



40-8714

ED HERSCHEMER
GOVERNOR

RETURN ORIGINAL TO

04008714100E

Department of Environmental Quality

LAND QUALITY DIVISION

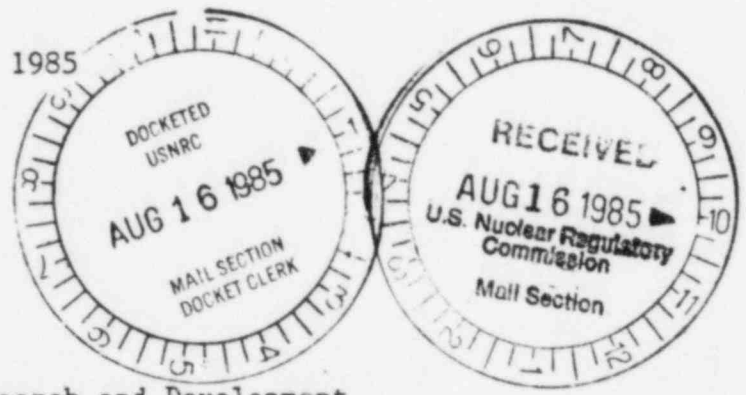
DISTRICT III OFFICE

30 EAST GRINNELL STREET

TELEPHONE 307-672-6488

SHERIDAN, WYOMING 82801

August 9, 1985



Mr. Truman Louderback
Cleveland-Cliffs, Inc.
818 Taughenbaugh Blvd.
Rifle, CO 81650-2445

RE: Collins Draw Uranium ISL Project, Research and Development
License No. 3RD

Dear Mr. Louderback:

Enclosed are copies of the results of analyses from those water samples taken from wells at the Collins Draw site on June 5, 1985, at the same time the NRC also took water samples from these and other wells.

If you have any questions, please feel free to contact this office.

Sincerely,

Glenn Mooney
Glenn Mooney
Acting District III Supervisor

enc.

cc. Kathy Ogle
Susan Hogg
Paul Hildebrand-NRC

8509060270 850809
PDR ADOCK 04008714
C PDR



DEPARTMENT ORIGINAL

Certified By *Mary C. Hood*

FEE EXEMPT

Add Info
00834

Report Of Analysis

Date Collected.....6-5-85
Collected By.....Glen Mooney
Station.....Cleveland Cliffs - Well #277
Permit Number.....na
Sample Number.....5-161-10

Parameter	Result
Chloride.....	11
Sulfate.....	187
Total Dissolved Solids.....	308
Ammonia-N.....	*
Nitrate/nitrite-N.....	*
pH, lab, s.u.....	9.510
pH, field, s.u.....	9.45
Sp. Cond. ,umhos/cm @ 25C, lab.....	740
Sp. Cond. ,umhos/cm @ 25C, field.....	695
Aluminum.....	<0.2
Arsenic.....	0.067
Barium.....	<0.1
Cadmium.....	<0.001
Calcium.....	4
Chromium.....	<0.01
Copper.....	<0.01
Fluoride.....	0.34
Iron.....	0.05
Lead.....	<0.01
Magnesium.....	1
Manganese.....	<0.02
Mercury.....	<0.001
Nickel.....	<0.01
Potassium.....	41
Selenium.....	1.38
Sodium.....	67
Vanadium.....	0.3
Zinc.....	<0.01
Uranium.....	2.308
Alkalinity.....	313
Carbonate.....	248
Bicarbonate.....	0
Boron.....	0.17
Molybdenum.....	<0.2
Ion Balance.....	-49.21
Calc TDS.....	559
Hydroxide.....	65

* Sample lost during shipment to the WQD Laboratory

Approved By

Kent M. Anglos

Kent M. Anglos

Chemical Analysis Supervisor

Date July 21 1985

Notes

All analysis results are reported in milligrams per liter, except where noted.



Report Of Analysis

Date Collected6-5-85
Collected By.....Glen Mooney
Station.....Cleveland Cliffs - Well #232
Permit Number.....na
Sample Number.....5-161-11

Parameter	Result
Chloride	11
Sulfate	167
Total Dissolved Solids	544
Ammonia-N	60
Nitrate/nitrite-N	0.16
pH, lab, s.u.	9.574
pH, field, s.u.	9.70
Sp. Cond. ,umhos/cm @ 25C, lab	830
Sp. Cond. ,umhos/cm @ 25C, field	780
Aluminum	<0.2
Arsenic	0.139
Barium	<0.1
Cadmium	<0.001
Calcium	5
Chromium	<0.01
Copper	<0.01
Fluoride	0.34
Iron	0.02
Lead	<0.01
Magnesium	1
Manganese	<0.02
Mercury	<0.001
Nickel	<0.01
Potassium	94
Selenium	1.33
Sodium	65
Strontium	0.7
Zinc	<0.01
Uranium	11.5
Alkalinity	314
Carbonate	298
Bicarbonate	18
Boron	0.19
Molybdenum	<0.2
Ion Balance	-49.17
Calc. TDS	659
Hydroxide	---

* Sample lost during shipment to the WQD Laboratory

Approved By Kent M. Angeles
Kent M. Angeles
Chemical Analysis Supervisor
Date July 21, 1985

Notes All analysis results are reported in mg/liters per liter except where noted.



Report Of Analysis

Date Collected.....6-5-85
Collected By.....Glen Mooney
Station.....Cleveland Cliffs - Well #276
Permit Number.....na
Sample Number.....5-161-12

Parameter	Result
Chloride.....	52
Sulfate.....	366
Total Dissolved Solids.....	1012
Ammonia-N.....	71
Nitrate/nitrite-N.....	0.11
pH, lab, s.u.....	9.610
pH, field, s.u.....	9.67
Sp. Cond. ,umhos/cm @ 25C, lab.....	1500
Sp. Cond. ,umhos/cm @ 25C, field.....	740
Aluminum.....	<0.2
Arsenic.....	0.163
Barium.....	<0.1
Cadmium.....	<0.001
Calcium.....	7
Chromium.....	<0.01
Copper.....	<0.01
Fluoride.....	0.39
Iron.....	<0.01
Lead.....	<0.01
Magnesium.....	1
Manganese.....	<0.02
Mercury.....	<0.001
Nickel.....	<0.01
Potassium.....	263
Selenium.....	8.6
Sodium.....	73
Vanadium.....	1.0
Zinc.....	<0.01
T. Uranium.....	5.99
Alkalinity.....	361
Carbonate.....	343
Bicarbonate.....	18
Boron.....	0.11
Molybdenum.....	0.3
Ion Balance.....	-33.65
Calc TDS.....	1123
Hydroxide.....	---

* sample lost during shipment to the WQD Laboratory

Approved By

Kent M. Angelos
Kent M. Angelos

Chemical Analysis Supervisor

Date July 31, 1985

Notes

All analysis results are reported in milligrams per liter except
where noted



Report Of Analysis

Date Collected.....6-5-85
Collected By.....Glen Mooney
Station.....Cleveland Cliffs - Well #234
Permit Number.....na
Sample Number.....5-161-13

Parameter	Result
Chloride.....	42
Sulfate.....	322
Total Dissolved Solids.....	1032
Ammonia-N.....	101
Nitrate/nitrite-N.....	0.12
pH, lab, s.u.....	9.970
pH, field, s.u.....	9.890
Sp. Cond. ,umhos/cm @ 25C, lab.....	1500
Sp. Cond. ,umhos/cm @ 25C, field.....	1325
Aluminum.....	<0.2
Arsenic.....	0.172
Barium.....	<0.1
Cadmium.....	<0.001
Calcium.....	3
Chromium.....	<0.01
Copper.....	<0.01
Fluoride.....	0.5
Iron.....	<0.01
Lead.....	<0.01
Magnesium.....	1
Manganese.....	<0.02
Mercury.....	<0.001
Nickel.....	<0.01
Potassium.....	280
Selenium.....	19.2
Sodium.....	65
Vanadium.....	1.6
Zinc.....	<0.01
T. Uranium.....	2.445
Alkalinity.....	496
Carbonate.....	366
Bicarbonate.....	0
Boron.....	0.16
Molybdenum.....	0.2
Ion Balance.....	-31.99
Calc. TDS.....	1082
Hydroxide.....	---

1 sample lost during shipment to the WQD Laboratory

Approved By

Kent M. Angelos

Kent M. Angelos

Chemical Analysis Supervisor

Date: July 31, 1985

WQD 85

All analysis results are reported in milligrams per liter except
where noted.



Report Of Analysis

Date Collected.....6-5-85
Collected By.....Glen Mooney
Station.....Cleveland Cliffs - Well #190
Permit Number.....na
Sample Number.....5-161-14

Parameter	Result
Chloride.....	34
Sulfate.....	300
Total Dissolved Solids.....	776
Ammonia-N.....	94
Nitrate/nitrite-N.....	0.12
pH, lab, s.u.....	9.685
pH, field, s.u.....	9.64
Sp. Cond. ,umhos/cm @ 25C, lab.....	1200
Sp. Cond. ,umhos/cm @ 25C, field.....	1180
Aluminum.....	<0.2
Arsenic.....	0.193
Barium.....	<0.1
Cadmium.....	<0.001
Calcium.....	5
Chromium.....	<0.02
Copper.....	<0.01
Fluoride.....	0.47
Iron.....	<0.01
Lead.....	<0.01
Magnesium.....	1
Manganese.....	<0.02
Mercury.....	<0.001
Nickel.....	<0.01
Potassium.....	181
Selenium.....	13.5
Sodium.....	76
Vanadium.....	1.5
Zinc.....	<0.01
Uranium.....	3.545
Alkalinity.....	396
Carbonate.....	378
Bicarbonate.....	0
Boron.....	0.16
Molybdenum.....	<0.2
Ion Balance.....	-41.10
Calc. TDS.....	975
Hydroxide.....	---

x Sample lost during shipment to the WQD Laboratory

Approved: *W. M. Angelos*
W. M. Angelos
Chemical Analysis Supervisor
Date July 31, 1985

Notes All analysis results are reported in milligrams per liter except where noted



Report Of Analysis

Date Collected.....6-5-85
Collected By.....Glen Mooney
Station.....Cleveland Cliffs - Well #285
Permit Number.....na
Sample Number.....5-161-15

Parameter	Result
Chloride.....	22
Sulfate.....	213
Total Dissolved Solids.....	536
Ammonia-N.....	84
Nitrate/nitrite-N.....	0.33
pH, lab, s.u.....	9.06E
pH, field, s.u.....	9.20
Sp. Cond. ,umhos/cm @ 25C, lab.....	1000
Sp. Cond. ,umhos/cm @ 25C, field.....	1000
Aluminum.....	<0.2
Arsenic.....	0.136
Barium.....	<0.1
Cadmium.....	<0.001
Calcium.....	8
Chromium.....	0.01
Copper.....	<0.01
Fluoride.....	0.46
Iron.....	<0.01
Lead.....	<0.01
Magnesium.....	1
Manganese.....	<0.02
Mercury.....	<0.001
Nickel.....	<0.01
Potassium.....	121
Selenium.....	7.5
Sodium.....	67
Vanadium.....	1.5
Zinc.....	<0.01
T. Uranium.....	3.325
Alkalinity.....	672
Carbonate.....	142
Bicarbonate.....	130
Boron.....	<0.01
Molybdenum.....	<0.2
Ion Balance.....	-29.29
Calc TDS.....	704
Hydroxide.....	—

* sample lost during shipment to the WQD Laboratory

Analyst By: *Robert M. Angelo*
Robert M. Angelo
Chemical Analysis Supervisor
Date July 31, 1985



All analysis results are reported in milligrams per liter except where noted

Report Of Analysis

Date Collected.....6-5-85
Collected By.....Glen Mooney
Station.....Cleveland Cliffs - Well #237
Permit Number.....na
Sample Number.....S-161-16

Parameter	Result
Chloride.....	21
Sulfate.....	217
Total Dissolved Solids.....	408
Ammonia-N.....	81
Nitrate/nitrite-N.....	0.38
pH, lab, s.u.....	9.382
pH, field, s.u.....	9.22
Sp. Cond. ,umhos/cm @ 25C, lab.....	950
Sp. Cond. ,umhos/cm @ 25C, field.....	875
Aluminum.....	<0.2
Arsenic.....	0.131
Barium.....	<0.1
Cadmium.....	<0.001
Calcium.....	6
Chromium.....	0.02
Copper.....	<0.01
Fluoride.....	0.56
Iron.....	<0.01
Lead.....	<0.01
Magnesium.....	1
Manganese.....	<0.02
Mercury.....	<0.001
Nickel.....	<0.01
Potassium.....	97
Selenium.....	10.3
Sodium.....	66
Manganese.....	1.1
Zinc.....	<0.01
Uranium.....	4.615
Alkalinity.....	307
Carbonate.....	260
Bicarbonate.....	47
Boron.....	0.11
Molybdenum.....	<0.2
Free Balance.....	-43.46
Total TDS.....	715
Hydroxide.....	---

* sample lost during shipment to the WQD Laboratory

Approved By

Ken F. Angeles

Ken F. Angeles

Chemical Analysis Supervisor

Date July 31, 1985

Notes

All analysis results are reported in milligrams per liter except
where noted



THE STATE



OF WYOMING

40-8714
RETURN ORIGINAL TO PDR, HQ

ED HERSCHLER
GOVERNOR

Department of Environmental Quality

04008714100E

LAND QUALITY DIVISION

DISTRICT III OFFICE

TELEPHONE 307-672-6488

SHERIDAN, WYOMING 82801

30 EAST GRINNELL STREET

August 9, 1985

Mr. Truman Louderback
Cleveland-Cliffs, Inc.
818 Taughenbaugh Blvd.
Rifle, CO 81650-2445



RE: Collins Draw Uranium ISL Project, Research and Development
License No. 3RD

Dear Mr. Louderback:

Enclosed are copies of the results of analyses from those water samples taken from wells at the Collins Draw site on June 5, 1985, at the same time the NRC also took water samples from these and other wells.

If you have any questions, please feel free to contact this office.

Sincerely,

Glenn Mooney

Glenn Mooney
Acting District III Supervisor

enc.

cc. Kathy Ogle
Susan Hogg
Paul Hildebrand-NRC

FEE EXEMPT

DESIGNATED ORIGINAL

Certified By *Mary C. Hood*

Add Info.
00822

Report Of Analysis

Date Collected 6-5-85
Collected By Glen Mooney
Station Cleveland Cliffs - Well #277
Permit Number na
Sample Number 5-161-10

Parameter	Result
Chloride	11
Sulfate	187
Total Dissolved Solids	308
Ammonia-N	*
Nitrate/nitrite-N	*
pH, lab, s.u.	9.510
pH, field, s.u.	9.45
Sp. Cond. ,umhos/cm @ 25C, lab	740
Sp. Cond. ,umhos/cm @ 25C, field	695
Aluminum	<0.2
Arsenic	0.067
Barium	<0.1
Cadmium	<0.001
Calcium	4
Chromium	<0.01
Copper	<0.01
Fluoride	0.34
Iron	0.05
Lead	<0.01
Magnesium	1
Manganese	<0.02
Mercury	<0.001
Nickel	<0.01
Potassium	41
Selenium	1.33
Sodium	67
Vanadium	0.3
Zinc	<0.01
T. Uranium	2.308
Alkalinity	313
Carbonate	248
Bicarbonate	0
Boron	0.17
Molybdenum	<0.2
Ion Balance	-49.21
Calc TDS	559
Hydroxide	65

* sample lost during shipment to the WQD Laboratory

Approved By

Kent M. Angello

Kent M. Angello

Chemical Analysis Supervisor

Date July 21 1985

Note:

All analysis results are reported in milligrams per liter except where noted



Wyoming Department of Environmental Quality
Water Quality Division Laboratory

File: GM516110.TXT

Report Of Analysis

Date Collected.....6-5-85
Collected By.....Glen Mooney
Station.....Cleveland Cliffs - Well #232
Permit Number.....na
Sample Number.....5-161-11

Parameter	Result
Chloride	11
Sulfate	167
Total Dissolved Solids	544
Ammonia-N	60
Nitrate/nitrite-N	0.16
pH, lab, s.u.	9.574
pH, field, s.u.	9.70
Sp. Cond., umhos/cm @ 25C, lab	830
Sp. Cond., umhos/cm @ 25C, field	780
Aluminum	<0.2
Arsenic	0.139
Barium	<0.1
Cadmium	<0.001
Calcium	5
Chromium	<0.01
Copper	<0.01
Fluoride	0.34
Iron	0.02
Lead	<0.01
Magnesium	1
Manganese	<0.02
Mercury	<0.001
Nickel	<0.01
Potassium	94
Selenium	1.38
Sodium	65
Vanadium	0.7
Zinc	<0.01
T. Uranium	11.5
Alkalinity	314
Carbonate	298
Bicarbonate	18
Boron	0.19
Molybdenum	<0.2
Ion Balance	-48.17
Calc. TDS	659
Hydroxide	---

* Sample lost during shipment to the WQD Laboratory

Approved By

Kent M. Angeles
Kent M. Angeles
Chemical Analysis Supervisor
Date July 31, 1985

Notes

All analysis results are reported in milligrams per liter except where noted.



Report Of Analysis

Date Collected6-5-85
Collected ByGlen Mooney
StationCleveland Cliffs - Well #276
Permit Numberna
Sample Number5-161-12

Parameter	Result
Chloride	52
Sulfate	366
Total Dissolved Solids	1012
Ammonia-N	71
Nitrate/nitrite-N	0.11
pH, lab, s.u.	9.610
pH, field, s.u.	9.67
Sp. Cond. ,umhos/cm @ 25C, lab	1500
Sp. Cond. ,umhos/cm @ 25C, field	740
Aluminum	<0.2
Arsenic	0.163
Barium	<0.1
Cadmium	<0.001
Calcium	7
Chromium	<0.01
Copper	<0.01
Fluoride	0.39
Iron	<0.01
Lead	<0.01
Magnesium	1
Manganese	<0.02
Mercury	<0.001
Nickel	<0.01
Potassium	263
Selenium	8.6
Sodium	73
Vanadium	1.0
Zinc	<0.01
Uranium	5.99
Alkalinity	361
Carbonate	343
Bicarbonate	18
Boron	0.11
Molybdenum	0.3
Ion Balance	-33.65
Calc TDS	1123
Hydroxide	---

* sample lost during shipment to the WQD Laboratory

Approved By

Kent M. Angelos
Kent M. Angelos

Chemical Analysis Supervisor

Date July 31, 1985

Notes

All analysis results are reported in milligrams per liter except
where noted.



Report Of Analysis

Date Collected.....6-5-85
Collected By.....Glen Mooney
Station.....Cleveland Cliffs - Well #294
Permit Number.....na
Sample Number.....5-161-13

Parameter	Result
Chloride.....	42
Sulfate.....	322
Total Dissolved Solids.....	1032
Ammonia-N.....	101
Nitrate/nitrite-N.....	0.12
pH, lab, s.u.....	9.970
pH, field, s.u.....	9.890
Sp. Cond. ,umhos/cm @ 25C, lab.....	1500
Sp. Cond. ,umhos/cm @ 25C, field.....	1325
Aluminum.....	<0.2
Arsenic.....	0.172
Barium.....	<0.1
Cadmium.....	<0.001
Calcium.....	3
Chromium.....	<0.01
Copper.....	<0.01
Fluoride.....	0.5
Iron.....	<0.01
Lead.....	<0.01
Magnesium.....	1
Manganese.....	<0.02
Mercury.....	<0.001
Nickel.....	<0.01
Potassium.....	280
Selenium.....	19.2
Sodium.....	68
Vanadium.....	1.8
Zinc.....	<0.01
T. Uranium.....	2.445
Alkalinity.....	496
Carbonate.....	366
Bicarbonate.....	0
Boron.....	0.16
Molybdenum.....	0.2
Ion Balance.....	-31.99
Calc TDS.....	1082
Hydroxide.....	---

1 sample lost during shipment to the WQD Laboratory

Approved By

Kent M. Angelos

Kent M. Angelos

Chemical Analysis Supervisor

Date July 31, 1985

Notes:

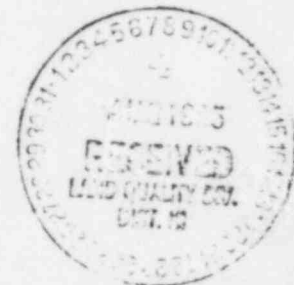
All analysis results are reported in milligrams per liter except
where noted



Report Of Analysis

Date Collected.....6-5-85
Collected By.....Glen Mooney
Station.....Cleveland Cliffs - Well #190
Permit Number.....na
Sample Number.....5-161-14

Parameter	Result
Chloride	34
Sulfate	300
Total Dissolved Solids	776
Ammonia-N	94
Nitrate/nitrite-N	0.12
pH, lab, s.u.	9.685
pH, field, s.u.	9.64
Sp. Cond. ,umhos/cm @ 25C, lab	1200
Sp. Cond. ,umhos/cm @ 25C, field	1180
Aluminum	<0.2
Arsenic	0.193
Barium	<0.1
Cadmium	<0.001
Calcium	5
Chromium	<0.02
Copper	<0.01
Fluoride	0.47
Iron	<0.01
Lead	<0.01
Magnesium	1
Manganese	<0.02
Mercury	<0.001
Nickel	<0.01
Potassium	181
Selenium	13.5
Sodium	76
Vanadium	1.5
Zinc	<0.01
Uranium	3.545
Alkalinity	396
Carbonate	378
Bicarbonate	0
Boron	0.16
Phenol	<0.2
Ion Balance	-41.10
Calc. TDS	975
Hydroxide	---



Sample lost during shipment to the WQD Laboratory

Approved:

Glen Mooney
Glen Mooney
Chemical Analysis Supervisor
Date: July 31, 1985

Notes:

All analysis results are reported in milligrams per liter except
where noted.

Report Of Analysis

Date Collected..... 6-5-85
Collected By..... Glen Mooney
Station..... Cleveland Cliffs - Well #285
Permit Number..... na
Sample Number..... 5-161-15

Parameter	Result
Chloride.....	22
Sulfate.....	213
Total Dissolved Solids.....	536
Ammonia-N.....	84
Nitrate/nitrite-N.....	0.33
pH, lab, s.u.....	9.068
pH, field, s.u.....	9.20
Sp. Cond. ,umhos/cm @ 25C, lab.....	1000
Sp. Cond. ,umhos/cm @ 25C, field.....	1000
Aluminum.....	<0.2
Arsenic.....	0.136
Barium.....	<0.1
Cadmium.....	<0.001
Calcium.....	8
Chromium.....	0.01
Copper.....	<0.01
Fluoride.....	0.46
Iron.....	<0.01
Lead.....	<0.01
Magnesium.....	1
Manganese.....	<0.02
Mercury.....	<0.001
Nickel.....	<0.01
Potassium.....	121
Selenium.....	7.5
Sodium.....	67
Vanadium.....	1.5
Zinc.....	<0.01
T. Uranium.....	3.325
Alkalinity.....	272
Carbonate.....	142
Bicarbonate.....	130
Boron.....	<0.21
Molybdenum.....	<0.2
Ion Balance.....	-29.49
Calc. TDS.....	704
Hydroxide.....	---

* sample lost during shipment to the WQT Laboratory

Approved By: *Ken F. Angelos*
Ken F. Angelos
Chemical Analysis Supervisor
Date: July 21, 1985

All analysis results are reported in milligrams per liter except
where noted



Report Of Analysis

Date Collected.....6-5-85
Collected By.....Glen Mooney
Station.....Cleveland Cliffs - Well #237
Permit Number.....na
Sample Number.....5-161-16

Parameter	Result
Chloride	21
Sulfate	217
Total Dissolved Solids	408
Ammonia-N	81
Nitrate/nitrite-N	0.38
pH, lab, s.u.	9.382
pH, field, s.u.	9.22
Sp. Cond. ,umhos/cm @ 25C, lab	950
Sp. Cond. ,umhos/cm @ 25C, field	875
Aluminum	<0.2
Arsenic	0.131
Barium	<0.1
Cadmium	<0.001
Calcium	6
Chromium	0.02
Copper	<0.01
Fluoride	0.56
Iron	<0.01
Lead	<0.01
Magnesium	1
Manganese	<0.02
Mercury	<0.001
Nickel	<0.01
Potassium	97
Selenium	10.3
Sodium	66
Vanadium	1.1
Zinc	<0.01
Uranium	4.615
Alkalinity	307
Carbonate	260
Bicarbonate	47
Boron	0.11
Molybdenum	<0.2
Ion Balance	-43.46
Calc. TDS	715
Hydroxide	---

* sample lost during shipment to the WQD Laboratory

Approved By *Kent Angelos*
Kent Angelos
Chemical Analysis Supervisor
Date July 31, 1985

Notes: All analysis results are reported in milligrams per liter except where noted

