Database Reports

SampleID	BITSUI-1	
Date	3/26/1998	
Ph	8.8	
Cond 20°C (µS)	19600	
TDS (110 °C, mg/l)	14600	
Cations	(mg/l)	(meq/l)
Na+	4.360E+03	1.896E+02
K +	2.100E+01	5.371E-01
Mg++	2.800E+01	2.304E+00
Ca++	5.200E+01	2.595E+00
Mn++	3.910E-01	1.423E-02
Fe++	3.500E-01	1.254E-02
Ba++	4.000E-02	5.825E-04
Anions	(mg/l)	(meq/l)
F-	2.740E+00	1.442E-01
Cl-	1.750E+03	4.936E+01
SO4--	6.200E+03	1.291E+02
HCO3-	9.500E+02	1.557E+01
CO3--	8.600E+01	2.866E+00
Uncharged	(mg/l)	
Al tot	.34	
H3BO3	12.1	

Reports

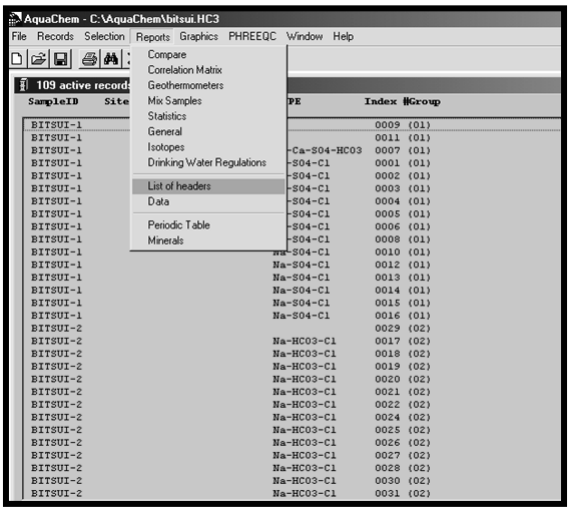
Reports in AquaChem are all generated in a separate Report window in unformatted ASCII text. These reports can be printed "as is" using the [Print] button on the lower left hand corner of the windows or the information can be cut "cut-and–pasted" into a formatted report document

Database Report Types

- Header lists
- Data reports
- Detailed data report
- Tabulation of parameters compared to drinking water standards
- Comparison of database to single parameter
- Statistics for selected parameters
- Other - Periodic Table and Minerals Table

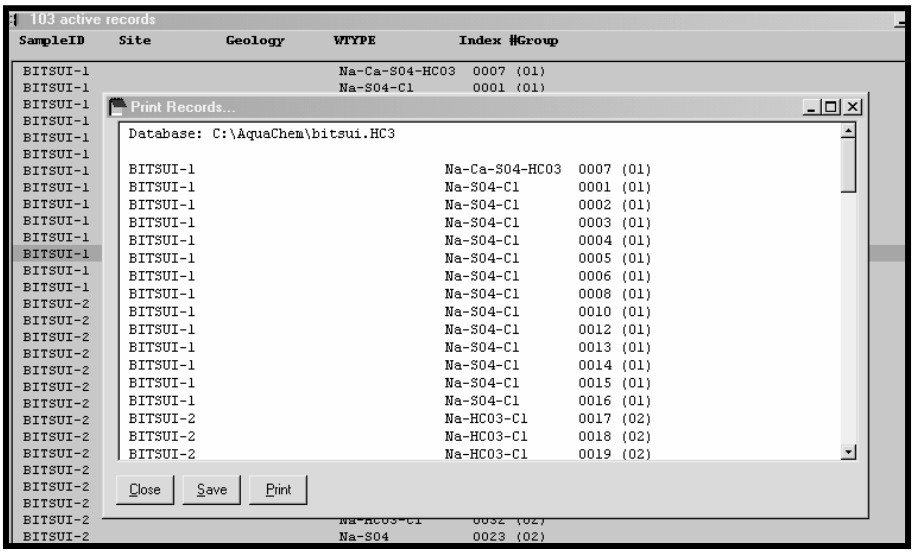
Header List

Gives printout of the headers for each record

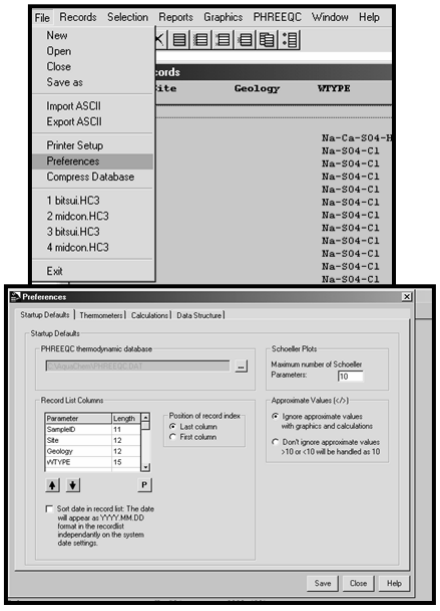


- Reports
- List of Headers
- [Enter]

Modified Header List

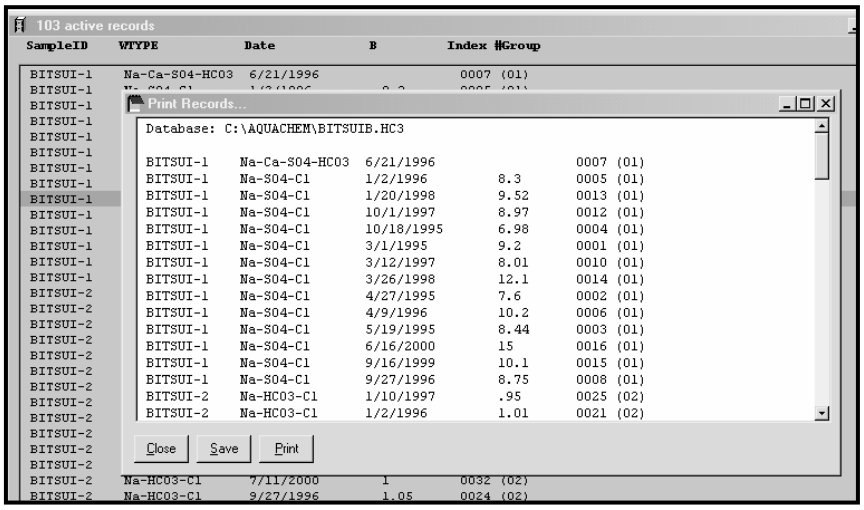


Modified Header List



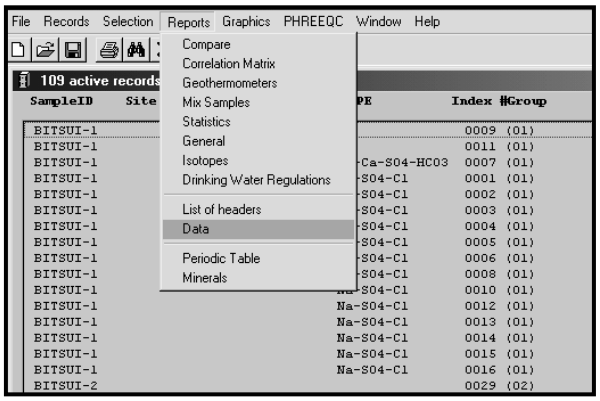
File
Preferences
[Enter]
On Startup Defaults tab
- Add Date, set length 15
- Remove Site
- Remove Geology
- Click blank field under WTYPE
- Add B, set length 10
- Save
- Close
Reports
List of Headers

Modified Header List



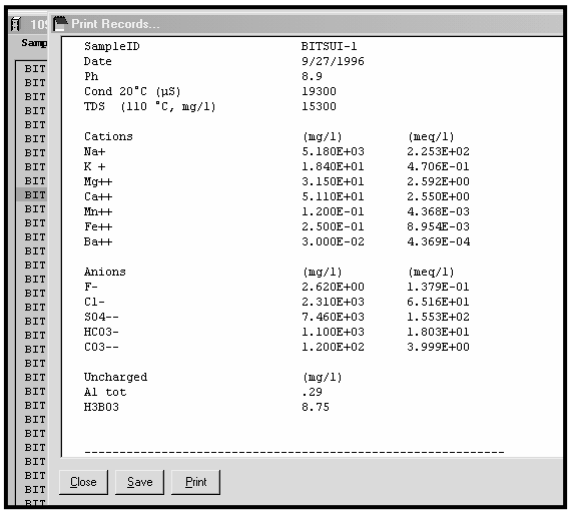
Data Report

Gives listing of all data for each database record



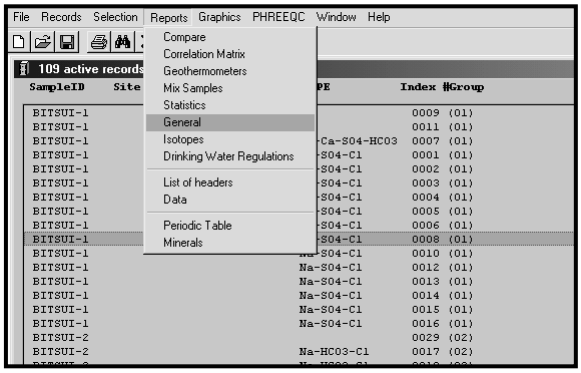
- Reports
- Data
- [Enter]

Data Report



Detailed Record Report

Includes data and the calculated parameters



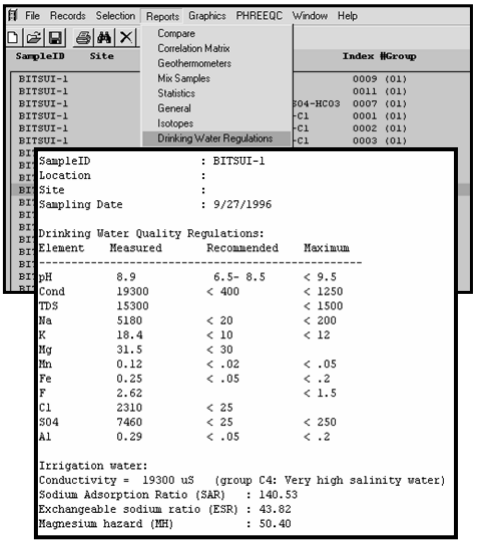
- **Reports**
- **General**
- **[Enter]**

Detailed Data Report

```
SampleID                : BITSUI-1
Location                :
Site                    :
Sampling Date           : 9/27/1996
Geology                 :
Watertype               : Na-SO4-Cl

Sum of Anions (meq/l)   : 242.6506
Sum of Cations (meq/l)  : 230.9411
Balance:                : -2.47%

Measured TDS(mg/l)      : 15300.0
Calculated TDS(mg/l)    : 10557.5

Hardness                : meq/l     °f        °g        mg/l CaCO3
Total hardness          : 5.14      25.71     14.40     257.1
Permanent hardness      : 0.0       0.00      0.00      0.0
Temporary hardness      : 5.14      25.71     14.40     257.1
Alkalinity              : 22.03     110.15    61.68     1101.5
(1 °f = 10 mg/l CaCO3/l 1 °g = 10 mg/l CaO)

Major ion composition
        mg/l        mmol/l      meq/l       meq%
-------------------------------------------------------------
Na+     5180.0      225.315     225.315     47.576
K +     18.4        0.471       0.471       0.099
Ca++    51.1        1.275       2.55        0.538
Mg++    31.5        1.296       2.592       0.547
Cl-     2310.0      65.157      65.157      13.758
SO4--   7460.0      77.663      155.326     32.797
HCO3-   1100.0      18.03       18.03       3.807
```

Drinking Water Regulations

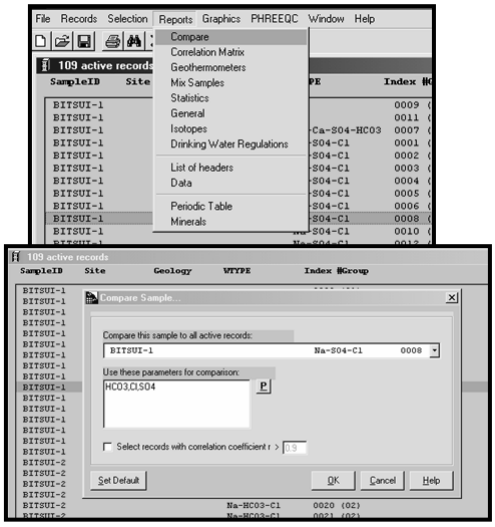
Tabulation Relative to Water Quality Standards



- Reports
- Drinking Water Regulations
- [Enter]
- [>]Advance one record
- [>>] Go to end of list
- [<]Go back one record
- [<<] Go to start of list

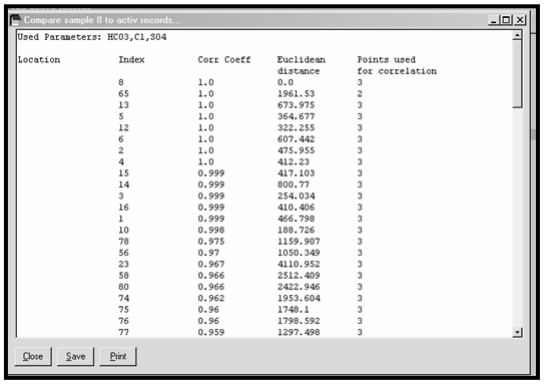
Comparison

Compare the complete database with a single record



- Reports
- Compare
- [Enter]
- Pick a sample from dropdown list
- Pick at least three parameters to use for the correlation
- [OK]

Comparison

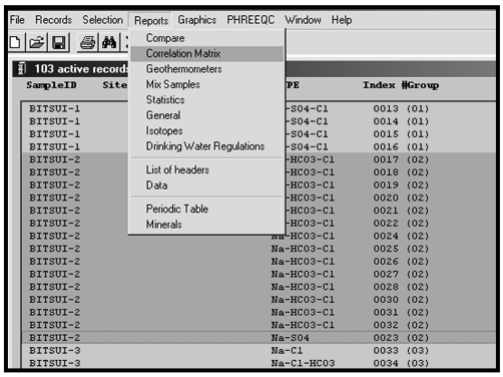


Correlation coefficient = linear regression of all concentrations of each sample with the designated sample.

Euclidean distance = normalized sum of the differences in absolute concentrations.

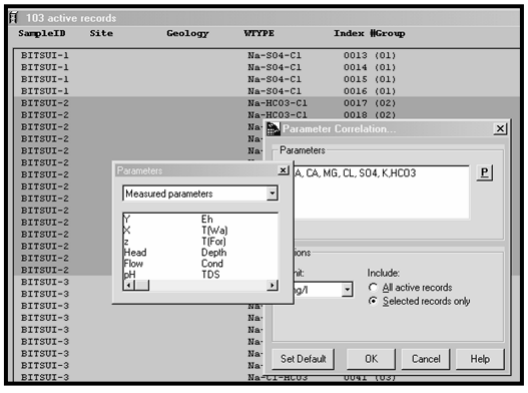
Correlation Matrix

Determines whether groups of samples have parameters that are correlated with one another



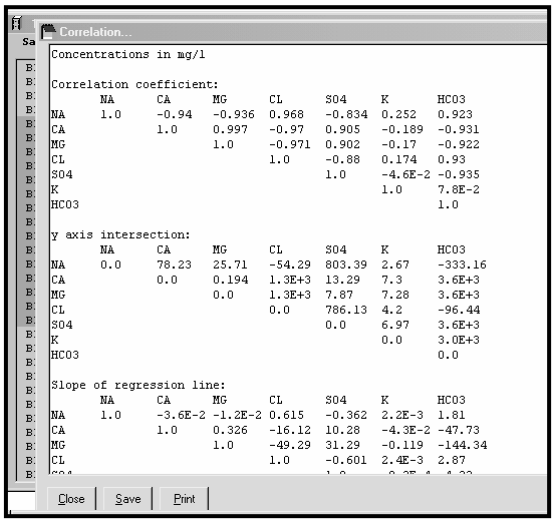
- Select all records for Bitsui -2
- Reports
- Correlation matrix

Correlation Matrix



- Choose parameters: NA, CA, MG, SO4, K, HCO3
- Include: Selected records only
- [OK]

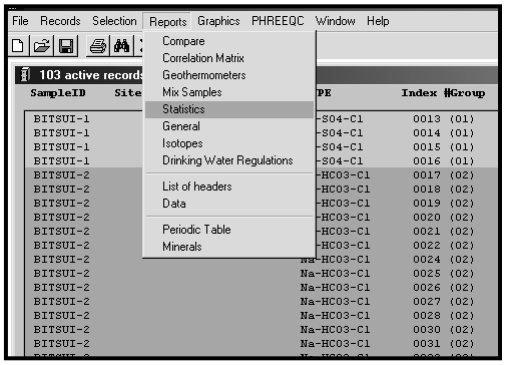
Correlation Matrix



- Correlation between Na and K is very low (r = .253)
- Correlation between Na and Cl is high (r = .968)
- Correlation between Na and HCO3 is high (r = .923)

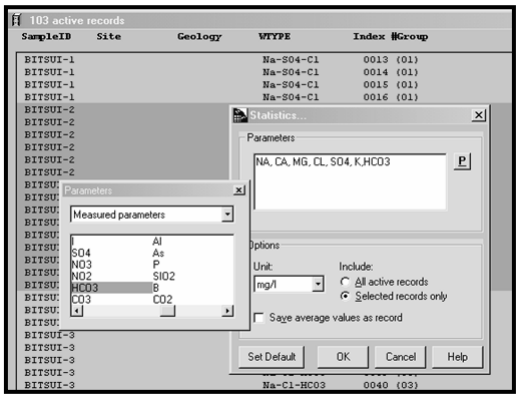
Statistics Reports

Generates set of simple statistics



- Use same set of samples Bitsui – 2
- Reports
- Statistics

Statistics Report

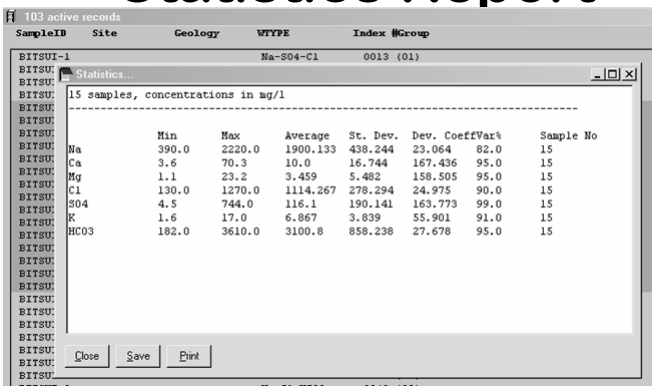


- Choose parameters:

NA,CA,MG,CL,SO4, HCO3

- Include: Selected records only
- [OK]

Statistics Report

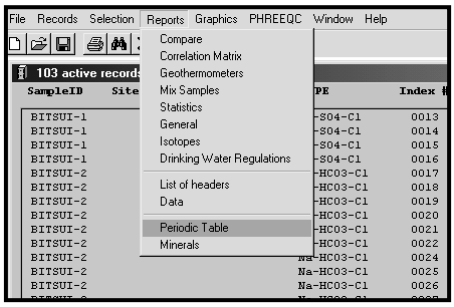


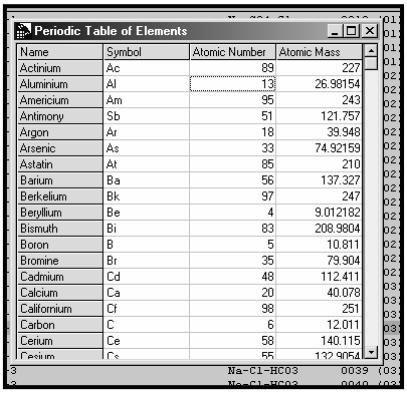
Dev. Coeff. = σ (data scatter) / Average x 100 … a normalized measure of variability in the data.

Var% (vairiability) = (Min-Max) / Average x 100 … a normalized measure of total variability.

Periodic Table

Lists Symbol, Atomic Number and Atomic Mass for all elements

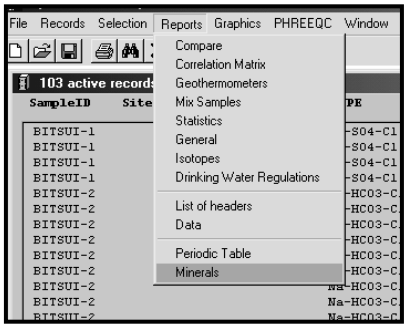


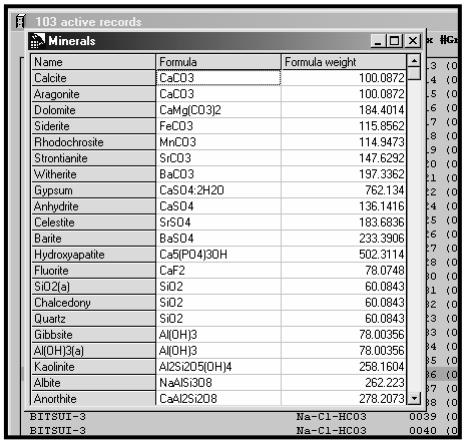


- **Reports**
- **Periodic Table**

Minerals

Lists Name, Formula and Formula Weight of most common minerals



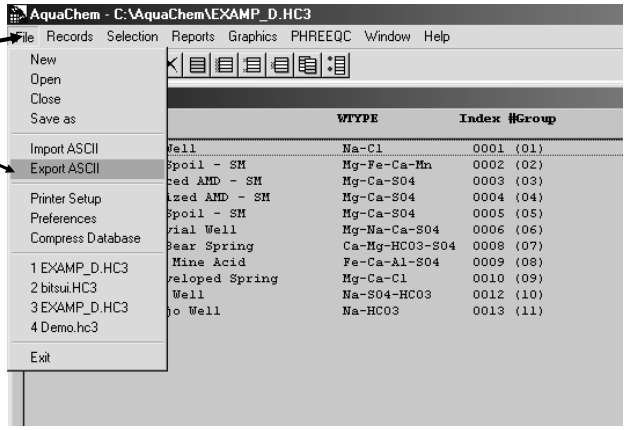


- **Reports**
- **Minerals**

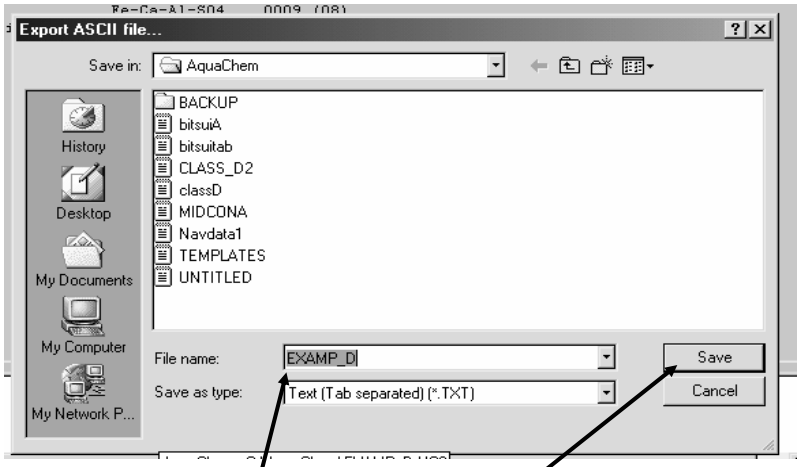
Export Data

File

Export ASCII

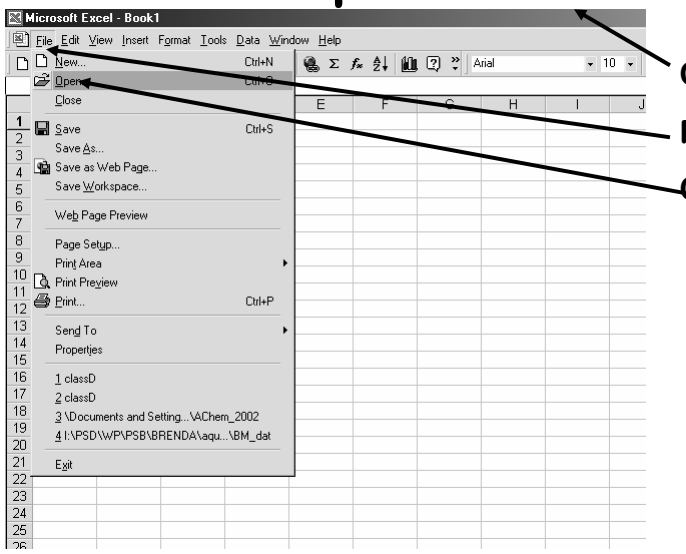


Export Data



Name File & Save

Export Data

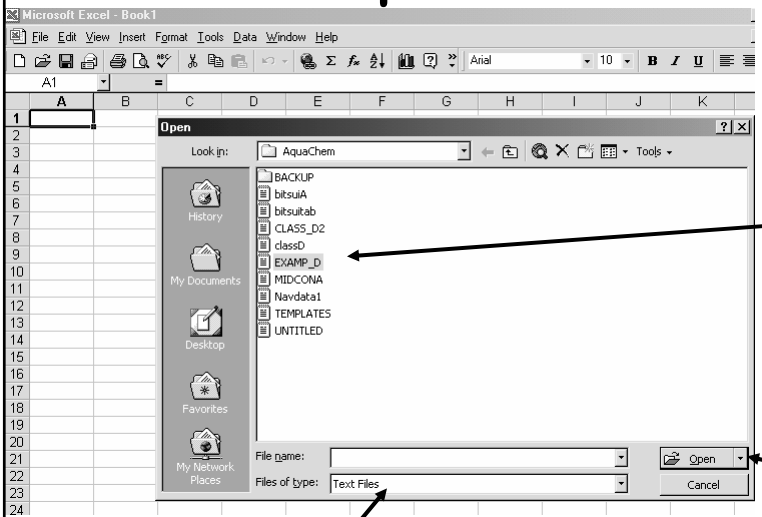


Open Excel

File

Open

Export Data

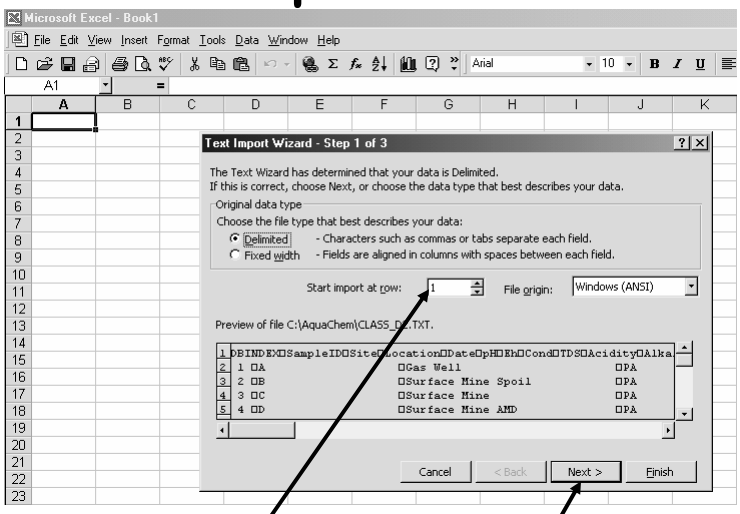


2. Pick File

3. Open

1. File Type – Text File

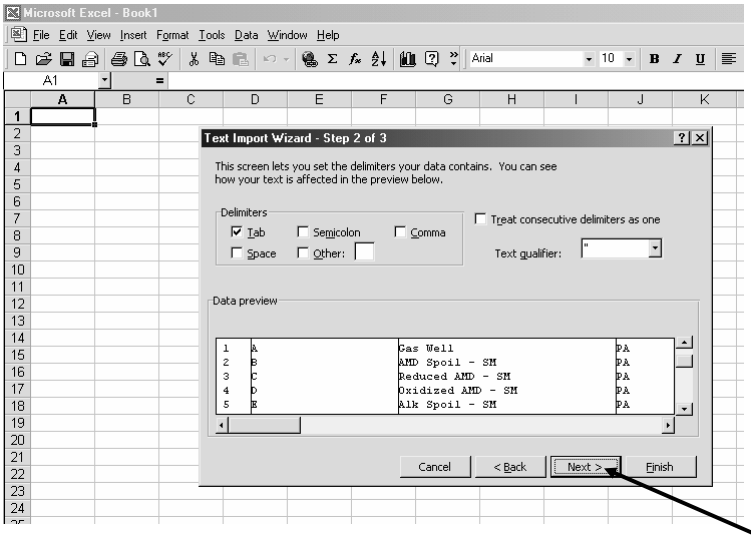
Export Data



Start Import at row 1

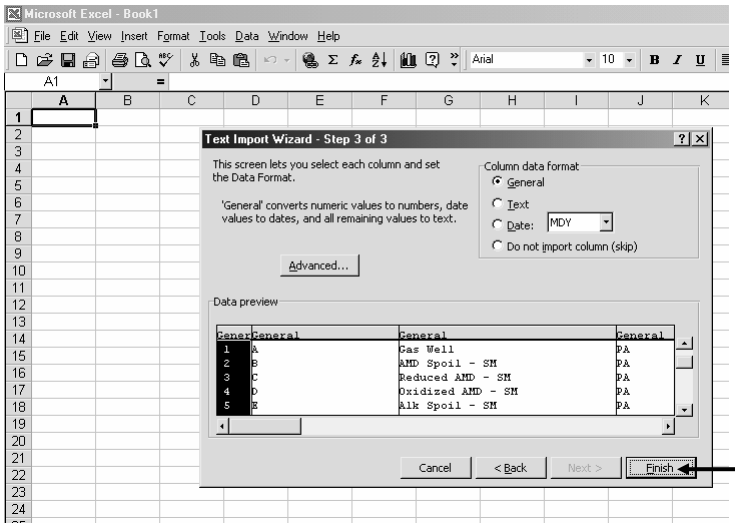
Next

Export Data



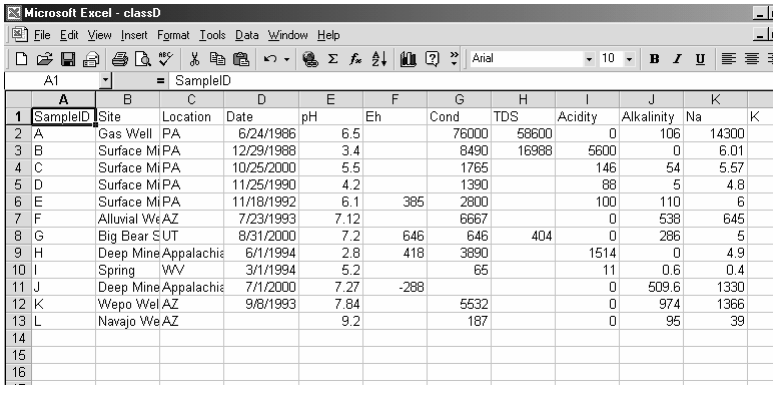
Next

Export Data



Finish

Export Data



	A	B	C	D	E	F	G	H	I	J	K
1	SampleID	Site	Location	Date	pH	Eh	Cond	TDS	Acidity	Alkalinity	Na
2	A	Gas Well	PA	6/24/1986	6.5		76000	58600	0	106	14300
3	B	Surface Mi	PA	12/29/1988	3.4		8490	16988	5600	0	6.01
4	C	Surface Mi	PA	10/25/2000	5.5		1765		146	54	5.57
5	D	Surface Mi	PA	11/25/1990	4.2		1390		88	5	4.8
6	E	Surface Mi	PA	11/18/1992	6.1	385	2800		100	110	6
7	F	Alluvial We	AZ	7/23/1993	7.12		6667		0	538	645
8	G	Big Bear S	UT	8/31/2000	7.2	646	646	404	0	286	5
9	H	Deep Mine	Appalachia	6/1/1994	2.8	418	3890		1514	0	4.9
10	I	Spring	WV	3/1/1994	5.2		65		11	0.6	0.4
11	J	Deep Mine	Appalachia	7/1/2000	7.27	-288			0	509.6	1330
12	K	Wepo Wel	AZ	9/8/1993	7.84		5532		0	974	1366
13	L	Navajo We	AZ		9.2		187		0	95	39

End of Database Reports Exercise