

Lab #: 844102 Job #: 52354 IS-65777 Co. Job#:
Sample Name: NDCS-MPC-WS-1 Co. Lab#:
Company: University of North Dakota - Energy & Environm
API/Well:
Container: 1 Liter Plastic Bottle
Field/Site Name: North Dakota CarbonSafe (NDCS)
Location: Center, ND
Formation/Depth:
Sampling Point:
Date Sampled: 9/27/2022 15:00 Date Received: 10/04/2022 Date Reported: 1/30/2023

δD of water ----- -118.5 ‰ relative to VSMOW
 $\delta^{18}O$ of water ----- -14.42 ‰ relative to VSMOW
Tritium content of water ----- 2.61 ± 0.29 TU
 $\delta^{13}C$ of DIC ----- -11.6 ‰ relative to VPDB
 ^{14}C content of DIC ----- 66.4 ± 0.2 percent modern carbon
 $\delta^{15}N$ of nitrate ----- na
 $\delta^{18}O$ of nitrate ----- na
 $\delta^{34}S$ of sulfate ----- na
 $\delta^{18}O$ of sulfate ----- na
Vacuum Distilled? * ----- No

Remarks:

nd = not detected. na = not analyzed.

*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

Lab #: 844103 Job #: 52354 IS-65777 Co. Job#:
Sample Name: NDCS-MPC-WS-1 Dup Co. Lab#:
Company: University of North Dakota - Energy & Environm
API/Well:
Container: 1 Liter Plastic Bottle
Field/Site Name: North Dakota CarbonSafe (NDCS)
Location: Center, ND
Formation/Depth:
Sampling Point:
Date Sampled: 9/27/2022 15:30 Date Received: 10/04/2022 Date Reported: 1/30/2023

δD of water ----- -118.5 ‰ relative to VSMOW
 $\delta^{18}O$ of water ----- -14.39 ‰ relative to VSMOW
Tritium content of water ----- 2.27 ± 0.33 TU
 $\delta^{13}C$ of DIC ----- -11.4 ‰ relative to VPDB
 ^{14}C content of DIC ----- 66.3 ± 0.2 percent modern carbon
 $\delta^{15}N$ of nitrate ----- na
 $\delta^{18}O$ of nitrate ----- na
 $\delta^{34}S$ of sulfate ----- na
 $\delta^{18}O$ of sulfate ----- na
Vacuum Distilled? * ----- No

Remarks:

nd = not detected. na = not analyzed.

*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

Lab #: 844104 Job #: 52354 IS-65777 Co. Job#:
Sample Name: NDCS-MPC-WS-2 Co. Lab#:
Company: University of North Dakota - Energy & Environm
API/Well:
Container: 1 Liter Plastic Bottle
Field/Site Name: North Dakota CarbonSafe (NDCS)
Location: Center, ND
Formation/Depth:
Sampling Point:
Date Sampled: 9/27/2022 16:00 Date Received: 10/04/2022 Date Reported: 1/30/2023

δ D of water ----- -122.7 ‰ relative to VSMOW
 δ^{18} O of water ----- -15.27 ‰ relative to VSMOW
Tritium content of water ----- 3.51 ± 0.32 TU
 δ^{13} C of DIC ----- -10.2 ‰ relative to VPDB
 14 C content of DIC ----- 54.4 ± 0.2 percent modern carbon
 δ^{15} N of nitrate ----- na
 δ^{18} O of nitrate ----- na
 δ^{34} S of sulfate ----- na
 δ^{18} O of sulfate ----- na
Vacuum Distilled? * ----- No

Remarks:

nd = not detected. na = not analyzed.

*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

Lab #: 844105 Job #: 52354 IS-65777 Co. Job#:
Sample Name: NDCS-W269 Co. Lab#:
Company: University of North Dakota - Energy & Environm
API/Well:
Container: 1 Liter Plastic Bottle
Field/Site Name: North Dakota CarbonSafe (NDCS)
Location: Center, ND
Formation/Depth:
Sampling Point:
Date Sampled: 9/28/2022 8:00 Date Received: 10/04/2022 Date Reported: 1/30/2023

δD of water ----- -120.4 ‰ relative to VSMOW
 $\delta^{18}O$ of water ----- -15.69 ‰ relative to VSMOW
Tritium content of water ----- 2.59 ± 0.32 TU
 $\delta^{13}C$ of DIC ----- -11.0 ‰ relative to VPDB
 ^{14}C content of DIC ----- 67.7 ± 0.3 percent modern carbon
 $\delta^{15}N$ of nitrate ----- na
 $\delta^{18}O$ of nitrate ----- na
 $\delta^{34}S$ of sulfate ----- na
 $\delta^{18}O$ of sulfate ----- na
Vacuum Distilled? * ----- No

Remarks:

nd = not detected. na = not analyzed.

*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

Lab #: 844106 Job #: 52354 IS-65777 Co. Job#:
Sample Name: NDCS-W217 Co. Lab#:
Company: University of North Dakota - Energy & Environm
API/Well:
Container: 1 Liter Plastic Bottle
Field/Site Name: North Dakota CarbonSafe (NDCS)
Location: Center, ND
Formation/Depth:
Sampling Point:
Date Sampled: 9/28/2022 10:30 Date Received: 10/04/2022 Date Reported: 1/30/2023

δD of water ----- -118.5 ‰ relative to VSMOW
 $\delta^{18}O$ of water ----- -14.82 ‰ relative to VSMOW
Tritium content of water ----- < 0.51 TU
 $\delta^{13}C$ of DIC ----- -8.1 ‰ relative to VPDB
 ^{14}C content of DIC ----- 0.8 ± 0.0 percent modern carbon
 $\delta^{15}N$ of nitrate ----- na
 $\delta^{18}O$ of nitrate ----- na
 $\delta^{34}S$ of sulfate ----- na
 $\delta^{18}O$ of sulfate ----- na
Vacuum Distilled? * ----- No

Remarks:

nd = not detected. na = not analyzed.

*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

Lab #: 844107 Job #: 52354 IS-65777 Co. Job#:
Sample Name: NDCS-W1686 Co. Lab#:
Company: University of North Dakota - Energy & Environm
API/Well:
Container: 1 Liter Plastic Bottle
Field/Site Name: North Dakota CarbonSafe (NDCS)
Location: Center, ND
Formation/Depth:
Sampling Point:
Date Sampled: 9/28/2022 13:00 Date Received: 10/04/2022 Date Reported: 1/30/2023

δD of water ----- -122.2 ‰ relative to VSMOW
 $\delta^{18}O$ of water ----- -16.19 ‰ relative to VSMOW
Tritium content of water ----- 3.74 ± 0.33 TU
 $\delta^{13}C$ of DIC ----- -11.7 ‰ relative to VPDB
 ^{14}C content of DIC ----- 48.6 ± 0.2 percent modern carbon
 $\delta^{15}N$ of nitrate ----- na
 $\delta^{18}O$ of nitrate ----- na
 $\delta^{34}S$ of sulfate ----- na
 $\delta^{18}O$ of sulfate ----- na
Vacuum Distilled? * ----- No

Remarks:

nd = not detected. na = not analyzed.

*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

Lab #: 844108 Job #: 52354 IS-65777 Co. Job#:
Sample Name: NDCS-W478 Co. Lab#:
Company: University of North Dakota - Energy & Environm
API/Well:
Container: 1 Liter Plastic Bottle
Field/Site Name: North Dakota CarbonSafe (NDCS)
Location: Center, ND
Formation/Depth:
Sampling Point:
Date Sampled: 9/28/2022 17:00 Date Received: 10/04/2022 Date Reported: 1/30/2023

δ D of water ----- -130.3 ‰ relative to VSMOW
 δ^{18} O of water ----- -16.82 ‰ relative to VSMOW
Tritium content of water ----- < 0.54 TU
 δ^{13} C of DIC ----- -9.2 ‰ relative to VPDB
 14 C content of DIC ----- 0.6 ± 0.0 percent modern carbon
 δ^{15} N of nitrate ----- na
 δ^{18} O of nitrate ----- na
 δ^{34} S of sulfate ----- na
 δ^{18} O of sulfate ----- na
Vacuum Distilled? * ----- No

Remarks:

nd = not detected. na = not analyzed.

*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

Lab #: 844109 Job #: 52354 IS-65777 Co. Job#:
Sample Name: NDCS-W395 Co. Lab#:
Company: University of North Dakota - Energy & Environm
API/Well:
Container: 1 Liter Plastic Bottle
Field/Site Name: North Dakota CarbonSafe (NDCS)
Location: Center, ND
Formation/Depth:
Sampling Point:
Date Sampled: 9/29/2022 10:30 Date Received: 10/04/2022 Date Reported: 1/30/2023

δ D of water ----- -120.2 ‰ relative to VSMOW
 δ^{18} O of water ----- -15.06 ‰ relative to VSMOW
Tritium content of water ----- < 0.55 TU
 δ^{13} C of DIC ----- -9.9 ‰ relative to VPDB
 14 C content of DIC ----- 0.5 ± 0.0 percent modern carbon
 δ^{15} N of nitrate ----- na
 δ^{18} O of nitrate ----- na
 δ^{34} S of sulfate ----- na
 δ^{18} O of sulfate ----- na
Vacuum Distilled? * ----- No

Remarks:

nd = not detected. na = not analyzed.

*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

Lab #: 844110 Job #: 52354 IS-65777 Co. Job#:
Sample Name: NDCS-W510 Co. Lab#:
Company: University of North Dakota - Energy & Environm
API/Well:
Container: 1 Liter Plastic Bottle
Field/Site Name: North Dakota CarbonSafe (NDCS)
Location: Center, ND
Formation/Depth:
Sampling Point:
Date Sampled: 9/29/2022 12:00 Date Received: 10/04/2022 Date Reported: 1/30/2023

δ D of water ----- -130.2 ‰ relative to VSMOW

$\delta^{18}\text{O}$ of water ----- -16.64 ‰ relative to VSMOW

Tritium content of water ----- < 0.89 TU

$\delta^{13}\text{C}$ of DIC ----- -15.6 ‰ relative to VPDB

^{14}C content of DIC ----- < 0.4 percent modern carbon

$\delta^{15}\text{N}$ of nitrate ----- na

$\delta^{18}\text{O}$ of nitrate ----- na

$\delta^{34}\text{S}$ of sulfate ----- na

$\delta^{18}\text{O}$ of sulfate ----- na

Vacuum Distilled? * ----- No

Remarks:

nd = not detected. na = not analyzed.

*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

Lab #: 844111 Job #: 52354 IS-65777 Co. Job#:
Sample Name: NDCS-W510 Dup Co. Lab#:
Company: University of North Dakota - Energy & Environm
API/Well:
Container: 1 Liter Plastic Bottle
Field/Site Name: North Dakota CarbonSafe (NDCS)
Location: Center, ND
Formation/Depth:
Sampling Point:
Date Sampled: 9/29/2022 12:30 Date Received: 10/04/2022 Date Reported: 1/30/2023

δ D of water ----- -130.2 ‰ relative to VSMOW

$\delta^{18}\text{O}$ of water ----- -16.65 ‰ relative to VSMOW

Tritium content of water ----- < 0.94 TU

$\delta^{13}\text{C}$ of DIC ----- -15.6 ‰ relative to VPDB

^{14}C content of DIC ----- < 0.4 percent modern carbon

$\delta^{15}\text{N}$ of nitrate ----- na

$\delta^{18}\text{O}$ of nitrate ----- na

$\delta^{34}\text{S}$ of sulfate ----- na

$\delta^{18}\text{O}$ of sulfate ----- na

Vacuum Distilled? * ----- No

Remarks:

nd = not detected. na = not analyzed.

*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

Lab #: 844112 Job #: 52354 IS-65777 Co. Job#:
Sample Name: NDCS-W468 Co. Lab#:
Company: University of North Dakota - Energy & Environm
API/Well:
Container: 1 Liter Plastic Bottle
Field/Site Name: North Dakota CarbonSafe (NDCS)
Location: Center, ND
Formation/Depth:
Sampling Point:
Date Sampled: 9/29/2022 13:30 Date Received: 10/04/2022 Date Reported: 1/30/2023

δ D of water ----- -141.6 ‰ relative to VSMOW
 δ^{18} O of water ----- -18.73 ‰ relative to VSMOW
Tritium content of water ----- < 0.78 TU
 δ^{13} C of DIC ----- -4.3 ‰ relative to VPDB
 14 C content of DIC ----- 10.5 ± 0.1 percent modern carbon
 δ^{15} N of nitrate ----- na
 δ^{18} O of nitrate ----- na
 δ^{34} S of sulfate ----- na
 δ^{18} O of sulfate ----- na
Vacuum Distilled? * ----- No

Remarks:

nd = not detected. na = not analyzed.

*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

Lab #: 844113 Job #: 52354 IS-65777 Co. Job#:
Sample Name: NDCS-W424 Co. Lab#:
Company: University of North Dakota - Energy & Environm
API/Well:
Container: 1 Liter Plastic Bottle
Field/Site Name: North Dakota CarbonSafe (NDCS)
Location: Center, ND
Formation/Depth:
Sampling Point:
Date Sampled: 9/29/2022 14:30 Date Received: 10/04/2022 Date Reported: 1/30/2023

δD of water ----- -122.2 ‰ relative to VSMOW

$\delta^{18}O$ of water ----- -15.47 ‰ relative to VSMOW

Tritium content of water ----- < 0.61 TU

$\delta^{13}C$ of DIC ----- -14.8 ‰ relative to VPDB

^{14}C content of DIC ----- < 0.4 percent modern carbon

$\delta^{15}N$ of nitrate ----- na

$\delta^{18}O$ of nitrate ----- na

$\delta^{34}S$ of sulfate ----- na

$\delta^{18}O$ of sulfate ----- na

Vacuum Distilled? * ----- No

Remarks:

nd = not detected. na = not analyzed.

*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water

Lab #: 844114 Job #: 52354 IS-65777 Co. Job#:
Sample Name: NDCS-W471 Co. Lab#:
Company: University of North Dakota - Energy & Environm
API/Well:
Container: 1 Liter Plastic Bottle
Field/Site Name: North Dakota CarbonSafe (NDCS)
Location: Center, ND
Formation/Depth:
Sampling Point:
Date Sampled: 9/29/2022 17:00 Date Received: 10/04/2022 Date Reported: 1/30/2023

δ D of water ----- -121.6 ‰ relative to VSMOW
 δ^{18} O of water ----- -15.31 ‰ relative to VSMOW
Tritium content of water ----- < 1.21 TU
 δ^{13} C of DIC ----- -11.9 ‰ relative to VPDB
 14 C content of DIC ----- 0.9 ± 0.0 percent modern carbon
 δ^{15} N of nitrate ----- na
 δ^{18} O of nitrate ----- na
 δ^{34} S of sulfate ----- na
 δ^{18} O of sulfate ----- na
Vacuum Distilled? * ----- No

Remarks:

nd = not detected. na = not analyzed.

*Indicates if vacuum distillation was utilized for hydrogen and oxygen isotopic analysis of water