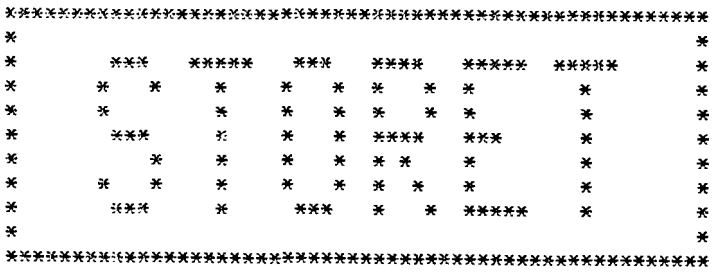


On-Line Documentation System
STORET User Assistance
(800)424-9067
(202)382-7220
(FTS)382-7220

SEMINAR DOCUMENTATION STORAGE

This document explains the techniques required to put Water Quality Information into the STORET Water Quality System. It is used in STORET seminars as a training guide. Also available from User Assistance is the STORET handbook which is maintained under contract.

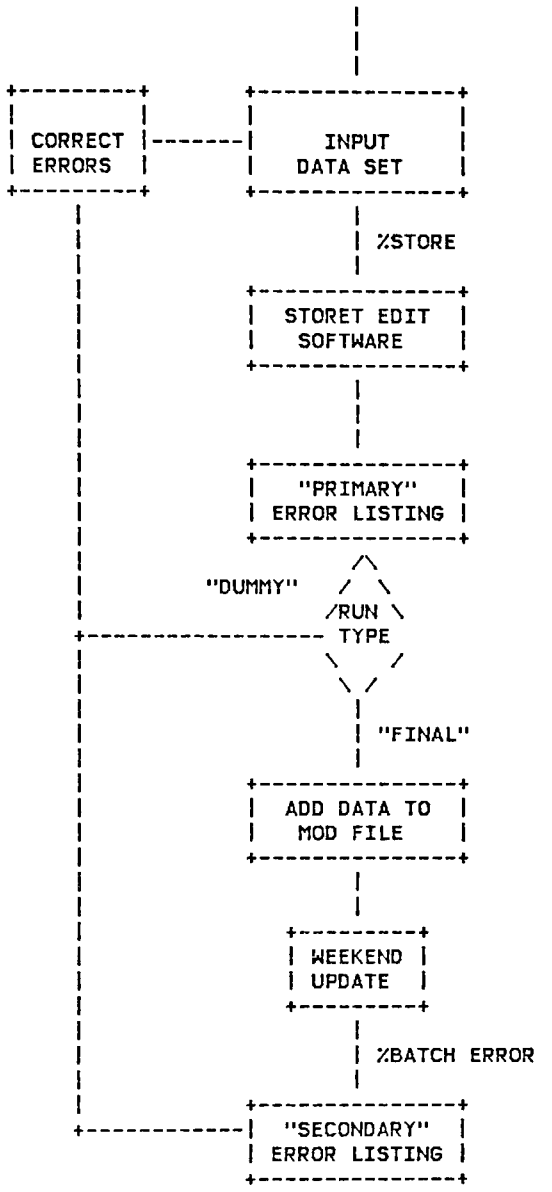
Document Current as of March 13, 1989. For fresh copies of this document, call User Assistance since special forms and inserts are required.

Change Log	
New Data Storage and moved old methods to appendix	
07/08/87 Louis H. Hoelman, II	
New Station Storage Procedures	
09/27/88 Louis H. Hoelman, II	
Revisions and Corrections	
03/13/89 Louis H. Hoelman, II	
Revisions and Corrections	
05/08/89 Louis H. Hoelman, II	
Added new station types and other revisions	
06/23/89 Louis H. Hoelman, II	

* * * This document may be copied * * *

THERE ARE SEVERAL TECHNIQUES FOR STORING MONITORING INFORMATION IN THE STORET WATER QUALITY SYSTEM (WQS). CARDS CAN BE PUNCHED AND READ INTO THE SYSTEM THROUGH A CARD READER; A FILE CAN BE CREATED ON TAPE AND THE TAPE CAN BE SENT TO THE DATA CENTER FOR PROCESSING; A FILE CAN BE CREATED ON A SMART TERMINAL, I.E., A PC OR A MINI-COMPUTER, AND TRANSMITTED OVER THE TELECOMMUNICATION NETWORK; OR AN ON-LINE DATA SET CAN BE CREATED EITHER BY THE STORET COMMAND PROCEDURE NAMED "%EASYSTOR" OR BY USING THE TSO "EDIT" COMMAND. IF ONE OF THE FIRST THREE METHODS IS USED, THE IBM UTILITY "IEBGENER" IS USED TO CREATE THE ON-LINE DATA SET. AFTER THE FILE OF STORAGE TRANSACTIONS IS CREATED, IT IS SUBMITTED FOR PROCESSING BY USING EITHER THE STORET COMMAND PROCEDURE NAMED "%STORE" OR A JOB CONTROL LANGUAGE (JCL) RUN STREAM. THE FIRST TIME A STORAGE FILE IS SUBMITTED FOR PROCESSING THE "DUMMY" OPTION SHOULD BE USED. THE "DUMMY" RUN CHECKS THE TRANSACTIONS FOR ERRORS AND GENERATES AN ERROR LISTING THAT IDENTIFIES IMPERFECTIONS IN THE FILE BUT DOES NOT PUT THE TRANSACTIONS IN THE "MOD" FILE. THE "MOD" FILE IS A HOLDING FILE CONTAINING ALL OF THE TRANSACTIONS THAT ARE TO BE STORED IN THE SYSTEM THAT WEEK. THE "DUMMY" RUN ALLOWS THE USER TO CORRECT THE ERRORS WITHOUT HAVING TO DETERMINE WHICH ONES WERE CORRECT, AND THEREFORE, WERE POSTED TO THE "MOD" FILE. AFTER THE ERRORS ARE CORRECTED, THE FILE IS RE-SUBMITTED FOR PROCESSING USING THE "FINAL" OPTION. THE "FINAL" OPTION WILL IDENTIFY ANY FURTHER ERRORS, HOPEFULLY NONE, AND POST THE ERROR FREE ONES TO THE "MOD" FILE. THE ERROR LISTING GENERATED BY THE STORAGE RUN ARE CALLED THE "PRIMARY ERROR MESSAGES". THE TRANSACTIONS ON THE "MOD" FILE ARE STORED IN THE SYSTEM ON SATURDAY AND ARE AVAILABLE FOR RETRIEVAL ON THE FOLLOWING MONDAY. EVEN THOUGH USERS SUBMIT TRANSACTIONS FOR STORAGE ALL WEEK, THE SYSTEM IS UPDATED ONLY ONCE A WEEK ON SATURDAY. THIS IS KNOWN AS THE UPDATE CYCLE. THE SATURDAY UPDATE RUN ALSO GENERATES ERROR MESSAGES CALLED THE "SECONDARY ERROR MESSAGES". IT IS IMPERATIVE THAT THE PERSON STORING THE DATA OBTAIN A COPY OF THESE MESSAGES TO ENSURE THAT THEIR DATA WERE STORED. TO DO THIS, THE STORET COMMAND PROCEDURE "%BATCH" IS USED. AN EXAMPLE OF THE USE OF THE "%BATCH" PROCEDURE IS SHOWN ON PAGE 27 OF THE SEMINAR DOCUMENTATION NAMED "AGENDA, OVERVIEW, AND INTRODUCTION TO TSO".

STORAGE CONCEPTS



WHAT IS NEEDED TO STORE A NEW SAMPLING SITE?

I. AN AGENCY CODE WHICH IDENTIFIES THE ORGANIZATION RESPONSIBLE FOR THE MONITORING NETWORK. THIS IS PROCURED FROM STORET USER ASSISTANCE.

II. EITHER AN ESTABLISHED MONITORING NETWORK OR A PLAN FOR A NEW NETWORK. EACH SAMPLING SITE TO BE ENTERED INTO STORET MUST HAVE THE FOLLOWING INFORMATION.

   A. AT LEAST ONE STATION NAME WHICH CAN BE ALPHA OR NUMERIC.

   B. A VALID STATION TYPE WHICH IDENTIFIES THE WATER BEING SAMPLED AND THE TYPE OF MONITORING BEING PERFORMED.

   C. STATE AND COUNTY FIPS NUMERIC CODES IN WHICH THE SITE IS LOCATED.

   D. THE LATITUDE AND LONGITUDE OF THE SITE.

   E. THE U. S. G. S. CATALOGING UNIT CODE IN WHICH THE SITE IS LOCATED.

   F. A BRIEF NARRATIVE ABOUT THE SITE'S LOCATION. THIS SHOULD CONTAIN THE NAME OF THE BODY OF WATER.

III. OPTIONAL ITEMS THAT MAY BE USED WHEN ENTERING A NEW ARE AS FOLLOWS:

   A. UP TO THREE ALIASES FOR THE STATION NAME.

   B. THE DEPTH OF THE WATER AT THE SAMPLING SITE.

   C. THE EPA MAJOR AND MINOR BASIN NAMES AND CODES.

   D. UP TO 5 AQUIFERS THAT ARE RELATED TO THE SITE.

   E. THE ELEVATION OF THE SITE.

   F. THE EPA SEGMENT NUMBER AND RELATED REACH INFORMATION.

   G. THE WATER BODY SYSTEM NUMBER.

   H. AN ECOREGION CODE.

   I. UP TO 1080 CHARACTERS OF FURTHER DESCRIPTIVE DATA.

   J. THE DESCRIPTION OF UP TO 3 EXTENSION POINTS FOR THE SITE.

HOW TO GET ITEMS FOR STATION LOCATION STORAGE

Agency Code/Unlocking Key
Louis Hoelman (FTS) 260-7050 (202) 260-7050

Station Numbers
Your Imagination

Station Type
Storage Documentation or Help File
STORET.HELP.STATION.TYPE

Location Name
Your Imagination

Water Body System Information
Jack Clifford (FTS) 260-3667 or (202) 260-3667

EPA Basin Codes
STORET.HELP.BASIN.CODES

Elevation
By Measuring

Depth
By Measuring

Aquifer Codes
STORET Command Procedure %PRNTAQ

LAT/LONG
Maps or Global Positioning Systems

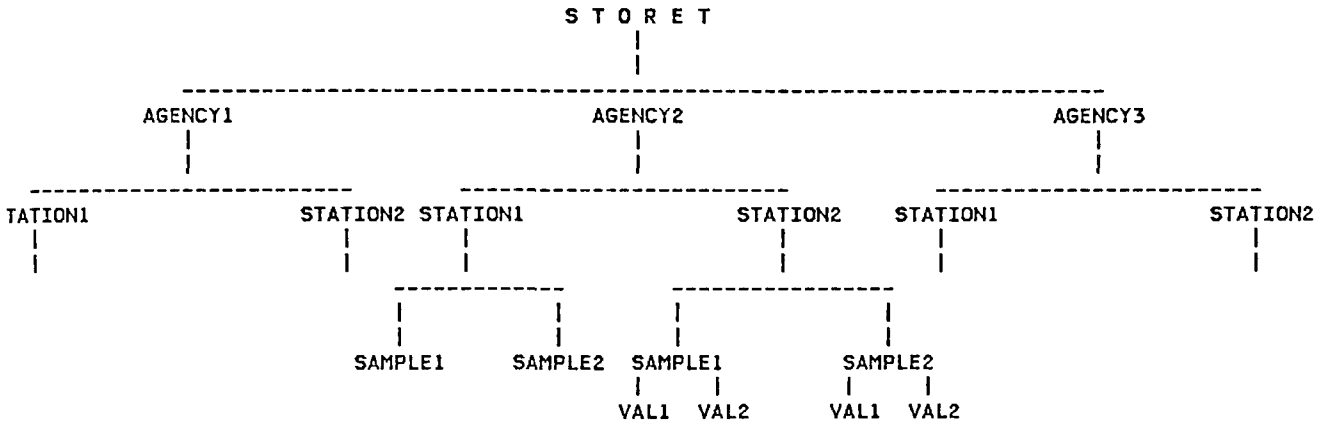
STATE/COUNTY
Federal Information Processing Standards PUB 6-1
or STORET Command Procedure %FIPSCODE

ECOREGION Region Codes
Jim Omernick (503) 753-6221

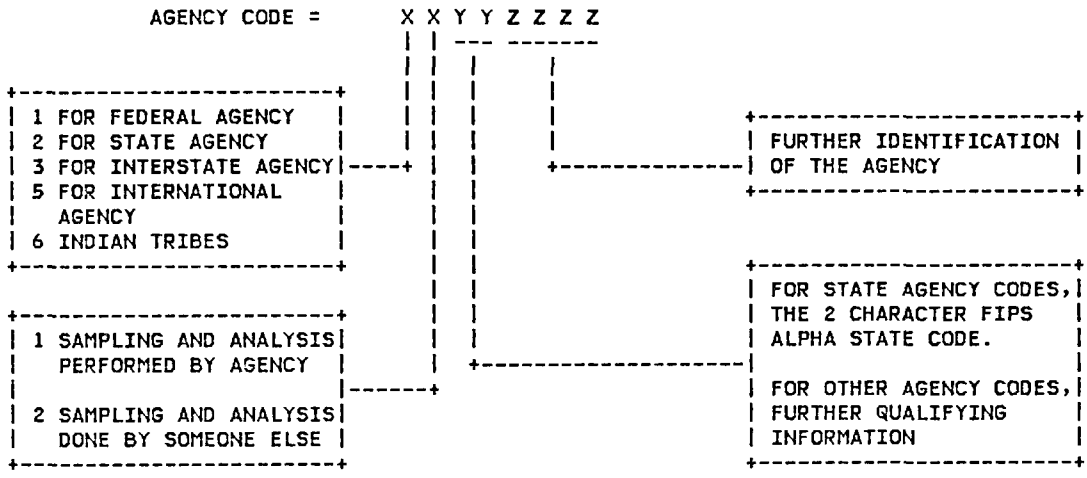
USGS Cataloging Units
Maps or STORET Command Procedure %PRNTHUC

EPA REACH Information
STORET COMMAND PROCEDURE %Batch with either
REACHRET or DIRLIST as the operand

THE HIERARCHICAL STRUCTURE OF THE DATA IN THE STORET WATER QUALITY SYSTEM IS SHOWN IN THE FIGURE BELOW. AS CAN BE SEEN, THE HIGHEST LEVEL IN THE HIERARCHY IS THE AGENCY CODE. UNDER THE AGENCY CODE, STATIONS ARE STORED, AND UNDER STATIONS, SAMPLE DATA ARE STORED. THE ORDER THAT INFORMATION IS ENTERED INTO THE SYSTEM FOLLOWS THE SAME SEQUENCE. AGENCY CODES MUST BE STORED BEFORE STATIONS CAN BE STORED AND STATIONS MUST BE STORED BEFORE SAMPLE DATA FOR THEM CAN BE STORED. EVEN THOUGH THE STORET USER SUBMITS STORAGE JOBS DURING THE WEEK, THE SYSTEM UPDATE OCCURS ONLY OVER THE WEEK END. THIS IS WHAT IS KNOWN AS THE UPDATE CYCLE. THEREFORE, BEFORE STATIONS CAN BE STORED, THERE MUST BE AN UPDATE CYCLE CONTAINING THE AGENCY STORAGE TRANSACTIONS, AND BEFORE SAMPLE DATA ARE STORED, THE STATION STORAGE TRANSACTIONS MUST HAVE BEEN PROCESSED THROUGH AN UPDATE CYCLE.



AS PREVIOUSLY MENTIONED, AN AGENCY CODE MUST BE ESTABLISHED BEFORE ANY STATION OR SAMPLE INFORMATION CAN BE ENTERED INTO THE WATER QUALITY SYSTEM (WQS). THIS CODE CAN ONLY BE ESTABLISHED BY THE STORET USER ASSISTANCE STAFF. WHEN THE AGENCY CODE IS BEING CREATED, THE ORGANIZATION AND A POINT OF CONTACT WHO IS GOING TO BE RESPONSIBLE FOR THE DATA IS IDENTIFIED. THIS GIVES THE USERS OF THE DATA A PERSON TO CONTACT IF THERE ARE QUESTIONS ABOUT THE DATA. THE AGENCY CODE IS A STRUCTURED NUMBER INDICATING WHO THE SAMPLING AGENCY IS, AND WHO IS RESPONSIBLE FOR THE DATA. POSITION 1 IS USED TO INDICATE WHETHER THE SAMPLING NETWORK BELONGS TO A FEDERAL AGENCY, A STATE AGENCY, AN INTERSTATE AGENCY, OR AN INTERNATIONAL AGENCY. THE SECOND POSITION INDICATES WHETHER THE AGENCY DOES ITS OWN MONITORING AND ANALYSIS OR WHETHER ANOTHER GROUP IS RESPONSIBLE FOR THE DATA. FOR FEDERAL, INTERSTATE, AND INTERNATIONAL AGENCIES, THE REMAINING 6 DIGITS ARE USED TO FURTHER IDENTIFY THE AGENCY. FOR STATE AGENCY CODES, POSITIONS 3 AND 4 CONTAIN THE 2 CHARACTER ALPHABETIC FIPS STATE CODE, AND THE REMAINING 4 POSITIONS ALLOW FURTHER CLARIFICATION OF THE AGENCY NAME. THE FOLLOWING TABLE DEMONSTRATES THE CODING SCHEME FOR AGENCY CODES:



AT THE TIME THAT THE AGENCY CODE IS ESTABLISHED, AN UNLOCKING KEY (MAXIMUM OF 8 CHARACTERS) IS CHOSEN BY THE REQUESTOR. FOR DATA TO BE STORED IN THE SYSTEM FOR AN AGENCY, THE UNLOCKING KEY MUST BE KNOWN.

AFER THE UPDATE CYCLE CONTAINING THE STORAGE TRANSACTIONS FOR THE AGENCY CODE HAS BEEN COMPLETED, SAMPLING SITE (STATION) LOCATION INFORMATION MAY BE STORED. WHEN ESTABLISHING NEW STATIONS IN EPA'S STORET DATA SYSTEM, A DATA SET (FILE) MUST BE CREATED WHICH CONTAINS THE PROPER STORAGE INSTRUCTIONS IN THE FORMAT "KEYWORD=VALUE,". TO INITIATE THE CREATION OF THIS DATA SET, THE FOLLOWING SEQUENCE OF COMMANDS IS ISSUED AFTER THE "READY" PROMPT:

```
READY
edit filename new lrecl(88)  <cr>
```

THIS WILL TRANSFER CONTROL TO THE "QUICK EDITOR" (QED) AND WILL ALLOW THE ENTERING OF THE KEYWORDS AND THEIR VALUES. THE INSTRUCTIONS CAN BE ENTERED ONE PER LINE OR STRUNG OUT ACROSS THE LINE BUT NOT EXCEEDING COLUMN 80. EACH LINE MUST END WITH A COMMA AND THE KEYWORD AND THE VALUE MUST BE ON THE SAME LINE WHICH MEANS THAT THEY CANNOT BE SPLIT AT THE END OF A LINE. THE FOLLOWING IS TYPICAL OF THE INFORMATION REQUIRED WHEN ESTABLISHING A NEW SAMPLING SITE IN THE STORET WATER QUALITY SYSTEM. AFTER THE NARRATIVE INFORMATION FOR THE STATION IS AN EXAMPLE DATA SET SHOWING THE KEYWORDS AND THEIR VALUES NEEDED TO STORE THE STATION.

THE AGENCY CODE IS "11TRAIN" WHOSE UNLOCKING KEY IS "CHOOCHOO". THE PRIMARY STATION NUMBER IS TO BE SEMINAR01A AND THE SAMPLING SITE HAS TWO ALIASES: 01041934 AND BLCK001. THE LATITUDE AND LONGITUDE OF THE SITE WHICH IS LOCATED IN MASON COUNTY (105) IN THE STATE OF MICHIGAN (26) IS 43 DEGREES, 58 MINUTES, AND 22.2 SECONDS AND 86 DEGREES, 8 MINUTES, AND 10.3 SECONDS. THE LATITUDE AND LONGITUDE WAS MEASURED WITH A PRECISION OF 1 SECOND. THE DEPTH OF THE WATER AT THE SAMPLING SITE IS 10 FEET AND THE STATION'S ELEVATION IS 318 METERS. THE STATION IS MONITORING AMBIENT STREAM DATA ON THE ONOWAGON RIVER WHICH IS IN THE PERE MARQUETTE MINOR BASIN (21) WHICH IS PART OF THE LAKE MICHIGAN MAJOR BASIN (08). THE SAMPLING IS PERFORMED OFF OF THE MAIN STREET BRIDGE WHICH IS 10 MILES NORTH OF THE FAIRCHILD RESERVOIR AND IS DONE NEAR THE LEFT BANK. THE STATION IS LOCATED IN THE MOST TYPICAL PART OF EPA'S ECOREGION 56. THE SAMPLING SITE LIES ABOVE AN AQUIFER OF SAND (AQUIFER CODE 112SAND). THE STATION IS LOCATED 3.8 MILES UP RIVER REACH SEGMENT NUMBER 029 WHICH IS IN U.S.G.S. CATALOGING UNIT 04060101. THE CHECK DIGIT FOR THE REACH IS 4. THE SAMPLING SITE IS LOCATED ON THE WATER BODY IDENTIFIED AS MI00346. SAMPLES ARE TAKEN ALONG A TRANSECT STARTING AT THIS POINT AND ENDING 0.3 MILES UP SEGMENT 030. ALL OF THE OTHER DESCRIPTIVE INFORMATION IS THE SAME EXCEPT THE AFOREMENTIONED SEGMENT NUMBER AND THE LATITUDE AND LONGITUDE WHICH IS 43 DEGREES, 58 MINUTES, AND 22.3 SECONDS AND 86 DEGREES, 8 MINUTES, AND 10.4 SECONDS. THE CHECK DIGIT FOR THE SECOND POINT IS 5. THE DATA FOR THE STATION ARE NOT TO BE LOCKED.

```
FORMAT=STATIONS,
A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703-883-8861,
NEWSTA=SEMINAR01A,SECSTA1=01041934,SECSTA2=BLCK001,
TYPE=STREAM/AMBNT,
LOCNAME=ONOWAGON RIVER MAIN ST BRDGE 10 M FROM RESERVOIR,
[redacted]BODY=MI00346 ONOWAGON RIVER,MAJNAME=LAKE MICHIGAN,
MINNAME=PERE MARQUETTE,BS=082100,DEPTH=010F,ELEV=318M,AQ1=112SAND,
POINT=1,
LAT=43 58 22.2,LONG=086 08 10.3,PREC=2,STCO=26105,ECOREG=56M,
RCHMIL=04060101029/3.8,ONRCH=YES,CKDIGIT=4,
POINT=2,
LAT=43 58 22.3,LONG=086 08 10.4,STCO=26105,ECOREG=56M,
RCHMIL=04060101030/0.3,ONRCH=YES,CKDIGIT=5,
PAR01=THE SAMPLING SITE IS ON THE LEFT BANK AND IS SAMPLED OFF THE MAIN ST,
PAR02=BRIDGE.  THIS IS 10 MILES UPSTREAM FROM THE FAIRCHILD RESERVOIR,
PAR03=SAMPLING IS DONE QUARTERLY WITH INTENSIVE SURVEYS EVERY 5 YEARS,
PAR04=THE SAMPLING IS DONE IN CONJUNCTION WITH THE CORPS OF ENGINEERS WITH,
PAR05=THE STATE LAB DOING THE ANALYSIS,
LOCKDAYS=000,LOCKDATE=9999,
```

AFTER THE DATA SET IS CREATED, IT IS SUBMITTED FOR PROCESSING BY USING THE STORET COMMAND PROCEDURE "STORE". THIS IS SHOWN BELOW ON PAGES 30 THROUGH 34.1.

STARTING WITH PAGE SIX BELOW ARE THE VARIOUS INSTRUCTIONS REQUIRED TO STORE A NEW STATION ALONG WITH WHICH ITEMS ARE REQUIRED AND THEIR DEFINITIONS AND LIMITATIONS. ALSO SHOWN ARE THE METHODS OF CHANGING PREVIOUSLY STORED STATION HEADER INFORMATION (CHGSTA), HOW TO DELETE ALL OF THE DATA FOR A STATION (DELDATA), AND HOW TO DELETE THE STATION AND ALL OF ITS DATA (DELSTA). PLEASE NOTE THAT "FORMAT=STATIONS," MUST BE THE FIRST ITEM IN THE FILE, AND IT MUST BE ON A LINE BY ITSELF. THE NEXT LINE MUST CONTAIN THE AGENCY CODE AND ITS UNLOCKING KEY.

THE FOLLOWING IS THE INFORMATION REQUIRED WHEN ESTABLISHNG A GROUND-WATER SITE IN THE STORET WATER QUALITY SYSTEM USING THE PROCEDURES DESCRIBED IN MANUAL "GROUND-WATER DATA MANAGEMENT WITH STORET:

THE AGENCY CODE IS "11TRAIN" WHOSE UNLOCKING KEY IS "CHOOCHOO". THE PRIMARY WELL NUMBER IS TO BE TESTWELL01A AND THE SAMPLING SITE HAS ONE ALIAS WHICH IS SITE0003001. THE LATITUDE AND LONGITUDE OF THE SITE, WHICH IS LOCATED IN PAGE COUNTY (139) IN THE STATE OF VIRGINIA (51), IS 38 DEGREES, 41 MINUTES, AND 44.0 SECONDS AND 78 DEGREES, 28 MINUTES, AND 10.0 SECONDS. THE LATITUDE AND LONGITUDE WAS MEASURED WITH A PRECISION OF 1 SECOND. THE ELEVATION OF THE WELL IS 318 METERS. THE WELL IS SAMPLING AMBIENT WATER. THE WELL IS LOCATED IN EPA'S POTOMAC RIVER MINOR BASIN (14) WHICH IS IN THE NORTH ATLANTIC MAJOR BASIN (02). THE OWNER'S NAME IS EEZZY OIL CO. THE WELL IS LOCATED IN THE MOST TYPICAL PART OF EPA'S ECOREGION 64. THE AQUIFER IN WHICH THE WELL IS SAMPLING IS THE LONDONBRIDGE FORMATION (AQUIFER CODE 112LDBG) AND IS LOCATED IN THE U.S.G.S. CATALOGING UNIT 02070005. THE DESCRIPTIVE PARAGRAPH SHOULD CONTAIN INFORMATION ABOUT THE METHOD OF MEASURING THE LATITUDE AND LONGITUDE AND INFORMATION ABOUT THE WELL LOGS. SINCE THIS STATION IS TO BE USED FOR TEST PURPOSES, ITS DATA SHOULD BE LOCKED.

```
FORMAT=STATIONS,
A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703-883-8861,
NEWSTA=TESTWELL01A,SECSTA1=SITE0003001,
TYPE=WELL/AMBNT,
LOCNAME=EEZZY OIL CO,
MAJNAME=NORTH ATLANTIC,
MINNAME=POTOMAC RIVER,BS=021400,ELEV=318M,AQ1=112LDBG,
POINT=1,
LAT=38 41 44.0,LONG=078 28 10.0,PREC=2,STCO=51139,ECOREG=64M,
CATUNIT=02070005,
PAR01=METHOD OF MEASURE FOR LATITUDE/LONGITUDE: SURVEY,
PAR02=SOURCE AGENCY FOR LAT/LONG DATA: STATE GEOLOGICAL SURVEY,
PAR03=USE OF THE WELL: DRINKING WATER SUPPLY,
PAR04=TYPE OF WELL LOG:   DRILLER'S LOG            ELECTRIC LOG,
PAR05=LOCATION OF WELL LOG:  COURT HOUSE ROOM 412  EEZZY OIL COMPANY,
PAR06=                       22 N COURT STREET     BLACK FUEL AVENUE,
PAR07=                       ANYTOWN VA 20371      OILBOOM  VA 20771,
LOCKDAYS=000,LOCKDATE=4001,
```

++

TYPE OF STORAGE YES

THE TYPE OF STORAGE TRANSACTIONS BEING CREATED IS ENTERED. FOR STATION STORAGE, "STATIONS" IS USED, AND FOR DATA, "WQS" IS ENTERED. THIS MUST BE THE FIRST ITEM ENTERED AND IT MUST BE ON A LINE BY ITSELF. IT IS ENTERED ONCE AND ONLY ONCE.

FORMAT=STATIONS,

AGENCY CODE YES

ORGANIZATION RESPONSIBLE FOR THE DATA. UP TO 8 ALPHANUMERIC CHARACTERS. THE AGENCY CODE MUST BE ON THE LINE THAT COMES IMMEDIATELY AFTER THE ONE CONTAINING THE "FORMAT=STATIONS,".

A=--------,

UNLOCKING KEY YES

REQUIRED FOR THE STORAGE OF INFORMATION FOR THE PRECEDING AGENCY. UP TO 8 ALPHANUMERIC CHARACTERS ARE USED.

UK=--------,

USER INFORMATION NO

THIS OPTIONAL FIELD IS USED TO ENTER INFORMATION ABOUT THE JOB. IT IS RECOMMENDED THAT THE USER'S NAME AND TELEPHONE NUMBER BE ENTERED IN THIS FIELD WHICH CAN BE UP TO 37 CHARACTERS IN LENGTH.

USER=-----------------------------------,

DATA ITEM KEYWORD=VALUE,	DESCRIPTION/FORMAT	REQUIRED
PRIMARY STATION NUMBER AND TRANSACTION TYPES		YES
	SUPPLIES PRIMARY STATION NUMBER AND THE TYPE OF TRANSACTION TO BE PERFORMED. UP TO 15 ALPHANUMERIC CHARACTERS. CHOOSE EXACTLY ONE.	
NEWSTA=----------,	NEW STATION STORAGE-PRIMARY STATION #	YES
	WHEN USING ONE OF THE FOLLOWING, THE PRIMARY STATION NUMBER MUST BE USED.	
CHGSTA=----------,	CHANGE STATION HEADER	YES
DELSTA=----------,	DELETE STATION AND ITS DATA	YES
DELDATA=----------,	DELETE STATION'S DATA ONLY	YES
SECONDARY STATION NUMBERS		NO
	EACH STATION MAY HAVE UP TO 3 ALIASES. ALL STATION NUMBERS FOR AN AGENCY MUST BE UNIQUE WHETHER IT IS A SECONDARY OR PRIMARY NUMBER. THE FIRST TWO ALIASES CAN BE UP TO 12 CHARACTERS IN LENGTH AND THE THIRD ONE CAN BE UP TO 10 IN LENGTH.	
SECSTA1=----------,	FIRST STATION ALIAS/ALPHANUMERIC	NO
SECSTA2=----------,	SECOND STATION ALIAS/ALPHANUMERIC	NO
SECSTA3=----------,	THIRD STATION ALIAS/ALPHANUMERIC	NO

++

STATION TYPE YES

A VALID STATION TYPE MUST BE SUPPLIED. IT DESCRIBES THE TYPE OF WATER BEING SAMPLED AND OTHER ATTRIBUTES OF THE SITE. EACH LEVEL IS SEPARATED BY A SLASH "/". WHEN ENTERED, IT MAY OVERFLOW TO THE NEXT LINE AND UP TO 155 CHARACTERS MAY BE USED WITHOUT ANY SPACES. SEE "STORET.HELP.STATION.TYPE" FOR A LIST OF THE VALID TYPES. "TYPE" IS USED FOR NEW STATIONS, "ADDTYPE" IS USED TO ADD ONE OR MORE TYPES TO AN EXISTING STATION AND "DELTYPE" IS USED TO DELETE ONE OR MORE TYPES FROM AN EXISTING STATION. IF "ADDTYPE" OR "DELTYPE" ARE USED, "CHGSTA" MUST ALSO BE USED. USE EXACTLY ONE.

TYPE=----------,

ADDTYPE=----------,

DELTYPE=----------,

The following four pages show the available station types and their definitions.

Level Number	Type code	Definition
Level 1 (One) Required	STREAM	Station samples from a stream. A naturally occurring, freshwater, free-flowing, channeled body of surfacewater, with regular or seasonal flow, that empties into an ocean, lake, reservoir or another stream. Includes rivers.
	CANAL	Station samples from a canal. An artificial, channeled waterway used for navigation, drainage, land irrigation, etc. Includes drainage ditches.
	LAKE	Station samples from a lake. An inland body of water, naturally formed. Includes pon
	RESERV	Station samples from a reservoir. A man-made body of water formed by damming or obstructing a stream or river (many "lakes" are actually reservoirs).
	SPRING	Station samples from a spring. A natural flow of groundwater from the earth, which feeds into a stream or body of water on the surface.
	WELL	Station samples from a well. An artificial excavation from which groundwater is draw or through which liquid waste is disposed of by injection.
	FWTLND	Station samples from a freshwater wetland. A tract of soft, wet land saturated and sometimes partially covered with freshwater (where the water table is at or near the surface of the land) or where the surface is covered by shallow freshwater due to seasonal flooding or tidal conditions. Includes swamps and freshwater marshes.
	SWTLND	Station samples from a saltwater wetland. A tract of soft, wet land saturated and sometimes partially covered with salt, brackish or estuarian waters or where the surf of the land is covered by shallow saltwater due to tidal conditions. Includes saltmarshes and coastal areas.
	ESTURY	Station samples from an estuary. That part of a river or stream or other natural bod of water having un-impaired connection with the open sea, where the sea water is measurably diluted with freshwater derived from land drainage. Includes lagoons, bays inlets, and harbors.
	OCEAN	Station samples from an ocean. The open sea.
	LND	Station is not located within a body of water and samples soil, air, precip, etc.
	PIPE	Station samples at or within a man-made facility. Includes water supply, wastewater treatment and industrial sites, and sewers.

Level Number	Type code	Definition
Level 2a (One) Required	AMBNT	Monitoring ambient conditions of the environment. Includes facility intakes pulling directly from an ambient source (Ex- STREAM/AMBNT/MUN/INTAKE).
	NONAMB	Monitoring at or within a man-made facility. Compliance monitoring falls into this category. Includes sites where facility discharge has directly influenced or impacte though not necessarily polluted, the environment (Ex- PIPE/NONAMB/IND/OUTFL/NTRTMT). Only valid for Level 1 codes "PIPE" or "WELL". NONAMB is assumed for "PIPE" sites.
Level 2b (One) * Required for PIPE (Otherwise optional)	NTRTMT	No pollution abatement has been performed.
	PTRTMT	Some, but not all, of the intended pollution abatement has been performed.
	TREATD	All of the intended pollution abatement has been performed.
	CMBTRT	Combined treatment, where treatment status does not clearly fall into one of the categories defined above. Includes unknown treatment status.
	SEWER	Monitoring within a sewer (see level 5 for further identification).
	INPLNT	Inside a treatment facility. This type is used in conjunction with plant location co defined within the Storet User Handbook.
Level 3 (One) * Required for PIPE (Otherwise optional)	MUN	Municipal (incorporated). Includes water supply or wastewater treatment facilities.
	IND	Industrial facility.
	CMBMI	Combined "MUN" and "IND".
	AGRI	Agricultural site. Includes raw crops, feedlots, grazing, and silviculture (forestry
	DOMEST	Domestic (residential) domicile or facility. Includes water supplies and on-lot sept systems for private dwellings.
	DISPOS	Waste (solid or liquid) disposal site.
	ABANDN	The site from which samples are gathered is abandoned.
Level 4 (One) * Required for PIPE (Otherwise optional)	INTAKE	Intake or influent.
	OUTFL	Outfall, discharge or effluent.
	CMBSRC	Combined source ("INTAKE" and "OUTFL").

Level Number	Type code	Definition
Level 5 (One or more) Optional	SPRAY	Site where water has been sprayed on the surface of the land for purposes of irrigati
	SBSOIL	Subsoil - a drain tile system or other points just below the surface of the land.
	HRZTL	Horizontal well.
	TUNNEL	Tunnel - an underground corridor.
	GALERY	Gallery - an artificial, underground structure implanted to collect groundwater.
	PRECIP	Wet atmospheric deposition (precipitation) due to the condensation of water vapor. Includes mist, rain, sleet, snow and hail.
	NRSHRE	Near shore - less than 3 kilometers (approximately 1.9 miles) from a major shore.
	OFSHRE	Off shore - from 3 to 8 kilometers (approximately 1.9 to 5 miles) from a major shore.
	OPENLK	Open water - greater than 8 kilometers (approximately 5 miles) from a major shore.
	RUNOFF	Stormwater runoff.
	STMSWR	Stormwater sewer.
	SANSWR	Sanitary sewer.
	CMBSWR	Combined "STMSWR" and "SANSWR".
	SUPPLY	Water supply storage or treatment facility.
	NET	Fixed site network station.
	MONITR	Source monitoring site, which monitors a known problem or to detect a specific proble
	HAZARD	Site of hazardous or toxic wastes or substances.
	BACK	Monitoring for background (baseline) water quality. Opposite of "DOWN".
	DOWN	Down (i.e., within a potentially polluted area) from a facility which has a potential to pollute. See also "DOWNGR" and "UPGR".
	MET	Site where sampling is performed to describe scientific phenomena related to meteorological conditions, such as temperature, solar radiation, winds, and the quanti and quality of atmospheric deposition.
	LNDTRT	Land treatment area.

Level Number	Type code	Definition
Level 5 (Continued)	UPGR	Upgradient of a well or spring. Only valid for use with "WELL" or "SPRING" (groundwater sites).
	DOWNGR	Downgradient of a well or spring. Only valid for use with "WELL" or "SPRING" (groundwater sites).
	RCRA	RCRA monitoring site.
	CERCLA	CERCLA ("Superfund") monitoring site.
	BASSAY	Bioassay site.
	IMPDMT	Impoundment. Includes waste pits, treatment lagoons and settling and evaporation pon
	LNDFL	Landfill.
	INJECT	Site where liquid waste has been injected underground as a means of disposal.
	NONPNT	Nonpoint source pollution. Includes eutrophication, acidification, thermal change, organic nutrients, sedimentation, and hydromodification.
	DEVLMT	Developement site. Includes construction.
	MINE	Mine or site of mining activities. Includes reclaimed land areas and coal mining.
	DISTR	Water supply distribution system.
	BIO	Biological monitoring site (for BIOS Field Survey System).
	FISH	Fish tissue sampling site.
	TISSUE	Plant or animal matter sampling site.
	SOLIDS	Sludge or sediment sampling site.
	SLUDGE	Sludge spreading site.
	POLLUT	Site of pollution incident.
	RANNEY	Ranney collector (usually associated with level 1 code WELL).
	ONLOT	On-lot septic system.

* Entries from Levels 2b, 3, and 4 are -not- required for sites sampling from storm sewers, e.g., PIPE/NONAMB/RUNOFF/STMSWR, or from a water supply system's distribution system, e.g., PIPE/NONAMB/DISTR.

++

WATER BODY CODE NO

THE WATER BODY CODE AND NAME AS IT APPEARS IN THE WATER BODY FILE IS ENTERED. UP TO 25 CHARACTERS CAN BE USED.

WBODY=-------------------------,

MAJOR BASIN NAME NO

THE EPA MAJOR BASIN IN WHICH THE SAMPLING SITE IS LOCATED IS ENTERED. UP TO 24 CHARACTERS CAN BE USED. SEE THE DATA SET "STORET.HELP.BASIN.CODES" FOR A LIST OF THE NAMES AND CODES.

MAJNAME=------------------------,

MINOR BASIN NAME NO

THE EPA MINOR BASIN IN WHICH THE SAMPLING SITE IS LOCATED IS ENTERED. UP TO 40 CHARACTERS CAN BE USED. THE ABOVE DATA SET CONTAINS THESE NAMES AND CODES.

MINNAME=--,

EPA BASIN CODE NO

THE EPA BASIN CODE IS ENTERED WHICH CONSISTS OF 2 DIGITS FOR THE MAJOR BASIN, 2 DIGITS FOR THE MINOR BASIN, AND 2 DIGITS FOR THE SUB-BASIN. IF USED, AT LEAST 4 DIGITS MUST BE USED. THERE ARE NO EPA SUB-BASIN CODES AND ITS USE IS OPTIONAL.

BS=------,

STATION LOCATION DESCRIPTION YES

A BRIEF NARATIVE OF THE SITE LOCATION IS ENTERED. IT SHOULD BE AS INFORMATIVE AS SPACE ALLOWS, AND IF POSSIBLE, IT SHOULD CONTAIN THE STREAM NAME. UP TO 48 CHARACTERS CAN BE USED.

LOCNAME=--,

++

DEPTH OF WATER NO

THE DEPTH OF THE WATER AT THE SAMPLING SITE. UP TO 3 DIGITS ARE ENTERED AND THE UNITS ARE ASSUMMED TO BE FEET. IF METERS ARE DESIRED FOR THE UNITS, AN "M" IS APPENED TO THE NUMBER. IF THIS FIELD IS NOT ENTERED, ZERO FEET IS ASSUMMED. EVEN THOUGH METERS ARE STORED, THEY WILL BE CONVERTED AND PRINTED IN FEET.

DEPTH=----,

STATION ELEVATION NO

THE ELEVATION OF THE STATION IS ENTERED AND UP TO 9 DIGITS CAN BE USED. THE DEFAULT UNITS ARE FEET AND TO STORE THE ELEVATION IN METERS AN "M" IS APPENDED TO THE NUMBER. THE ELEVATION WILL PRINT EXACTLY AS IT IS ENTERED.

ELEV=----------,

AQUIFER IDENTIFIER NO

THE AQUIFER IN WHICH THE SITE IS LOCATED IS ENTERED. UP TO FIVE 8 CHARACTER CODES MAY BE USED. THE FIRST 3 CHARACTERS MUST BE NUMERIC AND THE REMAINING 5 CHARACTERS ARE ALPHABETIC. THE STORET COMMAND "PRNTAQ" WILL PRODUCE A LIST OF THE AQUIFER CODES BY STATE.

AQ1=--------,
AQ2=--------,
AQ3=--------,
AQ4=--------,
AQ5=--------,

THE INFORMATION SHOWN ABOVE CAN BE ENTERED ONLY ONCE FOR EACH STATION AND IT IS USED TO DESCRIBE THE PRIMARY POINT LOCATION. THE DATA BELOW MUST BE ENTERED AT LEAST ONCE FOR THE PRINCIPAL POINT. HOWEVER, EACH STATION MAY HAVE UP TO 3 EXTENSION POINTS FOR WHICH INFORMATION MAY BE STORED. THE INFORMATION FOR THE PRIMARY POINT ARE THE ONES USED BY THE RETRIEVAL SOFTWARE TO RETRIEVE THE STATIONS OF INTEREST. THE OTHER 3 POINTS ARE USED TO DESCRIBE THE STATION'S EXTENT. THE INFORMATION SUPPLIED FOR EACH OF THE POINTS MUST BE CONSISTANT WITH REGARD TO THE LATITUDE, LONGITUDE, STATE, COUNTY, CATALOGING UNIT, AND REACH (WHEN USED) BECAUSE THE SYSTEM CHECKS EACH OF THE ITEMS TO ENSURE THAT THE POINT IS LOCATED AS INDICATED.

DATA ITEM KEYWORD=VALUE,	DESCRIPTION/FORMAT	REQUIRED
POINT IDENTIFIER		YES

THIS IS USED TO SPECIFY WHICH POINT'S DATA IS BEING ENTERED AND IT MUST COME BEFORE THE KEYWORDS THAT FOLLOW. EVERY STATION MUST USE "POINT=1," WHICH DESIGNATES THAT THE DATA FOLLOWING IT ARE FOR THE PRINCIPAL POINT. "POINT=2,", ETC. IS USED TO SPECIFY THE DATA FOR THE OTHER POINTS. FOR THE PRINCIPAL POINT, THE ECOREGION INFORMATION IS OPTIONAL AND FOR ALL OF THE POINTS, THE REACH INFORMATION IS OPTIONAL. THE PRECISION WITH WHICH THE LAT/LONG WAS MEASURED CAN ONLY BE ENTERED FOR THE PRIMARY POINT.

POINT=-,

LATITUDE OF SITE — YES

THE DEGREES, MINUTES, SECONDS, AND TENTHS OF SECONDS OF LATITUDE ARE ENTERED AS FOLLOWS: DD MM SS.S.

LAT=-- -- --.-,

LONGITUDE OF SITE — YES

THE DEGREES, MINUTES, SECONDS, AND TENTHS OF SECONDS OF LONGITUDE ARE ENTERED AS FOLLOWS: DDD MM SS.S.

LONG=--- -- --.-,

PRECISION CODE — NO

THE PRECISION WITH WHICH THE LAT/LONG WAS MEASURED IS ENTERED USING THE TABLE BELOW. THIS IS ENTERED ONLY FOR THE PRIMARY POINT.

CODE	PRECISION
1	TENTH OF A SECOND
2	ONE SECOND
3	TEN SECONDS
4	THIRTY SECONDS
5	ONE MINUTE
6	TEN MINUTES
7	THIRTY MINUTES
8	ONE DEGREE

PREC=-,

++

STATE/COUNTY CODE YES

THE TWO DIGIT FIPS STATE CODE AND THE THREE DIGIT FIPS COUNTY CODE IN WHICH THE STATION IS LOCATED ARE ENTERED. THESE CODES ARE CHECKED AGAINST THE LAT/LONG FOR ACCURACY.

STCO=-----,

ECOREGION NO

THE 3 CHARACTER ECOREGION CODE IS ENTERED. THESE ARE MAINTAINED BY JIM OMERNICK IN EPA'S CORVALLIS LAB IN OREGON. MAPS ARE AVAILABLE AND THE STORET HELPFUL DATA SET NAMED "STORET.HELP.ECO.REGIONS" CONTAINS INFORMATION ABOUT THEM. THE CODE IS MADE UP OF 2 DIGITS AND EITHER THE LETTER "M" WHICH MEANS THAT THE SITE IS LOCATED IN AN AREA THAT IS MOST LIKE THE ECOREGION, OR THE LETTER "G" WHICH MEANS THAT THE SITE IS LOCATED IN AN AREA THAT IS GENERALLY LIKE THE ECOREGION.

ECOREG=---,

++

U.S.G.S. CATALOGING UNIT YES

THE U.S.G.S. CATALOGING UNIT CODE IN WHICH THE STATION IS LOCATED IS ENTERED. THIS IS AN 8 DIGIT CODE AND CAN BE OBTAINED FROM U.S.G.S. MAPS OR BY USING THE "PRNTHUC" COMMAND. THE CODE IS CHECKED AGAINST THE LAT/LONG TO ENSURE THAT THE PROPER CODE IS USED. IF THE FULL "REACH" INFORMATION IS TO BE USED, THEN THIS IS NOT USED AND THE "RCHMIL" INSTRUCTION IS UTILIZED.

CATUNIT=--------,

EPA REACH INFORMATION

THE EPA "REACH" INFORMATION MAY BE USED INSTEAD OF THE U.S.G.S. CATALOGING UNIT. THE REACH NUMBER IS MADE UP OF THE 8 DIGIT CATALOGING UNIT CODE AND THE 3 DIGIT EPA SEGMENT NUMBER ALONG WITH MILEAGE INFORMATION. IF A MILEAGE IS USED, IT IS SEPARATED FROM THE REACH NUMBER BY A SLASH. THE "ONRCH" AND "CKDIGIT" KEYWORDS MUST BE USED. THE TOTAL REACH INFORMATION MAY BE UP TO 20 CHARACTERS IN LENGTH. THE MILEAGE MAY BE EXPRESSED WITH A PRECISION OF UP TO A THOUSANDTH OF A MILE.

RCHMIL=----------/----.---,

IS STATION ON REACH

IF THE EPA REACH INFORMATION IS USED, THIS FIELD MUST BE USED TO SPECIFY WHETHER THE SITE IS ON THE SEGMENT OR ON A STREAM THAT IS A TRIBUTARY TO THE SEGMENT. "ONRCH=YES," MEANS THAT IT IS ON THE REACH AND "ONRCH=NO," MEANS THAT IT IS NOT.

ONRCH=---,

CHECK DIGIT FOR REACH SEE ABOVE

IN ORDER TO STORE AN EPA REACH NUMBER, THE CHECK DIGIT MUST BE KNOWN AND ENTERED FOR THE STATION. IT IS A ONE DIGIT CODE AND CAN BE DETERMINED BY USING THE "%BATCH" COMMAND WITH THE "REACHRET" OPTION.

CKDIGIT=-,

IN ORDER FOR A STATION TO BE ENTERED INTO THE SYSTEM, EITHER A U.S.G.S. CATALOGING UNIT CODE OR THE EPA REACH CODING MUST BE ENTERED. IF THE REACH CODING IS USED, THEN "RCHMIL" IS USED AND THE ITEMS "ONRCH" AND "CKDIGIT" MUST BE USED.

FOR THE ITEMS ENTERED AFTER THE "POINT" INSTRUCTION, THE FOLLOWING ARE CHECKED FOR VALIDITY BY THE SYSTEM TO ENSURE THAT THEY ARE CORRECT AS ENTERED: LAT/LONG VERSES STATE AND COUNTY; LAT/LONG VERSES CATALOGING UNIT; LAT/LONG VERSES REACH DATA; AND STATE/COUNTY VERSES REACH DATA.

TREE LEVEL 12 11 10 9 8 7 6 5 4 3 2 1	REACH NAME	REACH NUMBER	CHECK DIGIT	TYPE	LENGTH (MILES)
	- ASSOCIATED SHORELINE				
	POTOMAC R	02070010023	3	SHRL(W)	3.90
	NOT A HYDROLOGIC TRANSPORT REACH				
	*				
	/ - FROM THE RIGHT				
	041 HOLMES RUN	02070010041	9	ARTF(M)	1.40
	- ARTIFICIAL REACH THROUGH POTOMAC R				
	ASSOCIATED SHORELINE				
	POTOMAC R	02070010024	7	SHRL(W)	3.80
	- NOT A HYDROLOGIC TRANSPORT REACH				
	*				
	- CONTINUATION				
	042 HOLMES RUN	02070010042	3	SRCE(S)	10.60
	*				
	FROM THE LEFT				
	025 POTOMAC R	02070010025	1	ARTF(M)	5.10
	- ARTIFICIAL REACH THROUGH POTOMAC R				
	ASSOCIATED SHORELINE				
	POTOMAC R	02070010026	5	SHRL(W)	7.40
	- NOT A HYDROLOGIC TRANSPORT REACH				
	ASSOCIATED SHORELINE				
	POTOMAC R	02070010027	9	SHRL(W)	6.50
	- NOT A HYDROLOGIC TRANSPORT REACH				
	*				
	/ - FROM THE LEFT				
	028 ANACOSTI R	02070010028	3	ARTF(M)	2.10
	- ARTIFICIAL REACH THROUGH POTOMAC R				
	*				
	- CONTINUATION				
	029 ANACOSTI R	02070010029	7	REGL(R)	7.90
	*				
	/ - FROM THE LEFT				
	030 *A	02070010030	8	SRCE(S)	16.20
	*				
	FROM THE RIGHT				
	031 ANACOSTI R	02070010031	2	SRCE(S)	18.00
	*				
	- FROM THE RIGHT				
	032 POTOMAC R	02070010032	6	ARTF(M)	3.80
	ARTIFICIAL REACH THROUGH POTOMAC R				
	- ASSOCIATED SHORELINE				
	POTOMAC R	02070010033	0	SHRL(W)	4.90
	- NOT A HYDROLOGIC TRANSPORT REACH				

++

ADDITIONAL STATION INFORMATION NO

THE SYSTEM ALLOWS FOR THE ENTERING OF ADDITIONAL NARRATIVE INFORMATION ABOUT THE STATION. THIS ADDITIONAL INFORMATION IS ENTERED IN THE DESCRIPTIVE PARAGRAPH AND UP TO 15 LINES OF INFORMATION MAY BE ENTERED WITH EACH LINE CONTAINING UP TO 72 CHARACTERS.

PAR01=--,
PAR02=--,
PAR03=--,
PAR04=--,
PAR05=--,
PAR06=--,
PAR07=--,
PAR08=--,
PAR09=--,
PAR10=--,
PAR11=--,
PAR12=--,
PAR13=--,
PAR14=--,
PAR15=--,

NUMBER OF DAYS LOCKED NO

USED TO ENTER THE NUMBER OF DAYS AFTER THE SAMPLE DATE THAT THE DATA FOR A STATION ARE TO BE LOCKED. IF THIS IS USED, THE DATA WILL BE UNAVAILABLE FOR THE SPECIFIED NUMBER OF DAYS. THE ASSUMED VALUE IS "000" WHICH MEANS THAT THE DATA ARE ACCESSIBLE AS SOON AS THEY ARE STORED. THE DATA MAY BE LOCKED FOR UP TO 360 DAYS FROM THE SAMPLE DATE.

LOCKDAYS=---,

LOCK AFTER DATE NO

A DATE IN YEAR-MONTH ORDER IS SPECIFIED AND DATA SAMPLED AFTER THAT DATE ARE UNAVAILABLE FOR A RETRIEVAL UNLESS THE UNLOCKING KEY IS SUPPLIED AS PART OF THE RETRIEVAL REQUEST. THE ASSUMED VALUE FOR THE FOUR DIGIT FIELD IS "9999" WHICH MEANS THAT THE DATA ARE ACCESSIBLE.

LOCKDATE=----,

++

ARCHIVE CLASS FOR STATION NO

THIS IS USED TO PUT A NEW STATION INTO AN ARCHIVE CLASS OTHER THAN THE ON-LINE CLASS OF "00". IT IS A TWO DIGIT FIELD AND THE FOLLOWING ARE THE VARIOUS CLASSES AND THEIR MEANINGS:

CLASS	TYPE OF DATA
00	THE DEFAULT CLASS (THE STATIONS THAT ARE ON-LINE)
01	OKLAHOMA OIL WELL DATA AND OREGON FISH AND GAME DATA
02	USGS WELL AND SPRING DATA
03	ORSANCO CONTINUOUS MONITORING DATA AND CALIFORNIA WELL DATA
04	NATIONWIDE URBAN RUNOFF PROGRAM DATA

ARCLASS=--,

REPEATED BELOW IS THE INFORMATION REQUIRED WHEN ESTABLISHING A NEW SAMPLING SITE IN THE STORET WATER QUALITY SYSTEM. AND THE KEYWORDS AND THEIR VALUES CORRESPONDING TO THE ITEMS TO BE STORED.

THE AGENCY CODE IS "11TRAIN" WHOSE UNLOCKING KEY IS "CHOOCHOO". THE PRIMARY STATION NUMBER IS TO BE SEMINAR01A AND THE SAMPLING SITE HAS TWO ALIASES: 01041934 AND BLCK001. THE LATITUDE AND LONGITUDE OF THE SITE WHICH IS LOCATED IN MASON COUNTY (105) IN THE STATE OF MICHIGAN (26) IS 43 DEGREES, 58 MINUTES, AND 22.2 SECONDS AND 86 DEGREES, 8 MINUTES, AND 10.3 SECONDS. THE LATITUDE AND LONGITUDE WAS MEASURED WITH A PRECISION OF 1 SECOND. THE DEPTH OF THE WATER AT THE SAMPLING SITE IS 10 FEET AND THE STATION'S ELEVATION IS 318 METERS. THE STATION IS MONITORING AMBIENT STREAM DATA ON THE ONOWAGON RIVER WHICH IS IN THE PERE MARQUETTE MINOR BASIN (21) WHICH IS PART OF THE LAKE MICHIGAN MAJOR BASIN (08). THE SAMPLING IS PERFORMED OFF OF THE MAIN STREET BRIDGE WHICH IS 10 MILES NORTH OF THE FAIRCHILD RESERVOIR AND IS DONE NEAR THE LEFT BANK. THE STATION IS LOCATED IN THE MOST TYPICAL PART OF EPA'S ECOREGION 56. THE SAMPLING SITE LIES ABOVE AN AQUIFER OF SAND (AQUIFER CODE 112SAND). THE STATION IS LOCATED 3.8 MILES UP RIVER REACH SEGMENT NUMBER 029 WHICH iS IN U.S.G.S. CATALOGING UNIT 04060101. THE CHECK DIGIT FOR THE REACH IS 4. THE SAMPLING SITE IS LOCATED ON THE WATER BODY IDENTIFIED AS MI00346. SAMPLES ARE TAKEN ALONG A TRANSECT STARTING AT THIS POINT AND ENDING 0.3 MILES UP SEGMENT 030. ALL OF THE OTHER DESCRIPTIVE INFORMATION IS THE SAME EXCEPT THE AFOREMENTIONED SEGMENT NUMBER AND THE LATITUDE AND LONGITUDE WHICH IS 43 DEGREES, 58 MINUTES, AND 22.3 SECONDS AND 86 DEGREES, 8 MINUTES, AND 10.4 SECONDS. THE CHECK DIGIT FOR THE SECOND POINT IS 5. THE DATA FOR THE STATION IS NOT TO BE LOCKED.

```
FORMAT=STATIONS,
A=11TRAIN,
UK=CHOOCHOO,
USER=HORACE HAWGKNUCKLES 703-883-8861,
NEWSTA=SEMINAR01A,
SECSTA1=01041934,
SECSTA2=BLCK001,
TYPE=STREAM/AMBNT,
LOCNAME=ONOWAGON RIVER MAIN ST BRDGE 10 M FROM RESERVOIR,
NBODY=MI00346 ONOWAGON RIVER,
MAJNAME=LAKE MICHIGAN,
MINNAME=PERE MARQUETTE,
BS=082100,
DEPTH=010F,
ELEV=318M,
AQ1=112SAND,
```

```
POINT=1,
LAT=43 58 22.2,
LONG=086 08 10.3,
PREC=2,
STCO=26105,
ECOREG=56M,
RCHMIL=04060101029/3.8,
ONRCH=YES,
CKDIGIT=4,
POINT=2,
LAT=43 58 22.3,
LONG=086 08 10.4,
STCO=26105,
ECOREG=56M,
RCHMIL=04060101030/0.3,
ONRCH=YES,
CKDIGIT=5,
PAR01=THE SAMPLING SITE IS ON THE LEFT BANK AND IS SAMPLED OFF THE MAIN ST,
PAR02=BRIDGE.  THIS IS 10 MILES UPSTREAM FROM THE FAIRCHILD RESERVOIR,
PAR03=SAMPLING IS DONE QUARTERLY WITH INTENSIVE SURVEYS EVERY 5 YEARS,
PAR04=THE SAMPLING IS DONE IN CONJUNCTION WITH THE CORPS OF ENGINEERS WITH,
PAR05=THE STATE LAB DOING THE ANALYSIS,
LOCKDAYS=000,
LOCKDATE=9999,
```

MORE THAN ONE ITEM MAY BE ENTERED PER LINE BUT NOTHING CAN BE ENTERED PAST COLUMN 80 AND THE VALUE FOR A KEYWORD MUST BE ENTERED ON THE SAME LINE AS THE KEYWORD. THE STATION TYPE IS THE EXCEPTION TO THIS RULE. THEREFORE, THE ABOVE STATION STORAGE INFORMATION COULD BE ENTERED AS FOLLOWS:

```
FORMAT=STATIONS,
A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703-883-8861,
NEWSTA=SEMINAR01A,SECSTA1=01041934,SECSTA2=BLCK001,
TYPE=STREAM/AMBNT,
LOCNAME=ONOWAGON RIVER MAIN ST BRDGE 10 M FROM RESERVOIR,
WBODY=MI00346 ONOWAGON RIVER,MAJNAME=LAKE MICHIGAN,
MINNAME=PERE MARQUETTE,BS=082100,DEPTH=010F,ELEV=318M,AQ1=112SAND,
POINT=1,
LAT=43 58 22.2,LONG=086 08 10.3,PREC=2,STCO=26105,ECOREG=56M,
RCHMIL=04060101029/3.8,ONRCH=YES,CKDIGIT=4,
POINT=2,
LAT=43 58 22.3,LONG=086 08 10.4,STCO=26105,ECOREG=56M,
RCHMIL=04060101030/0.3,ONRCH=YES,CKDIGIT=5,
PAR01=THE SAMPLING SITE IS ON THE LEFT BANK AND IS SAMPLED OFF THE MAIN ST,
PAR02=BRIDGE.  THIS IS 10 MILES UPSTREAM FROM THE FAIRCHILD RESERVOIR,
PAR03=SAMPLING IS DONE QUARTERLY WITH INTENSIVE SURVEYS EVERY 5 YEARS,
PAR04=THE SAMPLING IS DONE IN CONJUNCTION WITH THE CORPS OF ENGINEERS WITH,
PAR05=THE STATE LAB DOING THE ANALYSIS,
LOCKDAYS=000,LOCKDATE=9999,
```

THE FOLLOWING IS A BLANK FORM WHICH CAN BE USED TO ENTER STATIONS. FOR A MORE IN DEPTH DISCUSSION OF THE VARIOUS ITEMS REQUIRED FOR STATION STORAGE, SEE THE STORET SEMINAR DOCUMENTATION ENTITLED "STORAGE FORMATS AND TSO STORAGE PROCEDURES".

```
FORMAT=STATIONS,
A=-------,
UK=--------,
USER=-------------------------------------,
NEWSTA=---------------,
SECSTA1=-------------,
SECSTA2=-------------,
SECSTA3=-----------,
TYPE=-----------------------------------------------------------------,
LOCNAME=-------------------------------------------------,
WBODY=-------------------------,
MAJNAME=-------------------------,
MINNAME=----------------------------------------,
BS=------,
DEPTH=----,
ELEV=----------,
AQ1=--------,
AQ2=--------,
AQ3=--------,
AQ4=--------,
AQ5=--------,
```

```
POINT=1,
LAT=-- -- --.-,
LONG=--- -- --.-,
PREC=-,
STCO=-----,
ECOREG=---,
CATUNIT=--------,
        OR
RCHMIL=----------/----.---,
ONRCH=---,
CKDIGIT=-,

PAR01=----------------------------------------------------------------------,
PAR02=----------------------------------------------------------------------,
PAR03=----------------------------------------------------------------------,
PAR04=----------------------------------------------------------------------,
PAR05=----------------------------------------------------------------------,
PAR06=----------------------------------------------------------------------,
PAR07=----------------------------------------------------------------------,
PAR08=----------------------------------------------------------------------,
PAR09=----------------------------------------------------------------------,
PAR10=----------------------------------------------------------------------,
PAR11=----------------------------------------------------------------------,
PAR12=----------------------------------------------------------------------,
PAR13=----------------------------------------------------------------------,
PAR14=----------------------------------------------------------------------,
PAR15=----------------------------------------------------------------------,
LOCKDAYS=---,
LOCKDATE=----,
ARCLASS=--,
```

```
POINT=2,
LAT=-- -- --.-,
LONG=--- -- --.-,
STCO=-----,
ECOREG=---,
CATUNIT=--------,
        OR
RCHMIL=----------/----.---,
ONRCH=---,
CKDIGIT=-,

POINT=3,
LAT=-- -- --.-,
LONG=--- -- --.-,
STCO=-----,
ECOREG=---,
CATUNIT=--------,
        OR
RCHMIL=----------/----.---,
ONRCH=---,
CKDIGIT=-,

POINT=4,
LAT=-- -- --.-,
LONG=--- -- --.-,
STCO=-----,
ECOREG=---,
CATUNIT=--------,
        OR
RCHMIL=----------/----.---,
ONRCH=---,
CKDIGIT=-,
```

STORET RETRIEVAL DATE 87/06/24

STATION DESCRIPTION

PAGE: 1

/TYPA/AMBNT/STREAM

SEMINAR01A 01041934 BLCK001
43 58 22.2 086 08 10.3 2
ONOWAGON RIVER MAIN ST BRDGE 10 M FROM RESERVOIR
26105 MICHIGAN MASON
LAKE MICHIGAN 082100
PERE MARQUETTE
11TRAIN 870606 04060101029 0003.800 ON
0010 FEET DEPTH 318 METERS ELEVATION
56M SOUTHERN MICHIGAN/NORTHERN INDIANA TILL PLAIN
MI00346 ONOWAGON RIVER
112SAND
DATA LOCKED AFTER 49/01.

ADDITIONAL STATION BOUNDARY POINTS

ST	CO	LATITUDE	LONGITUDE	REACH LOCATION	ECOREGION
26	105	43 58 22.3	086 08 10.4	04060101030 0000.300 ON	56M ==> SOUTHERN MICHIGAN/NORTHERN INDIANA TILL PLAIN

DESCRIPTIVE PARAGRAPH

THE SAMPLING SITE IS ON THE LEFT BANK AND IS SAMPLED OFF THE MAIN ST BRIDGE. THIS IS 10 MILES UPSTREAM FROM THE FAIRCHILD RESERVOIR

SAMPLING IS DONE QUARTERLY WITH INTENSIVE SURVEYS EVERY 5 YEARS

THE SAMPLING IS DONE IN CONJUNCTION WITH THE CORPS OF ENGINEERS WITH THE STATE LAB DOING THE ANALYSIS

REPEATED BELOW IS THE WELL LOCATION INFORMATION REQUIRED WHEN ESTABLISHING A NEW WELL IN THE WATER QUALITY SYSTEM AND THE PROPER INSTRUCTION SETS FOR IT. AFTER THE EXAMPLE, IS A SAMPLE OF WHAT THE WELL'S HEADER WOULD LOOK LIKE IN A RETRIEVAL.

THE AGENCY CODE IS "11TRAIN" WHOSE UNLOCKING KEY IS "CHOOCHOO". THE PRIMARY WELL NUMBER IS TO BE TESTWELL01A AND THE SAMPLING SITE HAS ONE ALIAS WHICH IS SITE0003001. THE LATITUDE AND LONGITUDE OF THE SITE, WHICH IS LOCATED IN PAGE COUNTY (139) IN THE STATE OF VIRGINIA (51), IS 38 DEGREES, 41 MINUTES, AND 44.0 SECONDS AND 78 DEGREES, 28 MINUTES, AND 10.0 SECONDS. THE LATITUDE AND LONGITUDE WAS MEASURED WITH A PRECISION OF 1 SECOND. THE ELEVATION OF THE WELL IS 318 METERS. THE WELL IS SAMPLING AMBIENT WATER. THE WELL IS LOCATED IN EPA'S POTOMAC RIVER MINOR BASIN (14) WHICH IS IN THE NORTH ATLANTIC MAJOR BASIN (02). THE OWNER'S NAME IS EEZZY OIL CO. THE WELL IS LOCATED IN THE MOST TYPICAL PART OF EPA'S ECOREGION 64. THE AQUIFER IN WHICH THE WELL IS SAMPLING IS THE LONDONBRIDGE FORMATION (AQUIFER CODE 112LDBG) AND IS LOCATED IN THE U.S.G.S. CATALOGING UNIT 02070005. THE DESCRIPTIVE PARAGRAPH SHOULD CONTAIN INFORMATION ABOUT THE METHOD OF MEASURING THE LATITUDE AND LONGITUDE AND INFORMATION ABOUT THE WELL LOGS. SINCE THIS STATION IS TO BE USED FOR TEST PURPOSES, ITS DATA SHOULD BE LOCKED.

```
FORMAT=STATIONS,
A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703-883-8861,
NEWSTA=TESTWELL01A,SECSTA1=SITE0003001,
TYPE=WELL/AMBNT,
LOCNAME=EEZZY OIL CO,
MAJNAME=NORTH ATLANTIC,
MINNAME=POTOMAC RIVER,BS=021400,ELEV=318M,AQ1=112LDBG,
POINT=1,
LAT=38 41 44.0,LONG=078 28 10.0,PREC=2,STCO=51139,ECOREG=64M,
CATUNIT=02070005,
PAR01=METHOD OF MEASURE FOR LATITUDE/LONGITUDE: SURVEY,
PAR02=SOURCE AGENCY FOR LAT/LONG DATA: STATE GEOLOGICAL SURVEY,
PAR03=USE OF THE WELL: DRINKING WATER SUPPLY,
PAR04=TYPE OF WELL LOG:   DRILLER'S LOG            ELECTRIC LOG,
PAR05=LOCATION OF WELL LOG:  COURT HOUSE ROOM 412  EEZZY OIL COMPANY,
PAR06=                       22 N COURT STREET     BLACK FUEL AVENUE,
PAR07=                       ANYTOWN VA 20371      OILBOOM  VA 20771,
LOCKDAYS=000,LOCKDATE=4001,
```

STORET RETRIEVAL DATE 87/06/24

STATION DESCRIPTION

PAGE:

/TYPA/AMBNT/WELL

TESTWELL01A SITE0003001
38 41 44.0 078 28 10.0 2
EEZZY OIL CO
51139 VIRGINIA PAGE
NORTH ATLANTIC 021400
POTOMAC RIVER
11TRAIN 870606 02070005
0000 FEET DEPTH 318 METERS ELEVATION
64M NORTHERN PIEDMONT

112LDBG
DATA LOCKED AFTER 40/01.

DESCRIPTIVE PARAGRAPH

METHOD OF MEASURE FOR LATITUDE/LONGITUDE: SURVEY

SOURCE AGENCY FOR LAT/LONG DATA: STATE GEOLOGICAL SURVEY

USE OF THE WELL: DRINKING WATER SUPPLY

TYPE OF WELL LOG:	DRILLER'S LOG	ELECTRIC LOG
LOCATION OF WELL LOG:	COURT HOUSE ROOM 412	EEZZY OIL COMPANY
	22 N COURT STREET	BLACK FUEL AVENUE
	ANYTOWN VA 20371	OIL BOOM VA 20771

AFTER A STATION HAS BEEN ENTERED IN THE SYSTEM, CHANGES MAY HAVE TO BE MADE TO IT. THESE CHANGES CAN ONLY BE MADE AFTER THE UPDATE CYCLE CONTAINING THE STORAGE TRANSACTIONS FOR IT HAS BEEN COMPLETED. TO MAKE CHANGES TO A STATION, THE "CHGSTA" INSTRUCTION MUST BE USED AND IT IS SET EQUAL TO THE PRIMARY STATION NUMBER WHOSE INFORMATION IS TO BE CHANGED. THE ITEMS TO BE CHANGED ARE ENTERED IN THE SAME MANNER USED FOR THE ORIGINAL STORAGE OF THE INFORMATION, I.E., "KEYWORD=VALUE,". IF ONE OR MORE STATION TYPES ARE TO BE ADDED TO AN EXISTING STATION, "ADDTYPE" IS SET EQUAL TO ONLY THE NEW ITEM(S) TO BE ADDED TO THE STATION TYPE FIELD, AND IF ONE OR MORE STATION TYPES ARE TO BE DELETED, "DELTYPE" IS SET EQUAL TO THE ONES TO BE DELETED. "ADDTYPE" AND "DELTYPE" ARE USED IN CONJUNCTION WITH THE "CHGSTA" INSTRUCTION. TO DELETE AN OPTIONAL FIELD FOR A STATION, THE KEY-WORD USED TO STORE THAT ITEM IS SET EQUAL TO "X", E.G., "KEYWORD=X,".

FOR STATION XDDR004 STORED BEHIND AGENCY CODE 11TRAIN, MAKE THE FOLLOWING CHANGES TO THE STATION HEADER INFORMATION: DELETE THE SECOND SECONDARY STATION NUMBER; CHANGE THE COUNTY CODE TO 121; CHANGE THE LONGITUDE FOR THE PRIMARY POINT (POINT=1,) TO 91 DEGREES, 58 MINUTES, 45.1 SECONDS; ADD A SECOND AQUIFER CODE OF 124CCKF; CHANGE THE MINOR BASIN CODE TO 07; CHANGE THE ECOREGION TO 37G; CHANGE THE LOCATION INFORMATION TO READ "ROCK RIVER NEAR BARLOW DAM SPILL WAY"; CHANGE THE MILES UP THE REACH FOR POINT NUMBER ONE TO 3.7 MILES; CHANGE THE WATER BODY CODE TO AR000783; FOR THE THIRD POINT, CHANGE THE LATITUDE TO 34 DEGREES, 25 MINUTES 15.1 SECONDS; CHANGE THE SEVENTH LINE OF THE DESCRIPTIVE PARAGRAPH TO READ "ESTABLISHED IN 1965"; DELETE THE EIGHTH LINE IN THE DESCRIPTIVE PARAGRAPH; ADD THE STATION TYPE OF "NRSHRE"; AND CHANGE THE NUMBER OF DAYS THAT THE THE DATA ARE TO BE LOCKED TO 360.

```
FORMAT=STATIONS,
A=11TRAIN,UK=CHOOCHOO,USER=STATION CHANGE EXAMPLE,
CHGSTA=XDDR004,SECSTA2=X,AQ2=124CCKF,BS=150700,
WBODY=AR000783 ROCK RIVER,ADDTYPE=NRSHRE,LOCKDAYS=360,
LOCNAME=ROCK RIVER NEAR BARLOW DAM SPILL WAY,
POINT=1,
STCO=05121,LONG=091 58 45.1,ECOREG=37G,
RCHMIL=11110207004/3.7,CKDIGIT=1,ONRCH=YES,
POINT=3,
LAT=34 25 15.1,
PAR07=ESTABLISHED IN 1965,
PAR08=X,
```

AS CAN BE SEEN, WHEN CHANGING STATION LOCATION INFORMATION, THE FORMAT OF THE DATA ITEMS ARE ENTERED THE SAME WAY AS THEY WERE STORED ORIGINALLY. ALSO, WHEN CHANGING ANY OF THE "REACH" IN-FORMATION, THE ENTIRE SET OF DATA MUST BE RE-ENTERED. CARE MUST BE EXERCISED WHEN DEALING WITH THE POINT INFORMATION TO ENSURE THAT THE INFORMATION IS ASSOCIATED WITH THE CORRECT POINT. THE "?01" FIXED FIELD STATION STORAGE PROCEDURE PRECLUDES THE CHANGING OF THE STATION TYPE AND/OR THE UNLOCKING DATES IN THE SAME UPDATE CYCLE. THE NEW FREE FORM METHOD ALLOWS THIS.

DELETING STATION'S DATA AND DELETING THE STATION

AFTER A STATION HAS BEEN STORED, IT MAY BE NECESSARY TO DELETE IT OR ITS DATA. TO ACCOMPLISH THIS, EITHER THE "DELSTA" INSTRUCTION IS USED WHICH WILL DELETE THE STATION AND ITS DATA OR "DELDATA" WHICH DELETED ONLY THE DATA FOR THE STATION. THE FOLLOWING IS AN EXAMPLE OF HOW TO DO THIS:

```
FORMAT=STATIONS,
A=11TRAIN,UK=CHOOCHOO,USER=DELETING STATIONS AND DATA,
DELSTA=ABC001,DELSTA=ABC002,DELSTA=ABC003,
DELDATA=XYZ001,DELDATA=XYZ002,DELDATA=XYZ003,
```

THE ABOVE WILL DELETE STATIONS ABC001 THROUGH ABC003 AND THEIR DATA AND DELETE ONLY THE DATA FOR STATIONS XYZ001 THROUGH XYZ003 FOR AGENCY CODE 11TRAIN. EXTREME CARE MUST BE USED WHEN UTILIZING THIS OPTION BECAUSE IT DOES WORK, AND AFTER THE WEEKEND'S UPDATE, THE DATA WILL BE GONE WITH LITTLE CHANCE OF GETTING IT BACK.

1. IF A REACH NUMBER IS BEING STORED, ZERO MILES ARE NOT ALLOWED. BLANK MILEAGE MEANS THAT THE STATION IS AT THE DOWNSTREAM END OF THE REACH OR THAT THE MILEAGE IS UNKNOWN.

2. STORET PERFORMS CERTAIN LATITUDE-LONGITUDE EDIT CHECKS WHEN A STATION IS PROCESSED FOR STORAGE. THEY ARE: LAT/LONG VERSUS THE STATE-COUNTY CODE, LAT/LONG VERSUS THE HYDROLOGIC UNIT CODE, AND LAT/LONG VERSUS THE REACH SEGMENT NUMBER. IF THE STATION FAILS ONE OR MORE OF THESE EDITS, AND IF THE STATION'S LATITUDE-LONGITUDE ACTUALLY FALLS WITHIN THE AREA CODED, THESE CHECKS CAN BE BY-PASSED BY USING THE OVERRIDE FEATURE AS FOLLOWS:

   %STORE DATA-SET-NAME PRM(HUW999) <cr>

   "PRM" SPECIFIES THAT THE EDIT CHECKS ARE TO BE BY-PASSED AND THE CODES HAVE THE FOLLOWING MEANINGS:

H	BY-PASS THE LAT/LONG HYDROLOGIC UNIT CODE EDIT
U	BY-PASS THE LAT/LONG STATE-COUNTY EDIT CHECK
W	BY-PASS THE LAT/LONG REACH EDIT CHECK
999	IS THE MAGIC NUMBER WHICH WILL CHANGE FROM TIME TO TIME AND CAN BE OBTAINED BY USING THE "%MAGIC" COMMAND

   FOR DATA STORAGE, THE LETTER "V" IS USED TO BY-PASS THE VALUE RANGE CHECK ALONG WITH THE "MAGIC" NUMBER.

1. ESTABLISH A NEW STATION WITH A PRIMARY STATION NUMBER OF 01DRCR AND A SECONDARY NUMBER OF 36588627 ON DRAKES CREEK 4.80 MILES UPSTREAM FROM ITS CONFLUENCE WITH THE BARREN RIVER. THE STATION'S LATITUDE IS 36 DEGREES, 50 MINUTES, 20.0 SECONDS, AND ITS LONGITUDE IS 86 DEGREES, 27 MINUTES, 33.0 SECONDS, WHICH IS ACCURATE TO THE NEAREST MINUTE (PRECISION CODE OF 5), AND IT IS LOCATED IN WARREN COUNTY (227), KENTUCKY (21). THE AGENCY CODE FOR THE STATION IS 11TRAIN, AND THE UNLOCKING KEY IS CHOOCHOO. THE DEPTH IS TO BE MEASURED IN FEET, AND THE DEPTH AT THE STATION IS 10 FEET. THE STATION'S ELEVATION IS 251 METERS AND IT IS LOCATED ABOVE AQUIFER 324BRTT. THE STATION IS SAMPLING AMBIENT WATER IN A STREAM. THE MAJOR BASIN IS THE OHIO RIVER (05) AND THE MINOR BASIN IS THE GREEN RIVER (16). THE STATION IS ON REACH SEGMENT NUMBER 006 AND IS 4.8 MILES UP FROM THE DOWNSTREAM END OF THE REACH. THE CHECK DIGIT FOR THE SEGMENT NUMBER IS 4 AND IT IS IN CATALOGING UNIT NUMBER 05110002. THE STATION IS LOCATED IN THE MOST TYPICAL AREA OF ECOREGION 71. THE LOCATION INFORMATION FOR AN ADDITIONAL POINT FOR THE STATION IS TO BE ENTERED WITH THE SAME ATTRIBUTES AS THE MAIN SAMPLING POINT EXCEPT THAT THE POINT IS 4.81 MILES UP THE REACH AND THE LATITUDE FOR THE EXTRA POINT IS 36 DEGREES, 50 MINUTES AND 20.1 SECONDS. THE WATER BODY CODE FOR DRAKES CREEK IS KY000968. A DESCRIPTIVE PARAGRAPH IS TO BE ENTERED.

2. AFTER THE STATION WAS STORED, THE FOLLOWING CORRECTIONS ARE REQUIRED. SHOW THE KEYWORDS NEEDED TO MAKE THE CORRECTIONS.

STATION TYPE	LAKE-AMBIENT
LONGITUDE	86 27' 30.0"
ADD SECONDARY NUMBER	PJCT-08
MINOR BASIN NAME	BARREN RIVER
SEGMENT NUMBER	007
WATER BODY CODE	KY000967
THE REACH CHECK DIGIT	8
ECOREGION FOR THE FIRST EXTENSION POINT	71G

As previously mentioned, whenever entering information into the Water Quality System, a data set (file) must be created and processed via the STORET software. The following is an example of how to do this in the TSO environment using a STORET command procedure named "EASYSTOR":

```
READY
%easystor <cr>   (Invokes the STORET command procedure that creates
                  storage transactions.  For a full explanation of the
                  %EASYSTOR command procedure, enter 'help easystor'.)

MM/DD/YY       HH:MM:SS      IIIAAAA

            - EASYSTOR -
       - VERSION OF MONTH YEAR -
         - WELCOME TO STORET -
         - DATA ENTRY SYSTEM -

         (ENTER "END" TO EXIT)

     WHAT ARE YOU GOING TO STORE ?

            S  -  STATIONS
            K  -  STATIONS USING KEYWORDS
            D  -  DATA

  OPTION ==> k  <cr>  (User enters "k" for station
                       storage via keywords.)

      This program keeps track of all values you enter
 in response to prompts for STORET Station Storage
 Keywords.

      After entering all your data, you type SAVE to create
 a data set that can be used for a STORET update.

      This procedure gives you additional options that
 may be useful.  Type HELP if you would like to
 review them.

ENTER AGENCY THE CODE
 11train   <cr>
ENTER THE UNLOCKING KEY FOR YOUR AGENCY
 choochoo  <cr>
ENTER INFORMATION ABOUT PERSON CREATING THIS DATA
 horace hawgknuckles 703 883 8857  <cr>
```

```
ENTER KEYWORD NEWSTA, CHGSTA, DELSTA OR DELDATA
 newsta    <cr>
ENTER NEW PRIMARY STATION
 ann1      <cr>
ENTER 1ST SECONDARY STATION NAME
 aaaaaa1   <cr>
ENTER 2ND SECONDARY STATION NAME
 testst093 <cr>
ENTER 3RD SECONDARY STATION NAME
  <cr>
ENTER KEYWORD TYPE, ADDTYPE OR DELTYPE
 type      <cr>
ENTER STATION TYPE
 stream/ambnt   <cr>
ENTER MAJOR BASIN NAMES
 north atlantic  <cr>
ENTER MINOR BASIN NAME
 potomac river   <cr>
ENTER EPA BASIN CODE
 021400  <cr>
ENTER LOCATION INFORMATION
 holmes run 22.64 miles up from potomac  <cr>
ENTER DEPTH OF WATER AT STATION
 010  <cr>
ENTER ELEVATION AT STATION
 38m  <cr>
ENTER 1ST AQUIFER CODE
 217ptmc  <cr>
POTOMAC GROUP
ENTER 2ND AQUIFER CODE
 <cr>
ENTER 3RD AQUIFER CODE
 <cr>
ENTER 4TH AQUIFER CODE
 <cr>
ENTER 5TH AQUIFER CODE
 <cr>
```

```
ENTER POINT DESIGNATOR 1
 1   <cr>
ENTER STATION LATITUDE IN FORMAT (DD MM SS.T)
 48 48 53.2    <cr>
ENTER STATION LONGITUDE IN FORMAT (DDD MM SS.T)
 077 07 18.4   <cr>
ENTER PRECISION CODE
 3   <cr>
ENTER STATE COUNTY CODE OF STATION
 51059  <cr>
STATE IS VIRGINIA
COUNTY IS FAIRFAX
ENTER ECOREGION CODE
 64m   <cr>
ENTER YES, FOR REACH DATA -- NO, FOR HUC CODE
 yes   <cr>
ENTER E.P.A. REACH NUMBER/MILES
 02070010042/2.64
Careful, station latitude does not
place it eithin HUC Code boundaries
3912590 maximum latitude
3830030 minimum latitude
ENTER ON OR OFF THE REACH
 off  <cr>
ENTER CHECK DIGIT
 3    <cr>
ENTER POINT DESIGNATOR 2 IF DESIRED
 2    <cr>
ENTER LATITUDE FOR EXT POINT 2
 38 48 53.8   <cr>
ENTER LONGITUDE FOR EXT POINT 2
 077 07 18.8  <cr>
ENTER STATE COUNTY CODE FOR EXT POINT 2
 51069  <cr>
STATE IS VIRGINA
COUNTY IS FAIRFAX
ENTER ECOREGION CODE FOR EXT POINT 2
 64g   <cr>
ENTER U.S.G.S. CAT UNIT FOR EXT POINT 2
 <cr>
ENTER E.P.A. REACH FOR EXT 2
 02070010041/0.9  <cr>
ENTER ON OR OFF THE REACH EXT POINT 2
 on  <cr>
ENTER CHECK DIGIT FOR EXT POINT 2
 9   <cr>
ENTER POINT DESIGNATOR 3 IF DESIRED
 <cr>
ENTER POINT DESIGNATOR 4 IF DESIRED
 <cr>
```

```
ENTER YES TO SKIP NARATIVE CARDS
 no  <cr>
ENTER ADDITIONAL NARRATIVE LINE 1
 this station was established to test storage procedures  <cr>
ENTER ADDITIONAL NARRATIVE LINE 2
 data will be copied form tut1   <cr>
ENTER ADDITIONAL NARRATIVE LINE 3
 these data are not real and should not be used   <cr>
ENTER ADDITIONAL NARRATIVE LINE 4
 the data are locked   <cr>
ENTER ADDITIONAL NARRATIVE LINE 5
ENTER ADDITIONAL NARRATIVE LINE 6
ENTER ADDITIONAL NARRATIVE LINE 7
ENTER ADDITIONAL NARRATIVE LINE 8
ENTER ADDITIONAL NARRATIVE LINE 9
ENTER ADDITIONAL NARRATIVE LINE 10
ENTER ADDITIONAL NARRATIVE LINE 11
ENTER ADDITIONAL NARRATIVE LINE 12
ENTER ADDITIONAL NARRATIVE LINE 13
ENTER ADDITIONAL NARRATIVE LINE 14
ENTER ADDITIONAL NARRATIVE LINE 15
ENTER LOCK FOR DAYS (360 MAX)
 000   <cr>
ENTER LOCK DATA AFTER DATE  (YYMM)
 4001  <cr>
ENTER ARCHIVE CLASS
 <cr>
Default value of 00 created for ARCLASS

We have cycled through the keywords used when
storing a new station.  Type the command SAVE to
create a data set that can be used by %STORE.  The
command QUIT will return system to the TSO READY Prompt.
The command LIST will display what you have entered.

ENTER AGENCY CODE OR COMMAND
save   <cr>
ENTER 1-8 CHARACTER NAME FOR YOUR OUTPUT FILE
aaaaaaaa   <cr>
Keywords have been placed in your data set.
Use the QUIT command to return you to TSO.

ENTER AGENCY CODE OR COMMAND
quit  <cr>  (Leave the "EASYSTOR procedure.)
READY
```

```
READY
edit aaaaaaaa  <cr>  (Bring a copy of the data
                     set into working storage.)
QED   (This is the Prompt for the Quick Editor.)
list  <cr>  (List the contents of working space.)                    90/03/01
00010 FORMAT=STATIONS,
00020 A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 883-8861,
00030 NEWSTA=ANN1,SECSTA1=AAAAAA1,SECSTA2=TESTST093,
00040 TYPE=STREAM/AMBNT,
00050 LOCNAME=HOLMES RUN 22.64 MILES UP FROM POTOMAC,
00060 MAJNAME=NORTH ATLANTIC,MINNAME=POTOMAC RIVER,BS=021400,
00070 WBODY=VA000671 HOLMES RUN,
00080 DEPTH=010F,ELEV=38M,AQ1=217PTMC,
00090 POINT=1,
00100 LAT=48 48 53.2,LONG=077 07 18.4,PREC=3,STCO=51059,ECOREG=64M,
00110 RCHMIL=02070010042/2.64,ONRCH=NO,CKDIGIT=3,
00120 POINT=2,
00130 LAT=38 48 53.8,LONG=077 07 18.8,STCO=51059,ECOREG=64G,
00140 RCHMIL=02070010041/0.9,ONRCH=YES,CKDIGIT=9,
00150 PAR01=THIS STATION WAS ESTABLISHED TO TEST STORAGE PROCEDURES,
00160 PAR02=DATA WILL BE COPIED FROM TUT1,
00170 PAR03=THESE DATA ARE NOT REAL AND SHOULD NOT BE USED,
END OF DATA

After checking the storage transactions, it is determined that the
miles in the location name field is in error.  To correct the error,
the "LED" editing procedure is used.  For a further discussion of the
"LED" procedure, see the previous discussion on creating and editing
a data set shown on pages 16 through 22 of the Seminar Documentation
named "Agenda, Overview, and Introduction to TSO".

led 50  <cr>  (Line edit line 50.)
00050 LOCNAME=HOLMES RUN 22.64 MILES UP FROM POTOMAC,
EDIT?                        <       <cr>
00050 LOCNAME=HOLMES RUN 2.64 MILES UP FROM POTOMAC,
EDIT? <cr>  (Make the change permanent and return to the "QED" mode.)
QED
end save  <cr>   (Save a permanent copy and return to TSO.)
SAVED
READY
%store aaaaaaaa dummy route(hold)  <cr>

        ("%STORE" is a STORET command procedure used
        to submit a storage job.  Enter 'help store'
        to get the full explanation of the "STORE"
        command procedure.)

  JOB III(JOB09999) SUBMITTED
SUBMIT COMPLETED
READY
```

After the job has executed, it is located using the "SDSF" facility. The following is an example of the procedures required to locate a station storage job:

```
V1R3M1 ------------------  SDSF PRIMARY OPTIONS MENU  --------------------
COMMAND INPUT ===>                                          SCROLL ===> CRS
PREFIX=III  DEST=(ALL)  OWNER=*
 Type an Option or command and press Enter.

   LOG       - Display the system log
   DA        - Display active users of the system
   I         - Display jobs in the JES2 input queue
   O         - Display jobs in the JES2 output queue
   H         - Display jobs in the JES2 held output queue
   ST        - Display status of jobs in the JES2 queues
   PR        - Display JES2 printers on this system
   INIT      - Display JES2 initiators on this system

   TUTOR     - Short course on SDSF (ISPF only)
   END       - Exit SDSF

   Use Help key for more information.

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```

If "i" is entered on the COMMAND INPUT line, the following screen will be displayed. It shows the jobs for the user id that are in the input queue.

```
SDSF INPUT QUEUE DISPLAY ALL CLASSES                    LINE 0-0 (0)
COMMAND INPUT ===>                                           SCROLL ===> CRS
NP JOBNAME  Job-id     P C Pos Prt-Dest ASYS Stat Causer  Programmer Name
   III99    JOB99999   1 F 39  HOLD                      IIIAAAA.XX
   III98    JOB99998   1 F 38  HOLD                      IIIAAAA.XX
```

If "o" is entered on the COMMAND INPUT line, the following screen will be displayed. It shows the jobs for the user id that are in the output queue.

To view the output of a job in the output queue, an "s" is placed next to it in the column labelled "NP".

```
SDSF OUTPUT ALL CLASSES   ALL FORMS    LINES 99,999    LINE 1-2 (2)
COMMAND INPUT ===>                                     SCROLL ===> CRS
 NP JOBNAME  Jobid    Dest     C  Tot-rcds Programmer-name     Room Device      p
    III99    JOB99999 HOLD     A       745 STORET              MIII
    III98    JOB99998 HOLD     A       865 STORET              MIII
```

```
SDSF DISPLAY   III99   JOB99999 DSID   2 LINE 0 COLUMNS 02-81-2 (2)
COMMAND INPUT ===>                                        SCROLL ===> CRS
```

This page contains one valuable piece of information which indicates whether the job executed properly. As shown below the word "CODE" is followed by "0". This indicates that the job was processed properly by the computer. If any other code appears here, the job did not execute properly.

```
                J E S 2  J O B  L O G  --  S Y S T E M  E P A 2  --  N O D E  N C C I B M 1


10.49.25 JOB10458  IEF677I WARNING MESSAGE(S) FOR JOB GJH58    ISSUED
10.49.26 JOB10458  ICH70001I GJH      LAST ACCESS AT 09:58:01 ON WEDNESDAY, JULY 24, 1991
10.49.26 JOB10458  $HASP373 GJH58    STARTED - INIT 29 - CLASS B - SYS EPA2
10.49.49 JOB10458  NCC802I GJH58    ENDED 07/24/91, CODE     0, ELAPSED      :23, CPU      :01, EXCPS     282
10.49.49 JOB10458  $HASP395 GJH58    ENDED

------ JES2 JOB STATISTICS ------


   24 JUL 91 JOB EXECUTION DATE


         36 CARDS READ


        457 SYSOUT PRINT RECORDS


          0 SYSOUT PUNCH RECORDS


         32 SYSOUT SPOOL KBYTES


       0.39 MINUTES EXECUTION TIME
      1 //GJH JOB (A063STORP,D068),'ONE02-UPDATE',TIME=(0,30),PRTY=2,          JOB10458
        //             MSGLEVEL=(1,1),NOTIFY=GJH
        ***ROUTE  PRINT HOLD
        ***JOBPARM LINES=999
        ***CNTL  CWT.TRY,EXC
```

Since the first several hundred lines of the output contain information about the job such as which program modules were executed, system allocation messages and other JCL information which the user does not need to see, they need to be by-passed. To accomplished this, "bottom'" is entered on the COMMAND INPUT line. This will instruct the system to go to the last page of the ouput which contains information about any errors encountered while the job was executing.

AGENCY: 11TRAIN STORET WATER QUALITY STORAGE ERRORS DUMMY STORAGE RUN DATE:

STATION	ERROR MESSAGE(S)	END DATE-SOPH BEG DATE-R-C	COMP DATE UMK	DEPTH MEDIU SMK	ETC.
*ANN1	(80)LAT/LONG NOT WITHIN STATE/COUNTY BOUNDARY ST/CO = 51059 LAT/LONG = 484853207707184		(D)STATN NOT STORED		
*ANN1	(160)LATITUDE GREATER THAN REACH MAXIMUM LATITUDE RCH=02070010042 MAX LAT= 38 53 59.9 STN LAT= 48 48 53.2		(D)STATN NOT STORED		
*ANN1	(161)LONGITUDE GREATER THAN REACH MAXIMUM LONGITUDE RCH=02070010041 MAX LONG= 77 04 59.9 STN LONG= 77 07 18.8		(D)STATN NOT STORED		1E
*ANN1	(162)REACH NOT IN SPECIFIED STATE/COUNTY RCH=02070010041 STN STCO=51059 RCH STCO=24033		(D)STATN NOT STORED		
*	(96)END OF RUN		(A)INFORMATION		

11TRAIN STORET WATER QUALITY STORAGE ERRORS - DUMMY STORAGE RUN DATE:

JOB ID	RUN DATE & TIME	JOB #	INPUT DATASET	#ERR	EDIT PGM	"A" CARD COMMENT
III96	1/09/89 9:99AM	JES 9999	IIIAAAA.AAAAAAAA	4	?05	DUMMY HORACE HAWGKNUCKLES 883 8861

TOTAL: ERRORS = 4 WARNINGS = 0 (DUMMY RUN - NOTHING STORED)

(The above lines were truncated to fit on the page.)

To make corrections to the station storage data set, a copy of it must be brought into working space. To accomplish this, the following sequence of commands is issued:

```
READY
edit aaaaaaaa        <cr>  (Bring a copy of the data set into working space and pass
                           control to the "QED" facility so it may be corrected.)
QED       ("QED" is the prompt for the Quick Editor facility.)
list    <cr>   (List the contents of working space.)
00010 FORMAT=STATIONS,
00020 A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 883-8861,
00030 NEWSTA=ANN1,SECSTA1=AAAAAA1,SECSTA2=TESTST093,
00040 TYPE=STREAM/AMBNT,
00050 LOCNAME=HOLMES RUN 2.64 MILES UP FROM POTOMAC,
00060 MAJNAME=NORTH ATLANTIC,MINNAME=POTOMAC RIVER,BS=021400,
00070 WBODY=VA000671 HOLMES RUN,
00080 DEPTH=010F,ELEV=38M,AQ1=217PTMC,
00090 POINT=1,
00100 LAT=48 48 53.2,LONG=077 07 18.4,PREC=3,STCO=51059,ECOREG=64M,
00110 RCHMIL=02070010042/2.64,ONRCH=NO,CKDIGIT=3,
00120 POINT=2,
00130 LAT=38 48 53.8,LONG=077 07 18.8,STCO=51059,ECOREG=64G,
00140 RCHMIL=02070010041/0.9,ONRCH=YES,CKDIGIT=9,
00150 PAR01=THIS STATION WAS ESTABLISHED TO TEST STORAGE PROCEDURES,
00160 PAR02=DATA WILL BE COPIED FROM TUT1,
00170 PAR03=THESE DATA ARE NOT REAL AND SHOULD NOT BE USED,
END OF DATA
led 100  <cr>  (Line edit line 100.)
00100 LAT=48 48 53.2,LONG=077 07 18.4,PREC=3,STCO=51059,ECOREG=64M,  <CR>
EDIT?     3  <cr>  (Replace the 4 with a 3.)
00100 LAT=38 48 53.2,LONG=077 07 18.4,PREC=3,STCO=51059,ECOREG=64M,  <CR>
EDIT?    <cr>  (Enter a null line to make the change permanent and
               return to "QED".)
QED
      (After checking the latitude/longitude, the state/county codes and the
      other identified errors, it was determined that they were correct.
      Therefore, it was necessary to by-pass the edit checks.  This is done
      with the "MAGIC" number in conjunction with the "PRM" option.

end save  <cr>  (Save the new copy of the station storage data set
                and return to TSO.)
SAVED
READY
%magic   <cr>   (STORET command procedure to get the "MAGIC" override
                number which will tell the system to by-pass the edit
                checks.)
THE NUMBER FOR TODAY IS : 999
READY
%store aaaaaaaa final route(hold) prm(huw999)  <cr>
           (The above sequence of commands will submit a storage job
           "FINAL", which will post the transaction to the 'MOD' file
           and the edit checks will be by-passed.)
  JOB III(JOB09999) SUBMITTED
SUBMIT COMPLETED
READY
```

After the job has executed, it is located and examined using the procedures shown above. The following is a listing of the job that was run "FINAL". As can be seen, the errors are now warnings because the edits were by-passed with the "MAGIC" number. The station will be added to the data base the weekend following the storage job.


```
AGENCY: 11TRAIN                STORET WATER QUALITY STORAGE ERRORS - FINAL STORAGE RUN                    DATE:

 STATION                      ERROR MESSAGE(S)                      END DATE-SOPH  COMP DATE   DEPTH MEDIU ETC.
                                                                    BEG DATE-R-C      UMK      SMK
----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+
*ANN1            (80)LAT/LONG NOT WITHIN STATE/COUNTY BOUNDARY           (A)WARNING
                     ST/CO = 51059     LAT/LONG = 384853207707184
*ANN1            (160)LATITUDE GREATER THAN REACH MAXIMUM LATITUDE       (A)WARNING
                     RCH=02070010042        MAX LAT= 38 53 59.9    STN LAT= 38 48 53.2
*ANN1            (161)LONGITUDE GREATER THAN REACH MAXIMUM LONGITUDE     (A)WARNING
                     RCH=02070010041        MAX LONG= 77 04 59.9    STN LONG= 77 07 18.8          1E
*ANN1            (162)REACH NOT IN SPECIFIED STATE/COUNTY                (A)WARNING
                     RCH=02070010041        STN STCO=51059   RCH STCO=24033
                 (95)NO ERRORS                                           (F)STATION O.K.
*                (96)END OF RUN                                          (A)INFORMATION
11TRAIN                        STORET WATER QUALITY STORAGE ERRORS   FINAL STORAGE RUN                    DATE:


  JOB ID   RUN DATE & TIME  JOB #   INPUT DATASET                #ERR  EDIT PGM  "A" CARD COMMENT
----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+
 III96     1/09/90  9:99AM JES 9999 IIIAAAA.AAAAAAAA              4  ?05 FINAL HORACE HAWGKNUCKLES 883 8861



TOTAL:          ERRORS =      0     WARNINGS =      4     (FINAL RUN - TRANSACTIONS WITHOUT ERRORS STORED

                  (The above lines were truncated to fit on the page.)

SDSF
end  <cr>     (Instructs the system to leave the "SDSF" facility
              and return to TSO.)
```

The following is an example of the procedure used to get a copy of the on-line documentation for the STORET command procedure "%STORE". This same technique can be used for any of the STORET command procedures.

```
READY   (The system prompt for TSO.)
help store  <cr>  (Invoke the help procedure of TSO.)

 FUNCTION -
    THE STORE COMMAND IS USED TO SUBMIT A BATCH JOB WHICH WILL
    CHECK STORET DATA STORAGE TRANSACTIONS FOR VALIDITY, AND
    PASS VALID TRANSACTIONS ONWARD FOR MASS UPDATE INTO THE
    MAIN STORET DATABANK.

 SYNTAX -
        %STORE 'DSNAME'
                        FINAL/DUMMY OR TYPE('FINAL/DUMMY')
                        STWQNEW/STBIOJ/PROC('PROCNAME')
                        SPECIAL
                        PRM('PARAMETER OVER-RIDE CODE')
                        PRTY('PRIORITY')
                        TIME('CPU TIME')
                        LINES('PRINT LINES')
                        ROOM('ROOM CODE')
                        ROUTE('ROUTE')
     REQUIRED    'DSNAME'
     DEFAULT   -DUMMY,STWQNEW,PRTY(1),ROUTE(HOLD) (FOR FETCH)

 OPERANDS -
   'DSNAME' - THE NAME OF THE DATASET WHICH CONTAINS THE STORET
              DATA STORAGE TRANSACTIONS.
   FINAL      THE TRANSACTIONS HAVE BEEN PREVIOUSLY CHECKED, AND
              ARE READY FOR ACTUAL STORAGE.
   DUMMY    - THE TRANSACTIONS MAY NOT BE ERROR FREE, AND SHOULD
              BE CHECKED, BUT NOT PASSED ON TO STORET.
   TYPE     - ALTERNATIVE WAY TO CODE RUNTYPE "FINAL" OR "DUMMY".
   STWQNEW    REQUESTS USE OF STANDARD STORET PROCEDURE "STWQNEW"
              TO CHECK THE TRANSACTIONS.  THIS IS THE DEFAULT.
   STBIOJ   - REQUESTS USE OF STANDARD STORET PROCEDURE "STBIOJ"
              TO CHECK TRANSACTIONS FOR THE BIOS DATA BASE.
   PROC       THE NAME OF THE STORET PROCEDURE TO BE USED TO CHECK
              THE TRANSACTIONS, IF NOT ONE OF THE STANDARD
              PROCEDURES ABOVE.
   SPECIAL    USED TO PREVENT SUBMISSION OF STORAGE RUN.  THE
              J.C.L. IS PLACED IN WORKING STORAGE.
   PRM      - THE PARAMETER OVER-RIDE CODE FOR THE DAY, BETTER
              KNOWN AS THE "MAGIC NUMBER".  FOR EXAMPLE, PRM(V999).
                NOTE - THE LETTER PART OF THE CODE MEANS
                       U - OVER-RIDE FOR COUNTY VS LAT/LONG CHECK
                       V - OVER-RIDE FOR DATA RANGE-VALUE CHECKS
                       W - OVER-RIDE FOR REACH VS LAT/LONG CHECK
                       H - OVER-RIDE FOR HUC VS LAT/LONG CHECK
   PRTY     - NUMERIC.  THE RUN-TIME PRIORITY FOR THE BATCH JOB.
   TIME     - THE CPU TIME LIMIT DESIRED FOR THIS RUN.
   LINES      THE PRINT-LINE LIMIT DESIRED FOR THIS RUN.
   ROOM     - THE ROOM(BIN OR DELIVERY CODE) FOR THIS RUN.
```

```
   ROUTE       PRINT CONTROL.  MAY BE ANY ONE OF THE FOLLOWING
                  0         - SAME AS LOCAL.
                  NUMERIC   - REMOTE PRINTER DESIRED FOR PRINTING.
                  HOLD      - TO HOLD JOB FOR FETCH.
                  LOCAL     - ROUTE TO CENTRAL PRINTER.
                  RMTXXX    - ROUTE TO REMOTER PRINTER "XXX".
                  NX        - ROUTE TO NODE "X".
READY
```

The option of particular use from the above list is "SPECIAL" which builds a JCL job stream in your working storage. This allows the user to make any alterations to the JCL and then the user can use the "SUBMIT" command to submit the job stream for processing. In this manner, the TIME field can be set to less than one minute which will allow for faster processing of the job if the PRIORITY is set to 4. The following sequence of commands is performed to accomplish this:

```
READY   (This is the TSO prompt.)
%store aaaaaaaa special  <cr>  (This issues the "STORE" command
                                with the "SPECIAL" option.)
ENTER A NAME FOR WORKING STORAGE : stjcl  <cr>  (Enter a name.)
ALL YOURS.
QED
list  <cr>  (List the contents of working storage.)
00001 //III      JOB (AAAASTORPUUU,MIII),STORET,NOTIFY=III,TIME=3,
00002 //             MSGLEVEL=(1,1),PRTY=1
00003 /*ROUTE  PRINT HOLD
00004 /*JOBPARM LINES=10
00005 //STORAGE EXEC STWQNEW,TYPE='DUMMY,'
00006 //CARDF DD DISP=SHR,
00007 //   DSN=IIIAAAA.AAAAAAAA
END OF DATA
led 1 2  <cr>  (Use the Line Editor to make changes to lines 1 and 2.)
00001 //III      JOB (AAAASTORPUUU,MIII),STORET,NOTIFY=III,TIME=3,
EDIT?                                                      (,7), <cr>
00001 //III      JOB (AAAASTORPUUU,MIII),STORET,NOTIFY=III,TIME=(,7),
EDIT? <cr>   (Enter a null carriage return to make change permanent
             and to move to next line.)
00002 //             MSGLEVEL=(1,1),PRTY=1
EDIT?                                  2  <cr>
00002 //             MSGLEVEL=(1,1),PRTY=2
EDIT? <cr>   (Enter a null carriage return to make change permanent
             and to return to QED.)
QED
sub *  <cr>  (Submit the contents of working space for processing.)
  JOB III      (JOB09999) SUBMITTED
SUBMIT COMPLETED
QED
end nos  <cr>  (Leave the Quick Editor and do not save the file.)
READY
```

By changing the priority to "2" and the time to 7 seconds, the job will be processed almost immediately. This method will cost more than if the job had been run at priority "1". However, storage jobs are extremely cheap even at priority "2".

An alternate method of creating a data set (file) for the inputing of station location information into the Water Quality Systems is domonstrated below. After the data set is created it is processed through the STORET storage software as shown on the previous pages.

```
READY    (This is the TSO  prompt.)
edit statn.storage new lrecl(88) blksize(1672)  <cr>

        (The above sequence of commands allows the
        user to create a data set with the proper
        attributes for a STORET storage deck with
        the name of "STATN.STORAGE".)

INPUT   (The above puts the user in the "INPUT" mode.)
00010 format=stations,  <cr>
00020 a=11train,uk=choochoo,user=horace hawgknuckles 883-8861,  <cr>
00030 newsta=ann1,secsta1=aaaaaa1,secsta2=testst093,  <cr>
00040 type=stream/ambnt,  <cr>
00050 locname=holmes run 2.64 miles up from potomac,  <cr>
00060 majname=north atlantic,minname=potomac river,bs=f21400,  <cr>
00070 wbody=va000671 holmes run,  <cr>
00080 depth=010f,elev=38m,aq1=217ptmc,  <cr>
00090 point=1,  <cr>
00100 lat=48 48 53.2,long=077 07 18.4,prec=3,stco=51059,ecoreg=64m,  <cr>
00110 rchmil=02070010042/2.64,onrch=no,ckdigit=3,  <cr>
00120 point=2,  <cr>
00130 lat=38 48 53.8,long=077 07 18.8,stco=51059,ecoreg=64g,  <cr>
00140 rchmil=02070010041/0.9,onrch=yes,ckdigit=9,  <cr>
00150 par01=this station was established to test storage procedures,  <cr>
00160 par02=data will be copied from tut1,  <cr>
00170 par03=these data are not real and should not be used,  <cr>
00180 <cr>  (A null line is entered to exit the input mode.)

QED  ("QED" is the prompt for the quick editor.)

list  <cr>  (List the contents of working space.)
00010 FORMAT=STATIONS,
00020 A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 883-8861,
00030 NEWSTA=ANN1,SECSTA1=AAAAAA1,SECSTA2=TESTST093,
00040 TYPE=STREAM/AMBNT,
00050 LOCNAME=HOLMES RUN 2.64 MILES UP FROM POTOMAC,
00060 MAJNAME=NORTH ATLANTIC,MINNAME=POTOMAC RIVER,BS=F21400,
00070 WBODY=VA000671 HOLMES RUN,
00080 DEPTH=010F,ELEV=38M,AQ1=217PTMC,
00090 POINT=1,
00100 LAT=48 48 53.2,LONG=077 07 18.4,PREC=3,STCO=51059,ECOREG=64M,
00110 RCHMIL=02070010042/2.64,ONRCH=NO,CKDIGIT=3,
00120 POINT=2,
00130 LAT=38 48 53.8,LONG=077 07 18.8,STCO=51059,ECOREG=64G,
00140 RCHMIL=02070010041/0.9,ONRCH=YES,CKDIGIT=9,
00150 PAR01=THIS STATION WAS ESTABLISHED TO TEST STORAGE PROCEDURES,
00160 PAR02=DATA WILL BE COPIED FROM TUT1,
00170 PAR03=THESE DATA ARE NOT REAL AND SHOULD NOT BE USED,
END OF DATA
```

After checking the storage transactions, it is determined that the basin code is in error. To correct the error, the "LED" editing procedure is used. For a further discussion of the "LED" procedure, see the previous discussion on creating and editing a data set shown on pages 16 through 22 of the Seminar Documentation named "Agenda, Overview, and Introduction to TSO".

```
led 60  <cr>  (Line edit line 60.)
00060 MAJNAME=NORTH ATLANTIC,MINNAME=POTOMAC RIVER,BS=F21400,
EDIT?                                                    0  <cr>
00060 MAJNAME=NORTH ATLANTIC,MINNAME=POTOMAC RIVER,BS=021400,
EDIT? <cr>  (Make the change permanent and return to the "QED" mode.)
QED
end save  <cr>   (Save a permanent copy and return to TSO.)
SAVED
READY
%store statn.storage dummy route(hold)  <cr>

        ("%STORE" is a STORET command procedure used
        to submit a storage job.  Enter 'help store'
        to get the full explanation of the "STORE"
        command procedure.)

  JOB III(JOB09999) SUBMITTED
SUBMIT COMPLETED
READY
```

After the job has executed, it is located using the "SDSF" facility.
The following is an example of the procedures required to locate a station storage job:

```
READY
sdsf  <cr>    ("SDSF" passes control to the "SDSF" facility.)
      SDSF      ENTER:  "Help" FOR COMMAND LIST
SDSF          ("SDSF" is the prompt for the "SDSF" facility.)
o     <cr>    ("O" is the abbreviation for "OUTPUT" and locates
               the status of the user's output jobs.)
NP JOBNAME T JNUM  DEST  C FORM FCB  TOT-REC  PRT-REC DEVICE ST
   III95  J 9995  HOLD  A STD  ****     788
   III96  J 9999  HOLD  A STD  ****     750
SDSF
s 9999  <cr>   ("S" is the abbreviation for "SELECT".  This allows
               access to the output for job 9999, which is in
               "PRINT HOLD".)
    1                  J E S 2  J O B  L O G  --  S Y S T E M  E P A 1  --  N O D E  N C C I B M
              (When a job is SELECTD, the first 20 lines print out, first line shown above.)
SDSF
find 'cc=' all<cr>  (List all occurrences of the character string "CC=" which will
                    display the job's completion code.  Four zeros (CC=0000) indicates
                    that the job ended normally.  Other completion codes generally
                    indicate a problem.  The data set 'STORET.HELP.SYSTEM.ABEND.CODES'
                    has an explanation of these.) If you are at the bottom you must
                    type 'top', find 'cc=' all, and then 'right' to view the completion
                    code. Some terminals wrap around and do not require this action.
    7 HR.MM.SS JOB 9999  NCC005I * JOB III99 ENDED MM/DD/YY AT HR:MM:SS, PRTY=2,  CC=0000
                    (The first 20 lines print and the completion code is displayed.)
SDSF
find 'errors'    <cr>   (The first line of each page of the output from a STORET
                        storage job has the word "ERRORS" in it.  This statement
                        instructs the system to find the first occurence of the
                        word 'errors' and proceeds to print the next 20 lines.)

AGENCY: 11TRAIN              STORET WATER QUALITY STORAGE ERRORS - DUMMY STORAGE RUN                    DATE:

 STATION                      ERROR MESSAGE(S)                      END DATE-SOPH  COMP DATE   DEPTH MEDIU ETC.
                                                                    BEG DATE-R-C      UMK       SMK
----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+
*ANN1           (80)LAT/LONG NOT WITHIN STATE/COUNTY BOUNDARY          (D)STATN NOT STORED
                   ST/CO   51059     LAT/LONG = 484853207707184
*ANN1           (160)LATITUDE GREATER THAN REACH MAXIMUM LATITUDE      (D)STATN NOT STORED
                   RCH=02070010042        MAX LAT= 38 53 59.9    STN LAT= 48 48 53.2
*ANN1           (161)LONGITUDE GREATER THAN REACH MAXIMUM LONGITUDE    (D)STATN NOT STORED
                   RCH=02070010041        MAX LONG= 77 04 59.9    STN LONG= 77 07 18.8          1E
*ANN1           (162)REACH NOT IN SPECIFIED STATE/COUNTY               (D)STATN NOT STORED
                   RCH=02070010041        STN STCO=51059   RCH STCO=24033
*               (96)END OF RUN                                         (A)INFORMATION
11TRAIN                      STORET WATER QUALITY STORAGE ERRORS - DUMMY STORAGE RUN                    DATE:


  JOB ID   RUN DATE & TIME  JOB #   INPUT DATASET                #ERR  EDIT PGM  "A" CARD COMMENT
----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+
 III96     1/09/89  9:99AM JES 9999 IIIAAAA.STATN.STORAGE          4  ?05 DUMMY HORACE HAWGKNUCKLES 883 8861
TOTAL:          ERRORS        4     WARNINGS =      0     (DUMMY RUN - NOTHING STORED)
                  (The above lines were truncated to fit on the page.)
SDSF
end  <cr>      (Instructs the system to leave the "SDSF" facility
               and return to TSO.)
```

To make corrections to the station storage data set, a copy of it must be brought into working space. To accomplish this, the following sequence of commands is issued:

```
READY
edit statn.storage  <cr>  (Bring a copy of the data set into working space and pass
                          control to the "QED" facility so it may be corrected.)
QED       ("QED" is the prompt for the Quick Editor facility.)
list    <cr>   (List the contents of working space.)
00010 FORMAT=STATIONS,
00020 A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 883-8861,
00030 NEWSTA=ANN1,SECSTA1=AAAAAA1,SECSTA2=TESTST093,
00040 TYPE=STREAM/AMBNT,
00050 LOCNAME=HOLMES RUN 2.64 MILES UP FROM POTOMAC,
00060 MAJNAME=NORTH ATLANTIC,MINNAME=POTOMAC RIVER,BS=021400,
00070 WBODY=VA000671 HOLMES RUN,
00080 DEPTH=010F,ELEV=38M,AQ1=217PTMC,
00090 POINT=1,
00100 LAT=48 48 53.2,LONG=077 07 18.4,PREC=3,STCO=51059,ECOREG=64M,
00110 RCHMIL=02070010042/2.64,ONRCH=NO,CKDIGIT=3,
00120 POINT=2,
00130 LAT=38 48 53.8,LONG=077 07 18.8,STCO=51059,ECOREG=64G,
00140 RCHMIL=02070010041/0.9,ONRCH=YES,CKDIGIT=9,
00150 PAR01=THIS STATION WAS ESTABLISHED TO TEST STORAGE PROCEDURES,
00160 PAR02=DATA WILL BE COPIED FROM TUT1,
00170 PAR03=THESE DATA ARE NOT REAL AND SHOULD NOT BE USED,
END OF DATA
led 100  <cr>  (Line edit line 100.)
00100 LAT=48 48 53.2,LONG=077 07 18.4,PREC=3,STCO=51059,ECOREG=64M,  <CR>
EDIT?     3  <cr>  (Replace the 4 with a 3.)
00100 LAT=38 48 53.2,LONG=077 07 18.4,PREC=3,STCO=51059,ECOREG=64M,  <CR>
EDIT?    <cr>  (Enter a null line to make the change permanent and
               return to "QED".)
QED
      (After checking the latitude/longitude, the state/county codes and the
      other identified errors, it was determined that they were correct.
      Therefore, it was necessary to by-pass the edit checks.  This is done
      with the "MAGIC" number in conjunction with the "PRM" option.

end save  <cr>  (Save the new copy of the station storage data set
                and return to TSO.)
SAVED
READY
%magic   <cr>   (STORET command procedure to get the "MAGIC" override
                number which will tell the system to by-pass the edit
                checks.)
THE NUMBER FOR TODAY IS : 999
READY
%store statn.storage final route(hold) prm(huw999)  <cr>
           (The above sequence of commands will submit a storage job
           "FINAL", which will post the transaction to the 'MOD' file
           and the edit checks will be by-passed.)
  JOB III(JOB09999) SUBMITTED
SUBMIT COMPLETED
READY
```

After the job has executed, it is located and examined using the procedures shown above. The following is a listing of the job that was run "FINAL". As can be seen, the errors are now warnings because the edits were by-passed with the "MAGIC" number. The station will be added to the data base the weekend following the storage job.

```
SDSF
bottom          <cr>  (Prints out the last 20 lines of the run.)

AGENCY: 11TRAIN              STORET WATER QUALITY STORAGE ERRORS - FINAL STORAGE RUN                    DATE:

 STATION                    ERROR MESSAGE(S)                    END DATE-SOPH  COMP DATE   DEPTH MEDIU ETC.
                                                                BEG DATE-R-C      UMK       SMK
----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+
*ANN1           (80)LAT/LONG NOT WITHIN STATE/COUNTY BOUNDARY          (A)WARNING
                    ST/CO = 51059     LAT/LONG - 384853207707184
*ANN1           (160)LATITUDE GREATER THAN REACH MAXIMUM LATITUDE      (A)WARNING
                    RCH=02070010042       MAX LAT= 38 53 59.9    STN LAT= 38 48 53.2
*ANN1           (161)LONGITUDE GREATER THAN REACH MAXIMUM LONGITUDE    (A)WARNING
                    RCH=02070010041       MAX LONG= 77 04 59.9    STN LONG= 77 07 18.8          1E
*ANN1           (162)REACH NOT IN SPECIFIED STATE/COUNTY               (A)WARNING
                    RCH=02070010041       STN STCO=51059   RCH STCO=24033
                (95)NO ERRORS                                          (F)STATION O.K.
*               (96)END OF RUN                                         (A)INFORMATION
11TRAIN                      STORET WATER QUALITY STORAGE ERRORS - FINAL STORAGE RUN                    DATE:


  JOB ID   RUN DATE & TIME  JOB #   INPUT DATASET               #ERR  EDIT PGM  "A" CARD COMMENT
----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+
 III96     1/09/90  9:99AM JES 9999 IIIAAAA.STATN.STORAGE          4  ?05 FINAL HORACE HAWGKNUCKLES 883 8861



TOTAL:          ERRORS -      0     WARNINGS        4     (FINAL RUN - TRANSACTIONS WITHOUT ERRORS STORED

                  (The above lines were truncated to fit on the page.)

SDSF
end  <cr>     (Instructs the system to leave the "SDSF" facility
              and return to TSO.)
```

If the user desires to be prompted for the information needed to store a sampling site, the inter-active procedure "%EASYSTOR" can be used. This method creates a file of the fixed-form station storage cards in the proper format consistent with the EPA Form 7500-24(6-77). This technique is generally fool proof in creating the file but it can be tedious. The following is an example of its use:

```
YOU ARE NOW USING THE STORET INTERACTIVE STORAGE PROCEDURE,
WHICH PROVIDES FOR THE INPUT OF STORET STATION DESCRIPTIONS.
ALL REPLIES TO THE PROMPTS THAT FOLLOW MUST BE CONSISTENT
WITH FIELD LENGTHS, ACCEPTABLE VALUES, ETC. ESTABLISHED FOR
EPA FORM 7500-24(6-77).

ENTER A NAME FOR THE WORKING STORAGE: aaaaaaaa  <cr>

ENTER THE STORET AGENCY CODE: 11train  <cr>
ENTER THE "UNLOCK AFTER" VALUE (USUALLY 000): 000  <cr>
ENTER THE UNLOCKING KEY FOR AGENCY "11TRAIN ": choochoo  <cr>
ENTER USER IDENTIFICATION (NAME AND TELEPHONE):
horace hawgknuckles 703 883 8861 <cr>
ENTER THE STATION DEPTH UNITS ("F" OR "M") :f <cr>
ENTER THE "LOCK AFTER" DATE (USUALLY 9999): 9999  <cr>
ENTER THE STATION TYPE:stream/ambnt <cr>
ENTER THE PRIMARY STATION CODE: ann1 <cr>
DO YOU WANT TO ENTER SECONDARY STATION CODES ? yes <cr>
ENTER THE FIRST SECONDARY STATION CODE: aaaaaa1 <cr>
ENTER THE SECOND SECONDARY STATION CODE: testst093 <cr>
ENTER THE THIRD SECONDARY STATION CODE: <cr>
ENTER THE FIPS NUMERIC STATE CODE (2 DIGITS): 51  <cr>
ENTER THE FIPS NUMERIC COUNTY CODE (3 DIGITS): 059 <cr>
ENTER  LATITUDE  DEGREES (DD):48   <cr>
                 MINUTES (MM):48   <cr>
               SECONDS (SS.S):53.2  <cr>
ENTER LONGITUDE DEGREES (DDD):077  <cr>
                 MINUTES (MM):07   <cr>
               SECONDS (SS.S):18.4  <cr>
ENTER THE LATITUDE-LONGITUDE PRECISION CODE:3  <cr>
```

```
ENTER THE WATER DEPTH (F) AT THE STATION:010  <cr>
ENTER THE SURFACE ELEVATION (M) AT THE STATION:38M  <cr>
ENTER OPTIONAL AQUIFER CODE (1 OF 5):  210MNCS  <cr>
ENTER OPTIONAL AQUIFER CODE (2 OF 5):  <cr>
ENTER THE MAJOR BASIN NAME:
north atlantic  <cr>
ENTER THE MINOR BASIN NAME:
potomac river  <cr>
ENTER THE NUMERIC MAJOR, MINOR, AND SUB BASIN CODES: f21400  <cr>
ENTER THE ECOREGION CODE IN THE FORM "99G" OR "99M" (OPTIONAL):64m  <cr>
ENTER THE STATION LOCATION NAME:
holmes run 2.64 miles up from potomac  <cr>
ENTER THE U.S.G.S. CATALOGING UNIT CODE (8 DIGITS): 02070010  <cr>
ENTER THE OPTIONAL REACH SEGMENT NUMBER (3 DIGITS): 042  <cr>
"ON" OR "OFF" THE REACH: off  <cr>
ENTER MILES FROM DOWNSTREAM END OF REACH: 2.64  <cr>
ENTER THE CHECK-BYTE FOR THIS REACH 3:  <cr>
ENTER THE OPTIONAL WATER BODY NAME:
va000671  holmes run  <cr>

YOU MAY NOW DESCRIBE UP TO 3 ADDITIONAL STATION BOUNDARY POINTS
(OPTIONAL) THAT DEFINE THE AREA OR LENGTH OF THE SAMPLING SITE.

DO YOU WANT TO ENTER ADDITIONAL STATION BOUNDARY POINT(S) ?yes  <cr>

YOU ARE NOW ENTERING DATA FOR ADDITIONAL BOUNDARY POINT NO. 1

  FIPS NUMERIC STATE CODE: 51   <cr>
  FIPS NUMBER COUNTY CODE: 059  <cr>
  LATITUDE   DEGREES (DD):38    <cr>
             MINUTES (MM):48    <cr>
           SECONDS (SS.S):53.8   <cr>
  LONGITUDE DEGREES (DDD):077   <cr>
             MINUTES (MM):07    <cr>
           SECONDS (SS.S):18.8   <cr>
  CATALOGING UNIT CODE: 02070010  <cr>
  OPTIONAL EPA REACH SEGMENT NUMBER (3 DIGITS): 041  <cr>
  "ON" OR "OFF" THE REACH: on  <cr>
  MILES FROM DOUNSTREAM TERMINUS (XXXX.XX): 0.9  <cr>
  CHECK BYTE FOR REACH "02070010041": 9  <cr>
  ECOREGION CODE (IN THE FORM "99G" OR "99M"): 64g  <cr>

DO YOU WANT TO ENTER ANOTHER STATION BOUNDARY POINT ? no  <cr>

DO YOU WANT TO ENTER A DESCRIPTIVE PARAGRAPH ? yes  <cr>
ENTER THE NUMBER OF DESCRIPTIVE PARAGRAPH LINES YOU WANT TO INPUT: 5  <cr>
ENTER UP TO 72 CHARACTERS OF DESCRIPTION FOR HEADER 05 ON THE NEXT LINE:
this station was established to test storage procedures <cr>
ENTER UP TO 72 CHARACTERS OF DESCRIPTION FOR HEADER 15 ON THE NEXT LINE:
it was generated using the easystor procedures <cr>
ENTER UP TO 72 CHARACTERS OF DESCRIPTION FOR HEADER 25 ON THE NEXT LINE:
data will be copied from tut1 <cr>
ENTER UP TO 72 CHARACTERS OF DESCRIPTION FOR HEADER 35 ON THE NEXT LINE:
these data are not real and should not be used for analysis <cr>
ENTER UP TO 72 CHARACTERS OF DESCRIPTION FOR HEADER 45 ON THE NEXT LINE:
the data are locked <cr>
DO YOU WISH TO ENTER DATA FOR ANOTHER STATION ?no <cr>
```

```
   NOTE:  STORET INPUT DATASETS HAVE A RECORD LENGTH OF 88,
          WITH TSO LINE NUMBERS IN COLUMNS 81-88.

MAKE ANY NECESSARY EDITING CHANGES,  THEN USE %STORE TO SUBMIT
THESE TRANSACTIONS TO STORET AFTER YOU HAVE "SAVED" THIS DATASET.

QED      ("QED" is the prompt for the Quick Editor facility.
         The "%EASYSTOR" procedure puts the user into the
         Quick Editor.)
list <cr>  (List the contents of the working space.)
00010 FORMAT=STATIONS,
00020 11TRAIN     000 CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861                 9999  A
00030 STREAM/AMBNT                                                              T
00040    ANN1                          AAAAAA1     TESTST093            51059     NSS
00050       484853207707184      3F010   38210MNCS                              0
00060    NORTH ATLANTIC          POTOMAC RIVER                          F2140064M   3
00070    HOLMES RUN 2.64 MILES UP FROM POTOMAC          02070010042OFF2.64    3     4
00080    VA000671 HOLMES RUN                                                    B
00090    51 059   38 48 53.8 077 07 18.8   02070010041 ON      0.9 9   64G     1E
00100       THIS STATION WAS ESTABLISHED TO TEST STORAGE PROCEDURES             05
00110       IT WAS GENERATED USING THE EASYSTOR PROCEDURES                      15
00120       DATA WILL BE COPIED FROM TUT1                                       25
00130       THESE DATA ARE NOT REAL AND SHOULD NOT BE USED FOR ANALYSIS         35
00140       THE DATA ARE LOCKED                                                 45
END OF DATA

After checking the storage transactions, it is determined that the
basin code is in error.  To correct the error, the "LED" editing
procedure is used.  For a further discussion of the "LED" procedure,
see the previous discussion on creating and editing a data set shown
on pages 16 through 22 of the Seminar Documentation named "Agenda,
Overview, and Introduction to TSO".

led 60  <cr>   (Line edit line 60.)
00060    NORTH ATLANTIC          POTOMAC RIVER                          F2140064M   3
EDIT?                                                                   0  <cr>
00060    NORTH ATLANTIC          POTOMAC RIVER                          02140064M   3
EDIT?   <cr>     (Make the change permanent and return to the "QED" mode.)
QED
end save <cr>    (Save a permanent copy and return to TSO.)
SAVED
READY
%store aaaaaaaa dummy route(hold)  <cr>  (%STORE is a STORET command pro-
                                         cedure used to submit a storage
                                         job.  Enter 'help store' to get
                                         the full explanation of the %STORE
                                         command procedure.)
  JOB III(JOB09999) SUBMITTED       (9999 is the storage job number.)
SUBMIT COMPLETED
READY
```

After the job has executed, it is located using the "SDSF" facility.
The following is an example of the procedures required to locate a station storage job:

```
READY
sdsf   <cr>   ("SDSF" passes control to the "SDSF" facility.)
SDSF           ENTER "HELP" FOR COMMAND LIST
SDSF          ("SDSF" is the prompt for the "SDSF" facility.)
o      <cr>   ("o" is the abbreviation for "OUTPUT" and displays
               the status of the user's output jobs. Use "i" to)
               display input jobs.)
 JOB#  JOBNAME    QUEUE    POSITION  LINES  DESTINATION
  9998 III       TSO USER        17
  9999 III99     OUTPUT   A     777      610 HOLD
SDSF
s  9999  <cr>  ("S" is the abbreviation for "SELECT".  This allows
               access to the output for job 9999, which is in
               "PRINT HOLD".)
     1                    J E S 2  J O B  L O G  --  S Y S T E M  E P A 1  --  N O D E  N C C I B M
                     (The first 20 lines are printed.  First line above is displayed.)
SDSF
find 'cc=' all<cr>  (List all occurrences of the character string "CC=" which will
                    display the job's completion code.  Four zeros (CC=0000) indicates
                    that the job ended normally.  Other completion codes generally
                    indicate a problem.  The data set 'STORET.HELP.SYSTEM.ABEND.CODES'
                    has an explanation of these. If you are at the bottom you must
                    type 'top', find 'cc=' all, and then 'right' to view the completion
                    code. Some terminals will wrap around and do not require this action.
     7 HR.MM.SS JOB 9999  NCC005I * JOB III99 ENDED MM/DD/YY AT HR:MM:SS, PRTY=2,  CC=0000
                    (The line containing the completion code prints.)
SDSF
```

```
find 'errors'    <cr>   (The first line of each page of the output from a STORET
                        storage job has the word "ERRORS" in it.  This statement
                        instructs the system to find the first occurence of the
                        word 'errors' and proceeds to print the next 20 lines.)

11TRAIN                      STORET WATER QUALITY STORAGE ERRORS - DUMMY STORAGE RUN                    DATE:

 STATION                    ERROR MESSAGE(S)                    END DATE-SOPH  COMP DATE   DEPTH MEDIU ETC.
                                                                BEG DATE-R-C      UMK      SMK
                                                               SAMP DATE       SURV DATE  SAMPID REPLNUM
----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+

----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+
*              (00)DIAGNOSTIC COMMENT                                        (A)INFORMATION
                   11TRAIN     000 ********HORACE HAWGKNUCKLES 703 883 8861     F           9999  A
*              (99)T CARD INFORMATION                                        (A)INFORMATION
                   STREAM/AMBNT                                                              T
*ANN1          (160)LATITUDE GREATER THAN REACH MAXIMUM LATITUDE             (D)STATN NOT STORED
                   RCH=02070010042        MAX LAT= 38 53 59.9    STN LAT= 48 48 53.2
*ANN1          (161)LONGITUDE GREATER THAN REACH MAXIMUM LONGITUDE           (D)STATN NOT STORED
                   RCH=02070010041        MAX LONG= 77 04 59.9    STN LONG= 77 07 18.8          1E
*ANN1          (162)REACH NOT IN SPECIFIED STATE/COUNTY                      (D)STATN NOT STORED
                   RCH=02070010041        STN STCO=51059   RCH STCO=24033
*ANN1          (80)LAT/LONG NOT WITHIN STATE/COUNTY BOUNDARY                 (D)STATN NOT STORED
                   ST/CO - 51059     LAT/LONG - 484853207707184
*              (96)END OF RUN                                                (A)INFORMATION
11TRAIN                      STORET WATER QUALITY STORAGE ERRORS - DUMMY STORAGE RUN                    DATE:

  JOB ID   RUN DATE & TIME  JOB #   INPUT DATASET                          #ERR  EDIT PGM  "A" CARD COMMENT
----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+
 III99    87/07/08  9:99AM JES 9999 IIIAAAA.AAAAAAAA                        4  ?01 DUMMY

TOTAL:          ERRORS =      4     WARNINGS =      0     (DUMMY RUN - NOTHING STORED)

                  (The above lines were truncated to fit on the page.)

SDSF
end  <cr>     (Instructs the system to leave the "SDSF" facility
               and return to TSO.)
READY
```

To make corrections to the station storage data set, a copy of it must be brought into working space. To accomplish this, the following sequence of commands is issued:

```
READY
edit aaaaaaaa  <cr>    (Bring a copy of the data set into working space
                       and pass control to the "QED" facility so it may be
                       corrected.)
QED       ("QED" is the prompt for the Quick Editor facility.)
list    <cr>   (List the contents of working space.)
00010 FORMAT=STATIONS,
00020 11TRAIN     000 CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861                 9999  A
00030 STREAM/AMBNT                                                              T
00040    ANN1                          AAAAAA1     TESTST093             51059     NSS
00050       484853207707184       3F010   38210MNCS                              0
00060    NORTH ATLANTIC           POTOMAC RIVER                          02140064M   3
00070    HOLMES RUN 2.64 MILES UP FROM POTOMAC          020700100420FF2.64    3     4
00080    VA000671 HOLMES RUN                                                    B
00090    51 059   38 48 53.8 077 07 18.8   02070010041 ON      0.9 9   64G     1E
00100       THIS STATION WAS ESTABLISHED TO TEST STORAGE PROCEDURES             05
00110       IT WAS GENERATED USING THE EASYSTOR PROCEDURES                      15
00120       DATA WILL BE COPIED FROM TUT1                                       25
00130       THESE DATA ARE NOT REAL AND SHOULD NOT BE USED FOR ANALYSIS         35
00140       THE DATA ARE LOCKED                                                 45
END OF DATA
led 50  <cr>  (Line edit line 50.)
00050       484853207707184       3F010   38210MNCS                              0
EDIT?       3  <cr>   (Replace the character immediately above with a three.)
00050       384853207707184       3F010   38210MNCS                              0
EDIT?   <cr>   (Enter a null line to make the change permanent and to return to "QED".)
QED

      (After checking the latitude and longitude and the state and county
      codes for the extension point, it was determined that they are correct.
      In order to by-pass the edit checks, the "PRM" operand of the "%STORE"
      command is used in conjunction with the "MAGIC" number.)

end save  <cr>  (Save the new copy of the station storage data set
                and return to TSO.)
SAVED
READY
%magic   <cr>   (STORET command procedure to get the "MAGIC" override
                number which will tell the system to by-pass the edit
                checks.)
THE NUMBER FOR TODAY IS : 999
READY
%store aaaaaaaa final route(hold) prm(huw999)  <cr>
           (The above sequence of commands will submit a storage job
           "FINAL", which will post the transaction to the 'MOD' file
           and the edit checks will be by-passed.)
  JOB III(JOB09999) SUBMITTED
SUBMIT COMPLETED
READY
```

After the job has executed, it is located using the sequence above. If there are no errors, the station will be added to the data base the weekend following the storage job.

After a station has been stored in the data base ("FINAL" store, and after the weekend update), changes and corrections can be made to it. The user may create a data set containing the change transactions or "%STNDESC" may be used. "%STNDESC" will retrieve the station header information and create a data set containing change transactions. This data set is modified using the Line Editor "LED", and saved. If the user needs help with the "LED" procedures, see pages 16 through 22 of the Seminar Documentaion named "Agenda, Overview, and Introduction to TSO". To submit the job for processing, the "%STORE" command is used. The following sequence of commands is issued to create a data set containg the change transactions:

```
READY
%stndesc card  <cr>   (STORET command procedure to generate
                      station header change transactions
                      Enter 'help stndesc' to obtain the on-
                      line documentation for the %STNDESC
                      command procedure.)
ENTER THE DATA-SET-NAME WHERE
YOU WANT TO PUT THE STORAGE CARDS   chng.header  <cr>
WARNING :
YOU HAVE REQUESTED OUTPUT IN CARD FORM.
YOU MUST -NOT- USE THE "BREAK" (ATTN/INT)
TO TERMINATE THIS PROGRAM.
TO AVOID LOSS OF SOME OR ALL OF YOUR CARD
OUTPUT, ANSWER "STOP" TO TERMINATE, AFTER
ANY PROMPTING MESSAGE.
STORET RETRIEVAL DATE 87/07/08                INDEX  -  VERSION OF MONTH DAY,YEAR            PAGE  1

AGENCY          ST-CO COUNTY              STATE                LOCATION NAME
PRIME STN NO    SECONDARY STATION NUMBERS                 MINOR BASIN                        BASIN CODE
                LAT/LONG/PREC             STORED DATE     MAJOR BASIN                   DEPTH
                STATION TYPE CODE
                RIVER MILE  (   IF    )                                                        HYDR.UNIT COI
                INDEX       ( PRESENT )                                                        MILES ON REA(
 =   = = = = = = = = = = = =   = = =    = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = =
ENTER AGENCY CODE OR "STOP" :
example  <cr>
ENTER STATION NUMBER
seminar01  <cr>
EXAMPLE         24031 MONTGOMERY          MARYLAND         SLIGO CREEK NEAR LOUIS'S JOGGING
SEMINAR01       TEST001A     JOYCE06                       POTOMAC RIVER
                39 01 16.3 077 02 15.8  2 STORED 800607    NORTH ATLANTIC
                /TYPA/AMBNT/STREAM                                 DATA LOCKED AFTER
                INDEX 0214001  000600  00070  0110   0050   0120                                  0207001003(
                MILES   16.37   18.31  29.55   4.28   5.40   7.80                                  0006.420 OI
 - -   - - - - - -   - - - - -   - - -   - - - - - - - - - - - - - -    - - - - - - - - - - - - - - -
ENTER AGENCY CODE OR "STOP" :
stop  <cr>
END OF INDEX MODULE.
STATION DESCRIPTIONS PROCESSED :     1
READY
```

```
READY
edit chng.header  <cr>   (Bring a copy of the data set into working
                         space and pass control to the "QED" facility.)
DATASET NOT LINE NUMBERED-NONUM ASSUMED
QED    ("QED" is the prompt for the Quick Editor facility.)
list   <cr>  (List the contents of working space.)
?START
?01
EXAMPLE     000 ********COPYDESC STATION DESCRIPTION********             5001  A
AMBNT/STREAM                                                              T
   SEMINAR01                      TEST001A    JOYCE06              24031     CXS
      390116307702158      2F005                                            0
      02140010016370006000018310007002955011000428005000540012000780       06 1
   NORTH ATLANTIC           POTOMAC RIVER                          021400     3
   SLIGO CREEK NEAR LOUIS'S JOGGING TRACK BRIDGE   020700100300FF0006.4208    4
      ESTABLISHED TO DEMOSTRATE STORAGE PROCEDURES AND AS A TEST STATION FOR  05
      SOFTWARE TESTING ETC                                                   15
      THIS LINE LEFT INTENTIONALLY BLANK                                     25
END OF DATA
verify  <cr>   (Causes the line to echo whenever a change is made to
               it or when the current line pointer is moved to it.)
top  <cr>   (Move the 'Current Line Pointer' to the top of the data set.)
TOP OF DATA SET
led '********'  <cr>  (Line Edit the lines that contain "********".)
EXAMPLE     000 ********COPYDESC STATION DESCRIPTION********             5001  A
               test       <cr>  (Change the '********' to 'TEST    '.)
EXAMPLE     000 TEST    COPYDESC STATION DESCRIPTION********             5001  A
<cr>   (Enter a null line to make the change permanent and to return to "QED".)
QED
top  <cr>   (Move the 'Current Line Pointer' to the top of the data set.)
TOP OF DATA SET
led 'seminar'  <cr>  (Line Edit the lines that contain "SEMINAR".)
   SEMINAR01                      TEST001A    JOYCE06              24031     CXS
                                  example1    sligocr1  <cr>
         (The above will replace the characters with those typed below them.)
   SEMINAR01                      EXAMPLE1    SLIGOCR1             24031     CXS
<cr>  (Enter a null line to make the change permanent and return to "QED".)
QED
```

```
QED
top  <cr>   (Move the 'Current Line Pointer' to the top of the data set.)
TOP OF DATA SET
led  <cr>   (Line Edit the entire data set.)
?START
<cr>   (Enter a null line to skip to next line.  No changes made.)
?01
<cr>   (Enter a null line to skip to next line.  No changes made.)
EXAMPLE     000 TEST    COPYDESC STATION DESCRIPTION********              5001  A
<cr>   (Enter a null line to skip to next line.  No changes made.)
AMBNT/STREAM                                                               T
<cr>   (Enter a null line to skip to next line.  No changes made.)
   SEMINAR01                      EXAMPLE1    SLIGOCR1               24031     CXS
<cr>   (Enter a null line to skip to next line.  No changes made.)
     390116307702158      2F005                                              0
                              3  <cr>  (Change the '5' to a '3'.)
     390116307702158      2F003                                              0
<cr>   (Enter a null line to make the change permanent and to go to next line.)
     02140010016370006000018310007002955011000428005000540012000780        06 1
                                                                 96  <cr>
               (Change the '78' to '96'.)
     02140010016370006000018310007002955011000428005000540012000960        06 1
<cr>   (Enter a null line to make the change permanent and to go to next line.)
   NORTH ATLANTIC          POTOMAC RIVER                          021400      3
                                       basin  <cr>  (Replace blanks
                                                    with 'BASIN'.)
   NORTH ATLANTIC          POTOMAC RIVER BASIN                    021400      3
<cr>   (Enter a null line to make the change permanent and to go to next line.)
   SLIGO CREEK NEAR LOUIS'S JOGGING TRACK BRIDGE   020700100300FF0006.4208     4
              9.6|miles|up|from|n|w|branch|||||  <cr>
        (The above will replace the character string with the new one.
        The "|" replaces the character above it with a blank.)
   SLIGO CREEK 9.6 MILES UP FROM N W BRANCH        020700100300FF0006.4208     4
<cr>   (Enter a null line to make the change permanent and to go to next line.)
     ESTABLISHED TO DEMOSTRATE STORAGE PROCEDURES AND AS A TEST STATION FOR  05
<cr>   (Enter a null line to skip to next line.  No changes made.)
     SOFTWARE TESTING ETC                                                  15
<cr>   (Enter a null line to skip to next line.  No changes made.)
     THIS LINE LEFT INTENTIONALLY BLANK                                    25
     station|moved|in|1982|stream|changed|course  <cr>
         (The above will replace the character string with the new one.
         The "|" replaces the character above it with a blank.)
     STATION MOVED IN 1982 STREAM CHANGED COURSE                           25
<cr>  (Enter a null line to make the change permanent and to return to "QED".)
QED
```

```
QED
list <cr>  (List the contents of working space.)
?START
?01
EXAMPLE     000 TEST    COPYDESC STATION DESCRIPTION********             5001  A
AMBNT/STREAM                                                                T
   SEMINAR01                       EXAMPLE1    SLIGODR1              24031     CXS
      390116307702158      2F003                                               0
      02140010016370006000018310007002955011000428005000540012000960       06 1
   NORTH ATLANTIC           POTOMAC RIVER BASIN                      021400     3
   SLIGO CREEK 9.6 MILES UP FROM N W BRANCH        020700100300FF0006.4208     4
      ESTABLISHED TO DEMOSTRATE STORAGE PROCEDURES AND AS A TEST STATION FOR  05
      SOFTWARE TESTING ETC                                                    15
      STATION MOVED IN 1982 STREAM CHANGED COURSE                             25
END OF DATA
end save  <cr>  (Save a permanent copy of the data set and return to "TSO".)
SAVED
READY
%store chng.header dummy route(hold)  <cr>  (%STORE is a STORET command pro-
                                            cedure used to submit a storage
                                            job.  Enter 'help store' to get
                                            the full explanation of the %STORE
                                            command procedure.)
  JOB III(JOB09999) SUBMITTED
SUBMIT COMPLETED
READY
```

After the job has executed, it is located using the procedures shown above. If there are no errors found, the job is re-submitted using 'FINAL' instead of 'DUMMY' to post the change transactions to the 'MOD' file.

WHAT IS NEEDED TO ENTER SAMPLING DATA?

I. A SITE NUMBER WHICH HAS BEEN PREVIOUSLY ENTERED INTO STORET.

II. THE DATE THAT THE SAMPLE WAS TAKEN, AND OPTIONALLY, THE TIME, THE DEPTH, AND COMPOSITING INFORMATION FOR THE SAMPLE.

III. THE RESULTS OF THE LABORATORY ANALYSIS OF THE WATER THAT WAS WITHDRAWN FROM THE SITE.

IV. A LIST OF THE STORET PARAMETER CODES FOR THE CONSTITUENTS THAT ARE TO BE ENTERED.

AFTER THE STATIONS HAVE BEEN ESTABLISHED IN THE SYSTEM, PARAMETRIC DATA CAN BE STORED FOR THEM. BEFORE DISCUSSING THE STORAGE FORMATS, AN UNDERSTANDING OF THE SAMPLE KEY CONCEPT IS NECESSARY. GROUPS OF PARAMETRIC DATA SAMPLED ON AND STORED WITH THE SAME DATE (TIME AND DEPTH ARE OPTIONAL) ARE REFERRED TO AS A SAMPLE. EACH PIECE OF DATA IN THE SYSTEM IS IDENTIFIED BY AND MUST BE UNIQUE FOR THE SAMPLE KEY, I.E., THERE CAN NOT BE TWO VALUES AT A SAMPLING SITE WITH THE SAME DATE, AND OPTIONALLY TIME AND DEPTH, FOR A PARAMETER. THE FOLLOWING SHOWS THE MAKE UP OF THE SAMPLE KEY. SEE THE DISSCUSSION BELOW FOR EXPLANATION OF THE EXPANDED SAMPLE KEY.

AGENCY NUMBER

STATION NUMBER

DATE (TIME) (DEPTH) (COMPOSITE QUALIFIERS)

PARAMETER NUMBER

TIME DEPTH AND COMPOSITE QUALIFIERS ARE OPTIONAL

AS PREVIOUSLY MENTIONED, THE DATE (TIME AND DEPTH) ARE REFERRED TO AS THE SAMPLE KEY. FOR SAMPLES TAKEN IN WATER, THE KEY CAN BE EXPANDED TO INCLUDE QUALIFIED COMPOSITE INFORMATION SUCH AS THE TYPE OF COMPOSITE (TIME, SPACE, BOTH OR FLOW PROPORTIONAL), THE STATISTICAL VALUE FROM THE COMPOSITE BEING STORED (MAXIMUM, MINIMUM, MEAN, ETC.), AND THE TYPE OF SAMPLING THAT WAS PERFORMED (CONTINUOUS OR GRAB). STORET WAS DEVELOPED AS A DATA BASE FOR WATER QUALITY INFORMATION. HOWEVER, OVER THE YEARS, IT HAS BEEN MODIFIED TO ACCEPT INFORMATION FOR A VARIETY OF MEDIA. TO ACCOMMODATE THESE DATA, THE SAMPLE KEY HAS BEEN EXPANDED. THE EXPANDED SAMPLE KEY IS MADE UP OF MEDIUM (WATER IS THE DEFAULT), THE SYSTEM MULTIPURPOSE KEY (SMK), AND THE THE USER MULTIPURPOSE KEY (UMK). THE MEDIUM FIELD, WHICH CAN CONTAIN UP TO 7 ALPHANUMERIC CHARACTERS, IS A CONTROLLED FIELD. THE VALUES THAT CAN BE ENTERED FOR IT ARE MAINTAINED BY THE STORET USER ASSISTANCE GROUP, AND THE VALUE IS CHECKED WHEN THE DATA ARE STORED. SOME OF THE VALUES FOR THE MEDIUM ARE WATER, GRWTR, RCRAGW, LAND, ETC. THE SMK FIELD, WHICH IS ALSO UNDER THE CONTROL OF STORET PERSONNEL, CONTAINS A FURTHER QUALIFIER OF THE SAMPLE AND CAN CONTAIN UP TO 6 NUMERIC CHARACTERS. FOR QUALIFIED DEPTH SAMPLES (BOTTOM, DREDGE, ETC.), IT WILL CONTAIN A LENGTH OR DEPTH MEASUREMENT. FOR BIOLOGICAL INFORMATION, IT WILL CONTAIN A SPECIES CODE. AGAIN, THE MEDIA AND SMK FIELDS CAN CONTAIN ONLY APPROVED VALUES WHICH WILL BE MAINTAINED BY THE STORET USER ASSISTANCE GROUP. THE UMK SAMPLE QUALIFIER IS UNDER THE CONTROL OF THE USER AND CAN CONTAIN UP TO 8 ALPHANUMERIC CHARACTERS. SINCE THIS IS UNDER THE CONTROL OF THE USER, THE USER WILL BE RESPONSIBLE FOR MAINTAINING THE DEFINITIONS OF THE CODES. IF THE UMK IS TO BE USED, THERE MUST BE AN SMK AND THE QUALIFIED COMPOSITE ATTRIBUTES CAN NOT BE USED.

AGENCY NUMBER

STATION NUMBER

DATE (TIME) (MEDIUM, SMK, UMK)

PARAMETER NUMBER

BEFORE A CONSTITUENT CAN BE STORED IN THE STORET SYSTEM, A PARAMETER CODE MUST BE ASSIGNED TO IT. IN MOST CASES, THIS HAS ALREADY BEEN DONE. TO GET A LIST OF THE PARAMETER CODES, THE STORET COMMAND PROCEDURE "%BATCH" IS USED. SEE PAGES 24 THROUGH 26 OF THE SEMINAR DOCUMENTATION NAMED "AGENDA, OVERVIEW, AND INTRODUCTION TO TSO" FOR A DEMONSTRATION OF HOW TO USE THE "%BATCH" PROCEDURE TO DO THIS. THE PARAMETER LIST CAN BE SORTED INTO SEVERAL DIFFERENT SEQUENCES DEPENDING UPON WHICH OPERAND IS USED WITH THE "%BATCH" PROCEDURE. IF THE CONSTITUENT IS NOT PRESENTLY IN THE SYSTEM, A NEW CODE CAN BE ASSIGNED TO IT BY CONTACTING PHIL TAYLOR ON (202)382-7046. THE FOLLOWING IS A PAGE FROM THE NUMERICAL LISTING OF THE CODES:

EPA/STORET SYSTEM 84/03/20 VERSION OF 84/02/17

CODE	COMPUTER PRINTOUT ABBREVIATION	DECIMAL POINT LOCATION	PARAMETER DESCRIPTION MAJOR GROUP	ANALYSIS	TISSUE AQC REF.	PARAMETER ENTERED REQUESTER	CHANGES REVISED ACTION	NUMBER STORET OBSERV	%1970-197 %1965-196 %BEFORE 6
00621	NO3 MUD DRY WGT MG/KG-N	XXXXX.XX	NITRATE NITROGEN, BOTTOM DEPOS. (MG/KG-N DRY WGT) (09)NITROGEN			73/03 F-GS		631	41 45 12
00622	TKN 30 DAY MG/L	XXXX.XXX	TOTAL KJELDAHL NITROGEN, 30 DAY,(MG/L AS N) (09)NITROGEN			78/05 S-VA		4	100
00623	KJELDL N DISS MG/L	XXXX.XXX	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N) (09)NITROGEN			70/05 E-R03		27129	89 8 1
00624	KJELDL N SUSP MG/L	XXXX.XXX	NITROGEN, KJELDAHL, SUSPENDED (MG/L AS N) (09)NITROGEN			70/05 E-R03		6964	99
00625	TOT KJEL N MG/L	XXXX.XXX	NITROGEN, KJELDAHL, TOTAL, (MG/L AS N) (09)NITROGEN		*AQC	65/07 E-STORET		555888	67 25 6
00626	ORGAN. N MUD D WT MG/KG-N	XXXXX.XX	NITROGEN,ORG. KJEL.,BOT. DEPOS. (MG/KG-N DRY WGT) (09)NITROGEN			74/03 E-R05		3816	78 19 2
00627	KJELDL N TOT MU D MG/KG	XXXX.XXX	NITROGEN KJELDAHL TOTAL BOTTOM DEP DRY WT MG/KG (09)NITROGEN			74/09 E-R05		915	85 10 3
00628	NO2+NO3- N SUSP MG/L	XXXXX.XX	NITRITE PLUS NITRATE SUSPENDED (09)NITROGEN	(MG/L AS N)		80/11 E-HQ			
00629	TOT ORG KJELDL N MG/L	XXXXX.XX	NITROGEN, ORGANIC KJELDAHL, TOTAL (MG/L AS N) (09)NITROGEN			73/05 E-R02	80/12	27375	60 29 10
00630	NO2&NO3 N-TOTAL MG/L	XXXXX.XX	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N) (09)NITROGEN		*AQC	65/07 E-STORET		531406	66 27 5
00631	NO2&NO3 N-DISS MG/L	XXXXXX.X	NITRITE PLUS NITRATE, DISS. 1 DET. (MG/L AS N) (09)NITROGEN			72/08 F-GS		143416	57 41 1

OCCASIONALLY VALUES TO BE STORED IN THE SYSTEM MAY NOT REPRESENT THE ACTUAL MEASURED VALUE OR THE CONSTITUENT IS BELOW THE DETECTION LIMIT OF THE EQUIPMENT AND CANNOT BE QUANTIFIED. FOR THIS DATA, A GROUP OF REMARK CODES HAS BEEN ESTABLISHED. THE FOLLOWING IS A LIST OF THESE REMARK CODES AND THEIR DEFINITIONS:

REMARK CODES

A	VALUE REPORTED IS THE MEAN OF TWO OR MORE DETERMINATIONS.
B	RESULTS BASED UPON COLONY COUNTS OUTSIDE THE ACCEPTABLE RANGE.
C	VALUE CALCULATED.
D	INDICATES FIELD MEASUREMENT.
E	INDICATES EXTRA SAMPLES TAKEN AT COMPOSITE STATIONS.
F	IN THE CASE OF SPECIES, F INDICATES FEMALE SEX.
G	VALUE REPORTED IS THE MAXIMUM OF TWO OR MORE DETERMINATIONS.
H	VALUE BASED ON FIELD KIT DETERMINATION; RESULTS MAY NOT BE ACCURATE.
J	ESTIMATED VALUE; VALUE NOT ACCURATE.
K	ACTUAL VALUE IS KNOWN TO BE LESS THAN VALUE GIVEN.
L	ACTUAL VALUE IS KNOWN TO BE GREATER THAN VALUE GIVEN.
M	PRESENCE OF MATERIAL VERIFIED BUT NOT QUANTIFIED. IN THE CASE OF TEMPERATURE OR OXYGEN REDUCTION POTENTIAL, M INDICATES A NEGATIVE VALUE. IN THE CASE OF SPECIES, M INDICATES MALE SEX.

N PRESUMPTIVE EVIDENCE OF PRESENCE OF MATERIAL.

O SAMPLED, BUT ANALYSIS LOST OR NOT PERFORMED.

P TOO NUMEROUS TO COUNT.

Q SAMPLE HELD BEYOND NORMAL HOLDING TIME.

R SIGNIFICANT RAIN IN THE PAST 48 HOURS.

S LABORATORY TEST.

T VALUE REPORTED IS LESS THAN CRITERIA OF DETECTION.

U INDICATES MATERIAL WAS ANALYZED FOR BUT NOT DETECTED. IN THE CASE OF SPECIES, U INDICATES UNDETERMINED SEX.

V INDICATES THE ANALYTE WAS DETECTED IN BOTH THE SAMPLE AND ASSOCIATED METHOD BLANK.

W VALUE OBSERVED IS LESS THAN LOWEST VALUE REPORTABLE UNDER "T" CODE.

X VALUE IS QUASI VERTICALLY-INTERGRATED SAMPLE.

Y LABORATORY ANALYSIS FROM UNPRESERVED SAMPLE. DATA MAY NOT BE ACCURATE.

Z TOO MANY COLONIES WERE PRESENT TO COUNT (TNTC), THE NUMERIC VALUE REPRESENTS THE FILTRATION VOLUME.

AS PREVIOUSLY MENTIONED, IN ORDER TO ENTER INFORMATION INTO THE STORET WATER QUALITY SYSTEM, A DATA SET MUST BE CREATED. THIS CAN BE DONE BY USING ONE OF SEVERAL DIFFERENT PRECEDURES, E.G., KEY-PUNCHING A DECK OF CARDS, CREATING A FILE ON A PC AND UPLOADING IT VIA KERMIT OR ANOTHER TECHNIQUE, CREATING A TAPE AND SENDING IT TO THE COMPUTER CENTER, OR CREATING A FILE WITH "%EASYSTOR" OR THE TSO "QUICK EDITOR". THE END RESULT OF ALL OF THESE TECHNIQUES IS A DATA SET IN THE PROPER FORMAT AT THE DATA CENTER. THE NEXT SEVERAL PAGES SHOW THE FORMAT OF THE FILE AND HOW IT IS USED TO ADD, CHANGE, AND DELETE PARAMETRIC DATA. IN APPENDIX C, THERE ARE OTHER STORAGE FORMATS SHOWN. THE CARDS REQUIRED TO USE THE "WQS" METHOD OF STORAGE ARE AN AGENCY CARD (EITHER THE STANDARD "A" CARD OR THE FREE FORMAT "AC" CARD), "SC" CARDS, AND/OR A COMBINATION OF "PN", "DC" AND "PNOFF" CARDS. THE COMMA (,) IS USED AS THE DELIMITER (SEPARATER OF ITEMS) FOR ALL OF THE FREE FORM CARDS UTILIZED TO STORE DATA.

```
FORMAT=WQS,
AGENCY CARD (EITHER VARIABLE OR FIXED FIELD)
SAMPLE CARD(S) ("SC")

   OR

FORMAT=WQS,
AGENCY CARD (EITHER VARIABLE OR FIXED FIELD)
PARAMETER CARD(S) ("PN")
DATA CARD(S) ("DC")
```

IF THE USER DESIRES, THE DATA SET MAY CONTAIN A COMBINATION OF BOTH "SC" CARDS AND GROUPS OF "PN", "DC", AND "PNOFF" CARDS.

```
FORMAT=WQS,
AGENCY CARD (EITHER VARIABLE OR FIXED FIELD)
SAMPLE CARD(S) ("SC")
PARAMETER CARD ("PN")
DATA CARD(S) ("DC")
PARAMETER CARD OFF (PNOFF")
SAMPLE CARD(S) ("SC")
```

THE FOLLOWING IS THE FORMAT OF THE VARIABLE AGENCY CARD:

AC,A=AGENCY CODE,UK=UNLOCKING KEY,USER=ANYTHING,NDC,

FIELD	CONTENTS
1	COLUMNS 1 THROUGH 3 CONTAIN "AC," WHICH IS THE CARD IDENTIFIER. THE COMMA IS THE DELIMITER, I.E. SEPARATOR OF ITEMS.
2	THE FIELD CONTAINS AN "A" SET EQUAL TO THE AGENCY CODE BEHIND WHICH THE DATA IS TO BE STORED (A=AGENCY CODE).
3	THE UNLOCKING KEY FOR THE AGENCY IS SPECIFIED BY SETTING "UK" EQUAL TO IT (UK=UNLOCKING KEY).
4	THE "USER= " FIELD CONTAINS ANY CHARACTERS THE USER DESIRES. THEY ARE NOT STORED AND SHOULD BE USED TO IDENTIFY THE JOB OR THE RUN. IT IS AN OPTIONAL FIELD.
5	"NDC". IF USED, WILL OVERRIDE THE DATE CHECKING ROUTINE. IT IS RECOMMENDED THAT THIS OPTION NOT BE USED SINCE IT WILL ALLOW THE STORING OF INVALID DATES OR TIMES. IT IS USED TO STORE DATA SAMPLED PRIOR TO JANUARY 1, 1932.

THE FREE FORM AGENCY CARD LENDS ITSELF READILY FOR USE WITH A TERMINAL SINCE ITEMS DO NOT HAVE TO BE IN PARTICULAR COLUMNS. EACH ITEM IS SEPARATED BY A COMMA AND THE LAST ITEM MUST BE FOLLOWED BY A COMMA.

THE FOLLOWING IS AN EXAMPLE OF A DATA SET UTILIZING THE "SC" CARDS TO STORE DATA. AS WITH ALL STORAGE DECKS, THE FIRST CARD MUST BE A "FORMAT" CARD WHICH IDENTIFIES THE FILE WHERE THE DATA IS TO BE STORED, IN THIS CASE "FORMAT=WQS," IS ENTERED. THIS IS FOLLOWED BY THE AGENCY CARD AND AS MANY MANY "SC" CARDS AS ARE NEEDED. TO CONTINUE AN "SC" CARD ONTO THE NEXT CARD, THE PRESENT CARD IS ENDED WITH A COMMA AND THEN THE NEXT CARD IS STARTED IN COLUMN 1. THE MAIN ADVANTAGE OF THIS STORAGE METHOD IS ITS SIMPLICITY. AFTER THE SAMPLE KEY IS ENTERED, THE PARAMETER CODE IS ENTERED FOLLOWED IMMEDIATELY BY A COMMA AND THE VALUE FOR IT. THIS IS CONTINUED UNTIL ALL OF THE DATA FOR THE SAMPLE ARE ENTERED. THE DISADVANTAGE IS THAT THE PARAMETER CODE MUST BE ENTERED EACH TIME WHICH REQUIRES MORE KEY STROKES.

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

FORMAT=WQS,
AC,A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703 883 8861,
SC,MSP1,750618,P10,13.9,P300,8.3,P400,8.2,
SC,MSP1,7507151200,P10,14.8,P300,6.3,P400,7.7,
SC,MSP1,7507181300,D10,P10,12.3,P300,7.3,P400,7.9,
SC,MSP1,7507221400,DM3.28,P10,10.5,P300,4.3,P400,8.3,
SC,MSP1,750823,D2.94,P400,7.8,P610,13K,
SC,MSP1,7508241200,DM10,P10,10.8,P300,9.1L,P400,8.4,P610,16,P940,35,
SC,MSP1,7508250800,DMV15,P400,7.6,P940,63,
SC,MSP1,7508260900,D10,P400,7.4,PC10,14.5,P620,.3,PD650,
P300,11.3,
SC,MSP1,7508271200,D10,DEL,
SC,MSP1,750816,750818,D3,P10,15,P300,15.4,P610,16.3,
SC,MSP1,7508271200,7508311200,A,S,GN15,P10,12.4,P310,88.2,P610,15.8,
SC,MSP1,7508271200,7508311200,H,S,GN15,P10,16.8,P310,98.2,P610,18.8,
SC,MSP1,7508271200,7508311200,L,S,GN15,P10,10.2,P310,81.2,P610,13.7,

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
```

WHEN STORING DATA FROM SAMPLING EVENTS IN A WELL, THE EXPANDED SAMPLE KEY SHOULD BE USED WITH A MEDIA OF "GRWTR" EXCEPT FOR THOSE DATA THAT ARE ASSOCIATED WITH THE RCRA PROGRAM. FOR THOSE DATA, A MEDIA OF "RCRAGW" IS USED. IN THE MANUAL "GROUND-WATER DATA MANAGEMENT WITH STORET",THE CODING SCHEME FOR THE "SMK" FIELD CAN BE FOUND ON PAGE 4-29. THE CODING SCHEME FOR THE "UMK" FIELD IS IN APPENDIX E. THE "SMK" IS USED TO DEFINE THE SAMPLING METHOD, E.G., IS IT A FIELD SPLIT OR A LAB SPLIT, ETC. THE "UMK" IS UTILIZED TO SPECIFY SAMPLER TYPES, SAMPLER MATERIAL, AND LAB OR FIELD DESIGNATORS. THE ABOVE MANUAL ALSO DESCRIBES IN GREAT DETAIL THE ADDITIONAL PARAMETER CODES WHICH WERE ADDED TO THE SYSTEM TO ACCOMMODATE THE REQUIRED WELL DESCRIPTIVE INFORMATION. THE MANUAL CAN BE OBTAINED BY CALLING THE OFFICE OF GROUNDWATER PROTECTION (202-382-7077). THE FOLLOWING IS AN EXAMPLE EXAMPLE DATA SET DEMONSTRATING THE REQUIRED CODINGFOR GROUNDWATER SAMPLES:

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

FORMAT=WQS,
AC,A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703 883 8861,
SC,WELL01,8406151400,MED=GRWTR,SMK=511000,UMK=05156303,P11,66.0,
P300,8.4,P400,6.0,P1029,2.3,P70390,4.1,
SC,WELL01,8406151400,MED=GRWTR,SMK=411000,UMK=05156303,P11,63.1,
P300,9.1,P400,6.8,P1140,3.2,P1002,5.1K,
SC,WELL01,8407011500,MED=GRWTR,SMK=511000,UMK=05156303,P11,68.3,
PC300,9.1,PD400,P1029,.5K,P1045,2.8,
SC,WELL01,830814,MED=GRWTR,SMK=201000,UMK=05156303,DEL,

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
```

THE FOLLOWING IS A SYNOPSIS OF PAGE 4-29 OF THE AFORE MENTIONED MANUAL:

FIRST DIGIT CODE	MULTIPLE SAMPLE	FIELD REPLICATE	LAB REPLICATE
0	NO	NO	NO
1	NO	NO	YES
2	NO	YES	NO
3	YES	NO	NO
4	NO	YES	YES
5	YES	YES	NO
6	YES	NO	YES
7	YES	YES	YES

FOR EXAMPLE, IF THE CODE 4 IS ENTERED, IT IS KNOWN THAT THERE WERE NO MULTIPLE SAMPLES TAKEN, BUT BOTH FIELD AND LAB REPLICATES ARE PRESENT.

THE SECOND DIGIT IS USED TO INFORM THE USER WHICH REPLICATE THIS IS FROM THE SET OF REPLICATES TAKEN AT THE SITE. THE THIRD DIGIT INDICATES WHICH FIELD REPLICATE THE SAMPLE IS AND THE FOURTH DIGIT INDICATES WHETHER THE SAMPLE WAS DIVIDED IN THE LAB, AND IF SO, WHICH SAMPLE NUMBER IT IS. IF THE "SMK" FIELD CONTAINS 201000, IT MEANS THAT ONLY ONE SAMPLE WAS COLLECTED AND THAT THIS IS THE FIRST FIELD REPLICATE. THE FIFTH AND SIXTH DIGITS MUST BE PRESENT BUT PRESENTLY THEY HAVE NO MEANING.

THE FOLLOWING IS AN EXPLANATION OF THE "SC" CARD:

FIELD	CONTENTS
1	"SC," IS ENTERED, WHICH IS THE CARD IDENTIFIER. THE COMMA IS USED THROUGHOUT AS THE DELIMITER, I.E., SEPARATOR OF ITEMS.
2	THE STATION NUMBER IS ENTERED FOLLOWED BY A COMMA. EITHER A PRIMARY OR SECONDARY NUMBER MAY BE USED.
3	FOR A GRAB SAMPLE, THE DATE AND THE TIME, IF PRESENT, THAT THE SAMPLE WAS TAKEN IS ENTERED FOLLOWED BY A COMMA. IF THE SAMPLE IS AN UNQUALIFIED COMPOSITE, THEN THE BEGINNING DATE IS ENTERED FOLLOWED BY A COMMA. IF THE SAMPLE IS A QUALIFIED COMPOSITE, THEN THE BEGINNING DATE AND TIME IS ENTERED FOLLOWED BY A COMMA. DATES ARE ENTERED IN YEAR, MONTH, DAY ORDER, AND IF A TIME IS TO BE SPECIFIED, THE 24 HOUR CLOCK IS UTILIZED.
4	FOR A GRAB SAMPLE WITH OR WITHOUT TIME, THIS FIELD IS IGNORED. FOR UNQUALIFIED COMPOSITES, THE ENDING DATE IS ENTERED, AND FOR QUALIFIED COMPOSITES, THE ENDING DATE AND TIME IS ENTERED. IF THIS IS USED, THE FIELD MUST BE TERMINATED WITH A COMMA. IF THE FIELD IS NOT NEEDED, NOTHING IS ENTERED, NOT EVEN A COMMA.
5	THIS FIELD CONTAINS THE MEDIUM CODE. FOR WATER SAMPLES (WHICH INCLUDE BOTTOM, VERTICALLY INTEGRATED, CORE, PORE AND DREDGE), THIS FIELD IS NOT USED AND CAN BE LEFT BLANK BECAUSE WATER AND WATER RELATED SAMPLES ARE THE ASSUMED MEDIUM. IF THE SAMPLE BEING STORED IS FROM A MEDIUM OTHER THAN WATER, THE "MED" KEYWORD IS USED AND IS SET EQUAL TO ONE OF THE VALID MEDIUM CODES FOR STORET. SEE THE HELPFUL DATA SET "STORET.HELP.MEDIA.SMK.CODES" FOR A LIST OF THE VALID MEDIUM CODES.

IF A DEPTH IS BEING STORED FOR A WATER OR WATER RELATED SAMPLE, THE CODES BELOW ARE USED TO STORE THE DEPTH (LENGTH) AND THE DEPTH QUALIFIER FOLLOWED BY A COMMA. FOR A SAMPLE WHOSE MEDIUM IS OTHER THAN WATER, THE SYSTEM MULTI-PURPOSE KEY (SMK) IS ENTERED BY SETTING "SMK" EQUAL TO A VALID CODE FOR THE MEDIUM WHICH WAS SPECIFIED WITH THE "MED" KEYWORD.

D999	SAMPLE DEPTH WHERE 999 IS THE DEPTH IN FEET
DM999	SAMPLE DEPTH WHERE THE 999 IS THE DEPTH IN METERS
DB999	BOTTOM SAMPLE WHERE THE 999 IS THE DEPTH IN FEET
DMB999	BOTTOM SAMPLE WHERE THE 999 IS THE DEPTH IN METERS
DV999	VERTICALLY INTEGRATED SAMPLE WHERE 999 IS THE LENGTH OF THE COLUMN IN FEET
DMV999	VERTICALLY INTEGRATED SAMPLE WHERE 999 IS THE LENGTH OF THE COLUMN IN METERS
DP999	PORE SAMPLE WHERE THE 999 IS THE LENGTH OF THE CORE FROM WHICH THE WATER WAS EXTRACTED IN FEET
DMP999	PORE SAMPLE WHERE THE 999 IS THE LENGTH OF THE CORE FROM WHICH THE WATER WAS EXTRACTED IN METERS
DD999	DREDGE SAMPLE WHERE THE 999 IS THE LENGTH OF THE DREDGE IN FEET
DMD999	DREDGE SAMPLE WHERE THE 999 IS THE LENGTH OF THE DREDGE IN METERS
DC999	CORE SAMPLE WHERE 999 IS THE DISTANCE FROM THE TOP OF THE CORE TO MIDDLE OF THE SAMPLE ANALYZED IN FEET
DMC999	CORE SAMPLE WHERE THE 999 IS THE DISTANCE FROM THE TOP OF THE CORE TO THE MIDDLE OF THE SAMPLE ANALYZED IN METERS

7 FOR A WATER OR WATER RELATED SAMPLE THAT IS A GRAB OR AN UNQUALIFIED COMPOSITE, THIS FIELD IS NOT USED. FOR A QUALIFIED COMPOSITE, THIS FIELD MUST CONTAIN ONE OF THE CODES BELOW FOLLOWED BY A COMMA. FOR A SAMPLE WHOSE MEDIUM IS OTHER THAN WATER, THIS FIELD MAY CONTAIN A USER MULTI-PURPOSE KEY (UMK). THE UMK IS OPTIONAL AND TO BE USED, A MEDIUM AND A SYSTEM MULTI-PURPOSE KEY MUST HAVE BEEN SPECIFIED. THE USER IS RESPONSIBLE FOR MAINTAINING THE MEANING OF THE UMK CODES. TO STORE A UMK, THE "UMK" KEYWORD IS SET EQUAL TO IT, AND IT CAN BE UP TO 8 ALPHA-NUMERIC CHARACTERS. IF A UMK IS USED, THE SAMPLE CAN NOT BE A QUALIFIED COMPOSITE.

TYPE OF COMPOSITE VALUE

A	AVERAGE
H	MAXIMUM
L	MINIMUM
N	NUMBER OF OBSERVATIONS FOR THE SAMPLE
S	STANDARD DEVIATION
U	SUM OF SQUARES
V	VARIANCE
C	COEFFICIENT OF ERROR
X	COEFFICIENT OF VARIANCE
E	SKEWNESS
F	KURTOSIS
Z	NUMBER OF SAMPLES IN COMPOSITE EXCEEDS ESTABLISHED LIMIT
%	PRECISION
$	ACCURACY
B	NONE OF THE ABOVE
D	INDICATES REPLICATE SAMPLE

8 THIS FIELD IS USED ONLY WITH QUALIFIED COMPOSITES, AND ONE OF THE FOLLOWING MUST BE ENTERED FOR THIS TYPE OF SAMPLE FOLLOWED BY A COMMA:

TYPE OF COMPOSITE

S	SPACE
T	TIME
B	BOTH
F	FLOW PROPORTIONAL COMPOSITE
1-9	REPLICATE NUMBER

9 THIS FIELD IS IGNORED EXCEPT WITH QUALIFIED COMPOSITES. FOR THEM, ONE OF THE FOLLOWING IS CODED FOLLOWED BY A COMMA.

SAMPLING METHOD

C	SAMPLES COLLECTED CONTINUOUSLY
G	GRAB SAMPLES, NUMBER COMPRISING SAMPLE NOT REPORTED
GNXX	GRAB SAMPLES WITH XX INDICATING THE NUMBER OF SAMPLES
B	NONE OF THE ABOVE. USED WITH REPLICATE SAMPLES

10 ALL TYPES OF SAMPLES USE THIS FIELD, AND IT IS USED TO SPECIFY THE PARAMETER FOR WHICH A TRANSACTION IS TO BE PERFORMED. ONE OF THE FOLLOWING IS ENTERED:

** PXXXXX, NEXT VALUE IS TO BE STORED FOR PARAMETER XXXXX

** PCXXXXX, CHANGE THE EXISTING VALUE FOR PARAMETER XXXXX TO THE VALUE IN THE NEXT FIELD FOR THE SAMPLE THAT HAS THE DATE, TIME, AND DEPTH INDICATED IN THE PREVIOUS SAMPLE KEY FIELDS

** PDXXXXX, DELETE THE VALUE STORED FOR PARAMETER XXXXX FOR THE DATE, TIME, AND DEPTH INDICATED IN THE PREVIOUS SAMPLE KEY FIELDS

DEL, DELETE THE ENTIRE SAMPLE WITH THE DATE, TIME, AND DEPTH INDICATED IN THE PREVIOUS SAMPLE KEY FIELDS

11 FOR ALL OF THE ABOVE CODES EXCEPT PDXXXXX AND DEL, THE VALUE TO BE ADDED OR THE NEW VALUE FOR A CHANGE IS ENTERED FOLLOWED BY A COMMA.

FIELDS 10 AND 11 ARE REPEATED UNTIL ALL OF THE INFORMATION FOR THE SAMPLE IS ENTERED. PDXXXXX IS NEVER FOLLOWED BY A VALUE, AND DEL IS USED ONLY ONCE PER SAMPLE WITH NO OTHER INFORMATION INDICATED. TO CONTINUE AN "SC" CARD, A COMMA IS PLACED AT THE END OF THE LINE, AND PARAMETER CODES AND VALUES ARE ENTERED ON THE NEXT LINE STARTING IN COLUMN 1. ONE "SC" CARD AND ITS CONTINUATION CARDS MAY CONTAIN UP TO 500 COMMAS WHICH MEANS THAT DATA FOR 246 TO 248 PARAMETERS MAY BE ENTERED ON ONE "SC" CARD AND ITS CONTINUATION CARDS. WHEN USING THE ?00 TYPE OF STORAGE, DATA MAY BE ADDED, DELETED, AND CHANGED WITHIN ONE "SC" CARD DEPENDING UPON THE CODES IN FIELD 10 (P, PC, PD, DEL). AS MANY "SC" CARDS ARE USED AS THERE ARE SAMPLES TO BE STORED. REMARK CODES ARE ENTERED IMMEDIATELY AFTER THE VALUE FOR A PARAMETER. WITH THE ?00 STORAGE FORMAT, LEADING ZEROS ARE NOT NEEDED FOR THE PARAMETER CODES.

** "XXXXX" MAY BE REPLACED WITH THE SPECIAL CODE "AQ" WHICH MEANS THAT AN AQUIFER CODE IS TO BE STORED. IT ALLOWS THE GEOLOGIC AGE (PARAMETER 84000) AND THE AQUIFER CODE (PARAMETER 84001) TO BE CONCATENATED AS ONE VALUE FOLLOWING THE "PAQ", E.G., PAQ,210MNCS,.

THE FOLLOWING IS AN EXAMPLE DATA SET SHOWING THE USE OF THE "PN" CARD AND THE "DC" CARDS TO STORE DATA. AS CAN BE SEEN, THIS IS USEFUL WHEN THE SAME SET OF CONSTITUENTS ARE MEASURED CONSISTENTLY AT A STATION OR GROUP OF STATIONS BECAUSE THE PARAMETER CODE DOES NOT HAVE TO BE REPEATED FOR EACH VALUE. THE DISADVANTAGE IS THAT THE USER MUST BE CAREFUL THAT THE VALUE FOR A PARAMETER IS IN THE PROPER POSITION WITH RELATION TO THE LIST OF PARAMETERS ON THE "PN" CARD. WHEN A SAMPLE IS MISSING A VALUE FOR ONE OF THE PARAMETERS, A COMMA MUST BE PLACED IN ITS PLACE AS A POSITION HOLDER SO THE REMAINDER OF THE VALUES ARE ASSOCIATED WITH THE PROPER PARAMETER CODE. THE COMMA IS USED AS A POSITION HOLDER. TO CONTINUE EITHER A "PN" CARD OR A "DC" CARD, THE PRESENT CARD IS ENDED WITH A COMMA AND THE INFORMATION IS CONTINUED IN COLUMN 1 OF THE NEXT CARD. A VALUE OR A PARAMETER CODE CANNOT BE SPLIT AT THE END OF A LINE.

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

FORMAT=WQS,
AC,A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703 883 8861,
PN,435,410,305,940,300,900,1045,550,650,945,75,10,
400,405,630,930,31505,
DC,MSP1,8305171300,8,105,2.4,17,9.8,110,15.02,95,.41,32,104,8.1,
7.5,10,20.9,135.1,3.7E04,
DC,MSP1,8308031200,6,100,,15,,105,,61,,,145,8,,8,,,2.8E03,
PN,95,10,400,410,31505,300,
DC,MSP1,830914,210,6.2,7.4,110,4300L,9.8,
DC,MSP1,8309221400,183,9.2,7.9,83,2.4E03,8.5,
DC,MSP1,8310021500,D5.62,163,7.8,8.2,72,1273,10.4,
DC,MSP1,8310030900,DMB12,208,9.4,6.5,48,3.7E05,5.4,
DC,MSP1,831001,831031,D0,98,7.9,,,5623,12.6,
DC,MSP1,8311011200,8311301200,D0,A,S,GN30,218,7.3,,,2278,11.5,
DC,MSP1,840101,D10,153,PD,7.1,141,PC4.2E04,,
DC,MSP1,8212031200,D10,DEL,
DC,MSP1,840220,DM2.64,118,4.6,8.2,83,3.6E05Z,14.8,
DC,MSP1,8403160800,118L,3.2,6.7,100K,,13.2,

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
```

THE FOLLOWING DATA SET IS AN EXAMPLE OF THE CODING REQUIRED WHEN ENTERING DATA COLLECTED FROM A GROUNDWATER SITE USING THE PROCEDURES DESCRIBED IN THE MANUAL "GROUND-WATER DATA MANAGEMENT WITH STORET". THE CODING SCHEME FOR THE "SMK" FIELD CAN BE FOUND ON PAGE 4-29 IN THE AFORE MENTIONED MANUAL AND THE SCHEME FOR THE "UMK" FIELD IS IN APPENDIX E OF THE SAME MANUAL.

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

FORMAT=WQS,
AC,A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703 883 8857,
PN,11,1029,300,400,1045,
DC,WELL01,8302180900,MED=GRWTR,SMK=511000,UMK=05156303,68.3,.8,10.3,
7.3,3.1,
DC,WELL01,830714,MED=GRWTR,SMK=411000,UMK=05156303,71.7,1.0K,6.2,
7.9,.05K,
DC,WELL01,8308150900,MED=GRWTR,SMK=511000,UMK=05156303,DEL,
DC,WELL01,840713,MED=GRWTR,SMK=201000,UMK=05156303,PC71.3,PD,5.8,6.7,2.6,

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
```

THE FORMAT OF THE "PN" CARD IS AS FOLLOWS:

	FIELD	CONTENTS
	1	"PN," WHICH IS THE CARD IDENTIFIER. THE COMMA IS USED THROUGHOUT AS THE DELIMITER, I.E., SEPARATOR OF ITEMS.
**	2	PARAMETER CODES ARE ENTERED SEPARATED BY COMMAS. LEADING ZEROS ARE NOT NEEDED AND THE CARD CAN BE CONTINUED ON THE NEXT CARD AT ANY POINT AFTER A COMMA. UP TO 490 PARAMETER CODES MAY BE SPECIFIED AND THE LAST ONE MUST BE FOLLOWED BY A COMMA.

AFTER THE "PN" CARD IS COMPLETED, IT IS FOLLOWED BY AS MANY "DC" CARDS AS ARE NEEDED TO STORE ALL OF THE SAMPLES. SINCE A DECK MAY HAVE MORE THAN ONE "PN" CARD, THE "DC" CARDS REFER TO THE "PN" CARD THAT THEY IMMEDIATELY FOLLOW. THE FOLLOWING IS THE FORMAT OF THE DATA CARD:

FIELD	CONTENTS
1	"DC," IS ENTERED WHICH IS THE CARD IDENTIFIER. THE COMMA IS USED THROUGHOUT AS THE DELIMITER, I.E., SEPARATOR OF ITEMS.
2	THE STATION NUMBER IS ENTERED FOLLOWED BY A COMMA. EITHER A PRIMARY OR SECONDARY NUMBER MAY BE USED.
3	FOR A GRAB SAMPLE, THE DATE AND THE TIME, IF PRESENT, THAT THE SAMPLE WAS TAKEN IS ENTERED FOLLOWED BY A COMMA. IF THE SAMPLE IS AN UNQUALIFIED COMPOSITE, THEN THE BEGINNING DATE IS ENTERED FOLLOWED BY A COMMA. IF THE SAMPLE IS A QUALIFIED COMPOSITE, THEN THE BEGINNING DATE AND TIME IS ENTERED FOLLOWED BY A COMMA. DATES ARE ENTERED IN YEAR, MONTH, DAY ORDER, AND IF A TIME IS TO BE SPECIFIED, THE 24 HOUR CLOCK IS UTILIZED.
4	FOR A GRAB SAMPLE WITH OR WITHOUT TIME, THIS FIELD IS IGNORED. FOR UNQUALIFIED COMPOSITES, THE ENDING DATE IS ENTERED, AND FOR QUALIFIED COMPOSITES, THE ENDING DATE AND TIME IS ENTERED. IF THIS IS USED, THE FIELD MUST BE TERMINATED WITH A COMMA. IF THE FIELD IS NOT NEEDED, NOTHING IS ENTERED, NOT EVEN A COMMA.
5	THIS FIELD CONTAINS THE MEDIUM CODE. FOR WATER SAMPLES (WHICH INCLUDE BOTTOM, VERTICALLY INTEGRATED, CORE, PORE AND DREDGE), THIS FIELD IS NOT USED AND CAN BE LEFT BLANK BECAUSE WATER AND WATER RELATED SAMPLES ARE THE ASSUMED MEDIUM. IF THE SAMPLE BEING STORED IS FROM A MEDIUM OTHER THAN WATER, THE "MED" KEYWORD IS USED AND IS SET EQUAL TO ONE OF THE VALID MEDIUM CODES FOR STORET. SEE THE HELPFUL DATA SET "STORET.HELP.MEDIA.SMK.CODES" FOR A LIST OF THE VALID MEDIUM CODES.

** A SPECIAL CODE OF "AQ" CAN BE USED AS ONE OF THE POSITIONS ON THE "PN" CARD WHICH SPECIFIES THAT THE GEOLOGIC AGE (PARAMETER 84000) AND THE AQUIFER CODE (PARAMETER 84001) ARE TO BE CONCATENATED AS ONE VALUE ON THE "DC" CARD.

IF A DEPTH IS BEING STORED FOR A WATER OR WATER RELATED SAMPLE, THE CODES BELOW ARE USED TO STORE THE DEPTH (LENGTH) AND THE DEPTH QUALIFIER FOLLOWED BY A COMMA. FOR A SAMPLE WHOSE MEDIUM IS OTHER THAN WATER, THE SYSTEM MULTI-PURPOSE KEY (SMK) IS ENTERED BY SETTING "SMK" EQUAL TO A VALID CODE FOR THE MEDIUM WHICH WAS SPECIFIED WITH THE "MED" KEYWORD.

D999	SAMPLE DEPTH WHERE 999 IS THE DEPTH IN FEET
DM999	SAMPLE DEPTH WHERE THE 999 IS THE DEPTH IN METERS
DB999	BOTTOM SAMPLE WHERE THE 999 IS THE DEPTH IN FEET
DMB999	BOTTOM SAMPLE WHERE THE 999 IS THE DEPTH IN METERS
DV999	VERTICALLY INTEGRATED SAMPLE WHERE 999 IS THE LENGTH OF THE COLUMN IN FEET
DMV999	VERTICALLY INTEGRATED SAMPLE WHERE 999 IS THE LENGTH OF THE COLUMN IN METERS
DP999	PORE SAMPLE WHERE THE 999 IS THE LENGTH OF THE CORE FROM WHICH THE WATER WAS EXTRACTED IN FEET
DMP999	PORE SAMPLE WHERE THE 999 IS THE LENGTH OF THE CORE FROM WHICH THE WATER WAS EXTRACTED IN METERS
DD999	DREDGE SAMPLE WHERE THE 999 IS THE LENGTH OF THE DREDGE IN FEET
DMD999	DREDGE SAMPLE WHERE THE 999 IS THE LENGTH OF THE DREDGE IN METERS
DC999	CORE SAMPLE WHERE 999 IS THE DISTANCE FROM THE TOP OF THE CORE TO MIDDLE OF THE SAMPLE ANALYZED IN FEET
DMC999	CORE SAMPLE WHERE THE 999 IS THE DISTANCE FROM THE TOP OF THE CORE TO THE MIDDLE OF THE SAMPLE ANALYZED IN METERS

7 FOR A WATER OR WATER RELATED SAMPLE THAT IS A GRAB OR AN UNQUALIFIED COMPOSITE, THIS FIELD IS NOT USED. FOR A QUALIFIED COMPOSITE, THIS FIELD MUST CONTAIN ONE OF THE CODES BELOW FOLLOWED BY A COMMA. FOR A SAMPLE WHOSE MEDIUM IS OTHER THAN WATER, THIS FIELD MAY CONTAIN A USER MULTI-PURPOSE KEY (UMK). THE UMK IS OPTIONAL AND TO BE USED, A MEDIUM AND A SYSTEM MULTI-PURPOSE KEY MUST HAVE BEEN SPECIFIED. THE USER IS RESPONSIBLE FOR MAINTAINING THE MEANING OF THE UMK CODES. TO STORE A UMK, THE "UMK" KEYWORD IS SET EQUAL TO IT, AND IT CAN BE UP TO 8 ALPHA-NUMERIC CHARACTERS. IF A UMK IS USED, THE SAMPLE CAN NOT BE A QUALIFIED COMPOSITE.

TYPE OF COMPOSITE VALUE

A	AVERAGE
H	MAXIMUM
L	MINIMUM
N	NUMBER OF OBSERVATIONS FOR THE SAMPLE
S	STANDARD DEVIATION
U	SUM OF SQUARES
V	VARIANCE
C	COEFFICIENT OF ERROR
X	COEFFICIENT OF VARIANCE
E	SKEWNESS
F	KURTOSIS
Z	NUMBER OF SAMPLES IN COMPOSITE EXCEEDS ESTABLISHED LIMIT
%	PRECISION
$	ACCURACY
B	NONE OF THE ABOVE
D	INDICATES REPLICATE SAMPLE

8 THIS FIELD IS USED ONLY WITH QUALIFIED COMPOSITES, AND ONE OF THE FOLLOWING MUST BE ENTERED FOR THIS TYPE OF SAMPLE FOLLOWED BY A COMMA:

TYPE OF COMPOSITE

S	SPACE
T	TIME
B	BOTH
F	FLOW PROPORTIONAL COMPOSITE
1-9	REPLICATE NUMBER

9 THIS FIELD IS IGNORED EXCEPT WITH QUALIFIED COMPOSITES. FOR THEM, ONE OF THE FOLLOWING IS CODED FOLLOWED BY A COMMA.

SAMPLING METHOD

C	SAMPLES COLLECTED CONTINUOUSLY
G	GRAB SAMPLES, NUMBER COMPRISING SAMPLE NOT REPORTED
GNXX	GRAB SAMPLES WITH XX INDICATING THE NUMBER OF SAMPLES
B	NONE OF THE ABOVE. USED WITH REPLICATE SAMPLES

10 ALL TYPES OF SAMPLES USE THIS FIELD, AND IT IS USED TO SPECIFY THE VALUES FOR THE PARAMETERS SHOWN ON THE "PN" CARD. THE VALUE FOR THE FIRST PARAMETER ON THE "PN" CARD IS ENTERED FOLLOWED BY A COMMA, THEN THE VALUE FOR THE SECOND PARAMETER IS ENTERED FOLLOWED BY A COMMA, ETC. THIS SCHEME IS CONTINUED UNTIL A VALUE FOR EACH OF THE PARAMETERS ON THE "PN" CARD HAS BEEN ENTERED. THE USER MUST ENSURE THAT THE ORDER OF THE VALUES MATCHES THE ORDER ON THE "PN" CARD. IF THERE IS NO VALUE FOR ONE OF THE PARAMETERS IN THE SAMPLE, A COMMA IS ENTERED SO THE ALIGNMENT FOR THE REMAINDER OF CARD IS MAINTAINED. IF A PREVIOUSLY STORED VALUE NEEDS TO BE DELETED, "PD" IN ENTERED INSTEAD OF A VALUE IN THAT PARAMETER'S POSITION, AND IF A PREVIOUSLY STORED VALUE FOR ONE OF THE PARAMETERS IN THE SAMPLE NEEDS TO BE CHANGED, THE VALUE IS ENTERED PRECEDED BY THE CHARACTERS "PC". IF A VALUE IS TO BE STORED WITH A REMARK CODE, THE REMARK CODE IS PLACED IMMEDIATELY AFTER THE VALUE. THIS SCHEME IS CONTINUED UNTIL EACH OF THE PARAMETERS ON THE "PN" CARD HAS EITHER A VALUE, A "PD" (DELETE A PREVIOUSLY STORED VALUE FOR THE PARAMETER FOR THE SAMPLE KEY), "PC" FOLLOWED BY A VALUE (CHANGE THE PREVIOUSLY STORED VALUE FOR THE PARAMETER FOR THIS SAMPLE KEY), OR A COMMA (FOR A MISSING VALUE). THIS FIELD MAY BE USED TO DELETE ALL OF THE VALUES FOR A SAMPLE BY ENTERING "DEL,". THIS WILL DELETE ALL OF THE DATA FOR THE SAMPLE KEY EVEN FOR THOSE PARAMETERS THAT ARE NOT ENTERED ON THE "PN" CARD.

AS MENTIONED PREVIOUSLY, THE DATA SET MAY CONTAIN BOTH "SC" CARDS AND "PN"/"DC" COMBINATIONS. IF THIS IS THE CASE, THE "PNOFF" CARD MUST COME IMMEDIATELY AFTER THE LAST "DC" CARD AND BEFORE A GROUP OF "SC" CARDS. THE SWITCHING OF MODES CAN TAKE PLACE AS MANY TIMES AS IS DESIRED BY PLACING A "PNOFF" CARD AFTER A GROUP OF "PN" AND "DC" CARDS AND BEFORE THE GROUP OF "SC" CARDS. THE "PN" CARD AFTER A GROUP OF "SC" CARDS INITIATES THE STRING OF "PN" AND "DC" CARDS.

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

```
FORMAT=WQS,
AC,A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703 883 8861,
PN,435,410,305,940,300,900,1045,550,650,945,75,10,
400,405,630,930,31505,
DC,MSP1,8305171300,8,105,2.4,17,9.8,110,15.02,95,.41,32,104,8.1,
7.5,10,20.9,135.1,3.7E04,
DC,MSP1,8308031200,6,100,,15,,105,,61,,,145,8,,8,,,6250,
PNOFF,
SC,MSP1,850618,P300,9.7,P400,6.9,P10,15.4,
SC,MSP1,8408121500,D0,P300,5.4,P10,18.2,P400,8.2,
PN,300,10,400,
DC,MSP1,830211,9.3,16.2,7.6,
DC,MSP1,8304151200,8305151200,D0,A,B,GN30,7.2,17.2,8.2,
DC,MSP1,830714,DEL,
PNOFF,
SC,MSP1,8507120900,8507120900,A,S,GN5,P300,12.3,
SC,MSP1,841202,P625,2.7,P1045,10.3,P1140,5.1,
```

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

THE FIELDS ON THE VARIOUS CARDS REMAIN THE SAME AS SHOWN PREVIOUSLY.

THE PROCEDURES REQUIRED TO CHANGE OR DELETE PREVIOUSLY STORED DATA ARE DISCUSSED ON PAGES WQ-DE/4-55 THROUGH WQ-DE/4-72 OF THE USER HANDBOOK. DATA CAN BE CHANGED WITH "FORMAT=WQS," ?01 OR ?04 STORAGE FORMAT. SEE APPENDIX C FOR A DISCUSSION OF THE FORMATS ?01 AND ?04. THE FOLLOWING IS A SYNOPSIS OF THE PROCEDURES:

CHANGING ONE OR MORE VALUES

THE MOST IMPORTANT THING TO REMEMBER WHEN CHANGING A VALUE OR A GROUP OF VALUES IS THAT THE SAMPLE KEY MUST BE SPECIFIED EXACTLY AS IT WAS WHEN THE DATA WERE ORIGINALLY ENTERED. THE SAMPLE KEY IS COMPOSED OF THE DATE, TIME, DEPTH, MEDIUM, SMK, UMK, AND/OR COMPOSITE QUALIFIERS.

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

FORMAT=WQS,
AC,A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703 883 8861,
SC,SEMINAR01A,7803151400,PC300,10.7,PC10,14.5,PC400,7.9,
SC,SEMINAR01A,7804081500,D10,PC505,130,PC400,8.1,
SC,SEMINAR01A,7901010000,7901312400,D3,A,T,G,PC300,15.6,
PC10,8.3,PC400,7.2,
SC,WELL01,790314,MED=GRWTR,SMK=311000,UMK=11136203,PC1029,2.8,
PC1140,4.7,PC400,5.4,

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

FORMAT=WQS,
AC,A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703 883 8861,
PN,300,10,400,505,
DC,SEMINAR01A,7803151400,PC10.7,PC14.5,PC7.9,,
DC,SEMINAR01A,7804081500,D10,,,PC8.1,PC130,
DC,SEMINAR01A,7901010000,7901312400,D3,A,T,G,PC15.6,,,,
DC,WELL01,821213,MED=GRWTR,SMK=311000,UMK=11124301,PC11.2,
PC5.1,PC8.2,PC38,

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

?START
?04
AC,A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703 883 8861,
SC,SEMINAR01A,7803151400,PC300,10.7,PC10,14.5,PC400,7.9,
SC,SEMINAR01A,7804081500,D10,PC505,130,PC400,8.1,
SC,SEMINAR01A,7901010000,7901312400,D3,A,T,G,PC300,15.6,
PC10,8.3,PC400,7.2,
```

WHEN USING THE "SC" CARD WITH WQS AND ?04 STORAGE PROCEDURES TO CHANGE EXISTING VALUES, THE SAMPLE KEY IS SPECIFIED FOLLOWED BY A COMMA (,). AFTER THE COMMA, THE CODE "PC" IS ENTERED FOLLOWED IMMEDIATELY BY THE PARAMETER CODE WHOSE VALUE IS TO BE CHANGED FOLLOWED BY A COMMA (,). THE NEW VALUE FOR THE PARAMETER IS THEN ENTERED FOLLOWED BY A COMMA. THIS SCENARIO IS CONTINUED UNTIL ALL OF THE CHANGE TRANSACTIONS FOR THE SAMPLE HAVE BEEN ENTERED. WHEN USING THE WQS'S "DC" CARDS TO CHANGE PREVIOUSLY STORED DATA, A "PN" CARD IS ENTERED CONTAINING ALL OF THE PARAMETER CODES WHOSE VALUE ARE TO BE CHANGED. THE "PN" CARD IS FOLLOWED BY THE "DC" CARDS. AFTER THE SAMPLE KEY IS ENTERED ON THE "DC" CARD, A COMMA IS ENTERED FOLLOWED BY THE CHARACTERS "PC" AND THE NEW VALUE. EACH VALUE IS FOLLOWED BY A COMMA. THE VALUES ON THE "DC" CARDS MUST MATCH THE PARAMETER CODES ON THE "PN" CARD AND MUST BE IN THE SAME SEQUENCE AS THE PARAMETERS ON THE "PN" CARD.

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

?START
?01
11TRAIN          CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861     F                  A
   SEMINAR01A                                                                  S
      7803151400  00300107012 00010145012 00400790011                          C6
   0107804081500  00505130013 00400810011                                      C6
   0037901312400TA90101C0000G 00300156012 00010830011 00400720011              C6
```

WHEN USING ?01 PROCEDURES TO CHANGE VALUES, A "C" IS ENTERED IN COLUMN 79 OF THE "6" CARD WHICH INDICATES THAT ALL OF THE TRANSACTIONS ON THE CARD ARE CHANGES.

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

FORMAT=WQS,
AC,A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703 883 8861,
SC,SEMINAR01A,7804151300,PD400,PD10,PD600,PD300,
SC,SEMINAR01A,7804161300,D10,PD400,PD300,PD31501,
SC,SEMINAR01A,7903151000,7904151000,D3,A,T,C,PD10,PD400,PD300,PD31616,
SC,WELL01,820315,MED=GRWTR,SMK=311100,UMK=13124503,PD1029,
PD1140,PD1002,PD31501,

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

FORMAT=WQS,
AC,A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703 883 8861,
PN,400,10,600,300,31501,31616,
DC,SEMINAR01A,7804151300,PD,PD,PD,PD,,,
DC,SEMINAR01A,7804161300,D10,PD,PD,PD,PD,,,
DC,SEMINAR01A,7903151000,7904151000,D3,A,T,C,PD,PD,,PD,,PD,
DC,WELL01,810403,MED=GRWTR,SMK=411100,UMK=21320217,PD,PD,,PD,PD,PD,

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

?START
?04
AC,A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703 883 8861,
SC,SEMINAR01A,7804151300,PD400,PD10,PD600,PD300,
SC,SEMINAR01A,7804161300,D10,PD400,PD300,PD31501,
SC,SEMINAR01A,7903151000,7904151000,D3,A,T,C,PD10,PD400,PD300,PD31616,
```

WHEN DELETING ONE OR MORE PREVIOUSLY STORED VALUES, THE SAMPLE KEY MUST BE ENTERED EXACTLY AS IT WAS WHEN THE DATA WERE STORED. WHEN USING THE "SC" CARDS WITH "WQS" AND ?04 STORAGE FORMATS, THE SAMPLE KEY IS ENTERED FOLLOWED BY A COMMA. THE CODE "PD" FOLLOWED BY THE PARAMETER CODE WHOSE VALUE IS TO BE DELETED IS ENTERED FOLLOWED BY A COMMA. THIS IS CONTINUED UNTIL ALL OF THE PARAMETERS CODES ARE ENTERED WHOSE VALUES ARE TO BE DELETED. WHEN USING THE "DC" CARD OPTION UNDER "WQS", A "PN" CARD CONTAINING ALL OF THE PARAMETER CODES WHOSE VALUES ARE TO BE DELETED IS ENTERED. THIS IS FOLLOWED BY THE "DC" CARDS WITH A PROPER SAMPLE KEY. AFTER THE COMMA FOLLOWING THE SAMPLE KEY, THE CODE "PD" IS ENTERED FOLLOWED BY A COMMA FOR EACH OF THE PARAMETERS ON THE PN CARD WHOSE VALUE IS TO BE DELETED ENSURING THAT THE SEQUENCE OF THE PARAMETERS ON THE PN CARD IS MAINTANED. EACH "PD" IS SEPARATED BY A COMMA AND THE LAST ONE IS FOLLOWED BY A COMMA. APPENDIX C CONTAINS EXAMPLES OF THE ?01 AND ?04 STORAGE FORMATS.

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

?START
?01
11TRAIN          CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861     F                A
   SEMINAR01A                                                                S
      7804151300  00300D       00010D       00400D                           6
   0107804161300  00505D       00400D                                        6
   0037901312400TA90101C0000G 00300D       00010D       00400D               6
```

WHEN UTILIZING THE ?01 PROCEDURES TO DELETE PREVIOUSLY STORED DATA, THE SAMPLE KEY MUST MATCH THE ORIGINAL ONE AND A "D" IS PLACED IN THE FIRST POSITION OF THE VALUE FIELD FOR EACH PARAMETER TO BE DELETED.

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

FORMAT=WQS,
AC,A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703 883 8861,
SC,SEMINAR01A,7804151300,DEL,
SC,SEMINAR01A,7804161300,D10,DEL,
SC,SEMINAR01A,7903151000,7904151000,D3,A,T,C,DEL,
SC,WELL01,810415,MED=GRWTR,SMK=511100,UMK=11126205,DEL,

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

FORMAT=WQS,
AC,A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703 883 8861,
PN,10,
DC,SEMINAR01A,7804151300,DEL,
DC,SEMINAR01A,7804161300,D10,DEL,
DC,SEMINAR01A,7903151000,7904151000,D3,A,T,C,DEL,
DC,WELL01,800712,MED=GRWTR,SMK=411000,UMK=13124108,DEL,

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

?START
?04
AC,A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703 883 8861,
SC,SEMINAR01A,7804151300,DEL,
SC,SEMINAR01A,7804161300,D10,DEL,
SC,SEMINAR01A,7903151000,7904151000,D3,A,T,C,DEL,

IN ORDER TO DELETE AN ENTIRE SAMPLE (ALL VALUES STORED FOR THE SAMPLE KEY),
THE SAMPLE KEY IS ENTERED ON THE "SC" CARD FOLLOWED BY A COMMA AND THE CHAR-
ACTERS "DEL" AND A COMMA.  NO OTHER TRANSACTION CAN APPEAR ON THE CARD.  TO
DELETE AN ENTIRE SAMPLE WITH A "DC" CARD, A "PN" CARD MUST HAVE BEEN ENTERED
WITH AT LEAST ONE PARAMETER CODE ON IT.  THIS IS FOLLOWED BY A "DC" CARD WITH
THE PROPER SAMPLE KEY FOLLOWED BY A COMMA.  THE CHARACTERS "DEL" AND A COMMA
ARE ENTERED, WHICH WILL CAUSE ALL OF THE DATA FOR THE SAMPLE TO BE DELETED
REGARDLESS OF WHAT PARAMETER CODES ARE ON THE "PN" CARD.

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

?START
?01
11TRAIN         CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861     F                A
   SEMINAR01A                                                                S
      7804151300  DEL                                                        6
   0107804161300  DEL                                                        6
   00379013124OOTA90101C0000G DEL                                            6

IN ORDER TO DELETE AN ENTIRE SAMPLE (ALL VALUES STORED FOR THE SAMPLE KEY),
THE SAMPLE KEY IS ENTERED ON THE "6" CARD FOLLOWED BY THE CHARACTERS "DEL"
IN THE FIRST PARAMETER CODE FIELD.  IT IS THE ONLY TRANSACTION ALLOWED ON
THIS "6" CARD.  SEE APPENDIX C FOR AN EXPLANATION OF THE ?01 AND ?04 FORMATS.
```

TO DELETE ALL OF THE DATA FOR A STATION

```
123456789.123456739.123456789.123456789.123456789.123456789.123456789.123456789.

FORMAT=STATIONS,
A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703 883 8861,
DELDATA=ABC099NM,
DELDATA=ABC100NM,
DELDATA=ABC101NM,
DELDATA=ABC102NM,

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
```

TO DELETE ALL OF THE DATA FOR A STATION, THE "DELDATA" KEYWORD IS SET TO THE PRIMARY STATION NUMBER. CARE MUST BE EXERCISED WHEN THIS IS USED BECAUSE THE ALL OF THE DATA FOR THE STATION WILL BE GONE AFTER THE NEXT UPDATE CYCLE.

TO DELETE ALL OF THE DATA FOR A STATION AND THE STATION

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

FORMAT=STATIONS,
A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703 883 8861,
DELSTA=ABC099NM,
DELSTA=ABC100NM,
DELSTA=ABC101NM,
DELSTA=ABC102NM,

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
```

TO DELETE A STATION AND ALL OF ITS DATA, THE "DELSTA" KEYWORD IS SET EQUAL TO THE PRIMARY STATION NUMBER TO BE DELETED. WHEN THIS IS USED, CARE MUST EXERCISED BECAUSE IT DOES WORK AND THE STATION AND ITS DATA WILL BE GONE AFTER THE UPDATE WITHOUT ANY MEANS FOR RECOVERY.

DATA STORAGE EXAMPLE

1. FOR STATION 01DRCR WHICH PART OF THE MONITORING NETWORK BELONGING TO AGENCY CODE 11TRAIN, STORE THE FOLLOWING DATA:

DATE	TIME	PARAMETER 00400	PARAMETER 00310	PARAMETER 00410
8/14/74	0300	7.4	2.4	110
11/3/74	1100	8.1	3.8	8.9
12/12/74	1300	6.9	3.1	114
1/8/75	1500	7.2	2.9	103

2. AFTER REVIEWING THE STORED DATA, THE FOLLOWING CORRECTIONS NEED TO BE MADE:

8/14/74	0300	CHANGE PARAMETER 00310 TO 3.4
12/12/74	1300	DELETE PARAMETER 00410
1/8/75	1500	ADD A VALUE FOR PARAMETER 00010 OF 15.8

To create and submit a file containing parametric storage transactions for processing by the computer, the following sequence of commands is issued after the "READY" prompt:

```
READY
%easystor  <cr>  (Invokes the STORET command procedure that creates
                  storage transactions.  For a full explanation of the
                  %EASYSTOR command procedure, enter 'help easystor'.)

MM/DD/YY       HH:MM:SS      IIIAAAA

         - EASYSTOR -
    - VERSION OF MONTH YEAR -
      - WELCOME TO STORET -
      - DATA ENTRY SYSTEM -

      (ENTER "END" TO EXIT)

  WHAT ARE YOU GOING TO STORE ?

        S  -  STATIONS
        D  -  DATA

  OPTION ==> d  <cr>       (User selects "d" for data storage.)

     INTO WHICH STORET SYSTEM ?

          WQ   -  WATER QUALITY
         BIOS  -  BIOLOGICAL

SYSTEM ==> wq   <cr>  (User selects "wq" for the water quality system.)

  WHICH STORAGE FORMAT WILL YOU USE ?

      WQS    ?01    ?02    ?03    ?04

FORMAT ==> WQS   <cr>   (User selects the WQS format.)

  ENTER A NAME FOR THE WORKING STORAGE - data01  <cr>

  ENTER THE STORET AGENCY CODE - 11train  <cr>
  ENTER THE UNLOCKING KEY FOR AGENCY "11TRAIN "  choochoo  <cr>
  ENTER USER IDENTIFICATION (NAME AND TELEPHONE):
  horace hawgknuckles 703 883 8861   <cr>
```

```
ENTER DATA STORAGE TRANSACTIONS IN WQS FORMAT AFTER THE
PROMPTING LINE NUMBERS.  TO TERMINATE INPUT, ENTER A -NULL-
LINE (CARRIAGE RETURN) IN RESPONSE TO THE LINE-NUMBER PROMPT.

00010 FORMAT=WQS,
      123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
00020 11TRAIN     000 CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861                9999  A
INPUT
00030 pn,435,410,305,940,300,900,1045,550,650,945,75,10,400,403,  <cr>
00040 930,1029,1027,   <cr>
00050 dc,seminar01,8502152600,d0,8,105,2.4,17,9.8,110,15.02,95,.41,3200,105,  <cr>
00060 8,1.7,5,10,20.9,135.1,  <cr>
00070 dc,seminar01,8506341500,d2,6,100,,15,,105,,50,,,135,8,,8,,,,   <cr>
00080 pnoff,   <cr>
00090 sc,seminar01,8507211400,d0,p400,7.6,p300,5.1,p10,21,   <cr>
00100 <cr>     (A null line is entered to exit the input mode.)

YOU ARE IN EDIT MODE.
WORKING STORAGE IS NAMED DATA01

   NOTE: STORET INPUT DATASETS HAVE A RECORD LENGTH OF 88
         WITH TSO LINE NUMBERS IN COLUMNS 81-88.

MAKE ANY NECESSARY EDITING CHANGES.  THEN USE %STORE TO SUBMIT
THESE TRANSACTIONS TO STORET AFTER YOU HAVE "SAVED" THIS DATASET.

QED     ("QED" is the prompt for the Quick Editor facility.)
list <cr>  (List the contents of working space.)
00010 FORMAT=WQS,
00020 11TRAIN     000 CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861                9999  A
00030 PN,435,410,305,940,300,900,1045,550,650,945,75,10,400,403,
00040 930,1029,1027,
00050 DC,SEMINAR01,8502152600,D0,8,105,2.4,17,9.8,110,15.02,95,.41,3200,105,
00060 8,1.7,5,10,20.9,135.1,
00070 DC,SEMINAR01,8506341500,D2,6,100,,15,,105,,50,,,135,8,,8,,,,
00080 PNOFF,
00090 SC,SEMINAR01,8507211400,D0,P400,7.6,P300,5.1,P10,21,
END OF DATA
```

After examining the storage transactions, it is determined that the time is in error. To correct the error, the "LED" editing procedure is used. For a further explanation of the "LED" procedure, see pages 16 through 22 of the STORET Seminar documentation named "Agenda, Overview, and Introduction to TSO".

```
led 50  <cr>  (Line edit line 50.)
00050 DC,SEMINAR01,8502152600,D0,8,105,2.4,17,9.8,110,15.02,95,.41,3200,105,
EDIT?                     10  <cr>  (Replace the characters immediately above
                                     these characters with 10.)
00050 DC,SEMINAR01,8502151000,D0,8,105,2.4,17,9.8,110,15.02,95,.41,3200,105,
EDIT?  <cr>  (Enter null line to make the change permanent and to return to "QED".)
QED
end save <cr>     (Save a permanent copy of the work space and
                  return to TSO.)
SAVED
READY
%store data01 dummy route(hold)  <cr>
          (The above will submit a storage job 'dummy', which means
          that the transactions will be checked, but nothing will be
          posted to the 'MOD' file.  Enter 'help store' to obtain the
          on-line documentation for the %STORE command procedure.)
  JOB III(JOB09999) SUBMITTED
SUBMIT COMPLETED
```

After the job has executed, it is located using the "SDSF" facility. The following is an example of the procedures required to locate a station storage job:

```
V1R3M1 ------------------  SDSF PRIMARY OPTIONS MENU  --------------------
COMMAND INPUT ===>                                          SCROLL ===> CRS
PREFIX=III  DEST=(ALL)  OWNER=*
Type an Option or command and press Enter.

   LOG       - Display the system log
   DA        - Display active users of the system
   I         - Display jobs in the JES2 input queue
   O           Display jobs in the JES2 output queue
   H           Display jobs in the JES2 held output queue
   ST        - Display status of jobs in the JES2 queues
   PR          Display JES2 printers on this system
   INIT      - Display JES2 initiators on this system

   TUTOR     - Short course on SDSF (ISPF only)
   END       - Exit SDSF

   Use Help key for more information.

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```

If "i" is entered on the COMMAND INPUT line, the following screen will be displayed. It shows the jobs for the user id that are in the input queue.

```
SDSF INPUT QUEUE DISPLAY ALL CLASSES                    LINE 0-0 (0)
COMMAND INPUT ===>                                           SCROLL ===> CRS
NP JOBNAME  Job-id     P C Pos Prt-Dest ASYS Stat Causer  Programmer Name
   III99    JOB99999   1 F 39  HOLD                      IIIAAAA.XX
   III98    JOB99998   1 F 38  HOLD                      IIIAAAA.XX
```

If "o" is entered on the COMMAND INPUT line, the following screen will be displayed. It shows the jobs for the user id that are in the output queue.

To view the output of a job in the output queue, an "s" is placed next to it in the column labelled "NP".

```
SDSF OUTPUT ALL CLASSES   ALL FORMS    LINES 99,999    LINE 1-2 (2)
COMMAND INPUT ===>                                     SCROLL ===> CRS
NP JOBNAME  Jobid    Dest     C  Tot-rcds Programmer-name     Room Device      p
   III99    JOB99999 HOLD     A       745 STORET              MIII
   III98    JOB99998 HOLD     A       865 STORET              MIII
```

SDSF DISPLAY III99 JOB99999 DSID 2 LINE 0 COLUMNS 02-81-2 (2)
COMMAND INPUT ===> SCROLL ===> CRS

This page contains one valuable piece of information which indicates whether the job executed properly. As shown below the word "CODE" is followed by "0". This indicates that the job was processed properly by the computer. If any other code appears here, the job did not execute properly.

J E S 2 J O B L O G -- S Y S T E M E P A 2 -- N O D E N C C I B M 1

```
10.49.25 JOB10458  IEF677I WARNING MESSAGE(S) FOR JOB GJH58    ISSUED
10.49.26 JOB10458  ICH70001I GJH      LAST ACCESS AT 09:58:01 ON WEDNESDAY, JULY 24, 1991
10.49.26 JOB10458  $HASP373 GJH58    STARTED - INIT 29 - CLASS B - SYS EPA2
10.49.49 JOB10458  NCC802I GJH58    ENDED 07/24/91, CODE     0, ELAPSED      :23, CPU      :01, EXCPS     282
10.49.49 JOB10458  $HASP395 GJH58    ENDED

------ JES2 JOB STATISTICS ------


   24 JUL 91 JOB EXECUTION DATE


         36 CARDS READ


        457 SYSOUT PRINT RECORDS


          0 SYSOUT PUNCH RECORDS


         32 SYSOUT SPOOL KBYTES


        0.39 MINUTES EXECUTION TIME
       1 //GJH JOB (A063STORP,D068),'ONE02-UPDATE',TIME=(0,30),PRTY=2,          JOB10458
         //             MSGLEVEL=(1,1),NOTIFY=GJH
         ***ROUTE  PRINT HOLD
         ***JOBPARM LINES=999
         ***CNTL  CWT.TRY,EXC
```

Since the first several hundred lines of the output contain information about the job such as which program modules were executed, system allocation messages and other JCL information which the user does not need to see, they need to be by-passed. To accomplished this, "bottom'" is entered on the COMMAND INPUT line. This will instruct the system to go to the last page of the ouput which contains information about any errors encountered while the job was executing.

```
11TRAIN                              STORET WATER QUALITY STORAGE ERRORS - DUMMY STORAGE RUN    DATE :

 STATION                      ERROR MESSAGE(S)                    END DATE-SOPH  COMP DATE  DEPTH MEDIUM ETC.
                                                                  BEG DATE-R-C
----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+
::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+
*               (00)DIAGNOSTIC COMMENT                                  (A)INFORMATION
                    11TRAIN     000 ********HORACE HAWGKNUCKLES 703 883 8861                  9999  A
*SEMINAR01      (53)DAY EITHER GREATER THAN 31 OR 0                  8506341500                   WATER
                    DC,SEMINAR01,8506341500,D2,6,100,,15,,105,,50,,,135,8,,8,,,,
*SEMINAR01      (18)DATA VALUE ERROR
                VALUE IS NOT WITHIN ACCEPTED RANGE-VALUE NOT STOR  8502151000
                                                                                          00945 +320E+01
11TRAIN                              STORET WATER QUALITY STORAGE ERRORS - DUMMY STORAGE RUN    DATE :

  JOB ID   RUN DATE & TIME  JOB #   INPUT DATASET                          #ERR  EDIT PGM  "A" CARD
----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+----*----+
 III09    87/07/08  9:99AM JES 9999 IIIAAAA.DATA01                           2  ?00 DUMMY

TOTAL:          ERRORS =      2     WARNINGS        0     (DUMMY RUN   NOTHING STORED)
```

To return to TSO, "END" is entered on the "COMMAND" line.

To make corrections to a data set, a copy of it must be brought into working space. To accomplish this, the following sequence of commands is issued:

```
READY
edit data01  <cr>  (Bring a copy of the data set into working space
                    and pass control to the "QED" facility.)
QED       ("QED" is the prompt for the Quick Editor facility.)
verify  <cr>   (Causes the line to echo whenever a change is made to
                it or when the current line pointer is moved to it.)
list  <cr>     (List the contents of working space.)
00010 FORMAT=WQS,
00020 11TRAIN     000 CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861                  9999  A
00030 PN,435,410,305,940,300,900,1045,550,650,945,75,10,400,403,
00040 930,1029,1027,
00050 DC,SEMINAR01,8502151000,D0,8,105,2.4,17,9.8,110,15.02,95,.41,3200,105,
00060 8,1.7,5,10,20.9,135.1,
00070 DC,SEMINAR01,8506341500,D2,6,100,,15,,105,,50,,,135,8,,8,,,,
00080 PNOFF
00090 SC,SEMINAR01,8507211400,D0,P400,7.6,P300,5.1,P10,21,
END OF DATA
led 70  <cr>  (Line edit line 70.)
00070 DC,SEMINAR01,8506341500,D2,6,100,,15,,105,,50,,,135,8,,8,,,,
EDIT?                  1  <cr>  (Replace the character immediately above
                                  with a one.)
00070 DC,SEMINAR01,8506141500,D2,6,100,,15,,105,,50,,,135,8,,8,,,,
EDIT?   <cr>  (Enter null line to make the change permanent and to return to "QED".)
QED
end save  <cr>  (Save a permanent copy of the working space and
                 return control back to TSO.)
SAVED
READY
%magic  <cr>  (STORET command procedure to get the over-ride number
               which will by-pass edit checks.  Used to store a valid
               value for a parameter which is outside of the range which
               has been established for the parameter.)
THE NUMBER FOR TODAY IS : 999
READY
%store data01 final route(hold) prm(v999)  <cr>
         (The above sequence of commands will submit a storage job
         'final', which will post the transactions to the 'MOD' file,
         and the 'PRM(V999)' will cause the STORET range checks to be
         by-passed.)

  JOB III(JOB09999) SUBMITTED
SUBMIT COMPLETED
READY
```

After the job has executed, it is located using the sequence above. If there are no errors, the data will be added to the data base the weekend following the storage job.

APPENDIX A

FIXED-FORM STATION STORAGE PROCEDURES AND CARD LAYOUT

AFTER THE UPDATE CYCLE CONTAINING THE STORAGE TRANSACTIONS FOR THE AGENCY CODE HAS BEEN COMPLETED, SAMPLING SITES (STATIONS) MAY BE STORED. AGAIN, WHEN UTILIZING THE STORET WQS, LINES IN A DATA SET ARE THE EQUIVALENT TO A DECK OF CARDS AND THE TERMS ARE USED INTERCHANGEABLY. TO STORE A NEW STATION, THE FOLLOWING "CARDS" ARE USED:

NAME	USE	CARD TYPE	REQUIRED
AGENCY CARD	SUPPLIES AGENCY CODE, UNLOCKING KEY AND LEVEL OF DATA ACCESS (IS THE DATA LOCKED OR UNLOCKED).	A	YES
STATION TYPE CARD	SUPPLIES THE ATTRIBUTES OR THE CHARACTERISTICS THE SITE.	T	YES
STATION CARD	SUPPLIES STATION NUMBERS, STATE AND COUNTY CODES.	S	YES
LAT/LONG CARD	SUPPLIES LAT/LONG, PRECISION CODE, DEPTH OF WATER AT SITE, ELEVATION OF STATION, AND UP TO 5 AQUIFER CODES.	0	YES
RMI CARDS	SUPPLIES RIVER MILE INDICES.	1 & 2	NO
BASIN CARD	SUPPLIES EPA BASIN NAMES, EPA BASIN CODES, AND ECOREGION CODE.	3	NO
LOCATION CARD	SUPPLIES NARRATIVE STATION DESCRIPTION, HYDROLOGIC UNIT CODE, AND RIVER REACH INFORMATION.	4	YES
WATERBODY CARD	SUPPLIES WATERBODY CODE AND NAME FROM THE WATERBODY FILE.	B	NO
EXTENSION CARDS	SUPPLIES LOCATION INFORMATION FOR OTHER POINTS THAT DEFINE THE SAMPLING AREA FOR THE STATION.	1E-3E	NO
PARAGRAPH CARDS	SUPPLIES DESCRIPTIVE PARAGRAPH FOR STATION.	05-N5	NO

AS SHOWN ABOVE, THE CARDS A, T, S, 0, AND 4 ARE REQUIRED. WHEN STORING A NEW STATION, THEY CONTAIN THE FOLLOWING MANDATORY INFORMATION:

CARD TYPE	REQUIRED INFORMATION
A	AGENCY CODE, UNLOCKING KEY.
T	A VALID STATION TYPE.
S	PRIMARY STATION NUMBER, STATE CODE, COUNTY CODE, AND CONTROL CODE "NS".
0	LATITUDE AND LONGITUDE.
4	BRIEF NARRATIVE OF STATION LOCATION AND U.S.G.S. HYDROLOGIC UNIT CODE.

IF THE NUMBER OF STATIONS TO BE ENTERED INTO THE SYSTEM IS SMALL, THEN THE "%EASYSTOR" PROCEDURES SHOWN ON PAGES 28 THROUGH 33 CAN BE USED. HOWEVER, IF THERE ARE A LARGE NUMBER OF STATIONS TO BE PROCESSED, THE USER MAY WANT TO COMPLETE EPA FORM 7500-24(8-83) AND HAVE THE DATA KEYED EITHER INTO A PC OR OTHER MEDIUM AND TRANSMITTED TO THE COMPUTER CENTER FOR PROCESSING. EVEN THOUGH THE LATTER METHOD IS USED, THE FILE (DATA SET) CONTAINING THE STORAGE TRANSACTIONS SHOULD BE CREATED AT NCC FOR PROCESSING BY THE STORET STORAGE SOFTWARE. BY DOING THIS, THE FILE ONLY HAS TO BE TRANSMITTED ONCE AND THE ERRORS IDENTIFIED BY THE STORAGE SOFTWARE CAN BE CORRECTED USING THE EDITING PROCEDURES UNDER TSO.

THE FIRST CARD (LINE) IN A STATION STORAGE FILE MUST HAVE "FORMAT=STATIONS," IN COLUMNS 1 THROUGH 16. BELOW IS AN EXAMPLE OF THE STORAGE DECK REQUIRED TO STORE A STATION WITH THE FOLLOWING DESCRIPTION:

THE AGENCY CODE IS "11TRAIN" WHOSE UNLOCKING KEY IS "CHOOCHOO". THE PRIMARY STATION NUMBER IS TO BE SEMINAR01A AND THE SAMPLING SITE HAS TWO ALIASES: 01041934 AND BLCK001. THE LATITUDE AND LONGITUDE OF THE SITE WHICH IS LOCATED IN MASON COUNTY (105) IN THE STATE OF MICHIGAN (26) IS 43 DEGREES, 58 MINUTES, AND 22.2 SECONDS AND 86 DEGREES, 8 MINUTES, AND 10.3 SECONDS. THE LATITUDE AND LONGITUDE WAS MEASURED WITH A PRECISION OF 1 SECOND. THE DEPTH OF THE WATER AT THE SAMPLING SITE IS 10 FEET AND THE STATION'S ELEVATION IS 318 METERS. THE STATION IS MONITORING AMBIENT STREAM DATA ON THE ONOWAGON RIVER WHICH IS IN THE PERE MARQUETTE MINOR BASIN (21) WHICH IS PART OF THE LAKE MICHIGAN MAJOR BASIN (08). THE SAMPLING IS PERFORMED OFF OF THE MAIN STREET BRIDGE WHICH IS 10 MILES NORTH OF THE FAIRCHILD RESERVOIR AND IS DONE NEAR THE LEFT BANK. THE STATION IS LOCATED IN THE MOST TYPICAL PART OF EPA'S ECOREGION 56. THE SAMPLING SITE LIES ABOVE AN AQUIFER OF SAND (AQUIFER CODE 112SAND). THE STATION IS LOCATED 3.8 MILES UP RIVER REACH SEGMENT NUMBER 029 WHICH IS IN U.S.G.S. CATALOGING UNIT 04060101. THE CHECK DIGIT FOR THE REACH IS 4. THE SAMPLING SITE IS LOCATED ON THE WATER BODY IDENTIFIED AS MI00346. SAMPLES ARE TAKEN ALONG A TRANSECT STARTING AT THIS POINT AND ENDING 0.3 MILES UP SEGMENT 030. ALL OF THE OTHER DESCRIPTIVE INFORMATION IS THE SAME EXCEPT THE AFOREMENTIONED SEGMENT NUMBER AND THE LATITUDE AND LONGITUDE WHICH IS 43 DEGREES, 58 MINUTES, AND 22.3 SECONDS AND 86 DEGREES, 8 MINUTES, AND 10.4 SECONDS. THE CHECK DIGIT FOR THE SECOND POINT IS 5. THE DATA FOR THE STATION IS NOT TO BE LOCKED.

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

FORMAT=STATIONS,
11TRAIN     000 CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861                  9999  A
STREAM/AMBNT                                                                  T
   SEMINAR01A                    01041934    BLCK001               26105      NSS
      435822208608103      2F010  318112SAND                                   0
   LAKE MICHIGAN           PERE MARQUETTE                          08210056M   3
   ONOWAGON RIVER MAIN ST BRDGE 10 M FROM RESERVOIR040601010290N 3.8     4     4
   MI00346  ONOWAGON RIVER                                                    B
   26 105   43 58 22.3 086 08 10.4   04060101030 ON      0.3 5   56M          1E
      THE SAMPLING SITE IS ON THE LEFT BANK AND IS SAMPLED OFF THE MAIN ST    05
      BRIDGE.  THIS IS 10 MILES UPSTREAM FROM THE FAIRCHILD RESERVOIR         15
      SAMPLING IS DONE QUARTERLY WITH INTENSIVE SURVEYS EVERY 5 YEARS         25
      THE SAMPLING IS DONE IN CONJUNCTION WITH THE CORPS OF ENGINEERS WITH    35
      THE STATE LAB DOING THE ANALYSIS                                        45

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
```

THE CARD SEQUENCE DEMONSTRATED ABOVE MUST BE MAINTAINED WHEN CREATING A STORAGE DECK. THE "FORMAT" CARD, WHICH MUST BE THE FIRST ONE IN THE DECK, IS ENTERED ONLY ONCE. IF SUCCEEDING SAMPLING SITES IN THE DECK ARE TO BE STORED FOR THE SAME AGENCY, THE "A" CARD DOES NOT HAVE TO BE REPEATED, AND IF THE SUCCEEDING SAMPLING SITES HAVE THE SAME STATION TYPE, THE "T" CARD DOES NOT NEED TO BE REPEATED.

THE FOLLOWING IS A DETAILED EXPLANATION OF THE CARDS AND THE VARIOUS FIELDS ON THE CARDS:

AGENCY CARD (A CARD)

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
11TRAIN     000 CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861                9999 A
```

COLUMNS	CONTENTS	REQUIRED
1-8	AGENCY CODE WHICH IS A REQUIRED FIELD.	YES
13-15	THE NUMBER OF DAYS THE DATA ARE TO BE LOCKED. IF NOTHING IS ENTERED, THREE ZEROS ARE ASSUMED WHICH INDICATES THAT THE DATA ARE NOT LOCKED. THE NUMBER OF DAYS IS MEASURED FROM THE DATE OF THE SAMPLE AND NOT THE STORAGE DATE.	NO
17-24	UNLOCKING KEY. IT IS REQUIRED AND IT ENSURES THAT ONLY THE PERSON RESPONSIBLE FOR THE AGENCY MAY STORE DATA FOR THE AGENCY CODE.	YES
25-61	OPTIONAL FIELD WHICH IS NOT STORED WITH THE STATION. USED AS AN AID FOR THE USER TO IDENTIFY THE JOB OR THE USER'S NAME AND PHONE NUMBER.	NO
74-77	THE LOCK AFTER DATE IS USED TO SPECIFY THAT THE DATA SAMPLED AFTER THE DATE INDICATED ARE TO BE LOCKED. THE SAMPLE DATE IS THE ONE REFERRED TO AND NOT THE STORAGE DATE. IF NOT ENTERED, '9999' IS ASSUMED WHICH MEANS THE DATA ARE NOT LOCKED.	NO
78-79	CONTROL CODE WHICH FOR A NEW STATION IS LEFT BLANK. USED WHEN CHANGING THE STATION TYPE OR THE UNLOCKING DATES FOR PREVIOUSLY STORED STATIONS.	NO
80	THE CARD IDENTIFIER IS ENTERED. SINCE THIS IS THE AGENCY (A) CARD, AN "A" IS ENTERED.	YES

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.
STREAM/AMBNT                                                          T
```

COLUMNS	CONTENTS	REQUIRED
1-78	A VALID STATION TYPE WHICH DESCRIBES THE TYPE OF WATER BEING SAMPLED AND OTHER CHARACTERISTICS OF THE SAMPLING SITE. EACH LEVEL IS SEPARATED BY A "/", AND NO EMBEDDED BLANKS ARE ALLOWED. THIS IS A REQUIRED ITEM. FOR A LIST OF ALL OF THE VALID STATION TYPES, SEE THE STORET HELP FILE "STORET.HELP.STATION.TYPE". THE HELP FILE ALSO CONTAINS EXAMPLES OF THEIR FORMAT AND USE. A LIST OF THE STATION TYPES IS SHOWN BELOW.	YES
80	THE LETTER "T" IS ENTERED WHICH IS THE CARD IDENTIFIER	YES

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
  SEMINAR01A                  01041934    BLCK001              26105     NSS
```

COLUMNS	CONTENTS	REQUIRED
1-3	SORT NUMBER WHICH IS NOT REQUIRED NOR IS IT STORED.	NO
4-18	THE PRIMARY STATION NUMBER WHICH IS REQUIRED AND MUST BE UNIQUE FOR THE AGENCY.	YES
34-45 46-57 58-67	SECONDARY STATION NUMBERS OR ALIASES. THESE ARE NOT REQUIRED, BUT IF THEY ARE USED, EACH NUMBER FOR AN AGENCY CODE MUST BE UNIQUE. ALL STATION NUMBERS FOR AN AGENCY CODE MUST BE UNIQUE WHETHER THEY ARE PRIMARY NUMBERS OR SECONDARY NUMBERS.	NO
68-69	THE TWO CHARACTER FIPS STATE CODE WHICH IS REQUIRED.	YES
70-72	THE THREE CHARACTER FIPS COUNTY CODE WHICH IS REQUIRED. THE STATE AND COUNTY CODES ARE CHECKED AGAINST THE LAT/LONG ON THE "0" TO ENSURE THAT THE PROPER CODES ARE USED. THEY ARE ALSO CHECKED AGAINST THE "HUC" CODE AND "REACH" INFORMATION TO ENSURE THAT ALL OF THESE CODES ARE CONSISTENT.	YES
78-79	FOR NEW STATIONS, "NS" IS ENTERED.	YES
80	THE CHARACTER "S" IS ENTERED. THIS IS THE CARD IDENTIFIER.	YES

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
    435822208608103      2F010  318112SAND                                    0
```

COLUMNS	CONTENTS	REQUIRED
1-3	SORT NUMBER WHICH IS NOT STORED NOR REQUIRED.	NO
7-13	THE DEGREES, MINUTES, SECONDS, AND TENTHS OF SECONDS OF LATITUDE. NO DECIMAL POINT IS ENTERED. THE LATITUDE OF THE STATION IS CHECKED ALONG WITH THE LONGITUDE TO ENSURE THAT THE SPECIFIED LAT/LONG IS WITHIN THE COUNTY ENTERED ON THE "S" CARD AND THE "HUC" AND "REACH" INFORMATION ON THE "4" CARD.	YES
14-21	THE DEGREES, MINUTES, SECONDS, AND TENTHS OF SECONDS OF LONGITUDE. NO DECIMAL POINT IS ENTERED. THE LONGITUDE OF THE STATION IS CHECKED ALONG WITH THE LATITUDE TO ENSURE THAT THE SPECIFIED LAT/LONG IS WITHIN THE COUNTY ENTERED "S" CARD AND THE "HUC" AND "REACH" INFORMATION ON THE "4" CARD. A LEADING ZERO IS REQUIRED FOR THOSE STATIONS WHOSE DEGREES OF LONGITUDE ARE LESS THAN 100.	YES
28	THE PRECISION CODE WHICH INDICATES THE PRECISENESS WITH WHICH THE LAT/LONG WAS MEASURED. IF NOTHING IS CODED, A "4" IS ASSUMED. SEE THE TABLE BELOW FOR THE CODES.	NO

CODE	PRECISION
1	TENTH OF A SECOND
2	ONE SECOND
3	TEN SECONDS
4	THIRTY SECONDS
5	ONE MINUTE
6	TEN MINUTES
7	THIRTY MINUTES
8	ONE DEGREE

29	THE UNITS USED WHEN ENTERING THE DEPTH OF THE WATER AT THE SITE (F FOR FEET OR M FOR METERS). IF NOTHING IS ENTERED, FEET ARE ASSUMED.	NO
30-32	THE DEPTH OF THE WATER AT THE STATION. IF NOTHING IS ENTERED, "000" IS ASSUMED.	NO
33-37	THE ELEVATION OF THE SAMPLING SITE ABOVE SEA LEVEL IN WHOLE METERS.	NO
38-45 46-53 54-61 62-69 70-77	UP TO FIVE 8 CHARACTER AQUIFER CODES CAN BE ENTERED. THE FIRST 3 DIGITS MUST BE NUMERIC AND THE REMAINING 5 CHARACTERS ARE ALPHANUMERIC.	NO
80	THE CHARACTER ZERO (0) WHICH IS THE CARD IDENTIFIER.	YES

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
LAKE MICHIGAN PERE MARQUETTE 08210056M 3

COLUMNS	CONTENTS	REQUIRED
1-3	SORT NUMBER WHICH IS NOT STORED NOR REQUIRED.	NO
4-27	THE EPA MAJOR BASIN NAME IN WHICH THE STATION IS LOCATED. THIS IS AN OPTIONAL FIELD, AND THE NAMES CAN BE FOUND IN THE STORET HELP FILE "STORET.HELP.BASIN.CODES" OR IN APPENDIX D OF THE STORET HANDBOOK.	NO
28-67	THE EPA MINOR BASIN NAME IN WHICH THE STATION IS LOCATED. THIS IS AN OPTIONAL FIELD, AND THE NAMES CAN BE FOUND IN THE STORET HELP FILE "STORET.HELP.BASIN.CODES" OR IN APPENDIX D OF THE STORET HANDBOOK.	NO
68-69	THE EPA MAJOR BASIN CODE WHERE THE STATION IS LOCATED. THIS IS AN OPTIONAL FIELD, AND THE CODES CAN BE FOUND IN THE STORET HELP FILE "STORET.HELP.BASIN.CODES" OR IN APPENDIX D OF THE STORET HANDBOOK.	NO
70-71	THE EPA MINOR BASIN CODE WHERE THE STATION IS LOCATED. THIS IS AN OPTIONAL FIELD, AND THE CODES CAN BE FOUND IN THE STORET HELP FILE "STORET.HELP.BASIN.CODES" OR IN APPENDIX D OF THE STORET HANDBOOK.	NO
72-73	THIS IS AN OPTIONAL FIELD WHICH IS USED TO ENTER THE SUB-BASIN CODE IF ONE IS AVAILABLE. EPA HAS NOT DEFINED SUB-BASINS, AND IF NOTHING IS ENTERED, TWO ZEROS ARE ASSUMED.	NO
74-76	THE THREE CHARACTER EPA ECOREGION CODE IS ENTERED. THE FIRST TWO DIGITS ARE NUMERIC AND ARE FOLLOWED BY EITHER AN "M" FOR MOST TYPICAL OR "G" FOR GENERALLY TYPICAL FOR THE ECOREGION. THESE CODES ARE CONTAINED IN THE HELPFUL DATA SET "STORET.HELP.ECO.REGIONS". A MAP DELINEATING THE ECOREGIONS CAN BE OBTAINED BY CONTACTING JIM OMERNICK IN CORVALLIS, OREGON, WHOSE PHONE NUMBER IS 503-753-6221.	NO
80	A "3" IS ENTERED WHICH IS THE CARD IDENTIFIER.	YES

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
  ONONWAGON RIVER MAIN ST BRDGE 10 M FROM RESERVOIR040601010290N 3.8     4     4
```

COLUMNS	CONTENTS	REQUIRED
1-3	SORT NUMBER WHICH IS NOT STORED NOR REQUIRED.	NO
4-51	A BRIEF DESCRIPTION OF THE STATION'S LOCATION IS ENTERED. THIS IS A REQUIRED FIELD AND SHOULD BE AS INFORMATIVE AS SPACE ALLOWS.	YES
52-59	THE U.S.G.S. CATALOGING UNIT NUMBER IN WHICH THE STATION IS LOCATED IS ENTERED. THE "HUC" CODE IS CHECKED AGAINST THE LAT/LONG ON THE "0" CARD TO ENSURE THAT THE PROPER CODE IS ENTERED.	YES
60-62	THE EPA SEGMENT NUMBER ON WHICH THE STATION IS LOCATED OR THE SEGMENT THAT RECEIVES THE DRAINAGE FROM THE STREAM ON WHICH THE STATION IS LOCATED IS ENTERED. IF A CATALOGING UNIT CODE IS ENTERED AND A REACH NUMBER IS NOT SUPPLIED, THIS FIELD IS LEFT BLANK.	NO*
63-65	IF A SEGMENT NUMBER IS ENTERED, THIS FIELD MUST BE USED. "ON" INDICATES THAT THE STATION IS LOCATED ON THE REACH, AND "OFF" IS USED IF THE STATION IS ON A STREAM WHOSE WATERS ENTER THE INDICATED REACH DIRECTLY OR THROUGH A SERIES OF TRIBUTARIES. IF "ON" IS USED, IT IS ENTERED LEFT JUSTIFIED.	NO*
66-73	THE MILES FROM THE DOWNSTREAM END OF THE SEGMENT TO THE POINT WHERE THE STATION IS LOCATED OR WHERE THE WATERS ENTER THE SEGMENT IF THE STATION IS NOT ON THE SEGMENT. THE MILEAGE IS ENTERED LEFT JUSTIFIED AND DECIMAL FRACTIONS OF MILES MAY BE USED WITH THE UNUSED COLUMNS LEFT BLANK.	NO*
74	A CHECK DIGIT IS ENTERED WHICH IS USED BY AN ALGORITHM TO VERIFY THAT THE 11 DIGIT REACH INFORMATION IS CORRECT. THE CHECK DIGIT IS SHOWN IN THE REACH DIRECTORY.	NO*
80	THE CARD IDENTIFIER "4" IS ENTERED.	YES

* COLUMNS 60-74 MAKE UP THE REACH CODING FOR THE STATION AND PRESENTLY ITS USE IS OPTIONAL. HOWEVER, IT IS RECOMMENDED THAT THESE FIELDS BE USED TO FURTHER IDENTIFY THE STATION'S LOCATION AND TO ENHANCE STATION RETRIEVAL CAPABILITIES.

THE FOLLOWING PAGE (PAGE 16) IS AN EXAMPLE OF THE OUTPUT GENERATED BY THE "REACHRET" PROGRAM. IT SHOWS THE EPA REACH NUMBER, ITS CHECK DIGIT, THE LENGTH OF THE SEGMENT, THE TYPE OF SEGMENT, THE NAME OF THE SEGMENT, AND A TREE DIAGRAM WHICH SHOWS THE STRUCTURE OF THE STREAMS IN THE AREA. THE %BATCH COMMAND IS USED TO GENERATE THE REPORT. FOR AN EXPLANATION OF THE %BATCH PROCEDURE, SEE PAGES 24 THROUGH 27 OF THE SEMINAR DOCUMENTATION NAMED "AGENDA, OVERVIEW, AND INTRODUCTION TO TSO".

123456789.123456739.123456789.123456789.123456789.123456789.123456789.123456789.
MI00346 ONONAGON RIVER B

COLUMNS	CONTENTS	REQUIRED
1-3	SORT NUMBER WHICH IS NOT REQUIRED NOR IS IT STORED.	NO
4-53	THE WATER BODY CODE AND NAME THAT IS BEING SAMPLED. THIS NAME AND CODE MUST BE CONSISTENT WITH THE "WATER BODY FILE".	NO
80	THE CARD IDENTIFIER IS ENTERED WHICH IN THIS CASE IS A "B".	YES

```
123456789.123456739.123456789.123456789.123456789.123456789.123456789.123456789.
  26 105   43 58 22.3 086 08 10.4   04060101030 ON      0.3 5   56M          1E
```

COLUMNS	CONTENTS	REQUIRED
1-3	SORT NUMBER WHICH IS NOT STORED NOR REQUIRED.	NO
4-5	THE TWO CHARACTER FIPS STATE CODE IN WHICH THE ADDITIONAL POINT IS LOCATED.	YES *
7-9	THE THREE CHARACTER FIPS COUNTY CODE IN WHICH THE ADDITIONAL POINT IS LOCATED.	YES *
13-14 16-17 19-22	THE DEGREES, MINUTES, SECONDS, AND TENTHS OF SECONDS OF LATITUDE FOR THE ADDITIONAL POINT. COLUMN 21 MUST CONTAIN A DECIMAL POINT.	YES *
24-26 28-29 31-34	THE DEGREES, MINUTES, SECONDS, AND TENTHS OF SECONDS OF LONGITUDE FOR THE ADDITIONAL POINT. A LEADING ZERO IS REQUIRED FOR DEGREES LESS THAN 100 AND A DECIMAL POINT IN COLUMN 33.	YES *
38-45	THE U.S.G.S. HYDROLOGIC UNIT CODE IN WHICH THE ADDITIONAL ADDITIONAL POINT IS LOCATED.	YES *
46-48	THE EPA SEGMENT NUMBER ON WHICH THE STATION IS LOCATED OR THE SEGMENT THAT RECEIVES THE DRAINAGE FROM THE STREAM ON ON WHICH THE SITE IS LOCATED. IF THERE IS NO SEGMENT NUMBER TO BE ENTERED, THIS FIELD IS LEFT BLANK.	NO *
50-52	IF A SEGMENT NUMBER IS USED, THIS FIELD MUST BE COMPLETED. "ON" INDICATES THAT THE STATION IS LOCATED ON THE SEGMENT AND "OFF" IS USED IF THE SITE IS ON A STREAM WHOSE WATERS ENTER THE INDICATED SEGMENT DIRECTLY OR THROUGH A SERIES OF TRIBUTARIES. IF "ON" IS USED, IT IS ENTERED LEFT JUSTIFIED.	NO *
54-60	THE MILES FROM THE DOWNSTREAM END OF THE SEGMENT TO THE POINT WHERE THE STATION IS LOCATED OR WHERE THE WATERS ENTER THE SEGMENT IF THE STATION IS NOT ON THE STREAM. FRACTIONAL MILES MAY BE ENTERED.	NO*
62	WHEN THE 11 DIGIT REACH INFORMATION IS USED, A CHECK DIGIT AS SHOWN IN THE REACH DIRECTORY IS REQUIRED IN THIS FIELD WHICH IS USED TO ENSURE THAT THE REACH NUMBER IS CORRECT.	NO *
66-68	THE THREE CHARACTER EPA ECOREGION CODE IS ENTERED. THE FIRST TWO DIGITS ARE NUMERIC AND ARE FOLLOWED BY EITHER AN "M" FOR MOST TYPICAL OR "G" FOR GENERALLY TYPICAL OF THE ECOREGION. SEE THE FILE "STORET.HELP.ECO.REGIONS" FOR THESE CODES.	YES *
80	THE CARD IDENTIFIER "1E" THROUGH "3E" IS ENTERED.	YES *

* OPTIONALLY, UP TO THREE EXTENSION CARDS MAY BE USED, AND IF THEY ARE USED, CERTAIN ITEMS ARE REQUIRED. FURTHERMORE, THE LAT/LONG, STATE/COUNTY CODES, HUC CODE, AND REACH CODING ARE CHECKED AGAINST EACH OTHER TO ENSURE THAT ALL OF THE ITEMS ARE CONSISTENT.

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
     THE SAMPLING SITE IS ON THE LEFT BANK AND IS SAMPLED OFF THE MAIN ST    05
     BRIDGE.  THIS IS 10 MILES UPSTREAM FROM THE FAIRCHILD RESERVOIR         15
     SAMPLING IS DONE QUARTERLY WITH INTENSIVE SURVEYS EVERY 5 YEARS         25
     THE SAMPLING IS DONE IN CONJUNCTION WITH THE CORPS OF ENGINEERS WITH    35
     THE STATE LAB DOING THE ANALYSIS                                        45
```

COLUMNS	CONTENTS
1-3	THE SORT NUMBER WHICH IS NOT STORED NOR REQUIRED.
7-78	FURTHER DESCRIPTIVE INFORMATION ABOUT THE STATION. THIS THIS CAN BE ANYTHING THE USER WISHES. UP TO 15 "5" CARDS MAY BE USED ALLOWING THE USER TO STORE UP TO 1080 CHARACTERS OF ADDITIONAL INFORMATION ABOUT THE STATION.
79-80	"05" THROUGH "N5" WHICH IDENTIFIES THE CARD AND WHICH OF THE "5" CARDS IS TO BE USED. THEY MUST BE ENTERED IN SEQUENCE BEGINNING WITH "05" AND INCREMENTING BY ONE. AFTER THE 95 CARD IS USED, THE NEXT CARD IS "J5". IT THEN IS INCREMENTED BY ONE LETTER OF THE ALPHABET UNTIL "N5" IS REACHED.

THE COMPLETE DECK IS REPEATED BELOW. IN ORDER TO SUBMIT IT FOR PROCESSING, THE %STORE COMMAND PROCEDURE IS USED. SEE PAGES 28 THROUGH 33 BELOW FOR AN EXAMPLE OF HOW TO CREATE A STATION STORAGE FILE AND THE PROCEDURES REQUIRED TO SUBMIT IT FOR PROCESSING BY THE COMPUTER. FOLLOWING THE SAMPLE DECK IS A RETRIEVAL OUTPUT SHOWING THE STATION HEADER AS IT WOULD APPEAR WHEN RETRIEVED. THE CARD SEQUENCE SHOWN IS MANDATORY, AND THE "FORMAT=STATIONS," IS ENTERED ONLY ONCE PER DECK OF CARDS.

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

FORMAT=STATIONS,
11TRAIN     000 CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861                  9999  A
STREAM/AMBNT                                                                  T
   SEMINAR01A                    01041934    BLCK001               26105      NSS
      435822208608103      2F010  318112SAND                                   0
   LAKE MICHIGAN           PERE MARQUETTE                          08210056M   3
   ONOWAGON RIVER MAIN ST BRDGE 10 M FROM RESERVOIR040601010290N 3.8     4     4
   MI00346  ONOWAGON RIVER                                                     B
   26 105   43 58 22.3 086 08 10.4   04060101030 ON      0.3 5   56M           1E
      THE SAMPLING SITE IS ON THE LEFT BANK AND IS SAMPLED OFF THE MAIN ST    05
      BRIDGE.  THIS IS 10 MILES UPSTREAM FROM THE FAIRCHILD RESERVOIR         15
      SAMPLING IS DONE QUARTERLY WITH INTENSIVE SURVEYS EVERY 5 YEARS         25
      THE SAMPLING IS DONE IN CONJUNCTION WITH THE CORPS OF ENGINEERS WITH    35
      THE STATE LAB DOING THE ANALYSIS                                        45

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
```

IN ALL OF THE PREVIOUS EXAMPLES, THE STRING OF CHARACTERS "123456789." ETC., ARE NOT TO BE ENTERED. THEY ARE ONLY SHOWN SO PROPER COLUMN ALIGNMENT MAY BE MAINTAINED. IF THEY ARE IN THE DECK OF CARDS USED FOR STORAGE, THE JOB WILL FAIL.

FOR A MORE IN DEPTH DISCUSSION OF THE STATION STORAGE PROCEDURES AND CARD FORMATS, SEE SECTION 3 IN CHAPTER 0E OF THE STORET HANDBOOK.

AFTER A STATION HAS BEEN ESTABLISHED, CHANGES MAY HAVE TO BE MADE TO IT. SOME OF THE CHANGES MUST BE MADE IN SEPARATE UPDATE CYCLES AND SOME CAN BE DONE IN THE SAME UPDATE CYCLE. NO CHANGES CAN BE MADE UNTIL THE STATION IS ACTUALLY IN THE SYSTEM (AN UPDATE CYCLE MUST OCCUR).

THE CHANGES THAT INVOLVE THE CONTROL CODES ON THE "A" CARD MUST BE MADE IN SEPARATE UPDATE CYCLES. THE CONTROL CODES THAT GO ON THE "A" CARD ARE "CT", "AT", AND "DT" WHICH IS USED TO CHANGE THE STATION TYPE AND "CD" WHICH IS USED TO CHANGE THE UNLOCKING DATES. IF EITHER ONE OF THESE CHANGES ARE TO BE MADE, NO OTHER CHANGES CAN BE MADE TO THAT STATION UTIL THE NEXT UPDATE CYCLE. THE CHANGES TO THE INFORMATION SUPPLIED BY THE CARDS "S" THROUGH "N5" CAN ALL BE MADE IN THE SAME UPDATE CYCLE. HOWEVER, THEY MUST BE IN A SEPARATE UPDATE CYCLE FROM ANY CHANGES INVOLVING THE CONTROL CODES ON THE "A" CARD, I.E., IF THE UNLOCKING DATE, STATION TYPE, AND ANY OTHER CHANGES HAVE TO BE MADE, IT WILL TAKE AT LEAST 3 UPDATE CYCLES TO COMPLETE THEM.

IN ORDER TO CHANGE THE "UNLOCK AFTER" AND/OR "LOCK AFTER" DATES FOR A PREVIOUSLY STORED STATION, AN AGENCY ("A") CARD AND A STATION ("S") CARD FOR EACH STATION TO BE CHANGED IS REQUIRED. THE "A" CARD IS COMPLETED AS USUAL WITH THE NEW DATES ENTERED IN THE PROPER COLUMNS. IN COLUMNS 78 AND 79 OF THE "A" CARD, A CONTROL CODE OF "CD" IS REQUIRED. THIS IS FOLLOWED BY A STATION CARD FOR EACH STATION BEING CHANGED. THIS TYPE OF CHANGE MUST BE THE ONLY ONE FOR THE STATION IN THE UPDATE CYCLE.

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

FORMAT=STATIONS,
11TRAIN     090 CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861                9999CDA
   ABC001                                                                    S
   ABC002                                                                    S
   ABC003                                                                    S
   ABC004                                                                    S

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
```

THE ABOVE EXAMPLE WOULD CHANGE THE UNLOCK AFTER DATE TO 90 DAYS, AND THE LOCK AFTER DATE TO 9999. THE DATA FOR THE LISTED STATIONS WILL BE AVAILABLE TO ALL USERS 90 DAYS FROM ITS SAMPLE DATE.

CHANGING STATION TYPE

IN ORDER TO CHANGE THE STATION TYPE FOR A PREVIOUSLY STORED STATION, AN AGENCY ("A") CARD , A STATION TYPE ("T") CARD, AND A STATION ("S") CARD FOR EACH STATION TO BE CHANGED ARE REQUIRED. ON THE "A" CARD, THE AGENCY CODE, UN-UNLOCKING KEY AND ONE OF THE FOLLOWING CONTROL CODES ARE REQUIRED: CT, AT, DT. IF "CT" IS USED IN COLUMNS 78 AND 79, THEN AN ENTIRELY NEW STATION TYPE MUST BE SUPPLIED ON THE "T" CARD. THIS IS A TOTAL REPLACE OF THE OLD STATION TYPE. "AT" IS USED TO ADD ONE OR MORE NEW CODES TO AN EXISTING STATION TYPE. THE "T" CARD THAT FOLLOWS WILL ONLY CONTAIN THE TYPE TO BE ADDED TO THE STATION TYPE FIELD AND RESULTING TYPE MUST BE CONSISTENT WITH THE RULES FOR STATION TYPES. "DT" IS USED TO DELETE ONE OR MORE OF THE EXISTING TYPES FROM A STATION. AGAIN, THE RESULTING STATION TYPE MUST BE CONSISTENT WITH RULES FOR STATION TYPES. AFTER THE "A" CARD AND THE "T" CARD, AN "S" CARD FOR EACH OF THE STATIONS TO BE CHANGED IS ENTERED WITH THE PRIMARY STATION NUMBER IN COLUMNS 4 THROUGH 18.

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

FORMAT=STATIONS,
11TRAIN          CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861                    CTA
STREAM/AMBNT                                                                  T
   ABC001                                                                     S
   ABC002                                                                     S
   ABC003                                                                     S
   ABC004                                                                     S
11TRAIN          CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861                    ATA
NRSHRE                                                                        T
   LAKE001                                                                    S
   LAKE002                                                                    S
   LAKE003                                                                    S
   LAKE004                                                                    S
11TRAIN          CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861                    DTA
POLLUT                                                                        T
   SAMP001                                                                    S
   SAMP002                                                                    S
   SAMP003                                                                    S
   SAMP004                                                                    S

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
```

THE INFORMATION CONTAINED ON STORAGE CARDS "S" THROUGH "N5" CAN ALL BE CHANGED IN THE SAME UPDATE CYCLE AND IN THE SAME JOB. TO EFFECT THESE CHANGES, AN "A" CARD, AN "S" CARD AND THE CARD OR CARDS CONTAINING THE DATA TO BE CHANGED ARE USED. THE "A" CARD MUST CONTAIN THE AGENCY CODE, THE UNLOCKING KEY, AND AN "A" IN COLUMN 80. THE "S" CARD MUST HAVE THE PRIMARY STATION NUMBER, AN "S" IN COLUMN 80 AND THE CONTROL CODE "CX" IN COLUMNS 78 AND 79. TO CHANGE A VALUE, THE NEW INFORMATION IS ENTERED IN THE PROPER COLUMNS OF THE CARD USED TO STORE THE INFORMATION. TO DELETE AN OPTIONAL FIELD, AN "X" IS PLACED IN POSITION ONE OF THE FIELD. REQUIRED INFORMATION CAN NOT BE DELETED. IT CAN ONLY BE REPLACED. IF ONE OF THE OPTIONAL "5" CARDS IS TO BE DELETED, AN "X" IS PLACED IN COLUMN 7 OF THE CARD TO BE DELETED. THE "0" CARD IS TREATED AS ONE LONG FIELD, AND IF ANY ITEM ON IT IS TO BE CHANGED, THE ENTIRE CARD MUST BE ENTERED, E.G., IF THE MINUTES OF LONGITUDE ARE TO BE CHANGED, THE ENTIRE "0" CARD INFORMATION MUST BE SPECIFIED WHICH MEANS ALL OF THE LAT/LONG DIGITS MUST BE ENTERED ALONG WITH THE PRECISION CODE, THE DEPTH UNIT INDICATOR, THE DEPTH OF THE WATER AT THE STATION, THE ELEVATION OF THE STATION, AND ALL OF THE AQUIFER CODES. IF ANY ITEM IS TO BE CHANGED, THE ENTIRE CARD MUST BE COMPLETED. THIS IS ALSO TRUE FOR THE WATER BODY CARD ("B" CARD) AND THE EXTENSION CARDS ("1E" THRU "3E" CARDS). THE STATE AND COUNTY CODES ON THE "S" CARD APPEAR AS SEPARATE FIELDS. HOWEVER, THEY ARE ONE 5 DIGIT FIELD, AND IF EITHER IS TO BE CHANGED, THE ENTIRE 5 DIGITS MUST BE SUPPLIED. THE SAME IS TRUE FOR THE BASIN CODE ON THE "3" CARD. IF A CHANGE IS TO BE MADE, ALL SIX DIGITS MUST BE ENTERED. THE CATALOGING UNIT CODE ON THE "4" CARD IS AN 8 DIGIT FIELD, AND IF ANY OF THE DIGITS ARE TO BE CHANGED, ALL EIGHT DIGITS MUST BE CODED. THE REACH CODING IS ONE FIELD (INCLUDING THE CATALOGING UNIT CODE), AND IF ANY ITEM IS TO BE CHANGED, THE ENTIRE FIELD MUST BE COMPLETED. EACH OF THE "5" CARDS IS ONE FIELD, AND IF ANYTHING IS TO BE CHANGED ON THE CARD OR IF THE CARD IS TO BE REPLACED, THE ENTIRE CARD MUST BE ENTERED.

FOR STATION XDDR004 STORED BEHIND AGENCY CODE 11TRAIN, MAKE THE FOLLOWING CHANGES TO THE STATION HEADER INFORMATION: DELETE THE SECOND SECONDARY STATION NUMBER; CHANGE THE COUNTY CODE TO 121; CHANGE THE LONGITUDE TO 91 DEGREES, 58 MINUTES, 45.1 SECONDS; ADD A SECOND AQUIFER CODE OF 124CCKF; CHANGE THE MINOR BASIN CODE TO 07; CHANGE THE ECOREGION TO 37G; CHANGE THE LOCATION INFORMATION TO READ "ROCK RIVER NEAR BARLOW DAM SPILL WAY"; CHANGE THE MILES UP THE REACH TO 3.7 MILES; CHANGE THE WATER BODY CODE TO AR000783; ON THE EXTENSTION CARD "2E", CHANGE THE LATITUDE TO 34 DEGREES, 25 MINUTES 15.1 SECONDS; CHANGE THE "75" CARD TO READ "ESTABLISHED IN 1965"; AND DELETE THE "85" CARD.

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

FORMAT=STATIONS,
11TRAIN         CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861                       A
   XDDR004                                 X                      05121      CXS
      342515209158451      2F030  472124RDFD 124CCKF                           0
                                                                  15070037G    3
   ROCK RIVER NEAR BARLOW DAM SPILL WAY           11110207004ON 3.7      1     4
   AR000783   ROCK RIVER                                                       B
   05 121   34 25 15.1 091 58 45.1   11110207004 ON  3.8     1   37G          2E
      ESTABLISHED IN 1965                                                     75
      X                                                                       85
```

NOTE: THE CARD SEQUENCE MUST BE THE SAME AS THAT USED WHEN STORING THE STATION ORIGINALLY.

THE STORET COMMAND PROCEDURE "%STNDESC" CAN BE USED TO CREATE A DATA SET CONTAINING THE NECESSARY CARDS TO CHANGE THE STATION HEADER INFORMATION FOR AN EXISTING STATION. SEE PAGES 37 THROUGH 40 BELOW FOR AN EXAMPLE OF ITS USE.

DELETING A STATION AND ALL OF ITS DATA

TO DELETE AN EXISTING STATION AND ITS ASSOCIATED DATA, AN AGENCY CARD IS REQUIRED ALONG WITH A STATION CARD FOR EACH STATION TO BE DELETED. USE CARE WHEN DOING THIS, BECAUSE IT WILL DELETE THE STATION AND ALL OF THE DATA DURING THE NEXT UPDATE CYCLE. THE "A" CARD MUST HAVE THE AGENCY CODE, UNLOCKING KEY, AND AN "A" IN COLUMN 80. THE "S" CARD MUST HAVE THE PRIMARY STATION NUMBER AND "DS" IN COLUMNS 78 AND 79. AN "S" IS ENTERED IN COLUMN 80. SEE PAGE WQ-DE/3-43.

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

FORMAT=STATIONS,
11TRAIN         CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861                    A
   XYZ001                                                                 DSS
   XYZ002                                                                 DSS
   XYZ003                                                                 DSS
   XYZ004                                                                 DSS

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
```

DELETING ALL OF THE DATA FOR A STATION

TO DELETE ALL OF THE DATA FOR A STATION, AN AGENCY CARD AND A STATION CARD ARE NEEDED. THE "A" CARD MUST HAVE THE AGENCY CODE, THE UNLOCKING KEY, AND AN "A" IN COLUMN 80. THE "S" CARD MUST CONTAIN THE PRIMARY STATION NUMBER, THE CONTROL CODE "DD" IN COLUMNS 78 AND 79, AND AN "S" IN COLUMN 80. CARE MUST BE EXERCISED WHEN USING THIS BECAUSE IT WILL DELETE ALL OF THE DATA FOR THE STATIONS SPECIFIED. SEE PAGE WQ-DE/4-66.

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

FORMAT=STATIONS,
11TRAIN         CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861                    A
   TT0045                                                                 DDS
   TY09332                                                                DDS
   TY78004                                                                DDS
   VBUC054                                                                DDS

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
```

If there are several sampling sites to be entered into the STORET system, the user may opt to create the storage file using the following procedure rather than the "%EASYSTOR" method. The "%easystor" method is simple to use, however, it is time consuming. The alternate method requires that the user be familiar with the station location storage card layouts described on EPA Form 7500-24(6-77), and the procedures needed to create a data set using the Quick Editor (QED). After logging on and getting the "READY" prompt, the following sequence of commands is issued:

```
READY
edit statn.storage new lrecl(88) blksize(1672)  <cr>
        (The above sequence of commands will allow
        the user to create a working space with the
        proper attributes for a STORET storage deck
        and with the name "STATN.STORAGE".)
INPUT   (The above puts the user in the "INPUT" mod.)
00010 format=stations,   <cr>
00020  <cr>   (A null line is entered to exit the input mode.)
QED   ("QED" is the prompt for the Quick Editor Facility.)
%columns  <cr>  (This STORET command procedure will print a row of column
                 numbers that are used for proper column alignment.)
      123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
QED
input  <cr>   (Return to the input mode to enter the fixed form
              station storage cards.)
INPUT
00020 11train     000 choochoohorace hawgknuckles 703 883 8861                  9999  a   <cr>
00030 stream/ambnt                                                                t   <cr>
00040    ann1                              aaaaaa1     testst093             51059     nss   <cr>
00050       484853207707184       3f010   38210mncs                                   0   <cr>
00060    north atlantic           potomac river                                02140064m   3   <cr>
00070    holmes run 2.64 miles up from potomac           02070010042off2.64    3     4   <cr>
00080    va00671 holmes run                                                           b   <cr>
00090    51 059   38 48 53.8 077 07 18.8   02070010041 on      0.9 9   64g           1e   <cr>
00100       this station was established to test storage procedures                  05   <cr>
00110       it was generated using the quick editor                                  15   <cr>
00120       data will be copied from tut1                                            25   <cr>
00130       these data are not real and should not be used for analysis              35   <cr>
00140       the data are locked                                                      45   <cr>
00150  <cr>  (A null line is entered to exit the input mode.)
QED
```

```
QED
list  <cr>  (List the contents of working space.)
00010 FORMAT=STATIONS,
00020 11TRAIN      000 CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861                  9999  A
00030 STREAM/AMBNT                                                                 T
00040    ANN1                              AAAAAA1      TESTST093              51059      NSS
00050       484853207707184       3F010    38210MNCS                                      0
00060    NORTH ATLANTIC           POTOMAC RIVER                                 02140064M   3
00070    HOLMES RUN 2.64 MILES UP FROM POTOMAC            020700100420FF2.64     3      4
00080    VA00671 HOLMES RUN                                                            B
00090    51 059   38 48 53.8 077 07 18.8   02070010041 ON       0.9 9   64G          1E
00100       THIS STATION WAS ESTABLISHED TO TEST STORAGE PROCEDURES                    05
00110       IT WAS GENERATED USING THE EASYSTOR PROCEDURES                             15
00120       DATA WILL BE COPIED FROM TUT1                                              25
00130       THESE DATA ARE NOT REAL AND SHOULD NOT BE USED FOR ANALYSIS                35
00140       THE DATA ARE LOCKED                                                        45
END OF DATA
end save  <cr>  (Save a permanent copy of the work space and return to TSO.)
SAVED
READY
%store statn.storage dummy route(hold)  <cr>  (%STORE is a STORET command pro-
                                               cedure used to submit a storage
                                               job.  Enter 'help store' to get
                                               the full explanation of the %STORE
                                               command procedure.)
  JOB III(JOB09999) SUBMITTED          (9999 is the storage job number.)
SUBMIT COMPLETED
READY
```

After the job has executed it is fetched using the procedures shown above.

RIVER MILE INDEX CODING

THE RIVER MILE INDEX SYSTEM IS A METHOD OF IDENTIFYING STREAMS SUCH THAT THEIR HYDROLOGICAL RELATIONSHIP CAN BE DETERMINED ALONG WITH THE POINTS OF INTEREST ON THE STREAMS. IT IS CONSTRUCTED BY ASSIGNING INDEX NUMBERS TO THE STREAMS AND MEASURING THE MILEAGE BETWEEN THE CONFLUENCES ON THE STREAMS. ORIGINALLY, THIS WAS DONE BY HAND. AN ATTEMPT TO AUTOMATE THE PROCESS PROVED TO BE TOO CUMBERSOME TO BE COMPLETED. SINCE THIS IDENTIFICATION METHOD IS NOT AVAILABLE FOR THE ENTIRE COUNTRY, THE RMI INFORMATION IS NOT REQUIRED. THE STORING OF THE RMI INFORMATION IS SHOWN BELOW FOR THOSE USER WHO ARE STILL UTILIZING THIS METHOD. THE EPA RIVER REACH SYSTEM, WHICH IS UNIVERSAL, HAS REPLACED THE RMI METHOD OF IDENTIFYING STATIONS BY THEIR HYDROLOGICAL RELATIONSHIP TO OTHER STATIONS AND POINTS OF INTEREST ON THE STREAM.

RMI MAP AND 1 & 2 CARD FORM GOES HERE

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.
  0817002013341000050003816000100311600100234 8                  04 1
```

COLUMNS	CONTENTS
1-3	SORT NUMBER WHICH IS NOT STORED NOR REQUIRED.
7-8	THE TERMINAL MAJOR BASIN CODE.
9-10	THE TERMINAL MINOR BASIN CODE.
11-13	THE TERMINAL STREAM NUMBER.
14-19 26-31 37-41 46-50 55-59 64-68 73-76	THE MILES UP THE STREAM TO THE CONFLUENCE OR TO THE STATION. SEE PAGES WQ-DE/3-10 THROUGH WQ-DE 3-12 FOR A DETAILED EXPLANATION OF THESE FIELDS. NO DECIMAL POINT IS ENTERED. IT IS ASSUMED THAT THE MILEAGES ARE MEASURED IN HUNDREDTHS OF MILES. THE ONE CARD CONTAINS THE MILEAGES FOR LEVEL 1 THROUGH LEVEL 7 STREAMS.
20-25 32-36 42-45 51-54 60-63 69-72	THE INDEX NUMBERS FOR EACH OF THE STREAMS ENCOUNTERED AS THE USER GOES UPSTREAM TO THE STATION. SEE PAGES WQ-DE/3-10 THROUGH WQ-DE/3-12 FOR A DETAILED DESCRIPTION OF THE CARD COLUMNS AND FIELDS UTILIZED. THE ONE CARD IS USED FOR THE INDEX NUMBERS OF LEVEL 1 THROUGH LEVEL 7 STREAMS.
77-78	THE LAST LEVEL USED WHICH IS THE STREAM LEVEL ON WHICH THE STATION IS LOCATED.
80	THE NUMBER "1" IS ENTERED TO IDENTIFY THIS AS THE ONE CARD.

COLUMNS	CONTENTS
1-3	SORT NUMBER WHICH IS NOT STORED NOR REQUIRED.
7-8	THE TERMINAL MAJOR BASIN CODE.
9-10	THE TERMINAL MINOR BASIN CODE.
11-13	THE TERMINAL STREAM NUMBER.
18-21 26-29 34-37 42-45 50-53	THE MILES UP THE STREAM TO THE CONFLUENCE OR TO THE STATION. SEE PAGES WQ-DE/3-10 THROUGH WQ-DE 3-12 FOR A DETAILED EXPLANATION OF THESE FIELDS. NO DECIMAL POINT IS ENTERED. IT IS ASSUMED THAT THE MILEAGES ARE MEASURED IN HUNDREDTHS OF MILES. THE TWO CARD CONTAINS THE MILEAGES FOR STREAMS WITH LEVELS OF 8 THROUGH 12.
14-17 22-25 30-33 38-41 46-49	THE INDEX NUMBERS FOR EACH OF THE STREAMS ENCOUNTERED AS THE USER GOES UPSTREAM TO THE STATION. SEE PAGES WQ-DE/3-10 THROUGH WQ-DE/3-12 FOR A DETAILED DESCRIPTION OF THE CARD COLUMNS AND FIELDS UTILIZED. THE TWO CARD IS USED FOR THE INDEX NUMBERS OF STREAMS WITH A LEVEL OF 8 THROUGH 12. IF THE STATION IS ON A STREAMS WITH A LEVEL OF 7 OR LESS, THE "2" CARD IS NOT USED.
80	THE NUMBER "2" IS ENTERED TO IDENTIFY THIS AS THE TWO CARD.

ALTERNATE DATA STORAGE FORMATS

STORET HAS BEEN IN EXISTENCE SINCE 1964, AND THE INITIAL DATA INPUT METHOD WAS VIA CARDS IN A FIXED FIELD FORMAT WHICH WAS IDENTIFIED AS "?01". WITH THE ADVENT OF TELECOMMUNICATION CAPABILITIES, NEW AND EASIER TO USE FORMATS WERE DEVELOPED. THESE WERE WERE FREE FORM PROCEDURES WHICH LENT THEMSELVES READILY TO TERMINALS IN THAT ITEMS DID NOT HAVE TO BE IN SPECIFIC FIELDS BUT INSTEAD WERE SEPARATED BY A DELIMITER. THESE WERE NAMED "?02" AND "?03" BUT THEY HAD CERTAIN LIMITATIONS IN THAT NOT ALL TYPES OF SAMPLES COULD BE ENTERED USING THEM AND PREVIOUSLY STORED DATA COULD NOT BE MODIFIED WITH THEM. THEREFORE, "?04" EVOLVED WHICH HAD ALL OF THE CAPABILITIES OF "?01" BUT WAS FREE FORM. WHEN THE SAMPLE KEY WAS EXPANDED TO ALLOW THE STORAGE OF MORE TYPES OF DATA, "?04" WAS ENHANCED TO HANDLE ALL TYPES OF SAMPLES AND ALL TYPES OF TRANSACTIONS (ADD, CHANGE, AND DELETE) AND RENAMED "WQS". "WQS" IS THE METHOD THAT IS NOW TAUGHT, BUT THE OTHER FORMATS WHICH ARE DESCRIBED ON THE FOLLOWING PAGES ARE STILL VIABLE. THE TABLE BELOW DEMONSTRATES THE CAPABILITIES OF EACH OF THE METHODS AND THE LIMITATIONS OF EACH ONE.

FUNCTION/USE	CODING PROCEDURE				
	WQS	?01	?02	?03	?04
STORING NEW PARAMETRIC DATA	YES	YES	YES	YES	YES
CHANGING PARAMETRIC DATA	YES	YES	NO	NO	YES
DELETING PARAMETRIC DATA	YES	YES	NO	NO	YES

SAMPLE TYPE	CODING PROCEDURE				
	WQS	?01	?02	?03	?04
GRAB SAMPLE WITH DATE ONLY DEPTH OPTIONAL	YES	YES	YES	YES	YES
GRAB SAMPLE WITH DATE AND TIME DEPTH OPTIONAL	YES	YES	YES	YES	YES
COMPOSITE SAMPLE WITH BEGINNING AND ENDING DATES	YES	YES	YES	YES	YES
QUALIFIED COMPOSITES, BEGINNING AND ENDING DATES AND TIMES, AND WITH SAMPLING CONDITION	YES	YES	NO	NO	YES
SAMPLES WITH THE EXPANDED	YES	NO	NO	NO	YES

SINGLE STATION "DIP" INPUT (?02) CAN BE USED TO STORE ALL TYPES OF DATA EXCEPT QUALIFIED COMPOSITE SAMPLES (BEGINNING AND ENDING DATES AND TIMES, TYPE OF COMPOSITING, AND COMPOSITE VALUE TYPE). IT CAN NOT BE USED TO CHANGE OR DELETE DATA. ITS MOST EFFECTIVE USE IS THE STORING OF DATA WHEN THE SAME GROUP OF PARAMETERS ARE TO BE STORED FOR DIFFERENT STATIONS, DATES, TIME, AND/OR DEPTHS. THE CARDS NEEDED TO PERFORM THIS METHOD OF STORAGE ARE:

```
?START
?02
AGENCY CARD
'P' CARD(S)
'D' CARD(S)
```

THE FOLLOWING IS AN EXAMPLE STORAGE DECK DEMONSTRATING THE REQUIRED CARDS FOR A "?02" TYPE OF STORAGE. THE FIRST AND LAST LINE ARE NOT TO BE ENTERED IN THE DATA SET. THEY ARE ONLY INCLUDED IN THE EXAMPLE TO INDICATE CARD COLUMNS. AFTER THE SAMPLE DECK OF CARDS, THERE IS AN EXPLANATION OF THE FIELDS ON EACH CARD.

```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

?START
?02
11TRAIN          CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861                          A
'P', D0009500010004000041031505
'D','205090',8201150900,20,210,6.2,7.4,110,4300,
'D','205090',820223,35,,10.1,7.6,,10000,
'D','205090',8206301300,10,250,14.8,,98,3.7E04,
'P',  00940000750090000300009450062O
'D','108130',8112141000,K15,K250,120,9.8,J25,K.85,
'D','108130',810814,L8,,L130,8.7,J20,.92,
'P',  00435004100030500940003000090001045005500065000945000750001000400004O5   C
0063000930
'D','M350J1',8004151500,8,105,2.4,17,9.8,110,15.02,95,.41,32,105,8.1,
7.5,10,20.9,135.1,
'D','M350J1',791030,6,100,,15,,105,,50,,,145,8,,8,,,
'P',BD00010004000041031505
'D','205090',800301800331,5,10.8,7.5,2.4,4.2E03,
'D','205090',800401800430,8,11.2,8.1,5.7,56000,

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
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AS SHOWN ABOVE, A SINGLE DIP STORAGE DECK MAY CONTAIN SEVERAL "P" CARDS, AND THE "D" CARDS REFER TO THE "P" CARD THAT THEY IMMEDIATELY FOLLOW.

ALL STORAGE DECKS MUST HAVE AS THE FIRST CARD A "?START" CARD. THE SECOND CARD IN ALL DECKS IDENTIFIES THE STORAGE PROCEDURES OR FORMAT THAT IS BEING USED. THE AGENCY CARD (A CARD) IS UTILIZED TO IDENTIFY THE AGENCY AND THE UNLOCKING KEY. THE AGENCY CODE IS ENTERED IN COLUMNS 1 THROUGH 8 AND THE UNLOCKING KEY IS PUT IN COLUMNS 17 THROUGH 24, AND AN "A" IS ENTERED IN COLUMN 80. THE "'P'" CARD IS USED TO SPECIFY THE PARAMETERS BEING STORED, AND WHETHER A DEPTH IS BEING STORED. IF A DEPTH IS BEING STORED, THE "'P'" CARD IS ALSO USED TO IDENTIFY THE TYPE OF DEPTH BEING STORED. THE FORMAT OF THE "'P'" CARD IS AS FOLLOWS:

FIELD	CONTENTS
1	IN COLUMNS 1 THROUGH 4 THE CARD IDENTIFIER IS ENTERED SURROUNDED BY SINGLE QUOTES AND FOLLOWED BY A COMMA ('P',). THIS IS THE "P" CARD ON WHICH THE PARAMETER CODES ARE SPECIFIED AND IF A DEPTH IS TO BE STORED, ITS TYPE IS IDENTIFIED ALONG WITH THE INDICATOR THAT A DEPTH IS TO BE STORED.
2	THE CODE FOR THE TYPE OF DEPTH BEING STORED IS ENTERED IN COLUMN 5. THE FOLLOWING ARE THE CODES THAT ARE ALLOWED:

CODE	SAMPLE TYPE
BLANK	WATER
B	BOTTOM
V	VERTICALLY INTEGRATED
P	PORE
D	DREDGE
C	CORE

3	IF A DEPTH IS TO BE STORED, A "D" IS ENTERED IN COLUMN 6. IF THIS COLUMN IS BLANK, THEN NO DEPTH IS TO BE STORED.
4	FIVE CHARACTER PARAMETER CODES (LEADING ZEROS MUST BE INCLUDED) WITH NO SPACES BETWEEN THEM ARE ENTERED IN COLUMNS 7 THROUGH 76. UP TO 14 PARAMETER CODES MAY BE ENTERED ON THIS CARD.
5	IF THERE ARE MORE THAN 14 CONSTITUENTS IN THE SAMPLES TO BE STORED, A "C" IS ENTERED IN COLUMN 80 WHICH MEANS THAT THE PARAMETER CARD IS TO BE CONTINUED ON THE NEXT CARD. IF THERE ARE 14 OR LESS PARAMETERS BEING STORED, COLUMN 80 IS LEFT BLANK.
4 CONT'D	IF COLUMN 80 OF THE PREVIOUS CARD CONTAINS A "C", THIS CARD CONTAINS FIVE DIGIT PARAMETER CODES STARTING IN COLUMN 1 AND CONTINUING UNTIL THE LAST CODE IS ENTERED OR UNTIL COLUMN 80 IS REACHED. THERE CAN ONLY BE ONE CONTINUATION CARD WHICH ALLOWS THE STORING OF UP TO 30 PARAMETERS FOR EACH "'P'" CARD.

THE OTHER TYPE OF CARD USED WITH "?02" TYPE OF STORAGES IS THE "'D'" CARD. IT IS USED TO IDENTIFY THE STATIONS BEHIND WHICH THE DATA ARE TO BE STORED ALONG WITH THE SAMPLE KEY INFORMATION (DATA, TIME, AND DEPTH). THIS IS FOLLOWED BY THE VALUE FOR THE PARAMETERS SEPARATED BY COMMAS. THE VALUES ARE ENTERED IN THE SAME ORDER AS THEIR PARAMETER CODES APPEAR ON THE "P" CARD. IF A PARAMETER DOES NOT HAVE A VALUE FOR A SAMPLE, A COMMA IS ENTERED TO MAINTAIN THE PROPER SEQUENCE.

FIELD	CONTENTS
1	COLUMNS 1 THROUGH 4 CONTAIN A "D" SURROUNDED BY SINGLE QUOTES FOLLOWED BY A COMMA ('D',). THIS IDENTIFIES THE CARD AS A DATA CARD.
2	THE STATION NUMBER IS ENTERED SURROUNDED BY SINGLE QUOTES AND FOLLOWED BY A COMMA ('STATION#',). THE STATION NUMBER MAY BE A PRIMARY OR A SECONDARY NUMBER.
3	THE DATE OR THE DATE AND TIME THAT THE SAMPLE WAS TAKEN IS ENTERED FOLLOWED BY A COMMA. THE DATE IS ENTERED IN YEAR, MONTH, AND DAY ORDER, AND THE TIME, IF USED, IS ENTERED USING THE 24 HOUR CLOCK. IF AN UNQUALIFIED COMPOSITE IS BEING ENTERED, THE BEGINNING DATE AND ENDING DATE ARE ENTERED FOLLOWED BY A COMMA.
4	IF COLUMN 6 OF THE "P" CONTAINS A "D", THE DEPTH OF THE SAMPLE IS ENTERED. IF THE "P" CARD DOES NOT HAVE A "D" IN COLUMN 6, THEN THE VALUE FOR THE FIRST PARAMETER IS ENTERED FOLLOWED BY A COMMA. WITH NO BLANKS, THE VALUE FOR THE NEXT PARAMETER IS ENTERED FOLLOWED BY A COMMA. THIS SCHEME IS CONTINUED UNTIL A VALUE HAS BEEN ENTERED FOR EACH OF THE PARAMETERS ON THE "P" CARD. IF THERE IS NO VALUE FOR ONE OF THE PARAMETERS ON THE "P" CARD, A COMMA IS ENTERED. THERE MUST BE A COMMA FOR EACH OF THE PARAMETER CODES ON THE "P" CARD. AFTER ALL OF THE VALUES FOR THE SAMPLE ARE ENTERED, THE DATA FOR THE NEXT SAMPLE ARE ENTERED USING A NEW "'D'" CARD. REMARK CODES ARE PLACED BEFORE THE VALUE. TO CONTINUE A "'D'" CARD, A COMMA IS ENTERED AFTER THE LAST VALUE ON THE PRESENT CARD, AND THE VALUES ARE CONTINUED ON THE NEXT CARD. AN UNLIMITED NUMBER OF CONTINUATION CARDS MAY BE USED.

MULTIPLE STATION "DIP" INPUT (?03) CAN BE USED TO STORE ALL TYPES OF DATA EXCEPT QUALIFIED COMPOSITE DATA (BEGINNING AND ENDING TIMES, TYPE OF COMPOSITING, AND COMPOSITE VALUE TYPE). IT CANNOT BE USED TO CHANGE OR DELETE DATA. IT IS MOST EFFECTIVELY USED WHEN DATA WAS SAMPLED AT THE SAME SET OF STATIONS AT IDENTICAL DATES AND TIMES. THE CARDS REQUIRED TO USE THIS METHOD ARE:

```
?START
?03
AGENCY CARD
'P' CARD(S)
'D' CARD(S)
```

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123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
```

```
?START
?03
11TRAIN          CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861                        A
'P',M075           M076           M077           M078           M079
'D',00620,680717,.2,.2,.2,.2,.2,
'D',00620,680718,.1,.1,.2,.2,.2,
'D',00620,680719,.2,.2,.2,.1,.1,
'D',00620,680720,.2,.1,.2,.1,.2,
'D',00620,680721,.2,.2,.2,.2,.2,
'D',00300,680717,10.8,10.9,10.9,11,11.1,
'D',00300,680718,10.8,10.8,11.2,11.2,11.2,
'D',00300,680719,10.5,10.9,11.2,10.9,11.0,
'D',00300,680720,10.6,10.8,10.9,10.6,10.8,
'D',00300,680721,10.3,10.6,10.9,10.7,10.8,
'D',00650,680717,.01,.01,K.01,K.01,.01,
'D',00650,680718,K.01,K.01,K.01,K.01,.02,
'D',00650,690719,.04,.02,.43,.19,.33,
'D',00650,680720,.03,.02,.05,.02,.02,
'P',MT001          MT002          MT003          MT004          MT005          C
    MT006          MT007                                                        D
'D',00010,6803091300,D10,5.7,4.2,6.7,8.1,6.4,2.9,8.2,
'D',00010,680301680331,DB23,6.3,7.1,3.9,4.3,8.3,3.8,2.9,
'D',00300,6803050800,DM14,7.3,8.5,3.9,5.7,9.2,10.8,12.4,
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```
123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
```

ALL STORAGE DECKS MUST HAVE AS THE FIRST CARD A "?START" CARD. THE SECOND CARD IN ALL DECKS IDENTIFIES THE STORAGE PROCEDURES OR FORMAT THAT IS BEING USED (IN THIS CASE "?03"). THE AGENCY CARD (A CARD) IS USED TO IDENTIFY THE AGENCY AND THE UNLOCKING KEY. THE AGENCY CODE IS ENTERED IN COLUMNS 1 THROUGH 8 AND THE UNLOCKING KEY IS PUT IN COLUMNS 17 THROUGH 24, AND AN "A" IS ENTERED IN COLUMN 80. THE "'P'" CARD IS USED TO SPECIFY THE STATIONS BEHIND WHICH THE DATA IS TO BE STORED. IF DEPTH IS BEING STORED, COLUMN 80 OF THE LAST "P" CARD USED MUST HAVE A "D" IN THE COLUMN. EACH "P" CARD CAN CONTAIN UP TO 5 STATION NUMBERS, AND IF MORE THAN 5 STATIONS ARE BEING USED, THE P CARD IS CONTINUED BY ENTERING A "C" IN COLUMN 80. UP TO 3 CONTINUATION CARDS MAY BE USED WHICH MEANS THAT UP TO 20 STATIONS MAY BE SPECIFIED FOR A "'P'" CARD. THE FORMAT OF THE "'P'" CARD IS SHOWN BELOW:

FIELD	CONTENTS
1	IN COLUMNS 1 THROUGH 4 THE CARD IDENTIFIER IS ENTERED SURROUNDED BY SINGLE QUOTES AND FOLLOWED BY A COMMA ('P',). THIS IS THE "P" CARD ON WHICH THE STATIONS ARE SPECIFIED BEHIND WHICH THE DATA ARE TO BE STORED.
2	THE STATION NUMBERS ARE ENTERED IN COLUMNS 5, 20, 35, 50, AND 65. IF DATA ARE TO BE STORED FOR MORE THAN 5 STATIONS, A "C" IS ENTERED IN COLUMN 80. THE NEXT CARD IS A CONTINUATION OF THE "P" CARD WITH STATION NUMBERS ENTERED IN THE SAME COLUMNS. UP TO 3 CONTINUATION CARDS MAY BE USED WHICH MEANS THAT DATA FOR UP TO 20 STATIONS MAY BE STORED. EITHER A PRIMARY OR A SECONDARY STATION NUMBER MAY BE USED.
3	IF DATA FOR 5 OR FEWER STATIONS ARE BEING STORED, AND NO DEPTH IS ASSOCIATED WITH THE SAMPLE, COLUMN 80 IS LEFT BLANK. IF DATA FOR 5 OR FEWER STATIONS ARE BEING STORED, AND THE SAMPLE HAS A DEPTH TO BE STORED WITH IT, A "D" IS ENTERED IN COLUMN 80. IF DATA FOR MORE THAN 5 STATIONS ARE TO BE STORED, A "C" IS ENTERED IN COLUMN 80. IF DEPTH IS TO BE ASSOCIATED WITH THE SAMPLES, A "D" IS ENTERED IN COLUMN 80 OF THE LAST CONTINUATION CARD.

THE OTHER TYPE OF CARD USED WITH "?03" TYPE OF STORAGE IS THE "'D'" CARD. IT IS USED TO SPECIFY THE PARAMETER FOR WHICH DATA ARE BEING STORED, THE SAMPLE KEY (DATE, TIME, DEPTH) AND THE PARAMETRIC VALUES FOR THE STATIONS SPECIFIED ON THE "'P'" CARD. THE VALUES FOR THE STATIONS ON THE "'D'" CARD MUST BE ENTERED IN SAME ORDER AS THE STATIONS APPEAR ON THE "'P'" CARD.

FIELD	CONTENTS
1	COLUMNS 1 THROUGH 4 CONTAIN A "D" SURROUNDED BY SINGLE QUOTES FOLLOWED BY A COMMA ('D',). THIS IDENTIFIES THE CARD AS A DATA CARD.
2	THE FULL FIVE DIGIT PARAMETER NUMBER IS ENTERED IN COLUMNS 5 THROUGH 9 FOLLOWED BY A COMMA.
3	THE DATE OR THE DATE AND TIME THAT THE SAMPLE WAS TAKEN IS ENTERED FOLLOWED BY A COMMA. THE DATE IS ENTERED IN YEAR, MONTH, AND DAY ORDER, AND THE TIME, IF USED, IS ENTERED USING THE 24 HOUR CLOCK. IF AN UNQUALIFIED COMPOSITE IS BEING ENTERED, THE BEGINNING DATE AND ENDING DATE ARE ENTERED FOLLOWED BY A COMMA.
4	IF COLUMN 80 OF THE "P" CARD OR THE LAST CONTINUATION CARD CONTAINS A "D" AND A DEPTH IS TO BE STORED, THE DEPTH IS ENTERED IN POSITION 4 OF THE "'D'" CARD. IT IS ENTERED USING ONE OF THE CODES IN THE FOLLOWING TABLE:

D999	SAMPLE DEPTH WHERE 999 IS THE DEPTH IN FEET
DM999	SAMPLE DEPTH WHERE THE 999 IS THE DEPTH IN METERS
DB999	BOTTOM SAMPLE WHERE THE 999 IS THE DEPTH IN FEET
DMB999	BOTTOM SAMPLE WHERE THE 999 IS THE DEPTH IN METERS
DV999	VERTICALLY INTEGRATED SAMPLE WHERE 999 IS THE LENGTH OF THE COLUMN IN FEET
DMV999	VERTICALLY INTEGRATED SAMPLE WHERE 999 IS THE LENGTH OF THE COLUMN IN METERS
DP999	PORE SAMPLE WHERE THE 999 IS THE LENGTH OF THE CORE FROM WHICH THE WATER WAS EXTRACTED IN FEET
DMP999	PORE SAMPLE WHERE THE 999 IS THE LENGTH OF THE CORE FROM WHICH THE WATER WAS EXTRACTED IN METERS
DD999	DREDGE SAMPLE WHERE THE 999 IS THE LENGTH OF THE DREDGE IN FEET
DMD999	DREDGE SAMPLE WHERE THE 999 IS THE LENGTH OF THE DREDGE IN METERS

DC999 CORE SAMPLE WHERE 999 IS THE DISTANCE FROM THE TOP OF THE CORE TO MIDDLE OF THE SAMPLE ANALYZED IN FEET

DMC999 CORE SAMPLE WHERE THE 999 IS THE DISTANCE FROM THE TOP OF THE CORE TO THE MIDDLE OF THE SAMPLE ANALYZED IN METERS

5 THE VALUE FOR THE FIRST STATION FOR THE SPECIFIED PARAMETER IS ENTERED FOLLOWED BY A COMMA. THIS SCHEME IS CONTINUED UNTIL A VALUE FOR EACH STATION HAS BEEN ENTERED. IF A STATION DOES NOT HAVE A VALUE FOR THE PARAMETER, A COMMA IS ENTERED WITH NO VALUE. THERE MUST BE A COMMA FOR EACH OF THE STATIONS SO POSITIONING IS MAINTAINED. DATA FOR THE NEXT PARAMETER ARE ENTERED ON THE NEXT CARD IN THE SAME MANNER. REMARK CODES ARE ENTERED IN FRONT OF THE VALUE. THE "'D'" CARD MAY BE CONTINUED ON THE NEXT CARD BY ENDING THE PRESENT CARD WITH A COMMA, AND CONTINUING ON THE NEXT CARD WITH THE VALUE FOR THE NEXT STATION.

WQSSTORE (?04) TYPE OF DATA INPUT CAN BE USED TO STORE PARAMETRIC DATA FOR ALL TYPES OF SAMPLES (GRAB, ALL TYPES OF COMPOSITES, AND ALL OF THE VARIOUS SAMPLE KEYS). IT ALSO CAN BE USED TO CHANGE AND DELETE PREVIOUSLY STORED DATA. IT UTILIZES THE FREE FORM METHOD OF INPUT (ITEMS DO NOT HAVE TO BE ENTERED IN CERTAIN COLUMNS). THEREFORE, IT LENDS ITSELF READILY TO INPUTTING DATA VIA TERMINALS. THE CARDS NEEDED TO EFFECT THIS METHOD OF STORAGE ARE AN AGENCY CARD (EITHER THE STANDARD "A" CARD OR THE FREE FORMAT "AC" CARD) AND AN "SC" CARD.

```
?START
?04
AGENCY CARD (EITHER FIXED OR VARIABLE)
SAMPLE CARD(S)
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SEE PAGES WQ-DE/4-40 THROUGH WQ-DE/4-47 FOR A COMPLETE EXPLANATION OF THE CODES USED WITH THIS METHOD OF STORING DATA. THE FOLLOWING IS THE FORMAT OF THE VARIABLE AGENCY CARD:

AC,A=AGENCY CODE,UK=UNLOCKING KEY,USER=ANYTHING,NDC,

FIELD	CONTENTS
1	COLUMNS 1 THROUGH 3 CONTAIN "AC," WHICH IS THE CARD IDENTIFIER. THE COMMA IS THE DELIMITER, I.E., SEPARATOR OF ITEMS.
2	THE FIELD CONTAINS AN "A" SET EQUAL TO THE AGENCY CODE BEHIND WHICH THE DATA ARE TO BE STORED (A=AGENCY CODE).
3	THE UNLOCKING KEY FOR THE AGENCY IS SPECIFIED BY SETTING "UK" EQUAL TO IT (UK=UNLOCKING KEY).
4	THE "USER= " FIELD CONTAINS ANY CHARACTERS THE USER DESIRES. THEY ARE NOT STORED AND SHOULD BE USED TO IDENTIFY THE JOB OR THE RUN. IT IS AN OPTIONAL FIELD.
5	"NDC", IF USED, WILL OVERRIDE THE DATE CHECKING ROUTINE. IT IS RECOMMENDED THAT THIS OPTION NOT BE USED SINCE IT WILL ALLOW THE STORING OF INVALID DATES OR TIMES. IT SHOULD ONLY BE USED TO STORE DATA SAMPLED PRIOR TO JANUARY 1, 1932.

THE FREE FORM AGENCY CARD LENDS ITSELF READILY FOR USE WITH A TERMINAL SINCE ITEMS DO NOT HAVE TO BE IN PARTICULAR COLUMNS. EACH ITEM IS SEPARATED BY A COMMA AND THE LAST ITEM MUST BE FOLLOWED BY A COMMA.

THE FOLLOWING IS A SAMPLE OF A ?04 TYPE STORAGE DECK. NOTE THAT AS WITH ALL STORAGE DECKS, THE FIRST TWO CARDS ARE ?START AND A FORMAT IDENTIFIER, IN THIS CASE A ?04. AFTER THE "AC" CARD, AS MANY "SC" CARDS ARE ENTERED AS ARE NEEDED. TO CONTINUE A "SC" CARD, END THE PRESENT CARD WITH A COMMA, AND THEN START THE NEXT CARD IN COLUMN 1.

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

```
?START
?04
AC,A=11TRAIN,UK=CHOOCHOO,USER=HORACE HAWGKNUCKLES 703 883 8861,
SC,M075,680717,D100,P620,.2,P300,10.8,P650,.01,
SC,M075,680718,D100,P620,.1,P300,10.8,P650,.01K,
SC,M075,680719,D100,P620,.2,P300,10.5,P650,.04,
SC,M075,680720,680720,D100,A,S,G,P620,.2,P300,10.6,P650,.02,
SC,ABC099NM,750823,P400,7.8,P610,13K,
SC,ABC099NM,7508241200,DM10,P10,10.8,P300,9.1L,P400,8.4,P610,16,P940,35,
SC,ABC099NM,7508250800,DMV15,P400,7.6,P940,63,
SC,ABC099NM,7508260900,D10,P400,7.4,PC10,14.5,P620,.3,PD650,
P300,11.3,
SC,ABC099NM,7508271200,D10,DEL,
SC,ABC099NM,750816,750818,D3,P10,15,P300,15.4,P610,16.3,
SC,ABC099NM,7508271200,7508311200,A,S,GN15,P10,12.4,P310,88.2,P610,15.8,
SC,ABC099NM,7508271200,7508311200,H,S,GN15,P10,16.8,P310,98.2,P610,18.8,
SC,ABC099NM,7508271200,7508311200,L,S,GN15,P10,10.2,P310,81.2,P610,13.7,
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123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

THE FOLLOWING IS AN EXPLANATION OF THE "SC" CARD:

FIELD	CONTENTS
1	"SC," IS ENTERED WHICH IS THE CARD IDENTIFIER. THE COMMA IS USED THROUGHOUT AS THE DELIMITER, I.E., SEPARATOR OF ITEMS.
2	THE STATION NUMBER IS ENTERED FOLLOWED BY A COMMA. EITHER A PRIMARY OR SECONDARY NUMBER MAY BE USED.
3	FOR A GRAB SAMPLE, THE DATE AND THE TIME, IF PRESENT, THAT THE SAMPLE WAS TAKEN IS ENTERED FOLLOWED BY A COMMA. IF THE SAMPLE IS AN UNQUALIFIED COMPOSITE, THEN THE BEGINNING DATE IS ENTERED FOLLOWED BY A COMMA. IF THE SAMPLE IS A QUALIFIED COMPOSITE, THEN THE BEGINNING DATE AND TIME IS ENTERED FOLLOWED BY A COMMA. DATES ARE ENTERED IN YEAR, MONTH, DAY ORDER, AND IF A TIME IS TO BE SPECIFIED, THE 24 HOUR CLOCK IS UTILIZED.
4	FOR A GRAB SAMPLE WITH OR WITHOUT TIME, THIS FIELD IS IGNORED. FOR UNQUALIFIED COMPOSITES, THE ENDING DATE IS ENTERED, AND FOR QUALIFIED COMPOSITES, THE ENDING DATE AND TIME IS ENTERED. IF THIS IS USED, THE FIELD MUST BE TERMINATED WITH A COMMA. IF THE FIELD IS NOT NEEDED, NOTHING IS ENTERED, NOT EVEN A COMMA.

IF THE DEPTH AT WHICH THE SAMPLE WAS TAKEN IS TO BE SPECIFIED, THIS FIELD MUST CONTAIN ONE OF THE FOLLOWING VALUES FOLLOWED BY A COMMA:

D999	SAMPLE DEPTH WHERE 999 IS THE DEPTH IN FEET
DM999	SAMPLE DEPTH WHERE THE 999 IS THE DEPTH IN METERS
DB999	BOTTOM SAMPLE WHERE THE 999 IS THE DEPTH IN FEET
DMB999	BOTTOM SAMPLE WHERE THE 999 IS THE DEPTH IN METERS
DV999	VERTICALLY INTEGRATED SAMPLE WHERE 999 IS THE LENGTH OF THE COLUMN IN FEET
DMV999	VERTICALLY INTEGRATED SAMPLE WHERE 999 IS THE LENGTH OF THE COLUMN IN METERS
DP999	PORE SAMPLE WHERE THE 999 IS THE LENGTH OF THE CORE FROM WHICH THE WATER WAS EXTRACTED IN FEET
DMP999	PORE SAMPLE WHERE THE 999 IS THE LENGTH OF THE CORE FROM WHICH THE WATER WAS EXTRACTED IN METERS
DD999	DREDGE SAMPLE WHERE THE 999 IS THE LENGTH OF THE DREDGE IN FEET
DMD999	DREDGE SAMPLE WHERE THE 999 IS THE LENGTH OF THE DREDGE IN METERS
DC999	CORE SAMPLE WHERE 999 IS THE DISTANCE FROM THE TOP OF THE CORE TO MIDDLE OF THE SAMPLE ANALYZED IN FEET
DMC999	CORE SAMPLE WHERE THE 999 IS THE DISTANCE FROM THE TOP OF THE CORE TO THE MIDDLE OF THE SAMPLE ANALYZED IN METERS

6 FOR A GRAB SAMPLE OR AN UNQUALIFIED COMPOSITE (BEGINNING DATE AND ENDING DATE), THIS FIELD IS IGNORED. FOR A QUALIFIED COMPOSITE, THIS FIELD MUST CONTAIN ONE OF THE FOLLOWING FOLLOWED BY A COMMA:

TYPE OF COMPOSITE VALUE	
A	AVERAGE
H	MAXIMUM
L	MINIMUM
N	NUMBER OF OBSERVATIONS FOR THE SAMPLE
S	STANDARD DEVIATION
U	SUM OF SQUARES
V	VARIANCE
C	COEFFICIENT OF ERROR
X	COEFFICIENT OF VARIANCE
E	SKEWNESS
F	KURTOSIS
Z	NUMBER OF SAMPLES IN COMPOSITE EXCEEDS ESTABLISHED LIMIT
%	PRECISION
$	ACCURACY
B	NONE OF THE ABOVE
D	INDICATES REPLICATE SAMPLE

7 THIS FIELD IS USED ONLY WITH QUALIFIED COMPOSITES, AND ONE OF THE FOLLOWING MUST BE ENTERED FOR THIS TYPE OF SAMPLE FOLLOWED BY A COMMA:

TYPE OF COMPOSITE	
S	SPACE
T	TIME
B	BOTH
F	FLOW PROPORTIONAL COMPOSITE
1-9	REPLICATE NUMBER

8 THIS FIELD IS IGNORED EXCEPT WITH QUALIFIED COMPOSITES. FOR THEM, ONE OF THE FOLLOWING IS CODED FOLLOWED BY A COMMA.

SAMPLING METHOD	
C	SAMPLES COLLECTED CONTINUOUSLY
G	GRAB SAMPLES, NUMBER COMPRISING SAMPLE NOT REPORTED
GNXX	GRAB SAMPLES WITH XX INDICATING THE NUMBER OF SAMPLES
B	NONE OF THE ABOVE. USED WITH REPLICATE SAMPLES

9 ALL TYPES OF SAMPLES USE THIS FIELD, AND IT IS USED TO SPECIFY THE PARAMETER FOR WHICH A TRANSACTION IS TO BE PERFORMED. ONE OF THE FOLLOWING IS ENTERED:

- ** PXXXXX, NEXT VALUE IS TO BE STORED FOR PARAMETER XXXXX
- ** PCXXXXX, CHANGE THE EXISTING VALUE FOR PARAMETER XXXXX TO THE VALUE IN THE NEXT FIELD FOR THE SAMPLE THAT HAS THE DATE, TIME, AND DEPTH INDICATED IN THE PREVIOUS SAMPLE KEY FIELDS
- ** PDXXXXX, DELETE THE VALUE STORED FOR PARAMETER XXXXX FOR THE DATE, TIME, AND DEPTH INDICATED IN THE PREVIOUS SAMPLE KEY FIELDS
- DEL, DELETE THE ENTIRE SAMPLE WITH THE DATE, TIME, AND DEPTH INDICATED IN THE PREVIOUS SAMPLE KEY FIELDS

10 FOR ALL OF THE ABOVE CODES EXCEPT PDXXXXX AND DEL, THE VALUE TO BE ADDED OR THE NEW VALUE FOR A CHANGE IS ENTERED FOLLOWED BY A COMMA.

FIELDS 9 AND 10 ARE REPEATED UNTIL ALL OF THE INFORMATION FOR THE SAMPLE IS ENTERED. PDXXXXX IS NEVER FOLLOWED BY A VALUE, AND DEL IS USED ONLY ONCE PER SAMPLE WITH NO OTHER INFORMATION INDICATED. TO CONTINUE A "SC" CARD, A COMMA IS PLACED AT THE END OF THE LINE, AND PARAMETER CODES AND VALUES ARE ENTERED ON THE NEXT LINE STARTING IN COLUMN 1. ONE "SC" CARD AND ITS CONTINUATION CARDS MAY CONTAIN UP TO 500 COMMAS WHICH MEANS THAT DATA FOR 246 TO 248 PARAMETERS MAY BE ENTERED ON ONE "SC" CARD AND ITS CONTINUATION CARDS. WHEN USING THE ?04 TYPE OF STORAGE, DATA MAY BE ADDED, DELETED, AND CHANGED WITHIN ONE "SC" CARD DEPENDING UPON THE CODES IN FIELD 9 (P, PC, PD, DEL). AS MANY "SC" CARDS ARE USED AS THERE ARE SAMPLES TO BE STORED. REMARK CODES ARE ENTERED IMMEDIATELY AFTER THE VALUE FOR A PARAMETER. WITH THE ?04 STORAGE FORMAT, LEADING ZEROS ARE NOT NEEDED FOR THE PARAMETER CODES.

** "XXXXX" MAY BE REPLACED WITH THE SPECIAL CODE "AQ" WHICH MEANS THAT AN AQUIFER CODE IS TO BE STORED. IT ALLOWS THE GEOLOGIC AGE (PARAMETER 84000) AND THE AQUIFER CODE (PARAMETER 84001) TO BE CONCATENATED AS ONE VALUE FOLLOWING THE "PAQ", E.G., PAQ,210MNCS,.

THE FIXFORM (?01) METHOD OF STORING DATA CAN BE USED TO STORE ALL TYPES OF DATA INCLUDING QUALIFIED COMPOSITE DATA. IT CAN ALSO BE USED TO CHANGE AND DELETE EXISTING DATA. IT UTILIZES A FIXED FORMAT CARD (ITEMS MUST BE ENTERED IN SPECIFIC COLUMNS). THEREFORE, IT LENDS ITSELF READILY TO DATA TO BE ENTERED VIA CARDS. IT ALSO IS A USEFUL FORMAT WHEN CONVERTING DATA FROM AN EXISTING SYSTEM BY A CONVERSION PROGRAM. IT IS CUMBERSOME TO USE WITH LOW-SPEED TERMINALS. THE CARDS NECESSARY TO EFFECT THIS TYPE OF STORAGE ARE A STANDARD AGENCY CARD, A STATION CARD, AND DATA ("6") CARDS. THE CARD FORMAT FOR THE STORAGE OF GRAB SAMPLES AND UNQUALIFIED COMPOSITES IS SHOWN ON PAGES WQ-DE/4-48 THROUGH WQ-DE/4-51 OF THE STORET MANUAL. THE CARD LAYOUT FOR QUALIFIED COMPOSITES IS ON PAGES WQ-DE/4-52 THROUGH WQ-DE/4-53.

```
                        ?START
                        ?01
                        AGENCY CARD
                        STATION CARD
                        DATA CARDS ("6" IN COLUMN 80)

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.

?START
?01
1ITRAIN          CHOOCHOOHORACE HAWGKNUCKLES 703 883 8861     F                 A
   SEMINAR01A                                                                  S
      741218       00300780011 00010103012 31505100015 00620100000 00650300001  6
      7412191800   00300930011 00010112012 31505900014 00620200000 00650400001K 6
   0107412201600   00300790011 00010127012 31505890014 00620150000 00650380001  6
      741201741231003008100111 00010124012 3150589001400620180000K00650290001L 6
      7501311200TA50101C1200G 00300840011 00010940011 3150510001500620210000  6
      7501311200TA50101C1200G 00650290001                                      6

123456789.123456789.123456789.123456789.123456789.123456789.123456789.123456789.
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THE ABOVE DECK DEMONSTRATES THE FORMAT FOR THE TYPES OF SAMPLES WHICH MAY BE STORED WITH THE 201 TYPE OF STORAGE PROCEDURE. THE FIRST LINE AFTER THE STATION CARD IS A SIMPLE GRAB. THE NEXT LINE IS A GRAB SAMPLE WITH A TIME. THE THIRD LINE DEMONSTRATES THE FORMAT FOR STORING A GRAB SAMPLE WITH A DEPTH. THE FOURTH LINE SHOWS THE REQUIRED ITEMS TO STORE AN UNQUALIFIED COMPOSITE (BEGINNING DATE AND ENDING DATE ONLY), AND THE LAST TWO LINES SHOW THE CODING FOR A QUALIFIED COMPOSITE (BEGINNING AND ENDING DATES AND TIMES ALONG WITH THE TYPE OF COMPOSITE, TYPE OF VALUE, AND SAMPLING METHOD). NOTE THAT THE QUALIFIED COMPOSITE REQUIRED AN EXTRA CARD TO STORE THE SAME AMOUNT OF DATA BECAUSE THE FIRST PARAMETER CODE FIELD WAS USED TO STORE THE BEGINNING DATE AND TIME. THE FOLLOWING IS A MORE COMPLETE EXPLANATION OF THE VARIOUS FIELDS ON THE 6 CARDS:

COLUMNS	CONTENTS
1-3	SORT NUMBER WHICH IS NOT REQUIRED NOR IS IT STORED.
4-6	DEPTH OF THE SAMPLE WHEN PRESENT.
7-12	FOR A SIMPLE GRAB SAMPLE, THE YEAR, MONTH, AND DAY THE SAMPLE WAS TAKEN IS ENTERED. FOR AN UNQUALIFIED COMPOSITE, THE BEGINNING DATE IS ENTERED. FOR A QUALIFIED COMPOSITE, THE ENDING DATE IS ENTERED.
13-18	FOR A SIMPLE GRAB, COLUMNS 13-16 WILL CONTAIN THE TIME OF THE SAMPLE IF PRESENT. FOR A SIMPLE COMPOSITE, THE ENDING DATE IS ENTERED IN COLUMNS 13-18, AND FOR A QUALIFIED COMPOSITE, THE ENDING TIME IS ENTERED IN COLUMNS 13-16. FOR A QUALIFIED COMPOSITE, COLUMN 17 CONTAINS THE TYPE OF COMPOSITE (SPACE = S, TIME = T, OR BOTH = B), AND COLUMN 18 CONTAINS THE TYPE OF VALUE BEING ENTERED (AVERAGE = A, MAXIMUM = H, ETC. SEE THE PREVIOUS TABLE FOR ALL OF THE VALUE TYPES).
19-23 31-35 43-47 55-59 67-71	FOR ALL TYPES OF SAMPLES EXCEPT QUALIFIED COMPOSITES, THESE FIELDS CONTAIN THE PARAMETER CODES BEING STORED FOR THE SAMPLE. EACH "6" CARD FOR SIMPLE SAMPLES CAN CONTAIN UP TO 5 PARAMETER CODES AND THEIR VALUES.
24-27 36-39 48-51 60-63 72-75	FOR ALL TYPES OF SAMPLES EXCEPT QUALIFIED COMPOSITES, THE VALUE FOR THE POLLUTANT IS ENTERED IN THESE FIELDS WITH THE DECIMAL POINT ASSUMED TO BE IN FRONT OF THE NUMBER. THE EXPONENT MOVERS DETERMINE THE FINAL LOCATION OF THE DECIMAL POINT.

28,40 52,64 76	FOR ALL TYPES OF SAMPLES EXCEPT QUALIFIED COMPOSITES, THESE COLUMNS CONTAIN THE DIRECTION THAT THE DECIMAL POINT IS TO BE MOVED. A "1" INDICATES THAT THE DECIMAL POINT IS TO BE MOVED TO THE RIGHT, AND A "0" MEANS THAT IT IS TO BE MOVED TO THE LEFT. BEFORE IT IS MOVED, THE DECIMAL POINT IS ASSUMED TO BE IN FRONT OF THE NUMBER.
29,41 53,65 77	FOR ALL TYPES OF SAMPLES EXCEPT QUALIFIED COMPOSITES, THESE COLUMNS CONTAIN THE NUMBER OF PLACES THAT THE DECIMAL POINT IS TO BE MOVED, AND ALONG WITH THE NUMBER IN THE PREVIOUS FIELD, THIS DETERMINES THE ACTUAL VALUE BEING STORED.
30,42, 54,66, 78	EXCEPT FOR QUALIFIED COMPOSITES, THESE COLUMNS CONTAIN THE REMARK CODES, IF NEEDED, FOR THE VALUE.
79	IF A DEPTH IS BEING STORED, THIS COLUMN CONTAINS THE TYPE OF DEPTH BEING STORED FOR THE SAMPLE. THE TABLE BELOW SHOWS THE VALUES AND THEIR MEANINGS:
80	A "6" IS ENTERED INDICATING THAT THIS IS A SIX CARD.

FOR ?01 TYPE OF STORAGE, THE FOLLOWING ARE THE CODES THAT ARE ENTERED IN COLUMN 79 OF THE 6 CARD:

CODE	SAMPLE TYPE
BLANK	WATER
1	BOTTOM
2	VERTICALLY INTEGRATED
3	PORE
4	DREDGE
5	CORE

FOR QUALIFIED COMPOSITE SAMPLES, THE PARAMETER, VALUE, AND EXPONENT FIELDS FOR THE FIRST PARAMETER HAVE A DIFFERENT MEANING. THE REMAINING FIELDS ARE THE SAME. SINCE THE FIRST PARAMETER FIELD IS BEING USED FOR DIFFERENT PURPOSES, ONLY 4 PARAMETERS MAY BE STORED PER "6" CARD.

COLUMNS	CONTENT
19-23	THE LAST 5 DIGITS OF THE BEGINNING DATE OF THE COMPOSITE.
24-28	THE LETTER "C" FOLLOWED BY THE BEGINNING TIME OF THE COMPOSITE. THE "C" INDICATES THAT THE SAMPLE IS A COMPOSITE.
29	THE SAMPLING METHOD IS ENTERED, EITHER A "G" FOR A GRAB SAMPLING METHOD, A "C" INDICATING CONTINOUS SAMPLING IS BEING DONE, OR A TWO DIGIT NUMBER REPRESENTING THE NUMBER OF GRAB SAMPLES MAKING UP THE COMPOSITE. WHEN THIS IS USED, COLUMNS 29 AND 30 ARE UTILIZED.

THE REMAINING FIELDS RETAIN THEIR NORMAL MEANINGS.

CHANGE LOG

MINOR CHANGE MADE TO THE FOLLOWING PAGES ON SEPT. 6, 1985 BY LOUIS HOELMAN:
3, 5, 9, 18, 22, 36, 42, 51, 52, 53

ADDED HUC AND REACH TO STATION CHANGE PROCEDURES AND STORAGE PROBLEM 9/6/85 BY HOELMAN:
25, 27

ADDED ?00 DATA STORAGE TO FOLLOWING PAGES BY HOELMAN ON 9/6/85:
41, 43.11 THROUGH 43.22, 61, 61.11, 62, 62.11, 62.12

SPELLING ERROR CORRECTED ON PAGE 43.11 BY LOUIS HOELMAN ON 87/07/08

CHANGED STATION AND DATA STORAGE TSO PROCEDURES TO REFLECT NEW OUTPUT
FROM STORAGE JOB AND USING ?00 FOR DATA STORAGE BY HOELMAN ON 87/07/08.
PAGES AFFECTED: 32, 32.1, 65, 66, 67, 67.1, 68. ALSO MINOR CHANGES
WERE MADE TO PAGES 43, 43.13, 43.18

MINOR CHANGES MADE TO PAGES 41, 51, AND 58 BY LOUIS HOELMAN ON 85/12/16.

MINOR AND COSMETIC CHANGES MADE TO PAGES 1, 2, 7, 21, 24,24,26, 32, 40,
43.13, 43.14, 43.16, 43.18, 43.21, 43.22, 44, 47, 49, 50, 51, 52, 55, 57,
58, 59, 61, 61.11, 62, 62.11, 62.12, 63, 67,
ADDED THAT THE HYDRLOGIC CODE IS REQUIRED FOR STATION STORAGE PAGES 6, 18, 30.
ALL OF THIS ON 87/07/03 BY LOUIS HOELMAN.
DATA SET NAME CORRECTED ON PAGE 32 ON APR. 7, 1986.

MINOR CHANGES MADE TO THE FOLLOWING PAGES BY LOUIS HOELMAN: 7,8,21,24,25,26,
30,31,32.1,33,34,35,43.13,43.17,43.18,43.19,44,47,52,56,57,60,61,61.11,62,62.11,
62.12,63,65,66,67.1,AND 68.

NEW ZEASYSTOR PROCEDURES ENTERED, MOVED ?01, ?02, ?03, AND ?04 TO APPENDIX. MOVED
RMI TO APPENDIX. ADDED THE "B" AND "E" STATION STORAGE CARDS PUT IN "FORMAT=ETC.,"
AND RENUMBERED ALL OF THE PAGES ON JULY 8, 1987.

BASIN IS NO LONGER REQUIRED. SHOWED THE NEW AT AND DT CONTROL COD ES ON THE A CARD
MINOR SPELLING CORRECTIONS ON MARCH 25, 1988.

NEW STATION STORAGE FORMAT DOCUMENTED AND ?01 MOVED TO APPENDIX
NEW STATION TYPES ADDED AND PAGES RENUMBERED. Sept. 27, 1988

THIS DATA SET WAS LAST UPDATED MAR 13, 1989 AND MOVED ON-LINE MAR 13, 1989.