Watersense - simplified diagram

MEASUREMENTNOTE

PK,FK	SENSORID	varchar2(200)
PK,FK	UNITID	varchar2(200)
PK,FK	DATETIMEFROM	timestamp(6)(11)
PK	MEASNOTENUMBER	number
	DATETIMETO	timestamp(6)(11)
	NOTES	varchar2(12000)
FK	MADEBY	varchar2(200)

MEASUREMENT

PK,FK	SENSORID	varchar2(200)
PK,FK	UNITID	varchar2(200)
PK	DATETIME	timestamp(6)(11)
	DATETIMEPLUS6	timestamp(6)(11)
	READING	number

SENSORCAPABILITY

PK,FK	SENSORID	varchar2(200)
PK,FK	MEASUNITID	varchar2(200)
	TOLERANCE	number
	TOLERANCEUNIT	varchar2(200)
	NOTES	varchar2(12000)
	DATECHECKED	timestamp(6)(11)
	CHECKEDBY	varchar2(200)

SENSOR

PK	SENSORID	varchar2(200)
	DATECHECKED	timestamp(6)(11)
	STATUS	varchar2(1600)
FK	CURRENTPLACE	varchar2(200)
FK	RIVERID	varchar2(200)
	DATEMOVED	timestamp(6)(11)
	BATTERYLEVEL	number
	NOTES	varchar2(12000)
FK	ENTEREDBY	varchar2(200)
FK	UPDATEDBY	varchar2(200)
	ACTIVE	char(1)

MEASUREMENTUNIT

PK	MEASUNITID	varchar2(200)
	MEASNAME	varchar2(200)
	UNITSYMBOL	varchar2(40)
	DESCRIPTION	varchar2(400)
	NOTES	varchar2(3000)

PLACE

PK	PLACEID	varchar2(200)
PK,FK	RIVERID	varchar2(200)
FK	DOWNRIVERPLACEID	varchar2(200)
FK	DOWNRIVERRIVERID	varchar2(200)
	DOWNRIVERDISTANCE	number
	LAT	binary_double(8)
	LONGITUDE	binary_double(8)
	NEARLAT	binary_double(8)
	NEARLONG	binary_double(8)
	DATECHECKED	timestamp(6)(11)
	DESCRIPTION	varchar2(1600)
	NOTES	varchar2(12000)
FK	ENTEREDBY	varchar2(200)
FK	CHECKEDBY	varchar2(200)

RIVER

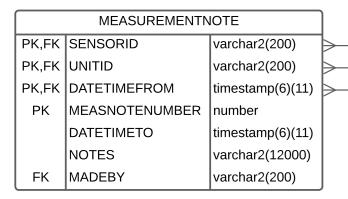|		
PK	RIVERID	varchar2(200)
	RIVERNAME	varchar2(200)
	SOURCELAT	binary_double(8)
	SOURCELONG	binary_double(8)
	MOUTHLAT	binary_double(8)
	MOUTHLONG	binary_double(8)
FK	DOWNRIVERID	varchar2(400)
	CONFBANK	char(1)
	DESCRIPTION	varchar2(1600)
	NOTES	varchar2(12000)
FK	ENTEREDBY	varchar2(200)

Measurement note holds data about a range of measurements in a time period - e.g. peculiar weather conditions that apply to that moment, or if the data is an outlier.
A note can be made to a single measurement or to a range of them; a measurement can be in the range of multiple notes.

Measurement holds the many values recorded.
DateTimePlus6 is recorded here so that data of two different sensors (not time coordinated) can be joined for comparison purposes. As a measurement is made every (normally) 12 minutes, two sensors take the measurements no more than 6 minutes apart. Indexing the time, and the time six minutes, later enables a fast non equi join comparing the time of records on two different sensors.

Sensorcapability records for each sensor what it measures, e.g. (Sensor1, DO2), etc. Tolerance is recorded there as it may vary for each sensor and its capability.

Sensor is related to a single place (there will be a separate archive).

MeasurementUnit enables data about diverse sensors, not limited to Dissolved O2 or temperature.

Place: identified by a number and the river. A sensor can be positioned there, so the quality of this data (lat, longitude) matters.
The downriver data (next place and distance) support showing an interactive graph of the river system, and The "nearlat" and "near Longitude" hold *approximate* values used to place the sensor on the map without revealing its exact position to the curious.

River: some of this data may be unneeded, in particular latitutes and longitutes (they are available).
Note that dowriverID is the river this flows in (null for the sea), confbank, for confluence bank, is to state it arrives on the right or left bank - also null if the river goes to sea. That information is useful to make an interactive graph approximating the river system.