STORET
Getting Started

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Morongo Band Of Mission Indians

Environmental Protection Department
Tribal Water Program

Data organization in STORET

Activity Start Date	Activity Start Time	Activity Start Time Zone	Depth to Activity	Depth to Activity Units	Sample Collection Procedure ID	Characteristic Name	Result Value	Result Value Units
4/25/2006	10:30:00 AM	PDT			QAPP	Nitrogen, Nitrat	*Non-detect	mg/l
4/25/2006	10:30:00 AM	PDT			QAPP	pH	8.40	None
4/25/2006	10:30:00 AM	PDT			QAPP	Dissolved Solic	360.00	mg/l
4/25/2006	10:30:00 AM	PDT			QAPP	Turbidity	0.54	NTU
4/25/2006	10:30:00 AM	PDT			QAPP	MBAS (deterge	*Non-detect	mg/l
4/25/2006	10:30:00 AM	PDT			QAPP	Perchlorate	*Non-detect	mg/l
4/25/2006	10:30:00 AM	PDT			QAPP	Phosphorus	*Non-detect	mg/l
4/25/2006	10:30:00 AM	PDT			QAPP	Mercury	*Non-detect	ug/l
4/25/2006	10:30:00 AM	PDT			QAPP	Arsenic	*Non-detect	ug/l
4/25/2006	10:30:00 AM	PDT			QAPP	Cadmium	*Non-detect	ug/l
4/25/2006	10:30:00 AM	PDT			QAPP	Chromium	*Non-detect	ug/l
4/25/2006	10:30:00 AM	PDT			QAPP	Copper	*Non-detect	ug/l
4/25/2006	10:30:00 AM	PDT			QAPP	Iron	75	ug/l
4/25/2006	10:30:00 AM	PDT			QAPP	Lead	*Non-detect	ug/l
4/25/2006	10:30:00 AM	PDT			QAPP	Selenium	*Non-detect	ug/l
4/25/2006	10:30:00 AM	PDT			QAPP	Chloride	12.00	mg/l
4/25/2006	10:30:00 AM	PDT			QAPP	Enterococcus (	27.00	MPN
4/25/2006	10:30:00 AM	PDT			QAPP	Fecal Streptoc	80.00	MPN
4/25/2006	10:30:00 AM	PDT			QAPP	Fecal Coliform	4.00	MPN
4/25/2006	10:30:00 AM	PDT			QAPP	Total Coliform	500.00	MPN
4/25/2006	11:20:00 AM	PDT			QAPP	Chloride	3.60	mg/l
4/25/2006	11:20:00 AM	PDT			QAPP	Nitrogen, Nitrat	1.20	mg/l
4/25/2006	11:20:00 AM	PDT			QAPP	pH	7.60	None
4/25/2006	11:20:00 AM	PDT			QAPP	Dissolved Solic	200.00	mg/l
4/25/2006	11:20:00 AM	PDT			QAPP	Turbidity	2.40	NTU
4/25/2006	11:20:00 AM	PDT			QAPP	MBAS (deterge	*Non-detect	mg/l
4/25/2006	11:20:00 AM	PDT			QAPP	Perchlorate	*Non-detect	mg/l
4/25/2006	11:20:00 AM	PDT			QAPP	Phosphorus	*Non-detect	mg/l
4/25/2006	11:20:00 AM	PDT			QAPP	Mercury	*Non-detect	ug/l
4/25/2006	11:20:00 AM	PDT			QAPP	Arsenic	*Non-detect	ug/l
4/25/2006	11:20:00 AM	PDT			QAPP	Cadmium	*Non-detect	ug/l
4/25/2006	11:20:00 AM	PDT			QAPP	Chromium	*Non-detect	ug/l
4/25/2006	11:20:00 AM	PDT			QAPP	Copper	*Non-detect	ug/l

Characteristic Name	Result Value
Nitrogen, Nitrat	*Non-detect
pH	8.40
Dissolved Solic	360.00
Turbidity	0.54
MBAS (deterge	*Non-detect
Perchlorate	*Non-detect
Phosphorus	*Non-detect
Mercury	*Non-detect
Arsenic	*Non-detect
Cadmium	*Non-detect
Chromium	*Non-detect
Copper	*Non-detect
Iron	75
Lead	*Non-detect
Selenium	*Non-detect
Chloride	12.00
Enterococcus (	27.00
Fecal Streptoc	80.00
Fecal Coliform	4.00
Total Coliform	500.00
Chloride	3.60
Nitrogen, Nitrat	1.20
pH	7.60
Dissolved Solic	200.00
Turbidity	2.40
MBAS (deterge	*Non-detect
Perchlorate	*Non-detect
Phosphorus	*Non-detect
Mercury	*Non-detect
Arsenic	*Non-detect
Cadmium	*Non-detect
Chromium	*Non-detect
Copper	*Non-detect

From 2006-2009, four years of data smashed into one template

Managing the Data

How can I make STORET work for me

- Reference the data easily

- Copy and paste STORET data into an excel sheet that could be easily graphed

Create folders for each year using a master copy of the STORET template

2006 DATA

2007 DATA

2008 DATA

Within each template I separated each sample site with borders so they did not bleed into each other

Project ID	Station ID	Activity ID	Medium	Activity Type	Activity Category
SWQM	Hathaway West	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Hathaway West	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Hathaway West	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Hathaway West	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Hathaway West	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Hathaway West	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Hathaway West	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Hathaway West	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Hathaway East	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Hathaway East	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Hathaway East	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Hathaway East	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Hathaway East	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Hathaway East	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Hathaway East	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Hathaway East	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Wood Canyon	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Wood Canyon	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Wood Canyon	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Wood Canyon	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Wood Canyon	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Wood Canyon	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Wood Canyon	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Wood Canyon	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Bog 1	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Bog 1	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Bog 1	40003	Water	Field Msr/Obs	Routine Msr/Obs
SWQM	Bog 1	40003	Water	Field Msr/Obs	Routine Msr/Obs

In order to not repeat this process or have somebody new go through the same process, start from the beginning

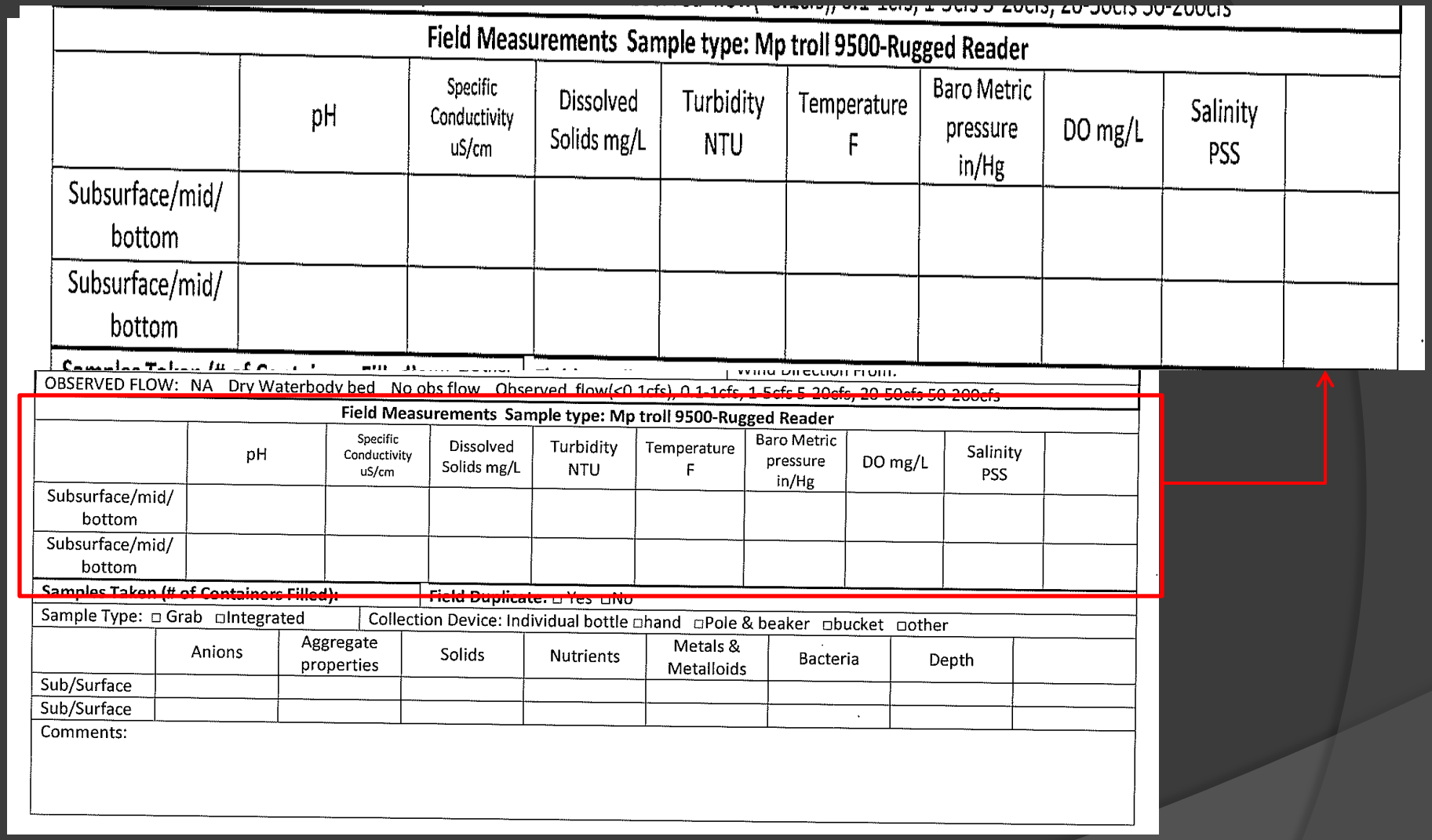
Field Sheet

Vision for the field sheet

- Make input of the data easier if I am unable to upload it
- Save time
- Consistency

Create a field sheet that was going to mirror how I input my data into STORET

Field Sheet



Field Measurements Sample type: Mp troll 9500-Rugged Reader

	pH	Specific Conductivity uS/cm	Dissolved Solids mg/L	Turbidity NTU	Temperature F	Baro Metric pressure in/Hg	DO mg/L	Salinity PSS	
Subsurface/mid/ bottom									
Subsurface/mid/ bottom									

OBSERVED FLOW: NA Dry Waterbody bed No obs flow Observed flow(<0.1cfs), 0.1-1cfs, 1-5cfs 5-20cfs, 20-50cfs 50-200cfs

Field Measurements Sample type: Mp troll 9500-Rugged Reader

	pH	Specific Conductivity uS/cm	Dissolved Solids mg/L	Turbidity NTU	Temperature F	Baro Metric pressure in/Hg	DO mg/L	Salinity PSS	
Subsurface/mid/ bottom									
Subsurface/mid/ bottom									

Samples Taken (# of Containers Filled): Field Duplicate: □ Yes □No

Sample Type: □ Grab □Integrated Collection Device: Individual bottle □hand □Pole & beaker □bucket □other

	Anions	Aggregate properties	Solids	Nutrients	Metals & Metalloids	Bacteria	Depth	
Sub/Surface								
Sub/Surface								

Comments:

Field Sheet is my hard copy to reference when I go back to graph my DATA and see a number that looks suspicious

In WQX/STORET on the results sheet, under Characteristic Name the parameters are in the same sequence

Characteristic Name	Result Value	Result Value Units
pH	6.63	None
Specific conductance	298.4	uS/cm
Dissolved Solids	194	mg/l
Turbidity	22.25	NTU
Temperature, water	60.02	deg F
Barometric pressure	14.00	in/Hg
Dissolved oxygen (DO)	5.61	mg/l
Salinity	0.14	PSS

This allows me to input the numbers in order and also allows for consistency

Data from field (Handheld Device)

Upload and put it into an Excel document

Date	Time	ET (min)	Chan[1] Temperatu Fahrenheit	Chan[3] Barometric Inches Hg	Chan[4] Turbidity FNU	Chan[: pH pH	Chan[2! Clark D(milligra	Chan[25] Clark DO S: %Saturatio	Chan[45] Conductivit microSiem
7/19/2010	1:18:26 PM	0.7333	80.66	26.622	8.3	9.1	30.24	429.1542	333.35
7/19/2010	1:18:30 PM	0.8	80.65	26.622	6.8	9.09	29.81	422.9551	335.31
7/19/2010	1:18:35 PM	0.8833	80.56	26.622	6.3	9.09	29.69	420.8037	337.19
7/19/2010	1:18:39 PM	0.95	80.81	26.622	6.2	9.1	29.1	413.6065	337.48
7/19/2010	1:18:43 PM	1.0167	80.89	26.622	3.8	9.08	28.75	408.9427	335.62
7/19/2010	1:18:48 PM	1.1	80.53	26.622	4	9.1	28.87	409.1454	334.88

How you deal with uploaded data is dependent upon how well you know excel

I use the field sheet to input data into the STORET template

- **Otherwise rearranging the uploaded data would double my work**

Chan[1]	Chan[3]	Chan[4]	Chan[	Chan[2	Chan[25]	Chan[45]
Temperatu	Barometric	Turbidity	pH	Clark D	Clark DO S	Conductivit
Fahrenheit	Inches Hg	FNU	pH	milligra	%Saturatio	microSiem
80.66	26.622	8.3	9.1	30.24	429.1542	333.35

pH
Specific conductance
Dissolved Solids
Turbidity
Temperature, water
Barometric pressure
Dissolved oxygen (DO)
Salinity

Lab Results

E.S.BABCOCK&Sons,Inc.
Environmental Laboratories

Client Name: Morongo Band / Mission Indians
Contact: Environmental Dept.
Address: 12700 Pumarra Rd.
Banning, CA 92220

Report Date: 21-Apr-2010

Analytical Report: Page 2 of 12
Project Name: Morongo-Field Water Samp/Surfac
Project Number: Field Water Sampling for Surface V

Work Order Number: A0D0894
Received on Ice (Y/N): Yes Temp: 4 °C

Laboratory Reference Number
A0D0894-01

Sample Description	Matrix	Sampled Date/Time	Received Date/Time
Hathaway West	Liquid	04/08/10 07:55	04/08/10 13:54

Analyte(s)	Result	RDL	Units	Method	Analysis Date	Analyst	Flag
Anions							
Chloride	5.3	1.0	mg/L	EPA 300.0	04/09/10 10:52	ss	
Nitrate as N	1.9	0.20	mg/L	EPA 300.0	04/09/10 10:52	ss	
Aggregate Properties							
pH	7.8	1.0	pH Units	SM 4500H+ B	04/08/10 19:15	ara	
Solids							
Total Dissolved Solids	190	20	mg/L	SM 2540C	04/15/10 10:45	je	
Nutrients							
Nitrite as N	ND	0.10	mg/L	SM 4500NO2 B	04/09/10 15:00	aa	
Ammonia-Nitrogen	0.10	0.10	mg/L	SM4500NH3H	04/14/10 13:43	sl	
Kjeldahl Nitrogen	0.11	0.10	mg/L	EPA 351.2	04/17/10 17:46	sl	
Total Nitrogen	2.0	0.2	mg/L	Calculation			
Total Phosphorus	ND	0.05	mg/L	SM 4500P B E	04/15/10 20:00	aa	
Metals and Metalloids							
Mercury	ND	1.0	ug/L	EPA 200.8	04/16/10 14:30	ap	
Metals and Metalloids; EPA SW846 Series							
Arsenic	ND	2.0	ug/L	EPA 6020	04/16/10 14:30	ap	
Cadmium	ND	1.0	ug/L	EPA 6020	04/16/10 14:30	ap	
Total Chromium	ND	10	ug/L	EPA 6020	04/16/10 14:30	ap	
Copper	ND	10	ug/L	EPA 6020	04/16/10 14:30	ap	
Iron	43	20	ug/L	EPA 6010B	04/16/10 12:24	lml	
Lead	ND	5.0	ug/L	EPA 6020	04/16/10 14:30	ap	
Selenium	ND	5.0	ug/L	EPA 6020	04/16/10 14:30	ap	

mailing
P.O Box 432
Riverside, CA 92502-0432

location
6100 Quail Valley Court
Riverside, CA 92507-0704

P 951 653 3351
F 951 653 1662
www.babcocklabs.com

NELAP no. 02101CA
CA ELAP no. 2668
EPA no. CA00102

Result	RDL
5.3	1.0
1.9	0.20
7.8	1.0
190	20
ND	0.10
0.10	0.10
0.11	0.10
2.0	0.2
ND	0.05
ND	1.0
ND	2.0
ND	1.0
ND	10
ND	10
43	20
ND	5.0
ND	5.0

Input the data by hand

Sample collection procedure

Characteristic name

4/14/2009	10:00:00 AM	PDT	QAPP	Nitrogen, Nitrate (NO3) as NO3	*Non-detect	mg/l
4/14/2009	10:00:00 AM	PDT	QAPP	Dissolved Solids	250.00	mg/l
4/14/2009	10:00:00 AM	PDT	QAPP	Perchlorate	*Non-detect	mg/l
4/14/2009	10:00:00 AM	PDT	QAPP	Nitrogen, Nitrite (NO2) as N	*Non-detect	mg/l
4/14/2009	10:00:00 AM	PDT	QAPP	Nitrogen, ammonia as N	*Non-detect	mg/l
4/14/2009	10:00:00 AM	PDT	QAPP	Nitrogen, Kjeldahl	0.20	mg/l
4/14/2009	10:00:00 AM	PDT	QAPP	Phosphorus, orthophosphate as P	0.06	mg/l
4/14/2009	10:00:00 AM	PDT	QAPP	Mercury	*Non-detect	ug/l
4/14/2009	10:00:00 AM	PDT	QAPP	Arsenic	*Non-detect	ug/l
4/14/2009	10:00:00 AM	PDT	QAPP	Cadmium	*Non-detect	ug/l
4/14/2009	10:00:00 AM	PDT	QAPP	Chromium	*Non-detect	ug/l
4/14/2009	10:00:00 AM	PDT	QAPP	Copper	*Non-detect	ug/l
4/14/2009	10:00:00 AM	PDT	QAPP	Iron	22.00	ug/l
4/14/2009	10:00:00 AM	PDT	QAPP	Lead	*Non-detect	ug/l
4/14/2009	10:00:00 AM	PDT	QAPP	Selenium	*Non-detect	ug/l

QAPP	Nitrogen, Nitrate (NO3) as NO3
QAPP	Dissolved Solids
QAPP	Perchlorate
QAPP	Nitrogen, Nitrite (NO2) as N
QAPP	Nitrogen, ammonia as N
QAPP	Nitrogen, Kjeldahl
QAPP	Phosphorus, orthophosphate as P
QAPP	Mercury
QAPP	Arsenic
QAPP	Cadmium
QAPP	Chromium
QAPP	Copper
QAPP	Iron
QAPP	Lead
QAPP	Selenium

Create one section then copy and paste for the rest of the sampling sites

My Data

- Sample quarterly
- 15 consistent sites
- With the number of parameters and sample sites, the Data input into STORET annually is manageable
- If sampling is done more frequently break down the data bimonthly, monthly, or as you see fit

In Conclusion

Don’t be scared to make mistakes

Make the STORET program work for you

Use your Project Officer as a resource, they should have the answer or know where to find it

Most importantly READ the INSTRUCTION sheet

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