Package: kwb.geosalz (via r-universe)

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Title R Package for Documenting Workflow Used in Project ``geosalz''

Version 0.7.0

Description R Package for Documenting Workflow Used in Project ``geosalz''.

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URL https://github.com/KWB-R/kwb.geosalz

BugReports https://github.com/KWB-R/kwb.geosalz/issues

Depends R (>= 2.10)

Imports archive, cowplot, cellranger (>= 1.1.0), crayon (>= 1.3.4), data.table (>= 1.12.0), dplyr (>= 0.7.8), forcats, fs (>= 1.2.6), geosalz.phreeqc, ggplot2 (>= 3.1.0), janitor (>= 1.1.1), jsonlite, kwb.base, kwb.file, kwb.nextcloud, kwb.utils, magrittr (>= 1.5), parallel, readODS, readr(>= 1.4.0), readxl (>= 1.2.0), RColorBrewer, rlang (>= 0.3.1), rmarkdown (>= 1.11), sf, sftp, stringr (>= 1.4.0), tibble (>= 2.0.1), tidyr (>= 0.8.2), tidyselect (>= 1.1.2), withr, zoo

Suggests covr (>= 3.2.1), DT, ggforce, htmltools, htmlwidgets, knitr (>= 1.21), kwb.pkgbuild, leaflet, openxlsx, phreeqc, sessioninfo (>= 1.1.1), wasserportal

VignetteBuilder knitr

Remotes github::KWB-R/geosalz.phreeqc, github::KWB-R/kwb.base, github::KWB-R/kwb.nextcloud@dev, github::KWB-R/kwb.pkgbuild, github::KWB-R/kwb.utils, github::KWB-R/wasserportal, github::stenevang/sftp

ByteCompile true

Encoding UTF-8

LazyData true

RoxygenNote 7.3.1

Repository https://kwb-r.r-universe.dev

RemoteUrl https://github.com/KWB-R/kwb.geosalz

RemoteRef HEAD

RemoteSha f4c7d826e476e767b9fd47fac7e718134339b08c

Contents

`add_para_metadata` *add_para_metadata*

Description

add_para_metadata

Usage

```
add_para_metadata(df, lookup_para_path, parameters_path)
```

Arguments

`df`	df
`lookup_para_path`	lookup_para_path
`parameters_path`	parameters_path

Value

return "df" with added parameter metadata

`add_site_metadata` *add_site_metadata*

Description

add_site_metadata

Usage

```
add_site_metadata(df, site_path)
```

Arguments

`df`	df
`site_path`	site_path

Value

data frame with added site metadata

`all_defined` *Check if all strings are not empty*

Description

Check if all strings are not empty

Usage

```
all_defined(x)
```

Arguments

`x`	vector of character

Value

`TRUE` or `FALSE`

cat_green_bold_0 *Helper function: cat_green_bold_0*

Description

Helper function: cat_green_bold_0

Usage

```
cat_green_bold_0(...)
```

Arguments

...	text passed to crayon::green()

Value

formatted text output

cat_red_bold_0 *Helper function: cat_red_bold_0*

Description

Helper function: cat_red_bold_0

Usage

```
cat_red_bold_0(...)
```

Arguments

...	text passed to crayon::red

Value

formatted text output

`column_pattern_gather_ignore`
Helper function: column_pattern_gather_ignore

Description

Helper function: column_pattern_gather_ignore

Usage

```
column_pattern_gather_ignore(
  fields = c("Datum", "KN", "[iI]nterne Nr.", "Name der", "Ort", "Probe", "Prü",
   "Untersuchung", "Labor", "Jahr", "Galer", "Detail", "Meß", "Zeit", "Bezei", "Monat")
)
```

Arguments

`fields`	column names to be ignored for gathering (default: c("Datum", "KN", "[iI]nterne Nr.", "Name der", "Ort", "Probe", "Pr\u00FC", "Untersuchung", "Labor", "Jahr", "Galer", "Detail", "Me\u00DF", "Zeit", "Bezei", "Monat")

Value

vector with ignored columns for gathering

`column_pattern_gather_ignore_clean`
Helper function: column_pattern_gather_ignore_clean

Description

Helper function: column_pattern_gather_ignore_clean

Usage

```
column_pattern_gather_ignore_clean(
  fields = c("LabSampleCode", "Date", "Time", "Waterbody", "ExSiteCode", "Site")
)
```

Arguments

`fields`	column names to be ignored for gathering (default: c("LabSampleCode", "Date", "Time", "Waterbody", "ExSiteCode", Site")

Value

vector with ignored columns for gathering

convert_phreeqc_input_to_wide *Convert PhreeqC input to "wide" format*

Description

Convert PhreeqC input to "wide" format

Usage

```
convert_phreeqc_input_to_wide(phreeqc_input)
```

Arguments

phreeqc_input	PhreeqC input as retrieved by get_phreeqc_data

Value

PhreeqC input in "wide" format

convert_to_sf *Convert to SF*

Description

Convert to SF

Usage

```
convert_to_sf(
  df,
  crs_source = 25833,
  crs_target = 4326,
  col_coord_x = "Rechtswert_UTM_33_N",
  col_cood_y = "Hochwert_UTM_33_N"
)
```

Arguments

df	data frame or tibble with spatial data
crs_source	origingal CRS (default: 25833)
crs_target	target CRS (default: 4326)
col_coord_x	column name of latitude (default: "Rechtswert_UTM_33_N")
col_cood_y	column name of longitude (default: "Hochwert_UTM_33_N")

Value

data frame or tibble converted to sf

Examples

```
gwl_master <- jsonlite::fromJSON("https://kwb-r.github.io/wasserportal/stations_gwl_master.json")
convert_to_sf(gwl_master)
```

---

convert_xls_as_xlsx *Convert xls to xlsx*

Description

Convert xls to xlsx

Usage

```
convert_xls_as_xlsx(
  input_dir,
  export_dir = tempdir(),
  office_folder = safe_office_folder(),
  dbg = TRUE
)
```

Arguments

input_dir	input directory containing .xls files
export_dir	export directory (default: tempdir())
office_folder	office folder path (default: safe_office_folder)
dbg	debug (default: TRUE)

---

convert_xls_to_xlsx *Helper function: convert_xls_to_xlsx*

Description

Helper function: convert_xls_to_xlsx

Usage

```
convert_xls_to_xlsx(exe, xls, xlsx, i, n_files, dbg = TRUE)
```

Arguments

exe	exe
xls	xls
xlsx	xlsx
i	i
n_files	n_files
dbg	debug (default: TRUE)

---

copy_lookup_para_file *Helper function: copy_lookup_para_file*

Description

Helper function: copy_lookup_para_file

Usage

```
copy_lookup_para_file(
  from_dir,
  to_dir,
  overwrite = FALSE,
  recursive = TRUE,
  file_pattern = "^lookup_para\\.csv$"
)
```

Arguments

from_dir	input directory with xlsx files
to_dir	target directory where to copy the xlsx files
overwrite	should existing files be overwritten (TRUE) otherwise (FALSE) ? (default: FALSE)
recursive	if TRUE recursively find all xlsx files in the directory specified in parameter "from_dir" (default: TRUE)
file_pattern	pattern for identifying lookup_para file (default: "^lookup_para\.csv$")

copy_xlsx_files *Helper function: copy_xlsx_files*

Description

Helper function: copy_xlsx_files

Usage

```
copy_xlsx_files(
  from_dir,
  to_dir,
  overwrite = FALSE,
  recursive = TRUE,
  file_pattern = "[xX][lL][sS][xX]"
)
```

Arguments

from_dir	input directory with xlsx files
to_dir	target directory where to copy the xlsx files
overwrite	should existing files be overwritten (TRUE) otherwise (FALSE) ? (default: FALSE)
recursive	if TRUE recursively find all xlsx files in the directory specified in parameter "from_dir" (default: TRUE)
file_pattern	pattern for identifying xlsx fles (default: "[xX][lL][sS][xX]")

create_emshoff91_import *Create EMSHOFF91 Import Data Frame*

Description

Create EMSHOFF91 Import Data Frame

Usage

```
create_emshoff91_import(
  ods_dir,
  files_to_ignore = c("cl25", "clliste", "rupelauf", "salzlast")
)
```

Arguments

ods_dir	directory to ".ods" files created manually by importing original ".wq1" files into LibreOffice 7.0 on Ubuntu with encoding (Western Europe (DOS/OS2-437/US)) and exporting to ".ods" format
files_to_ignore	tidied names of files to ignore due to complex data input structure not yet covered by importer (default: c("cl25", "clliste", "gwnguete", "rupelauf", "salzlast"))

Value

data frame with columns "ods_paths" (full paths to ".ods" files), "ods_files" (their "basenames") and "ods_names_clean" (tidied names used as identifier)

Examples

```
## Not run:
ods_dir <- "<replace-with-path-to-files>/emshoff91/converted_ods"
emshoff91_import <- create_emshoff91_import(ods_dir)

## End(Not run)
```

---

create_sftp_connection

Measurement Chains: Create an SFTP Connection

Description

Measurement Chains: Create an SFTP Connection

Usage

```
create_sftp_connection()
```

Value

sftp connection

delete_registry *Helper function: delete_registry*

Description

Helper function: delete_registry

Usage

```
delete_registry(office_folder = safe_office_folder(), dbg = TRUE)
```

Arguments

office_folder	office folder path (default: safe_office_folder)
dbg	debug (default: TRUE)

download_measurementchains_data *Measurement Chains: download data*

Description

Measurement Chains: download data

Usage

```
download_measurementchains_data(
  sftp_paths,
  target_directory = temp_dir(),
  sftp_connection = create_sftp_connection(),
  run_parallel = TRUE,
  debug = FALSE
)
```

Arguments

sftp_paths	character vector with paths to files to be downloaded. As retrieved by get_measurementchains_files column "sftp_path"
target_directory	target directory
sftp_connection	an SFTP connnection as retrieved by create_sftp_connection
run_parallel	default: TRUE
debug	show debug messages (default: FALSE)

Value

tibble with columns file_id, sftp_path and local_path of csv files

Examples

```
## Not run:
mc_files <- kwb.geosalz::get_measurementchains_files()
target_directory <- tempdir()
local_paths <- kwb.geosalz::download_measurementchains_data(
sftp_paths = mc_files$sftp_path,
target_directory)

## End(Not run)
```

---

emshoff91_list_to_df *Emshoff 91: list to data frame*

Description

Emshoff 91: list to data frame

Usage

```
emshoff91_list_to_df(emshoff91_list)
```

Arguments

emshoff91_list	list as retrieved by read_multiple_emshoff91_ods

Value

tibble

---

emshoff91_remap_values *Emshoff 91: remap values from imported tibble*

Description

Emshoff 91: remap values from imported tibble

Usage

```
emshoff91_remap_values(
  emshoff91_df,
  remap_list = list(fi_mi = "fi_mi_m_nn", ku_sto = "kupp_st", lf = "el_lf", progr =
    "beprob_progr", strat = "stratigr", uv254 = "uv_ext"),
  delete_cols = TRUE
)
```

Arguments

emshoff91_df	tibble as retrieved by emshoff91_list_to_df
remap_list	list with values to be remapped. Names of the list are columns values contained in list values should be mapped to (default: list(fi_mi = "fi_mi_m_nn", ku_sto = "kupp_st", lf = "el_lf", progr = "beprob_progr", strat = "stratigr", uv254 = "uv_ext"))
delete_cols	should unneeded columns be deleted, i.e. the ones where data where mapped from (default: TRUE)

Value

data frame with remapped values and deleted columns were this values were copied from (default: TRUE)

---

gather_and_join_1 *Helper function: gather_and_join_1*

Description

Helper function: gather_and_join_1

Usage

```
gather_and_join_1(tmp_data, columns_keep, metadata, dbg = FALSE)
```

Arguments

tmp_data	tmp_data
columns_keep	columns_keep
metadata	metadata
dbg	dbg (default: FALSE)

Value

gathered and joined data frame

gather_and_join_2 *Helper function: gather_and_join_2*

Description

Helper function: gather_and_join_2

Usage

```
gather_and_join_2(tmp_content, columns_keep, header)
```

Arguments

tmp_content	tmp_content
columns_keep	columns_keep
header	header

Value

gathered and joined data frame

get_excelcnv_exe *Helper function: get_excelcnv_exe*

Description

Helper function: get_excelcnv_exe

Usage

```
get_excelcnv_exe(office_folder = safe_office_folder())
```

Arguments

office_folder	office folder path (default: safe_office_folder

Value

path containing 'excelcnv.exe'

get_foerdermengen *get_foerdermengen*

Description

get_foerdermengen

Usage

```
get_foerdermengen(
  xlsx_path,
  sheet_name = "WW Q Rhow ",
  sheet_range = "A4:S127"
)
```

Arguments

xlsx_path	path to xlsx file with pumping rates
sheet_name	sheet_name (default: "WW Q Rhow ")
sheet_range	sheet_range (default: "A4:S127")

Value

data frame with annual pumping rates per waterworks

get_foerdermengen_gal_fri *Get Abtraction of Friedrichshagen Well Galleries*

Description

Get Abtraction of Friedrichshagen Well Galleries

Usage

```
get_foerdermengen_gal_fri(path)
```

Arguments

path	path to "2018-04-27 Rohwasser Bericht - Galerieförderm engen.xlsx"

Value

tidy data frame with abstraction rates for waterworks Friedrichshagen

get_measurementchains_files

Measurement Chains: Get Tidied Files Metadata

Description

Measurement Chains: Get Tidied Files Metadata

Usage

```
get_measurementchains_files(
  sftp_connection = create_sftp_connection(),
  debug = FALSE
)
```

Arguments

sftp_connection	an SFTP connnection as retrieved by create_sftp_connection
debug	show debug messages (default: FALSE)

Value

tibble with information on available files and tidied meta-information based on file naming

Examples

```
## Not run:
mc_files <- kwb.geosalz::get_measurementchains_files()
str(mc_files)

## End(Not run)
```

get_measurementchains_metadata

Measurement Chains: Get Metadata

Description

Measurement Chains: Get Metadata

Usage

```
get_measurementchains_metadata(file = extdata_file("metadata_messketten.csv"))
```

Arguments

file	path to measurement chains metadata file. Default: kwb.geosalz:::extdata_file("metadata_messketten.csv'

Value

tibble with measurement chains metadata

Examples

```
mc_metadata <- kwb.geosalz::get_measurementchains_metadata()
str(mc_metadata)
mc_metadata
```

---

get_measurement_chain_data_on_cloud
Get Measurement Chain Data on KWB Cloud

Description

Get Measurement Chain Data on KWB Cloud

Usage

```
get_measurement_chain_data_on_cloud(dbg = TRUE)
```

Arguments

dbg	logical indicating whether or not to show debug messages

Value

data frame with the content of "mc_data.zip" in the GeoSalz project folder on the Nextcloud server. The SFTP paths to the files from which the data in "mc_data.zip" originate are returned in attribute "sftp_paths". If either of the files "mc_data.zip" or "mc_files.csv" does not exist, NULL is returned.

`get_measurmentchains_data_stats` *Measurement Chains: get statistics for data*

Description

Measurement Chains: get statistics for data

Usage

```
get_measurmentchains_data_stats(mc_data)
```

Arguments

`mc_data`	tibble with measurement chains data as retrieved by `read_measurementchains_data`

Value

tibble with colunns datetime min/max, q10 (10 median, q90 (90

`get_meta_sheet_or_stop` *Helper function: get_meta_sheet_or_stop*

Description

Helper function: get_meta_sheet_or_stop

Usage

```
get_meta_sheet_or_stop(sheets, pattern, file)
```

Arguments

`sheets`	sheets
`pattern`	pattern
`file`	file

Value

meta sheet name

get_pandoc_info *Get Information on Pandoc*

Description

Get Information on Pandoc

Usage

```
get_pandoc_info()
```

Value

data frame with columns `pandoc_directory`, `pandoc_version` if Pandoc is installed, otherwise a message is printed that pandoc is not installed.

get_parameters_meta *get_parameters_meta*

Description

get_parameters_meta

Usage

```
get_parameters_meta(xlsx_path, sheet_name = "nur Parameterliste")
```

Arguments

`xlsx_path`	path to EXCEL spreadsheet with parameter metadata
`sheet_name`	name of sheet containing metadata table (default: "nur Parameterliste")

Value

imported parameter metadata with cleaned columns names

get_phreeqc_data *Get PhreeqC data*

Description

Get PhreeqC data

Usage

```
get_phreeqc_data(lab_bwb)
```

Arguments

lab_bwb	imported BWB lab data as retrieved by read_lab_bwb

Value

tibble with columns solution, par_name_phreeqc (which are not empty or NA) and numeric_value

get_site_id *Helper function: get_site_id*

Description

Helper function: get_site_id

Usage

```
get_site_id(string, pattern = "^[0-9]{1,4}")
```

Arguments

string	vector with character strings
pattern	pattern used for identifying site_id (default: "^[0-9]1,4")

Value

extracted site_id‘s from input string

import_labor *import_labor*

Description

import_labor

Usage

```
import_labor(files, export_dir, func = read_bwb_header2)
```

Arguments

files	vector with full paths of xlsx input files
export_dir	export directory
func	function to be used (default: read_bwb_header2)

Value

list with length equal to number of input files

order_measurement_chain_data *Order Measurement Chain Data*

Description

Order Measurement Chain Data

Usage

```
order_measurement_chain_data(data)
```

Arguments

data	data frame as retrieved by read_measurementchains_data

Value

data, ordered by "parameter", "sensor_id", "datum_uhrzeit"

`plot_measurementchains` *Measurement Chains: plott*

Description

Measurement Chains: plott

Usage

```
plot_measurementchains(mc_data, para = "Leitfaehigkeit")
```

Arguments

`mc_data`	as retrieved by `read_measurementchains_data`
`para`	parameter to plot "Leitfaehigkeit" or "Temperatur" (default: Leitfaehigkeit")

Value

plot of selected measurement chain parameter

`plot_measurementchain_and_well_operation` *Plot measurementchain and well operation in combined plot*

Description

Plot measurementchain and well operation in combined plot

Usage

```
plot_measurementchain_and_well_operation(
  mc_dat,
  well_op_data_meta,
  brunnen_nr = 9,
  para = "Leitfaehigkeit",
  y_label = "elektr. Leitfähigkeit (µS/cm)",
  date_min = as.Date("2023-05-10"),
  date_max = Sys.Date()
)
```

Arguments

mc_dat	mc_dat
well_op_data_meta	well_op_data_meta
brunnen_nr	well id (default: 9)
para	parameter (either: "Leitfaehigkeit" or "Temperatur")
y_label	y label (default: "elektr. Leitfaehigkeit (µS/cm)")
date_min	minimum date for plotting (default: as.Date("2023-05-10"))
date_max	maximum date for plotting (default: Sys.Date())

Value

combined plot

---

prepare_phreeqc_input *Prepare PhreeqC input*

Description

Prepare PhreeqC input

Usage

```
prepare_phreeqc_input(lab_bwb_phreeqc, title = "")
```

Arguments

lab_bwb_phreeqc	selected BWB lab data as retrieved by get_phreeqc_data
title	user defined title (default: "")

Value

data frame with input structure for kwb.phreeqc

print_datatype_info_if *Helper function: print_datatype_info_if*

Description

Helper function: print_datatype_info_if

Usage

```
print_datatype_info_if(dbg, tbl_datatypes, columns_keep)
```

Arguments

dbg	dbg
tbl_datatypes	tbl_datatypes
columns_keep	columns_keep

read_bwb_data *Import: read_bwb_data*

Description

wrapper around `read_bwb_header2` and `read_bwb_header1_meta`

Usage

```
read_bwb_data(
  files,
  meta_pattern = "META",
  keep_pattern = column_pattern_gather_ignore(),
  site_id_pattern = "^[0-9]{1,4}",
  dbg = TRUE
)
```

Arguments

files	file path(s) to EXCEL spreadsheet
meta_pattern	(default: "META")
keep_pattern	(default: `column_pattern_gather_ignore`)
site_id_pattern	(default: "^[0-9]1,4")
dbg	debug (default: TRUE)

Value

data.table with imported xls(x) files

`read_bwb_header1_meta` *Import: read_bwb_header1_meta*

Description

Import: read_bwb_header1_meta

Usage

```
read_bwb_header1_meta(
  file,
  meta_pattern = "META",
  keep_pattern = column_pattern_gather_ignore(),
  dbg = FALSE
)
```

Arguments

`file`	path(s) to EXCEL spreadsheet
`meta_pattern`	meta_pattern default("META")
`keep_pattern`	keep_pattern (default: `column_pattern_gather_ignore`)
`dbg`	debug (default: FALSE)

Value

data.table with imported xls(x) files

`read_bwb_header2` *Import: read_bwb_header2*

Description

Import: read_bwb_header2

Usage

```
read_bwb_header2(
  file,
  skip = 2,
  keep_pattern = column_pattern_gather_ignore(),
  site_id_pattern = "^[0-9]{1,4}",
  dbg = TRUE
)
```

Arguments

file	file path(s) to EXCEL spreadsheet
skip	number of rows to skip in each sheet (default: 2)
keep_pattern	(default: column_pattern_gather_ignore())
site_id_pattern	(default: "^[0-9]1,4")
dbg	debug (default: TRUE)

Value

data.table with imported xls(x) files

---

read_bwb_header4 *Import: read_bwb_header4*

Description

Import: read_bwb_header4

Usage

```
read_bwb_header4(
  file,
  skip = 4,
  keep_pattern = column_pattern_gather_ignore(),
  site_id_pattern = "^[0-9]{1,4}",
  dbg = TRUE
)
```

Arguments

file	file path(s) to EXCEL spreadsheet
skip	number of rows to skip in each sheet (default: 4)
keep_pattern	(default: column_pattern_gather_ignore())
site_id_pattern	(default: "^[0-9]1,4")
dbg	debug (default: TRUE)

Value

data.table with imported xls(x) files

read_emshoff91_ods *Reads a Single EMSHOFF 91 ODS File into Tibble*

Description

Reads a Single EMSHOFF 91 ODS File into Tibble

Usage

```
read_emshoff91_ods(emshoff91_import_selected)
```

Arguments

emshoff91_import_selected	a row as retrieved by create_emshoff91_import

Value

imports ods file into tibble

read_isotopes *Read Isotopes*

Description

Read Isotopes

Usage

```
read_isotopes(path)
```

Arguments

path	path to Isotopes delim (field separator ";")

Value

imported isotopes data

read_lab_bwb *Read Lab BWB*

Description

Read Lab BWB

Usage

```
read_lab_bwb(path, sheet = "Analysen")
```

Arguments

path	path to file with lab BWB data
sheet	name of sheet containing analysis data. Default: "Analysen"

Value

cleaned data frame with master data and lab values for all samples but only for selected parameters (columns A-BA and HB-HC)

read_master_data *Read Master Data*

Description

Read Master Data

Usage

```
read_master_data(path)
```

Arguments

path	path to file with master data (currently in file: lab BWB data)

Value

imported master data contained in sheet "Stammdaten"

`read_measurementchains_data` *Measurement Chains: read csv data from multiple files*

Description

Measurement Chains: read csv data from multiple files

Usage

```
read_measurementchains_data(
  csv_files,
  datetime_installation = as_gmt_plus_one("2022-09-27 11:00:00"),
  run_parallel = TRUE,
  debug = FALSE
)
```

Arguments

`csv_files`	vector of paths as retrieved by `download_measurementchains_data`
`datetime_installation`	datetime of first logger installation in well K10. Used to filter out older measurement data! Default: kwb.geosalz:::as_gmt_plus_one("2022-09-27 11:00:00")
`run_parallel`	default: TRUE
`debug`	show debug messages (default: FALSE)

Value

data frame with imported data from csv files

Examples

```
## Not run:
mc_files <- kwb.geosalz::get_measurementchains_files()
target_directory <- tempdir()
csv_files <- kwb.geosalz::download_measurementchains_data(
  sftp_paths = mc_files$sftp_path,
  target_directory
)
mc_data <- kwb.geosalz::read_measurementchains_data(csv_files)

## End(Not run)
```

read_multiple_emshoff91_ods *Reads Multiple EMSHOFF 91 ODS Files into List*

Description

Reads Multiple EMSHOFF 91 ODS Files into List

Usage

```
read_multiple_emshoff91_ods(emshoff91_import)
```

Arguments

emshoff91_import	a tibble as retrieved by create_emshoff91_import

Value

imports mulitple ods files into a list of tibbles

Examples

```
## Not run:
ods_dir <- "<replace-with-path-to-files>/emshoff91/emshoff91/converted_ods"
ods_dir <- "C:/users/mrustl/Downloads/emshoff91/emshoff91/converted_ods"
emshoff91_import <- create_emshoff91_import(ods_dir)
read_multiple_emshoff91_ods(emshoff91_import)

## End(Not run)
```

replace_nanb_with_na *Replace n.a. (not available) and n.b. (not determined) from lab data with NA*

Description

Replace n.a. (not available) and n.b. (not determined) from lab data with NA

Usage

```
replace_nanb_with_na(string)
```

Arguments

string	string

Value

string with NA instead of "n.a." or "n.b." (including 0-10 spaces between "n" and "a"/"b"

Examples

```
string <- c("19.2", "n.b.", "n. b.", "n.  b.", "n.a.", "n. a.", "n.  a.")
replace_nanb_with_na(string)
```

---

safe_office_folder *Helper function: safe_office_folder*

Description

Helper function: safe_office_folder

Usage

```
safe_office_folder(office_path = "C:/Program Files (x86)/Microsoft Office")
```

Arguments

office_path	office folder path (default: "C:/Program Files (x86)/Microsoft Office")

Value

path of office folder (if existing)

---

stop_if_duplicated_samples_found *Helper function: stop if duplicated sample ids are found*

Description

Helper function: stop if duplicated sample ids are found

Usage

```
stop_if_duplicated_samples_found(df, col_sampleid, path, sheet = "")
```

Arguments

df	data frame with samples in wide format
col_sampleid	column name of sample id
path	path to file from which df was read (for information only)
sheet	optional in case EXCEL is used (default: "")

Value

error in case duplicated samples were found

`stop_on_missing_or_inform_on_extra_sheets` *Helper function: stop_on_missing_or_inform_on_extra_sheets*

Description

Helper function: stop_on_missing_or_inform_on_extra_sheets

Usage

```
stop_on_missing_or_inform_on_extra_sheets(has_site_id, file, sheets)
```

Arguments

`has_site_id`	has_site_id
`file`	file
`sheets`	sheets

`to_full_metadata_2` *Helper function: to_full_metadata2*

Description

Helper function: to_full_metadata2

Usage

```
to_full_metadata_2(header, file, sheet)
```

Arguments

`header`	header
`file`	file
`sheet`	sheet

Value

data frame with metadata for header2 (EXCEL) files

to_full_metadata_4 *Helper function: to_full_metadata_4*

Description

Helper function: to_full_metadata_4

Usage

```
to_full_metadata_4(header, file, sheet)
```

Arguments

header	header
file	file
sheet	sheet

Value

data frame with metadata for header4 (EXCEL) files

write_measurementchains_data *Measurement Chains: write csv data*

Description

Measurement Chains: write csv data

Usage

```
write_measurementchains_data(
  mc_data,
  target_directory,
  to_zip = FALSE,
  debug = FALSE
)
```

Arguments

mc_data	measurement chains data as retrieved by read_measurementchains_data
target_directory	target directory
to_zip	should data be zipped? (default: FALSE), if TRUE only a temporary csv file is created which will be subsequently zipped and deleted
debug	print debug messages (default: FALSE)

Value

writes csv data to path

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