Flag 2: Unit conversion error - Identify over-reported diversions due to unit conversion errors

**Function name: unit\_conv\_error**

**EA2:** Total RMS reported diversion for calendar year exceeded Face Value by 10x: Gross Annual Overreporting – possible Unit Conversion issue; Both coded and manual, code checks for unit conversion error, manual input for erroneous reporting found by staff // **FROM EWRIMS ANALYZER 4a:** Enter Gallon Conversions: This sheet lists the Water Use Reports determined to have erroneously used units of gallons and that have been converted to acre-feet. These determinations were performed in the Error File, but may be edited here in Column B. If the "Process eWRIMS Data" script is ran again, it will incorporate these unit conversions in its estimates. **(Could there be units mis-used other than gallon vs. AF?)**

**Data Source:**

* ewrims\_flat\_file.csv

[https://intapps.waterboards.ca.gov/downloadFile/faces/flatFilesEwrims.xhtml?fileName=ewrims\_flat\_file.csv](https://intapps.waterboards.ca.gov/downloadFile/faces/flatFilesCiwqs.xhtml?fileName=ewrims_flat_file.csv)

* water\_use\_report.csv

https://intapps.waterboards.ca.gov/downloadFile/faces/flatFilesEwrims.xhtml?fileName=water\_use\_report.csv

**Existing Fields:**

* AMOUNT “STORAGE, DIRECT” (water\_use\_report.csv)
* WATER\_RIGHT\_TYPE (ewrims\_flat\_file.csv)
* FACE\_VALUE\_AMOUNT (ewrims\_flat\_file.csv)

**New Fields:**

* POSSIBLE\_CONV\_ERROR\_TIER\_1
* POSSIBLE\_CONV\_ERROR\_TIER\_2

Reported use exceeds Face Value by 10x (indicative of unit conversion error)

If “WATER\_RIGHT\_TYPE” = Appropriative… Then…

Compare to previous years reported

Classic conversion error ratios

Gallons/AF, if they used rate to calculate volume

If greater than 2x “FACE\_VALUE\_AMOUNT” then flag (tier 1)

If greater than XXX “FACE\_VALUE\_AMOUNT” then flag and… (tier 2)

Calculate percentage above FACE\_VALUE\_AMOUNT

If above 3250% above face value, likely gallon conv issue

If significantly larger than face value (like 3250%) then we should remove or set to zero or face value, etc. – need to explore

Do unit conversion? Remove?

Calculate percentage “DIRECT\_DIV\_AMOUNT” exceeds “FACE\_VALUE\_AMOUNT”:

(“DIRECT\_DIV\_AMOUNT” – “FACE\_VALUE\_AMOUNT”) / “FACE\_VALUE AMOUNT” \* 100

What’s too big? Need to dig into data

New Fields: “TREATED\_AS\_CONV\_ERROR” (Y/N) (auto remove value?)

Don’t try to convert to specific unit – too many conversion error possibilities

If AMOUNT (DIRECT) + AMOUNT (STORAGE)

> FACE\_VALUE\_AMOUNT \* 2

AND

AMOUNT (DIRECT) + AMOUNT (STORAGE)

<= FACE\_VALUE\_AMOUNT \* 3

Then new field “POSSIBLE\_CONV\_ERROR\_TIER 1” = Y

And “POSSIBLE\_CONV\_ERROR\_TIER\_2” = N

If AMOUNT (DIRECT) + AMOUNT (STORAGE)

> FACE\_VALUE\_AMOUNT \* 3

Then new field

“POSSIBLE\_CONV\_ERROR\_TIER\_2” = Y

IF WATER\_RIGHT\_TYPE = (all appropriative types)