

DATA REPORTING MANUAL  
for the  
GROUND WATER MANAGEMENT PROGRAM

Washington Department of Ecology  
October 1987.

Ground water data collected as part of a Ground Water Management Program (Chapter 173-100 WAC) must be submitted to the Department of Ecology (Ecology) Grant Project Officer in accordance with the instructions in this manual. The manual consists of three parts; Part I deals with well construction and water level information, Part II with water quality information, and Part III with other miscellaneous types of ground water data.

Data must be submitted to Ecology in computer files in the formats explained in Parts I, II, and III.

Data shall be transmitted to Ecology in April and October of each year. The initial transfer shall contain all the data in the format outlined in this manual. The subsequent data updates shall contain only new information such as additions and modifications to the initial data. Data shall be error-checked and verified before being transmitted to Ecology.

Data transmitted to Ecology must be accompanied by the name and phone number of a contact person who can address questions or corrections.

Part I

Water Well Construction and Water Level Information

Table of Contents

	<u>page</u>
Introduction and Data Form.....	A-1
Field Characteristics.....	B-1
Coding Instructions.....	C-1
Aquifer Codes.....	D-1
Source Agency Codes.....	E-1
Example Completed Form and Corresponding Computer Files.....	F-1

## Section A - Introduction

Data in Part I on well construction and water levels will be entered into the USGS WATSTORE system by Ecology. Therefore, the data format required by Ecology is based on the WATSTORE system. To ensure that data on individual wells are not entered twice into the system, it will be necessary to contact the USGS and request a retrieval of existing information for the project area. The corresponding USGS field numbers are shown on the Data Form in the small boxes followed by an equal sign and in brackets in the Coding Instructions (Part I, Section C). Contact Dave Sapik of the USGS (206-593-6510) for more information.

Well construction data must be transmitted to Ecology for each well identified under the Ground Water Management Program. This includes any well used for defining stratigraphy, water level contours, or other analyses. Water levels must be reported for each well measured. When well inventories are conducted (a minimal amount of data is collected for a very large number of wells), this data should be handled according to the instructions in Part III. Data shall be error-checked and verified before being transmitted to Ecology.

Data must be submitted to Ecology in computer files on PC/MS-DOS 2.1 (or compatible) formatted 5-1/4 inch diskettes. A printout of all computer files submitted must be included with the diskettes. The computer files for Part I can be in dBASE II, dBASE III, SMART, or ASCII data-type formats. ASCII data-type files are specially formatted files in which fields are separated from each other by commas and text fields are enclosed by quotation marks. A carriage return and line feed marks the end of each record; a control Z character marks the end of the file. Blank fields must be carried; leading zeros are not needed except where noted in the coding instructions. (An example of an ASCII data file is shown in Part I, Section F.)

The well construction and water level data are divided into 14 files that are linked together through the Site ID. The file naming conventions are listed below:

1. SITE FILE	SITE?? .xxx
2. GROUND WATER MANAGEMENT IDENTIFICATION FILE	GWMID?? .xxx
3. OWNERS FILE	OWN?? .xxx
4. CONSTRUCTION FILE	CONST?? .xxx
5. HOLE DIAMETER FILE	HOLE?? .xxx
6. CASING FILE	CASE?? .xxx
7. OPENINGS FILE	OPEN?? .xxx
8. LIFT FILE	LIFT?? .xxx
9. OTHER DATA AVAILABLE FILE	OTDA?? .xxx
10. GEOPHYSICAL LOGS FILE	GEOL?? .xxx
11. NETWORK FILE	NETW?? .xxx
12. WELL FIELD FILE	WLFD?? .xxx
13. WATER LEVEL FILE	WTLV?? .xxx
14. MEASURING POINT FILE	MPNT?? .xxx

The "??" shown in each file name are to be replaced with the Ranking Number for each Ground Water Management Area from the General Schedule (listed in the Coding Instructions in Section C for Field 38). The "xxx" should be replaced with "ASC" for an ASCII file, "DB" for SMART database files, and "DB2" or "DB3" for DBASE2 or DBASE3 files respectively. There is always one sitefile record for each well, but there may be multiple records per well for the other files. The first field for each file other than the site file should always be the site ID, as shown in the example in Section F.

An example of the Data Form follows. This form is for Lead Agency use only; do not transmit paper forms to Ecology. Additional forms are available upon request from the Ecology Grant Project Officer. Mandatory fields are shaded in green on the form. Fields outlined in green are mandatory if the information is reasonably available, such as from a drillers report or other easily available source. Fields outlined in black are not mandatory.

A summary of field characteristics is given in Section B followed by the detailed coding instructions in section C. Sections D and E list the Aquifer and Source Agency codes, respectively. Section F gives an example of a completed form and the corresponding ASCII files.

# WASHINGTON STATE DEPARTMENT OF ECOLOGY GROUND WATER MANAGEMENT DATA FORM

**SITE FILE**

WASHINGTON STATE START CARD NUMBER

TRANSACTION T= A D M  
ADD, DELETE, MODIFY

1. SOURCE AGENCY 4= W A 0, 0, 1

2. SITE ID. L A T I T U D E      L O N G I T U D E      W E L L N O.

3. LOCAL NO. 12= N /      R A N G E E / W      S E C.      S U B      S E Q. N O.

4. LATITUDE 9=      D E C.      M I N.      S E C.

5. LONGITUDE 10=      D E C.      M I N.      S E C.

6. LAT/LONG ACCURACY 11= S F T M  
SEC, 5 SEC, 10 SEC, MIN

7. STATE 7=

8. COUNTY 8=

9. LOCATION MAP 14=

10. SCALE 15=

11. ALTITUDE 16=

12. METHOD OF MEASUREMENT 17= A L M  
ALTIMETER, LEVEL, MAP

13. ACCURACY 18=

14. HYDROLOGIC UNIT 20=

15. STATION TYPE 802= S L E C P G M  
STREAM, LAKE OR RESERVOIR, ESTUARY, COASTAL (NOT ESTUARY), SPRING, GROUND WATER (NOT SPRING), METEOROLOGICAL

16. AGENCY USE 803= A I O  
ACTIVE, INACTIVE, INVENTORY ONLY

17. REMARKS 806=

18. DATE SITE ESTABLISHED 711=      /      /      Y E A R  
MONTH      DAY      YEAR

19. DATA RELIABILITY 3= C L M U  
CHECKED, LOCAL, MINIMAL, UNCHECKED

20. SITE TYPE 2= C D E H I M O P S T W X  
COLLECTOR, DRAIN, EXCAVATION, SINK-HOLE, CONJECTOR WELLS, MULTIPLE, OUTCROP, POND, SPRING, TUNNEL OR SHAFT, WELL, TEST HOLE

21. DATE OF FIRST CONSTRUCTION 21=      /      /      Y E A R  
MONTH      DAY      YEAR

22. USE OF SITE 23= A C D E G H M O P R S T U W X Z  
ARNDT, STANDBY, EMER SUPPLY, DRAIN, GEOTHERMAL, SEISMIC, HEAT RESERV., MINE, OBSERVATION, OIL OR GAS, RECHARGE, REPRESS, TEST, UNUSED, WITHDRAWAL, WASTE, DESTROYED

23. SECONDARY SITE USE 301=

24. TERTIARY SITE USE 302=

25. USE OF WATER 24= A B C D E F H I J K M N P Q R S T U Y Z  
AIR-COND., BOTTLING, COMMERCIAL, DE-WATER, POWER, FIRE, DOMESTIC, IRRIGATION, INDUSTRIAL (COOKING), MINING, MEDICINAL, INDUSTRIAL, PUBLIC SUPPLY, AQUACULTURE, RECREATION, STOCK, INSTITUTION, CRUSHED, DESAL, OTHER

26. SECONDARY WATER USE 25=

27. TERTIARY WATER USE 26=

28. AQUIFER TYPE CODE 713= U N C M X  
UNCONFINED, SINGLE, UNCONFINED, MULTIPLE, CONFINED, SINGLE, CONFINED, MULTIPLE, MIXED

29. PRIMARY AQUIFER 714=

30. WELL DEPTH 28=

31. HOLE DEPTH 27=

32. SOURCE OF DEPTH DATA 29=

33. INVENTORY WATER LEVEL 30=

34. DATE MEASURED 31=      /      /      Y E A R  
MONTH      DAY      YEAR

35. METHOD OF MEASUREMENT 34= A B C E G H L M N R S T V Z  
AIRLINE, ANALOG, CALIBRATED AIRLINE, ESTIMATED, PRESSURE GAGE, CALIBRATED PRESSURE GAGE, GEOPHYSICAL LOGS, MANOMETER, NON REC. GAGE, REPORTED, STEEL TAPE, ELECTRIC TAPE, CALIBRATED ELECTRIC TAPE, OTHER

36. SITE STATUS 37= D E F G H I J N O P R S T V W X Z  
DRY, RECENTLY FLOWING, FLOWING, NEARBY FLOWING, NEARBY RECENTLY FLOWING, INJECTOR SITE, IN-SITE MONITOR, MEAS. DISCON., OB. STRUCTION, PUMPING, RECENTLY PUMPED, NEARBY PUMPING, NEARBY RECENTLY PUMPED, FOREIGN SUBSTANCE, WELL DESTROYED, SURFACE WATER EFFECTS, OTHER

37. SOURCE OF WATER LEVEL 33=

**FOOT NOTES:**

① SOURCE OF DATA CODES: A D G L M O R S Z  
OTHER COPY, DRILLER, GEOLOGIST, LOGS, MEMORY, OWNER, OTHER REPORTED, REPORTING AGENCY, OTHER

Recorded by \_\_\_\_\_

Date \_\_\_\_\_

**GROUND WATER MANAGEMENT IDENTIFICATION RECORD**

R=189

T= A D M  
ADD, DELETE, MODIFY

RECORD NUMBER 736= 0 0 1

38. IDENT. 190# G, W, M, A, -, -, -

39. ASSIGNER 191= E, C, O, L, O, G, Y, -, -, -

RECORD NUMBER 736= 0 0 2

38. IDENT. 190#

39. ASSIGNER 191=

**OWNER IDENTIFICATION RECORD**

R=158

T= A D M  
ADD, DELETE, MODIFY

RECORD NUMBER 718= 0 0 1

40. DATE OF OWNERSHIP 159# / /

41. NAME 161#

RECORD NUMBER 718= 0 0 2

40. DATE OF OWNERSHIP 159# / /

41. NAME 161#

**CONSTRUCTION RECORD**

R=58

T= A D M  
ADD, DELETE, MODIFY

ENTRY NUMBER 59# 0, 0,

RECORD NUMBER 723# 0, 0, 1

42. DATE OF COMPLETION 60= / /

43. CONTRACTOR/DRILLER 63=

44. SOURCE OF CONST. DATA 64=

45. METHOD OF CONSTRUCTION 65= A B C D H J P R T V W Z  
AIR ROTARY, BORED OR AUGERED, CABLE TOOL, DIG, HYDRAULIC ROTARY, JETTED, AIR-PERCUSSION, REVERSE ROTARY, TRENCHING, DRIVEN, DRIVE WASH, OTHER

46. FINISH 66= C F G H O P S T W X Z  
POROUS CONCRETE, GRAVEL W PERF., GRAVEL SCREEN, HORIZONTAL GALLERY, OPEN END, PERFORATED OR SLOTTED, SCREEN, SAND POINT, WALLED, OPEN HOLE, OTHER

47. TYPE OF SEAL 67= B C G N Z  
DENTONITE, CLAY, CEMENT, NONE, OTHER

48. BOTTOM OF SEAL 68=

49. METHOD OF DEVELOPMENT 69= A B C J N P S Z  
AIR-LIFT PUMP, BAILED, COM-PRESSED AIR, JETTED, NONE, OTHER PUMP, SURGED, OTHER

50. NUMBER OF HOURS IN DEVELOPMENT 70=

51. SPECIAL TREATMENT DURING DEVELOPMENT 71= C D E F H M Z  
CHEMICALS, DRY ICE, EXPLOSIVES, DEFLOCCULENT, HYDRO-FRACTURING, MECHANICAL, OTHER

**HOLE DIAMETER RECORD**

R=72

T= A D M  
ADD, DELETE, MODIFY

CONSTRUCTION ENTRY NO. 59# 0, 0,

RECORD NUMBER 724# 0, 0, 1

724# 0, 0, 2

724# 0, 0, 3

52. DEPTH TO TOP OF HOLE SEGMENT 73#

73#

73#

53. DEPTH TO BOTTOM OF HOLE SEGMENT 74#

74#

74#

54. DIAMETER OF HOLE SEGMENT 75#

75#

75#

**CASING RECORD**

R=76

T= A D M  
ADD, DELETE, MODIFY

CONSTRUCTION ENTRY NO. 59# 0, 0,

RECORD NUMBER 725# 0, 0, 1

725# 0, 0, 2

725# 0, 0, 3

55. DEPTH TO TOP OF CASING SEGMENT 77#

77#

77#

56. DEPTH TO BOTTOM OF CASING SEGMENT 78#

78#

78#

57. DIAMETER OF CASING SEGMENT 79#

79#

79#

58. CASING MATERIAL 80#

80#

80#

59. THICKNESS OF CASING 81#

81#

81#

**FOOT NOTES:**

① SOURCE OF DATA CODES:

A D G L M O R S Z  
OTHER DRILLER, GEOLOGIST, LOGS, MEMORY, OWNER, OTHER REPORTING AGENCY, OTHER

⑤ CASING MATERIAL CODES

B C D G I M P R S T U W Z  
BRICK, CON-CRETE, COPPER, GALV IRON, WROUGHT IRON, OTHER METAL, PVC OR PLASTIC, ROCK OR STONE, STEEL, TILE, COATED STEEL, WOOD, OTHER

**OPENING RECORD**

R=82      T= A D M  
ADD, DELETE, MODIFY

CONSTRUCTION ENTRY NO. 59# 0, 0,      726# 0 0 2      726# 0 0 3

RECORD NUMBER 726# 0 0 1      83#      83#

60. DEPTH TO TOP OF SECTION 83#

61. DEPTH TO BOTTOM OF SECTION 84#

62. TYPE OF OPENINGS 85#

63. TYPE OF MATERIAL 86#

64. DIAMETER OF OPEN SECTION 87#

65. WIDTH OF OPENING 88#

66. LENGTH OF OPENING 89#

**LIFT RECORD**

R=42      T= A D M      ENTRY NO. 254# 0, 0,      RECORD NUMBER 254# 0, 0,      68. DATE RECORDED 38# / /

67. TYPE OF LIFT 43# A B C J P R S T U Z  
AIR, BUCKET, CENTRIFUGAL, JET, PISTON, ROTARY, SUBMERSIBLE, TURBINE, UNKNOWN, OTHER

69. INTAKE DEPTH 44#

70. TYPE OF POWER 45# D E G H L N W Z  
DIESEL, ELECTRIC, GASOLINE, HAND, LP GAS, NATURAL GAS, WINDMILL, OTHER

71. HORSE-POWER 46#

**OTHER DATA AVAILABLE**

R=180      T= A D M

RECORD NUMBER 312# 0, 0, 1      72. TYPE OF DATA 181#

312# 0, 0, 2      181#

73. LOCATION OF DATA 182# C D R Z  
COOPERATOR, DISTRICT, REPORTING AGENCY, OTHER

74. FORMAT 261# F M P Z  
FILES, MACHINE READABLE, PUBLISHED, OTHER

182# C D R Z      261# F M P Z

**GEOPHYSICAL-LOG RECORD**

R=198      T= A D M

RECORD NUMBER 739# 0, 0, 1      75. TYPE OF LOG 199#      76. BEGINNING DEPTH 200#

739# 0, 0, 2      199#      200#

77. ENDING DEPTH 201#

201#

78. SOURCE OF DATA 202#

202#

**FOOT NOTES:**

① SOURCE OF DATA CODES:

A D G L M O R S Z  
OTHER DRILLER, GEOLOGIST, LOGS, MEMORY, OWNER, OTHER REPORTING AGENCY, OTHER GOV'T.

② TYPE OF LOG CODES:

A B C D E F G H I J K L M N O P Q  
TIME, COLLAR, CALIPER, DRILLERS, ELECTRIC, FLUID CONDUCT, GEOLOGIST, MAGNETIC, INDUCTION, GAMMA RAY, DIMETER, LATERLOG, MICROLOG, NEUTRON, U LATER, PHOTO, RADIOACTIVE

S T U V X Z  
SONIC, TEMP, GAMMA, FLUID GAMMA, CORE, OTHER

③ TYPE OF OPENINGS CODES:

F L M P R S T W X Z  
FRACTURE, COVERED SHUTTERED, MESH, PERFORATED OR SLOTTED, WIRE WOUND, SCREEN (UNKNOWN), SAND POINT, WALLED, OPEN HOLE, OTHER

④ TYPE OF MATERIAL CODES FOR OPEN SECTIONS:

B C G I M P R S T Z  
BRASS OR BRONZE, CONCRETE, CALV. IRON, WROUGHT IRON, OTHER METAL, PVC OR PLASTIC, STAINLESS STEEL, STEEL, TILE, OTHER

**NETWORK RECORD**

R=114

T= A D M  
ADD, DELETE, MODIFY

RECORD NUMBER 730# 0, 0,

79. TYPE OF NETWORK

706= QW WL WD  
WATER QUALITY, WATER LEVELS, PUMPAGE

80. BEGIN YEAR 115#

81. END YEAR 116#

82. TYPE OF ANALYSES

120= A B C D E F G H I J K L M N P Z  
PHYSICAL, COMMON IONS, TRACE ELEMENTS, PESTICIDES, NUTRIENTS, SANITARY, CODES B&D, CODES B&E, CODES B&G, CODES B&F, CODES D&E, CODES C,D&E, ALL OR MOST, CODES B&C RADIOACTIVE, CODES A&B&C, OTHER

83. SOURCE AGENCY

117=

84. FREQUENCY OF COLLECTION

118= A B C D F I M O Q S W Z 2 3 4 5 X  
ANNUAL, BI-MONTHLY, CON-TINUOUS, DAILY, SEMI-MONTHLY, INTER-MITTENT, MONTHLY, ONE TIME ONLY, QUARTER ANNUAL, SEMI-ANNUAL, WEEKLY, OTHER, EVERY 2 YEARS, EVERY 3 YEARS, EVERY 4 YEARS, EVERY 5 YEARS, EVERY 10 YEARS

85. METHOD OF COLLECTION

133= C E M U Z  
CALCULATED, ESTIMATED, METERED, UNKNOWN, OTHER

86. ANALYZING AGENCY

307=

87. PRIMARY NETWORK SITE

257# 1 2 3 4  
NATIONAL DISTRICT PROJECT COOPERATOR

88. SECONDARY NETWORK SITE

708#

**WELL FIELDS**

R=203

T= A D M  
ADD, DELETE, MODIFY

RECORD NUMBER 729# 0, 0,

89. NO WELLS IN GROUP

204=

90. DEEPEST DEPTH

205=

91. SHALLOWEST DEPTH

206=

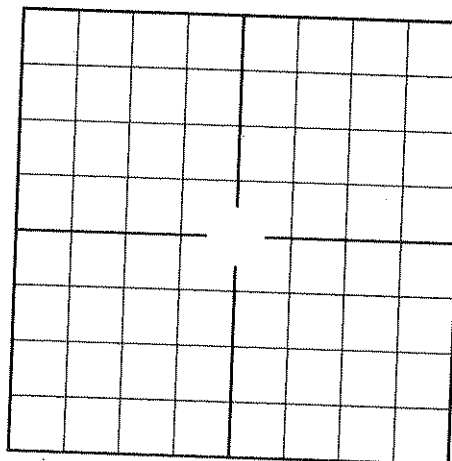
92. CONSTRUCTION METHOD

207= D J V W Z  
DRILLED, JETTED, DRIVEN, DRIVE WASH, OTHER

93. SIZE OF WELL FIELD

262=

NOTE: Locate the well site accurately on the section below.



**COLOR KEY:**

GREEN SHADED—Mandatory for new WATSTORE sites.

GREEN—Mandatory if the information is reasonably available, such as from driller's reports or other easily available source.

BLACK—Not mandatory.





Section B - Field Characteristics

II. GROUND WATER MANAGEMENT IDENTIFICATION RECORD

I. SITE FILE RECORD		II. GROUND WATER MANAGEMENT IDENTIFICATION RECORD	
Number	Field Title	Number	Field Title
	Type		Type
	Length		Length
1	Transaction	2	Site ID
2	Start Card No.		Transaction
3	Source Agency	38	Record Number
4	Site ID	39	Identification
5	Local Number		Assigner
6	Latitude		
7	Longitude		
8	Lat-Long Accuracy		
9	State		
10	County		
11	Location Map		
12	Scale		
13	Altitude		
14	Method Measure		
15	Accuracy		
16	Hydrologic Unit		
17	Station Type		
18	Agency Use Site		
19	Remarks		
20	Date Site Est.		
21	Data Reliability		
22	Site Type		
23	Date of Constr.		
24	Use of Site		
25	Second-site-use		
26	Third-site-use		
27	Use of Water		
28	Secondary Use		
29	Tertiary Use		
30	Aquifer Type		
31	Primary Aquifer		
32	Well Depth		
33	Hole Depth		
34	Source of Depth		
35	Water Level		
36	Date Measured		
37	Method of Meas.		
	Site Status		
	Source of Data		

III. OWNERS RECORD

Number	Field Title	Type	Length
2	Site ID	A	15
	Transaction	A	1
	Record Number	A	3
38	Identification	A	10
39	Assigner	A	15

IV. CONSTRUCTION RECORD

Number	Field Title	Type	Length
2	Site ID	A	15
	Transaction	A	1
	Entry Number	A	3
	Record Number	A	3
42	Date of Complet.	A	8
43	Name of Driller	A	12
44	Source of Data	A	1
45	Method of Constr.	A	1
46	Finish	A	1
47	Type of Seal	A	1
48	Bottom of Seal	NO	4
49	Method of Devel.	A	1
50	Hours Develop.	A	3
51	Special Treatment	A	1

Field Characteristics (Con't.)

V. HOLE DIAMETER RECORD

Number	Field Title	Type	Length
2	Site ID	A	15
	Transaction	A	1
	Entry Number	A	3
	Record Number	A	3
52	Top of Hole	N2	8
53	Bottom of Hole	N2	8
54	Diameter of Hole	N2	8

VIII. LIFT RECORD

Number	Field Title	Type	Length
2	Site ID	A	15
	Transaction	A	1
	Entry Number	A	3
	Record Number	A	3
67	Type of Lift	A	1
68	Date Recorded	A	8
69	Intake Depth	N0	5
70	Type of Power	A	1
71	Horsepower Rate	N2	7

VI. CASING RECORD

Number	Field Title	Type	Length
2	Site ID	A	15
	Transaction	A	1
	Entry Number	A	3
	Record Number	A	3
55	Top of Casing	N2	8
56	Bottom of Casing	N2	8
57	Diameter Casing	N2	5
58	Casing Material	A	1
59	Thickness Casing	N3	6

IX. OTHER DATA AVAILABLE RECORD

Number	Field Title	Type	Length
2	Site ID	A	15
	Transaction	A	1
	Record Number	A	3
72	Type of Data	A	10
73	Location of Data	A	1
74	Format	A	1

VII. OPENINGS RECORD

Number	Field Title	Type	Length
2	Site ID	A	15
	Transaction	A	1
	Entry Number	A	3
	Record Number	A	3
60	Top of Section	N2	8
61	Bottom of Section	N2	8
62	Type of Opening	A	1
63	Material Type	A	1
64	Diameter of Open	N2	5
65	Width of Opening	N3	6
66	Length of Opening	N2	6

X. GEOPHYSICAL LOGS RECORD

Number	Field Title	Type	Length
2	Site ID	A	15
	Transaction	A	1
	Record Number	A	3
75	Type of Log	A	1
76	Beginning Depth	N2	8
77	Ending Depth	N2	8
78	Source of Data	A	1

Field Characteristics (Con't.)

XI. NETWORK RECORD

Number	Field Title	Type	Length
2	Site ID	A	15
	Transaction	A	1
	Record Number	A	3
79	Type of Network	A	2
80	Beginning Year	A	4
81	Ending Year	A	4
82	Type of Analyses	A	1
83	Source Agency	A	5
84	Frcquency Collectn	A	1
85	Method Collection	A	1
86	Analyzing Agency	A	5
87	Primary Net. St.	A	1
88	Secondary Net. St.	A	1

XII. WELL FIELDS RECORD

Number	Field Title	Type	Length
2	Site ID	A	15
	Transaction	A	1
	Record Number	A	3
89	Number of Wells	A	3
90	Depth of Deepest	N0	3
91	Depth of Shallow	N0	3
92	Method Construct	A	1
93	Size of Well Fld	N0	7

XIII. WATER LEVEL RECORD

Number	Field Title	Type	Length
2	Site ID	A	15
	Transaction	A	1
94	Date Measured	A	8
95	Time Measured	A	4
96	Water Level	N2	7
97	Status	A	1
98	Method of Measur	A	1
99	Water Levl Acurcy	A	1

XIV. MEASURING POINT RECORD

Number	Field Title	Type	Length
2	Site ID	A	15
	Transaction	A	1
	Record Number	A	3
100	Beginning Date	A	8
101	Ending Date	A	8
102	M.P. Height	N2	6
103	M.P. Remarks	A	100

Key:

A - Alphanumeric field (this type is used for numbers when leading zeros must be carried)

Nx - Numeric Field; "x" indicates the number of digits to the right of the decimal point.

The decimal point and minus sign each take up one character in the field length.

N0 fields do not contain a decimal point.

Section C  
Coding Instructions

Table of Contents

I.	Site File Record -----	C-2
II.	Ground Water Management Identifiers Record -----	C-16
III.	Owners Record -----	C-16
IV.	Construction Record -----	C-17
V.	Hole Diameter Record -----	C-21
VI.	Casing Record -----	C-21
VII.	Openings Record -----	C-22
VIII.	Lift Record -----	C-23
IX.	Other-data-available Record -----	C-25
X.	Geophysical-logs Record -----	C-25
XI.	Networks Record -----	C-26
XII.	Well Fields Record -----	C-28
XIII.	Water-level Record -----	C-28
XIV.	Measuring-point Record -----	C-30

## Coding Instructions

### I. SITE FILE

The SITEFILE record is used for recording general information including location and water use information. Information will not be stored for a site if any mandatory entry in this record is missing. There is only one SITEFILE for each SITE ID. (In case of nested piezometers or deepening of wells, contact Ecology for instructions on SITE ID's and LOCAL NUMBERS.)

TRANSACTION CODE (mandatory) [A1]

Select the correct transaction code for this file.

- A - Add (this is for sites that do not exist in WATSTORE)
- D - Delete (this will delete a sitefile and should not normally be used)
- M - Modify (this will allow changes in the existing file)

WASHINGTON STATE START CARD NUMBER [A6]

Ch. 18.104 RCW requires drillers to submit a notice of intent to begin construction, reconstruction, or abandonment procedures ("start card") in advance of commencing work, effective September, 1987. The start card has a six-digit number in the upper right corner. If a start card is submitted on any well identified in the Ground Water Management Area, the start card number must be included in the SITEFILE information transmitted to Ecology.

1. SOURCE AGENCY (mandatory) [A5; WATSTORE #4]  
For the Ground Water Management Areas the SOURCE AGENCY will be the Department of Ecology (WA001).

2. SITE ID (mandatory) [A15; WATSTORE #1]  
This is a 15-digit identification number assigned to the site. It contains no blanks or alphabetic characters. It is used primarily as an internal control number within the computer files. Although the site identification number is formed initially from the latitude and longitude of a point believed to represent the location of the site, the number is an identifier and not a locator.

**\*\* It cannot be too strongly emphasized that the site identification number, once assigned, is a pure number and HAS NO LOCATIONAL SIGNIFICANCE.**

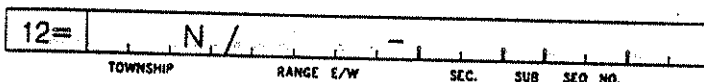
-- The site identification number is assigned as follows:  
Spot the site on the best available map (usually a USGS 7 1/2' quadrangle) as accurately as possible. Using an appropriate scaling aid, determine the latitude and longitude of the point on the map. The location of this point is always scaled to the nearest second of latitude and longitude, even if there is doubt about the exact location of the site or the accuracy of the map.

The first six digits of the identification number are the value of latitude, the seventh through thirteenth digits are the value of longitude, and the fourteenth and fifteenth digits are a sequence number used to distinguish between sites at the same location.

Use leading zeros if the value of latitude is less than 10 degrees, the value of longitude is less than 100 degrees, or the sequence number is less than 10.

3. LOCAL NUMBER (mandatory) [A16; WATSTORE #12]

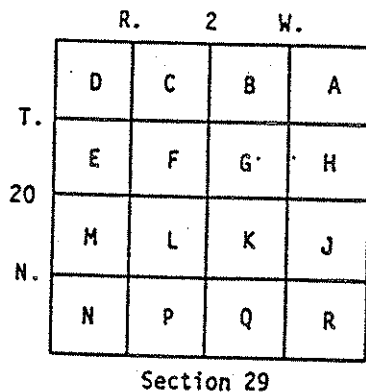
The local number for Ground Water Management sites is in the following format:



The last two digits are left blank unless the hole has been deepened since the initial local number was assigned (contact Ecology for instructions on how to handle deepened wells). The format for Township 20 North, Range 2 West, section 29, subsection (40 acres) F, and the third well entered into the data base at this location is:

29N/03E-09F03

This is a text field. The local number should be entered as it is to be printed; including leading zeros if the value of township or range is less than 10, or the sequence number is less than 10. The following diagram shows forty-acre tract letter designations.



4. LATITUDE (mandatory) [A6; WATSTORE #9]

Enter the best available value for the latitude of the site in degrees, minutes, and seconds, right justified in the field. Use leading zeros if needed. Six digits must be coded.

5. LONGITUDE (mandatory) [A7; WATSTORE #10]

Enter the best available value for the longitude of the site, in degrees, minutes, and seconds, right justified in the field. Use leading zeros if needed. Seven digits must be coded.

The values of latitude and longitude entered in these fields are locators: they should be the best available information about the location of the site. The accuracy of the location should be indicated by a suitable entry in the next field.

- \* 6. LAT-LONG ACCURACY [A1; WATSTORE #11]  
Enter the code for the accuracy of the latitude-longitude values.

S - the measurement is accurate to + 1 second  
F - the measurement is accurate to + 5 seconds  
T - the measurement is accurate to + 10 seconds  
M - the measurement is accurate to + 1 minute

No value (blank field) indicates that the accuracy is unknown and is, therefore, assumed to be greater than one minute.

7. STATE (mandatory) [A2; WATSTORE #7]  
The Washington State code is 53, Oregon is 41, and Idaho is 16.

8. COUNTY (mandatory) [A3; WATSTORE #8]  
Enter the numeric code for the county in which the site is located. Include leading and trailing zeros if appropriate.  
The county codes in Washington State are:

001	Adams	027	Grays Harbor	053	Pierce
003	Asotin	029	Island	055	San Juan
005	Benton	031	Jefferson	057	Skagit
007	Chelan	033	King	059	Skamania
009	Clallam	035	Kitsap	061	Snohomish
011	Clark	037	Kittitas	063	Spokane
013	Columbia	039	Klickitas	065	Stevens
015	Cowlitz	041	Lewis	067	Thurston
017	Douglas	043	Lincoln	069	Wahkiakum
019	Ferry	045	Mason	071	Walla Walla
021	Franklin	047	Okanogan	073	Whatcom
023	Garfield	049	Pacific	075	Whitman
025	Grant	051	Pend Oreille	077	Yakima

- \* 9. LOCATION MAP [A20; WATSTORE #14]  
Enter the name of the best available map on which the site can be located, preferably a USGS 7 1/2' topographic quadrangle. If no topographic map is available for the area, a county highway map or similar map may be used.

---

\* Mandatory if reasonably available, such as from a drillers report or other easily available source.



\* 10. SCALE [N0,7; WATSTORE #15]  
Enter the scale of the map identified in the previous entry, as follows. If the map scale is given as a ratio (1:24,000 1:62,500, and so forth) omit figure '1' and the colon, and enter the remaining number without the comma. If the scale is given in miles per inch, as on many county highway maps, convert the scale to a ratio (multiply miles per inch by 63,360) and proceed as above. A 7 1/2' quadrangle (1:24,000 scale) would be entered as 24000; a county or other map of 2 inches to the mile would be entered as 31680.

11. ALTITUDE (mandatory) [N2,8; WATSTORE #]  
For ground water sites, enter the altitude of the land surface at the site, in feet NGVD (National Geodetic Vertical Datum). Precision to two decimal places can be coded if available. Altitudes below NGVD should be preceded by a minus sign (-).

\* 12. METHOD OF MEASUREMENT [A1; WATSTORE #17]  
Enter the appropriate code for the method used to determine the altitude.

A - altimeter

L - level or other surveying method

M - interpolated from topographic map

Failure to select one of these values (blank field) implies that the method is unknown.

\* 13. ACCURACY [A3; WATSTORE #18]  
Enter the accuracy of the altitude in terms of the possible error in feet. An accuracy of +/- 0.1 foot would be entered as '.1'. In general, the accuracy of altitudes interpolated from the contours on topographic maps is plus or minus one-half of the contour interval.

\* 14. HYDROLOGIC UNIT [A8; WATSTORE #20]  
Enter the eight-digit hydrologic unit code for the USGS cataloging unit in which the site is located.

State Hydrologic Unit maps delineating the hydrographic boundaries of these units are available from the following address:

U.S. Geological Survey  
Branch of Distribution  
Box 25286, Federal Center  
Denver, Colorado 80225.

If the site does not lie within a currently designated hydrological unit (e.g., offshore wells), the eight-digit code 9999999 should be entered in this field.

---

\* Mandatory if reasonably available, such as from a drillers report or other easily available source.

15. STATION TYPE (mandatory) [A1; WATSTORE #802]  
Check which site type best describes the station. Only one type can be assigned for a site. For Ground Water Management Areas the STATION TYPE will usually be "G".

- S - Stream
- L - Lake or reservoir
- E - Estuary
- C - Coastal other than estuary
- P - Spring
- G - Ground water other than spring
- M - Meteorological

16. LEAD AGENCY USE OF SITE (mandatory) [A1; WATSTORE #803]  
The allowable codes for the agency use of site are as follows:

- A - Active data-collection site (the agency is actively collecting data at this site)
- I - Inactive or discontinued data-collection site (data has been collected but is not actively being collected)
- O - Inventory data site only (no data has been collected at this site)

17. REMARKS [A50; WATSTORE #806]  
General remarks concerning the site. (up to 50 characters)

\* 18. DATE SITE ESTABLISHED OR INVENTORIED by the Lead Agency [A8; WATSTORE #711]  
Enter the date that site was established or inventoried in the following format - MMDDYYYY.

\* 19. DATA RELIABILITY [A1; WATSTORE #3]  
Enter the code indicating the overall reliability of the data available for the site.

- C - the data have been field checked.
- L - location not accurate.
- M - minimal data.
- U - the data have not been field checked but is considered to be reliable.

When in doubt, always select the code which portrays the lesser confidence. (Note: The codes are listed in order of decreasing confidence).

---

\* Mandatory if reasonably available, such as from a drillers report or other easily available source.

20. SITE TYPE (mandatory) [A1; WATSTORE #2]  
Enter the code indicating the type of site to which these data apply. The most common site code is "W".

- C - collector or Ranney type well.
- D - drain dug to intercept the water table or potentiometric surface to either lower the ground-water level or serve as a water supply.
- E - excavation.
- H - sinkhole.
- I - interconnected wells, also called connector or drainage wells that is, a well interconnected via an underground lateral.
- M - multiple wells. Use only for well field consisting of a group of wells that are pumped through a single header and for which little or no data about the individual wells are available.
- O - outcrop.
- P - pond dug to intercept the water table or potentiometric surface and serve as a water supply.
- S - spring (used only on spring schedule).
- T - tunnel, shaft, or mine from which ground water is obtained.
- W - well, for single wells other than wells of the collector or Ranney type.
- X - test hole, not completed as a well.

\* 21. DATE OF FIRST CONSTRUCTION [A8; WATSTORE #21]  
Enter the earliest date for which data are available for the site or the date on which construction began, whichever is the earlier. If the month or day are not known, enter 00 in the spaces. Use leading zeros for month or day values less than 10. Enter four digits for year. Use the following format - MMDDYYYY.

22. USE OF SITE (mandatory) [A1; WATSTORE #23]  
Enter the code indicating the principal use of the site or the purpose for which the site was constructed (the former always holds precedence over the latter). The most common use of site code is "W".

- |                              |                         |
|------------------------------|-------------------------|
| A - anode                    | P - oil or gas well     |
| C - standby emergency supply | R - recharge            |
| D - drain                    | S - repressurize        |
| E - geothermal               | T - test                |
| G - seismic                  | U - unused              |
| H - heat reservoir           | W - withdrawal of water |
| M - mine                     | X - waste disposal      |
| O - observation              | Z - destroyed           |

\* Mandatory if reasonably available, such as from a drillers report or other easily available source.

- (A) Anode is a hole used as an electrical anode. Include in this category wells used solely to ground pipe-lines or electronic relays and other installations.
- (C) Standby emergency supply refers to a water supply source that is used only when the principal supplier of water is unavailable.
- (D) Drainage refers to the drainage of surface water underground.
- (E) Geothermal well is a hole drilled for geothermal energy development. Use this category for 'dry' geothermal wells or wells into which water is injected for heating. For 'wet' geothermal wells, through which water is withdrawn, use W -withdrawal of water for the use of site, and E - power generation for the primary use of water.
- (G) Seismic (G) hole is one drilled for seismic exploration. If it has been converted to water supply, it is used to withdraw water. A seismic hole used as an observation well should be in the observation-well category.
- (H) Heat reservoir refers to a well in which a fluid is circulated in a closed system. Water is neither added to, nor removed from, the aquifer.
- (M) Mine includes any tunnel, shaft, or other excavation constructed for the extraction of minerals.
- (O) Observation well is a cased test-hole or well drilled either for water-level or for water-quality observations. Do not use this category for an oil-test hole, or water supply well used only incidentally as an observation well.
- (P) Oil or gas well is any well or hole drilled in search of, or for production of, petroleum or gas. It includes any oil or gas production well, dry hole, core hole, injection well drilled for secondary recovery of oil, etc. An oil-test hole converted to a water supply well should be classified as withdrawal (W).
- (R) Recharge site is a site constructed or converted for use in replenishing the aquifer. An irrigation well used to return water to the aquifer during nonpumping periods is a well for withdrawing water, not a drainage or recharge well. Use this category for wells that are used to return water to the aquifer after use, such as those for returning air-conditioning water.

- (S) Repressurize refers to pumping water into an aquifer in order to increase the pressure in the aquifer for a specific purpose, for example, water flood purposes in oil fields.
- (T) Test hole is an uncased hole (or one cased only temporarily) that was drilled for water, or for geologic or hydrogeologic testing. It may be equipped temporarily with a pump in order to make a pumping test, but if the well is destroyed after testing is completed, it is still a test hole. A core hole drilled as a part of mining or quarrying exploration work, should be in this class.
- (U) An unused site is an abandoned water-supply site or one for which no use is contemplated. At an abandoned farmstead, a well originally used for domestic purposes may be classed as unused, even though it is equipped with a pump. Similarly, a stock well with a pump may become unused when a pasture or corral is put into cultivation. An irrigation well that is not equipped with a pump, nor used because the yield is too low or the water is too mineralized, belongs in this class.
- (W) Withdrawal of water refers to a site that supplies water for one of the purposes shown under use of water. It includes a dewatering well, if the dewatering is accomplished by pumping ground water.
- (X) A waste-disposal site is one used to convey industrial waste, domestic sewage, oil-field brine, mine drainage, radioactive waste, or other waste fluid into an underground zone. An oil-test or deep-water well converted to waste disposal should be in this category.
- (Z) A destroyed site is one that is no longer in existence. The casing of most destroyed wells will be pulled, but some may be plugged or filled. Do not use this category for an abandoned site that merely is not in use.

23. SECONDARY SITE USE [A1; WATSTORE #301]

If the site is used for more than one purpose, show the secondary use here. Enter a code from the above list.

24. TERTIARY SITE USE [A1; WATSTORE #302]

If needed, a third use of the site can be shown here. Enter an appropriate code from the above list.

\* 25. USE OF WATER [A1; WATSTORE #24]

Enter the code indicating the principal use of water from the site. If water from the site is used for more than one purpose, enter the principal use here and enter the subordinate uses in the following two fields.

A - air conditioning	I - irrigation	R - recreation
B - bottling	J - industrial (cooling)	S - stock
C - commercial	K - mining	T - institution
D - dewater	M - medicinal	U - unused
E - power	N - industrial	Y - desalination
F - fire	P - public supply	Z - other (explain in remarks)
H - domestic	Q - aquaculture	

- (A) Air conditioning refers to water supply used solely or principally for heating or cooling a building. Water used to cool industrial machinery belongs in the industrial category, not in the air conditioning category.
- (B) Bottling refers to the storage of water in bottles and use of the water for potable purposes (see Medicinal).
- (C) Commercial use refers to use by a business establishment that does not fabricate or produce a product. Filling stations and motels are examples of commercial establishments. If some product is manufactured, assembled, remodeled, or otherwise fabricated, use of water for that plant should be considered industrial, even though the water is not used directly in the product or in the manufacturing of the product.
- (D) Dewatering means the water is pumped for dewatering a construction or mining site, or to lower the water table for agricultural purposes. In this respect, it differs from a drainage well that is used to drain surface water underground. If the main purpose for which the water is withdrawn is to provide drainage, dewatering should be indicated even though the water may be discharged into an irrigation ditch and subsequently used to irrigate land.
- (E) Power generation refers to use of water for generation of any type of power.

---

\* Mandatory if reasonably available, such as from a drillers report or other easily available source.

- (F) Fire protection refers to the principal use of the water and should be indicated if the site was constructed principally for this purpose even though the water may be used at times to supplement an industrial or defense supply, to irrigate a golf course, fill a swimming pool, or for other use.
- (H) Domestic use is water used to supply household needs, principally for drinking, cooking, washing, and sanitary purposes, but including watering a lawn and caring for a few pets. Most domestic wells will be at suburban or farm homes, but wells supplying small quantities of water for domestic purposes for one-classroom schools, turnpike gates, and similar installations, should be in the domestic category.
- (I) Irrigation refers to the use of water to irrigate cultivated plants. Most irrigation sites will supply water for farm crops, but the category should include wells used to water the grounds of schools, industrial plants, or cemeteries, if more than a small amount of water is pumped and that is the sole use of the water.
- (J) Industrial (cooling) refers to a water supply used solely for industrial cooling.
- (K) Mining refers to a water supply used solely for mining purposes.
- (M) Medicinal refers to water purported to have therapeutic value. Water may be used for bathing and/or drinking. If use of water is mainly because of its claimed therapeutic value, use this category even though the water is bottled.
- (N) Industrial use is within a plant that manufactures or fabricates a product. The water may or may not be incorporated into the product being manufactured. Industrial water may be used to cool machinery, to provide sanitary facilities for employees, to air-condition the plant, and to irrigate the ground at the plant.
- (P) Public Supply use is water that is pumped and distributed to several homes. Such supplies may be owned by a municipality or community, a water district, or a private concern. In most States, public supplies are regulated by departments of health which enforce minimum safety and sanitary requirements. If the system supplies five or more homes, it should be considered a public supply, as four or less classify use as domestic. Water supplies for trailer or summer camps with five or

more living units should be in this category, but motels and hotels are classified as commercial. Most public supply systems also furnish water for a variety of other uses, such as industrial, institutional, and commercial.

- (Q) Aquaculture refers to a water supply used solely for aquaculture, such as fish farms.
- (R) Recreation refers to water discharged into pools, or channels which are dammed downstream to form pools, for swimming, boating, fishing, ice rinks, and other recreational uses.
- (S) Stock Supply refers to the watering of livestock.
- (T) Institutional refers to water used in the maintenance and operation of institutions such as large schools, universities, hospitals, rest homes, or similar installations. Owners of institutions may be individuals, corporations, churches, or governmental units.
- (U) Unused means water is not being removed from the site for one of the purposes described above. A test hole, oil or gas well, recharge, drainage, observation, or waste-disposal well will be in this category.

Do not use this classification for an irrigation, domestic, stock, or other well during 'off season' or temporary periods of nonuse. The use of water from a newly constructed site should be considered as the use for which it is intended even though it may not yet be in use when inventoried.

- (Y) Desalination refers to water used in a desalting process whereby dissolved solids are removed to make water potable or suitable for other uses. Enter the type of use of the desalinated water in the next column, "Secondary Water Use".
- (Z) Other refers to miscellaneous uses not included in the listed categories.

26. SECONDARY WATER USE [A1; WATSTORE #25]

If water from the site is used for more than one purpose, show the secondary use here. Enter an appropriate code from the list above.

27. TERTIARY WATER USE [A1; WATSTORE #26]

If needed, a third use of water from the site can be shown here. Enter an appropriate code from the list above.



28. AQUIFER TYPE CODE [A1; WATSTORE #713]

Enter the appropriate code to describe the type of aquifer(s) encountered by the well.

- U - Unconfined single aquifer
- N - Unconfined multiple aquifers
- C - Confined single aquifer
- M - Confined multiple aquifers
- X - Mixed (confined and unconfined) multiple aquifers

29. PRIMARY AQUIFER [A8; WATSTORE #714]

Left justify the code identifying the primary aquifer unit from which the water is obtained. Use codes given in the 'Catalog of Aquifer Names and Geologic Unit Codes used by the Water Resources Division' (Aquifer codes for Washington State are listed in Part I, Section D of this manual).

\* 30. WELL DEPTH [N2,8; WATSTORE #28]

Enter the depth of the finished well, in feet below land surface datum. The depth of the well is the greatest depth to which the well can be sounded if measurement is not practicable. Enter the reported depth at which the well was finished.

\* 31. HOLE DEPTH [N2,8; WATSTORE #27]

Enter the total depth to which the hole was drilled, in feet below the land surface datum, even though it may have been plugged back in completing the well. For collector or Ranney type wells, enter the depth of the central shaft. For multiple-well fields (listed as "M" in SITE TYPE field), leave the space blank.

This field should be completed for wells whenever possible. If the hole depth is given, all other depths entered on the schedule will be compared with it for validity. Precision may be carried to two decimal places.

---

\* Mandatory if reasonably available, such as from a drillers report or other easily available source.

\* 32. SOURCE OF DEPTH DATA [A1; WATSTORE #29]  
Enter a code to indicate how the depth information of the well was obtained.

- A - reported by another government agency. Do not use 'A' if the reporting agency is the owner of the well--use 'O'.
- D - from driller's log or report.
- G - from the lead agency or a private geologist or consultant.
- L - depth interpreted from geophysical logs by personnel of source agency.
- M - memory (owner, operator, driller).
- O - reported by the owner of the well.
- R - reported by person other than the owner, driller, or another government agency.
- S - measured by personnel of reporting agency.
- Z - other source (explain in remarks).

33. INVENTORY WATER LEVEL [N2,8; WATSTORE #30]  
Enter the water level that is reported on the drillers report, in feet below land surface. Precision can be carried to two decimal places. If the water level is above land surface, enter the water level in feet above land surface preceded by a minus sign (-). If the site flows but the head is not known, the site is dry, the level cannot be measured, measurement has been discontinued, or the well destroyed, leave this space blank and see SITE STATUS.

34. DATE MEASURED (mandatory only if 'inventory water level' or 'site status' is entered) [A8; WATSTORE #31]

Enter the date on which the water level entered above was measured. Use the following format - MMDDYYYY. If the day or month are not known, code the appropriate field with 00. Use leading zeros for values of month and day that are less than 10, and provide all four digits of the year.

---

\* Mandatory if reasonably available, such as from a drillers report or other easily available source.

35. METHOD OF WATER-LEVEL MEASUREMENT [A1; WATSTORE #34]

Enter the code indicating how the water level was measured.

- A - airline measurement
- B - analog or graphic recorder
- C - calibrated airline measurement
- E - estimated
- G - pressure-gage measurement
- H - calibrated pressure-gage measurement
- L - interpreted from geophysical logs
- M - manometer measurement
- N - nonrecording gage
- R - reported, method not known
- S - steel-tape measurement
- T - electric-tape measurement
- V - calibrated electric-tape measurement
- Z - other

36. SITE STATUS FOR WATER LEVEL [A1; WATSTORE #37]

Enter the code indicating the status of the site at the time the water-level was measured.

\*\* If no site status is indicated, the reported water-level measurement represents a static level.

- D - the site was dry (no water level is recorded).
- E - the site was flowing recently.
- F - the site was flowing, but the head could not be measured (no water level is recorded).
- G - a nearby site that taps the same aquifer was flowing.
- H - a nearby site that taps the same aquifer had been flowing recently.
- I - injector site (recharges water being injected into the aquifer).
- J - injector site monitor (a nearby site that taps the same aquifer is injecting recharge water).
- N - measurement discontinued.
- O - an obstruction was encountered in the well above the water surface (no water level is recorded).
- P - the site was being pumped.
- R - the site had been pumped recently.
- S - a nearby site that taps the same aquifer was being pumped.
- T - a nearby site that taps the same aquifer had been pumped recently.
- V - foreign substance present on the surface of the water.
- W - well destroyed.
- X - water level affected by stage in nearby surface-water site.
- Z - other conditions that would affect the measured water level (explain in remarks).

37. SOURCE OF WATER-LEVEL DATA [A1; WATSTORE #33]

Enter the code that best indicates source of the water-level data. The codes are the same as those used for field number 32 (SOURCE OF DEPTH DATA).

## II. GROUND WATER MANAGEMENT IDENTIFIERS RECORD

This record can be repeated as many times as needed and linked through the site ID to the SITEFILE. Record numbers are used to distinguish between repeats. The first record must contain the Ecology identifier as explained below; additional records may be used for ID numbers defined by the Lead Agency for internal tracking purposes.

\* 38. IDENTIFICATION [A10; WATSTORE #190]

Enter the name or number by which the site is identified. For Ground Water Management Areas the following codes shall be used:

GWMA-86-01	Clover-Chambers Creek Basin
GWMA-86-02	Island County
GWMA-86-03	S. King County
GWMA-86-04	Vashon\Maury Island
GWMA-86-05	Gig Harbor
GWMA-86-06	Kitsap County
GWMA-86-07	Redmond
GWMA-86-08	Issaquah
GWMA-87-09	Clark County
GWMA-87-10	North Thurston County
GWMA-87-11	Deer Park Basin
GWMA-87-12	Lummi Indian Reservation
GWMA-87-13	Toppenish Creek Basin
GWMA-87-14	East King County
GWMA-87-15	Methow River Basin

Contact Ecology for any other Ground Water Management Area

\* 39. ASSIGNER [A15; WATSTORE #191]

Enter 'Ecology' for the assigner.

## III. OWNERS RECORD

This record can be repeated as many times as needed and linked through the site ID to the SITEFILE. Record numbers are used to distinguish between repeats. If the site is used, leased, or occupied by someone other than the owner, this fact should be entered in the 'REMARKS' data record of the SITEFILE, together with the name of the user, lessee, or tenant.

\* 40. DATE OF OWNERSHIP [A8; WATSTORE #159]

Enter the date (MMDDYYYY) that this owner acquired ownership of the well or the earliest date on which this owner was known to own the source. If the day or month are not known, enter 00 in these spaces. Use leading zeros for month and day values less than 10. Specify all four digits of the year.

\* 41. OWNERS NAME [A42; WATSTORE #161]

Enter the last name of the owner. If known, enter the first name and middle initial. (Note: Although the form shows 23 characters for this field, up to 42 may be used.)

#### IV. CONSTRUCTION RECORD

This record can be repeated as many times as needed and linked through the site ID to the SITEFILE. Record numbers are used to distinguish between repeats. The entry number will always be 001 unless the well has been deepened or altered in some way; contact Ecology for instructions in these cases.

\* 42. DATE OF COMPLETED CONSTRUCTION [A8; WATSTORE #60]

Enter the date (MMDDYYYY) on which the work was completed. If the day or month are not known, enter 00 in the spaces. Use leading zeros for values of day and month less than 10, and specify all four digits for the year. For many sites, this date will be the same as the one entered earlier (Date of Construction/Completion) however, it must be re-entered here.

\* 43. NAME OF CONTRACTOR/DRILLER [A12; WATSTORE #63]

Enter the name of the individual or company that did the work. For company names, use meaningful abbreviations or acronyms if needed to fit the space.

\* 44. SOURCE OF CONSTRUCTION DATA [A1; WATSTORE #64]

Enter the code that best indicates the source of construction data, that is, who furnished the data. The codes are the same as those used for field number 32 (SOURCE OF DEPTH DATA).

\* 45. METHOD OF CONSTRUCTION [A1; WATSTORE #65]

Enter the code indicating the method by which the site was constructed.

A - air-rotary	P - air percussion
B - bored or augered	R - reverse rotary
C - cable-tool	T - trenching
D - dug	V - driven
H - hydraulic rotary	W - drive and wash
J - jetted	Z - other (explain in remarks)

(A) Air-rotary method uses a stream of air to cool the bit and bring the rock cuttings to the surface.

(B) A bored or augered hole cuts and removes the earth materials from the hole with an auger. The auger may be powered by hand or machinery.

(C) Cable-tool refers to a "percussion" or "churn-drill" method whereby a heavy drilling tool is raised and lowered with enough force to pulverize the rock. The rock debris is commonly removed from the hole with a bailer. The California mud-scow method is a special variation of the cabletool method.

\* Mandatory if reasonably available, such as from a drillers report or other easily available source.

- (D) Dug holes are excavated by hand tools or power-driven digging equipment. Caissons, Ranney-type collectors, and galleries belong here even though they may have laterals that are driven or jetted.
- (H) The hydraulic-rotary well is constructed by rotating a length of pipe (drill stem) equipped with a bit that cuts or grinds the rocks. Water or drilling mud is pumped down the drilling stem. Cuttings are carried to the surface in the annular space between the drilling stem and the wall of the hole. Note that separate categories are provided for air-rotary and reverse-rotary.
- (J) Jetted wells are excavated by using high velocity streams of water pumped through a pipe having a restricted opening or "jetting" nozzle. For some types of earth materials a cutting bit is attached to the end of the jetting pipe. The material cut or washed from the hole is carried to the surface in the annular space outside the pipe as by the hydraulic-rotary method. This method is most suitable for construction of small-diameter wells in unconsolidated material.
- (P) An air-percussion drill is powered by compressed air. It uses a rapid percussion effect, coupled with rotary action, to drill hard rocks. Compressed air also is used to blow the cuttings from the hole. Air-percussion drills are generally used in conjunction with air-rotary drilling rigs.
- (R) Reverse rotary is similar to the hydraulic rotary except that the water or drilling mud flows down the annular space between the drilling stem and the wall of the hole and the cuttings are pumped out through the drill stem.
- (T) Trenching refers to the construction of a sump or open pit from which ground water may be pumped. Trenching may be done by hand but more commonly power equipment, such as a bulldozer, dragline power shovel, or a backhoe is used.
- (V) Driven wells are constructed by driving a length of pipe, usually of small diameter and generally equipped with a sand point, to the desired depth. The wells may be driven by hand or with air hammer or other power equipment. An essential feature of a driven well is that no earth material is removed as the well is constructed.

(W) Drive and wash wells are constructed by driving a small diameter open-end casing a few feet into the earth, then washing out the material from inside the casing with a jet of water. The process is repeated until the well has penetrated a sufficient depth into the aquifer.

\* 46. TYPE OF FINISH [A1; WATSTORE #66]

Enter the code indicating the finish or the nature of the openings that allow water to enter the well.

C - porous concrete	S - screen
F - gravel pack w/perforations	T - sand point
G - gravel pack w/screen	W - walled
H - horizontal gallery	X - open hole
O - open end	Z - other (explain in remarks)
P - perforated or slotted	

(C) Porous concrete is concrete casing that is pervious enough to allow ground water to seep into the well.

(F & G) A gravel pack well is a drilled or dug well that has a gravel envelope opposite the part through which water enters. Commonly, these wells will be finished either with commercial screen or with slotted casing.

(H) A horizontal gallery or collector essentially is a horizontal type well in which the screen; slotted pipe, or gravel-filled trench is horizontal. All horizontal wells should be in this class; including Ranney collectors and infiltration galleries.

(O) An open-end well is one that is cased to the bottom of the hole so that water can enter the well only through the bottom of the hole.

(P) Perforated or slotted casing is well pipe that has had holes punched or slots cut in it to admit water. Do not use this designation if the well has a gravel pack. Use "F" instead.

(S) Screen refers to commercial well screen manufactured for the purpose of admitting water to a well. Common types of screen are wire mesh, wrapped trapezoidal wire, and shutter screen. Do not use this designation if the well also has a gravel pack. Use "G" instead.

(T) A sand point is the screen part of a drive point and usually is part of a driven well.

---

\* Mandatory if reasonably available, such as from a drillers report or other easily available source.

(W) A walled or shored well is usually a dug well in which the walls have been shored-up with open-jointed fieldstone, brick, tile, concrete blocks, wood cribbing, or other material. A few wells of this type may have gravel walls, however, they should be placed in this category instead of F or G. A dug well that is mostly open hole but has even a few feet of cribbing, corrugated pipe, or other shoring to prevent caving, should be in this category.

(X) An open hole well is one that has a finished open hole in the aquifer. A well belongs in this class even if the casing does not actually extend to the geologic unit or zone from which the water is obtained.

\* 47. TYPE OF SEAL [A1; WATSTORE #67]  
Enter the code indicating the material used to seal the well against the entry of surface water.

B - bentonite  
C - clay or cuttings  
G - cement grout

N - none  
Z - other (explain in remarks)

\* 48. BOTTOM OF SEAL [NO,4; WATSTORE #68]  
Enter the depth to the bottom of the seal, in feet below land surface.

\* 49. METHOD OF DEVELOPMENT [A1; WATSTORE #69]  
Enter the code indicating the method used to develop the well.

A - pumped with air lift  
B - bailed  
C - "blown" or surged w/compressed air  
J - washed or jetted

N - none  
P - pumped  
S - surged with surge block  
Z - other (explain in remarks)

\* 50. HOURS OF DEVELOPMENT [A3; WATSTORE #70]  
Enter the number of hours that the well was bailed, pumped, and so forth, for development.

\* 51. SPECIAL TREATMENT DURING DEVELOPMENT [A1; WATSTORE #71]  
Enter the code indicating any special treatment that was applied during development of the well.

C - chemical (acid, and so forth)  
D - dry ice  
E - explosives  
F - deflocculent

H - hydrofracturing  
M - mechanical abrasion  
Z - other (explain in remarks)

\* Mandatory if reasonably available, such as from a drillers report or other easily available source.



## V. HOLE DIAMETER RECORD

This record can be repeated as many times as needed and linked through the site ID to the SITEFILE. Record numbers are used to distinguish between repeats. The entry number will always be 001 unless the well has been deepened or altered in some way; contact Ecology for instructions in these cases.

- \* 52. DEPTH TO TOP OF HOLE SEGMENT [N2,8; WATSTORE #73]  
Enter the depth to the point where this section of hole begins, in feet below land surface. The first section of hole always begins at depth 0.0
- \* 53. DEPTH TO BOTTOM OF HOLE SEGMENT [N2,8; WATSTORE #74]  
Enter the depth to the bottom of the hole segment, in feet below land surface.
- \* 54. DIAMETER OF HOLE SEGMENT [N2,8; WATSTORE #75]  
Enter the nominal diameter of the bit used to drill this section of the hole or the diameter to which the hole was reamed, in inches.

## VI. CASING RECORD

This record can be repeated as many times as needed and linked through the site ID to the SITEFILE. Record numbers are used to distinguish between repeats. The entry number will always be 001 unless the well has been deepened or altered in some way; contact Ecology for instructions in these cases.

- \* 55. DEPTH TO TOP OF CASING SEGMENT [N2,8; WATSTORE #77]  
Enter the depth to the top of this section of casing, in feet below land surface. If the casing extends above land surface, enter the height of the casing above land surface preceded by a minus sign (-).
- \* 56. DEPTH TO BOTTOM OF CASING SEGMENT [N2,8; WATSTORE #78]  
Enter the depth to the bottom of this section of casing, in feet below land surface.
- \* 57. DIAMETER OF CASING SEGMENT [N2,5; WATSTORE #79]  
Enter the diameter of this section of casing, in inches. Two decimal places are provided for fraction sizes (  $1 \frac{1}{4} = 1.25$  ).
- \* 58. CASING MATERIAL [A1; WATSTORE #80]  
Enter the code indicating the casing material.  

B - brick	R - rock or stone
C - concrete	S - steel
D - copper	T - tile
G - galvanized iron	U - coated steel
I - wrought iron	W - wood
M - other metal	Z - other material
P - PVC, fiberglass, other plastic	(explain in remarks)

- \* 59. CASING THICKNESS [N3,6; WATSTORE #81]  
Enter the thickness of the casing wall, in inches. Three decimal places are provided.

VII. OPENINGS RECORD

This record can be repeated as many times as needed and linked through the site ID to the SITEFILE. Record numbers are used to distinguish between repeats. The entry number will always be 001 unless the well has been deepened or altered in some way; contact Ecology for instructions in these cases.

- \* 60. DEPTH TO TOP OF SECTION [N2,8; WATSTORE #83]  
Enter the depth to the top of the open section, in feet below land surface.

- \* 61. DEPTH TO BOTTOM OF SECTION [N2,8; WATSTORE #84]  
Enter the depth to the bottom of the open section, in feet below land surface.

- \* 62. TYPE OF OPENING [A1; WATSTORE #85]

Enter the code indicating type of open section.

F - fractured rock	S - screen, type not known
L - louvered or shutter-type screen	T - sand point
M - mesh screen	W - walled or shored
P - perforated, porous, or slotted casing	X - open hole
R - wire-wound screen	Z - other (explain in remarks)

- \* 63. MATERIAL TYPE [A1; WATSTORE #86]

Enter the code indicating the type of screen material.

B - brass or bronze	P - PVC, fiberglass, or other plastic
C - concrete	R - stainless steel
G - galvanized iron	S - steel
I - wrought iron	T - tile
M - other metal	Z - other (explain in remarks)

- \* 64. DIAMETER OF OPEN SECTION [N2,5; WATSTORE #87]

Enter the diameter, in inches, of perforated or slotted pipe, the diameter of a screen, or the diameter of the hole, if the well is finished open-hole.

- \* 65. WIDTH OF OPENING [N2,6; WATSTORE #88]

Enter the short dimension of perforations or slots, or the mesh size of screens, in inches.

- \* 66. LENGTH OF OPENING [N2,6; WATSTORE #89]

Enter the long dimension of perforations or slots, in inches. This refers to the individual openings in the screen or slotted pipe.

\* Mandatory if reasonably available, such as from a drillers report or other easily available source.

## VIII. LIFT RECORD

This record can be repeated as many times as needed and linked through the site ID to the SITEFILE. Record numbers are used to distinguish between repeats. The entry number will always be 001 unless the well has been deepened or altered in some way; contact Ecology for instructions in these cases.

### \* 67. TYPE OF LIFT [A1; WATSTORE #43]

Enter the code indicating the type of pump or lift. Allowable codes are:

A - air lift	R - rotary pump
B - bucket	S - submergible pump
C - centrifugal pump	T - turbine pump
J - jet pump	U - unknown
P - piston pump	Z - other (explain in remarks)

- (A) Air lift is a type of lift in which a jet of air pumped below the water table causes a stream of mixed air and water to issue from the well.
- (B) Bucket include the familiar "rope and bucket", chain and bucket lifts, and the small bailer lifted by a rope or chain and pulley.
- (C) Centrifugal pumps have rotating impellers in a closed chamber that draw the water into the pump. The water is then discharged from the pump, common under great pressure, by centrifugal force. Such pumps have maximum lift of about 25 feet but can force water to considerable heights above the pump.
- (J) Jet pumps have two pipes extending from the pump into the well. One pipe forces water down the hole under pressure while the other pipe discharges water that has been forced to the surface by the action of the jet. Jet pumps are used principally for small water supplies, such as would be used for a suburban home, farm, or small commercial establishment.
- (P) Piston pumps include the familiar lift and pitcher pumps common in many rural areas. The old "reciprocating" pumps and the "deep-well with walking-bean jacks" are of the piston type.
- (R) Rotary pumps operate on the principle that direct pressure is created by squeezing the water between specially designed runners. A relatively high vacuum may be created on the intake side so the suction lift is comparable to that for centrifugal pumps.

\* Mandatory if reasonably available, such as from a drillers report or other easily available source.

- (S) A submergible pump is a special type of turbine in which an electric motor is connected directly to the impellers and submerged beneath the water. It can be recognized by the presence of insulated electric wire leading into the well and the absence of any pump or power unit at the surface.
- (T) Turbines are of several types and may be either for a deep or shallow well. A series of impellers, placed below the surface of the water, are rotated by a vertical shaft connected to a power source at the land surface. These impellers "pick up" the water and force it to the surface through the pump column. Such pumps are commonly used to lift large amounts of water at high pressure. They are used in high capacity wells for public, industrial, or irrigation supply.
- (U) Use unknown only if the site is equipped with a pump about which other data are available, but the type of pump cannot be identified.
- (Z) Other. Place in this category any lifting device that does not belong in one of the other categories. Examples are: helical rotor, hydraulic ram, and siphon.

- \* 68. DATE RECORDED [A8; WATSTORE #38]  
Enter the date (MMDDYYYY) on which the lift data were collected. If the day or month are not known, enter 00 in the spaces. Use leading zeros for month or day less than 10 and specify all four digits for the year.
- \* 69. INTAKE DEPTH [N2,5; WATSTORE #44]  
Enter the depth to the bottom of the pump bowls or intake, in feet below land surface. The value desired for this entry is the maximum distance the water level can be drawn down before the pump breaks suction.
- \* 70. TYPE OF POWER [A1; WATSTORE #45]  
Enter the code indicating the type of power used to power the pump. The codes and their meanings are:
- |                     |                                       |
|---------------------|---------------------------------------|
| D - diesel engine   | L - LP gas (propane or butane engine) |
| E - electric motor  | N - natural-gas engine                |
| G - gasoline engine | W - windmill                          |
| H - hand            | Z - other (explain in remarks)        |
- \* 71. HORSEPOWER RATING [N2,7; WATSTORE #46]  
Enter the horsepower rating of the primary power source. Two decimal places are provided for small motors.

\* Mandatory if reasonably available, such as from a drillers report or other easily available source.

## IX. OTHER-DATA-AVAILABLE RECORD

This record can be repeated as many times as needed and linked through the site ID to the SITEFILE. Record numbers are used to distinguish between repeats. The 'other data' record is used to indicate the availability of additional data pertinent to the site.

- \* 72. OTHER DATA TYPE [A10; WATSTORE #181]  
Describe the type of data that are available for the site, such as pump tests. Use meaningful abbreviations if needed.
- \* 73. OTHER DATA LOCATION [A1; WATSTORE #182]  
Enter the code that identifies the location of the data.  
C - cooperator's office                      R - reporting agency office  
D - district office (USGS only)              Z - other (explain in remarks)
- \* 74. FORMAT [A1; WATSTORE #261]  
Enter the code describing the form in which the data are stored.  
F - files (raw data)  
M - machine readable  
P - published (report or basic-data release)  
Z - other (explain in remarks)

## X. GEOPHYSICAL-LOGS RECORD

This record can be repeated as many times as needed and linked through the site ID to the SITEFILE. Record numbers are used to distinguish between repeats.

This record is used to enter information about types of geophysical or other logs available for the site.

- \* 75. TYPE OF LOG [A1; WATSTORE #199]  
Enter the code that best describes the log type.  

A - drilling time	M - microlog
B - casing collar	N - neutron
C - caliper	O - microlateral log
D - drillers	P - photographic
E - electric	Q - radioactive-tracer
F - fluid-conductivity	S - sonic
G - geologists or sample	T - temperature
H - magnetic	U - gamma-gamma
I - induction	V - fluid velocity
J - gamma ray	X - core
K - dipmeter survey	Z - other (explain in remarks)
L - lateral log	

\* Mandatory if reasonably available, such as from a drillers report or other easily available source.

- \* 76. BEGINNING DEPTH [N2,8; WATSTORE #200]  
Enter the depth to the top of the logged interval in feet below land surface.
- \* 77. ENDING DEPTH [N2,8; WATSTORE #201]  
Enter the depth to the bottom of the logged interval, in feet below land surface.
- \* 78. SOURCE OF DATA [A1; WATSTORE #202]  
Enter the code that indicates who provided the information. The codes are the same as those used for field number 32 (SOURCE OF DEPTH DATA).

#### XI. NETWORKS RECORD

This record can be repeated as many times as needed and linked through the site ID to the SITEFILE. Record numbers are used to distinguish between repeats. The network record indicates the availability of the site as an established data collection station for water-quality, water-levels, or withdrawal data. If there are periods of significant interruption in the measurements or if the frequency of measurement changes, multiple entries may be reported to reflect the variations.

- 79. TYPE OF NETWORK [A2; WATSTORE #706]  
Enter the code for the type of network.
  - 'QW' - Water quality network station
  - 'WL' - Water levels network station
  - 'WD' - Pumpage or withdrawals network station
- 80. BEGINNING YEAR [A4; WATSTORE #115]  
Enter 4 digits for the year in which the data collection began.
- 81. ENDING YEAR [A4; WATSTORE #116]  
Enter the year in which the data collection was ended at the site. Use 4 digits. If the site is currently monitored, leave this field blank.
- 82. TYPE OF ANALYSES [A1; WATSTORE #120]  
Enter the code that indicates the type of water-quality data generally collected at the site.
 

A - physical properties	I - common ions/trace elements
B - common ions	J - sanitary analysis and common ions
C - trace elements	K - pesticides and nutrients
D - pesticides	L - trace elements, pesticides, and nutrients
E - nutrients	M - all or most of the above
F - sanitary analysis (organisms)	N - common ions, trace elements and radioactive
G - pesticides and common ions	P - common, trace, and physical
H - nutrients and common ions	Z - other (explain in remarks)

\* Mandatory if reasonably available, such as from a drillers report or other easily available source.

83. SOURCE AGENCY [A5; WATSTORE #117]

Enter the code identifying the principal agency responsible for collection of data. This field is mandatory only if necessary to uniquely identify the data collection network of more than one agency. Source Agency codes are listed in Part I, Section E of this manual).

84. FREQUENCY OF COLLECTION [A1; WATSTORE #118]

Enter the code indicating frequency with which data are collected at the site. The codes and their meanings are:

- |                                 |                                |
|---------------------------------|--------------------------------|
| A - annually                    | Q - quarterly                  |
| B - bimonthly (every 2 months)  | S - semiannually               |
| C - continuously (recorder)     | W - weekly                     |
| D - daily                       | Z - other (explain in remarks) |
| F - semimonthly (twice a month) | 2 - biannually                 |
| I - intermittently              | 3 - every 3 years              |
| M - monthly                     | 4 - every 4 years              |
| O - one time only               | 5 - every 5 years              |
|                                 | X - every 10 years             |

85. METHOD OF COLLECTION [A1; WATSTORE #133]

Enter the code indicating the method by which water withdrawal data are collected at the site.

- C - calculated from power-consumption records
- E - estimated
- M - metered
- U - unknown
- Z - other (explain in remarks)

86. ANALYZING AGENCY [A5; WATSTORE #307]

Enter up to 5 characters to indicate which agency performed the analyses on the water-quality data collected for this site.

87. PRIMARY NETWORK SITE [A1; WATSTORE #257]

Enter the code to indicate the network designation. This field is mandatory only if required to uniquely identify more than one data collection network for a single collection agency. Following are the codes and their meanings:

- |              |                |
|--------------|----------------|
| 1 - national | 3 - project    |
| 2 - district | 4 - cooperator |

88. SECONDARY NETWORK SITE [A1; WATSTORE #708]

This component allows for more than one entry for network designation. Use the codes as defined under field number 87 (PRIMARY NETWORK SITE).

## XII. WELL FIELDS RECORD

This record can be repeated as many times as needed and linked through the site ID to the SITEFILE. Record numbers are used to distinguish between repeats.

89. NUMBER WELLS IN GROUP [A3; WATSTORE #204]  
Enter the number of wells that make up this well group.
90. DEPTH OF DEEPEST WELL [NO,3; WATSTORE #205]  
Enter the depth of the deepest well in the group, in feet below land surface.
91. DEPTH OF SHALLOWEST WELL [NO,3; WATSTORE #206]  
Enter the depth of the shallowest well in the group, in feet below land surface.
92. METHOD WELLS CONSTRUCTED [A1; WATSTORE #207]  
Enter the code indicating the method by which the wells were constructed.
- |             |                |
|-------------|----------------|
| D - drilled | W - drive-wash |
| J - jetted  | Z - other      |
| V - driven  |                |
93. SIZE OF WELL FIELD [NO,7; WATSTORE #262]  
Enter the mean diameter of the well field, in feet; that is the diameter of a circle that will enclose the well group.

## XIV. WATER-LEVEL RECORD

This record can be repeated as many times as needed and linked through the site ID to the SITEFILE. Record numbers are used to distinguish between repeats.

The 'water level' record is used to enter water-level data for ground-water sites.

- \* 94. DATE MEASURED [A8; WATSTORE #235]  
Enter the date (MMDDYYYY) on which the water level was measured. If the day or month are unknown, show them as 00. Use leading zeros for values of month and day that are less than 10, and specify all four digits for year.

NOTE: Date is a control field, therefore, two entries with the same date and time will not be accepted. Furthermore, if the date is known to the year only, one entry only for that year may be specified. NOTE: The year is used as a secondary key.

- \* 95. TIME OF MEASUREMENT [A4; WATSTORE #709]  
Enter the time of day, when known, using the 24-hour clock.

\* Mandatory if reasonably available, such as from a drillers report or other easily available source.



\* 96. WATER LEVEL [N2,7; WATSTORE #237]

Enter the water level at the site, in feet below land surface. Precision can be carried to two decimal places. If the water level is above land surface, precede the value with a minus sign (-). If the site flows but the head is not known, the site is dry, the level cannot be measured, measurement has been discontinued, or the well was destroyed, leave this field blank and record the appropriate code under STATUS.

\* 97. STATUS [A1; WATSTORE #238]

Enter the code indicating the status of the site at the time the water-level was measured. If no site status is indicated, the reported water-level measurement represents a static level.

- D - the site was dry (no water level is recorded).
- E - the site was flowing recently.
- F - the site was flowing, but the head could not be measured (no water level is recorded).
- G - a nearby site that taps the same aquifer was flowing.
- H - a nearby site that taps the same aquifer had been flowing recently.
- I - injector site (recharges water being injected into the aquifer).
- J - injector site monitor (a nearby site that taps the same aquifer is injecting recharge water).
- N - measurement discontinued.
- O - an obstruction was encountered in the well above the water surface (no water level is recorded).
- P - the site was being pumped.
- R - the site had been pumped recently.
- S - a nearby site that taps the same aquifer was being pumped.
- T - a nearby site that taps the same aquifer had been pumped recently.
- V - foreign substance present on the surface of the water.
- W - well destroyed.
- X - water level affected by stage in nearby surface-water site.
- Z - other conditions that would affect the measured water level (explain in remarks).

\* 98. METHOD OF MEASUREMENT [A1; WATSTORE #239]

Enter the code indicating how the water level was measured.

- A - airline measurement
- B - analog or graphic recorder
- C - calibrated airline measurement
- E - estimated
- G - pressure-gage measurement
- H - calibrated pressure-gage measurement

\* Mandatory if reasonably available, such as from a drillers report or other easily available source.

- L - interpreted from geophysical logs

- M - manometer measurement
- N - nonrecording gage
- R - reported, method not known
- S - steel-tape measurement
- T - electric-tape measurement
- V - calibrated electric-tape measurement
- Z - other

\* 99. WATER LEVEL ACCURACY [A1; WATSTORE #276]

The accuracy of the water level can be coded as an aid to proper table formatting.

- 0 - Water level accuracy to nearest foot
- 1 - Water level accuracy to nearest tenth of a foot
- 2 - Water level accuracy to nearest hundredth of a foot

XIII. MEASURING-POINT RECORD

This record can be repeated as many times as needed and linked through the site ID to the SITEFILE. Record numbers are used to distinguish between repeats.

\* 100. BEGINNING DATE [A8; WATSTORE #321]

Enter the date on which the measuring point was established using the following format - MMDDYYYY. If the day or month are unknown, show them as 00. Use leading zeros for values of month and day that are less than 10, and specify all 4 digits for year. NOTE: Date is a control field, therefore two entries with the same date will not be accepted.

\* 101. ENDING DATE [A8; WATSTORE #322]

If this measuring point is no longer used, enter the date on which it was last used as a measuring point using the following format - MMDDYYYY. A new occurrence of the measuring point data should be used for the new measuring point. In this way, a history of measuring point data corresponding to each water level can be maintained.

\* 102. HEIGHT OF MEASURING POINT [N2,6; WATSTORE #323]

For observation wells or other wells where repeated measurements are made, enter the height of the measuring point above or below land surface datum. Values for measuring points above land surface should be preceded by a minus sign (-).

103. MEASURING POINT REMARK [A100; WATSTORE #324]

A detailed description of the measuring point may be entered here. Up to 94 characters of remarks are allowed.

- \* Mandatory if reasonably available, such as from a drillers report or other easily available source.

Section D - Aquifer Codes

note: left justify the aquifer source code in field number 29

000HKNS HAWKINS FORMATION  
 000LCHR LEECHER METAMORPHICS  
 000MNSR MOUNT STUART GRANODIORITE  
 000MTHW METHOW GNEISS  
 000NWKM NEWAUKUM SERIES  
 000ORCS ORCAS GROUP  
 000PSSN PESHASTIN FORMATION  
 000SPCK SHEEP CREEK CONGLOMERATE  
 000TLBK TURTLEBACK COMPLEX  
 100GVVWO GRAVEL OF WALLA WALLA, OLDER  
 110ALVM QUATERNARY ALLUVIUM  
 110BSLT BASALT  
 110CLVM COLLUVIUM  
 110DGHG DOGS HEAD ANDESITES  
 110DRML DRUMHELLER SILTS  
 110DUNE DUNE SAND  
 110GCPK GLACIER PEAK VOLCANICS  
 110GRCK GOAT ROCK PYROCLASTIC DEPOSITS  
 110MBKR MOUNT BAKER LAVA  
 110MNRR MOUNT RAINIER LAVAS  
 110MSHS MOUNT ST HELENS LAVAS  
 111ALVM HOLOCENE ALLUVIUM  
 111CLWD COLWOOD FORMATION  
 111DUNE DUNE SAND  
 111ELCR ELECTRON MUDFLOW  
 111OSCL OSCEOLA MUDFLOW  
 112ADML ADMIRALTY DRIFT OR CLAY  
 112ALVM ALLUVIUM  
 112ARLG ARLINGTON GRAVEL MEMBER OF VASHON DRIFT  
 112BRNG BORING LAVA  
 112CLVS COLVOS SAND  
 112CRSN CARSON LAVA  
 112CWCH COWICHE GRAVEL  
 112EPRC ESPERANCE SAND MEMBER OF VASHON DRIFT  
 112EVCK EVANS CREEK DRIFT OF FRASER GLACIATION  
 112EVRS EVERSON INTERSTADE OF FRASER GLACIATION  
 112FLVC FLUVIOLACUSTRINE DEPOSITS  
 112GALE GALE SAND  
 112GLCV GLACIO-FLUVIATILE  
 112KTSP KITSAP FORMATION  
 112LCSR LACUSTRINE DEPOSITS  
 112LGHL LOGAN HILL FORMATION  
 112LLCK LILY CREEK FORMATION  
 112LWTN LAWTON CLAY MEMBER OF VASHON DRIFT  
 112MDLD MIDLAND SAND  
 112MNRR MOUNT RAINIER VOLCANICS  
 112MRIN MARINE DEPOSITS  
 112MRVL MARYSVILLE SAND MEMBER OF VASHON DRIFT  
 112NPLM NESPELEM SILT  
 112OKNG OKANOGAN TILL  
 112ORNG ORTING DRIFT OR GLACIATION

Aquifer Codes (Con't.)

112PCCK PILCHUCK CLAY MEMBER OF VASHON DRIFT  
 112PLLP PUYALLUP FORMATION OR INTERGLACIATION  
 112PLUS PALOUSE FORMATION  
 112QUTS QUEETS BEDS  
 112RGLD RINGOLD FORMATION  
 112SCBD SCABLAND FLOOD DEPOSITS  
 112SKKM SKOKOMISH GRAVEL  
 112SLCM STEILACOOM GRAVEL  
 112SLGM STILLAGUAMISH SAND MEMBER OF VASHON DRIFT  
 112SSPG SALMON SPRINGS DRIFT  
 112STCK STUCK DRIFT  
 112STSP SATSOP FORMATION  
 112SUMS SUMAS DRIFT OF FRASER GLACIATION  
 112TCHT TOUCHET BEDS  
 112TFLS TIFLIS MEMBER OF WAHLUKE FORMATION  
 112THLH TAHOLAH FORMATION  
 112TILL TILL  
 112TRHL TROUT HILL LAVA FLOWS  
 112TRRC TERRACE DEPOSITS  
 112TTON TIETON ANDESITE  
 112VSHN VASHON DRIFT OF FRASER GLACIATION  
 112WGHL WINGATE HILL DRIFT  
 112WHLK WAHLUKE FORMATION  
 112WLLP WILLAPA CLAYS  
 120CAMS CAMAS BASALT  
 120CDRL CATHEDRAL GRANITE  
 120CLDP CLOUDY PASS DIORITE  
 120KRGR KRUGER ALKALINE SYENITES  
 120PLLK PHALEN LAKE VOLCANICS  
 120PLMR PALMER VOLCANICS  
 120RSLD ROSSLAND GROUP  
 120SDCK SOLEDUCK FORMATION  
 120SPRD SHEPPARD GRANITE  
 120TIGR TIGER FORMATION  
 120TSSR TWIN SISTERS DUNITE  
 120UDRD UNDERWOOD LAVA  
 121BVRL BEVERLY MEMBER OF ELLENSBURG FORMATION  
 121ELPM ELEPHANT MOUNTAIN FLOW  
 121HARO HARO FORMATION  
 121HOKO HOKO FORMATION  
 121HWSN HOWSON ANDESITE  
 121MNSN MONTESANO FORMATION  
 121QLLT QUILLAYUTE FORMATION  
 121QNLT QUINAULT FORMATION  
 121RFRV RAFT RIVER FORMATION  
 121SELH SELAH TUFF MEMBER OF ELLENSBURG FORMATION  
 121SGLF SUGARLOAF ANDESITE  
 121SLBT SELAH BUTTE FLOW  
 121SMMT SUMMIT CONGLOMERATE  
 121SNPS SNIPES CONGLOMERATES  
 121SQLM SNOQUALMIE GRANODIORITE  
 121TRDL TROUTDALE FORMATION

Aquifer Codes (Con't.)

121UDDM UNDERWOOD MOUNTAIN LAVA  
 122BRNP BROWNS POINT FORMATION  
 122CBRV COLUMBIA RIVER BASALT GROUP  
 122CLLM CLALLAM FORMATION  
 122DGLC DOUGLAS CANYON FORMATION  
 122EGCK EAGLE CREEK FORMATION  
 122ELBG ELLENSBURG FORMATION  
 122EMCL ENUMCLAW VOLCANIC SERIES  
 122FFPK FIFES PEAK FORMATION  
 122FSPG FRENCHMAN SPRINGS MEMBER OF YAKIMA BASALT OF COLUMBIA RIVER  
 122GDRD GRAND RONDE BSLT OF YAKIMA BSLT SUBGROUP OF COLUMBIA RIVER  
 BSLT GROUP  
 122HMBF HAMMER BLUFF FORMATION  
 122HOH HOH FORMATION  
 122HWRD HOWARD ARKOSE  
 122IMNH IMNAHA BASALT OF COLUMBIA RIVER BASALT GROUP  
 122LATH LATAH FORMATION  
 122LCCK LINCOLN CREEK FORMATION  
 122LKVG LAKE VANTAGE LAVAS  
 122MBTN MABTON MEMBER (INFORMAL USAGE) OF ELLENSBURG FORMATION  
 122MSHL MASHEL FORMATION  
 122OCDP ORCHARD POINT CONGLOMERATE OF BLAKELEY FORMATION  
 122PCGG PICTURE GORGE BASALT OF COLUMBIA RIVER GROUP  
 122PDV PEND OREILLE VALLEY ANDESITE  
 122PRPD PRIEST RAPIDS MEMBER OF YAKIMA BASALT OF COLUMBIA RIVER  
 GROUP  
 122QNCY QUINCY DIATOMITE BED OF PRIEST RAPIDS MBR OF YAKIMA BASALT  
 122ROZA ROZA MEMBER OF YAKIMA BASALT OF COLUMBIA RIVER GROUP  
 122RSRP RESTORATION POINT MEMBER OF BLAKELEY FORMATION  
 122SDLM SADDLE MNT BASALT OF YAKIMA, SUBGROUP OF COLUMBIA RIVER  
 BASALT GROUP  
 122SELH SELAH MEMBER (INFORMAL USAGE) OF ELLENSBURG FORMATION  
 122SKMN SKAMANIA VOLCANIC SERIES  
 122SLVS SILVER STAR GRANODIORITE  
 122SQCK SQUAW CREEK DIATOMITE BED OF FRENCHMAN SPRINGS MBR OF YAKIMA  
 BASALT  
 122SVRG STEVES RIDGE FORMATION  
 122TNUM TANEUM ANDESITE  
 122VNTG VANTAGE MEMBER OF ELLENSBURG FORMATION  
 122WIDX WEST INDEX ANDESITIC SERIES  
 122WNPM WANAPUM BASALT OF YAKIMA BASALT SUBGROUP OF COLUMBIA RIV.  
 BASALT GROUP  
 122YKIM YAKIMA BASALT SUBGROUP OF COLUMBIA RIVER BASALT GROUP  
 123BLKL BLAKELEY FORMATION  
 123GROM GEROME VOLCANICS  
 123GRRC GRIES RANCH FORMATION  
 123KDKM KLONDIKE MOUNTAIN FORMATION  
 123LNCL LINCOLN FORMATION  
 123MRSN MARROWSTONE SHALE  
 123OPCS OHANAPECOSH FORMATION  
 123PRTR PORTER SHALE

Aquifer Codes (Con't.)

123PUGT PUGET GROUP  
 123QMPR QUIMPER SANDSTONE  
 123RNTN RENTON FORMATION OF PUGET GROUP  
 123RSRP RESTORATION POINT HORIZON  
 123SKCK SKATE CREEK LAHARIC BRECCIA  
 123STTL SEATTLE FORMATION  
 123TKWL TUKWILA FORMATION OF PUGET GROUP  
 123TMTB TOM THUMB TUFF MEMBER OF KLONDIKE MOUNTAIN FORMATION  
 123TNSD TOWNSEND SHALE  
 123TRVR TWIN RIVER FORMATION  
 123TUTL TOUTLE FORMATION  
 123WKKM WAHKIAKUM FORMATION  
 124BLGM BELLINGHAM BEDS  
 124BNDR BOUNDARY SHALE  
 124BYNE BAYNE SERIES  
 124CBRV CARBON RIVER COAL SERIES  
 124CCKN CHUCKANUT FORMATION  
 124CHLS CHEHALIS SANDSTONE  
 124CLTZ COWLITZ FORMATION  
 124CRBD CARBONADO FORMATION OF PUGET GROUP  
 124CRSC CRESCENT FORMATION  
 124EVCK EVANS CREEK COAL SERIES  
 124FRFX FAIRFAX COAL BEARING ROCKS  
 124FRKL FRANKLIN SANDSTONE  
 124FRKLS FRANKLIN SERIES  
 124GUYE GUYE FORMATION  
 124KBHL KNOB HILL ANDESTIE  
 124KCSS KACHESS RHYOLITE  
 124KMMR KUMMER SERIES  
 124KMMRF KUMMER FORMATION  
 124LYRE LYRE FORMATION  
 124MCIS MC INTOSH FORMATION  
 124MCSN METCHOSIN VOLCANIC SERIES  
 124MLMN MELMONT COAL BEARING ROCKS  
 124MNSS MANASTASH FORMATION  
 124NCHS NACHES FORMATION  
 124NRCF NORTHCRAFT FORMATION OF PUGET GROUP  
 124NTPC NATAPOC FORMATION  
 124OBCK OBRIEN CREEK FORMATION  
 124OLQU OLEQUA FORMATION  
 124OQCK OLEQUA CREEK MEMBER OF COWLITZ FORMATION  
 124PELL PE ELL VOLCANICS MEMBER OF COWLITZ FORMATION  
 124PPNC PIPESTONE CANYON FORMATION  
 124PUYR PUYER FORMATION  
 124RGRV RAGING RIVER FORMATION  
 124RSLN ROSLYN FORMATION  
 124SCCK SCATTER CREEK RHYODACITE OR FORMATION  
 124SKKK SKOOKUMCHUCK FORMATION  
 124SLCK STILLWATER CREEK MEMBER OF COWLITZ FORMATION  
 124SNPL SANPOIL VOLCANICS  
 124SPKN SPIKETON FORMATION OF PUGET GROUP  
 124SPRR SOUTH PRAIRIE FORMATION

Aquifer Codes (Con't.)

124SUMS SUMAS SHALE IN CHUCKANUT FORMATION  
 124SWUK SWAUK FORMATION  
 124TGRM TIGER MOUNTAIN FORMATION OF PUGET GROUP  
 124TNWY TEANAWAY BASALT  
 124WLKS WILKESON COAL SERIES  
 125EGLE EAGLE GREENSCHIST  
 125ESTN EASTON SCHIST  
 200JUMB JUMBO VOLCANICS  
 200KRGM KRUGER MOUNTAIN MALIGNITE  
 200OSYS OSOYOOS GRANODIORITE  
 200WSKM WHISKEY MOUNTAIN GRANODIORITE  
 210BGCL BOGACHIEL FORMATION  
 210CLEM CLE ELUM FORMATION  
 210LCRV LEECH RIVER GROUP  
 210LNLK LOON LAKE GRANITE  
 210VGRG VIRGINIAN RIDGE FORMATION  
 211MGPK MIDNIGHT PEAK FORMATION  
 211WNRP WINTHROP SANDSTONE  
 217PSTN PASAYTEN FORMATION  
 217SPDN SPIEDEN FORMATION  
 220EGCF EAGLE CLIFF PORPHYRITE  
 220INDX INDEX GRANODIORITE  
 220NWBY NEWBY FORMATION  
 220RMML REMMEL GRANODIORITE  
 220TYE TYE GRANITE  
 221CHLN CHELAN GRANODIORITE  
 221MTOR METEOR GRANODIORITE  
 221SKSN SHUKSAN FORMATION  
 230COVD COVADA GROUP  
 230FDLG FIDALGO FORMATION  
 230VNTR VENTURA FORMATION  
 230VNTR VENTURA FORMATION  
 300CLGS CLUGSTON LIMESTONE  
 300DRLK DEER LAKE ARGILLITE  
 300EGLM EAGLE MOUNTAIN QUARTZITE  
 300FCRK FISH CREEK ARGILLITE  
 300LDPN LEAD POINT ARGILLITE  
 300SNJN SAN JUAN SERIES  
 310GRFL GRANITE FALLS LIMESTONE  
 320CHPKB CHOPAKA BASIC INTRUSIVES  
 320CHPKS CHOPAKA SCHIST  
 320GNPK GUNN PEAK FORMATION  
 320HZMN HOZOMEEN SERIES  
 320KRGR KRUGER SCHIST  
 330CLVL COLVILLE QUARTZITE  
 331CHLH CHEWELAH ARGILLITE  
 350SVNS STEVENS SERIES  
 360LDBR LEDBETTER SLATE  
 360MLNY MALONEY METAMORPHIC SERIES  
 370BCKK BUCKSKIN SCHIST  
 370BNDR BOUNDARY ARGILLITE  
 370CDCK CEDAR CREEK ARGILLITE

Aquifer Codes (Con't.)

370CHKM CHIWAUKUM SCHIST  
370DPLK DEEP LAKE ARGILLITE  
370FRNW FERNOW GNEISS  
370GYPS GYPSY QUARTZITE  
370REVS REEVES LIMESTONE MEMBER OF MAITLEN PHYLLITE  
370SWKN SWAKANE BIOTITE GNEISS  
370TONG TONGA FORMATION  
374MSSN MISSION ARGILLITE  
374MTLN METALINE LIMESTONE OR FORMATION  
374NRPR NORTHPORT LIMESTONE  
374RBCK REPUBLICAN CREEK LIMESTONE  
374RDTP RED TOP LIMESTONE  
377ADDY ADDY QUARTZITE  
377MTLN MAITLEN PHYLLITE  
377ODDM OLD DOMINION LIMESTONE  
400BDLK BEAD LAKE FORMATION  
400BFHP BUFFALO HUMP FORMATION OF DEER TRAIL GROUP  
400DRTL DEER TRAIL GROUP  
400EDNA EDNA DOLOMITE OF DEER TRAIL GROUP  
400HCKB HUCKLEBERRY FORMATION  
400LEOL LEOLA VOLCANICS  
400MCHL MC HALE SLATE OF DEER TRAIL GROUP  
400MNHL MOON HILL QUARTZITE MEMBER OF SKOOKUM FORMATION  
400MRDG MARTIN RIDGE SCHIST  
400MRSL MARSHALL DIORITE  
400NONM NO NAME ARGILLITE  
400NPRT NEWPORT GROUP  
400ORNT ORIENT GNEISS  
400RBBN RIBBON GNEISS  
400SDRF SHEDROOF CONGLOMERATE  
400SKKM SKOOKUM FORMATION  
400SSGR STENSGAR DOLOMITE OF DEER TRAIL GROUP  
400TOGO TOGO FORMATION OF DEER TRAIL GROUP



Section E - Source Agency Codes

USGS	GEOLOGICAL SURVEY
WA001	WASH DEPARTMENT OF ECOLOGY, WA
WA002	PUBLIC UTILITY DIST NO.1, SKAGIT COUNTY, WA
WA003	CHELAN COUNTY PUBLIC UTILITY DISTRICT NO.1 WA
WA004	WASHINGTON UNIV-FISHERIES RES INST, WA
WA005	ENVIRONMENTAL ENG, WASHINGTON STATE UNIV, WA
WA006	DEPARTMENT OF ZOOLOGY, UNIV OF WASHINGTON, WA
WA007	CITY OF BREMERTON WATER DEPARTMENT, WA
WA008	CITY OF EVERETT DEPARTMENT OF WATER, WA
WA009	WATER QUALITY DIV, SEATTLE WATER DEPARTMENT, WA
WA010	DEPT OF PUBLIC UTILITIES, CITY OF TACOMA, WA
WA011	MUNICIPALITY OF METROPOLITAN SEATTLE, WA
WA012	DEPARTMENT OF PUBLIC WORKS, KING COUNTY, WA
WA013	WASHINGTON WATER POWER COMPANY, WA
WA014	DOUGLAS COUNTY PUBLIC UTILITIES DISTRICT, WA
WA015	PUBLIC UTILITIES DISTRICT OF GRANT COUNTY, WA
WA016	PUGET SOUND POWER & LIGHT COMPANY, WA
WA017	DEPARTMENT OF LIGHTING, CITY OF SEATTLE, WA
WA018	WASHINGTON STATE DEPARTMENT OF FISHERIES, WA
WA019	WASHINGTON STATE DEPT OF NAT RES. AERIAL PHOTOG, WA
WA020	WATER RESEARCH CENTER, WASH STATE UNIV, WA
WA021	ALBROOK LABORATORY, WASHINGTON STATE UNIV, WA
WA022	GEOHYDROLOGY SECTION, WASHINGTON STATE UNIV, WA
WA024	WEYERHAEUSER COMPANY, WA
WA025	WALKER & ASSOCIATES, INC, WA
WA026	WASH STATE DEPT OF TRANS-PHOTOGRAMMETRY BR, WA
WA027	BURLINGTON NORTHERN, WA
WA028	CLARK COUNTY MAP SERVICE, WA
WA029	SNOHOMISH COUNTY, WA
WA030	CITY OF BELLEVUE, SURVEY DEPT, WA
WA031	HANFORD ENGINEERING DEVELOPMENT LABORATORY, WA
WA032	BATTELLE PACIFIC NORTHWEST LAB, WA
WA033	EVERGREEN STATE COLLEGE, WA
WA034	WASH STATE UNIV. DEPT OF CIVIL ENG, WA
WA035	S.J. GROVES & SONS COMPANY, WA
WA036	NORTHWEST AIR PHOTOS, WA
USAF	AIR FORCE
USAHS	ARMY HEALTH SERVICES
USAPA	ALASKA POWER ADMINISTRATION
USARS	AGRICULTURAL RESEARCH SERVICE
USBIA	BUREAU OF INDIAN AFFAIRS
USBLM	BUREAU OF LAND MANAGEMENT
USBM	BUREAU OF MINES
USBPA	BONNEVILLE POWER ADMINISTRATION
USBR	WATER AND POWER RESOURCES SERVICES
USCE	CORPS OF ENGINEERS
USCEQ	COUNCIL ON ENVIRONMENTAL QUALITY

Section E - Source Agency Codes (Con't.)

USDA	FRUIT PROT AND PRODUCTION RESE LAB
USDOE	DEPARTMENT OF ENERGY
USEDIS	ENVIRONMENTAL DATA AND INFORMATION SERVICE
USEPA	ENVIRONMENTAL PROTECTION AGENCY
USERL	ENVIRONMENTAL RESEARCH LABORATORIES
USESS	NATIONAL ENVIRONMENTAL SATELLITE SERVICE
USFEC	FEDERAL ENERGY REGULATORY COMMISSION
USFEM	FEDERAL EMERGENCY MANAGEMENT
USFHA	FEDERAL HIGHWAY ADMINISTRATION
USFS	FOREST SERVICE
USFWS	FISH AND WILDLIFE SERVICE
USGPO	GOVERNMENT PRINTING OFFICE
USHEW	DEPT OF HEALTH, EDUCATION AND WELFARE
USHUD	DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
USIBW	INTERNATIONAL BOUNDARY AND WATER COMMISSION
USMA	ARMY MILITARY ACADEMY, SCIENCES RESE LAB, NY
USMC	MARINE CORPS
USMFS	NATIONAL MARINE FISHERIES SERVICE
USN	NAVY DEPARTMENT
USNFE	NAVAL FACILITIES ENGINEERING COMMAND
USNOA	NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
USNOS	NATIONAL OCEAN SURVEY
USNPS	NATIONAL PARK SERVICE
USNRC	NUCLEAR REGULATORY COMMISSION
USNTS	NATIONAL TECHNICAL INFORMATION SERVICE
USNWS	NATIONAL WEATHER SERVICE
USOSM	OFFICE OF SURFACE MINING RECLAM & ENFORCEMENT
USPCC	PANAMA CANAL COMMISSION
USRDC	RENO FEDERAL DISTRICT COURT (NV)
USSCS	SOIL CONSERVATION SERVICE
USSPA	SOUTHEASTERN POWER ADMINISTRATION
USSWP	SOUTHWESTERN POWER ADMINISTRATION
USTVA	TENNESSEE VALLEY AUTHORITY
USWRC	WATER RESOURCE COUNCIL



# WASHINGTON STATE DEPARTMENT OF ECOLOGY GROUND WATER MANAGEMENT DATA FORM

SITE FILE

WASHINGTON STATE  
START CARD NUMBER

TRANSACTION T =  A  D  M  
ADD, DELETE, MODIFY

1. SOURCE AGENCY 4 = WA 001

2. SITE ID. 460.33.31.2.22.4380.1  
LATITUDE LONGITUDE WELL NO.

3. LOCAL NO. 12 = 13N / 33E - 34B01  
TOWNSHIP RANGE T. W. SEC. SUB. SEC. NO.

4. LATITUDE 9 = 460333  
DEC. MIN. SEC.

5. LONGITUDE 10 = 1222438  
DEC. MIN. SEC.

6. LAT/LONG ACCURACY 11 = S F T M  
SEC. 5 SEC. 10 SEC. MIN.

7. STATE 7 = 53

8. COUNTY 8 = 067

9. LOCATION MAP 14 = GRAND MOUND

10. SCALE 15 = 24000

11. ALTITUDE 16 = 225.00

12. METHOD OF MEASUREMENT 17 = A L M  
ALTIMETER, LEVEL, MAP

13. ACCURACY 18 = 5

14. HYDROLOGIC UNIT 20 = 17.1001.03

15. STATION TYPE 802 = S L E C P  G M  
STREAM LAKE OR RESERVOIR ESTUARY COASTAL (NOT ESTUARY) SPRING GROUND-WATER (NOT SPRING) METEOROLOGICAL

16. AGENCY USE 803 =  A  I  O  
ACTIVE INACTIVE INVENTORY ONLY

17. REMARKS 806 =

18. DATE SITE ESTABLISHED 711 = 07/15/1987  
MONTH DAY YEAR

19. DATA RELIABILITY 3 =  C  L  M  U  
CHECKED LOCAL MINIMAL UNCHECKED

20. SITE TYPE 2 = C D E H I M O P S T  W  X  
COLLECTOR, DRAIN, EXCAVATION, SAND CONNECTION WELL, MULTIPLE, OUTCROP, POND, SPRING, TUNNEL OR SHAFT, WELL, TEST HOLE

21. DATE OF FIRST CONSTRUCTION 21 = 09/10/1975  
MONTH DAY YEAR

22. USE OF SITE 23 = A C D E G H M O P R S T U  W  X  Z  
ANODE STANDBY, EMER. SUPPLY, DRAIN, GEO. THERMAL, SEISMIC, HEAT RESERV., MINE, OBSERVATION, OIL OR GAS, RECHARGE, REPRESS., TEST, UNUSED, WITH DRAINAGE, WASTE, DESTROYED

24. USE OF WATER 24 = A B C D E F H I J K M N P  Q  R  S  T  U  Y  Z  
AIR COND., BOT. FLING, COM. COMMERCIAL, DR. WATER, POWER, FIRE, DO. MESTIC, IND. GATION, INDUSTRIAL (COOLING), AMING, MEDICAL, INDUSTRIAL, PUBLIC SUPPLY, RECREATION, STOCK, INSTITUTION, UNUSED, DESAL, OTHER

25. SECONDARY WATER USE 25 =

26. TERTIARY WATER USE 26 =

27. AQUIFER TYPE CODE 713 =  U  N  C  M  X  
UNCONFINED SINGLE, UNCONFINED MULTIPLE, CONFINED SINGLE, CONFINED MULTIPLE, MISSED

28. PRIMARY AQUIFER 714 =

29. HOLE DEPTH 27 = 123.00

30. SOURCE OF DEPTH DATA 29 = D

31. INVENTORY WATER LEVEL 30 = 19.37

32. DATE MEASURED 31 = 09/10/1975  
MONTH DAY YEAR

33. METHOD OF MEASUREMENT 34 = A B C E G H L M N  R  S  T  V  Z  
AIRLINE, ANALOG, CALIBRATED AIRLINE, ESTIMATED, PRESSURE GAGE, CALIBRATED PRESSURE GAGE, GEOPHYSICAL LOGS, MAND. METER, NON REC. GAGE, REPORTED, STEEL TAPE, ELECTRIC TAPE, CALIBRATED ELECTRIC TAPE, OTHER

34. SITE STATUS 37 = D E F G H I J N O P R S T V W X Z  
DRY, RECENTLY FLOWING, FLOWING, NEARBY FLOWING, NEARBY RECENTLY FLOWING, INJECTOR SITE, IN-SITE MONITOR, HEAD DISCON., OR. STRUCTURE, PUMPING, RECENTLY PUMPED, NEARBY PUMPING, RECENTLY PUMPED, FOREIGN SUB. STANCE, WELL DESTROYED, SURFACE WATER EFFECTS, OTHER

35. SOURCE OF WATER LEVEL 33 = D

FOOT NOTES:

① SOURCE OF DATA CODES: A D G L M O R S Z  
OTHER COPY, DRILLER, GEOLOGIST, LOGS, MEMORY, OWNER, OTHER REPORTED, REPORTING AGENCY, OTHER

Recorded by A. Walters  
 Date 9-17-87

GROUND WATER MANAGEMENT IDENTIFICATION RECORD

R=189

T=ADM

RECORD NUMBER 736=001

38. IDENT. 190# G.W.M.A.-87-10

39. ASSIGNER 191=ECOLOG.Y

RECORD NUMBER 736=002

38. IDENT. 190#

39. ASSIGNER 191=

OWNER IDENTIFICATION RECORD

R=158

T=ADM

RECORD NUMBER 718=001

40. DATE OF OWNERSHIP 159# 09/10/1975

41. NAME 161# CLEARWATER FISH FARM

RECORD NUMBER 718=002

40. DATE OF OWNERSHIP 159#

41. NAME 161#

CONSTRUCTION RECORD

R=58

T=ADM

ENTRY NUMBER 59#001

RECORD NUMBER 723#001

42. DATE OF COMPLETION 60# 09/10/1975

43. CONTRACTOR/DRILLER 63# HENRY D.I.G.S.

44. SOURCE OF CONST. DATA 64# D

45. METHOD OF CONSTRUCTION 65# A B C D H J P R T V W Z

46. FINISH 66# C F G H O P S T W X Z

47. TYPE OF SEAL 67# B C G N Z

48. BOTTOM OF SEAL 68# 1.8

49. METHOD OF DEVELOPMENT 69# A B C J N P S Z

50. NUMBER OF HOURS IN DEVELOPMENT 70# 2.4

51. SPECIAL TREATMENT DURING DEVELOPMENT 71# C D E F H M Z

HOLE DIAMETER RECORD

R=72

T=ADM

CONSTRUCTION ENTRY NO. 59#001

RECORD NUMBER 724#001

724#002

724#003

52. DEPTH TO TOP OF HOLE SEGMENT 73# 0.00

73#

73#

53. DEPTH TO BOTTOM OF HOLE SEGMENT 74# 1.23.00

74#

74#

54. DIAMETER OF HOLE SEGMENT 75# 1.2.00

75#

75#

CASING RECORD

R=72

T=ADM

CONSTRUCTION ENTRY NO. 59#001

RECORD NUMBER 725#001

725#002

725#003

55. DEPTH TO TOP OF CASING SEGMENT 77# 0.00

77#

77#

56. DEPTH TO BOTTOM OF CASING SEGMENT 78# 1.23.00

78#

78#

57. DIAMETER OF CASING SEGMENT 79# 1.2.00

79#

79#

58. CASING MATERIAL 80#

80#

80#

59. THICKNESS OF CASING 81#

81#

81#

FOOT NOTES:

① SOURCE OF DATA CODES

A D G L M O R S Z

② CASING MATERIAL CODES

B C D G I M P R S U W Z

**OPENING RECORD**

R=82 T=(A) D M  
ADD, DELETE, MODIFY

CONSTRUCTION ENTRY NO. 59# 0 0 1

RECORD NUMBER 726# 0 0 1 726# 0 0 2 726# 0 0 3

60. DEPTH TO TOP OF SECTION 83# 73.00 83# 113.00 83#

61. DEPTH TO BOTTOM OF SECTION 84# 81.00 84# 123.00 84#

62. TYPE OF OPENINGS 85=S 85=S 85=

63. TYPE OF MATERIAL 86=S 86=S 86=

64. DIAMETER OF OPEN SECTION 87=12.00 87=12.00 87=

65. WIDTH OF OPENING 88= 0.18 88= 0.18 88=

66. LENGTH OF OPENING 89= 1.00 89= 1.00 89=

**LIFT RECORD**

R=42 T=(A) D M  
ADD, DELETE, MODIFY

ENTRY NO. 254# 0 0 1

RECORD NUMBER 254# 0 0 1

67. TYPE OF LIFT 43# A B C J P R S (T) U Z  
AIR, BUCKET, CENTIFUGAL, RT. PISTON, ROTARY, SUBMERSIBLE, TURNING, UNKNOWN, OTHER

68. DATE RECORDED 38=09/30/1975  
MONTH DAY YEAR

69. INTAKE DEPTH 44= 95

70. TYPE OF POWER 45# D (E) G H L N W Z  
DIESEL, ELECTRIC, GASOLINE, HAND, LP GAS, NATURAL GAS, WHIRLWIND, OTHER

71. HORSE-POWER 46=

**OTHER DATA AVAILABLE**

R=180 T=(A) D M  
ADD, DELETE, MODIFY

RECORD NUMBER 312# 0 0 1

72. TYPE OF DATA 181=W.E.A.T.H.E.R.

73. LOCATION OF DATA 182# (C) D R Z  
COOP. DIST. REPORTING OTHER  
 STATION, TRACT, AGENCY, OTHER

182# C D R Z

74. FORMAT 261# (F) M P Z  
FULL MACHINE PUB.  
 READABLE, LISTED, OTHER

261# F M P Z

**GEOPHYSICAL-LOG RECORD**

R=198 T=(A) D M  
ADD, DELETE, MODIFY

RECORD NUMBER 739# 0 0 1

75. TYPE OF LOG 199# G

76. BEGINNING DEPTH 200# 0.00

77. ENDING DEPTH 201# 123.00

78. SOURCE OF DATA 202# D

**FOOT NOTES:**

① SOURCE OF DATA CODES:  
 A D G L M O R S Z  
OTHER DRILLER, GEOLOGIST, LOCAL, MERCHANT, OWNER, OTHER REPORTING OTHER  
 GOV'T, REPORTED, AGENCY.

② TYPE OF LOG CODES: A B C D E F G H I J K L M N O P Q  
TOR, COLLAR, CALIPER, DRILLER'S, ELECTRIC, FLUID CONDUIT, GEOLOGIST, MAGNETIC, INDUCTION, GAMMA RAY, DIPMETER, LATERAL, MICROLOG, NEUTRON, J-LITER, PHOTO, RADIO-ACTIVE.

S T U V X Z  
SOME, TEST, GAMMA-FLUID CORE, OTHER  
 GAMMA, VELOCITY.

③ TYPE OF OPENINGS CODES: F L M P R S T W X Z  
FRACTURE, LOUVERED, MESH, PERFORATED, WIRE, SCREEN, SAND POINT, WALLED, OPEN HOLE, OTHER  
 SHUTTERED.

④ TYPE OF MATERIAL CODES FOR OPEN SECTIONS: B C G I M P R S T Z  
BRASS OR BRONZE, CONCRETE, GALV. IRON, WROUGHT IRON, OTHER METAL, PVC OR PLASTIC, STAINLESS STEEL, T&E, OTHER

**NETWORK RECORD**

R=114 T= (A) D M

RECORD NUMBER 730# 0 0 1

79. TYPE OF NETWORK 706# QW (WL) WD

80. BEGIN YEAR 115# 1 9 7 9

81. END YEAR 116# 1 9 8 4

82. TYPE OF ANALYSES 120# A B C D E F (G) H I J K L M N P Z

83. SOURCE AGENCY 117# W A 0 0 1

84. FREQUENCY OF COLLECTION 118# A S C D F I M O Q (S) W Z 2 3 4 5 X

85. METHOD OF COLLECTION 133# (C) E M U Z

86. ANALYZING AGENCY 307# W A 0 0 1

87. PRIMARY NETWORK SITE 257# 1 2 3 (4)

88. SECONDARY NETWORK SITE 708#

**WELL FIELDS**

R=203 T= (A) D M

RECORD NUMBER 729# 0 0 1

89. NO WELLS IN GROUP 204# 4

90. DEEPEST DEPTH 205# 1 3 6

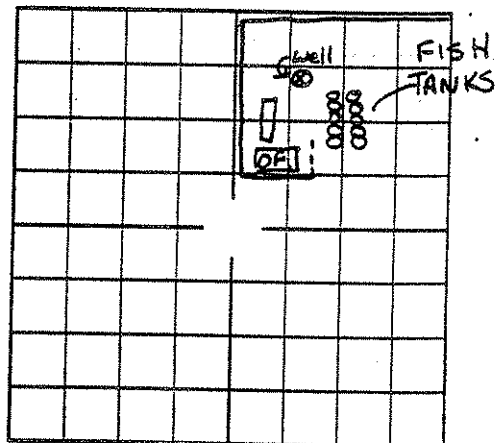
91. SHALLOWEST DEPTH 206# 6.8

92. CONSTRUCTION METHOD 207# (D) J V W Z

93. SIZE OF WELL FIELD 262# 7 0 0

NOTE: Locate the well site accurately on the section below.

T13N/R33E-34B01



**COLOR KEY:**

GREEN SHADED—Mandatory for new WATSTORE sites.

GREEN—Mandatory if the information is reasonably available, such as from driller's reports or other easily available

BLACK—Not mandatory.





## PART II. CODING INSTRUCTIONS FOR WATER QUALITY DATA

In order to prevent duplicate well entries in the STORET system, each grantee or its contractor will review a data retrieval of all wells in the national STORET data base that are in that Ground-Water Management Area (GWMA). If a well to be used in the GWMA study already exists in the STORET system, the existing primary and secondary station codes should be used. See the STORET ground-water manual for instructions and definitions of primary and secondary station codes (Ground-Water Data Management with STORET, 1986, EPA/600/M-86/007). New primary station codes should not be assigned for wells already in the STORET system.

## PART II. TABLE OF CONTENTS

	<u>Page</u>
A. Introduction	5
B. Entering Header Data in STORET Format	9
C. Entering Parametric Data in STORET "SC" Format (water quality, sampling parameters)	32
<b>LIST OF FIGURES</b>	
Figure 1. Sample location storage form.	11
Figure 2. Example station location storage form.	13
Figure 3. Forty-acre tract letter (quarter-quarter) diagram.	17
Figure 4a. Subbasin boundaries (Water Resource Inventory Areas) for the Puget Sound Basin.	24
Figure 4b. Subbasin boundaries (Water Resource Inventory Areas) for southwest Washington.	25
Figure 4c. Subbasin boundaries (Water Resource Inventory Areas) for south-central Washington.	26
Figure 4d. Subbasin boundaries (Water Resource Inventory Areas) for east-central Washington.	27
Figure 4e. Subbasin boundaries (Water Resource Inventory Areas) for north-central Washington.	28
Figure 5. Example of station location data entry in STORET format.	31
Figure 6. Example of STORET SC format for parametric data in Table 3.	32
<b>LIST OF TABLES</b>	
Table 1. STORET county codes for Washington.	19
Table 2. Major, minor, and subbasin names and codes in Washington for STORET.	23
Table 3. Example data reporting form.	33
Table 4. Remark codes to use with STORET data.	35

## A. Introduction

The following instructions outline procedures for reporting water quality and associated data in STORET format. STORET is the data base used by Ecology and EPA for water quality and associated information. Data must be submitted in ASCII text-type files. Boundaries between lines are marked by carriage return and line feed. The end of the file is marked by Control Z.

An example of the STORET WATER QUALITY FILE - STATION LOCATION STORAGE form follows. Since this form is used for several different functions, parts of the form do not pertain to this program. Mandatory fields are shaded in green on the form. Fields outlined in green are mandatory if the information is reasonably available, such as from a driller's report or other easily available source. Fields outlined in black do not pertain to this program and should not be filled in.

### GROUND WATER QUALITY DATA STORAGE FORMATS

This part contains an introduction to the formatting and retrieval strategies used in STORET. An explanation of data needed for storage is presented in the next several sections.

#### Data Needs Identified for Ground Water/STORET Users

A station must be thoroughly and correctly described so that data associated with it can be stored and later retrieved. It should be emphasized that the more information available about a station, the more flexibility there will be in retrieving the data stored with that station.

Three broad categories of descriptors have been identified as needed by Ground Water/STORET users to completely document information available for a particular station. These categories are:

- o Station descriptors.
- o Sample descriptors.
- o Analytical findings.

There are several elements under each category that will enable the user to describe the station thoroughly. These elements are perhaps more information than would be needed to store surface water data. Elements making up each category of descriptors are described below. A graphic representation of where these descriptors should be entered into the data record are given in Appendix A.

### Station Descriptors

Factors which are descriptive of the sampling location and would not change over time are called "station descriptors." There are three types of station descriptors needed by ground-water data managers to support their ground-water monitoring data. They are as follows:

#### Facility Descriptors

Facility descriptors are descriptors of the operation being monitored, such as type of waste management area (e.g., landfill), facility location (not the corporate headquarters), (e.g., zip code), and type of business (e.g., disposer of hazardous waste). Facility descriptors except ownership, will always be stored in either a station header or a descriptive paragraph.

#### Physical Setting Descriptors

Physical setting descriptors are descriptors of the setting in which the facility is located and from which samples were taken, such as aquifer name or geologic formation name. For the most part, these descriptors are stored in the parametric data field. Two of these descriptors are stored in the descriptive paragraph and one descriptor in the station header.

#### Well Descriptors

Well descriptors are descriptors of those characteristics of a well that may be an important factor in data analysis and that would not be expected to change over time, such as type of well, well depth, and casing material. All but one of these descriptors will be stored in the parametric data "fixed date" field. Note that the term "fixed date" under the parameter field means elements that will not change with time.

### Sample Descriptors

Factors that describe a sample at the time it was taken and that are expected to change with each sampling event are called "sample descriptors." Three types of sample descriptors needed by ground-water data managers to support their ground-water monitoring data are:

### Sampling Purpose Descriptors

Sampling purpose descriptors are descriptors of why and by whom a sample was taken. These descriptors are stored in the parametric "variable date field."

### Sampling Condition Descriptors

Sampling condition descriptors are descriptors of the conditions during the sampling event, such as the depth to the top of the water table or the temperature. These descriptors are stored in the parametric "variable date field."

### Sampling/Analysis Descriptors

Sampling/analysis descriptors are descriptors to document how a sample was taken and/or analyzed, such as how the sample was drawn and whether or not it was replicated.

### Analytical Findings

The findings that were determined from each sample at a station are called "analytical findings" (e.g., the concentration of arsenic in the sample). Analytical findings will be stored in the STORET parametric data field by using "parameter codes." A printed list of all current STORET parameters and their codes may be obtained by users of the STORET system with the command %Batch with one of the following: PARMALFA, PARNUMER, and PARCAS. Descriptions of these lists are contained in Section 4.6.5 of this report, and instructions on storing findings can be found in Chapter WQ-DE of the STORET User's Handbook (February 1982). A list of the parametric codes especially pertinent to RCRA and likely useful to others can be found in Appendices G and H of this manual.

There are specific formats that must be used when inputting station and parametric data into STORET. Station header data are always stored and modified with the ?01 format which is a fixed form method. Exhibit 4-1 is the EPA form used for storing station location data in the STORET Water Quality File. Parametric data can be stored with five different formats: ?00, ?01, ?02, ?03, and ?04. Whereas any of these formats are acceptable, the ?00 format is the most versatile and contains special features to be discussed in a later section that make it the only recommended format for ground-water users.

Chapter WQ-DE of the STORET User's Handbook (February 1982) describes the technical procedures for storing data in STORET. Specifically, it describes the various storage formats, how each one can be used, how to invoke each format, and how to enter data. This chapter is meant to be a supplement to Chapter WQ-DE of the STORET User's Handbook (February 1982). Rather than describing the technical procedures for entering any data into STORET, this chapter assists ground-water users in understanding what information is needed for data storage, and describes what has been determined to be the most useful organization and format for ground-water monitoring data in STORET. Extensive capabilities have been provided for storing station and sampling data. Users should determine which of these capabilities are appropriate to them.

#### Station Header

Before any ground-water monitoring data can be entered in STORET, an identification of each station from which the samples were taken must be "established" in the data base. In other words, a station header must be created for each ground-water monitoring well to which data are attributed.

## B. Entering Header Data in STORET Format

Figure 1 is a station location storage format form to be used for station headers. The information described in these instructions for entering header data is to be submitted one time only for each well unless the information for that sampling location (e.g., well) changes. Figure 2, an example station location storage form, with information filled in, illustrates the following instructions.

To store a new station, you have to use the following "cards." Lines in a data set are the equivalent of a deck of cards, and the terms are used interchangeably in this documentation.

<u>Name</u>	<u>Use</u>	<u>Card Type (in space 80)</u>	<u>Required</u>
Agency	FOR ECOLOGY USE ONLY.	A	No
Station Type Card	Supplies the attributes or the characteristics of the site.	T	Yes
Station Card	Supplies station identifier, state and county codes.	S	Yes
Lat/Long Card	Supplies latitude/longitude, precision code, and depth of water at site. Also supplies surface elevation of station, and up to 5 aquifer codes.	Ø	Yes
Basin Card	Supplies EPA basin names, basin codes, and EPA eco-region code.	3	Yes
Location Card	Supplies narrative station description, hydrologic unit code, and river reach information.	4	Yes
Descriptive Paragraph Card	Further descriptive information about the station. This can be anything the user wishes.	5	No

Figure 1.

**DEPARTMENT OF ECOLOGY STORET WATER QUALITY FILE - STATION LOCATION STORAGE**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
AGENCY CODE (Left Justify)																								UNLOCK AFTER (Days)		UNLOCKING KEY (Left Justify)		INDIVIDUAL STATION DATA NAME, LOCATION, AGENCY, TELEPHONE (Optional Comments - will not be stored)																																																			
AGENCY CARD (A CARD)																								LOCK AFTER		CONTR. CODE																																																					
STATION TYPE CARD (F CARD)																								YEAR		NO.																																																					
A STRING OF VALID COMBINATIONS OF STATION TYPE CODES SEPARATED BY SLASHES																																																																															
STATION CARD (S CARD)																																																																															
LATITUDE/LONGITUDE CARD (HEADER CARD 6)																																																																															
SORT NO.		PRIMARY STATION CODE (Left Justify)										SECONDARY STATION CODE (Left Justify)										STATE		COUNTY		SHIP CODES		CONTR. CODE																																																			
1		14 18										31 46										48 49		50 51		52 53		54 55																																																			
SORT NO.		LATITUDE (Zero Fill)		LONGITUDE (Zero Fill)		TOTAL STATION DEPTH		STATION ELEV.		LEVEL 1 INDEX		LEVEL 2 INDEX		LEVEL 3 INDEX		LEVEL 4 INDEX		LEVEL 5 INDEX		LEVEL 6 INDEX		LEVEL 7 INDEX		LEVEL 8 INDEX		LEVEL 9 INDEX		LEVEL 10 INDEX		LEVEL 11 INDEX		LEVEL 12 INDEX		LEVEL 13 INDEX		LEVEL 14 INDEX		LEVEL 15 INDEX		LEVEL 16 INDEX		LEVEL 17 INDEX		LEVEL 18 INDEX		LEVEL 19 INDEX		LEVEL 20 INDEX																															
1		44		11		13		10		25		26		31		32		37		41		42		45		46		50		51		54		55		58		59		60		61		62																																			
SORT NO.		TERMS		TERMS		TERMS		TERMS		TERMS		TERMS		TERMS		TERMS		TERMS		TERMS		TERMS		TERMS		TERMS		TERMS		TERMS		TERMS		TERMS		TERMS		TERMS		TERMS		TERMS		TERMS																																			
1		0 0		0 0		0 0		0 0		0 0		0 0		0 0		0 0		0 0		0 0		0 0		0 0		0 0		0 0		0 0		0 0		0 0		0 0		0 0		0 0		0 0		0 0																																			
SORT NO.		STATION LOCATION MAJOR BASIN NAME		STATION LOCATION MINOR BASIN NAME		MAJOR/MINOR BASIN CARD (HEADER CARD 2)		RAI CARD (HEADER CARD 1)		RAI CARD (HEADER CARD 2)		RAI CARD (HEADER CARD 3)		RAI CARD (HEADER CARD 4)		RAI CARD (HEADER CARD 5)		RAI CARD (HEADER CARD 6)		RAI CARD (HEADER CARD 7)		RAI CARD (HEADER CARD 8)		RAI CARD (HEADER CARD 9)		RAI CARD (HEADER CARD 10)		RAI CARD (HEADER CARD 11)		RAI CARD (HEADER CARD 12)		RAI CARD (HEADER CARD 13)		RAI CARD (HEADER CARD 14)		RAI CARD (HEADER CARD 15)		RAI CARD (HEADER CARD 16)		RAI CARD (HEADER CARD 17)		RAI CARD (HEADER CARD 18)		RAI CARD (HEADER CARD 19)		RAI CARD (HEADER CARD 20)																																	
1		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST																																	
SORT NO.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.		LOCATION OF SITE, LANDMARK NAMES, ETC.																																	
1		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST		PACIFIC NORTHWEST																															
SORT NO.		REACH CODING		REACH CODING		REACH CODING		REACH CODING		REACH CODING		REACH CODING		REACH CODING		REACH CODING		REACH CODING		REACH CODING		REACH CODING		REACH CODING		REACH CODING		REACH CODING		REACH CODING		REACH CODING		REACH CODING		REACH CODING		REACH CODING		REACH CODING		REACH CODING		REACH CODING		REACH CODING																																	
1		ON		ON		ON		ON		ON		ON		ON		ON		ON		ON		ON		ON		ON		ON		ON		ON		ON		ON		ON		ON		ON		ON		ON																																	
SORT NO.		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH		MILES ON REACH																																	
1		25.76		25.76		25.76		25.76		25.76		25.76		25.76		25.76		25.76		25.76		25.76		25.76		25.76		25.76		25.76		25.76		25.76		25.76		25.76		25.76		25.76		25.76																																			





Figure 2.

**DEPARTMENT OF ECOLOGY      STORED WATER QUALITY FILE - STATION LOCATION STORAGE**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
AGENCY CODE (Left Justify)															UNLOCKING KEY (Left Justify)															UNLOCK AFTER (Left Justify)										CON. BRO. CODE (Left Justify)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
AGENCY NAME (Left Justify)															INDIVIDUAL STORING DATA NAME, LOCATION, AGENCY TELEPHONE (Optional Comments - fill out for stored)															LOCK AFTER										CON. BRO. CODE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
STATION TYPE CARD (A CARD)															STATION TYPE CARD (F CARD)															STATION TYPE CARD (S CARD)										STATION TYPE CARD (T CARD)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
A STRING OF VALID COMBINATIONS OF STATION TYPE CODES SEPARATED BY SLASHES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
WELL/ARMENT/MUN																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
STATION CARD (S CARD)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
PRIMARY STATION CODE (Left Justify)															SECONDARY STATION CODE (Left Justify)															SECONDARY STATION CODE (Left Justify)										STATION ALIASES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
4182242122274701															86010007															35N42W02R01										626158-05153053																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
LATITUDE/LONGITUDE CARD (HEADER CARD 6)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
LATITUDE (Left Justify)															LONGITUDE (Left Justify)															STATION DEPTH (Left Justify)										STATION DEPTH (Left Justify)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
482242122274701															22274701															27000										27000																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
AQUIFER CODES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
RM CARD (HEADER CARD 1)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
LEVEL 1 INDEX															LEVEL 2 INDEX															LEVEL 3 INDEX															LEVEL 4 INDEX															LEVEL 5 INDEX															LEVEL 6 INDEX															LEVEL 7 INDEX															LEVEL 8 INDEX															LEVEL 9 INDEX															LEVEL 10 INDEX															LEVEL 11 INDEX															LEVEL 12 INDEX															LEVEL 13 INDEX															LEVEL 14 INDEX															LEVEL 15 INDEX															LEVEL 16 INDEX															LEVEL 17 INDEX															LEVEL 18 INDEX															LEVEL 19 INDEX															LEVEL 20 INDEX																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
1															2															3															4															5															6															7															8															9															10															11															12															13															14															15															16															17															18															19															20															21															22															23															24															25															26															27															28															29															30															31															32															33															34															35															36															37															38															39															40															41															42															43															44															45															46															47															48															49															50															51															52															53															54															55															56															57															58															59															60															61															62															63															64															65															66															67															68															69															70															71															72															73															74															75															76															77															78															79															80															81															82															83															84															85															86															87															88															89															90															91															92															93															94															95															96															97															98															99															100														
RM CARD (HEADER CARD 2)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
MAJOR/MINOR BASIN CARD (HEADER CARD 3)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
STATION LOCATION MAJOR BASIN NAME															STATION LOCATION MINOR BASIN NAME															LOCATION BASIN CODES										REACH CODING																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
PACIFIC NORTHWEST															PUGET SOUND															131112										ON OFF MILES ON REACH																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
1															2															3										4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
LOCATION DESCRIPTION CARD (HEADER CARD 4)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
LOCATION OF SITE LANDMARK NAMES, ETC															HYDROLOGIC UNIT CODE															REACH CODING										MILES ON REACH																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
CAREFREE ACRES MOBILE HOME PARK															1710019															5243-6246										35278																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
PAGE 1 OF 2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											



**AGENCY CARD (A CARD)**

**AGENCY CODE - FOR ECOLOGY USE ONLY.**

STATION TYPE CARD (T CARD)

<u>Space</u>	<u>Contents</u>	<u>Required</u>
1-78	Must begin with a slash (/) which is pre-printed on the form for users' convenience. A valid station type which describes the type of water body 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 the valid station types, see the STORET Help File "STORET.HELP.STATION.TYPE". The Help File also contains examples of their format and use.	Yes
79	Blank	No
80	The letter "T" is entered. This is the card identifier.	Yes

A list of valid station types is in the back of this document (Exhibit 4-1 in Appendix A). It includes a short definition of the types. Users are required to specify one one-level and one two-level code for each station.

**STATION CARD (S CARD)**

**NOTE:** No two wells can have the same Primary or Secondary Station Code.

<u>Space</u>	<u>Contents</u>	<u>Required</u>
1-3	Blank	No
4-18	The latitude/longitude followed by the sequential number will represent the Primary Station Code for each sampling location. This code must be the same as the USGS latitude/longitude Site ID number if the site exists in the USGS data base. If the site is not in the USGS data base, the latitude/longitude location should be determined to the nearest second using a map of no larger scale than a 7.5 minute quadrangle map, and a sequential number assigned (01 if no site with the same latitude/longitude already in the USGS system; the next highest sequential number if others with the same latitude/longitude already exist).	Yes
19-33	Blank	No
34-41	The first Secondary Station Code is the Ecology I.D. number consisting of the following:  First 4 characters = the Ground-Water Management Area Identifier Code:  Clover-Chambers Creek Basin -- 8601 Island County - 8602 South King County - 8603 Vashon/Maury Island - 8604 Gig Harbor - 8605 Kitsap County - 8606 Redmond-Bear Creek - 8607 Issaquah Valley - 8608 North Clark County - 8709 Thurston County - 8710 Deer Park Basin - 8711 Lummi Indian Reservation - 8712 Toppenish Creek Basin - 8713 East King County - 8714 Methow River Basin - 8715  Last 4 characters = assigned a unique number (grantee's choice). Leading zeros are mandatory.	No

STATION CARD (S CARD) - continued

<u>Space</u>	<u>Contents</u>	<u>Required</u>
42-45	Blank	No
46-56	If the sampling site is in the USGS data base, the second Secondary Station Code should be the USGS local identifier which is the township, range, section, quarter-quarter letter (Figure 3), sequential number (leaving out slashes and dashes). See Part I, LOCAL NUMBER, pg. C-3. Leading zeroes required; e.g., 20N02W29R01.	No

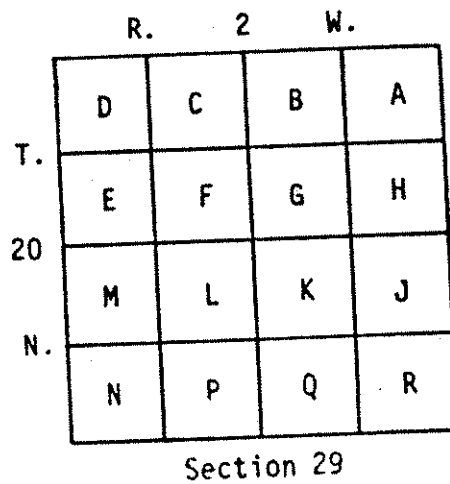


Figure 3. Forty-acre tract letter (quarter-quarter diagram).

If the sampling site is not in the USGS data base, the local identifier (township, range, section, quarter-quarter letter, sequential number) should be determined using a map of no larger scale than a 7.5 minute quadrangle map. The sequential number should be the next consecutive integer (01, 02, . . .) higher than the highest existing one for that township, range, section, quarter-quarter letter.

57	Blank	No
----	-------	----

STATION CARD (S CARD) - continued

<u>Space</u>	<u>Contents</u>	<u>Required</u>
58-67	If the sampling site is a public water supply well, the Secondary Station Code should be the 6-digit DSHS Station I.D. Number followed by a dash and the 3-digit source code. (Source codes have been stored as 2 digits in the past, but DSHS is planning to change them to 3 digits soon.)	No
68-69	The two-character FIPS state code which is required. It is always "53" for Washington. It is pre-printed on the form for users' convenience.	Yes
70-72	The three-character FIPS county code which is required. A leading zero is required. The zero is pre-printed on the form for users' convenience. (See Table 1 for a list of county codes.)	Yes
73-77	Blank	No
78-79	For new stations, "NS" is entered. If it is an existing STORET station, you do not have to enter this line.	Yes
80	The character "S" is entered. This is the card identifier.	Yes



Table 1. County codes for Washington State.

<u>County</u>	<u>Code</u>	<u>County</u>	<u>Code</u>
Adams	001	Lewis	041
Asotin	003	Lincoln	043
Benton	005	Mason	045
Chelan	007	Okanogan	047
Clallam	009	Pacific	049
Clark	011	Pend Oreille	051
Columbia	013	Pierce	053
Cowlitz	015	San Juan	055
Douglas	017	Skagit	057
Ferry	019	Skamania	059
Franklin	021	Snohomish	061
Garfield	023	Spokane	063
Grant	025	Stevens	065
Grays harbor	027	Thurston	067
Island	029	Wahkiakum	069
Jefferson	031	Walla Walla	071
King	033	Whatcom	073
Kitsap	035	Whitman	075
Kittitas	037	Yakima	077
Klickitat	039		

LATITUDE/LONGITUDE CARD (HEADER CARD 0)

<u>Space</u>	<u>Contents</u>	<u>Required</u>
1-6	Blank	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.	Yes
	For Clarity:	
7-8	= degrees	
9-10	= minutes	
11-12	= seconds	
13	= 1/10ths of seconds	
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 on the "S" card.	Yes
	For Clarity:	
14-16	= degrees	
17-18	= minutes	
19-20	= seconds	
21	= 1/10ths of seconds	
22-27	Blank	No
28	The precision code which indicates the preciseness with which the lat/long was measured. If nothing is coded, a "4" is assumed.	No

<u>Code</u>	<u>Precision</u>
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

LATITUDE/LONGITUDE CARD (HEADER CARD 0) - continued

<u>Space</u>	<u>Contents</u>	<u>Required</u>
29	The units used when entering the aquifer thickness at the sampling site (F for feet or M for meters). If nothing is entered, feet are assumed.	No
30-32	Refers to aquifer thickness. If nothing is entered, "000" is assumed.	No
33-37	The surface elevation of the station in feet as a five-digit, whole number.	No
38-77	Aquifer code of sampling site. Five sets of aquifer codes, each 8 characters long, can be entered. The first three characters must be numeric; the remaining five are alphanumeric. Used predominantly with ground-water wells. See Part I, Section D, Aquifer Codes, page D-1 through D-6.	No
78-79	Blank	No
80	The character zero "0" is entered. This is the card identifier.	Yes

MAJOR/MINOR BASIN CARD (HEADER CARD 3)

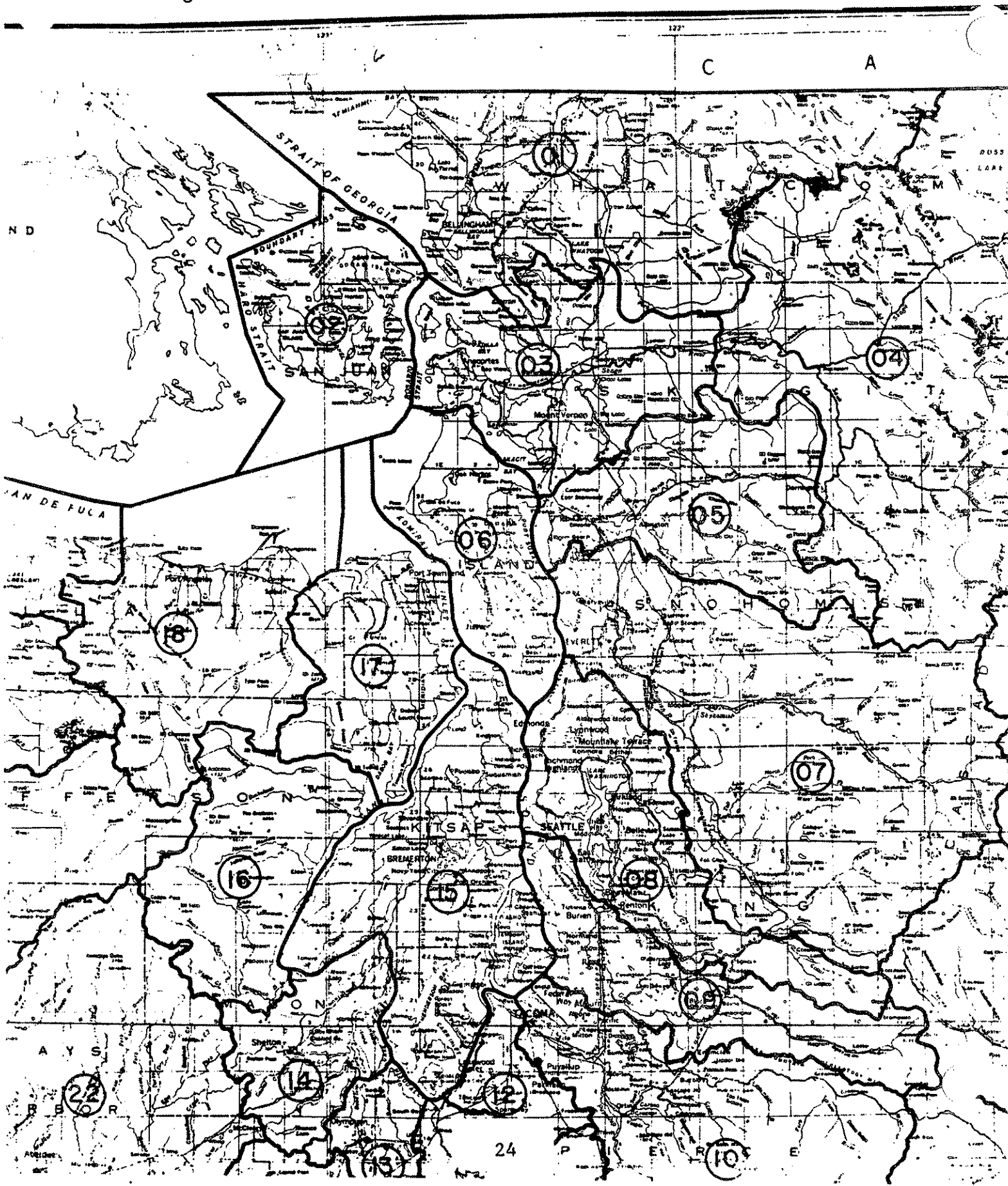
<u>Space</u>	<u>Contents</u>	<u>Required</u>
1-3	Blank	No
4-27	The EPA major basin name in which the station is located. It is a required field. The name is always "Pacific Northwest." It is pre-printed on the form for users' convenience.	Yes
28-67	Minor Basin name starting with space no. 28 (e.g., Puget Sound, Coastal, Yakima). May be up to 29 characters. See Table 2 for list of Minor Basin names. For added clarity, the subbasins are also listed.	Yes
68-69	The EPA major basin code where the station is located. This is a required field. It is always "13" in the Pacific Northwest. It is pre-printed on the form for users' convenience.	Yes
70-71	The EPA minor basin code where the station is located. This is a required field. Minor and Subbasin codes are shown in Table 2.	Yes
72-73	This is an optional field which is used to enter the subbasin code if one is available. EPA has not defined subbasins, and if nothing is entered, two zeros are assumed. See Table 2 and Figures 4a-e.	No
74-79	Blank	No
80	The character "3" is entered. This is the card identifier.	Yes

Table 2. Minor and subbasin names and codes in Washington State.

11 - Puget Sound (Minor basin)		10	Puyallup-White
01 Nooksack (Subbasin)		11	Nisqually
02 San Juan		12	Chambers-Clover
03 Lower Skagit		13	Deschutes
04 Upper Skagit		14	Kennedy-Goldsboro
05 Stillaguamish		15	Kitsap
06 Island		16	Skokomish-Dosewallips
07 Snohomish		17	Quilcene-Snow
08 Cedar		18	Elwha-Dungeness
09 Duwamish-Green			
12 - Coastal (Minor basin)		22	Lower Chehalis
19 Lyre-Hoko (Subbasin)		23	Upper Chehalis
20 Soleduck-Hoh		24	Willapa
21 Queets-Quinault			
10 - Lower Columbia (Minor basin)		29	Wind-White Salmon
25 Grays-Elochoman (Subbasin)		30	Klickitat
26 Cowlitz		31	Rock-Glade
27 Lewis		32	Walla Walla
28 Salmon-Washougal			
08 - Lower Snake (Minor basin)		35	Middle Snake
33 Lower Snake (Subbasin)			
34 Palouse			
04 - Yakima (Minor basin)		39	Upper Yakima
37 Lower Yakima (Subbasin)			
38 Naches			
05 - Upper Columbia (Minor Basin)		49	Okanogan
36 Esquatzel Coulee (Subbasin)		50	Foster
40 Alkali-Squilchuck		51	Nespelem
41 Lower Crab		52	Sanpoil
42 Grand Coulee		53	Lower Lake Roosevelt
43 Upper Crab-Wilson		58	Middle Lake Roosevelt
44 Moses Coulee		59	Colville
45 Wenatchee		60	Kettle
46 Entiat		61	Upper Lake Roosevelt
47 Chelan			
48 Methow			
03 - Spokane (Minor basin)		56	Hangman
54 Lower Spokane (Subbasin)		57	Middle spokane
55 Little Spokane			
02 - Clark Fork, Pend Oreille (Minor basin)			
62 Pend Oreille (Subbasin)			

*Ecology*

Figure 4a. Subbasin boundaries (Water Resource Inventory Areas) for the Puget Sound Basin.



*Ecology*

Figure 4b. Subbasin boundaries (Water Resource Inventory Areas) for southwest Washington.



Ecology

Figure 4c. Subbasin boundaries (Water Resource Inventory Areas) for south-central Washington.

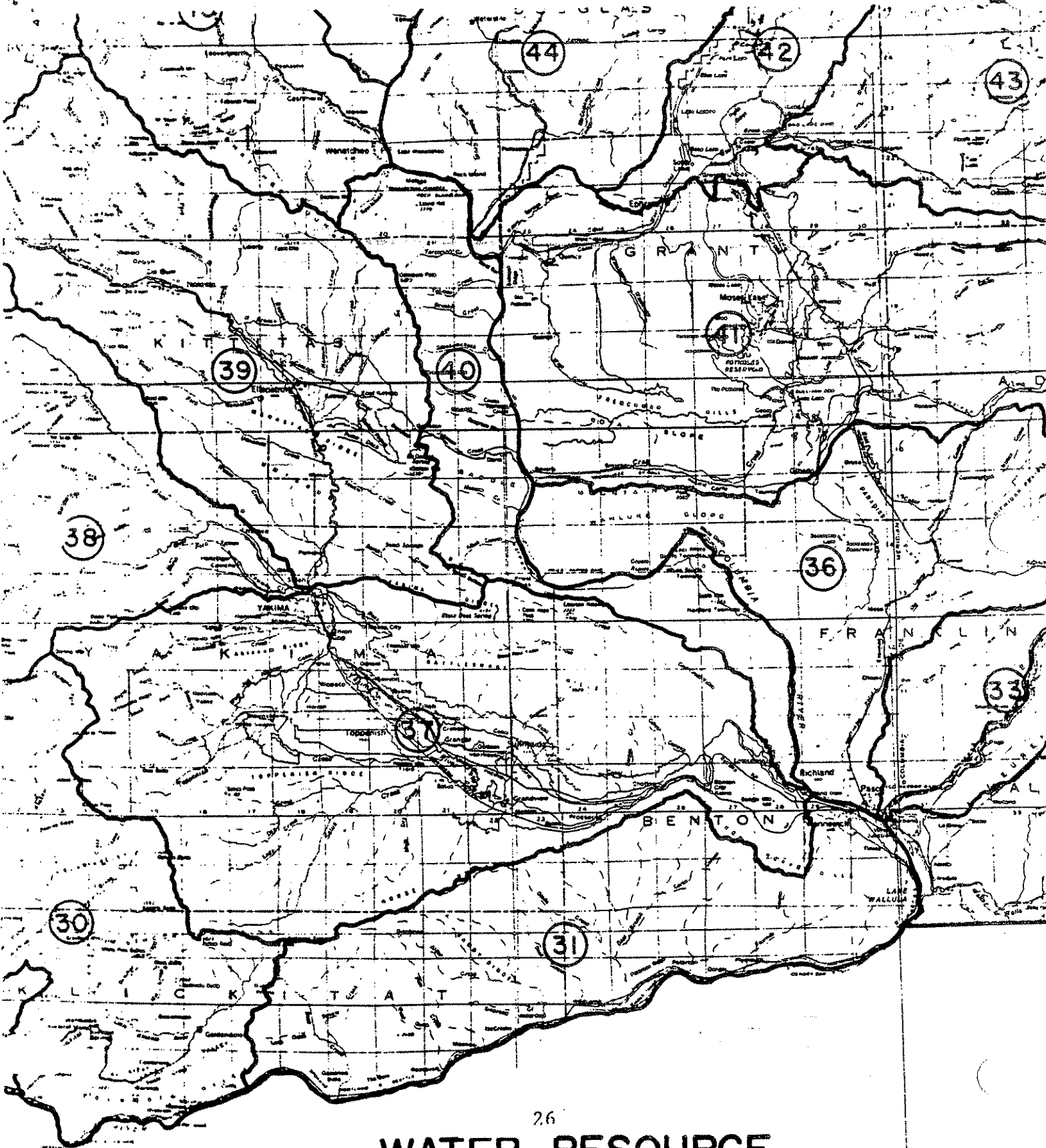
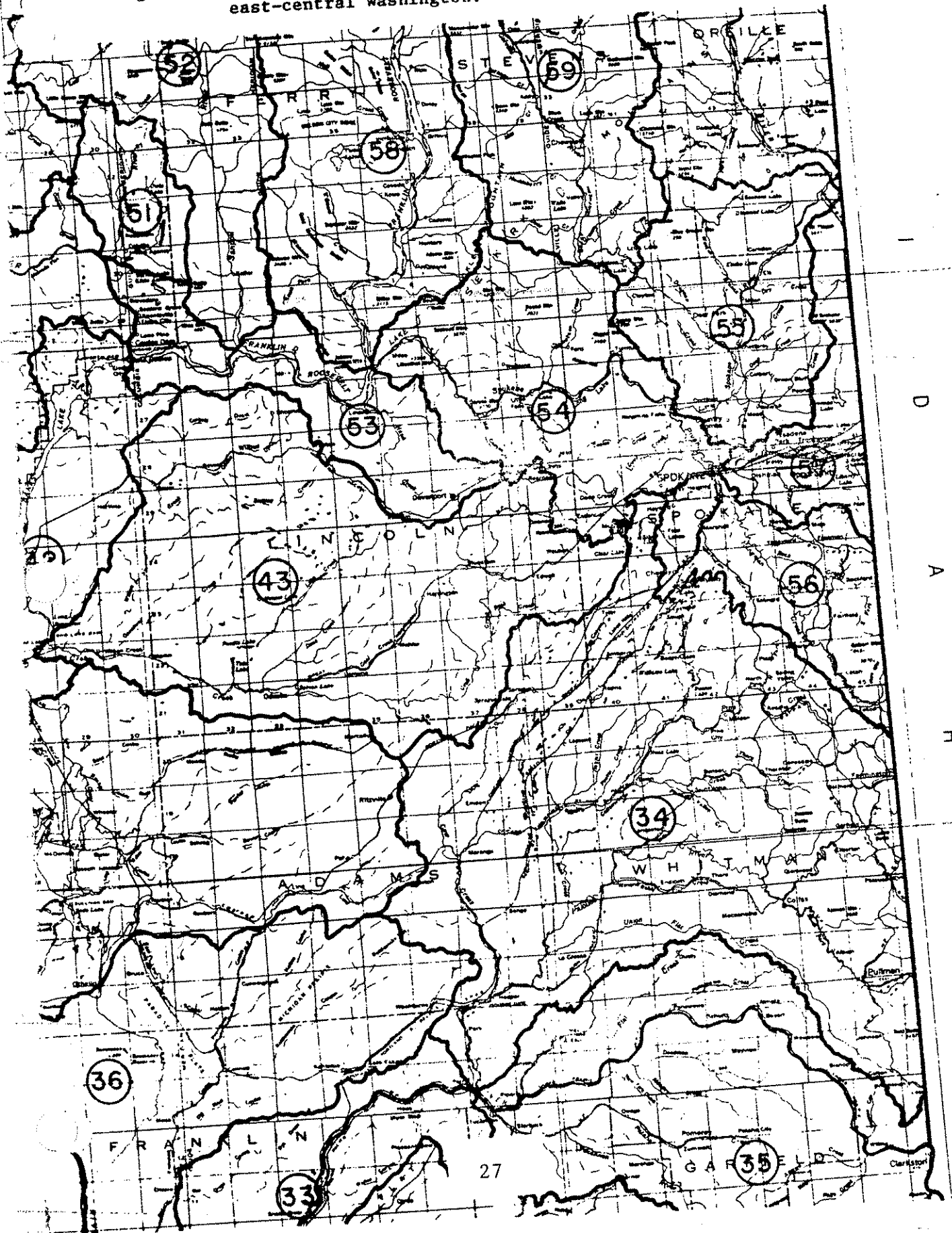


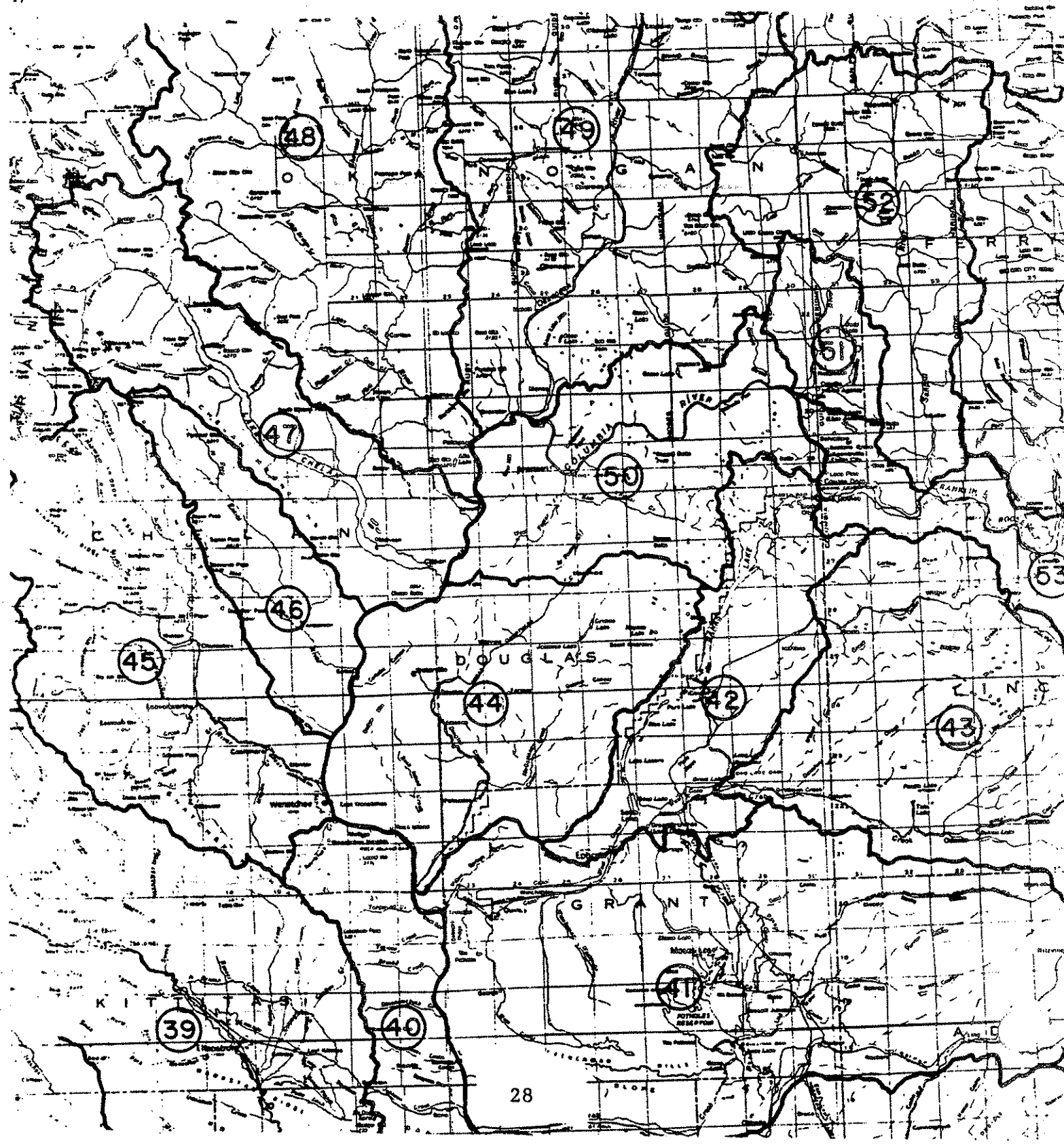


Figure 4d. Subbasin boundaries (Ecology Water Resource Inventory Areas) for east-central Washington.



D  
A  
H  
O

Figure 4e. Subbasin boundaries (Water Resource Inventory Areas) for north-central Washington.



LOCATION DESCRIPTION CARD (HEADER CARD 4)

<u>Space</u>	<u>Contents</u>	<u>Required</u>
1-3	Blank	No
4-51	Brief description of station's location. May be up to 48 characters. Leave 1 character space between words. This is a required field and should be as informative as possible.	Yes
52-59	The USGS cataloging unit number in which the station is located is entered. Codes can be found on <u>US Hydrologic Unit Map-1974, State of Washington</u> , which may be obtained from USGS Purchasing (Spokane), phone (509) 456-2524.	Yes
60-62	The EPA reach number on which the station is located or the reach that receives the drainage from the stream where 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 reach number is entered, this field must be completed. "ON" indicates that a station is located on the reach, and "OFF" is used if the station is on a stream whose water enters the indicated reach directly or through one or more tributaries. When "ON" is utilized, it is entered left-justified.	No
66-73	The miles from the downstream end of the reach to the point where the station is located or where the water enters the reach if the station is noted on the reach. The mileage is entered left-justified, and decimal fractions of miles may be utilized with the unused spaces left blank.	No
74	A check digit is entered which is used by an algorithm to verify that the 11-digit reach data are correct. The check digit is shown in the river reach file directory.	No
75-79	Blank	No

LOCATION DESCRIPTION CARD (HEADER CARD 4) - continued

<u>Space</u>	<u>Contents</u>	<u>Required</u>
80	The character "4" is entered. This is the card identifier.	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.

DESCRIPTIVE PARAGRAPH CARDS (HEADER CARD 5)

<u>Space</u>	<u>Contents</u>	<u>Required</u>
1-6	Blank	No
7-78	To be used for additional information on the sampling site location, directions for finding the site, elevation of the top of the casing, USGS quadrangle map name and scale, Ecology region. Up to 15 "5" cards may be used, allowing the user to store up to 1,080 characters of additional information about the station. (Leave 1 character space between words.)	No
79-80	"05" through "N5" is entered, which identifies the card and which of the "5" cards is to be used. Must be entered in sequence beginning with "05" and incrementing by 1. After the "95" card is used, the next card is "J5" and then it is incremented by 1 letter of the alphabet until "N5" is reached.	Yes

Figure 5 shows how the header data looks when printed in the STORET format.

Figure 5. Example station location printout in STORET format.

```

/WELL/AMBNT/MUN
482242122274701          12A007          33N42W02R01 676158-05153053      T
                                                                NSS
482242012227470          2F000          33N42W02R131112      0
PACIFIC NORTHWEST          PUGET SOUND
CAREFREE ACRES MOBILE HOME PARK          17110019          3
                                                                4
CLASS 4 WELL AT 372 PINEAPPLE DRIVE, MILTON 98404. WELL INSIDE PUMPHOUSE05
IN BACKYARD. SPIGOT BEFORE HOLDING TANK. ELEVATION OF TOP OF CASING IN 15
FEET: 201.30. ECOLOGY SOUTHWEST REGION. USGS BLACK BUTTE 7.5 MINUTE 25
QUADRANGLE MAP.          35
    
```

C. Entering Parametric Data in STORET "SC" Format (water quality, sampling parameters)

Table 3 is a sample data reporting form. Figure 6 demonstrates how data from this form look in STORET SC format.

Figure 6. Example of STORET SC format for parametric data in Table 3.

```
SC,86010007,8709240945,MEDIA=GRWTR,SMK=000000,UMK=00000000,P72019,52.3,  
P82546,55.3,P72004,15,P73655,230,P84124,SBPMP,P84125,CELTP,P84077,SBPMP,  
P84129, 11 ,P10,11.2,P400,6.8,P95,138,P70304,150,P630,.264,P940,12.4,P1045,5.6,  
P945,26,P31616,1K,P1002,1U,P1027,1U,P1034,2.8,P1051,10.5,P71900,.200U,  
SC,86010007,8709241000,MEDIA=GRWTR,SMK=310000,UMK=033601,P82546,55.2,P72004,15,  
P73675,230,P84124,SBPMP,P94077,BAIL,P84129, 11 ,P10,11.2,P400,6.8,P95,140,  
P34506,3U,P32102,8J,P34423,10B,  
SC,86010007,8709241005,MEDIA=GRWTR,SMK=320000,UMK=033601,P82546,55.2,P72004,15,  
P73675,230,P72004,15,P73675,230,P84124,SBPMP,P84077,BAIL,P84129, 11 ,P23406,3U,  
P344232,5N,P34423,5J,
```

Each set of samples taken at a particular time and place with the same System Multipurpose Key (SMK) and Users Multipurpose Key (UMK) code values is a separate data entry. Each data entry begins with "SC,". See the sample form (Table 3), Appendix B pages 43 through 46, and Appendix E for an explanation of SMK and UMK codes.

Lines for entering parametric data are up to 80 characters long.

The Station Code comes after "SC," followed by a comma. This may be either the primary station code or a secondary station code. Next comes the Date (YRMMDD) and Time, followed by a comma (no comma between Date and Time). "MEDIA=GRWTR," is entered next for all ground-water samples; then "SMK =" followed by the 6-digit code and a comma; then "UMK =" followed by the 8-digit code and a comma.

Parametric data immediately follows the above sample descriptor information. Parametric data is always in the format: parameter code, value, parameter code, value.

Parameter codes and the corresponding values must always be on the same line. There should be no spaces in the line except at the end. For instance, if the parameter code ends on the 77th character and the value and comma go beyond the 80th character, both the parameter code and the corresponding value would drop down to the next line. Space must be left at the end of a line in such a case. If all the data does not fit on one line, the second line (and third, etc.) begin with parameter code, value, rather than "SC,".

Table 3. Sample Data Reporting Form.

Chambers Creek/Clover Creek Ground Water Management Area

Primary Station Code	Date Traced	Time	Media	SPK	IRK	Depth to water surface from land surface (feet)	Depth to measuring point from land surface (feet)	Pumping period (minutes)	Volume of water evacuated (gallons)	Method of evacuation	Method of water level measurement	Monitoring well sampling method	Notes quality assessment	Temperature (°C)	pH
4822421274701	4-09-24	0945	GRWTR	0096000	0010000	52.3	55.3	15	230	Submersible Pump (SRPMP)	Calibrated Elec. Tape (CELTIP)	Submersible Pump (SRPMP)	-11--	11.2	6.8
4822421274703	8-09-24	1000	SRWTR	3100000	0336001	55.2	55.2	15	230	SRPMP		Boiler (BAIL)	-11--	11.2	6.8
4822421274701	8-09-24	1005	GRWTR	3200000	0336001	55.2	55.2	15	230	SRPMP		Boiler (BAIL)	-11--	11.1	6.8

Specific conductance (micro/cm) p85	Total dissolved solids (mg/L) p100	Total nitrate + nitrite (mg/L) p820	Total chloride (mg/L) p940	Total iron (mg/L) p1045	Total sulfate (mg/L) p945	Fecal coliform (colony/100ml) p11616	Total 1,1,1-trichloroethane (ug/L) p34506	Total carbon tetrachloride (ug/L) p32107	Total methylene chloride (ug/L) p34423	Total arsenic (ug/L) p1002	Total cadmium (ug/L) p1027	Total chromium (ug/L) p1034	Total lead (ug/L) p1051	Total mercury (ug/L) p1900
138	150	.765	17.4	5.6	26	<1				Not detected (DL = 1.0)	Not detected (DL = 1.0)	2.9	10.5	Not detected (DL = 0.2)
140							8 (estimate)		10 (also found in blank)					
139							ND (DL = 3.0)	ND (DL = 5.0)						

AV/MQ1/87/037003

ND = Not detected  
 DL = Detection limit  
 \* Membrane filter method

The Data Quality Assessment parameter code, P 84129, is an exception to the rule of no spaces in a line. Values for this code may be blank spaces. See Appendix C for instructions for using the "Quality Assurance/Quality Control" parameter code.

In addition to water quality information, the following parameters should be included in data entries:

- o Depth to water surface from land surface (feet) (P72019)
- o Depth to measuring point (sampling point) from land surface (feet) (P82546)
- o Pumping period (minutes) (P72004)
- o Volume of water evacuated from well (gallons) (P73675)
- o Method of evacuation (P84124)
- o Monitoring well sampling method (P84077)
- o Data quality assessment (P84129)

Appendix D lists additional sample descriptor parameter codes that may be used.

Water quality parameter codes and values should follow those above. See Appendix F for a listing of commonly used parameter codes. Parameter codes for some organics are listed in U.S. EPA's Ground-Water Data Management with STORET, 1986.

Leading and following zeroes in parameter values are optional (e.g., 0.3 or .3).

Remark codes should be used to explain numerical values as needed, particularly with metals and organics results. See Table 4 for a list of remark codes. The remark code is entered as the character directly following the value. See the last four lines of Figure 6 and corresponding data in Table 3 for examples.

A separate entry should be made to specify collection and quality control techniques (SMK and UMK codes) for each duplicate, replicate, or special treatment. Organics should always be entered separately from other data results. The examples (Figure 6 and corresponding Table 3) show that conventional parameters were sampled with a submersible pump at the well on Sept. 24, 1987, after the well was purged with the submersible pump. A few minutes later, two duplicate samples were collected for volatile organics using a teflon bailer.

The time and SMK and UMK codes for the organics samples are different from those for the conventionals. Duplicates were collected using a teflon bailer which changes the SMK code and the time tells someone looking at the data the order in which samples were collected.



Table 4. Remark codes to use with STORET data.

<u>Code</u>	<u>Definition</u>
Blank	Values greater than the detection limit
J	Estimated value
K	Actual value is known to be less than the value shown
L	Actual value is known to be greater than the value shown
M	Presence of material verified but not quantified
N	Presumptive evidence of presence of material
U	Material specifically analyzed for but not detected
B	Analyte found in blank as well as in the sample
C	Pesticide parameters identified and confirmed by GC/MS
s	Value determined by Method of Standard Addition
R	Spike sample recovery not within control limits
*	Duplicate analysis not within control limits
+	Correlation coefficient for Method of Standard Addition less than 0.995

It is helpful to include water level information (P82546), pumping period (P72004), volume of water evacuated (P73675), method of evacuation (P84124), monitoring well sampling method (P84077), and data quality assessment (P84129) in addition to the concentration of the specific organics or other constituents, as well as SMK, UMK, and media information on shorter data entries.

APPENDICES

(All are excerpts from U.S. EPA, 1986.  
Ground-Water Data Management with STORET.  
Office of Ground-Water Protection.  
EPA/600/M-86/007.)

NOTE: Some portions of these materials have been re-typed for consistency with Ecology material. All pages from the EPA document have been re-numbered for clarity and consistency.

APPENDIX A. Instructions for entering STORET Station Type Codes.

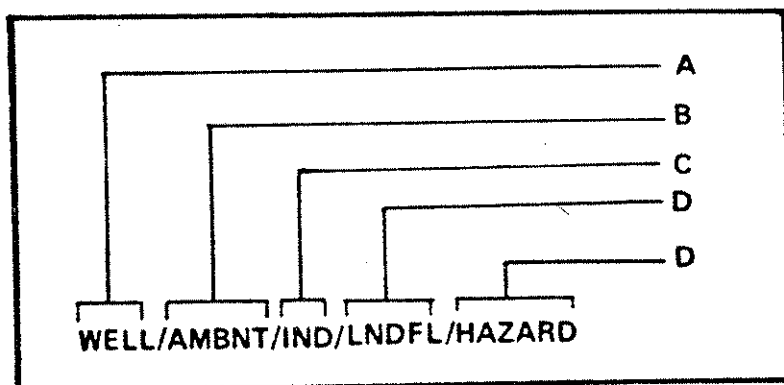
4.3.5 Station Type Codes

Station type codes are those station header data elements that describe the type and purpose of the monitoring station. STORET currently has several categories of station type codes. In STORET terminology, each category is called a level. Different levels are required depending on the type of data entered (Ground-Water, Surface-Water POTW, sediment, or biological).

Existing and planned station type codes of particular importance to Ground-Water/STORET users are highlighted in Exhibit 4-1. Many of the station type codes that are recommended for the station headers of ground-water monitoring wells are not of the "required" type for STORET. However, in order to completely distinguish ground-water monitoring stations from others in STORET, they should be used.

Users are required to specify one level-one and one level-two code for each station entered into STORET. The station codes in levels three through five are optional and may be used in any combination to further describe the sampling site. For example, with ground-water data, level-four codes are not pertinent. However, using two level-five codes may make station identification easier.

Users must string together station type codes relevant to their station. For example, a station monitoring a hazardous waste landfill located in an industrial facility might have a station type code of:



Key

A Level 1 Code

B Level 2 Code

C Level 3 Code

D Level 5 Code

EXHIBIT 4-1

Recommended STORET station-type codes  
for ground water monitoring stations

---

Category	Code	Definition
----------	------	------------

---

1 - Station Location; one required.

WELL		Station samples from a well.
SPRING		Station samples from a spring. A natural flow of ground water fro the earth, which feeds into a stream or body of water on the surface.
PIPE		Station samples at or within a man-made facility. Includes water supply, waste-water treatment and industrial facilities.

2 - Monitoring Class; 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 impacted the environment (Ex-PIPE/NONAMB/IND/OUTFL/NTRTMT). Only valid for station locations "PIPE" or "WELL". NONAMB is assumed for "PIPE" sites.

3 - Operation; required for "PIPE", otherwise optional.

MUN		Public drinking water intake sites or wastewater treatment facilities. Public facilities muni-ci-pal/state/federal).
IND		Industrial private facility.
CMBMI		Combined "MUN" and "IND".

EXHIBIT 4-1 - continued

---

Category	Code	Definition
----------	------	------------

---

3 - Operation; required for "PIPE", otherwise optional - continued.

AGRI	Agricultural site. Includes raw crops, feedlots, grazing, and silviculture (forestry).
MINE	Mine or site of mining activities.
COMNTY	Community (unincorporated). Includes water supplies and septic systems.
DEVLMT	Development site. Includes construction.
DOMEST	Domestic (residential) grey water discharge facility. Includes water supplies and on-lot septic systems.
ABANDN	The site from which samples are gathered is abandoned.
DISPOS	Waste disposal site (solid/liquid).

4 - Treatment Status; required for "PIPE", otherwise optional.

NTRTNT	No pollution abatement has been performed.
PTRTMT	Some, but not all, of the intended pollution abatement has been performed. Pretreatment.
TREATED	All of the intended pollution abatement has been performed.
CMBTRT	Combined treatment, where treatment status does not clearly fall into. Includes unknown treatment status.

5 - Source Type; required for "PIPE", otherwise optional.

INTAKE	Intake or influent.
OUTFL	Outfall, discharge or effluent.
CMBSRC	Combined source ("INTAKE and "OUTFL").

EXHIBIT 4-1 - continued

---

Category	Code	Definition
6 - Waste Source; one or more optional.		
	IMPDMT	Impoundment. Includes waste pits, treatment lagoons, and settling and evaporation ponds.
	LNDFL	Landfill.
	INJECT	Site where liquid waste has been injected underground as a means of disposal.
	SEPTIC	Septic system.
	LNDTRT	Land treatment area.
	NONPNT	Nonpoint source pollution. Includes eutrophication, acidification, thermal change, organic nutrients, sedimentation, and hydromodification.
7 - Miscellaneous Descriptors; optional.		
	SPRAY	Site where water has been sprayed on the surface of the land for purposes of irrigation.
	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 ground water.
	RUNOFF	Stormwater runoff.
	STMSWR	Stormwater sewer.
	SANSWR	Sanitary sewer.
	CMBSWR	Combined stormwater and sanitary sewer. "STMSWR" and "SANSWR".

EXHIBIT 4-1 - continued

Category	Code	Definition
7 - Miscellaneous Descriptors; optional - continued.		
	SUPPLY	Water supply storage or treatment facility.
	NET	Fixed site network station.
	MONITR	Source monitoring site, which monitors a known problem or detects a specific problem.
	HAZARD	Site of hazardous or toxic waste 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 the meteorological conditions, such as temperature, solar radiation, winds, and the quantity and quality of atmospheric deposition.
	UPGR	Upgradient of a well or spring. Only valid for use with "WELL" or "SPRING" (ground water sites).
	DOWNGR	Downgradient of a well or spring. Only valid for use with "WELL" or "SPRING" (ground water sites).
	RCRA	RCRA monitoring site.
	CERCLA	Cercla ("Superfund") monitoring site.



The complete list of valid STORET station type codes may be retrieved in the on-line data set called "STORET.HELP.STATION.TYPE".

#### 4.3.6 Station Depth

The station depth field in the STORET station header is used for surface-water stations, to store the total depth (i.e., from surface to bottom) of the point where the sample was taken. Ground-Water/STORET users may score the aquifer thickness, at the point where the well is located, in the station depth field.

#### 4.3.7 Hydrologic Unit Code

The hydrologic unit code of the STORET station header is an eight-digit code representing the USGS hydrologic unit in which the station is located. The components of the codes represent hydrologic region, sub-region, accounting unit, and cataloging unit. This coding scheme represents different basin designations than the major/minor/sub-basin required by STORET. Codes can be found on US Hydrologic Unit Map-1974, State of Washington, which may be obtained from USGS Purchasing (Spokane), phone (509) 456-2524.

APPENDIX B. Instructions for entering STORET SMK and UMK Codes.

4.5.4.1.1 Media Key

The media key identifies the medium in which sampling was done (e.g., water, sediment, etc.). For ground-water, there are currently two media keys: "GRWTR" and "RCRAGW." "GRWTR" is to be used by all programs except RCRA. The RCRA Program has designated its own media key "RCRAGW" which is to be used for inputting RCRA ground-water monitoring data. Any program that wishes its own media key can develop its own code. This option is currently being investigated at the Agency.

4.5.4.1.2 System Multipurpose Key (SMK)

When doing ground-water monitoring, it is common to extract more than one sample per monitoring station. There are several ways to obtain multiple samples, and for quality assurance purposes, it will be beneficial for STORET/Ground-Water users to be able to distinguish the manner in which multiple samples were obtained. The system multipurpose key enables users to make this distinction. A brief review of sampling is included here which will help explain the coding used with the system multipurpose key.

There are three common methods for obtaining multiple samples from ground-water monitoring stations.

- o Several samples may be taken from the same sample point and placed into separate sample bottles. For the purpose of this manual, each individual sample of the total set will carry its own unique number.
- o One sample may be taken from the sample point, immediately divided in the field, and placed into different sample bottles. Each portion of the original sample now residing in separate sample bottles will be called a "Field replicate" in this manual.
- o One sample may be taken from a well and not divided into separate sample bottles until it arrives at the laboratory. Each portion of the original sample now residing in sample bottles will be called a "laboratory replicate" in this manual.

It should be understood that when multiple samples are indicated on a data sheet, it may mean that any one of the above methods was used to obtain the multiple sample or that a combination of the above methods was used to obtain the multiple sample. The SMK code will enable a STORET/Ground-Water user to determine whether the ground-water data is a multiple sample, what method(s) was(were) used to obtain the multiple

sample, how many multiple samples were taken, and which one of the multiple samples the data examined came from.

This information is obtained via the six-digit SMK code. Each of the first four digit positions of the code signifies a specific piece of information. At this time, the last two digits of the code will appear as zeros because no specific pieces of sampling information have yet been defined for these positions. One SMK will be entered for each sampling event (each set of multiple samples will be considered a sampling event).

The information conveyed in the first four digit positions of the SMK is summarized in the following:

<u>Digit Position</u>	<u>Component Definition</u>
1	Identifies whether the sample is an individual sample or one of a multiple sample set. For example, the sample in question could be: one of a set of samples taken from a station (well) and not further divided; one of a set of multiple samples divided in the field; one of a set of multiple samples divided in the laboratory; or a combination of the above. The actual number placed in the first digit position will be a value ranging from 0-7. The meaning attached to the first digit position number can be determined from the table on page 4-29.
2	Identifies which sample in the set of multiple samples the data received comes from. For example, if a sampling event from a single sample point has resulted in four undivided samples, the data values reported for the first sample would have an SMK code with "1" in the second digit position; the data values reported for the second sample would have an SMK with "2" in the second digit position, etc.
3	Identifies which one of the field replicates the data received comes from. For example, if one sample was collected at the sample point and divided in to several sample bottles for analysis in the field, the data values reported for the first "field replicate" would have a "1" in the third digit position of the SMK code; the second field replicate would have "2" in the third digit position of the SMK code, etc.
4	Identifies which of the lab replicates the data received comes from. For example, if one sample was collected at the sample point and divided into several sample bottles for analysis in the lab, the

data values reported for the first "lab replicate" would have a "1" in the fourth digit position of the SMK code; the second "lab replicate" would have a "2" in the fourth digit position of the SMK code, etc.

The following table will enable the user to determine the significance of the value appearing in the first digit position of the SMK.

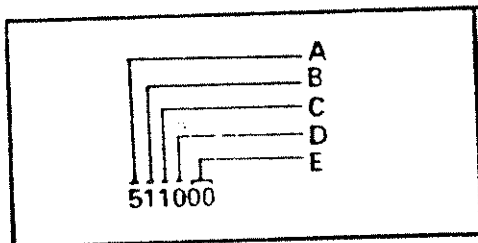
Sample Media Key "SMK" Notation for Ground-Water/STORET User

<u>First Digit Code</u>	<u>Multiple Sample</u>	<u>Field Replicate</u>	<u>Lab Replicate</u>
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, should the first value of an SMK code be 3, the user knows that several separate samples were taken at the sample point. None of these were further divided in either the field or the lab. If the first value of the SMK code were a 5, the user would know that several samples were taken at the station and further, that one or all of the samples were subsequently divided in the field so that the data retrieved is from a field replicate. Finally, should the first value of the SMK code be a 1, the user would know that only one sample was obtained from the sample point, but this was divided into several portions in the lab and the data retrieved is from one of the lab replicates.

The example of an SMK code illustrated below indicates that the data observed is one sample from a set of samples, that this particular sample was the first in the lot, the sample was divided in the field, and that this is the first of the field replicates. There was no division in the lab.

Key



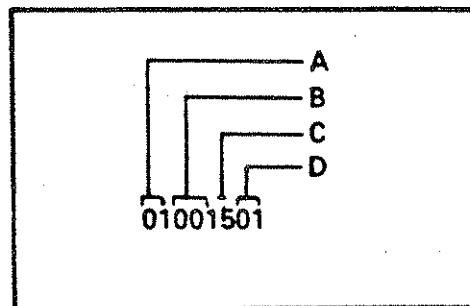
- A 5 indicates that this one set of multiple samples which was subsequently divided into field replicates
- B 1 indicates that this is the first replicate of the set of samples for this particular station
- C 1 indicates that this is the first field replicate
- D 0 indicates that the original samples were not divided in the lab.
- E These fields are currently undefined

#### 4.5.4.1.3 Users Multipurpose Key (UMK)

The UMK is an eight-digit number which will be used to describe the method in which a ground-water sample was collected and analyzed. There will be one "UMK" per sampling event (each multiple sample may be considered a sampling event). There are four components of a UMK code, defined below.

<u>Digit</u>	<u>Component Definition</u>
1-2	Coded value for sampler type (see Appendix E)
3-5	Identifies up to three different materials making up the sampling equipment; one digit each (see Appendix E)
6	Flag for indicating whether the reported values were determined in the lab or the field (see Appendix E)
7-8	Coded value to identify analytical method used to determine reported values (see Appendix E)

A sample UMK is illustrated below:



#### Key

- A Sampler type; 01 = Bottom Valve Bailer
- B Sampling equipment material; 001 = stainless steel
- C Lab or field determination flag; 5 = contract, field
- D Analytical method used to determine reported values; 01 = Gas chromatography/mass spectrometry (GC/MS)

## APPENDIX C. Instructions for entering STORET Data Quality Assessment information.

Remark codes may be entered with each data point. They need not always be used. Complete instruction on how to store data with remark codes may be found in Chapter WQ-DE of the STORET Users' Handbook (February 1982).

It should be noted that some data (Superfund especially) may have remark codes identical to STORET's but with different definitions. These are usually indicated on the lab data forms. For example, remark code "B" in STORET refers to bacterial counts out of range, while Superfund uses "B" to indicate a compound found in a travel or lab blank sample. Another example is that Region IX's office policy is to substitute "U" for "B" if data value is below the detection level. If the value is above detection level, no data is entered at all. These inconsistencies are mentioned to ensure that users "pre-edit" suspect data so that they maintain consistency with STORET remark codes.

### 4.7 Quality Assurance/Quality Control

Information of QA/QC for ground-water monitoring such as well construction, sampling methods, and laboratory analysis techniques is extremely important because of the numerous factors which may affect the accuracy of the parameter values input into STORET. For example, knowledge of the well construction may help the user determine the reliability of the data, and knowing the sampling method used might help the users determine the possibility of sample aeration and a subsequent volatilization of organics. Accessibility to this type of information will assist users in determining the usefulness of STORET data for their particular needs.

A parameter QA/QC code named Data Quality (84129) has been added to STORET. As with all parameter codes in STORET, four characters of coded values are available for use with the Data Quality parameter code. The presence of this code will enable users to store fairly detailed QA/QC information for each sample.

QA/QC is a complex element of a data management system and involves many activities in well location, construction, sampling, and laboratory analysis. A decision on how all or some of these activities should be included in the data base has not been made at this time. However, because of the importance of this issue, a preliminary approach has been added to STORET by the Office of Solid Waste. The approach will provide a mechanism for starting to address this topic. This approach is expected to be refined by EPA over the next year.

The four-digit code contains the following for the specified digit positions:

- o The first-position (left) character will contain a one-digit code for the evaluation of well construction. The values in the first digit position will range from 0-2 or be blank. The meaning of each of the possible values is summarized below:
  - 2 -- Well has been EPA/State inspected in the last five years and determined to be of high quality.
  - 1 -- Well has been properly drilled, constructed of inert materials, properly developed, properly located, and has controls to prevent tampering. Well constructed in accordance to guidance produced by EPA/State.
  - 0 -- Well is known to be inadequate in some manner.
  - Blank -- Well information unknown or not stored.
- o The second-position character will contain a one-digit code for the evaluation of sampling QA/QC. The values of digits in the second position can range from 0-3 or be blank. The meaning for each value is given below:
  - 3 -- EPA/State has performed a QA/QC evaluation within the last two years, with a positive result.
  - 2 -- A detailed QA/QC plan with standard procedures and internal checks exists; the objectives of the plan have been verified as being met for at least one year (e.g., RCRA guidance for waste analysis, September 1984).
  - 1 -- A detailed QA/QC plan with standard procedures and internal checks exists (e.g., RCRA guidance for waste analysis, September 1984).
  - 0 -- No detailed QA/QC plan exists.
  - Blank -- Information unknown or not stored.
- o The third-position character will contain a one-digit code for the evaluation of laboratory QA/QC and will have values ranging from 0-3 or be blank. The meaning for these values is identical to the second-position character described above.

- o The fourth-position character will contain a one-digit code for the evaluation of overall QA/QC during the entire sequence of the sampling event. The fourth-position character can have values ranging from 0-3 or be blank. The meaning for these values is identical to the second-position character described above.



Appendix D

Sample Descriptor Parameter Codes, Values, and Definition

Parameter Code	Name	Values	Value Definitions
<u>Sample purpose descriptors</u>			
84053	Sample type and frequency	WOM WOO WOS WQA WLC WUM WLO WLS WTA	Water quality, monthly Water quality, quarterly Water quality, semi-annually Water quality, annually Water level, continuous Water level, monthly Water level, quarterly Water level, semi-annually Water level, annually
84067	Nature of monitoring	SPLP CMP	Facility collected and analyzed sample Regulating agency collected and analyzed sample for compliance monitoring

Appendix D (continued, p.2)

Sample Descriptor Parameter Codes, Values, and Definition

Parameter Code	Name	Values	Value Definitions
<u>Sample purpose descriptors (continued)</u>			
84121	Regulating agency	STATE FEDL OTHER	State is regulating facility Federal agency is regulating facility Other agency is regulating facility
84122	Sample purpose	RKGRD CWOAL DWOAL CNIMN ASMTT PRMIT	Sampled to determine background levels Sampled to determine ground-water quality Sampled to determine ground-water suitability as drinking water source Sampled to determine ground-water contamination Sampled as part of facility's assessment plan Sampled as part of facility's permit requirements
<u>Sampling condition descriptors</u>			
73674	Production level	---	Water level, in feet below LSD, while well was discharging
72000	Elevation of land surface datum	---	Elevation of land surface, in feet above mean sea level

Appendix D (continued, p.3)

Sample Descriptor Parameter Codes, Values, and Definition

Parameter Code	Name	Values	Value Definitions
<u>Sampling condition descriptors (continued)</u>			
71993	Elevation of ground water	-----	Elevation of top of water table at sampling point, in feet above mean sea level
72019	Depth to water level	-----	Depth, in feet, from land surface to top of water table at sampling point
82545	Water level relative to mean sea level	-----	Difference between top of water table and mean sea level at sampling point
82514	Measuring point elevation	-----	Elevation of measuring point, in feet above mean sea level
82546	Depth from level to measuring point	-----	Depth, in feet, from land surface to measuring point, in feet
<u>Sampling/Analytical Methods Descriptors</u>			
73675	Volume of water evacuated from well prior to sample collection	-----	In gallons

Appendix D (continued, p.4)

Sample Descriptor Parameter Codes, Values, and Definition

Parameter Code	Name	Values	Value Definitions		
<u>Sampling/analytical methods descriptors (continued)***</u>					
84119	Source of evacuation data	EPA	EPA		
		OWNOP	Owner/operator		
		CL	Contract labs		
		FSDL	FSN labs		
		STATE	State		
		OTHER	Other		
		84124	Method of evacuation	APM	Air lift pump
				RAIL	Railed
				COMPA	Compressed air
				JETD	Jetted
PERP	Peristaltic pump				
CENP	Centrifugal pump				
PITP	Pitcher pump				
SMP	Sampler				
HICK	Hicket				
RTMP	Rotary pump				
SBPMP	Submersible pump				
TBPMP	Turbine pump				
PSPMP	Piston pump				
ROTVB	Bottom valve bailer				
SRNGB	Syringe bailer				
DILVB	Dual valve bailer				
ALDRP	Bladder pump				

Appendix D (continued, p.5)

Sample Descriptor Parameter Codes, Values, and Definition

Parameter Code	Name	Values	Value Definitions
<u>Sampling/analytical methods descriptors (continued)</u>			
84124	Method of evacuation (continued)	NLFTP CRMPN UNKN OTHER	Nitrogen lift pump Compressed nitrogen Unknown Other
84125	Method of water-level measurement	ARLMS ANGRP CARUM EST PRSG CPRSG GPHYS MMNTR NRFCG UNKN STLTP FCTP CHLIN SOUND CELTP OTHER UNKN	Airline measurement Analog or graphic recorded Calibrated airline measurement Estimated pressure-gage measurement Calibrated pressure gage Interpreted from geophysical logs Manometer Non-recording gage Reported, method unknown Steel tape Electric tape Chalk line Sounder Calibrated electric tape Other Unknown

Appendix D (continued, p.6)

Sample Descriptor Parameter Codes, Values, and Definition

Parameter Code	Name	Values	Value Definitions
<u>Sampling/analytical methods descriptors (continued)</u>			
84126	source of depth data	DRLLG	Driller's log or report
		GLAST	Private geologist/consultant
		GPHYS	Depth interpreted from geophysical logs by some source agency
		MEMRY	Memory
		OWNOP	Reported by well owner/operator
		OTHER	Reported by other
		RAGNC	Measured by reporting agency
		EPA	EPA
		STATE	State
		CL	Contract labs
		ESDLA	FSD labs
		STLTP	Steel tape
		EST	Estimated
		CHLIN	Chalk line
		SOUND	Sounder
84127	Method of depth measurement	GLIYS	Interpreted from geophysical logs
		UNKN	Unknown
		OTHER	Other

Appendix D (continued, p.7)

Sample Descriptor Parameter Codes, Values, and Definition

Parameter Code	Name	Values	Value Definitions
<u>Sampling/analytical methods descriptors (continued)</u>			
84128	Source of water level data	DRLLG GLGST GPHYS  MEMRY OMNOP OTHER RAGNC EPA STATE CL ESDLB	Driller's log or report Private geologist/consultant Depth interpreted from geophysical logs by some source agency  Memory Reported by well owner/operator Reported by other Measured by reporting agency EPA State Contract labs FSD labs
84077	Monitoring well sampling method	APIM BAIL COMPA JETD PERP CENP PITP	Air lift pump Bailed Compressed air Jetted Peristaltic pump Centrifugal pump Pitcher pump

Appendix D (continued, p.8)

Sample Descriptor Parameter Codes, Values, and Definition

Parameter Code	Name	Values	Value Definitions
	<u>Sampling/analytical methods descriptors (continued)</u>		
84077	Monitoring well sampling method (continued)	SMPL BUCKET RTPMP STPMP TRPMP PSPMP BOTVB SRNGB DULVR BLDRP NI,FTP COMPNI UNKN OTHER	Sampler Bucket Rotary pump Submersible pump Turbine pump Piston pump Bottom valve bailer Syringe bailer Dual valve bailer Bladder pump Nitrogen lift pump Compressed nitrogen Unknown Other
		-----	Cooled identification number for laboratory where sample was analyzed
00008	Lab identification number	-----	Pumping or flow period prior to sampling, in minutes
72004	Pumping period		



Appendix D (continued, p.9)

Sample Descriptor Parameter Codes, Values, and Definition

Parameter Code	Name	Values	Value Definitions
<u>Sampling/analytical methods descriptors (continued)***</u>			
84062	Sampling point description	LANDSR TPCAS PMPBS RPCRCD	Land surface Top of casing Pump base Continuous recorded
84129	Data quality assessment		(See Section 4.7 of this manual for code identification)

APPENDIX F

User Multipurpose Key (UMK)  
Sampler-Type Values for Digits 1 and 2 of the UMK

Codes for Digits 1 and 2	Definition
00	Entry not needed/not applicable
01	Bottom valve bailer
02	Syringe bailer
03	Dual valve bailer
04	Rotary pump
05	Centrifugal pump
06	Peristaltic pump
07	Bladder pump
08	Turbine pump
09	Piston pump
10	Air lift pump
11	Nitrogen lift pump
12	Compressed air
13	Compressed nitrogen
14	Unknown
15	Other

APPENDIX F. (continued, p.2)

User Multipurpose Key ("UMK")

Sampler Material Codes for Digits 3,4, and 5 of the UMK

One code per digit, up to three may be stored per sample

<u>Code for Digit 3 and/or 4 and/or 5</u>	<u>Definition</u>
0	Not applicable
1	Stainless steel
2	Polyvinyl chloride (PVC)
3	Teflon
4	Polyalkene (polyethylene, polypropylene, etc)
5	Nylon
6	Rubber
7	Other

APPENDIX E (continued, P.3)

User Multipurpose Key ("UMK")

Lab or Field Determination Flag as Sixth Digit of the UMK

<u>Code</u>	<u>Definition</u>
0	Not applicable
1	EPA Lab (in-house and contractors)
2	EPA Lab (in-house and contractors)
3	EPA Field (in-house and contractors)
4	Owner/operator, field
5	Owner/operator, lab
6	Contract, field
7	Contract, lab
8	Unknown
	Other

APPENDIX E (continued, p.4)

User Multipurpose Key ("UMK")

Analytical Method Codes for the 7-8 Digits of the UMK

<u>Code for 7th and 8th digits</u>	<u>Definition</u>
00	Not applicable
01	Gas chromatography/mass spectrometry (GC/MS)
02	Gas chromatography/flame ionization detector (GC/FID)
03	Gas chromatography/electron capture detector (GC/ECD)
04	Gas chromatography/thermal conductivity detector (GC/TD)
05	Gas chromatography/other
06	Liquid chromatography
07	Other chromatography
08	Atomic absorption spectrophotometry, Flame (AA/Flame)
09	Atomic absorption spectrophotometry, furnace (AA/furnace)
10	Atomic absorption spectrophotometry, other
11	Inductively coupled plasma (ICP)
12	Specific ion electrode (includes pH)
13	Resistivity or conductivity
14	Other electrochemical
15	Colorimetric
16	Infrared spectrometry (IR)
17	Other spectrophotometric
18	Titration
19	Unknown
20	Other

APPENDIX F

STORET Parameter Codes for Some Classic Ground-Water Monitoring Parameters

Substance	STORET PARAMETER CODES					
	Total or Whole Water Sample	Units	Dissolved Fraction of Water	Units	Suspended Fraction of Water	Units
<u>Drinking Water Suitability Parameters-</u>						
Arsenic	01002	ug/l	01000	ug/l	01001	ug/l
Barium	01007	ug/l	01005	ug/l	01006	ug/l
Cadmium	01027	ug/l	01025	ug/l	01026	ug/l
Chromium	01034	ug/l	01030	ug/l	01031	ug/l
Fluoride	00951	mg/l	00950	mg/l	82299	mg/l
Lead	01051	ug/l	01049	ug/l	01050	ug/l
Mercury	71900	ug/l	71890	ug/l	71895	ug/l
Nitrate (as N)	00620	mg/l	n/a	ug/l	n/a	ug/l
Selenium	01147	ug/l	01145	ug/l	01076	ug/l
Silver	01077	ug/l	01075	ug/l	39392	ug/l
Endrin	39390	ug/l	39391	ug/l	n/a	ug/l
Lindane	39782	ug/l	38341	ug/l	39479	ug/l
Methoxychlor	39480	ug/l	38478	ug/l	n/a	ug/l
Toxaphene	39400	ug/l	39401	ug/l	39733	ug/l
2,4-D	39730	ug/l	n/a	ug/l	n/a	ug/l
2,4,5-TP Silvex	39045	ug/l	n/a	ug/l	n/a	ug/l
Radium (226 & 228)	11503	pCi/l	n/a	pCi/l	n/a	pCi/l
• Radium (226)	09501	pCi/l	09503	pCi/l	09505	pCi/l
• Radium (228)	11501	pCi/l	81366	pCi/l	81368	pCi/l
Gross Alpha	01501	pCi/l	01503	pCi/l	01505	pCi/l
Gross Beta	03501	pCi/l	p3503	pCi/l	03505	pCi/l

APPENDIX F (continued)

SMPT Parameter Codes for Some Classic Ground-Water Monitoring Parameters

Substance	STORET PARAMETER CODES			
	Total or Whole Water Sample	Units	Dissolved Fraction of Water	Suspended Fraction of Water
<u>Drinking Water Suitability Parameters (continued)</u>				
Turbidity	00076	hach ftu	n/a	n/a
Coliform Bacteria (Mem Fil)	31501	c/100ml	n/a	n/a
Coliform Bacteria (Ferm Tube)	31505	mpn/100ml	n/a	n/a
<u>Ground-Water Quality Parameters</u>				
Chloride	00940	mg/l	82295	n/a
Iron	01045	ug/l	01046	01044
Phenols	32730	ug/l	32732	32733
Sodium	00929	mg/l	00930	00928
Sulfate	00945	mg/l	00946	n/a
<u>Ground-Water Contamination Indicator Parameters</u>				
pH	00400	s.u.	n/a	n/a
Specific conductance	00095	umhos/cm	n/a	n/a
Total Organic Carbon	00680	mg/l	00681	00689
Total Organic Halogen				
• Purgeable organic halogen DX20	70354	ug/l	n/a	n/a
• Total organic halogen DX20	70353	ug/l	n/a	n/a
• Total organic halogen	81375	ug/l	n/a	n/a
• Total organic halogen	78115	ug/l	n/a	n/a

APPENDIX F (continued)

STORET Parameter Codes for Some Classic Ground-Water Monitoring Parameters

Substance	STORET PARAMETER CODES		
	Total or Whole Water Sample	Dissolved Fraction of Water	Suspended Fraction of Water
	Units	Units	Units

Drinking Water Suitability Parameters (continued)

Turbidity	00076	hach ftu	n/a	n/a
Coliform Bacteria (Mem Fil)	31501	c/100ml	n/a	n/a
Coliform Bacteria (Ferm Tube)	31505	mpn/100ml	n/a	n/a

Ground-Water Quality Parameters

Chloride	00940	mg/l	82295	n/a	ug/l
Iron	01045	ug/l	01046	01044	ug/l
phenols	32730	ug/l	32732	32733	ug/l
Sodium	00929	mg/l	00930	00928	mg/l
Sulfate	00945	mg/l	00946	n/a	mg/l

Ground-Water Contamination Indicator Parameters

pH	00400	s.u.	n/a	n/a	n/a
Specific conductance	00095	umhos/cm	n/a	n/a	n/a
Total Organic Carbon	00680	mg/l	00681	00689	mg/l
Total Organic Halogen					
• Purgeable organic halogen DX20	70354	ug/l	n/a	n/a	n/a
• Total organic halogen DX20	70353	ug/l	n/a	n/a	n/a
• Total organic halogen	81375	ug/l	n/a	n/a	n/a
• Total organic halogen	78115	ug/l	n/a	n/a	n/a



APPENDIX F

**STORET Parameter Codes for Some Classic Ground-Water Monitoring Parameters**

Substance	STORET PARAMETER CODES					
	Total or Whole Water Sample	Units	Dissolved Fraction of Water	Units	Suspended Fraction of Water	Units
<u>Drinking Water Suitability Parameters-</u>						
Arsenic	01002	ug/l	01000	ug/l	01001	ug/l
Radium	01007	ug/l	01005	ug/l	01006	ug/l
Cadmium	01027	ug/l	01025	ug/l	01026	ug/l
Chromium	01034	ug/l	01030	ug/l	01031	ug/l
Chromium Fluoride	00951	mg/l	00950	mg/l	82299	mg/l
Lead	01051	ug/l	01049	ug/l	01050	ug/l
Mercury	71900	ug/l	71890	ug/l	71895	ug/l
Nitrate (as N)	00620	mg/l	n/a	ug/l	n/a	ug/l
Selenium	01147	ug/l	01145	ug/l	01146	ug/l
Silver	01077	ug/l	01075	ug/l	01076	ug/l
Endrin	39390	ug/l	39391	ug/l	39392	ug/l
Lindane	39782	ug/l	38341	ug/l	n/a	ug/l
Methoxychlor	39480	ug/l	38478	ug/l	39479	ug/l
Toxaphene	39400	ug/l	39401	ug/l	n/a	ug/l
2,4-D	39730	ug/l	n/a	ug/l	39733	ug/l
2,4,5-TP Silvex	39045	ug/l	n/a	ug/l	n/a	
Radium (226 & 228)	11503	pCi/l	n/a	pCi/l	n/a	
• Radium (226)	09501	pCi/l	09503	pCi/l	09505	pCi/l
• Radium (228)	11501	pCi/l	81366	pCi/l	81368	pCi/l
Gross Alpha	01501	pCi/l	01503	pCi/l	01505	pCi/l
Gross Beta	03501	pCi/l	p3503	pCi/l	03505	pCi/l

Appendix F (continued)

STORET Parameter Codes for some classic ground-water monitoring parameters.

PARAMETER NAME	UNIT OF MEASURE	NUMBER		COMMENTS
		DISS.	TOTAL	
ALKALINITY	mg/l		410	CAC03
AMMONIA	mg/l	608	610	NH3+NH4 AS N
BICARBONATE	mg/l		440	ION AS HCO3
CALCIUM	mg/l	915	916	
	ug/l	82036	82032	
CARBONATE	mg/l		445	ION AS CO3
COD	mg/l	341	340	HIGH LEVEL
COPPER	ug/l	1040	1042	
COB	mg/l	300		
FECAL COLIFORM			31616	DEPENDS ON METHOD USED - USGS
				USES 31625 THERE ARE APPROX-
				IMATELY 20 CODES FOR FLEALS
HARDNESS	ug/l		900	901-CARBONATE 902-NONCARBONATE
IRON	ug/l	1046	1045	
MAGNESIUM	mg/l	925	927	
MANGANESE	ug/l	1056	1055	
NITRATE + NITRITE	mg/l	631	630	
NITRITE	mg/l	613	615	
PHOSPHATE	mg/l		650	AS PO4
	mg/l		70505	COLORIMETRIC METHOD AS P
PHOSPHORUS	mg/l	671	665	DISSOLVED ORTHOPHOSPHATE
POTASSIUM	mg/l	935	937	
SODIUM	mg/l	930	929	
SULFATE	mg/l	946	945	
SULFITE	mg/l		740	
SUSPENDED SOLIDS	mg/l		530	
DISSOLVED SOLIDS	mg/l		70304	
TEMPERATURE	DEGREES		10	CELSIUS 11 FARENHEIT
ZINC	ug/l	1090	1092	

Appendix F (continued)

STORE Parameter Codes for microbiological parameters.

EPA/STORE SYSTEM		84/04/04	VERSION OF	84/02/17	PARAMETER CHANGES		NUMBER	21970-1975	CAS NO.
CODE	COMPUTER	DECIMAL	PARAMETER DESCRIPTION	ANALYSIS	UNIT	REVISION	SIG. FIG.	1969-1989	
	PHYSICAL	POINT							
	ACTIVATION	LOCATION	MAJOR GROUP			REQUESTER	ACTION	DATE	
31622	FEC COLI A-1M TIS MPN	XXXXXX.X	FECAL COLIFORM A-1 MOD. TISSUE, 44.5C, 24HR MPN/100ML (02)BACTERIOLOGICAL		81/10 S-N				
31646	FEC COLI INTERFAC 8/100ML	XXXXXX.XX	FECAL COLIFORM AT SURF MAT-BOT INTERFACE #/100ML (02)BACTERIOLOGICAL		83/04 S-IX				
48201	FEC COLI MPN/MER FILTER	XXXXXXXX	FECAL COLIFORM MPN & MEMBRANE FILTER, 44.5C (02)BACTERIOLOGICAL		78/05 S-5D				
74055	FEC COLI PLPHIT GENERAL	XXXXXXXXXX	FECAL COLIFORM, GENERAL (PERMIT) (02)BACTERIOLOGICAL		71/05 F-CCE				631 99



VERSION OF 84/07/17

NUMBER 21070-1975 CAS NO.  
SECRET 21-5-1969  
CESERY WELFORD 65

PARAMETER CHARACTS  
ENTITLED FIELD  
REQUESTER ACTION

ANALYSIS  
TITLE  
AND REF.

DECIMAL POINT LOCATION  
PARAMETER DESCRIPTION  
MAJOR GROUP

EPA COMPLIANCE SYSTEM	COMPUTER PRINTOUT ABBREVIATION	DECIMAL POINT LOCATION	PARAMETER DESCRIPTION	MAJOR GROUP	ANALYSIS TITLE AND REF.	PARAMETER CHARACTS ENTITLED FIELD REQUESTER ACTION	NUMBER	CAS NO.
31625	FEC COLI M-FCAGAR /100 ML	XXXXXXXX	FECAL COLIFORM, MF, M-FC, 0.7 UM (02)BACTERIOLOGICAL				24467	99
31621	FEC COLI A-IN H2O MPN	XXXXXXXX.X	FECAL COLIFORM, A-1 MOD. WATER, 44.5C, 2%HR MPN/100ML (02)BACTERIOLOGICAL					
31613	FEC COLI M-FCAGAR /100ML	XXXXXXXXXX	FECAL COLIFORM, MEMBER FILTER, M-FC AGAR, 44.5C, 24HR (02)BACTERIOLOGICAL				23313	98
31616	FEC COLI MFH-FCDR /100ML	XXXXXXXXXX	FECAL COLIFORM, MEMBER FILTER, M-FC BROTH, 44.5 C (02)BACTERIOLOGICAL				715753	59 33 7
31645	FEC COLI MF VERI #/G	XXXXXXXXXX	FECAL COLIFORM, MF, MFC MEDIUM, VERIFIED #/G (02)BACTERIOLOGICAL					
31623	FEC COLI MF VERI #/100ML	XXXXXXXXXX	FECAL COLIFORM, MF, MFC MEDIUM, VERIFIED #/100ML (02)BACTERIOLOGICAL					
31643	FEC COLI BOT SED MPN/100G	XXXXXXXXXX	FECAL COLIFORM, MPN IN BOT DEPOS, EC MED (MPN/100G) (02)BACTERIOLOGICAL				394	92 7
31620	FEC COLI BALB 43C TUBECODE	XXXXXXXXXX	FECAL COLIFORM, MPN, BORIC ACID LAC. BR. TUBE CONFIG (02)BACTERIOLOGICAL					
31619	FEC COLI MPN BALB /100ML	XXXXXXXXXX	FECAL COLIFORM, MPN, DOPIC ACID LACTOSE BR, 43C, 48HR (02)BACTERIOLOGICAL				542	9 88 1
31615	FEC COLI MF/ECHED /100ML	XXXXXXXXXX	FECAL COLIFORM, MPN, EC MED, 44.5C (TUBE 31614) (02)BACTERIOLOGICAL				216669	36 33 30
31618	FEC COLI EKM 45C TUBECODE	XXXXXXXXXX	FECAL COLIFORM, MPN, EIJKMAN TEST, TUBE CONFIG. (02)BACTERIOLOGICAL					100
31617	FEC COLI MPN E1JK /100ML	XXXXXXXXXX	FECAL COLIFORM, MPN, EIJKMAN TEST, 44.5C (TUBE 31618) (02)BACTERIOLOGICAL				2201	9 34 56
31640	FEC COLI SHELFISH MPN/100G	XXXXXXXXXX	FECAL COLIFORM, MPN, IN SHELLFISH, EC MED, 44.5C (02)BACTERIOLOGICAL				86	44 55





# STORET WATER QUALITY FILE—STATION LOCATION STORAGE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
<b>AGENCY CARD (A CARD)</b>																																																																															
AGENCY CODE (Left Justify)								UNLOCK AFTER (days)		UNLOCKING KEY (Left Justify)								INDIVIDUAL STORING DATA: NAME, LOCATION, AGENCY, TELEPHONE (Optional Comments—will not be stored)																																LOCK AFTER		CON- TROL CODE																											
1								8 9		12 13 15 16 17								24 25																																61 62		73 74 75 76 77		78 79 80																									
<b>STATION TYPE CARD (T CARD)</b>																																																																															
A STRING OF VALID COMBINATIONS OF STATION TYPE CODES SEPARATED BY SLASHES																																																																															
1 (Left Justify)																																																																															
<b>STATION CARD (S CARD)</b>																																																																															
SORT NO.			PRIMARY STATION CODE (Left Justify)															STATION ALIASES												FIPS CODES				CON- TROL CODE																																													
1 3 4			18 19															(1) SECONDARY STATION CODE (Left Justify)				(2) SECONDARY STATION CODE (Left Justify)				(3) SECONDARY STATION CODE (Left Justify)				STATE		COUNTY		77 78 79 80																																													
																														5 3 0				S																																													
<b>LATITUDE/LONGITUDE CARD (HEADER CARD Ø)</b>																																																																															
SORT NO.			LATITUDE (Zero Fill)						LONGITUDE (Zero Fill)						P C		D		TOTAL STATION DEPTH		STATION ELEVATION		AQUIFER CODES																																																								
1 3 4			7 8 9 10 11 13						14 16 17 18 19 21						27 28		29 30 32		33		37 38		77 78 79 80																																																								
																							Ø																																																								
<b>RMI CARD (HEADER CARD 1)</b>																																																																															
SORT NO.			T E M R A M J N		B A S I N		T E M R I M N N		B A S I N		TERM STREAM NO.		LEVEL 1 MILES		LEVEL 2 INDEX		LEVEL 2 MILES		LEVEL 3 INDEX		LEVEL 3 MILES		LEVEL 4 INDEX		LEVEL 4 MILES		LEVEL 5 INDEX		LEVEL 5 MILES		LEVEL 6 INDEX		LEVEL 6 MILES		LEVEL 7 INDEX		LEVEL 7 MILES		LAST LEVEL USED																																								
1 3 4			7 8		9 10		11 13		14		19 20		25 26		31 32		36 37		41 42		45 46		50 51		54 55		59 60		63 64		68 69		72 73		76 77		78 79 80																																										
																																					1																																										
<b>RMI CARD (HEADER CARD 2)</b>																																																																															
SORT NO.			T E M R A M J N		B A S I N		T E M R I M N N		B A S I N		TERM STREAM NO.		LEVEL 8 INDEX		LEVEL 8 MILES		LEVEL 9 INDEX		LEVEL 9 MILES		LEVEL 10 INDEX		LEVEL 10 MILES		LEVEL 11 INDEX		LEVEL 11 MILES		LEVEL 12 INDEX		LEVEL 12 MILES																																																
1 3 4			7 8		9 10		11 13		14		17 18		21 22		25 26		29 30		33 34		37 38		41 42		45 46		49 50		53 54								79 80																																										
																																					2																																										
<b>MAJOR/MINOR BASIN CARD (HEADER CARD 3)</b>																																																																															
SORT NO.			STATION LOCATION MAJOR BASIN NAME																								STATION LOCATION MINOR BASIN NAME																								LOCATION BASIN CODES																												
1 3 4			27 28																																																67 68 69 70 71 72 73			74 79 80																									
			P A C I F I C N O R T H W E S T																																																1 3					3																							
<b>LOCATION DESCRIPTION CARD (HEADER CARD 4)</b>																																																																															
SORT NO.			LOCATION OF SITE: LANDMARK NAMES, ETC.																																																				REACH CODING																								
1 3 4																																																							HYDROLOGIC UNIT CODE				ON OFF		MILES ON REACH				C K		79 80												
																																																							51 52 59 60 62 63 65 66				63 65		73 74 75				79 80														
																																																																			4												

## Part III

### Other Ground Water Information

Part III covers ground water data that is not covered in Parts I and II. Many types of data may be entered into various computer programs for Ground Water Management Programs. These data may include but not be limited to well inventories (a minimal amount of information for a very large number of wells), lithology, ground water models, water rights, water use, precipitation, runoff, and various types of maps and plots. As these data are not suitable for WATSTORE or STORET, Ecology needs the following where applicable:

- Hard and digital copy of the data;
- Manufacturer, model, amount of memory, CPU, and modification (if any) to the computer;
- What peripherals, if any, are required to run the program;
- The name and source of the program used to process the data (including the version if applicable);

If digital data is on a floppy disk, include:

- Disk operating system (DOS),
- Number of tracks,
- Number of sectors per track,
- Density tracks per inch,
- Hard or soft sectored,
- Number of bytes per sector,
- For sequential files the data separators,
- For random access files the number of fields per record and field length,
- Data file format, ASCII, binary, etc.

If digital data is on reel of tape include:

- Number of tracks,
- Density,
- Is it labeled or unlabeled,
- Record length
- Track length,
- For sequential files the data separators,
- For random access files the number of fields per record and field length,
- Data file format, ASCII, binary, etc.



In addition, Ecology requires a written description of what the software does and what is contained in the data set. Each site must have a unique site number which is consistent with the Site ID described in Part I, field number 2 (see Page C-2) or consistent with the Local Number (Part I, field number 3, Page C-3). In addition, the type of site (i.e. well, spring, etc.) must be identified and the source of the data stated.

For the case of computer generated maps Ecology requires the latitude and longitude of the reference or register points and the projection and scale of the source map used. The data files must be compatible with ARC/INFO. The software Auto LISP can be used to convert Auto CAD files (version 2.5 or more recent) into export files that Ecology will then convert to ARC/INFO.