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Prepared for

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1977

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PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

PROGRAM DOCUMENTATION

FUEL MODULE

U.S. Department of Housing and Urban Development
Office of Policy Development and Research

PUBLIC TECHNOLOGY, INC., WASHINGTON, D.C. AND SAN JOSE, CA.

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This document is one of a series comprising documentation for the PTI/APWA Equipment Management Information System; a system tailored to the special needs of local governments, developed by Public Technology, Inc. and the American Public Works Association.

The program documentation for the Fuel Module (there are six modules in the system) describes the module job streams, and explains in detail each program in the module including a program narrative, definitions of switches and flags used, a brief description of the purpose of each program paragraph, and the specifications from which each program was coded.

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PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPUTER PROGRAM DOCUMENTATION

FUEL MODULE

U.S. Department of Housing and Urban Development
Office of Policy Development and Research
Washington, D.C.

Prepared Under Contract #H-2106R

by

Public Technology, Inc.
1140 Connecticut Avenue, N.W.
Washington, D.C. 20036

1977

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FUEL MODULE

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SECTION 1

INTRODUCTION

INTRODUCTION

This program documentation is one volume of the technical program documentation of the PTI/APWA Equipment Management System. There are five volumes in all. Additionally the system is supported by Testing Instructions, an Implementation Handbook, Forms Completion Instructions, User's Guide, and Chief Executive's Report.

This program documentation is intended to help in maintaining the programs on the local government computer system. Before making the computer programs operational, the data processing staff should consult the Implementation Handbook and Computer Program Testing Instructions for relevant information.

Contact PTI if questions arise which are not addressed in this program documentation

SECTION 1.1

MODULE INTRODUCTION NARRATIVE

FUEL

INTRODUCTORY NARRATIVE

FUEL MODULE

The fuel module is the entry point to the system for information on the quantity and cost of fuel, oil, and miscellaneous commodities dispensed to equipment. This data is used to provide reports on the operating costs of equipment. The more important use of this information is in providing other modules with cost and consumption characteristics for equipment.

Historical data is collected from the fuel module for preparing trends and cumulative fuel figures. Fuel data is combined with repair data to determine the total cost of maintaining a piece of equipment. For preventive maintenance scheduling purposes, mileage reported in the fuel module is used to indicate to the preventive maintenance module the amount of usage since a piece of equipment's last PM.

The fuel module obtains its data from several sources. Individual fuel transactions are entered from fuel tickets, fuel sheets, or automated dispensing devices (the mode of data capture is a local option). Cumulative fuel dispensed from each fuel pump is submitted to the system weekly. (Each pump is assigned a unique number for identification purposes). The price of each type of fuel and the various commodities dispensed at the pumps, (e.g., oil, hydraulic fluid, transmission fluid, etc.) is adjusted as necessary on a form sent from the equipment manager to data processing. Using this pump information the fuel module produces a weekly fuel pump - fuel ticket reconciliation report to help account for all fuel dispensed. A detailed report is produced on demand showing all fuel dispensed to any particular piece of equipment for any given period of time. All fuel transactions against any given pump for any period of time is also available.

The fuel module maintains two years of monthly fuel information for each piece of equipment including: quantity and cost of fuel and miscellaneous commodities; organization to which assigned when receiving these commodities; monthly mileage; and type of fuel. Many jurisdictions find this information of considerable value in preparing intra-jurisdiction fuel allocation programs, and in analyzing fuel consumption and costs.

SECTION 2

JOB FLOWS

SECTION 2.1

JOB STREAM OVERVIEW

FUEL

COMPONENT JOB STREAMS

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT: FUEL

JOB STREAM IDENTIFICATION	RUN FREQUENCY
Fuel Edit and Merge (EMFJØ1)	Daily
Fuel Pump Reconciliation (EMFJØ2)	Weekly
Monthly Consolidation and Delete (EMFJØ3)	Monthly
Detailed Fuel Transactions by Equipment No. (EMFJØ4)	On Request
Detailed Fuel Transactions by Pump No. (EMFJØ5)	On Request

SECTION 2.2.1

DAILY JOBS

FUEL

JOB STREAM PROGRAMS AND FILES

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

JOB NAME: Fuel Edit and Merge (EMFJ01)

RUN FREQUENCY: Daily

JOB STREAM PROGRAMS	COMPILED SIZE	FILES ACCESSED BY THIS PROGRAM
Sort (EMFU01)	55K	EMFF01 EMFF02
Edit (EMFP01)	46K	EMFF01 EMFF02 EMFF03 EMFF04 EMFF05 EMFF06
Sort (EMFU02)	55K	EMFF06 EMFF07

SECTION 2.2.1.1

DAILY JOB FLOWS

FUEL

PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

JOB FLOW

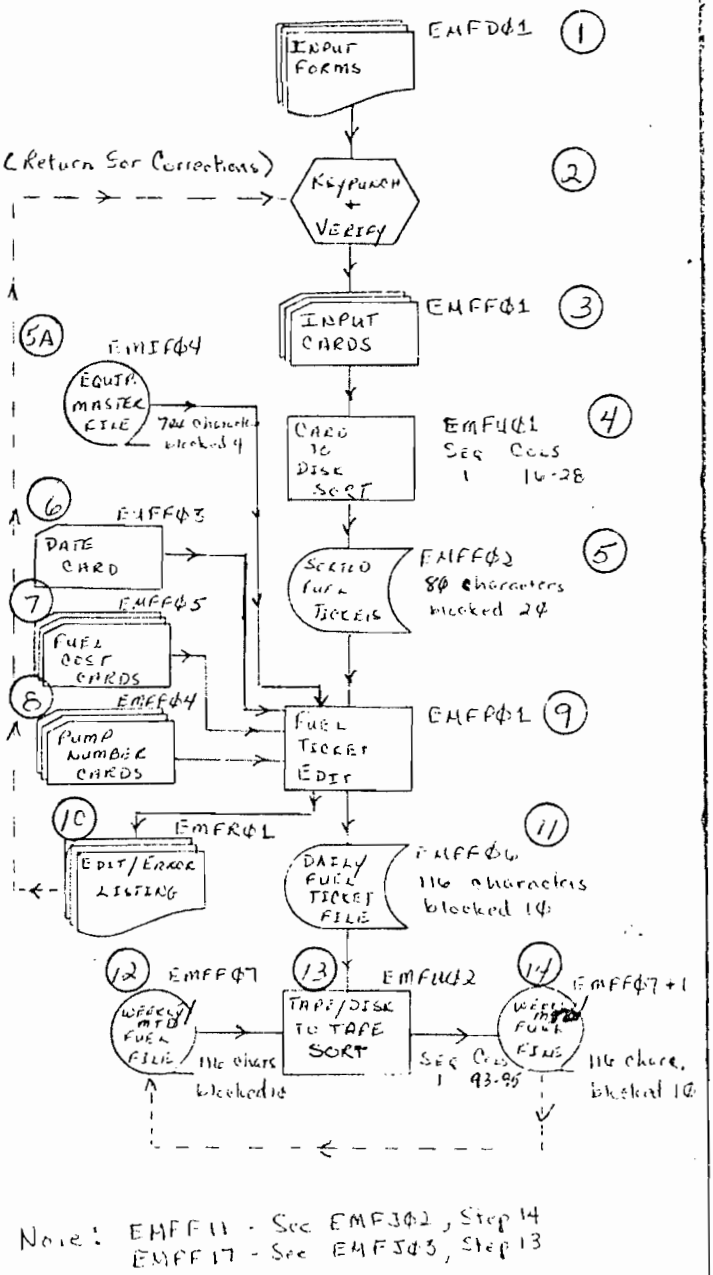
MODULE NAME: Fuel

JOB FLOW NUMBER: EMFJØ1

JOB FLOW NAME: Fuel Edit and Merge

FREQUENCY: Daily

JOB FLOW



NARRATIVE

(1) Fuel tickets are input.

(2) All tickets are keypunched and verified.

(3) Card input deck is sent to data processing.

(4) Card to disk sort of all input transactions.

(5) Sorted ticket file is input to fuel edit program.

(5A) Equipment Master File is input.

(6) Date card is input.

(7) Fuel cost cards are input.

(8) Pump number cards are input.

(9) Fuel edit program is run and checks as many error conditions as is feasible producing the following:

(10) An edit/error listing which is used for corrections

(11) And a valid fuel ticket file which is input to the tape/ disk sort.

(12) The weekly/mtd fuel file is the other file input to the sort. This file can be one of three - EMFF07 EMFF11 - or - EMFF17.

(13) Sort program is run and produces

(14) A merged fuel file.

*** mtd = month to date ***

SECTION 2.2.2

WEEKLY JOBS

FUEL

JOB STREAM PROGRAMS AND FILES

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

JOB NAME: Fuel Pump Reconciliation (EMFJØ2)

RUN FREQUENCY: Weekly

JOB STREAM PROGRAMS	COMPILED SIZE	FILES ACCESSED BY THIS PROGRAM
Pump Reconcilation (EMFPØ2)	46K	EMFFØ8 EMFFØ9 EMFF16 EMFFØ4 EMFFØ5 EMFFØ7

SECTION 2.2.2.1

WEEKLY JOB FLOWS

FUEL

PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

JOB FLOW

PAGE 1 of 1

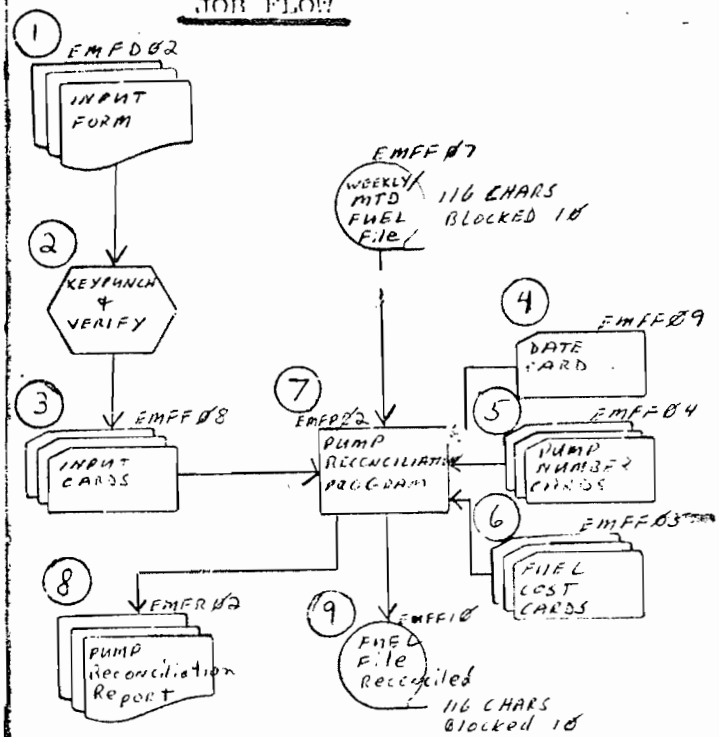
MODULE NAME Fuel

JOB FLOW NUMBER EMFJ02

JOB FLOW NAME Fuel Pump Reconciliation

FREQUENCY Weekly

JOB FLOW



NARRATIVE

(1) Pump reconciliation form

(2) Forms are keypunched and verified.

(3) Input cards are sent to data processing.

(4) Date card is input.

(5) Pump number cards are input.

(6) Fuel cost cards are input.

(7) Program reconciles all files and produces the following:

(8) The pump reconciliation report

(9) And a fuel file with the transaction code changed to indicate whether the data has been reconciled.

*** mtd = month to date***

SECTION 2.2.3

MONTHLY JOBS

FUEL

JOB STREAM PROGRAMS AND FILES

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

JOB NAME Monthly Consolidation and Delete (EMFJØ3)

RUN FREQUENCY: Monthly

JOB STREAM PROGRAMS	COMPILED SIZE	FILES ACCESSED BY THIS PROGRAM
Sort (FMFUØ3)	55K	EMFFIØ EMFFI1
Consolidation (EMFPØ3)	46K	EMFFI1 EMFFI2 EMFFI3 EMFFI4
Delete (EMFPØ4)	22K	EMFFI5 EMFFIØ EMFFIG

SECTION 2.2.3.1

MONTHLY JOB FLOWS

FUEL

JOB FLOW

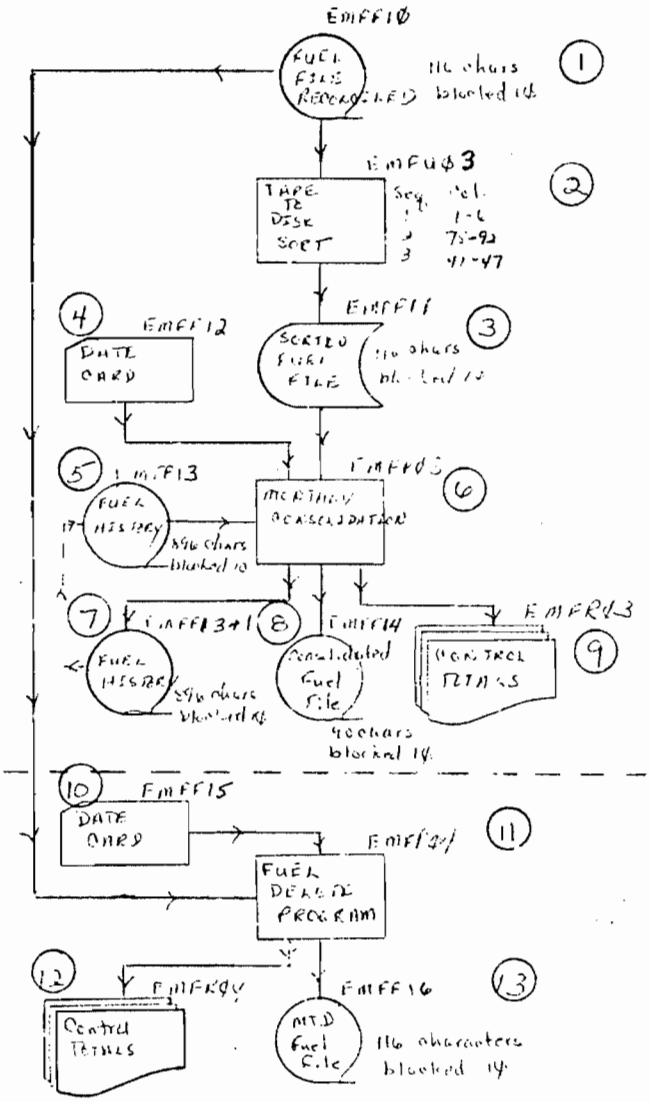
MODULE NAME: Fuel

JOB FLOW NUMBER: EMFJ03

JOB FLOW NAME: Monthly Consolidation and Delete

FREQUENCY: Monthly

JOB FLOW



NARRATIVE

(1) Reconciled fuel file is input

(2) Tape to disk sort of input

(3) Sorted fuel file is input to monthly consolidation program

(4) Date card is input.

(5) Fuel history file is input.

(6) Monthly consolidation program is r and produces the following

(7) An updated fuel history file

(8) A consolidated fuel file that will be used by the monthly master update program

(9) And a control total report.

---

(1) Reconciled fuel file is again input, this time to the fuel delete progra

(10) Date card is input.

(11) Fuel delete program is run and produces the following:

(12) A control total report

(13) And a fuel file with all reconciled transactions deleted.

*** mtd = month to date ***

SECTION 2.2.4

ON REQUEST JOBS

FUEL

JOB STREAM PROGRAMS AND FILES

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

JOB NAME: Detailed Fuel Transactions by Equipment (EMFJØ4)

RUN FREQUENCY: On Request

JOB STREAM PROGRAMS	COMPILED SIZE (specify unit of measure)	FILES ACCESSED BY THIS PROGRAM
Sort (EMFUØ4)	55K	EMFFIØ EMFFI7
Report Generator (EMFPØ5)	32K	EMFFI7 EMFFI8 EMFFI9 EMGFØ3

JOB STREAM PROGRAMS AND FILES

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

JOB NAME: Detailed Fuel Transactions by Pump (EMFJ05)

RUN FREQUENCY: On Request

JOB STREAM PROGRAMS	COMPILED SIZE (specify unit of measure)	FILES ACCESSED BY THIS PROGRAM
Sort (EMFU05)	55K	EMFF10 EMFF21
Report Generator (EMFP05)	32K	EMFF20 EMFF21 EMFF18 EMGF03

SECTION 2.2.4.1

ON REQUEST JOB FLOWS

FUEL

PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

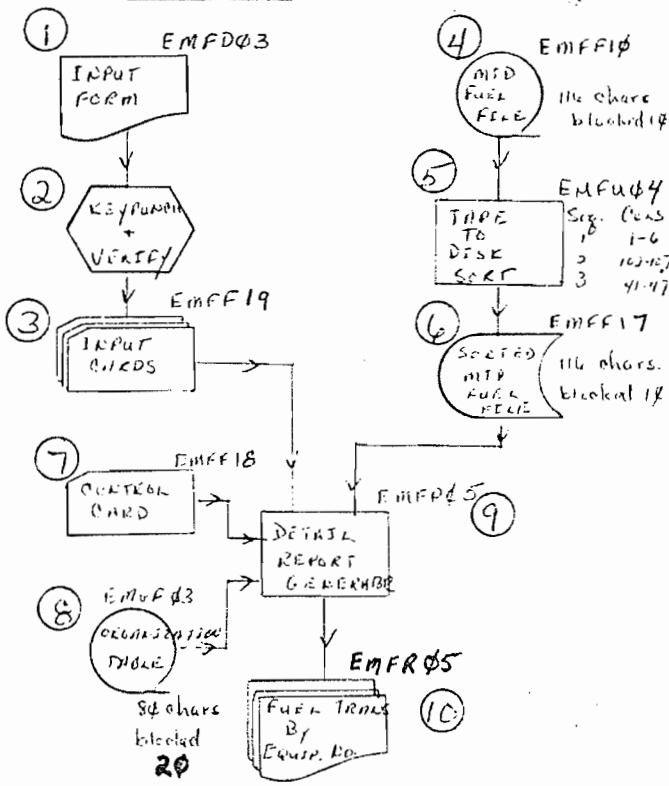
JOB FLOW

MODULE NAME Fuel

JOB FLOW NUMBER EMFJØ4

JOB FLOW NAME Detailed Fuel Transactions by Equip. FREQUENCY On Request

JOB FLOW



NARRATIVE

(1) Equipment select form is input.

(2) Form is sent to be keypunched and verified.

(3) Input cards are sent to data processing as input to detail report program.

(4) Mtd fuel file is input to sort

(5) Tape to disk sort of all input

(6) Sorted mtd file is input to report program.

(7) Control card is input.

(8) Organization table tape is input.

(9) The detail report program is run and it produces

(10) The detail listing of fuel transactions by equipment number.

*** mtd = month to date ***

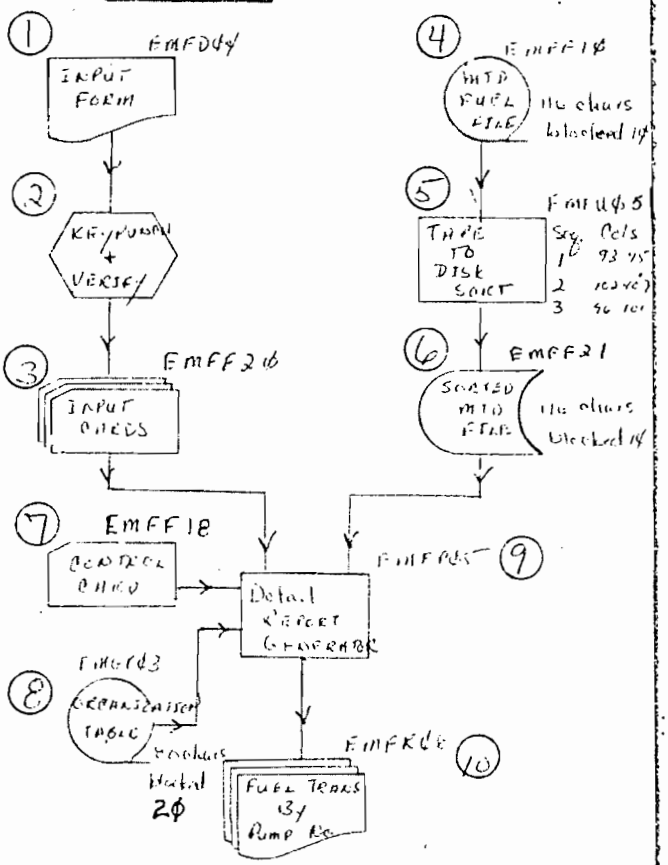
PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

JOB FLOW PAGE 1 of 1

MODULE NAME Fuel JOB FLOW NUMBER EMFJ05

JOB FLOW NAME Detailed Fuel Transactions by Pump FREQUENCY ON REQUEST

JOB FLOW



NARRATIVE

(1) Pump select form is input.

(2) Form is keypunched and verified.

(3) Input cards are sent to data processing as input to the detail report program.

(4) Mtd fuel file is input to sort.

(5) Tape to disk sort of all input

(6) Sorted mtd file is input to the detail program.

(7) Control card is input.

(8) Organizational table tape is input.

(9) The detail report program is run and it produces

(10) The detail listing of fuel transactions by pump number.

*** mtd = month to date ***

SECTION 3

PROGRAM DOCUMENTATION

SECTION 3.1.

FUEL EDIT

EMFP01

3.1.1

PROGRAM NARRATIVE

FUEL EDIT

PROGRAM NARRATIVE - FUEL EDIT

The purpose of this program is to edit all fuel input transactions.

The fuel data is recorded at the pumps as dispensed. These transactions are then key punched and placed on tape via a card to disk sort utility.

The sorted fuel transactions together with a series of card files are then entered into the edit program.

The fuel edit reads the data from the card files and after substantiating its correctness, uses this data to initialize internal tables.

Once this has been completed, it then reads individual fuel transaction records.

Each record in turn is verified for accuracy and matched against the equipment inventory master file for additional verification. Any errors detected are identified on the edit error listing.

If no critical errors are detected on a transaction, a record is written to a file of edited transactions.

SECTION 3.1.2

PROGRAM SPECIFICATIONS

FUEL EDIT

FUEL EDIT

PROGRAM SPECIFICATIONS

I. PURPOSE

The purpose of this program is to read the sorted fuel transactions, validate them against the Inventory Master File and several card files, and produce an error listing and the MTD fuel file containing valid transactions.

II. INPUTS

1. Fuel Transaction File (EMFFØ2)
2. Inventory Master File (EMFFØ4)
3. Period Ending Date Card (EMFFØ3)
4. Fuel Cost Cards (EMFF05)
5. Pump Number Cards (EMFFØ4)

III. OUTPUTS

1. Month-to-Date Fuel File (EMFFØ6)
2. Fuel Transaction Error Listing (EMFFØ1)

IV. The Period Ending Date Card, Pump Number Cards and Fuel Cost Cards are read, edited, and processed as follows:

A. Date Card Edit-

Pos. 1 - 6 must be "EMFPØ1
Pos. 7 must be blank
Pos. 8 - 9 "01" - "12"
Pos. 10 "/"
Pos. 11 - 12 "01" - "31"
Pos. 13 "/"
Pos. 14 -15 "75" - "80"
Pos. 16 -18 must be blank
(Pos. 8 - 80 can also be "NONE" followed by all blanks)

B. Pump Number Card Edit -

Position 1 must be "A-E:

Position 2 must be blank

Position 3-5 must be numeric

Position 6-78 must be blank

Position 79-80 must be "PN"

Maximum of 100 pump number cards allowed. There cannot be any duplicate pump number (Pos. 3-5)

C. Fuel Cost Card Edit -

Position 1 must be "A" - "I"

Position 2 must be blank

Position 3 must be numeric

Position 4 must be numeric

Position 5-6 must be numeric

Position 8-78 no edit

Position 79 - 80 must be "FC"

There cannot be any duplicate fuel type codes (Position 1)

Maximum of 15 cost cards allowed. If any of the above conditions are not met, print appropriate error message on both printer and console accoring to type of card in error as illustrated on report layout, and abort job.

Build two tables in core with data from the pump number cards and fuel cost cards as follows:

1. Pump number table:

   Position 1 - Fuel Type

   Position 2-4 - Pump Number

   Repeated up to 100 times, depending on number of cards

2. Fuel Cost Table:

   Position 1 - Fuel Type

   Position 2-4 - Fuel Cost (remove decimal)

After both tables are built, check to make sure every fuel type code in the Pump Number Table is represented in the Fuel Cost Table (Position 1 of both records). If not, print message as shown on printer layout chart on both printer and console and abort job.

Next, read the sorted fuel transactions and the Inventory Master File. Sequence check both of these files to ensure they are in correct sequence as shown on the systems flow chart. If not in correct sequence, print appropriate message shown on printer layout chart on both printer and console and abort job.

Edit each input transaction record as follows:

1. Pump Number - must be in pump number table. Error Message - "Invalid Pump Number - Transaction Rejected".
2. Ticket Number- must be all numeric. Error Message - "Invalid Ticket Number - Transaction Rejected".
3. Date-Month between Ø1 and 12; Day between Ø1 and 31; Year between 75 and 8Ø. Error Message - "Invalid Date - Transaction Rejected".
4. Vehicle Meter Reading - must all be numeric. Error Message - "Invalid Vehicle Meter Reading - Transaction Rejected".
5. Fuel - must be all numeric or all blank. If blank, set to zeros for later computation. Error Message - "Invalid Fuel - Transaction Rejected".
6. Oil - Edit and process same as Fuel.
7. Transmission Fluid - Edit and process same as Fuel.
8. Anti-Freeze - Edit and process same as Fuel. Error Message - "Invalid Anti-Freeze - Transaction Rejected".
9. Hydraulic Fluid - Edit and process same as fuel.
10. Mileage Over-Ride Code - must be "M" or blank.
11. There must be a non-blank numeric entry in at least one of the fuel, oil, transmission fluid, anti-freeze, or Hydraulic fluid fields. Error Message - "No Commodity Dispensed - Transaction Rejected".

12. Vehicle Number on Fuel Transaction must match with Vehicle Number on Inventory Master File Record, unless the Transaction Equipment Number is '999999' (non-vehicle), in which case . . . accept the transaction. If there is no message: "Invalid Vehicle Number - Transaction Rejected". Note: There can be one or more fuel transactions with the same vehicle (equipment) number. See Systems Flow Chart for exact sequence of files. There are four possible types of records on the master file for a given equipment number. Use status code "blank" (active vehicle), "1" (vehicle removed from fleet), "2" (vehicle reassigned), and "3" (vehicle deactivated). Use status codes "blank", "1", and "3" are mutually exclusive (only one record per equipment number on master file). The only other allowable combination is Use Code blank followed by intermediate number of Use Code "2" records with the same equipment number.

13. If there is a match on equipment number, and Use Code is "1" reject transaction with message: "Vehicle Removed from Fleet - Transaction Rejected".

14. If there is a match on equipment number and Use Code is "3", accept transaction with message: "Non-active Vehicle - Transaction Accepted".

15. If there is a match on equipment numbers and Use Code is blank, accept transaction and do not print message.

16. Ignore all Master File records with Use Code of "2".

17. Compare the Vehicle Meter Reading on the transaction with Current Meter Reading on the Master File (M/F). If Transaction Meter Reading is lower, reject transaction with message: "Trans Mileage XXXXXX.X Master Mileage XXXXXX.X-Trans Rejected". The first set of X's is mileage from transaction record, the second set is mileage from master record, exception to this is if Meter Failure Flag in M/F is on equal

to "1"), in which case accept the transaction, but print same message as above but change "rejected to "accepted".

18. Each group of Fuel Transaction Records for a given equipment number are in ascending order by meter reading. The increase in meter reading between each record in the group cannot be greater than 999. If greater, reject the one transaction which does not meet this test with message: "Excessive Mileage - Transaction Rejected"...and then continue making this test with the next set in the group. The only exception to this is if the mileage Over-Ride Code on the transaction record contains an "M" ...in which case, accept the record but print message: "Excessive Mileage - Transaction Accepted".

19. If the amount of fuel dispensed exceeds fuel tank capacity by more than 10% reject transaction with message: "Excessive Fuel Dispensed - Transaction Rejected". If fuel dispensed is between 100 and 110% of capacity accept transaction with message: "Fuel Dispensed between 100 and 110% of Capacity - Transaction Acceptable".

20. Compare fuel type dispensed (from Pump Number Table) with fuel type on Master Record for the vehicle. If they do not match, accept transaction, but print message: "Fuel not correct type for this vehicle - Transaction Acceptable". For every card image line printed on Error Report, print asterisks under the field(s) involved, corresponding card column(s) and error message(s). Edit every field of transaction and print as many error message lines (with asterisks and column numbers on same line as message) as necessary. Asterisks and column numbers of the starting and ending position of field in error are required for every edit listed above except numbers (11), (13), (14), (15), (16), and (20). These require only a message. Accumulate during processing and print at end of report control totals as shown on the attached report layout.

If the Fuel Transaction survives all the previously mentioned edits, a MTD Fuel Record is to be created as follows:

1. Vehicle Number (Equipment Number) - from Fuel Transaction.
2. APWA Code - From M/F, if non-vehicular (Equipment Number on Fuel Transaction is 999999), set APWA Code to blanks.
3. Vehicle Meter Reading - from Fuel Transaction.
4. Fuel (gals.) - from Fuel Transaction.
5. Fuel Cost - calculated by finding the Fuel Type distributed by the pump from the Pump Number Table, then finding the fuel cost per gallon for that type of fuel in the Fuel Cost Table and multipling that cost by the fuel gallons dispensed in the fuel transaction.

   Use the following table to convert Fuel Type Code in the Pump Number Table to a fuel type:

Fuel Type Code	Fuel Type
A	Regular
B	Low-Lead
C	Hi-Test
D	Diesel
E	Kerosene

6. Fuel Type - from Pump Number Conversion Table
7. Oil (Quarts) - from Fuel Transaction
8. Oil Cost - Fuel type code is "F". Find cost per quart from Fuel Cost Table. Multiply that cost by number of quarts dispensed on the fuel transaction to determine the oil cost.
9. Hydraulic Fluid (Quarts) - from Fuel Transaction
10. Transmission Fluid (Quarts) - from Fuel Transaction
11. Anti-Freeze (Quarts) - from Fuel Transaction

12. Misc. Cost - Determine cost of Hydraulic Fluid, cost of Transmission fluid and cost of Anti-Freeze. These values are calculated the same as oil cost, except for different fuel type codes shown in the above table. Miscellaneous cost is the sum of these three costs.
13. User Organization - from M/F - if non-vehicular transaction (Equip. No. = 999999) set to spaces
14. Fund Number - from M/F
15. Pump Number - from Fuel Transaction
16. Date - from Fuel Transaction
17. Vehicle Meter Reading Last Month - from M/F (Meter reading current month field on M/F). If non-vehicle, set to zeros.
18. Transaction Flag - set to "Ø"

If any commodities are zeros (set to zeros from spaces during edits) - the cost of that commodity will be zero.

SECTION 3.1.3

DEFINITIONS

FUEL EDIT

PROGRAM DEFINITIONS

SELECTED SWITCHES, COUNTERS, AND DATA ELEMENTS USED BY EMFPØ1

Switches, Counters, Data Elements	Use
LINE-CTR	Use to count the number of lines printed on a page to determine when the bottom has been reached.
PAGE-CTR	The accumulater for the page number.
PUMP-TBL-SUB	Subscript used when attempting to find a record in the pump table.
FUEL-CST-SUB	Subscript used when attemtping to find a record in the fuel cost table.
TOTAL-CTRS	These are the accumulators which are printed on last page of report.
CARD-INPUT-AREA	The read-in area for the card reader.
MASTER-IN-AREA	This is the read-in area for the master file.
MTD-FUEL-RECORD-OUT	The area in which the output record is built.
FUEL-COST-TABLE	The area in which the various fuel cost factors are stored. There is room for 15 items in this table.
PUMP-NO-TBL	Area in which the pump number data is stored. There is room for 100 items in this table.
FUEL-DISPERSEMENT-IN	This is the area in which the input transactions are read.

Switches, Counters, Data Elements	Use
TEMP-SW	This is a 1-character field used to store the value of the TRM-ERR-SW when an error is printed in subroutine 535-PRINT-ERR if the transaction is acceptable so as to reset whatever condition was applicable at the time of printing.
ERR-DETI	This area receives the card image which will print if an error is detected.
ERR-DET2	This area will contain the error message at time of print.
CUR-MAST-SEQ	This field is used to place the current equipment number for sequence checking.
PRV-MAST-SEQ	This area contains the equipment number of the previous master for sequence checking.
PUMP-CONV or PUMP-NO-9	This field is used to store the input number during table look-up.
TRN-ERR-SW	This switch is off when its value is 0, on when its value is 1. Any time an error is detected in any edit routine, this switch is set on. It is used by the main line of program to determine whether an input record is needed.
EOJ-SW	This switch is off when its value equals 0 and on when equal to 1. It is set on when an end file condition is determined in the input transaction record. This is tested

Switches, Counters, Data Elements	Use
	in the main-line routine to determine when the job should be closed.
CARD-ERR-SW	This switch is off when its value equals 0 and on when it indicates to the program that the card image line has been printed. It is used by paragraph 535-PRINT-ERR to print the card image only on the first line of error.
FUEL-COST-WORK	This field is used by the program to place the fuel cost from the input card into one field so it can properly be placed in its table.
CURR-TRAN-SEQ	This field is used to store information from the current transaction record for sequence checking.
PREV-TRAN-SEQ	This field is used to store information from the previous transaction record for sequence checking.
PUMP-THPE-CONV or PUMP-TYPE S9	These two fields are used so that the pump type, defined as "X" in input, can be used for calculation by redefining it as "S9".
EOF-MAST	This switch is off when its value equals 0, on when equal to 1. It is set on when an end file condition is detected on the master file. This is tested in the routine to determine whether there is a no-match routine of the master file against the transaction file.
PAGE-END	This field contains the number of lines in a page and is installation-oriented. It is checked against an accumulation of the

Switches, Counters, Data Elements	Use
	number of lines in field called LINE-CTR.
OK-SW	This switch is set to 0 (off) if the transaction in paragraph 540-TEST-NO-DISP is acceptable. It is set to 1 if this transaction is rejected and is used to adjust the condition of the program after printing this error line.

SECTION 3.1.4

PARAGRAPH EXPLANATIONS

FUEL EDIT

PARAGRAPH EXPLANATIONS

Program Concept Detail Information

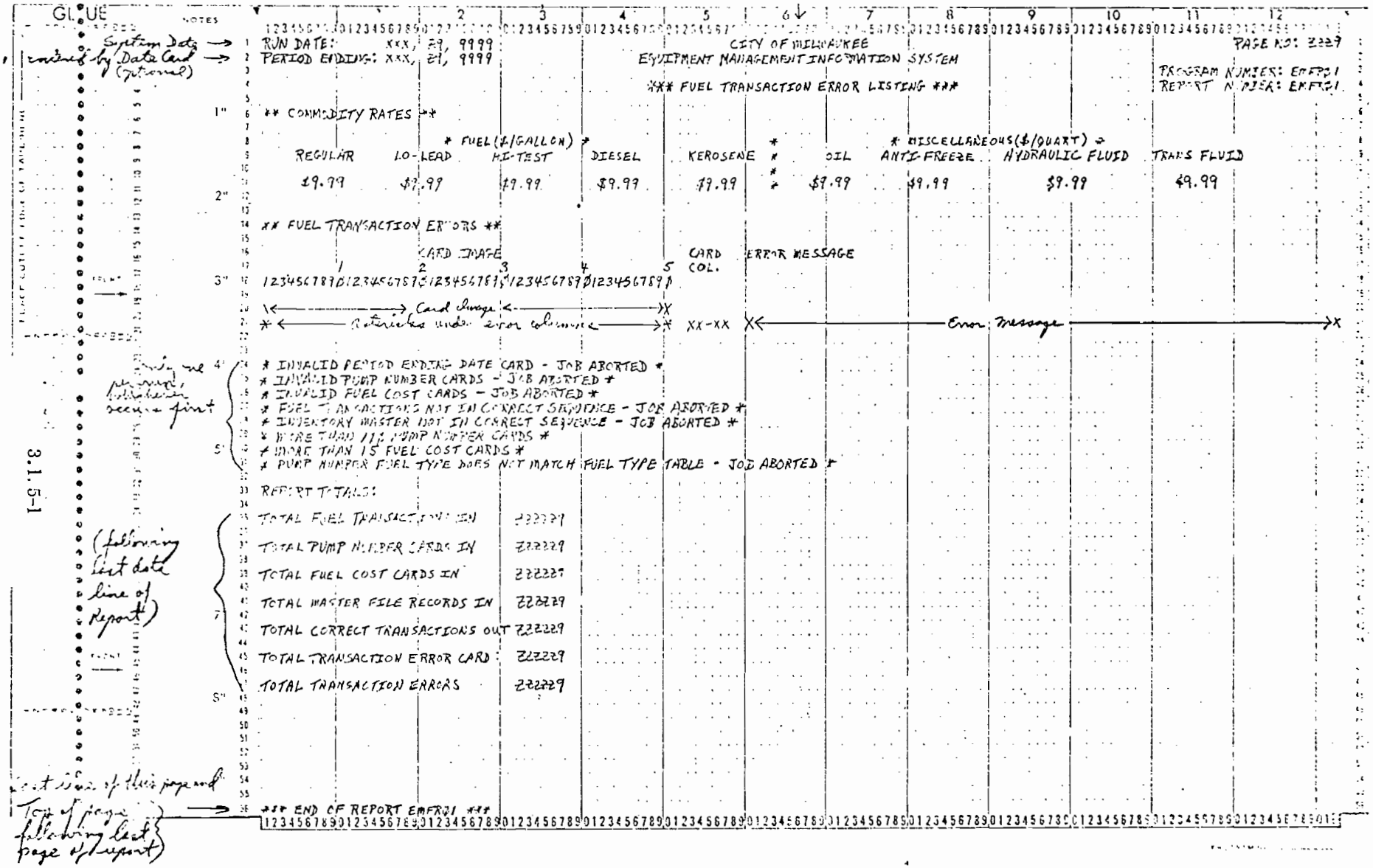
The following is a conceptualized idea of how the edit program functions. It is not intended to be a detailed document, but rather a reference to be used with the program specifications, the actual program listing, and the input forms.

Paragraph Numbers	Functions
100 through 110	Open files, read the preload records, load tables, and head the first page.
200	The main line of the program.
300	Perform routines at end of job.
500	Reads the date card, edits it, and uses this information in initialization.
510	Edits and loads the pump and fuel cost tables.
535	Performs all the various edits on the input transaction record.
540	Reads the master record and performs all the edits utilizing this master record.
545	Builds and writes the output tape record.
900	Opens the files.
905	Reads the transaction records.
910	Reads input from the card reader.
915	Writes the page heading and provides the program with write lines of various type spacing.
920	Closes the various files and ends the run.
925	Reads the inventory master file.
930	Writes the output record.

SECTION 3.1.5

REPORT LAYOUTS

FUEL EDIT



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3.2

FUEL PUMP RECONCILIATIONS

EMFPØ2

SECTION 3.2.1

PROGRAM NARRATIVE

PUMP RECONCILIATION

PUMP NARRATIVE - PUMP RECONCILIATION

The purpose of this program is to verify that the weekly pump readings balance against fuel ticket transactions.

To accomplish this, the program reads a series of inputs from the card reader and tape. One of the items read from the card reader is a file of pump numbers with starting and ending readings. The file read from tape are the fuel transactions for a week which have been edited in the Fuel-Edit program (EMFPØ1) and sorted into pump number sequence.

The output of the program produces a report and a tape. The printer report shows the results of the comparison by pump number and various totals. The tape produced is an image of the input record with changes made to the transaction code.

SECTION 3.2.2

PROGRAM SPECIFICATIONS

PUMP RECONCILIATION

PUMP RECONCILIATION

PROGRAM SPECIFICATIONS

I. Purpose

The purpose of this program is to edit the pump reading cards and if there are no errors, produce the pump reconciliation report, which compares fuel pump readings with fuel tickets, by both pump number and fuel type.

II. Inputs

1. Month-to-Date Fuel File
2. Pump Reading Cards
3. Period Ending Date Card
4. Pump Number Cards
5. Fuel Cost Cards

III. Outputs

1. Month-to-Date Fuel File
2. Pump Reconciliation Report

IV. Processing

The Period Ending Date Card, Pump Number Cards, and Fuel Cost Cards are read, edited and processed as follows:

A. Date Card Edit -

Position 1-6 must be "EMFPØ2"

Position 7 must be blank

Position 8-9 must be "Ø1-12"

Position 10 must be "/"

Position 11-12 must be "Ø1-31"

Position 13 must be "/"

Position 14-15 must be "75-8Ø"

Position 16-80 must be blank

Position 8-80 can also be "NONE" followed by all blanks.

B. Pump Number Card Edit -

Position 1 must be "A-E"

Position 2 must be blank

Position 3-5 must be numeric

Position 6-78 must be blank

Position 79-80 must be "PN"

Maximum of 100 pump number cards allowed.

There cannot be any duplicate pump numbers (position 3-5).

C. Fuel Cost Card Edit -

Position 1 must be "A-I"

Position 2 must be blank

Position 3 must be numeric

Position 4 must be numeric

Position 5-6 must be numeric

Position 7 must be blank

Position 8-78 do not edit

Position 79-80 must be "FC"

There cannot be any duplicate fuel type codes (position 1).

Maximum of 15 cost cards allowed.

If any of the above conditions are not met, print appropriate error message on both printer and console according to type card in error as illustrated on report layout, and abort job.

Build two tables in core with data from the pump number cards and fuel cost card as follows:

1. Pump number table:

   Position 1 - Fuel Type

   Position 2-4 - Pump Number

   Repeated up to 100 times, depending on number of cards.

2. Fuel Cost Table:

   Position 1 - Fuel Type

   Position 2-6 - Fuel Cost (remove decimal)

   Repeated up to 15 times depending on number of cards.

After both tables are built, check to make sure every fuel type code in the Pump Number Table is represented in the Fuel Cost Table (Position 1 of both records). If not, print message as shown on printer layout chart on both printer and console, and abort job.

Read the Pump Reading Cards. They will not be in any particular sequence. Edit each card as it is read as follows:

1. Pump Number - must be in pump number table.
2. Filler (field 2) - must be blank.
3. Pump Reading on - must be numeric and must have decimal in correct position.
4. Filler (field 4) - must be blank.
5. Date on - MM must be between Ø1-12.
   Date on - DD must be between Ø1-31.
   Date on - YY must be between 75-8Ø.
6. Filler (field 6) - must be blank.
7. Pump Reading Off - must be numeric and must have decimal in correct position. Must be greater than Pump Reading On unless there is an "X" in Pump Reading Bypass Flag field.
8. Filler (field 8) - must be blank.
9. Date Off - Same edit date on. Also, must be greater than date on.

10. Filler (field 10) - must be blank.

11. Pump Reading Bypass Flag - must be blank or "x".

12. Filler (field 12) - must be blank.

13. No duplicate pump numbers (only one card per pump number)

If there are any errors, print card image, asterisks under column(s) in error, column number (s), and appropriate error message. Edit every card and every field on each card. If there are one or more errors in the above edit, print program totals and normally end job.

As cards are read, build internal table in following format:

Pump Number	x(3)
Pump Reading on	9(6)V9
Date on	YYMMDD

Read the MTD Fuel File. Check file sequence and if sequence is incorrect, print appropriate message shown on printer layout chart on both printer and console, and abort job.

MTD Fuel File is in pump number sequence. There will be an indeterminate number of fuel records per pump number. There will be a transaction flag, "1", "2" and "3" on the file. Process only "Ø" and "2" records, since these have not been previously reconciled. From each MTD Fuel record, accumulate Fuel gallons by pump number and Fuel Type and grand totals for pump number section of the report. On MTD Fuel file pump number breaks, print a line of the report after matching fuel file pump number against pump reading pump number stored internally. On the report, get pump number, pump reading on, pump reading off, pump reading period from matching pump reading card data. Gallons dispensed = (Pump Reading Off-Pump Reading On). Gallons reported on Fuel Tickets and Fuel Type come from MTD Fuel File. Gallons Difference = (Gallons Reported on Fuel Tickets - Gallons Dispensed). Accumulate grand total for gallons dispensed.

If there is no match on pump number, print what data there is available according to the following rules:

A. Fuel File data but no Pump Reading data - Print Pump Number Fuel from fuel tickets, difference, and fuel type and "(NONE REPORTED)" under Pump Reading on/Pump Reading off fields.

B. Pump Reading Data but no Fuel File data - print all fields except Fuel from fuel tickets. Print "(NONE REPORTED)" under this field.

C. Neither Fuel File or Pump Reading Data - Obtain and print pump number and fuel type from Pump Number Table and "(NONE REPORTED)" in both fields as in A and B above.

Note: Report must be in pump number sequence and there must be an entry for all pumps in the pump number table. For every MTD Fuel File record processed (Trans. flag of Ø or 2), which matches an entry in the pump reading table, change the trans. flag on that MTD fuel type as shown on report layout.

Use the following terminology for fuel type on both sections of the report. (Section by pump number and section by fuel type):

GAS - REGULAR

GAS - LOW LEAD

GAS - HIGH TEST

DIESEL

KEROSENE

Report by fuel type calculation formulas are as follows:

a. Percent Difference = $\frac{\text{Quantity Difference}}{\text{Quantity Dispensed}} \times 1ØØ$

b. Cost of Difference = Quantity Difference x Cost per Unit (from fuel cost cards)

On report by fuel type, print fuel type in the order shown on page 3.2.2-6.

Print program totals, which should be self explanatory, except that: MTD Fuel Records Reconciled = Trans. code "Ø" changed to "1" and trans. code "2" changed to "3". MTD Fuel Records Prev. Reconciled - trans. code "1" not changed and trans. code "3" not changed.

MTD Fuel Records Unreconciled - trans. code "Ø" not changed and trans. code "2" not changed.

SECTION 3.2.3

DEFINITIONS

PUMP RECONCILIATION

PROGRAM DEFINITIONS

SELECTED SWITCHES, COUNTERS AND DATA ELEMENTS USED BY EMFPØ2

Switches, Counters, Data Elements	Use
ERROR-READ	Switch which is set on indicates an error is detected in reading a pump-read card. It is used to determine if a forced end of program is required after reading the last pump-read card.
PUMP-DZ-TABLE	A subscript used in the subroutine to check if the pump number in the fuel transaction file is in the pump table.
LINE-CTR-MAX	The value against which the field LINE-CTR is checked to determine if at the bottom of a page.
READ-ERR-SW	Set if an error is detected in reading an individual pump-read card to eliminate printing the card image on each error line printed for this card.
LINE-CTR	Accumulator which contains the count of the lines printed on this page. See LINE-CTR-MAX.
PAGE-CTR	Accumulator for printing the page number on the first heading line.
PUMP-SUB	Subscript used in loading the pump table.
TOTAL-INF	Field used to calculate and print the dispensed amount.
HOLD-MTD	Contains a "1" or "0" and set in routine which determines if the input fuel transaction pump number is in the pump table.

Switches, Counters, Data Elements	Use
TOTAL-INFL	Accumulator to print the total dispensed in the total line of the detail report.
CARD-INPUT-AREA	Area to which the input cards are read.
COST-TABLE	Table of 15 items to store data from the cost cards.
PUMP-NUMBER-TABLE	Table of 101 items to store data from the pump-number cards.
PUMP-READING-TABLE	Table of 100 items to store data from the pump-read cards.
FUEL-TYPE-TOT-TABLE	Table of 9 items into which are accumulated the various fields for the second last page of the report.
R-OF-A	Field used to eliminate the period from the read fields input cards where the data is punched with a decimal point.
PREV-PUMP-NO	Stores the pump number of the fuel transaction record for sequence checking.
FUEL-TYPE-S9	Subscript used to load the cost table and check fuel types.
MATCH-SUB	Subscript used in conjunction with the pump number table.
C9V99	Field used to eliminate the period from the cost fields of the input cards where the data is punched with a decimal point.
MTD-FUEL-RECORD-IN	Work area for the input fuel transaction record.
DATE-WORK2	Area to store the system date.

Switches, Counters, Data Elements	Use
COUNTERS-AREA	Various accumulators for the last page of the report.
EOF-MTD-SW	Set on when the end of file condition is found on the input fuel transaction file.
YMD-1-WORK2	Area to reconstitute the date into YY/MM/DD.
READ-SUB	Subscript to find a section in the pump-read table.

SECTION 3.2.4

PARAGRAPH EXPLANATIONS

PUMP RECONCILIATION

PARAGRAPH EXPLANATIONS

Program Concept

The following is a conceptualized idea of how the pump reconciliation program works. It is not intended to be a detailed document, but rather a reference to be used with the program specifications, the actual program listing, and the input forms.

Paragraph Numbers	Function
100	Clears the tables
105	Reads and processes the period ending card and writes the first heading line. It then reads and edits the pump number cards and places them in the Pump Number Table. The cost cards are then read, edited and placed in the cost table. Finally, the pump-read cards are read, edited and placed in their tables.
110	Verifies that the fuel types in the pump-read cards have a corresponding fuel type in the cost table.
200	Performed only once after reading the last pump-read card. If an error is detected in the pump-read cards it goes to end of program after printing the last page or else it finishes the page heading on the first page and reads the first fuel transaction record.
205	This is the start of the main-line routine. The program determines what to do at end of job or end of pump table or both.

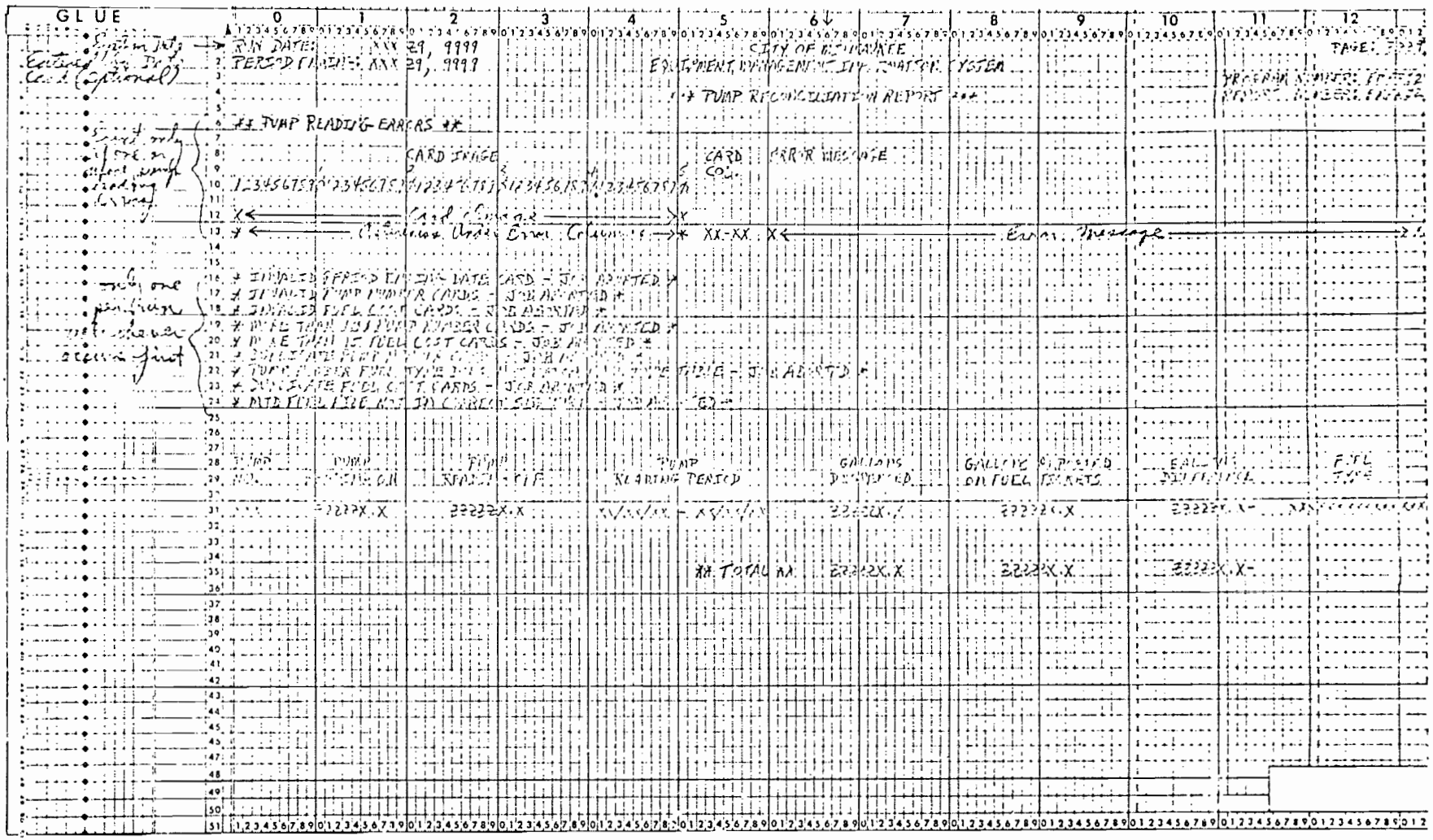
Paragraph Numbers	Function
210 and 220	The program tries to find the pump number in the fuel table and sets up the transaction flag accordingly and writes an output fuel record. It accumulates the gallons and reads another record. If there is no control break it goes back to paragraph 205. If there is a control break, it sets up the print lines and returns to paragraph 205.
900-Open-Files	Opens the various input and output files.
900-Find-Read Pump through 900-Find Exit	This is used to check if the pump number in the input fuel transaction record is in the pump file. It sets the HOLD-MTD field with "1" if found or "0" if missing.
900-EOJ Through 900-Close-Files	The end of program processing.
920	Reads and sequence checks the fuel transaction file.
925	Writes the output fuel transaction record.

SECTION 3.2.5

REPORT LAYOUTS

PUMP RECONCILIATION

EMFR02 - PUMP RECONCILIATION



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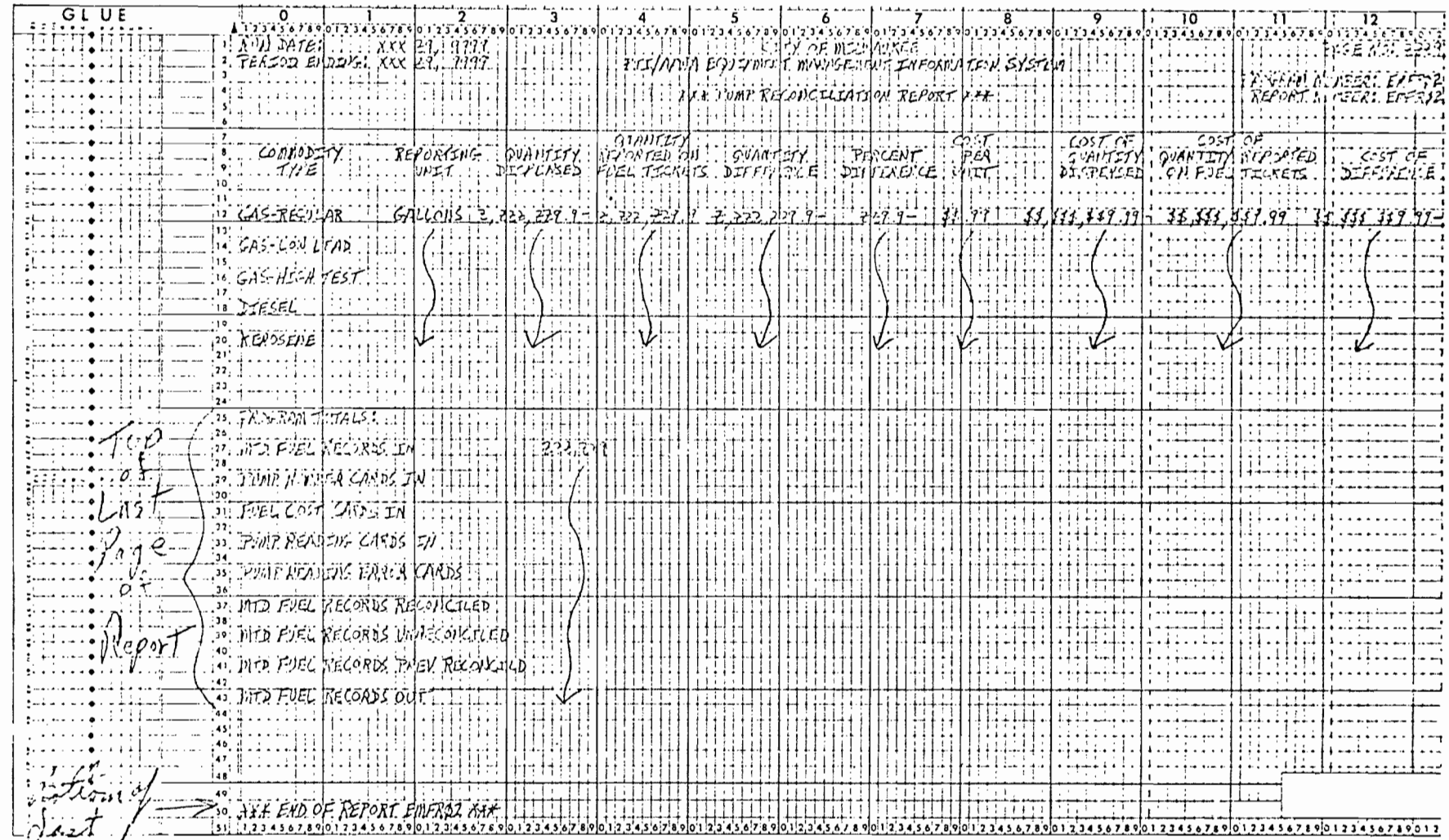
EMFR02 - PUMP RECONCILIATION



3.2.5-2

SECTION 3.3

MONTHLY FUEL CONSOLIDATION

EMFP03

SECTION 3.3.1

PROGRAM NARRATIVE

MONTHLY CONSOLIDATION

PROGRAM NARRATIVE - MONTHLY CONSOLIDATION

The purpose of this program is to take the information from detail fuel transactions for a month, accumulate them, and add them to output tapes, namely:

1. Fuel history tape containing fuel consumption by vehicle for the last 24 months.
2. Monthly consolidated fuel tape containing fuel data for one vehicle (on one record) for the month, which is to be used as input for monthly update program (EMGPØ6).

When the program reads the date card, it checks column 16 for a blank or a "1". If it is a "1", it indicates to the program that there is no history input tape. This facility is utilized for the first pass-through of this program.

SECTION 3.3.2

PROGRAM SPECIFICATIONS

MONTHLY CONSOLIDATION

MONTHLY CONSOLIDATION

I. PURPOSE

The purpose of this program is to match MTD Fuel File records with Fuel History File Records to update the Fuel History File. Fuel History records may also be added or deleted. The Fuel History File contains historical fuel data for a 2-year period. The Monthly Consolidated Fuel File is also created.

II. INPUTS

1. Month-to-date Fuel File
2. Fuel History File
3. Period Ending Date Card

III OUTPUTS

1. Updated Fuel History File
2. Monthly Consolidated Fuel File
3. Program Control Totals

IV PROCESSING

The period ending date card is read, edited, and processed as follows:

Date Card Edit

Position 1-6 must be "EMFPØ3"

Position 7 must be blank

Position 8-9 must be "Ø1-12"

Position 10 must be "/"

Position 11-12 must be "Ø1-31"

Position 13 must be "/"

Position 14 must be "75-8Ø"

Position 16-80 must be blank

NOTE: The first time the program is run, there will be no History File input, only the MTD Fuel File. Therefore, allow for a "1" in Col. 17 of the date card to indicate to the program not to open, read or close the input History File.

After a History File has been created, this coding may be removed from the program (if desired). When this option is used, code the program so that every set of MTD Fuel records for a given Fund number will produce a History File output record. Option - position 8-8Ø can also be "NONE" followed by all blanks. Date Card must be present. If Date Card edit fails, print message on both printer and console (see format on printer layout chart) and abort job.

Read the MTD Fuel File and Fuel History File, sequence check both files according to file sequence shown on Systems flowchart. If either file is out of sequence, print message on both printer and console (see format on printer layout chart) and abort job. Process only "Ø" and "1" trans flag records on MTD fuel file, as "2" and "3" records were consolidated in previous month's runs.

Match records from these two files by Equipment Number, Organization, and Fund Number. For a given equipment number there can be multiple records with different organizations and different fund numbers. The MTD Fuel File will have one or more records for a given fund number, in ascending order by vehicle meter reading. The history file will have only one record for a unique combination of equipment number, organization, and fund number. This combination will hereafter be referred to as the "key".

As MTD Fuel records are being read, accumulate fuel gallons, fuel cost, oil quarts, oil cost and miscellaneous cost by fund number.

There are three possible outcomes and procedures to follow as the MTD Fuel File and Fuel History File read and matched on the key. These are:

A. The two files match on the key - update history record and create Consolidated Fuel Record.

B.. MTD Fuel record(s) but no matching History record - create new history record. Sets 2-24 on History record should be set to all blanks. All data on set 1 plus equipment number, APWA code, Organization and Fund come from MTD Fuel File. Create Consolidated Fuel Record.

C. History record but no MTD Fuel record(s) - write History record to updated History file unless all 24 data sets contain zeros. This means there has been no activity on this vehicle/organization/fund for 2 years and the record must be deleted. Do not create Consolidated Fuel Record.

For Fuel History records processed as in A and C above, move each set of accumulators one set to the right. This will cause the oldest set to "fall-off" the record after 24 months. For Fuel History Records processed as in C above, move zeros to set 1 of the Fuel History output record. For Fuel History Records processed as in A and B above, compute the following for set 1 (leftmost set) of the fuel history output record:

1. Month/Year - Move Month/Year from date card.
   If "NONE" option, use system date month and year.
2. Monthly Files - Find MTD Fuel Record with highest vehicle meter reading. From this, subtract vehicle meter reading last month, found on the same record. Move result to Monthly Files field of History file.
3. Fuel (gallons) - Total fuel gallons of group of all MTD fuel records which matched on key.
4. Fuel Cost - Total Fuel cost of group of all MTD fuel records which matched on key.
5. Fuel Type - Move from highest mileage MTD fuel file record.
6. Quarts Oil - Total oil quarts from same group of records as 3 above.
7. Oil Cost - Total oil cost from same group of records as 3 above.
8. Miscellaneous Cost - Total miscellaneous cost from same group of records as 3 above.

Create one monthly consolidated fuel file record for each key group of MTD Fuel records, as in A and B above, as follows:

1. Equipment Number - from highest mileage MTD Fuel Record.
2. Organization - from highest mileage MTD Fuel Record.
3. Miles drive in month - same value as computed for history record above.
4. Month end mileage reading - from vehicle meter reading field from highest mileage MTD Fuel Record.
5. Fuel (gallons) - same value as computed for history record above.
6. Fuel Cost - same value as computed for history record above.
7. Quarts Oil - same value as computed forhistory record above.
8. Oil Cost - same value as computed for history record above.
9. Miscellaneous cost - same value as computed for history record above.

SECTION 3.3.3

DEFINITIONS

MONTHLY CONSOLIDATION

PROGRAM DEFINITIONS

SELECTED SWITCHES, COUNTERS AND DATA ELEMENTS USED BY EMFPØ3

CARD-IN	The various fields of the date input card
TOTAL-COUNTERS	Various fields accumulate the counts for the printout
MTD-FUEL-RECORD-IN	Contains the various fields into which the fuel transaction records are read
FUEL-HISTORY-RECORD-IN	Contains the various fields into which the history records are read
SUMMARY-FIELDS	Contains various accumulators to summarize the necessary data for an equipment number of the detail read on the fuel transaction file.
FUEL-HISTORY-RECORD-OUT	Same as FUEL-HISTORY-RECORD-IN except the monthly data have been moved one month to the right and current month's data has been added to it.
HIST-SEQ	Fields required to sequence check the history file
HOLD-HIST-SEQ	The sequence fields of the previous history record
CURR-MTD-FUEL-IN-SEQ	Various fields to sequence check the fuel transaction file and determine whether a control break exists
PERV-MTD-FUEL-IN-SEQ	Contains the various fields of the previous transaction record at control break

EOF-HIST-SW	This switch indicates whether an end of file has been detected on the history file. The switch is 0 when off and 1 when on.
EOF-MTD-FUEL-IN-SW	This switch indicates whether an end of file has been detected on the fuel transaction record. The switch is Ø when off and 1 when on.
HIST-0-SUB and HIST-1-SUB	These subscripts are used to move the monthly history information one field to the right.
MTD-FUEL-IN-PREV-STORE	These fields store the necessary data from the previous fuel transaction record so the proper information can be placed in a new history or consolidated output record upon detection of a control break.
HIST-BUILD-AREA	These fields are used to store the history information which is later transferred to the proper field to write the history output record.
CONSOLIDATED-MO-FUEL-REC-OUT	The area in which the output consolidated fuel record is written.

SECTION 3. 3. 4

PARAGRAPH EXPLANATIONS

MONTHLY CONSOLIDATIONS

PARAGRAPH EXPLANATIONS

Program Concept

The following is a conceptualized idea of how the monthly consolidation program works. It is not intended to be a detailed document, but rather a reference to be used with the program specifications, the actual program listing, and the input forms.

Paragraph Numbers	Functions
100	Open various files.
101	Read and process the date card to determine whether this covers a date, no date and whether there is a history input file.
102	The initial read of both files.
210	Sequence checks the transaction fuel record, determine whether there has been an equipment break, and if not, adds this fuel record to the various accumulators.
225	Determines the type of processing when a fuel break has been detected.
250	Writes a history record only from the input history record. This is done if there are no matching fuel transactions for a history input record.
300	Writes an updated history record and a consolidated history record. This is done if there are matching fuel transaction records for a history input record.

350	Write a new history record and a consolidated record. This is done if there are new transaction records with no history record.
400	Fill the various fields required for a history record in a hold area.
420	Fill various fields required for a consolidated record and write it.
901	Read and process a history record.
905	Read and process a fuel transaction record.
910	Actually write a history record.
920	Actually write a consolidated record.
940	Print the report on the line printer.
950	Print page heading.
960	Abort routine.
990	Close files and stop run.

SECTION 3.3.5

REPORT LAYOUTS

MONTHLY CONSOLIDATIONS

GLUE

RUN DATE: XXX 29, 9999
BEGIN EDIT: XXX 29, 9999

CITY OF WILMINGTON
EQUIPMENT MANAGEMENT INFORMATION SYSTEM
*** MONTHLY CONSOLIDATION CONTROL TOTALS ***

PAGE NO:
PROGRAM NUMBER: EMF#3
REPORT NUMBER: EMF#3

MTD FUEL RECORDS IN	7,777,777
FUEL HISTORY RECORDS IN	7,777,777
FUEL HISTORY RECORDS ADDED	7,777,777
FUEL HISTORY RECORDS DELETED	7,777,777
FUEL HISTORY RECORDS UPDATED	7,777,777
FUEL HISTORY RECORDS OUT	7,777,777
CONSOLIDATED FUEL RECORDS OUT	7,777,777

* INVALID PERIOD ENDING DATE CARD - JOB ABORTED *
* MTD FUEL FILE NOT IN CORRECT SEQUENCE - JOB ABORTED *
* FUEL HISTORY FILE NOT IN CORRECT SEQUENCE - JOB ABORTED *

*** END OF REPORT EMFR#3 ***

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SECTION 3.4

RECORD DELETE

EMFPØ4

SECTION 3.4.1

PROGRAM NARRATIVE

RECORD DELETE

PROGRAM NARRATIVE - RECORD DELETE

The purpose of this program is to remove those fuel transactions from the MTD fuel file which have been reconciled with the pump reconcilation program. The output tape of this run therefore contains only unreconciled records which will be treated as new items next month by entering them into the sort prior to program EMFPØ2, Pump Reconciliation.

SECTION 3.4.2

PROGRAM SPECIFICATIONS

RECORD DELETE

MONTHLY DELETE

PROGRAM SPECIFICATIONS

I. PURPOSE

The purpose of this program is to delete all records from the MTD fuel which have been previously reconciled against pump readings.

II. INPUTS

1. MTD Fuel File
2. Period Ending Date Card

III. OUTPUTS

1. MTD Fuel File
2. Control Totals

IV. PROCESSING

The period ending date card is read and edited using the identical procedure as in program no. EMFPØ5 (Monthly Consolidation). This date card should always be identical in format and content as the date card used for the monthly consolidation, (except for a different program identifier), since EMFPØ3 and EMFPØ4 should be executed in the same job stream. Read the MTD Fuel File. Delete all records with a "1" or "3" in transaction flag field (these records have been reconciled by the Pump Reconciliation Program). Write records with a "2" in transaction flag field to the MTD Fuel Output File but do not change the transaction flag. Write records with Ø transaction flag to MTD output file but change transaction flag to "2". Accumulate control totals and print per attached report format at end of job.

SECTION 3.4.3

DEFINITIONS

RECORD DELETE

PROGRAM DEFINITIONS

SELECTED SWITCHES, COUNTERS AND DATA ELEMENTS USED BY EMFPØ4

Switches, Counters, Data Elements	Use
MTD-FUEL-RECORD-IN	The area into which an MTD Fuel Transaction record is read.
DATE-CARD	The area into which the period-ending date card is read.
COUNT-IN	The various accumulators which print on the output printer.
COUNT-DELETED	Number of records deleted
LINE-COUNT	Accumulator to count the number of lines on the printed page.
LINE-MAX	A constant containing the number of lines (installation oriented) on a page.
LINE-VALUE	A calculated amount to print the signoff on the bottom of the page of the printout. It equals the LINE-MAX less LINE-COUNT.
SYSTEM-DATE	The area used to store the date obtained from the operating system.
MONTH-CONVERSION-TABLE	A table used to convert the numeric date to 3 position alpha for the page heading lines.

SECTION 3.4.4

PARAGRAPH EXPLANATIONS

RECORD DELETE

PARAGRAPH EXPLANATIONS

Program Concept

The following is a conceptualized idea of how the delete program works. It is not intended to be a detailed document, but rather a reference to be used with the program specifications, the actual program listing, and the input forms.

Paragraph Numbers	Processing
100	Gets the system date and opens the files.
200 to 250	Gets the period-ending control card, edits it and initialized the necessary areas requiring this date.
300 to 310	Main line processing routines which get the tape file and write it out if it is not marked for delete.
810	Reads the period-ending control card.
820	Reads the MTD Fuel Transaction Record.
840	Writes the MTD Fuel Transaction Record.
850	Writes the bad date indication on the printer.
900	Does the end of file processing by printing the report.
910	Opens the files.
950	Closes the files and stops the run.

SECTION 3.4.5

REPORT LAYOUTS

RECORD DELETE

GLUE

Ending Date entered by parm card (optional) → PERIOD ENDING: XXX 29, 9999

RUN DATE: XXX 99, 9999 CITY OF MILWAUKEE PAGE NO:

EQUIPMENT MANAGEMENT INFORMATION SYSTEM

PROGRAM NUMBER: EMFR04

*** MONTHLY DELETE CONTROL TOTALS ***

REPORT NUMBER: EMFR04

MTD FUEL RECORDS IN 222229

MTD FUEL RECORDS DELETED 222229

MTD FUEL RECORDS OUT 222229

* INVALID PERIOD ENDING DATE CARD - JOB ABORTED *

Last line of this page and top of following blank page → *** END OF REPORT EMFR04 ***

SECTION 3.5

REPORT GENERATOR

EMFPØ5

SECTION 3.5.1

PROGRAM NARRATIVE

REPORT GENERATOR

PROGRAM NARRATIVE - REPORT GENERATOR

This program is a basic report generator for the fuel module and will produce two different reports upon request. To obtain the wanted report, the program requires an input card which specifies the output type.

The program will produce individual reports from fuel records by vehicle or pump number for:

1. All Vehicles or pumps on the input fuel tape, or selected vehicles or pumps.
2. Records up to and including those of the date specified on the input card.
3. Records between a starting and ending date as specified on input card.
4. Combinations of the above.

If the program is to provide a selected vehicle or pump report, it also requires a set of input cards specifying the selected vehicles or pumps required.

The input fuel records must be presorted:

1. Meter reading within date within vehicle number.
2. Ticket number within date within pump number.

The program does a fairly extensive edit of the input control card and vehicle or pump select cards to assure that the proper report is selected by the program.

SECTION 3.5.2

PROGRAM SPECIFICATIONS

REPORT GENERATOR

Program No: EMFPØ5

DETAIL FUEL TRANSACTIONS

PROGRAM SPECIFICATIONS

I. PURPOSE

The purpose of this prog am is to produce two reports from the MTD fuel file giving detail information about fuel disbursement. Reports are in vehicle number and pump number sequence and program must be executed twice to get both reports (once for each report). Options to select particular pumps, vehicles, and dates, are provided by means of control cards.

II. INPUTS

1. MTD Fuel File
2. Organization/APWA Code Table
3. Vehicle Number or Pump Number select cards
4. Date Control Card

III. OUTPUTS

1. Fuel Transactions by Equipment Number Report or Fuel Transactions by Pump Number Report.

IV. SPECIAL NOTE

Note from the system flowchart that this program must be executed once to produce one report. The only difference in the two runs, which should be set up as two separate jobs, is a different sort and different select cards (either by pump number or vehicle number).

V. PROCESSING

The Control Card, Select Cards, and Organization/APWA table are read in that order, edited and processed as follows:

A. Control Card Edit -

Field Number 1 must be "EMFPØ5"

Field Number 2 must be "blank"

Field Number 3 must be "V" or "P"

Field Number 4 must be "blank"

Field Number 5 can have 3 possibilities as follows:

a. MM/DD/YY followed by blanks

MM must be "ØI-12"

/ must be "/"

DD must be "ØI-3I"

/ must be "/"

YY must be "75-8Ø"

The entire remainder of the card must be blank.

b. MM/DD/YY-MM/DD/YY - edit each date the same as "a." above. Edit for the "-". The entire remainder of the card must be either all blank or all blank except a "S" in field 7.

c. "NONE' followed by all blanks.

Field 6 must be blank.

Field 7 must be blank or "S". If Date options "a." or "c." above are in effect, field 7 must be blank. If option "b." above, it may be either "S" or blank.

Field 8 must be blank.

If control card does not pass edit, print message as shown on printer layout chart and abort job.

B. Vehicle Select Card Edit - none

C. Pump Select Card edit - none

Store control card. If control card has option A, use date for "period ending" on report. If option B, use for "reporting period" on report. If option C, use neither on report.

If vehicle/pump select field on control card is "V", select cards are for vehicles; if "P" for pumps. Store vehicle or pump numbers internally in a table.

Use the following table to determine fuel type:

Fuel type code in MTD fuel file	Fuel type
A	REGULAR
B	LOW LEAD
C	HIGH TEST
D	DIESEL
E	KEROSENE

If there is no select card equipment or pump number match on a MTD Fuel File vehicle number or pump number, print the following one double spaced line on the report: either **EQUIPMENT NUMBER NOT FOUND** or **PUMP NUMBER NOT FOUND *.

Accumulate vehicle totals or pump totals as required. At end of job print program totals.

The following applies to the Equipment Number Report only:

Meter Reading comes from MTD fuel file.

Miles/hours traveled equals Vehicle Meter Reading of current record minus Vehicle Meter Reading of previous record, except for the first record for a given vehicle, in which case Miles/Hours Traveled equals Vehicle Meter Reading minus Vehicle Meter Reading - last month. Determine if the vehicle has a mile or hour meter by a "M" (for mile) or "H) (for hour) in the meter unit field. If it is an "X" in this field all meter, miles/hours, and miles/hours per gallon fields should be blank on the report. On break in equipment number, calculate miles per gallon (hours per gallon) by dividing total gallons fuel into total miles/hours traveled.

When computing MPG/HPG and Miles/Hours traveled on this report, note the following points:

a. If Vehicle Meter Reading - Last Month is blank or zero, do not calculate the first miles/hours traveled line. Put spaces in this space on report.

b. If difference between current record and previous record meter reading - last month exceeds 100 miles or 10 hours (or is zero or negative) do not calculate the miles/hours traveled line. Put spaces in this area on report.

c. If either or both A and B above occur for a vehicle, do not calculate MPG/HPG and put space in MPG/HPG field.

d. If either or both A and B above occur for a vehicle, put space in total miles/hours traveled for that vehicle on report.

e. If there is not valid miles/hours traveled data for <u>any</u> line for a given vehicle, MPG/HPG cannot be calculated, so put space in total miles/hours traveled for that vehicle on report.

SECTION 3.5.3

PROGRAM DEFINITIONS

REPORT GENERATOR

PROGRAM DEFINITIONS

SECLECTED SWITCHES, COUNTERS AND DATA ELEMENTS USED BY EMFPØ5

Switches, Counters, Data Elements	Use
TABLE-1-INDEX thru TABLE-4-INDEX	Various subscripts used in program for table look-up and final line print.
LINE-INDEX	Used by the detail line routine for vehicles
L NES-PRINTED-PAGE	The count of number of lines printed on page is accumulated. It is to be used to check if the bottom of page is reached.
LINES-PER-PAGE	This constant is used to check with the field listed above since it contains the maximum lines allowed in a page. This field is used to check bottom of page before a not-found line is printed.
PAGE-MAX-LESS-6	This is used to check the bottom of page when starting to print the detail line required for a vehicle report.
PAGE-NO-COUNTER	The accumulator for the page number.
A-SET-NUMBER-OF	This field contains a numeric amount and is used by the write-after-advancing statement.
ERROR-IN-METER-READ-SW	This switch is set if the meter readings are set to zero or spaces to eliminate the calculation of miles per hour on the total line.
TYPE-OF-PROCESS-SWITCH	This switch is set when reading in the original control card and is used by the program to determine whether all dates, one date or two are to be used in the program.

ALL-SW	This switch is initialized at the time the control card is read and notifies the program to process all or only select vehicles.
READ-DATA-SW	This switch is set off after process of a control break and is set on if any detail is read thereafter. It is used by the program for checking out whether there was detail for an item in the vehicle/pump table.
FIRST-METER	In processing vehicles, the meter reading for the first detail record of an equipment number is stored here.
PREVIOUS-METER	In processing vehicles, the meter reading for the previously read detail record of an equipment number is stored.
LOW-NO	Contains the lowest number in the unsorted organization table during any pass through it by internal sort.
LOW-YEAR	Contains the system year less one.
HIGH-YEAR	Contains the system date plus one.
TRAVELED	This field contains the calculated traveled amount between this MTD fuel record and the previous one read.
TOTAL-TRAVELED thru TOTAL-MISC-COST	These are the accumulators for the total line.
GRAND-TOTAL-FUEL-GAL thru GRAND-TOTAL-MISC-COST	These are the totals that print at the end of the report.
STORED-VEHICLE-NUMBER	This field contains the vehicle number of the previously read MTD record and is used to determine if a vehicle total line has to be printed.

PRES-FIELD-4-SEQ-TEST	This field is used to formulate the data necessary to sequence check the input read from the MTD fuel file.
PREV-FIELD-4-SEQ-TEST	This file is directly the same as one above except it contains data from the previous record.
START-DATE	This field contains data from input control card if it contains the date or the first date if it contains two dates.
END-DATE	This field contains the second date if the input control card has two dates.
TEST-DATE	This field contains the reconstituted date from the input MTD fuel record file.
EXPANDED DATE	This is the date used in printing heading line one.
CONTROL-CARD-AREA	This is the area into which the control card is read.
SELECT-CARD-AREA	This is the area into which the select card data is read
APWA-AREA	This is the area in which the table tape is read.
MTD-FUEL-RECORD-IN	This is the area into which the MTD fuel transaction is read.
ALPHA-MONTHS	This is the table required to convert the numeric month into its corresponding alpha designation.

TABLE-A	This is a multi-use area. It will contain the following: 1. The vehicle or pump numbers as read from the select card input in unsorted order, or 2. The organization code and name table, or 3. The various changes of the heading lines to print pumps instead of vehicles.
SORTED-VEHICLE-TABLE	This is the area which will contain the vehicle or pump numbers which have been internally sorted into proper sequence.
FIELD-TYPE-TABLE	This table contains the valid field types and is used in editing this field on the transaction input record.
FUEL-TYPE-MESSAGE	These fields are used to convert fuel type codes to their corresponding description.
DETAIL-LINE-TABLE	This is an area which is used to store the three lines of constant information when processing vehicles.
LAST-LINE-STATEMENTS	This is a table used to print the designations for the totals as printed on last page of the report.
LAST-LINE-TOTALS	These are the various accumulators which will be printed on last page of the report.

SECTION 3.5.4

PARAGRAPH EXPLANATIONS

REPORT GENERATOR

PARAGRAPH EXPLANATIONS

Program Concept

The following is a conceptualized idea of how the detail fuel trans. program works. It is not intended to be a detailed document, but rather a reference to be used with the program specifications, actual program listing, and the input forms.

Paragraph Numbers	Function
00	Set up various dates required by program.
03	Read and test the first control card and initialize the program if it specifies "NONE".
03	If one date is specified, test this date, initialize and test this program for it.
04	If two dates are specified, test these dates and initialize the program for them.
05	A subroutine used to actually edit the dates in the control cards.
08	Read the first select card of all initialized programs to read all vehicle/pumps else initialize the indexes to load the pump or vehicle tables.
09 & 10	Force end of file condition on the card reader if the select card was for "ALL". If this is not the last card in the card reader, an appropriate message will be printed and all additional cards will be by-passed.

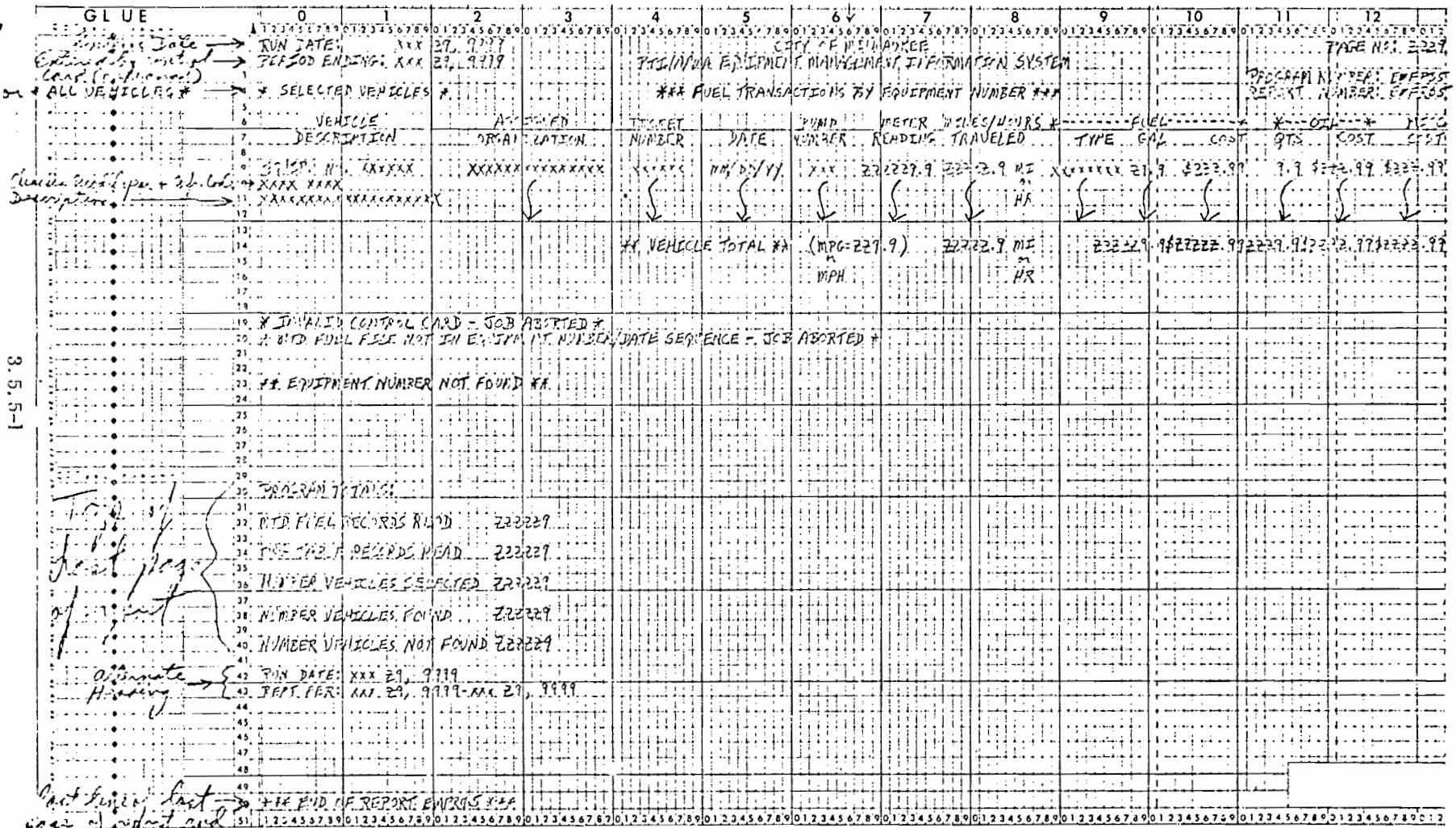
Paragraph Numbers	Function
11 - 14	Reads necessary select cards and loads the table. Edits are performed that the table does not exceed 100 items or an "ALL" card has not been found.
16 - 19	Sort the above table in sequence.
21	Clear the organization code table area, close card reader and open table tape. Read first table tape record and initialize the index to load organization code table.
22 - 27	Load organizational code table checking that no more that 75 items are entered in table. An additional check is made that the organizational code numbers loaded in table are in sequence.
28	Ends initialized routines by closing table tape, performing page heading, clearing print line, opening MTD file, setting index for vehicle/pump number table to 1 and clearing selected switches.
32	Routine which obtains the first MTD fuel record and subsequent records in case the output is for selected vehicles/pumps.
33 - 36	If it is a select report, this routine checks the input record against select table and selects the proper type of processing for the record read.

Paragraph Numbers	Function
37	The complete process routine if the report calls for all vehicles/pumps.
38	Subroutine to read the MTD fuel tape.
41 - 43	Sets up detail line if report is for vehicles.
44 - 46	Sets up and prints total line if process is for vehicles.
47	Stores various fields if the processing is for vehicles and sets up information on first detail line.
48	Finds organization code in organization table.
50 - 56	Sets up and prints a detail line.
60 - 64	Processing of pump detail and total lines.
71 - 76	Error routines.
81 - 83	End of job routine.
91	Page heading routine.

SECTION 3. 5. 5

REPORT LAYOUTS

REPORT GENERATOR



3.5.5-1

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GLUE

RUN DATE: XXX Z9, 9999 CITY OF MILWAUKEE PAGE NO: ZZZ9
PERIOD ENDING: XXX Z9, 9999 PTI/ATV A. EQUIPMENT MANAGEMENT INFORMATION SYSTEM PROGRAM NUMBER: EMF???
* SELECTED PUMPS * *** FUEL TRANSACTIONS BY PUMP NUMBER *** REPORT NUMBER: EMF???

PUMP NUMBER	FUEL TYPE	EQUIPMENT NUMBER	VEHICLE DESCRIPTION	ASSIGNED ORGANIZATION	TICKET NUMBER	DATE	FUEL GAL	FUEL COST	OIL QTS	OIL COST	MISC COST
XXX	XXXXXXXX	XXXXXX	XXXX XXXX XXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXX	XXXXXX	XX/XX/XX	Z9.9	$ZZZ.99	9.9	$ZZZ.99	$ZZZ.99
				** PUMP TOTAL **			ZZZZZ9.9	$ZZZZZ.99	ZZZZ9.9	$ZZZZZ.99	$ZZZZZ.99

* INVALID CONTROL CARD - JOB ABORTED *
* MTD FUEL FILE NOT IN PUMP NUMBER/DATE SEQUENCE - JOB ABORTED *
** PUMP NUMBER NOT FOUND **

RUN TOTALS:
MTD FUEL RECORDS READ ZZZZZ9
PRE-TABLE RECORDS READ ZZZZZ9
NUMBER PUMPS SELECTED ZZZZZ9
NUMBER PUMPS FOUND ZZZZZ9
NUMBER PUMPS NOT FOUND ZZZZZ9

RUN DATE: XXX Z9, 9999
REPT PER: XXX Z9, 9999 - XXX Z9, 9999

*** END OF REPORT EMF??? ***

*(handwritten margin notes: "Entry Date"; "Entry from control card (optional)"; "or * ALL PUMPS *"; "Last page of report"; "alternate heading"; "1st line of last page of report and top of following heading page")*

APPENDIX A

FILE DESCRIPTIONS AND RECORD LAYOUTS

FILE DESCRIPTION FORM

SYSTEM NAME; PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

FILE NAME: Fuel Tickets (EMFF01, EMFF02)

VOLUME DEVICE: Card Reader

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME(FIRST, SECOND, ETC.): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 80

RECORDS PER BLOCK: 1

FILE RETENTION:

a. TEMPORARY ☐

b. PERMANENT [X] RETENTION PERIOD: 6 Weeks

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 80 Characters

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: One Card Per Fuel Transaction

CREATING PROGRAM: N/A

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMFU01	Sequential

RECORD LAYOUT

TITLE NAME: Fuel Ticket Transactions RECORD LENGTH: 80

TITLE NUMBER: EMFFØ1, EMMFØ2 BLOCKING FACTOR: 2Ø

Field Number	Field Name	Position	Length	Picture or Remarks
1	Pump Number	1-3	3	X(3)
2	Ticket Number	4-9	6	9(6)
3	Date	1Ø-15	6	MMDDYY
4	Vehicle Number	16-21	6	X(6)
5	Vehicle Meter Reading	22-28	7	S9(6)V9
6	Fuel(Gallons)	29-31	3	S99V9
7	Oil (Quarts)	32-33	2	S9V9
8	Trans. Fluid	34-35	2	S9V9
9	Antifreeze	36-37	2	S9V9
10	Hydraulic Fluid	38-39	2	S9V9
11	Mileage Over-ride Code	4Ø	1	"M" OR Blank
12	Filler	41-8Ø	4Ø	Blank

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

FILE NAME: Control Card (EMFF03)

VOLUME DEVICE: Card Reader

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME (FIRST SECOND, ETC): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 80

RECORDS PER BLOCK: 1

FILE RETENTION:

a. TEMPORARY [ ]

b. PERMANENT [X]

RETENTION PERIOD: Until Next Run Then Change Da

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 80

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 1

CREATING PROGRAM: N/A

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMFP01	Sequential

RECORD LAYOUT

FILE NAME: Fuel Edit Date Card RECORD LENGTH: 80

FILE NUMBER: EMFF03 BLOCKING FACTOR: 1

Field Number	Data Element Name	Columns	Length	Picture or Remarks
1	Identifier	1-6	6	"EMFP01"
2	Filler	7	11	Blank
3	Period Ending Date	8-15	8	MM/DD/YY or "NONE" followed by blanks
4	Filler	16-80	65	Blank

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

FILE NAME: Pump Number Cards (EMFF04)

VOLUME DEVICE: Card Reader

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME (FIRST SECOND, ETC): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 80

RECORDS PER BLOCK: 1

FILE RETENTION:

a. TEMPORARY [ ]

b. PERMANENT [X] RETENTION PERIOD: Until a Pump Number Changes

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 80

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: One Card Per Pump

CREATING PROGRAM: N/A

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMFP01	Sequential
EMFP02	Sequential

RECORD LAYOUT

FILE NAME: Pump Number Cards RECORD LENGTH: 80

FILE NUMBER: EMFF04 BLOCKING FACTOR: 1

Field Number	Data Element Name	Columns	Length	Picture or Remarks
1	Fuel Type	1	1	"A-E"
2	Filler	2	1	blank
3	Pump Number	3-5	3	9(3)
4	Filler	6-78	73	blank
5	Table Identifier	79-80	2	"PN"

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

FILE NAME: Fuel Cost Cards (EMFF05)

VOLUME DEVICE: Card Reader

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME (FIRST SECOND, ETC): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 80

RECORDS PER BLOCK: 1

FILE RETENTION:

a. TEMPORARY [ ]

b. PERMANENT [X]

RETENTION PERIOD Until a Fuel or Commodity Cost Changes

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 80

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: One Card for Each Different Fuel or Commodity

CREATING PROGRAM: N/A

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMFP01	Sequential
EMFP02	Sequential

RECORD LAYOUT

TITLE NAME: Fuel Cost Cards RECORD LENGTH: 8Ø

TITLE NUMBER: EMEEØ5 BLOCKING FACTOR: 1

Field Number	Data Element Name	Columns	Length	Picture or Remarks
1	Fuel Type	1	1	"A-I"
2	Filler	2	1	blank
3	Fuel Cost ($ per gallon or quart)	3-6	4	9.99
4	Filler	7	1	blank
5	Fuel Identifier	8-27	2Ø	Descriptive fuel name, left justified
6	Filler	28-78	51	blank
7	Table Identifier	79-8Ø	2	"FC"

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

FILE NAME: MTD Fuel (EMFFØ6, EMFFØ7, EMFF1Ø, EMFF11, EMFF16, EMFF17, EMFF21)

VOLUME DEVICE: Tape/Disk

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME (FIRST, SECOND, ETC.): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 116

RECORDS PER BLOCK: 10

FILE RETENTION:

a. TEMPORARY [X] EMFFØ6, EMFF11, EMFF17, EMFF21

b. PERMANENT [X] EMFFØ7, EMFF1Ø, EMFF16 RETENTION PERIOD: EMFFØ7 - 3 Weeks
EMFF1Ø - 6 Weeks
EMFF16 - 6 Weeks

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 1160

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: One Record Per Fuel Transaction

CREATING PROGRAM: EMFPØ1, EMFUØ2, EMFUØ3, EMFPØ2, EMFUØ4, EMFPØ4, EMFUØ5

REFERENCING PROGRAM(S):

PROGRAM		ACCESS METHOD
EMFUO2	EMFPØ3	Sequential for All
EMFUO3	EMFPØ4	
EMFPO2	EMFUØ5	
EMFUO4	EMFPØ5	

RECORD LAYOUT

FILE NAME: Month-to-Date Fuel
RECORD LENGTH: 116
FILE NUMBER: EMFFØ6, EMFFØ7, EMFF1Ø, EMFF11, EMFF16, EMFF17, EMFF21
BLOCKING FACTOR: 1Ø

Field Number	Field Name	Position	Length	Picture or Remarks
1	Vehicle Number	1-6	6	X(6)
2	Chassis Model Year	7-8	2	99
3	Chassis Mfr. Code	9-12	4	X(4)
4	Vehicle Description	13-32	20	X(20)
5	APWA Code	33-40	8	X(8)
6	Vehicle Meter Reading	41-47	7	S9 (6) V9
7	Fuel (gallons)	48-50	3	S99V9
8	Fuel Cost	51-55	5	S999V99
9	Fuel Type	56	1	"A-E"
10	Oil (quarts)	57-58	2	S9V9
11	Oil Cost	59-63	5	S999V99
12	Hydraulic Fluid (qts)	64-65	2	S9V9
13	Trans. Fluid (qts)	65-66	2	S9V9
14	Antifreeze (qts)	68-69	2	S9V9
15	Miscellaneous Cost	70-74	5	S999V99
16	Organization	75-80	6	X(6)
17	Fund No.	81-92	12	X(12)
18	Pump Number	93-95	3	X(3)
19	Ticket Number	96-101	6	9(6)
20	Date	102-107	6	YYMMDD
21	Vehicle Meter Reading-Last Month	108-114	7	S9(6)V9

RECORD LAYOUT

FILE NAME: Month-to-Date Fuel RECORD LENGTH: 116

FILE NUMBER: EMFFØ6, EMFFØ7, EMFF1Ø BLOCKING FACTOR: 1Ø
EMFF11, EMFF16 EMFF17, EMFF21

Field Number	Field Name	Position	Length	Picture or Remarks
22	Meter Unit	115	1	"H", "M" OR "X"
23	Transaction Flag	116	1	"Ø" OR "1", "2", "3"

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME. Fuel

FILE NAME: Pump Reading Cards (EMFFØ8)

VOLUME DEVICE: Card Reader

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME(FIRST, SECOND, ETC.):N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 80

RECORDS PER BLOCK: 1

FILE RETENTION:

a. TEMPORARY ☐

b. PERMANENT [X] RETENTION PERIOD: 6 Weeks

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 80

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: One Card per Pump Reading

CREATING PROGRAM: N/A

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMFP02	Sequential

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

RECORD LAYOUT

FILE NAME: Pump Reading Cards RECORD LENGTH: 80

FILE NUMBER: EMFF08 BLOCKING FACTOR: 1

Field Number	Data Element Name	Columns	Length	Picture or Remarks
1	Pump Number	1-3	3	X (3)
2	Filler	4	1	blank
3	Pump Reading On	5-12	8	999999.9
4	Filler	13	1	blank
5	Date On	14-19	6	MMDDYY
6	Filler	20	1	blank
7	Pump Reading Off	21-28	8	999999.9
8	Filler	29	1	blank
9	Date Off	30-35	6	MMDDYY
10	Filler	36	1	blank
11	Pump Reading Bypass Flag	37	1	blank or "X"
12	Filler	38-80	43	blank

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

FILE NAME: Control Card (EMFFØ9)

VOLUME DEVICE: Card Reader

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME (FIRST SECOND, ETC): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 80

RECORDS PER BLOCK: 1

FILE RETENTION:

a. TEMPORARY [ ]

b. PERMANENT [X] RETENTION PERIOD: Until Next Run Then Change Date

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 80

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 1

CREATING PROGRAM: N/A

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMFP02	Sequential

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

RECORD LAYOUT

FILE NAME: Pump Reconciliation Date Card RECORD LENGTH: 80

FILE NUMBER: EMFF09 BLOCKING FACTOR: 1

Field Number	Data Element Name	Columns	Length	Picture or Remarks
1	Identifier	1-6	6	"EMFP02"
2	Filler	7	1	blank
3	Period Ending Date	8-15	8	MM/DD/YY or "NONE" followed by blanks
4	Filler	16-80	65	blank

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

FILE NAME: Control Card (EMFF12)

VOLUME DEVICE: Card Dealer

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME (FIRST, SECOND, ETC.): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 80

RECORDS PER BLOCK: 1

FILE RETENTION:

a. TEMPORARY ☐

b. PERMANENT ☒ RETENTION PERIOD Until Next Run Then Change Date

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 80

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 1

CREATING PROGRAM: N/A

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMFP03	Sequential

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

RECORD LAYOUT

TITLE NAME: Monthly Consolidation Date Card RECORD LENGTH: 8Ø

TITLE NUMBER: EMMF12 BLOCKING FACTOR: 1

Field Number	Data Element Name	Columns	Length	Picture or Remarks
1	Identifier	1-6	6	"EMFPØ3"
2	Filler	7	1	blank
3	Period Ending Date	8-15	8	or "none" followed by all blanks MM/DD/YY
4	Filler	16-8Ø	65	blank

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

FILE NAME: Fuel History (EMFF13)

VOLUME DEVICE: Tape

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME (FIRST SECOND, ETC): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 896

RECORDS PER BLOCK: 10

FILE RETENTION:

a. TEMPORARY [ ]

b. PERMANENT [X] RETENTION PERIOD: 2 months

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 8960

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: One Record per Vehicle with Uniquea Organization and Fund Number

CREATING PROGRAM: EMFP03

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMFP03	Sequential

RECORD LAYOUT

FILE NAME: Fuel History RECORD LENGTH: 896

FILE NUMBER: EMFF13 BLOCKING FACTOR: 10

Field Number	Field Name	Position	Length	Picture or Remarks
1	Equipment Number	1-6	6	X(6)
2	APWA Code	7-14	8	X(8)
3	Organization	15-20	6	X(6)
4	Fund Number	21-32	12	X(12)
5	Month/Year	33-36	4	MMYY
6	Monthly Miles	37-43	7	S9(6)V9
7	Fuel (Gallons)	44-48	5	S9(4)V9
8	Fuel Cost	49-54	6	S9(4)V99
9	Fuel Type *	55	1	"A-E"
10	Oil (Quarts)	56-58	3	S99V9
11	Oil Cost	59-63	5	S999V99
12	Misc. Cost	64-68	5	S999V99
13	"Sets" 2-24	69-896	828	same as fields 5-12

*"Set" repeated 24 times (leftmost set 1-youngest, rightmost set 24-oldest).

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

FILE NAME: Consolidated Fuel (EMFF14)

VOLUME DEVICE: Tape

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME(FIRST, SECOND, ETC.): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 90

RECORDS PER BLOCK: 10

FILE RETENTION:

a. TEMPORARY ☐

b. PERMANENT [X] RETENTION PERIOD: 2 Months

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 900

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: One Record per Vehicle With Unique Organization

CREATING PROGRAM: EMFP03

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMGP06	Sequential

PTL/APWA EQUIPMENT MANAGEMENT SYSTEM

RECORD LAYOUT

FILE NAME: Monthly Consolidated Fuel File RECORD LENGTH: 90

FILE NUMBER: EMFF14 BLOCKING FACTOR: 10

Field Number	Data Element Name	Columns	Length	Picture or Remarks
1	Equipment Number	1-6	6	X(6)
2	Organization	7-12	6	X(6)
3	Miles Driven in Month	13-18	6	S9(5)V9
4	Month End Mileage Reading	19-25	7	S9(6)V9
5	Gallons Fuel	26-30	5	S9(4)V9
6	Fuel Cost	31-36	6	S9(4)V99
7	Quarts Oil	37-39	3	S99V9
8	Oil Cost	40-44	5	S999V99
9	Misc. Cost	45-49	5	S999V99
10	Filler	50-90	41	Blank

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

FILE NAME: Control Card (EMFF15)

VOLUME DEVICE: Card Reader

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME(FIRST, SECOND, ETC.): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 80

RECORDS PER BLOCK: 1

FILE RETENTION:

a. TEMPORARY ☐

b. PERMANENT [X]

RETENTION PERIOD: Until Next Run Then Change Date

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 80

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 1

CREATING PROGRAM: N/A

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMFP04	Sequential

RECORD LAYOUT

FILE NAME: Delete Program Date Card RECORD LENGTH: 80

FILE NUMBER: EMFF15 BLOCKING FACTOR: 1

Field Number	Data Element Name	Columns	Length	Picture or Remarks
1	Identifier	1-6	6	"EMFP04"
2	Filler	7	1	blank
3	Period Ending Date	8-15	8	MM/DD/YY or "NONE" followed by all blanks
4	Filler	16-80	65	blank

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

FILE NAME: Control Card (EMFF18)

VOLUME DEVICE: Card Reader

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME(FIRST, SECOND, ETC.): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 80

RECORDS PER BLOCK: 1

FILE RETENTION:

a. TEMPORARY ☐

b. PERMANENT ☒ RETENTION PERIOD: Until Next Run Then Change Date

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 80

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 1

CREATING PROGRAM: N/A

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMFP05	Sequential

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

RECORD LAYOUT

Vehicle/Pump Select

FILE NAME: Control Card RECORD LENGTH: 8Ø

FILE NUMBER: EMFF18 BLOCKING FACTOR: 1

Field Number	Data Element Name	Columns	Length	Picture or Remarks
1	Identifier	1-6	6	"EMFPØ5"
2	Filler	7	1	blank
3	Vehicle/Pump Select	8	1	"V" or "P"
4	Filler	9	1	blank
5	Date - There are 3 options in this field:	1Ø-26	17	
	A. Period Ending Date			MM/DD/YY followed by blanks
	B. From/To Dates			MM/DD/YY-MM/DD/YY
	C. No date			"NONE" followed by blanks
6	Filler	27	1	blank
7	Date Select	28	1	"S" or blank
8	Filler	29-8Ø	52	blanks

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

FILE NAME: Select Card(s) (EMFF19)

VOLUME DEVICE: Card Reader

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME(FIRST, SECOND, ETC.): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 80

RECORDS PER BLOCK: 1

FILE RETENTION:

a. TEMPORARY ☐

b. PERMANENT ☒ RETENTION PERIOD: Until Report Validity is Confirmed

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 80

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 10

CREATING PROGRAM: N/A

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMFP05	Sequential

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

RECORD LAYOUT

FILE NAME: Select Cards (Vehicle Format) RECORD LENGTH: 8Ø

FILE NUMBER: EMFF19 BLOCKING FACTOR: 1

Field Number	Data Element Name	Columns	Length	Picture or Remarks
1	Vehicle Number (or ALL option)	1-6	6	X(6)or "ALL" followed by all blanks on rest of card
2	Filler	7	1	blank or comma
3	Vehicle Number	8-13	6	X(6)
4	Filler	14	1	blank or comma
5	Vehicle Number	15-2Ø	6	X(6)
6	Filler	21	1	blank or comma
7	Vehicle Number	22-27	6	X(6)
8	Filler	28	1	blank or comma
9	Vehicle Number	29-34	6	X(6)
10	Filler	35	1	blank or comma
11	Vehicle Number	36-41	6	X(6)
12	Filler	42	1	blank or comma
13	Vehicle Number	43-48	6	X(6)
14	Filler	49	1	blank or comma
15	Vehicle Number	5Ø-55	6	X(6)
16	Filler	56	1	blank or comma
17	Vehicle Number	57-62	6	X(6)
18	Filler	63	1	blank or comma
19	Vehicle Number	64-69	6	X(6)
20	Filler	7Ø	1	blank or comma
21	Vehicle Number	71-76	6	X(6)
22	Filler	77-8Ø	4	blank

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

FILE NAME: Select Card(s) (EMFF20)

VOLUME DEVICE: Card Reader

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME(FIRST, SECOND, ETC.): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 80

RECORDS PER BLOCK: 1

FILE RETENTION:

a. TEMPORARY ☐

b. PERMANENT ☒ RETENTION PERIOD: Until Report Validity is Confirmed

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 80

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 5

CREATING PROGRAM: N/A

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMFP05	Sequential

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

RECORD LAYOUT

FILE NAME: Select Cards (Pump Format) RECORD LENGTH: 80

FILE NUMBER: EMFF20 BLOCKING FACTOR: 1

Field Number	Data Element Name	Columns	Length	Picture or Remarks
1	Pump Number	1-3	3	X(3) or "ALL" followed by all blanks on rest of card
2	Filler	4	1	blank or comma
3	Pump Number	5-7	3	X(3)
4	Filler	8	1	blank or comma
5	Pump Number	9-11	3	X(3)
6	Filler	12	1	blank or comma
7	Pump Number	13-15	3	X(3)
8	Filler	16	1	blank or comma
9	Pump Number	17-19	3	X(3)
10	Filler	20	1	blank or comma
11	Pump Number	21-23	3	X(3)
12	Filler	24	1	blank or comma
13	Pump Number	25-27	3	X(3)
14	Filler	28	1	blank or comma
15	Pump Number	29-31	3	X(3)
16	Filler	32	1	blank or comma
17	Pump Number	33-35	3	X(3)
18	Filler	36	1	blank or comma
19	Pump Number	37-39	3	X(3)
20	Filler	40	1	blank or comma
21	Pump Number	41-43	3	X(3)
22	Filler	44	1	blank or comma
23	Pump Number	45-47	3	X(3)
24	Filler	48	1	blank or comma

RECORD LAYOUT

FILE NAME: ! Select Card (Pump Format) RECORD LENGTH: 8Ø

FILE NUMBER: EMFF20 BLOCKING FACTOR: 1

Field Number	Data Element Name	Columns	Length	Picture or Remarks
25	Pump Number	49-51	3	X(3)
26	Filler	52	1	blank or comma
27	Pump Number	53-55	3	X(3)
28	Filler	56	1	blank or comma
29	Pump Number	57-59	3	X(3)
30	Filler	6Ø	1	blank or comma
31	Pumb Number	61-63	3	X(3)
32	Filler	64	1	blank or comma
33	Pump Number	65-67	3	X(3)
34	Filler	68	1	blank or comma
35	Pump Number	69-71	3	X(3)
36	Filler	72	1	blank or comma
37	Pump Number	73-75	3	X(3)
38	Filler	76	1	blank or comma
39	Pump Number	77-79	3	X(3)
40	Filler	8Ø	1	blank

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

FILE NAME: Equipment Inventory Master (EMIFØ4)

VOLUME DEVICE: Tape

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME (FIRST, SECOND, ETC.): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 7ØØ

RECORDS PER BLOCK: 4

FILE RETENTION:

A. TEMPORARY ☐

B. PERMANENT ☒ RETENTION PERIOD: 6 Weeks

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 28ØØ

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: One record for every vehicle in fleet

CREATING PROGRAM: EMIPØ 2

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMFPØ1	Sequential

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

FILE NAME: Equipment Inventory Master RECORD LENGTH: 7ØØ

FILE NUMBER: EMIFØ4 BLOCKING FACTOR: 4

FIELD NO.	DATA ELEMENT NAME	POSITIONS	LENGTH	PICTURE OR REMARKS
1	Equipment Number	1-6	6	X(6)
2	APWA Code	7-14	8	Refer to APWA Manual
3	Organization Code	15-2Ø	6	X(6)
4	Use Status Code	21	1	"blank, 1, 2, 3"
5	Date Received	22-27	6	MMDDYY
6	Estimated Life	28-3Ø	3	S999V
7	Estimated Life Code	31	1	"1-3"
8	Salvage Value	32-36	5	S99999V
9	Purchase Order Amount	37-44	8	S9(6)V99
1Ø	Unit Depreciation Amount	45-5Ø	6	S999V999
11	PM Interval-Months	51-52	2	S99V
12	PM Interval-Meter Units	53-57	5	S9(5)V
13	PM Sequence	58-65	8	X(8)
14	PM Pointer	66	1	"1-8"
15	Assigned PM Location	67-7Ø	4	X(4)
16	Meter Unit	71	1	"H", "M" or "X"
17	Bill Accident Repairs	72	1	"Y" or "N"
18	Billing Basis	73	1	"R" or "D"
19	Insurance Schedule	74-76	3	X(3)
2Ø	Normal Duty Hours Per Month	77-79	3	S999V
21	Seasonal Usage	8Ø	1	X
22	Flat Rate	81-86	6	S9999V99
23	Flat Rate Unit Code	87	1	"M", "D" or "C"

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

FILE NAME: Equipment Inventory Master RECORD LENGTH: 7ØØ

FILE NUMBER: EMIFØ4 BLOCKING FACTOR: 4

FIELD NO.	DATA ELEMENT NAME	POSITIONS	LENGTH	PICTURE OR REMARKS
24	Basic Use Rate	88-93	6	S999V999
25	Use Rate B	94-99	6	S999V999
26	Use Rate B Units	1ØØ-1Ø4	5	S9(5)V
27	Use Rate C	1Ø5-11Ø	6	S999V999
28	Use Rate C Units	111-115	5	S9(5)V
29	Old Equipment Number	116-121	6	X(6)
3Ø	Date Released	122-127	6	MMDDYY
31	Old Property Control Number	128-135	8	X(8)
32	GVWR-Pounds	136-141	6	S9(6)V
33	Improvement Added-Current Month	142-148	7	S99999V99
34	Improvement Added-Life to Date	149-156	8	S999999V99
35	Fuel Tank Capacity	157-159	3	S999V
36	Fuel Type	16Ø	1	X
37	Description	161-18Ø	2Ø	X(2Ø)
38	Fund Number	181-192	12	X(12)
39	Inspection Frequency-Months	193-194	2	S99V
4Ø	Assigned Service Location	195-198	4	X(4)
41	Highway Code	199	1	"1-3"
42	Chassis Mfr. Code	2ØØ-2Ø3	4	X(4)
43	Chassis Model Number	2Ø4-21Ø	7	X(7)
44	Chassis Serial Number	211-23Ø	2Ø	X(2Ø)
45	Chassis Model/Year	231-232	2	last two digits of year

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

FILE NAME: Equipment Inventory Master RECORD LENGTH: 7ØØ

FILE NUMBER: EMIFØ4 BLOCKING FACTOR: 4

FIELD NO.	DATA ELEMENT NAME	POSITIONS	LENGTH	PICTURE OR REMARKS
46	Title Number	233-241	9	X(9)
47	Property Control Number	242-249	8	X(8)
48	Purchase Order Number	25Ø-257	8	X(8)
49	License Tag Number	258-266	9	X(9)
5Ø	Domicile Code	267-27Ø	4	X(4)
51	Body Mfr. Code	271-274	4	X(4)
52	Body Model Number	275-282	8	X(8)
53	Body Serial Number	283-3Ø2	2Ø	X(2Ø)
54	Body Model Year	3Ø3-3Ø4	2	last two digits of year
55	Current Meter Reading	3Ø5-311	7	S999999V9
56	Meter Reading Last Month	312-318	7	S999999V9
57	Meter Failure Flag	319	1	"Ø" or "1"
58	Meter Reading at Failure	32Ø-326	7	S999999V9
59	Meter Units Operated Current Month	327-332	6	S99999V9
6Ø	Meter Units Operated Last Month	333-338	6	S99999V9
61	Meter Units Operated-Life to Date	339-345	7	S999999V9
62	Date Last Status Change	346-351	6	MMDDYY
63	Downtime Hours-CM	352-355	4	S999V9
64	Downtime Hours-LTD	356-361	6	S99999V9
65	Insurance Cost-CM	362-366	5	S999V99
66	Insurance Cost-YTD	367-372	6	S9999V99
67	Insurance Cost-LTD	373-379	7	S99999V99

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

FILE NAME: Equipment Inventory Master RECORD LENGTH: 7ØØ

FILE NUMBER: EMIFØ4 BLOCKING FACTOR: 4

FIELD NO.	DATA ELEMENT NAME	POSITIONS	LENGTH	PICTURE OR REMARKS
68	Current Book Value	38Ø-387	8	S999999V99
69	Depreciation-CM	388-393	6	S9(4)V99
7Ø	Depreciation-YTD	394-4ØØ	7	S9(5)V99
71	Depreciation-LTD	4Ø1-4Ø8	8	S9(6)V99
72	Fuel Consumption (Gal.)-CM	4Ø9-413	5	S9999V9
73	Fuel Consumption (Gal.)-YTD	414-419	6	S9(5)V9
74	Fuel Consumption (Gal.)-LTD	42Ø-426	7	S9(6)V9
75	Fuel Cost - CM	427-432	6	S9999V99
76	Fuel Cost - YTD	433-44Ø	8	S9(6)V99
77	Fuel Cost - LTD	441-448	8	S9(6)V99
78	Oil Consumption (Qts.)-CM	449-451	3	S99V9
79	Oil Consumption (Qts.)-YTD	452-455	4	S999V9
8Ø	Oil Consumption (Qts.)-LTD	456-46Ø	5	S9999V9
81	Oil Cost - CM	461-465	5	S999V99
82	Oil Cost - YTD	466-472	7	S9(5)V99
83	Oil Cost - LTD	473-479	7	S9(5)V99
84	Misc. Cost - CM	48Ø-484	5	S999V99
85	Misc. Cost - YTD	485-491	7	S9(5)V99
86	Misc. Cost - LTD	492-498	7	S9(5)V99
87	Number Repair Orders - CM	499-5ØØ	2	S99V
88	Number Repair Orders - LTD	5Ø1-5Ø3	3	S999V
89	Number Road Calls - CM	5Ø4-5Ø5	2	S99V
9Ø	Number Road Calls - LTD	5Ø6-5Ø8	3	S999V

PTI/APWA EQUIPMENT MANAGEMENT SYSTEM

FILE NAME: Equipment Inventory Master RECORD LENGTH: 700

FILE NUMBER: EMIFØ4 BLOCKING FACTOR: 4

FIELD NO.	DATA ELEMENT NAME	POSITIONS	LENGTH	PICTURE OR REMARKS
91	Scheduled Labor Hours - CM	5Ø9-513	5	S9(4)V9
92	Scheduled Labor Hours - LTD	514-519	6	S9(5)V9
93	Total Labor Hours - CM	52Ø-524	5	S9(4)V9
94	Total Labor Hours - LTD	525-53Ø	6	S9(5)V9
95	Labor Cost - CM	531-537	7	S9(5)V99
96	Labor Cost - LTD	538-545	8	S9(6)V99
97	Parts Cost - CM	546-552	7	S9(5)V99
98	Parts Cost - LTD	553-56Ø	8	S9(6)V99
99	Commercial Cost - CM	561-567	7	S9(5)V99
1ØØ	Commercial Cost - LTD	568-575	8	S9(6)V99
1Ø1	Accident Cost - CM	576-583	8	S9(6)V99
1Ø2	Accident Cost - LTD	584-591	8	S9(6)V99
1Ø3	Warranty Cost - CM	592-599	8	S9(6)V99
1Ø4	Warranty Cost - LTD	6ØØ-6Ø7	8	S9(6)V99
1Ø5	Billed Amount - CM	6Ø8-614	7	S9(5)V99
1Ø6	Billed Amount - YTD	615-621	7	S9(5)V99
1Ø7	Billed Amount - LTD	622-629	8	S9(6)V99
1Ø8	Miles or Hours per Gallon	63Ø-635	6	S999V999
1Ø9	Date Last PM	636-641	6	MMDDYY
11Ø	Meter Last PM	647-648	7	S9(6)V9
111	Type of Last PM	649	1	"A,B, or C"
112	Date Last State Inspection	65Ø-655	6	MMDDYY
113	Total Repair Cost - YTD	656-663	8	S9(6)V99
114	Filler	664-7ØØ	37	X(37)

FILE DESCRIPTION FORM

SYSTEM NAME: PTI/APWA EQUIPMENT MANAGEMENT INFORMATION SYSTEM

COMPONENT NAME: Fuel

FILE NAME: Organization/APWA Table (EMGF03)

VOLUME DEVICE: Tape

FILE ORGANIZATION: Sequential

FILE NUMBER OF VOLUME(FIRST, SECOND, ETC.): N/A

RECORD FORMAT: Fixed Length

RECORD LENGTH: 80

RECORDS PER BLOCK: 20

FILE RETENTION:

a. TEMPORARY ☐

b. PERMANENT [X]

RETENTION PERIOD: Until Updated With Change to Org. Code, APWA code, or facility code

RECORD RELATIVE KEY POSITION: N/A

KEY LENGTH: N/A

PHYSICAL BLOCKSIZE: 1600 characters

MAXIMUM NUMBER OF LOGICAL RECORDS ON FILE: 225

CREATING PROGRAM: Card-to-tape Utility

REFERENCING PROGRAM(S):

PROGRAM	ACCESS METHOD
EMFP05	Sequential

APPENDIX B

SAMPLE FORMS

Form No: EMFDØ1

PTI/APWA Equipment Management System

FUEL TRANSACTION FORM

FUEL TICKET

1 3 Pump Number

4 9 Ticket Number

10 15 Mon Day Year Date

City of Sample-ville

16 21 Vehicle Number

22 28 Vehicle Meter Reading

Driver Signature

Department

Attendant Signature

Fuel Dispensing Location

29 31 Fuel (gal)

32 33 Oil (qts)

34 35 Trans. Fluid (qts)

36 37 Anti-Freeze (qts)

38 39 Hyd. Fluid (qts)

EMFDØ2

CITY OF SAMPLEVILLE

BUREAU OF MUNICIPAL EQUIPMENT

FUEL PUMP READING REPORT

PUMP NO. : ☐☐☐ (1 3)

BEGINNING PUMP READING: ☐☐☐☐☐☐•☐ (5 12)

BEGINNING DATE: ☐☐☐ (14 19)

ENDING PUMP READING: ☐☐☐☐☐☐•☐ (21 28)

ENDING DATE: ☐☐☐ (3Ø 35)

PUMP READING BY-PASS: ☐ (37)

PLACE "X" IN BOX IF PUMP READING FAULTY, OTHERWISE LEAVE BLANK. IF FAULTY, EXPLAIN BELOW.

CITY OF MILWAUKEE
Report Request Form For Requesting:
"FUEL TRANSACTIONS BY EQUIPMENT NUMBER"

Form No. EMF

Date: ___/___/___
mo. day yr.

To request this report, fill in the information below:

1. ☐ Check this box if most current data for this reporting period is requested.

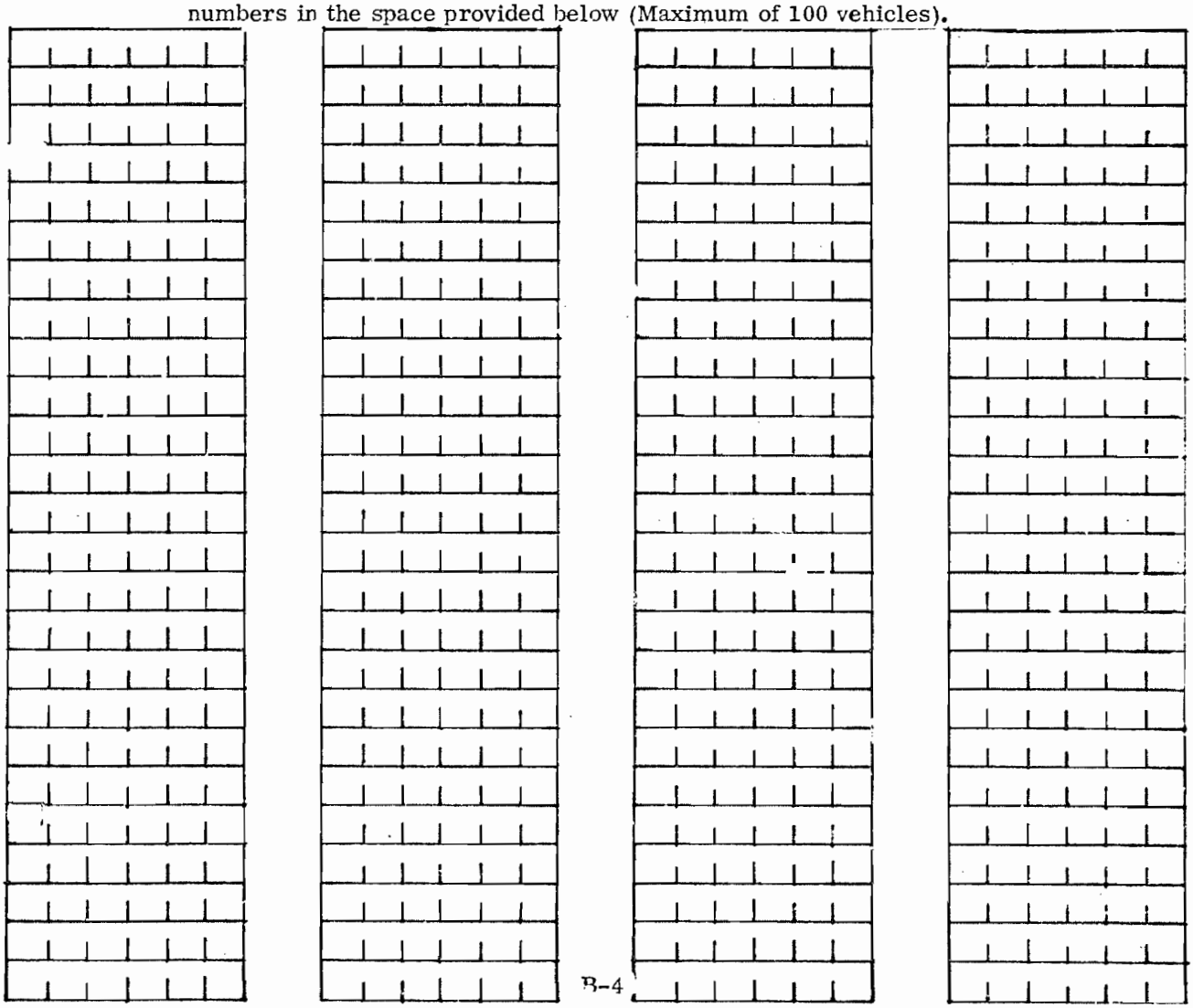
2. If most current data is not requested (as indicated above), specify the dates (below) for which data is requested:

From: ___/___/___ To: ___/___/___
mo. day yr. mo. day yr.

3. Do you wish all vehicles to appear on the report or only selected vehicles (check appropriate box).

All Vehicles ☐ Selected Vehicles ☐

If you checked the selected vehicles box, submit a list of vehicle equipment numbers in the space provided below (Maximum of 100 vehicles).



CITY OF MILWAUKEE

Report Request Form For Requesting:

"FUEL TRANSACTIONS BY PUMP NUMBER"

Form No. EMFD04

Date: ___/___/___
mo. day yr.

To request this report, fill in the information below:

1. ☐ Check this box if most current data for this reporting period is requested.

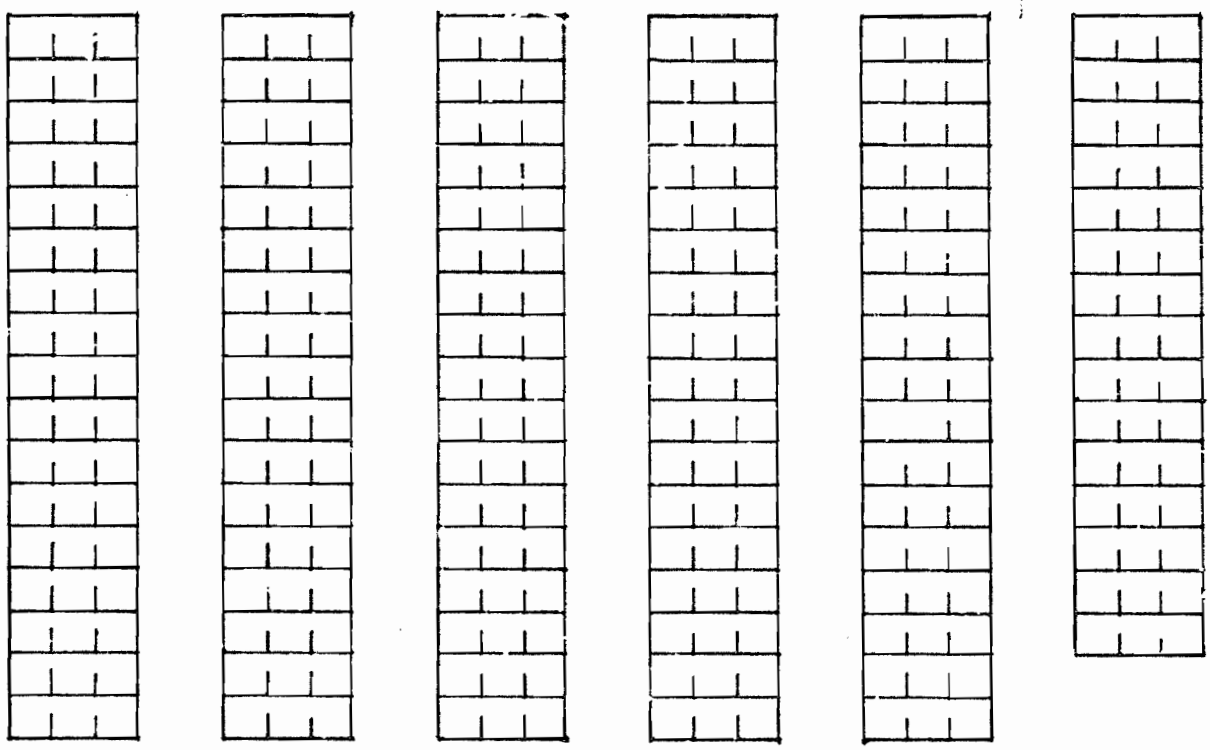
2. If most current data is not requested (as indicated above), specify the dates (below) for which data is requested:

   From: ___/___/___ To: ___/___/___
   mo. day yr. mo. day yr.

3. Do you wish all fuel pump numbers to appear on the report or only selected pumps (check appropriate box).

   All Pumps ☐ Selected Pumps ☐

   If you checked the selected pumps box, submit a list of fuel pump numbers in the space provided below (Maximum of 100 pumps).



END

DATE

FILMED

1-27-78

NTIS