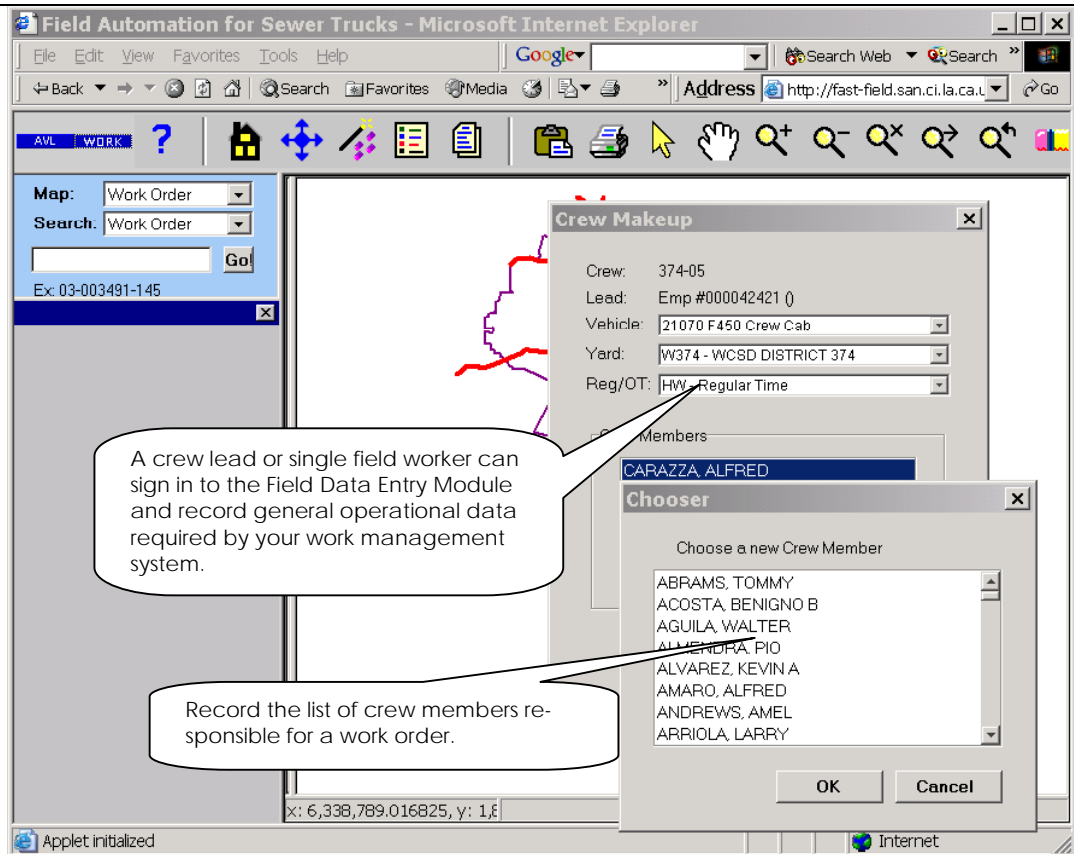
OK Cancel Refresh

Warning: Applet Window

Field Worker Sign-In and Crew Makeup

Crews can "sign in" to the Field Data Entry Module. A crew lead can record information about other crew members associated with the completed tasks, and this information is available to your work management system.

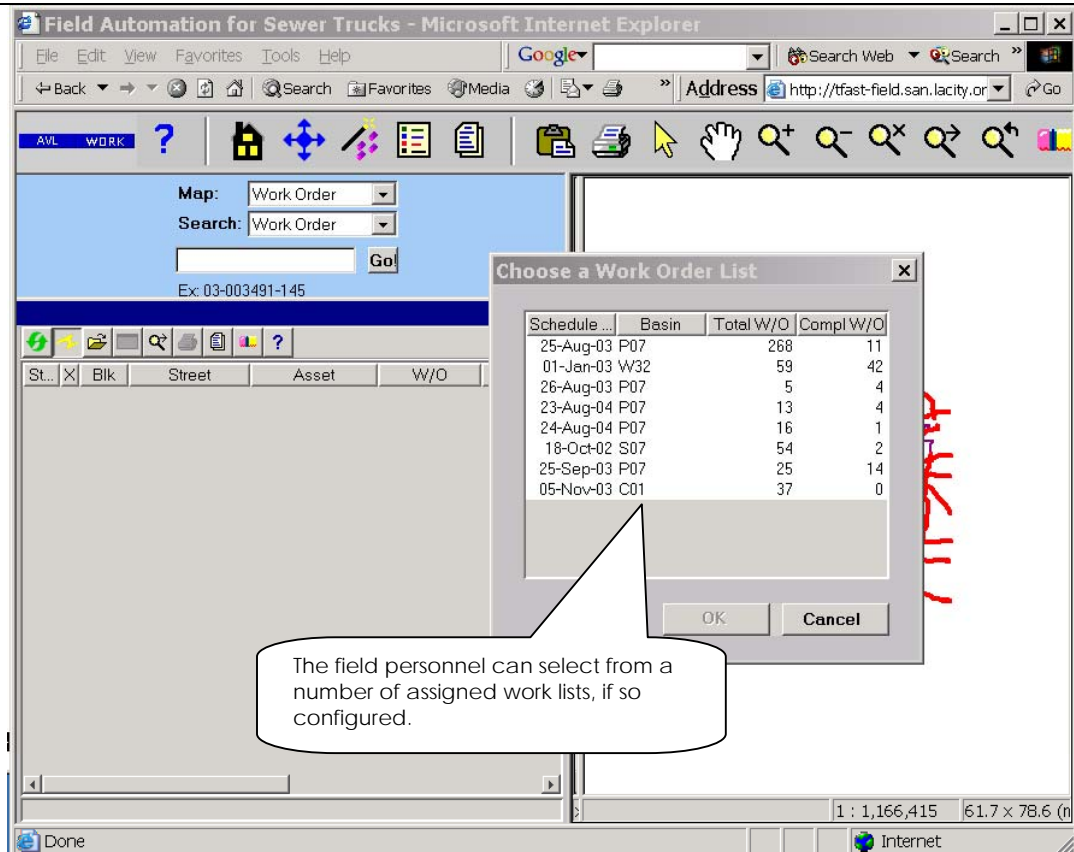
If desired, the Crew Makeup Module also records the vehicle in use so that the crew position can be re-recorded and displayed via the *NaviGate AVL Module*.



Pick Up Assignment Lists From the Field

Once identified to the Field Data Entry Module via the login process, field crews can browse their assignment lists and choose a list to work from. Lists can be assigned by crew, region, type of work, priority, due date, and many other configurable criteria.

Work Lists can be saved while partially complete, allowing field users to complete work over a number of days. Individual tasks can also be completed during multiple visits.



Field Data Entry Are Mapped Thematically

As work is completed, the work order icon changes dynamically on the map, both in the field and in the office. The Field Data Entry Module can be configured to show different colors for various task status values, such as "Assigned", "Unassigned", "Completed", "In Process", and "Approved".

The screenshot shows the 'Field Automation for Sewer Trucks' web application in Microsoft Internet Explorer. The interface includes a map on the right with various work order icons (yellow stars, green stars, and purple stars) overlaid on a street network. A data table on the left lists work orders with columns for Street, Asset, W/O, and Len. Callout boxes identify 'Completed Field Data' (yellow star), 'Selected Field Data Entry' (purple star), and 'Incomplete Field Data' (green star).

St...	Blk	Street	Asset	W/O	Len
1	3600	PATIO PL	4960602249606...	02-043413-0...	347.3
2	4400	PLACER PL	4661406446614...	02-043413-2...	60.5
3	4400	PLACER PL	4661407246614...	02-043413-2...	116.5
4	5200	PLACER PL...	4661406546614...	02-043413-2...	50.0
6	5300	POPLAR BL	4960212749602...	02-043413-1...	180.0
7	5400	POPLAR BL	4960212749602...	02-043413-1...	321.9
8	5400	POPLAR BL	4960215149602...	02-043413-1...	265.2
9	5500	POPLAR BL	4960215249602...	02-043413-1...	300.0
11	5200	REMSTOY DR	4661403746614...	02-043413-2...	118.0
14	5200	REMSTOY DR	4661405446614...	02-043413-2...	81.2
16	4400	REMSTOY D...	4661402546614...	02-043413-2...	178.3
21	5200	REMSTOY D...	4661404846614...	02-043413-2...	108.9
22	4400	RICHARD CR	4661405046614...	02-043413-2...	116.5
24	4400	RICHARD CR	4661407746614...	02-043413-2...	116.5
5	5200	PLACER PL...	4661407346614...	02-043413-2...	50.0
10	5300	POPLAR BL R...	4960213349602...	02-043413-1...	180.0
12	5200	REMSTOY DR	4661403846614...	02-043413-2...	236.0
13	5200	REMSTOY DR	4661404746614...	02-043413-2...	69.9
15	5200	REMSTOY DR	4661406646614...	02-043413-2...	57.0

Print Field Data Entry in the Office or Field

Field tasks can be selected and printed in user-selectable batches, one per page. Supervisors can give paper copies to field workers without a laptop, or workers can print their own copies at their desk and use the paper in the field. The hardcopy image can include different data than is shown in the on-screen version.

Field workers without wireless access to *NaviGate* can also print copies of maps to take with them, using the *NaviGate Print Module*, or using Windows cut-and-paste.

The screenshot shows the 'Field Automation for Sewer Trucks' web application with a 'Print' dialog box open. The dialog box is titled 'Print' and has tabs for 'General', 'Options', 'Layout', and 'Paper/Quality'. The 'General' tab is active, showing a list of printers, status (Toner Low), location, and page range options. The background shows a 'Work Order Detail' page for work order number 02-043413-244.

WORK ORDER NO: 02-043413-244

Entry Date: 2002-11-18 14:22:04
 Originator: WATSON, GERALD
 Requester: WATSON, GERALD
 Planner: WATSON, GERALD
 Reference: Yard: W374 - W3SD DISTRICT 37 Date R
 Late Date: Basin: PO7 CD: *****

Description: INSPECTION
 Up Node: 466-14-064 Dn Node: 466-14-072 Route: WPAQI
 Asset Name: 4661406446614072 Revision: 0
 Asset No: W000199338 Category: Default Category
 Location: 4400 PLACER PL
 Wye Map: 5038-3 Up Sta: 1+77 Dn Sta: 1+16.5
 Pipe Size: 8 Pipe Matl: VCP Pipe Len: 60.5

Previous Work Orders

Act Date	Req Date	Meth	Cond	Description	Duration
	374-05			Comp Date: 2003-09-25	Duration: 0:25
Method: Customer Service				Condition: Clear	

WORK ORDER NO: 02-043413-252

