

Lab #: 829802 Job #: 51155 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: 5/25/2022 10:00 Date Received: 6/01/2022 Date Reported: 6/29/2022

$\delta D$  of water ----- -116.4 ‰ relative to VSMOW  
 $\delta^{18}O$  of water ----- -14.34 ‰ relative to VSMOW  
Tritium content of water -----  $2.59 \pm 0.26$  TU  
 $\delta^{13}C$  of DIC ----- -11.7 ‰ relative to VPDB  
 $^{14}C$  content of DIC -----  $61.6 \pm 0.2$  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 #: 829803 Job #: 51155 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: 5/25/2022 11:00 Date Received: 6/01/2022 Date Reported: 6/29/2022

$\delta D$  of water ----- -116.1 ‰ relative to VSMOW  
 $\delta^{18}O$  of water ----- -14.33 ‰ relative to VSMOW  
Tritium content of water -----  $2.38 \pm 0.22$  TU  
 $\delta^{13}C$  of DIC ----- -12.1 ‰ relative to VPDB  
 $^{14}C$  content of DIC -----  $60.8 \pm 0.2$  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 #: 829804 Job #: 51155 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: 5/25/2022 11:30 Date Received: 6/01/2022 Date Reported: 6/29/2022

$\delta D$  of water ----- -121.6 ‰ relative to VSMOW  
 $\delta^{18}O$  of water ----- -15.27 ‰ relative to VSMOW  
Tritium content of water -----  $3.07 \pm 0.22$  TU  
 $\delta^{13}C$  of DIC ----- -10.2 ‰ relative to VPDB  
 $^{14}C$  content of DIC -----  $54.3 \pm 0.2$  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 #: 829805 Job #: 51155 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: 5/25/2022 13:00 Date Received: 6/01/2022 Date Reported: 6/29/2022

$\delta$ D of water ----- -116.3 ‰ relative to VSMOW  
 $\delta^{18}$ O of water ----- -15.30 ‰ relative to VSMOW  
Tritium content of water -----  $2.92 \pm 0.24$  TU  
 $\delta^{13}$ C of DIC ----- -10.5 ‰ relative to VPDB  
 $^{14}$ C content of DIC -----  $70.8 \pm 0.3$  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 #: 829806 Job #: 51155 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: 5/25/2022 15:00 Date Received: 6/01/2022 Date Reported: 6/29/2022

$\delta D$  of water ----- -119.4 ‰ relative to VSMOW  
 $\delta^{18}O$  of water ----- -15.94 ‰ relative to VSMOW  
Tritium content of water -----  $3.72 \pm 0.25$  TU  
 $\delta^{13}C$  of DIC ----- -11.3 ‰ relative to VPDB  
 $^{14}C$  content of DIC -----  $53.5 \pm 0.2$  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 #: 829807 Job #: 51155 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: 5/25/2022 17:30 Date Received: 6/01/2022 Date Reported: 6/29/2022

$\delta D$  of water ----- -117.5 ‰ relative to VSMOW

$\delta^{18}O$  of water ----- -14.76 ‰ relative to VSMOW

Tritium content of water ----- < 0.77 TU

$\delta^{13}C$  of DIC ----- -8.4 ‰ 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 #: 829808 Job #: 51155 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: 5/26/2022 10:00 Date Received: 6/01/2022 Date Reported: 6/29/2022

$\delta$ D of water ----- -119.7 ‰ relative to VSMOW

$\delta^{18}$ O of water ----- -15.17 ‰ relative to VSMOW

Tritium content of water ----- < 0.57 TU

$\delta^{13}$ C of DIC ----- -11.7 ‰ 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 #: 829809 Job #: 51155 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: 5/26/2022 12:00 Date Received: 6/01/2022 Date Reported: 6/29/2022

$\delta$ D of water ----- -141.2 ‰ relative to VSMOW  
 $\delta^{18}$ O of water ----- -18.76 ‰ relative to VSMOW  
Tritium content of water ----- < 0.52 TU  
 $\delta^{13}$ C of DIC ----- -4.4 ‰ relative to VPDB  
 $^{14}$ C content of DIC -----  $10.1 \pm 0.1$  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 #: 829810 Job #: 51155 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: 5/26/2022 15:30 Date Received: 6/01/2022 Date Reported: 6/29/2022

$\delta D$  of water ----- -120.8 ‰ relative to VSMOW

$\delta^{18}O$  of water ----- -15.42 ‰ relative to VSMOW

Tritium content of water ----- < 0.46 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 #: 829811 Job #: 51155 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: 5/26/2022 16:30 Date Received: 6/01/2022 Date Reported: 6/29/2022

$\delta$ D of water ----- -120.7 ‰ relative to VSMOW  
 $\delta^{18}$ O of water ----- -15.30 ‰ relative to VSMOW  
Tritium content of water ----- < 0.34 TU  
 $\delta^{13}$ C of DIC ----- -12.2 ‰ relative to VPDB  
 $^{14}$ C content of DIC -----  $0.5 \pm 0.0$  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 #: 829812 Job #: 51155 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: 5/27/2022 8:00 Date Received: 6/01/2022 Date Reported: 6/29/2022

$\delta$ D of water ----- -129.3 ‰ relative to VSMOW  
 $\delta^{18}$ O of water ----- -16.64 ‰ relative to VSMOW  
Tritium content of water ----- < 0.61 TU  
 $\delta^{13}$ C of DIC ----- -15.6 ‰ relative to VPDB  
 $^{14}$ C content of DIC -----  $0.5 \pm 0.0$  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 #: 829813 Job #: 51155 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: 5/27/2022 9:00 Date Received: 6/01/2022 Date Reported: 6/29/2022

$\delta$ D of water ----- -129.1 ‰ relative to VSMOW

$\delta^{18}$ O of water ----- -16.60 ‰ relative to VSMOW

Tritium content of water ----- < 0.43 TU

$\delta^{13}$ C of DIC ----- -15.5 ‰ 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 #: 829814 Job #: 51155 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: 5/27/2022 12:00 Date Received: 6/01/2022 Date Reported: 6/29/2022

$\delta$ D of water ----- -128.3 ‰ relative to VSMOW  
 $\delta^{18}\text{O}$  of water ----- -16.74 ‰ relative to VSMOW  
Tritium content of water ----- < 0.39 TU  
 $\delta^{13}\text{C}$  of DIC ----- -8.8 ‰ relative to VPDB  
 $^{14}\text{C}$  content of DIC -----  $0.6 \pm 0.0$  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