# ATTACHMENTS

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| Notes Utilized Throughout Tables | |
|---|---|
| **DEQ-7 Human Health Standards** | Montana Department of Environmental Quality- DEQ Circular 7 Human Health Standards |
| **EPA** | United States Environmental Protection Agency |
| **EPA Drinking MCL** | United States Environmental Protection Agency Risk Based Screening Level Drinking Water MCL |
| **EPA Tapwater RSL** | United StatesEnvironmental Protection Agency Risk Based Screening Level Tapwater RSL |
| **DUP** | Duplicate sample |
| **NA** | Compound was not analyzed by laboratory |
| **µg/l** | Micrograms per Liter |
| **J-** | Estimated Low Bias |
| **J** | Estimated value |
| **J+** | Estimated High Bias |
| **R** | Result is Rejected |
| **U** | Indicates that analyte was not detected at the limit reported |

Preliminary – Under EPA and MDEQ Review

**Table 1. Volatile Organic Compounds in Round 1 and Round 2 Surface Water**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFSWP-018 | CFSWP-019 | CFSWP-020 |
|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 6/6/2016 | 6/6/2016 | 6/6/2016 |
| | | | | Sample Designation | CFSWP-018-SW | CFSWP-019-SW | CFSWP-020-SW |
| | | | | Round | Round 1 | Round 1 | Round 1 |
| | | | | Sample Type | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | |
| 1,1,1-Trichloroethane | 200 | 200 | 800 | ug/l | 0.28 U | 0.28 U | 0.28 U |
| 1,1,2,2-Tetrachloroethane | 1.7 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | -- | -- | 5500 | ug/l | 0.34 U | 0.34 U | 0.34 U |
| 1,1,2-Trichloroethane | 3 | -- | -- | ug/l | 0.08 U | 0.08 U | 0.08 U |
| 1,1-Dichloroethane | -- | -- | 2.8 | ug/l | 0.24 U | 0.24 U | 0.24 U |
| 1,1-Dichloroethene | 7 | -- | -- | ug/l | 0.34 U | 0.34 U | 0.34 U |
| 1,2,3-Trichlorobenzene | -- | -- | 0.7 | ug/l | 0.35 U | 0.35 U | 0.35 U |
| 1,2,4-Trichlorobenzene | 35 | -- | 0.4 | ug/l | 0.27 U | 0.27 U | 0.27 U |
| 1,2-Dibromo-3-Chloropropane | 0.2 | 0.2 | 0.00034 | ug/l | 0.23 U | 0.23 U | 0.23 U |
| 1,2-Dichlorobenzene | 420 | 600 | 30 | ug/l | 0.22 U | 0.22 U | 0.22 U |
| 1,2-Dichloroethane | 3.8 | 5 | 0.17 | ug/l | 0.25 U | 0.25 U | 0.25 U |
| 1,2-Dichloropropane | 5 | 5 | 0.44 | ug/l | 0.18 U | 0.18 U | 0.18 U |
| 1,3-Dichlorobenzene | 320 | -- | -- | ug/l | 0.33 U | 0.33 U | 0.33 U |
| 1,4-Dichlorobenzene | 75 | 75 | 0.48 | ug/l | 0.33 U | 0.33 U | 0.33 U |
| 2-Butanone (MEK) | -- | -- | 560 | ug/l | 2.2 U | 2.2 U | 2.2 U |
| 2-Hexanone | -- | -- | 3.8 | ug/l | 0.72 U | 0.72 U | 0.72 U |
| 4-Methyl-2-pentanone (MIBK) | -- | -- | 630 | ug/l | 0.63 U | 0.63 U | 0.63 U |
| Acetone | -- | -- | 1400 | ug/l | 1.1 U | 1.1 U | 1.1 U |
| Benzene | 5 | 5 | 0.46 | ug/l | 0.09 U | 0.09 U | 0.09 U |
| Bromoform | 43 | 80 | 3.3 | ug/l | 0.18 U | 0.18 U | 0.18 U |
| Bromomethane | 47 | -- | 0.75 | ug/l | 0.18 UJ | 0.18 UJ | 0.18 UJ |
| Carbon disulfide | -- | -- | 81 | ug/l | 0.22 U | 0.22 U | 0.22 U |
| Carbon tetrachloride | 2.3 | 5 | 0.46 | ug/l | 0.33 U | 0.33 U | 0.33 U |
| Chlorobenzene | 100 | 100 | 7.8 | ug/l | 0.24 U | 0.24 U | 0.24 U |
| Chlorobromomethane | -- | -- | 8.3 | ug/l | 0.3 U | 0.3 U | 0.3 U |
| Chlorodibromomethane | 4 | 80 | 0.87 | ug/l | 0.22 U | 0.22 U | 0.22 U |
| Chloroethane | -- | -- | 2100 | ug/l | 0.37 U | 0.37 U | 0.37 U |
| Chloroform | 57 | 80 | 0.22 | ug/l | 0.22 U | 0.22 U | 0.22 U |
| Chloromethane | 30 | -- | 19 | ug/l | 0.22 U | 0.22 U | 0.22 U |
| cis-1,2-Dichloroethene | 70 | -- | -- | ug/l | 0.26 U | 0.26 U | 0.26 U |
| cis-1,3-Dichloropropene | 3.4 | -- | -- | ug/l | 0.16 U | 0.16 U | 0.16 U |
| Cyclohexane | -- | -- | 1300 | ug/l | 0.26 U | 0.26 U | 0.26 U |
| Dichlorobromomethane | 5.5 | 80 | 0.13 | ug/l | 0.15 U | 0.15 U | 0.15 U |
| Dichlorodifluoromethane | -- | -- | 20 | ug/l | 0.14 U | 0.14 U | 0.14 U |
| Ethylbenzene | 530 | 700 | 1.5 | ug/l | 0.3 U | 0.3 U | 0.3 U |
| Ethylene Dibromide | -- | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U |
| Isopropylbenzene | -- | -- | -- | ug/l | 0.32 U | 0.32 U | 0.32 U |
| Methyl acetate | -- | -- | 2000 | ug/l | 0.58 U | 0.58 U | 0.58 U |
| Methyl tert-butyl ether | 30 | -- | 14 | ug/l | 0.13 U | 0.13 U | 0.13 U |
| Methylcyclohexane | -- | -- | -- | ug/l | 0.22 U | 0.22 U | 0.22 U |

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**Table 1. Volatile Organic Compounds in Round 1 and Round 2 Surface Water**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | Sample Location | CFSWP-018 | CFSWP-019 | CFSWP-020 |
| | | | | Sample Date | 6/6/2016 | 6/6/2016 | 6/6/2016 |
| | | | | Sample Designation | CFSWP-018-SW | CFSWP-019-SW | CFSWP-020-SW |
| | | | | Round | Round 1 | Round 1 | Round 1 |
| | | | | Sample Type | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | |
| 1,1,1-Trichloroethane | 200 | 200 | 800 | ug/l | 0.28 U | 0.28 U | 0.28 U |
| Methylene Chloride | 5 | 5 | 11 | ug/l | 0.47 J | 0.21 U | 0.9 J |
| m-Xylene & p-Xylene | -- | -- | -- | ug/l | 0.28 U | 0.28 U | 0.28 U |
| o-Xylene | 10000 | -- | 19 | ug/l | 0.32 U | 0.32 U | 0.32 U |
| Styrene | 100 | 100 | 120 | ug/l | 0.17 U | 0.17 U | 0.17 U |
| Tetrachloroethene | 5 | -- | -- | ug/l | 0.12 U | 0.12 U | 0.12 U |
| Toluene | 1000 | 1000 | 110 | ug/l | 0.25 U | 0.25 U | 0.25 U |
| trans-1,2-Dichloroethene | 100 | -- | -- | ug/l | 0.18 U | 0.18 U | 0.18 U |
| trans-1,3-Dichloropropene | 2 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U |
| Trichloroethene | 5 | -- | -- | ug/l | 0.22 U | 0.22 U | 0.22 U |
| Trichlorofluoromethane | 10000 | -- | 520 | ug/l | 0.15 U | 0.15 U | 0.15 U |
| Vinyl chloride | 0.25 | 2 | 0.019 | ug/l | 0.06 U | 0.06 U | 0.06 U |

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**Table 2. Semivolatile Organic Compounds in Round 1 and Round 2 Surface Water**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFSWP-018 | CFSWP-019 | CFSWP-020 |
|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 6/6/2016 | 6/6/2016 | 6/6/2016 |
| | | | | Sample Designation | CFSWP-018-SW | CFSWP-019-SW | CFSWP-020-SW |
| | | | | Round | Round 1 | Round 1 | Round 1 |
| | | | | Sample Type | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | |
| 1,1'-Biphenyl | -- | -- | 0.083 | ug/l | 0.66 U | 0.63 U | 0.68 U |
| 1,2,4,5-Tetrachlorobenzene | 0.97 | -- | 0.17 | ug/l | 0.45 U | 0.43 U | 0.47 U |
| 1,4-Dioxane | -- | -- | 0.46 | ug/l | 3.2 U | 3.1 U | 3.4 U |
| 2,2'-oxybis[1-chloropropane] | 1400 | -- | -- | ug/l | 0.97 U | 0.93 U | 1 U |
| 2,3,4,6-Tetrachlorophenol | -- | -- | 24 | ug/l | 0.72 U | 0.69 U | 0.75 U |
| 2,4,5-Trichlorophenol | 1800 | -- | 120 | ug/l | 0.51 U | 0.49 U | 0.53 U |
| 2,4,6-Trichlorophenol | 14 | -- | 1.2 | ug/l | 0.55 U | 0.53 U | 0.58 U |
| 2,4-Dichlorophenol | 77 | -- | 4.6 | ug/l | 0.66 U | 0.63 U | 0.68 U |
| 2,4-Dimethylphenol | 380 | -- | 36 | ug/l | 0.95 U | 0.91 U | 0.99 U |
| 2,4-Dinitrophenol | 69 | -- | 3.9 | ug/l | 2.5 U | 2.4 U | 2.6 U |
| 2,4-Dinitrotoluene | 1.1 | -- | 0.24 | ug/l | 1.1 U | 1 U | 1.1 U |
| 2,6-Dinitrotoluene | 0.5 | -- | 0.049 | ug/l | 0.92 U | 0.88 U | 0.96 U |
| 2-Chloronaphthalene | 1000 | -- | -- | ug/l | 0.64 U | 0.61 U | 0.66 U |
| 2-Chlorophenol | 81 | -- | 9.1 | ug/l | 0.77 U | 0.74 U | 0.8 U |
| 2-Methylnaphthalene | -- | -- | 3.6 | ug/l | 0.92 U | 0.88 U | 0.96 U |
| 2-Methylphenol | -- | -- | -- | ug/l | 1.3 U | 1.3 U | 1.4 U |
| 2-Nitroaniline | -- | -- | 19 | ug/l | 0.68 U | 0.65 U | 0.71 U |
| 2-Nitrophenol | -- | -- | -- | ug/l | 0.61 U | 0.59 U | 0.64 U |
| 3 & 4 Methylphenol | -- | -- | -- | ug/l | 0.92 U | 0.88 U | 0.96 U |
| 3,3'-Dichlorobenzidine | 0.21 | -- | 0.13 | ug/l | 1.1 U | 1 U | 1.1 U |
| 3-Nitroaniline | -- | -- | -- | ug/l | 0.85 U | 0.82 U | 0.89 U |
| 4,6-Dinitro-2-methylphenol | 13 | -- | -- | ug/l | 2.1 U | 2 U | 2.2 U |
| 4-Bromophenyl phenyl ether | -- | -- | -- | ug/l | 1.1 U | 1 U | 1.1 U |
| 4-Chloro-3-methylphenol | 3000 | -- | -- | ug/l | 0.79 U | 0.76 U | 0.83 U |
| 4-Chloroaniline | -- | -- | 0.37 | ug/l | 0.76 U | 0.73 U | 0.79 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | ug/l | 1 U | 0.96 U | 1 U |
| 4-Nitroaniline | -- | -- | 3.8 | ug/l | 0.5 U | 0.48 U | 0.52 U |
| 4-Nitrophenol | 60 | -- | -- | ug/l | 4.8 U | 4.7 U | 5.1 U |
| Acenaphthene | 670 | -- | 53 | ug/l | 0.92 U | 0.88 U | 0.96 U |
| Acenaphthylene | -- | -- | -- | ug/l | 0.68 U | 0.65 U | 0.71 U |
| Acetophenone | -- | -- | 190 | ug/l | 1.1 U | 1 U | 1.1 U |
| Anthracene | 8300 | -- | 180 | ug/l | 0.59 U | 0.57 U | 0.62 U |
| Atrazine | 3 | 3 | 0.3 | ug/l | 0.8 U | 0.77 U | 0.84 U |
| Benzaldehyde | -- | -- | 19 | ug/l | 0.9 U | 0.86 U | 0.93 U |
| Benzo[a]anthracene | 0.038 | -- | -- | ug/l | 0.57 U | 0.55 U | 0.6 U |
| Benzo[a]pyrene | 0.038 | 0.2 | 0.0034 | ug/l | 0.17 U | 0.16 U | 0.17 U |
| Benzo[b]fluoranthene | 0.038 | -- | 0.034 | ug/l | 0.46 U | 0.44 U | 0.48 U |
| Benzo[g,h,i]perylene | -- | -- | -- | ug/l | 0.78 U | 0.75 U | 0.82 U |
| Benzo[k]fluoranthene | 0.038 | -- | 0.34 | ug/l | 0.19 U | 0.18 U | 0.2 U |
| Bis(2-chloroethoxy)methane | -- | -- | 5.9 | ug/l | 0.72 U | 0.69 U | 0.75 U |

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**Table 2. Semivolatile Organic Compounds in Round 1 and Round 2 Surface Water**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | Sample Location | CFSWP-018 | CFSWP-019 | CFSWP-020 |
| | | | | Sample Date | 6/6/2016 | 6/6/2016 | 6/6/2016 |
| | | | | Sample Designation | CFSWP-018-SW | CFSWP-019-SW | CFSWP-020-SW |
| | | | | Round | Round 1 | Round 1 | Round 1 |
| | | | | Sample Type | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | |
| 1,1'-Biphenyl | -- | -- | 0.083 | ug/l | 0.66 U | 0.63 U | 0.68 U |
| Bis(2-chloroethyl)ether | 0.3 | -- | 0.014 | ug/l | 0.13 U | 0.12 U | 0.13 U |
| Bis(2-ethylhexyl) phthalate | 6 | 6 | 5.6 | ug/l | 0.75 U | 0.72 U | 0.78 U |
| Butyl benzyl phthalate | 1500 | -- | 16 | ug/l | 0.63 U | 0.6 U | 0.65 U |
| Caprolactam | -- | -- | 990 | ug/l | 1.1 U | 1.1 U | 1.1 U |
| Carbazole | -- | -- | -- | ug/l | 0.89 U | 0.85 U | 0.92 U |
| Chrysene | 0.038 | -- | 3.4 | ug/l | 0.7 U | 0.67 U | 0.73 U |
| Dibenz(a,h)anthracene | 0.038 | -- | 0.0034 | ug/l | 0.094 U | 0.09 U | 0.098 U |
| Dibenzofuran | -- | -- | 0.79 | ug/l | 0.89 U | 0.85 U | 0.92 U |
| Diethyl phthalate | 17000 | -- | -- | ug/l | 1 U | 1 U | 1.1 U |
| Dimethyl phthalate | 270000 | -- | -- | ug/l | 1 U | 0.98 U | 1.1 U |
| Di-n-butyl phthalate | 2000 | -- | -- | ug/l | 0.85 U | 0.82 U | 0.89 U |
| Di-n-octyl phthalate | -- | -- | 20 | ug/l | 0.72 U | 0.69 U | 0.75 U |
| Fluoranthene | 130 | -- | 80 | ug/l | 0.75 U | 0.72 U | 0.78 U |
| Fluorene | 1100 | -- | 29 | ug/l | 0.83 U | 0.8 U | 0.87 U |
| Hexachlorobenzene | 0.0028 | 1 | 0.0098 | ug/l | 0.49 U | 0.47 U | 0.51 U |
| Hexachlorobutadiene | 4.4 | -- | 0.14 | ug/l | 0.79 U | 0.76 U | 0.83 U |
| Hexachlorocyclopentadiene | 40 | 50 | 0.041 | ug/l | 0.64 U | 0.61 U | 0.66 U |
| Hexachloroethane | 14 | -- | 0.33 | ug/l | 0.094 U | 0.09 U | 0.098 U |
| Indeno[1,2,3-cd]pyrene | 0.038 | -- | 0.034 | ug/l | 0.22 U | 0.21 U | 0.23 U |
| Isophorone | 350 | -- | 78 | ug/l | 0.7 U | 0.67 U | 0.73 U |
| Naphthalene | 100 | -- | 0.17 | ug/l | 0.83 U | 0.8 U | 0.87 U |
| Nitrobenzene | 17 | -- | 0.14 | ug/l | 0.51 U | 0.49 U | 0.53 U |
| N-Nitrosodi-n-propylamine | 0.05 | -- | 0.011 | ug/l | 0.86 U | 0.83 U | 0.9 U |
| N-Nitrosodiphenylamine | 33 | -- | 12 | ug/l | 0.77 U | 0.74 U | 0.8 U |
| Pentachlorophenol | 1 | 1 | 0.041 | ug/l | 2.3 U | 2.2 U | 2.4 U |
| Phenanthrene | -- | -- | -- | ug/l | 0.68 U | 0.65 U | 0.71 U |
| Phenol | 300 | -- | 580 | ug/l | 0.43 U | 0.41 U | 0.45 U |
| Pyrene | 830 | -- | 12 | ug/l | 0.86 U | 0.83 U | 0.9 U |

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**Table 3. Metals in Round 1 and Round 2 Surface Water**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFSWP-001 | CFSWP-001 | CFSWP-002 | CFSWP-002 | CFSWP-003 | CFSWP-003 | CFSWP-004 | CFSWP-004 | CFSWP-005 | CFSWP-005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/16/2016 | 12/2/2016 | 9/16/2016 | 12/2/2016 | 12/1/2016 | 9/9/2016 | 9/9/2016 | 12/1/2016 | 9/9/2016 | 12/1/2016 |
| | | | | Sample Designation | CFSWP-001-SW | CFSWP-001-SW | CFSWP-002-SW | CFSWP-002-SW | CFSWP-003-SW | CFSWP-003-SW | CFSWP-004-SW | CFSWP-004-SW | CFSWP-005-SW | CFSWP-005-SW |
| | | | | Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 2 | Round 1 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | | |
| Aluminum | -- | -- | 2000 | ug/l | 23.7 J | 25.6 J | 28.8 J | 23.7 J | 172 | 63.5 | 522 | 53.3 | 143 | 94.3 |
| Antimony | 5.6 | 6 | 0.78 | ug/l | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U |
| Arsenic | 10 | 10 | 0.052 | ug/l | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.78 J | 0.64 U | 0.64 U | 0.64 U |
| Barium | 1000 | 2000 | 380 | ug/l | 107 | 102 | 102 | 101 | 118 | 117 | 197 | 173 | 192 | 179 |
| Beryllium | 4 | 4 | 2.5 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Cadmium | 5 | -- | -- | ug/l | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U |
| Calcium | -- | -- | -- | ug/l | 24200 | 25300 | 23200 | 24300 | 30000 | 27700 | 60700 | 52400 | 60200 | 62600 |
| Chromium | 100 | 100 | -- | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Cobalt | -- | -- | 0.6 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 J | 1.3 U | 1.3 U | 1.3 J |
| Copper | 1300 | 1300 | 80 | ug/l | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.5 J | 1.8 J | 1.6 J | 1.4 U |
| Cyanide, Total | **140** | 200 | 0.15 | ug/l | 2 U | 2 U | 2 U | 2 U | 36.2 | 18.8 | 209 | **178** | 213 | **192** |
| Iron | -- | -- | 1400 | ug/l | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 294 | 135 | 827 | 238 | 256 | 266 |
| Lead | 15 | 15 | 15 | ug/l | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.48 J | 2.9 | 0.38 U | 0.38 U |
| Magnesium | -- | -- | -- | ug/l | 6320 | 7060 | 6030 | 6750 | 8430 | 7650 | 18200 | 15100 | 17800 | 17900 |
| Manganese | -- | -- | -- | ug/l | 2.5 U | 2.5 U | 2.5 U | 2.5 U | 30.4 | 10.9 | 57.1 | 57.9 | 15.7 | 212 |
| Mercury | 0.05 | 2 | 0.063 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Nickel | 100 | -- | -- | ug/l | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| Potassium | -- | -- | -- | ug/l | 330 | 341 | 306 | 319 | 476 | 398 | 1120 | 833 | 1020 | 1060 |
| Selenium | 50 | 50 | 10 | ug/l | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U |
| Silver | 100 | -- | 9.4 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Sodium | -- | -- | -- | ug/l | 1070 | 1200 | 1030 | 1060 | 5990 | 3780 | 36400 | 26100 | 36900 | 35600 |
| Thallium | 0.24 | 2 | 0.02 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Vanadium | -- | -- | 8.6 | ug/l | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U |
| Zinc | 2000 | -- | 600 | ug/l | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 19.9 | 7 U |

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**Table 3. Metals in Round 1 and Round 2 Surface Water**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFSWP-006 | CFSWP-006 | CFSWP-007 | CFSWP-007 | CFSWP-008 | CFSWP-008 | CFSWP-009 | CFSWP-010 | CFSWP-011 | CFSWP-012 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/9/2016 | 12/1/2016 | 9/16/2016 | 12/2/2016 | 9/16/2016 | 12/2/2016 | 6/7/2016 | 6/7/2016 | 6/7/2016 | 6/7/2016 |
| | | | | Sample Designation | CFSWP-006-SW | CFSWP-006-SW | CFSWP-007-SW | CFSWP-007-SW | CFSWP-008-SW | CFSWP-008-SW | CFSWP-009-SW | CFSWP-010-SW | CFSWP-011-SW | CFSWP-012-SW |
| | | | | Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 1 | Round 1 | Round 1 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | | |
| Aluminum | -- | -- | 2000 | ug/l | 19.9 J | 29.8 J | 28.9 J | 54.5 | 33.9 J | 31 J | 16.8 J | 44.6 | 28.2 J | 35.9 J |
| Antimony | 5.6 | 6 | 0.78 | ug/l | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U |
| Arsenic | 10 | 10 | 0.052 | ug/l | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.95 J | 0.71 U | 0.71 U | 0.8 J |
| Barium | 1000 | 2000 | 380 | ug/l | 105 | 99.7 | 102 | 102 | 103 | 103 | 104 | 79.6 | 78.6 | 79 |
| Beryllium | 4 | 4 | 2.5 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.29 U | 0.29 U | 0.29 U | 0.29 U |
| Cadmium | 5 | -- | -- | ug/l | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| Calcium | -- | -- | -- | ug/l | 24200 | 24500 | 23100 | 24500 | 23200 | 25400 | 50100 | 47000 | 47000 | 46800 |
| Chromium | 100 | 100 | -- | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.5 U | 1.5 U | 1.5 U | 1.5 U |
| Cobalt | -- | -- | 0.6 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.5 U | 1.5 U | 1.5 U | 1.5 U |
| Copper | 1300 | 1300 | 80 | ug/l | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.6 U | 1.6 U | 2.1 J | 4.1 |
| Cyanide, Total | **140** | 200 | 0.15 | ug/l | 3.2 J | 2 U | 2 U | 2 U | 2 U | 2 U | 4 U | 4 U | 4 U | 4 U |
| Iron | -- | -- | 1400 | ug/l | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 49.1 U | 49.3 J | 49.1 U | 72.8 J |
| Lead | 15 | 15 | 15 | ug/l | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U |
| Magnesium | -- | -- | -- | ug/l | 6630 | 6750 | 6010 | 6780 | 6050 | 7110 | 12600 | 10900 | 10800 | 10900 |
| Manganese | -- | -- | -- | ug/l | 2.5 U | 2.5 U | 2.5 U | 3.9 J | 2.5 U | 2.5 U | 3 U | 7.8 J | 6.3 J | 8.6 |
| Mercury | 0.05 | 2 | 0.063 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U |
| Nickel | 100 | -- | -- | ug/l | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U |
| Potassium | -- | -- | -- | ug/l | 328 | 315 | 311 | 313 | 317 | 309 | 560 | 535 | 540 | 537 |
| Selenium | 50 | 50 | 10 | ug/l | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.79 U | 0.79 U | 0.79 U | 0.79 U |
| Silver | 100 | -- | 9.4 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.5 U | 1.5 U | 1.5 U | 1.5 U |
| Sodium | -- | -- | -- | ug/l | 1030 | 1150 | 951 | 1040 | 958 | 1140 | 2340 | 2080 | 2120 | 2080 |
| Thallium | 0.24 | 2 | 0.02 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.31 U | 0.31 U | 0.31 U | 0.31 U |
| Vanadium | -- | -- | 8.6 | ug/l | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 2.2 J | 2.1 J | 2.1 J | 2.1 J |
| Zinc | 2000 | -- | 600 | ug/l | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 6.5 U | 6.5 U | 6.5 U | 6.5 U |

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**Table 3. Metals in Round 1 and Round 2 Surface Water**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFSWP-013 | CFSWP-013 | CFSWP-013 | CFSWP-014 | CFSWP-014 | CFSWP-014 | CFSWP-015 | CFSWP-015 | CFSWP-015 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 6/7/2016 | 6/7/2016 | 11/30/2016 | 8/29/2016 | 11/30/2016 | 11/30/2016 | 8/29/2016 | 8/29/2016 | 11/30/2016 |
| | | | | Sample Designation | CFSWP-013-SW | CFSWP-DUP1-SW | CFSWP-013-SW | CFSWP-014-SW | CFSWP-014-SW | CFSWP-DUP3-SW | CFSWP-015-SW | CFSWP-DUP2-SW | CFSWP-015-SW |
| | | | | Round | Round 1 | Round 1 | Round 2 | Round 1 | Round 2 | Round 2 | Round 1 | Round 1 | Round 2 |
| | | | | Sample Type | N | FD | N | N | N | FD | N | FD | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Aluminum | -- | -- | 2000 | ug/l | 30 J | 34.6 J | 1610 | 37.6 J | 18.2 UJ | 27.4 J | 44.9 | 39.7 J | 18.2 U |
| Antimony | 5.6 | 6 | 0.78 | ug/l | 0.76 U | 0.76 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U |
| Arsenic | 10 | 10 | 0.052 | ug/l | 0.71 U | 0.71 U | 1.8 J | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U |
| Barium | 1000 | 2000 | 380 | ug/l | 78 | 81.2 | 183 | 98.1 | 101 | 103 | 103 | 101 | 106 |
| Beryllium | 4 | 4 | 2.5 | ug/l | 0.29 U | 0.29 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Cadmium | 5 | -- | -- | ug/l | 0.72 U | 0.72 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U |
| Calcium | -- | -- | -- | ug/l | 46500 | 47700 | 40000 | 43100 | 52800 | 53300 | 47500 | 44600 | 53100 |
| Chromium | 100 | 100 | -- | ug/l | 1.5 U | 1.5 U | 1.4 J | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Cobalt | -- | -- | 0.6 | ug/l | 1.5 U | 1.5 U | 2.4 J | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Copper | 1300 | 1300 | 80 | ug/l | 2.2 J | 11.7 J | 6.2 | 5.4 | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| Cyanide, Total | **140** | 200 | 0.15 | ug/l | 4 U | 4 U | 2 U | 2 U | 15.3 J | 2 UJ | 2.3 J | 2 U | 10.6 |
| Iron | -- | -- | 1400 | ug/l | 49.1 U | 49.1 U | 2910 | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 42.4 U |
| Lead | 15 | 15 | 15 | ug/l | 0.44 U | 0.44 U | 2.1 | 0.41 J | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U |
| Magnesium | -- | -- | -- | ug/l | 10700 | 11100 | 11300 | 13500 | 13500 | 13900 | 13600 | 13400 | 13600 |
| Manganese | -- | -- | -- | ug/l | 10.7 | 11 | 3750 | 13.2 | 5.2 J | 3.9 J | 8.6 J | 5.9 J | 4 J |
| Mercury | 0.05 | 2 | 0.063 | ug/l | 0.14 U | 0.14 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Nickel | 100 | -- | -- | ug/l | 1.6 U | 1.6 U | 2.3 J | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| Potassium | -- | -- | -- | ug/l | 530 | 556 | 778 | 377 | 481 | 486 | 405 | 357 | 484 |
| Selenium | 50 | 50 | 10 | ug/l | 0.79 U | 0.79 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U |
| Silver | 100 | -- | 9.4 | ug/l | 1.5 U | 1.5 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Sodium | -- | -- | -- | ug/l | 2030 | 2120 | 2340 | 3240 | 2590 | 2660 | 2870 | 2620 | 2610 |
| Thallium | 0.24 | 2 | 0.02 | ug/l | 0.31 U | 0.31 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Vanadium | -- | -- | 8.6 | ug/l | 1.9 J | 1.8 J | 1.9 J | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U |
| Zinc | 2000 | -- | 600 | ug/l | 6.5 U | 6.5 U | 18.9 | 16.4 | 7 U | 7 U | 7 U | 7 U | 7 U |

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**Table 3. Metals in Round 1 and Round 2 Surface Water**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Location | CFSWP-015 | CFSWP-016 | CFSWP-016 | CFSWP-017 | CFSWP-017 | CFSWP-018 | CFSWP-018 | CFSWP-019 | CFSWP-019 | CFSWP-020 |
| | | | | Sample Date | 12/20/2016 | 8/29/2016 | 11/30/2016 | 9/16/2016 | 12/2/2016 | 6/6/2016 | 12/1/2016 | 6/6/2016 | 12/1/2016 | 6/6/2016 |
| | | | | Sample Designation | CFSWP-015-SW | CFSWP-016-SW | CFSWP-016-SW | CFSWP-017-SW | CFSWP-017-SW | CFSWP-018-SW | CFSWP-018-SW | CFSWP-019-SW | CFSWP-019-SW | CFSWP-020-SW |
| | | | | Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | | |
| Aluminum | -- | -- | 2000 | ug/l | 20 J | 59.2 | 19.5 J | 33.2 J | 26.3 J | 13.5 U | 583 | 18.7 J | 61.7 | 15.3 J |
| Antimony | 5.6 | 6 | 0.78 | ug/l | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.76 U | 0.62 U | 0.76 U | 0.62 U | 0.76 U |
| Arsenic | 10 | 10 | 0.052 | ug/l | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.71 J | 0.64 U | 0.71 U | 0.64 U | 0.71 U |
| Barium | 1000 | 2000 | 380 | ug/l | 118 | 99.5 | 105 | 190 | 103 | 268 | 225 | 265 | 156 | 305 |
| Beryllium | 4 | 4 | 2.5 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.29 U | 0.24 U | 0.29 U | 0.24 U | 0.29 U |
| Cadmium | 5 | -- | -- | ug/l | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.72 U | 0.71 U | 0.72 U | 0.71 U | 0.72 U |
| Calcium | -- | -- | -- | ug/l | 56800 | 44400 | 53100 | 33800 | 25400 | 48300 | 77000 | 49100 | 51000 | 45500 |
| Chromium | 100 | 100 | -- | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 3.9 J | 1.3 U | 1.8 J | 1.3 U | 1.5 U |
| Cobalt | -- | -- | 0.6 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.5 U | 1.3 U | 1.5 U | 1.3 U | 1.5 U |
| Copper | 1300 | 1300 | 80 | ug/l | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 2 J | 9.8 | 3.3 J | 1.6 J | 1.8 J |
| Cyanide, Total | **140** | 200 | 0.15 | ug/l | 2 U | 2 U | 2 U | 2 U | 2 U | 4 U | 2 U | 4 U | 2 U | 12.5 |
| Iron | -- | -- | 1400 | ug/l | 42.4 U | 42.4 U | 42.4 U | 63.1 J | 42.4 U | 109 J | 449 | 110 J | 134 | 49.1 U |
| Lead | 15 | 15 | 15 | ug/l | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.44 U | 1.7 | 0.44 U | 0.38 U | 0.44 U |
| Magnesium | -- | -- | -- | ug/l | 14000 | 13500 | 13900 | 9260 | 7090 | 16200 | 17200 | 16200 | 16500 | 15600 |
| Manganese | -- | -- | -- | ug/l | 5.5 J | 3.5 J | 3.6 J | 21.8 | 2.5 U | 5.7 J | 8.3 | 4.4 J | 9.3 | 3 U |
| Mercury | 0.05 | 2 | 0.063 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.14 U | 0.17 U | 0.14 U | 0.17 U | 0.14 U |
| Nickel | 100 | -- | -- | ug/l | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.6 U | 1.6 J | 1.6 U | 1.4 U | 1.6 U |
| Potassium | -- | -- | -- | ug/l | 519 | 367 | 483 | 439 | 314 | 797 | 600 | 910 | 641 | 818 |
| Selenium | 50 | 50 | 10 | ug/l | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.79 U | 0.73 U | 0.79 U | 0.73 U | 0.79 U |
| Silver | 100 | -- | 9.4 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.5 U | 1.3 U | 1.5 U | 1.3 U | 1.5 U |
| Sodium | -- | -- | -- | ug/l | 2940 | 3260 | 2630 | 1580 | 1100 | 5660 | 9290 | 5840 | 8710 | 5150 |
| Thallium | 0.24 | 2 | 0.02 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.31 U | 0.26 U | 0.31 U | 0.26 U | 0.31 U |
| Vanadium | -- | -- | 8.6 | ug/l | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 2.1 J | 1.9 U | 2.1 J | 1.9 U | 2.1 J |
| Zinc | 2000 | -- | 600 | ug/l | 7 U | 7 U | 7 U | 7 U | 7 U | 6.5 U | 18.2 | 6.5 U | 7 U | 6.5 U |

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**Table 3. Metals in Round 1 and Round 2 Surface Water**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Location | CFSWP-020 | CFSWP-021 | CFSWP-021 | CFSWP-022 | CFSWP-025 |
| | | | | Sample Date | 12/1/2016 | 6/6/2016 | 11/30/2016 | 6/6/2016 | 12/20/2016 |
| | | | | Sample Designation | CFSWP-020-SW | CFSWP-021-SW | CFSWP-021-SW | CFSWP-022-SW | CFSWP-025-SW |
| | | | | Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | |
| Aluminum | -- | -- | 2000 | ug/l | 615 | 95.3 | 5750 | 937 | 44.4 |
| Antimony | 5.6 | 6 | 0.78 | ug/l | 0.62 U | 0.76 U | 0.62 U | 0.76 U | 0.62 U |
| Arsenic | 10 | 10 | 0.052 | ug/l | 0.64 U | 1.2 J | 3.7 | 0.88 J | 0.64 U |
| Barium | 1000 | 2000 | 380 | ug/l | 424 | 98 | 219 | 125 | 122 |
| Beryllium | 4 | 4 | 2.5 | ug/l | 0.24 U | 0.29 U | 0.24 U | 0.29 U | 0.24 U |
| Cadmium | 5 | -- | -- | ug/l | 0.71 U | 0.72 U | 0.71 U | 0.72 U | 0.71 U |
| Calcium | -- | -- | -- | ug/l | 73300 | 50500 | 82100 | 43600 | 56700 |
| Chromium | 100 | 100 | -- | ug/l | 1.3 U | 1.5 U | 3.4 J | 1.5 U | 1.3 U |
| Cobalt | -- | -- | 0.6 | ug/l | 1.3 U | 1.5 U | 2 J | 1.5 U | 1.3 U |
| Copper | 1300 | 1300 | 80 | ug/l | 4 | 1.6 U | 5.7 | 2.6 J | 1.4 U |
| Cyanide, Total | **140** | 200 | 0.15 | ug/l | 16.4 | 4 U | 2 U | 4 U | 2 U |
| Iron | -- | -- | 1400 | ug/l | 451 | 79.5 J | 4760 | 302 | 42.4 U |
| Lead | 15 | 15 | 15 | ug/l | 0.91 J | 0.44 U | 4.5 | 0.44 U | 0.38 U |
| Magnesium | -- | -- | -- | ug/l | 16500 | 11700 | 19500 | 10900 | 13900 |
| Manganese | -- | -- | -- | ug/l | 10.1 | 4.1 J | 127 | 17.8 | 8.9 |
| Mercury | 0.05 | 2 | 0.063 | ug/l | 0.17 U | 0.14 U | 0.17 U | 0.14 U | 0.17 U |
| Nickel | 100 | -- | -- | ug/l | 1.4 U | 1.6 U | 3.9 J | 1.6 U | 1.4 U |
| Potassium | -- | -- | -- | ug/l | 894 | 578 | 1250 | 785 | 528 |
| Selenium | 50 | 50 | 10 | ug/l | 0.73 U | 0.79 U | 0.73 U | 0.79 U | 0.73 U |
| Silver | 100 | -- | 9.4 | ug/l | 1.3 U | 1.5 U | 1.3 U | 1.5 U | 1.3 U |
| Sodium | -- | -- | -- | ug/l | 4860 | 6150 | 31000 | 6900 | 2880 |
| Thallium | 0.24 | 2 | 0.02 | ug/l | 0.26 U | 0.31 U | 0.26 U | 0.31 U | 0.26 U |
| Vanadium | -- | -- | 8.6 | ug/l | 1.9 U | 2.1 J | 3.9 J | 2.2 J | 1.9 U |
| Zinc | 2000 | -- | 600 | ug/l | 7 U | 6.5 U | 19.2 | 6.5 U | 7 U |

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**Table 4. Polychlorinated Biphenyl in Round 1 and Round 2 Surface Water**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFSWP-018 | CFSWP-019 | CFSWP-020 |
|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 6/6/2016 | 6/6/2016 | 6/6/2016 |
| | | | | Sample Designation | CFSWP-018-SW | CFSWP-019-SW | CFSWP-020-SW |
| | | | | Round | Round 1 | Round 1 | Round 1 |
| | | | | Sample Type | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | |
| Aroclor 1016 | 0.00064 | -- | 0.14 | ug/l | 0.098 U | 0.098 U | 0.098 U |
| Aroclor 1221 | 0.00064 | -- | 0.0047 | ug/l | 0.098 U | 0.098 U | 0.098 U |
| Aroclor 1232 | 0.00064 | -- | 0.0047 | ug/l | 0.098 U | 0.098 U | 0.098 U |
| Aroclor 1242 | 0.00064 | -- | 0.0078 | ug/l | 0.098 U | 0.098 U | 0.098 U |
| Aroclor 1248 | 0.00064 | -- | 0.0078 | ug/l | 0.098 U | 0.098 U | 0.098 U |
| Aroclor 1254 | 0.00064 | -- | 0.0078 | ug/l | 0.084 U | 0.084 U | 0.084 U |
| Aroclor 1260 | 0.00064 | -- | 0.0078 | ug/l | 0.084 U | 0.084 U | 0.084 U |
| Aroclor 1268 | 0.00064 | -- | -- | ug/l | 0.084 U | 0.084 U | 0.084 U |
| Aroclor-1262 | -- | -- | -- | ug/l | 0.084 U | 0.084 U | 0.084 U |
| Polychlorinated biphenyls, Total | 0.00064 | -- | -- | ug/l | 0.098 U | 0.098 U | 0.098 U |

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**Table 5. Organochlorine Pesticides in Round 1 and Round 2 Surface Water**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFSWP-018 | CFSWP-019 | CFSWP-020 |
|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 6/6/2016 | 6/6/2016 | 6/6/2016 |
| | | | | Sample Designation | CFSWP-018-SW | CFSWP-019-SW | CFSWP-020-SW |
| | | | | Round | Round 1 | Round 1 | Round 1 |
| | | | | Sample Type | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | |
| 4,4'-DDD | 0.0031 | -- | 0.032 | ug/l | 0.005 U | 0.005 U | 0.005 U |
| 4,4'-DDE | 0.0022 | -- | 0.046 | ug/l | 0.004 U | 0.004 U | 0.004 U |
| 4,4'-DDT | 0.0022 | -- | 0.23 | ug/l | 0.004 U | 0.004 U | 0.004 U |
| Aldrin | 0.00049 | -- | 0.00092 | ug/l | 0.004 U | 0.004 U | 0.004 U |
| alpha-BHC | 0.026 | -- | 0.0072 | ug/l | 0.006 U | 0.006 U | 0.006 U |
| alpha-Chlordane | 0.008 | -- | -- | ug/l | 0.004 U | 0.004 U | 0.004 U |
| beta-BHC | 0.091 | -- | 0.025 | ug/l | 0.005 U | 0.005 U | 0.005 U |
| delta-BHC | -- | -- | -- | ug/l | 0.006 U | 0.006 U | 0.006 U |
| Dieldrin | 0.00052 | -- | 0.0018 | ug/l | 0.004 U | 0.004 U | 0.004 U |
| Endosulfan I | 62 | -- | -- | ug/l | 0.005 U | 0.005 U | 0.005 U |
| Endosulfan II | 62 | -- | -- | ug/l | 0.004 U | 0.004 U | 0.004 U |
| Endosulfan sulfate | 62 | -- | -- | ug/l | 0.005 U | 0.005 U | 0.005 U |
| Endrin | 0.059 | 2 | 0.23 | ug/l | 0.004 U | 0.004 U | 0.004 U |
| Endrin aldehyde | 0.29 | -- | -- | ug/l | 0.004 U | 0.004 U | 0.004 U |
| Endrin ketone | -- | -- | -- | ug/l | 0.004 U | 0.004 U | 0.004 U |
| gamma-BHC (Lindane) | 0.2 | 0.2 | 0.042 | ug/l | 0.004 U | 0.004 U | 0.004 U |
| gamma-Chlordane | -- | -- | -- | ug/l | 0.005 U | 0.005 U | 0.005 U |
| Heptachlor | 0.00079 | 0.4 | 0.0014 | ug/l | 0.004 U | 0.004 U | 0.004 U |
| Heptachlor epoxide | 0.00039 | 0.2 | 0.0014 | ug/l | 0.004 U | 0.004 U | 0.004 U |
| Methoxychlor | 40 | 40 | 3.7 | ug/l | 0.004 U | 0.004 U | 0.004 U |
| Toxaphene | 0.0028 | 3 | 0.071 | ug/l | 0.06 U | 0.06 U | 0.06 U |

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**Table 6. General Chemistry in Round 1 and Round 2 Surface Water**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFSWP-001 | CFSWP-001 | CFSWP-002 | CFSWP-002 | CFSWP-003 | CFSWP-003 | CFSWP-004 | CFSWP-004 | CFSWP-005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/16/2016 | 12/2/2016 | 9/16/2016 | 12/2/2016 | 9/9/2016 | 12/1/2016 | 9/9/2016 | 12/1/2016 | 9/9/2016 |
| | | | | Sample Designation | CFSWP-001-SW | CFSWP-001-SW | CFSWP-002-SW | CFSWP-002-SW | CFSWP-003-SW | CFSWP-003-SW | CFSWP-004-SW | CFSWP-004-SW | CFSWP-005-SW |
| | | | | Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Ammonia | -- | -- | -- | ug/l | 72 U | 72 UJ | 72 U | 72 UJ | 72 UJ | 72 UJ | 72 UJ | 72 UJ | 72 UJ |
| Chloride | -- | -- | -- | ug/l | 379 J | 1110 J- | 342 J | 1710 J- | 500 | 904 J- | 3060 | 2310 J- | 2910 |
| Fluoride | 4000 | 4000 | 80 | ug/l | 35.8 J- | 211 J- | 35.9 J- | 547 J- | 181 | 615 J- | 2560 | 1810 J- | 2570 |
| Hardness as calcium carbonate | -- | -- | -- | ug/l | 88000 | 90000 | 86000 | 92000 | 90000 | 108000 | 222000 | 216000 | 218000 |
| Nitrate Nitrite as N | 10000 | 10000 | -- | ug/l | 898 | 100 U | 100 U | 100 U | 122 | 283 | 1510 | 1340 | 1680 |
| Orthophosphate as P | -- | -- | -- | ug/l | 42 R | 48 U | 42 R | 48 U | 42 U | 48 UJ | 42 U | 48 UJ | 42 U |
| Sulfate | -- | -- | -- | ug/l | 3570 J- | 6620 J- | 3610 J- | 17400 J- | 4620 | 7120 J- | 18100 | 14400 J- | 17800 |

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**Table 6. General Chemistry in Round 1 and Round 2 Surface Water**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFSWP-005 | CFSWP-006 | CFSWP-006 | CFSWP-007 | CFSWP-007 | CFSWP-008 | CFSWP-008 | CFSWP-009 | CFSWP-010 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/1/2016 | 9/9/2016 | 12/1/2016 | 9/16/2016 | 12/2/2016 | 9/16/2016 | 12/2/2016 | 6/7/2016 | 6/7/2016 |
| | | | | Sample Designation | CFSWP-005-SW | CFSWP-006-SW | CFSWP-006-SW | CFSWP-007-SW | CFSWP-007-SW | CFSWP-008-SW | CFSWP-008-SW | CFSWP-009-SW | CFSWP-010-SW |
| | | | | Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 1 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Ammonia | -- | -- | -- | ug/l | 72 UJ | 72 UJ | 72 UJ | 72 U | 72 UJ | 72 U | 72 UJ | 48.9 J | 23 U |
| Chloride | -- | -- | -- | ug/l | 2910 J- | 352 | 360 J- | 348 J | 351 J- | 335 J | 363 J- | 1770 J+ | 1970 J+ |
| Fluoride | 4000 | 4000 | 80 | ug/l | 2100 J- | 37.3 J | 106 J- | 33.8 J- | 110 J- | 33.5 J- | 107 J- | 80.3 | 39.4 J |
| Hardness as calcium carbonate | -- | -- | -- | ug/l | 252000 | 90000 | 150000 | 86000 | 90000 | 84000 | 92000 | 170000 | 164000 |
| Nitrate Nitrite as N | 10000 | 10000 | -- | ug/l | 1620 | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U |
| Orthophosphate as P | -- | -- | -- | ug/l | 48 UJ | 42 U | 48 UJ | 42 R | 48 U | 42 R | 48 U | NA | NA |
| Sulfate | -- | -- | -- | ug/l | 18400 J- | 3680 | 3620 J- | 3530 J- | 3590 J- | 3490 J- | 4010 J- | 2790 | 1930 |

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**Table 6. General Chemistry in Round 1 and Round 2 Surface Water**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFSWP-011 | CFSWP-012 | CFSWP-013 | CFSWP-013 | CFSWP-013 | CFSWP-014 | CFSWP-014 | CFSWP-014 | CFSWP-015 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 6/7/2016 | 6/7/2016 | 6/7/2016 | 6/7/2016 | 11/30/2016 | 8/29/2016 | 11/30/2016 | 11/30/2016 | 8/29/2016 |
| | | | | Sample Designation | CFSWP-011-SW | CFSWP-012-SW | CFSWP-013-SW | CFSWP-DUP1-SW | CFSWP-013-SW | CFSWP-014-SW | CFSWP-014-SW | CFSWP-DUP3-SW | CFSWP-015-SW |
| | | | | Round | Round 1 | Round 1 | Round 1 | Round 1 | Round 2 | Round 1 | Round 2 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | FD | N | N | N | FD | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Ammonia | -- | -- | -- | ug/l | 23 U | 23 U | 23 U | 27.9 J | 72 U | 72 U | 72 U | 72 U | 72 U |
| Chloride | -- | -- | -- | ug/l | 1710 J+ | 1720 J+ | 1780 J+ | 1700 J+ | 577 J- | 2670 | 1580 J- | 1630 J- | 2600 |
| Fluoride | 4000 | 4000 | 80 | ug/l | 38.7 J | 39.5 J | 39.2 J | 38.3 J | 43 J- | 55.8 J | 117 J- | 123 J- | 62.4 J |
| Hardness as calcium carbonate | -- | -- | -- | ug/l | 156000 | 152000 | 156000 | 156000 | 170000 | 164000 | 196000 | 192000 | 178000 |
| Nitrate Nitrite as N | 10000 | 10000 | -- | ug/l | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U |
| Orthophosphate as P | -- | -- | -- | ug/l | NA | NA | NA | NA | 48 UJ | 42 UJ | 48 UJ | 48 UJ | 42 UJ |
| Sulfate | -- | -- | -- | ug/l | 1910 | 1900 | 1910 | 1960 | 3020 J- | 3320 | 2230 J- | 2240 J- | 2740 |

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**Table 6. General Chemistry in Round 1 and Round 2 Surface Water**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFSWP-015 | CFSWP-015 | CFSWP-015 | CFSWP-016 | CFSWP-016 | CFSWP-017 | CFSWP-017 | CFSWP-018 | CFSWP-018 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 8/29/2016 | 11/30/2016 | 12/20/2016 | 8/29/2016 | 11/30/2016 | 9/16/2016 | 12/2/2016 | 6/6/2016 | 12/1/2016 |
| | | | | Sample Designation | CFSWP-DUP2-SW | CFSWP-015-SW | CFSWP-015-SW | CFSWP-016-SW | CFSWP-016-SW | CFSWP-017-SW | CFSWP-017-SW | CFSWP-018-SW | CFSWP-018-SW |
| | | | | Round | Round 1 | Round 2 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | FD | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Ammonia | -- | -- | -- | ug/l | 72 U | 72 U | 72 U | 72 U | 72 U | 72 U | 72 UJ | 178 | 72 UJ |
| Chloride | -- | -- | -- | ug/l | 2610 | 1630 J- | 1370 | 2800 | 1630 J- | 864 J | 370 J- | 2160 J+ | 1910 J- |
| Fluoride | 4000 | 4000 | 80 | ug/l | 62.3 J | 119 J- | 112 J- | 58.8 J | 123 J- | 56.2 J- | 106 J- | 353 | 828 J- |
| Hardness as calcium carbonate | -- | -- | -- | ug/l | 170000 | 196000 | 208000 | 172000 | 200000 | 124000 | 92000 | 180000 | 260000 |
| Nitrate Nitrite as N | 10000 | 10000 | -- | ug/l | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U | 100 U |
| Orthophosphate as P | -- | -- | -- | ug/l | 42 UJ | 48 UJ | 48 UJ | 42 UJ | 48 UJ | 42 R | 48 U | NA | 48 UJ |
| Sulfate | -- | -- | -- | ug/l | 3100 | 2190 J- | 2480 J- | 2700 | 2270 J- | 4300 J- | 4810 J- | 3390 | 4660 J- |

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**Table 6. General Chemistry in Round 1 and Round 2 Surface Water**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFSWP-019 | CFSWP-019 | CFSWP-020 | CFSWP-020 | CFSWP-021 | CFSWP-021 | CFSWP-022 | CFSWP-025 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 6/6/2016 | 12/1/2016 | 6/6/2016 | 12/1/2016 | 6/6/2016 | 11/30/2016 | 6/6/2016 | 12/20/2016 |
| | | | | Sample Designation | CFSWP-019-SW | CFSWP-019-SW | CFSWP-020-SW | CFSWP-020-SW | CFSWP-021-SW | CFSWP-021-SW | CFSWP-022-SW | CFSWP-025-SW |
| | | | | Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | |
| Ammonia | -- | -- | -- | ug/l | 53 J | 72 UJ | 23 U | 72 UJ | 28.4 J | 72 U | 23 U | 72 U |
| Chloride | -- | -- | -- | ug/l | 1930 J+ | 1860 J- | 2240 J+ | 1590 J- | 1590 J+ | 2250 J- | 1640 J+ | 1400 |
| Fluoride | 4000 | 4000 | 80 | ug/l | 379 | 785 J- | 250 | 265 J- | 166 | 189 J- | 177 | 115 J- |
| Hardness as calcium carbonate | -- | -- | -- | ug/l | 180000 | 208000 | 176000 | 256000 | 168000 | 304000 | 172000 | 206000 |
| Nitrate Nitrite as N | 10000 | 10000 | -- | ug/l | 100 U | 100 U | 117 | 186 | 100 U | 100 U | 100 U | 100 U |
| Orthophosphate as P | -- | -- | -- | ug/l | NA | 48 UJ | NA | 48 UJ | NA` | 48 UJ | NA | 48 UJ |
| Sulfate | -- | -- | -- | ug/l | 3270 | 5110 J- | 3590 | 3250 J- | 7440 | 73100 J- | 6540 | 2510 J- |

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**Table 7. Volatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-002 | CFMW-003 | CFMW-003 | CFMW-007 | CFMW-007 | CFMW-008a | CFMW-008a | CFMW-010 | CFMW-010 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/12/2016 | 9/14/2016 | 12/9/2016 | 9/21/2016 | 12/12/2016 | 9/15/2016 | 12/16/2016 | 9/12/2016 | 12/15/2016 |
| | | | | Sample Designation | CFMW-002-GW | CFMW-003-GW | CFMW-003-GW | CFMW-007-GW | CFMW-007-GW | CFMW-008a-GW | CFMW-008a-GW | CFMW-010-GW | CFMW-010-GW |
| | | | | Sample Round | Round 1 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| 1,1,1-Trichloroethane | 200 | 200 | 800 | ug/l | 0.28 U | 3.8 | 3.2 | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| 1,1,2,2-Tetrachloroethane | 2 | -- | -- | ug/l | 0.19 UJ | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 UJ | 0.19 U |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | -- | -- | 5500 | ug/l | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| 1,1,2-Trichloroethane | 3 | -- | -- | ug/l | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U |
| 1,1-Dichloroethane | 4 | -- | 2.8 | ug/l | 0.24 U | 0.71 J | 0.95 J | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| 1,1-Dichloroethene | 7 | -- | -- | ug/l | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| 1,2,3-Trichlorobenzene | 0.7 | -- | 0.7 | ug/l | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U |
| 1,2,4-Trichlorobenzene | 70 | -- | 0.4 | ug/l | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U |
| 1,2-Dibromo-3-Chloropropane | 0.2 | 0.2 | 0.00033 | ug/l | 0.23 U | 0.23 U | 0.23 U | 0.23 UJ | 0.23 U | 0.23 U | 0.23 U | 0.23 U | 0.23 UJ |
| 1,2-Dichlorobenzene | 600 | 600 | 30 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| 1,2-Dichloroethane | 4 | 5 | 0.17 | ug/l | 0.25 U | 0.25 U | 0.25 U | 0.25 UJ | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| 1,2-Dichloropropane | 5 | 5 | 0.44 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| 1,3-Dichlorobenzene | 600 | -- | -- | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| 1,4-Dichlorobenzene | 75 | 75 | 0.48 | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| 2-Butanone (MEK) | -- | -- | 560 | ug/l | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U |
| 2-Hexanone | -- | -- | 3.8 | ug/l | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| 4-Methyl-2-pentanone (MIBK) | -- | -- | 630 | ug/l | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U |
| Acetone | -- | -- | 1400 | ug/l | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 8.3 | 3.2 J | 1.1 U | 1.1 UJ |
| Benzene | 5 | 5 | 0.46 | ug/l | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.15 J | 0.09 U | 0.09 U |
| Bromoform | 80 | 80 | 3.3 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 UJ | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| Bromomethane | 10 | -- | 0.75 | ug/l | 0.18 UJ | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 UJ | 0.18 U |
| Carbon disulfide | -- | -- | 81 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Carbon tetrachloride | 3 | 5 | 0.46 | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| Chlorobenzene | 100 | 100 | 7.8 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Chlorobromomethane | -- | -- | 8.3 | ug/l | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Chlorodibromomethane | 4 | 80 | 0.87 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 UJ | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Chloroethane | -- | -- | 2100 | ug/l | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U |
| Chloroform | 70 | 80 | 0.22 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Chloromethane | 30 | -- | 19 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| cis-1,2-Dichloroethene | 70 | -- | -- | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| cis-1,3-Dichloropropene | 4 | -- | -- | ug/l | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U |
| Cyclohexane | -- | -- | 1300 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Dichlorobromomethane | 10 | 80 | 0.13 | ug/l | 0.15 U | 0.15 U | 0.15 U | 0.15 UJ | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U |
| Dichlorodifluoromethane | 1000 | -- | 20 | ug/l | 0.14 UJ | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 UJ | 0.14 U |
| Ethylbenzene | 700 | 700 | 1.5 | ug/l | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Ethylene Dibromide | 0.004 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Isopropylbenzene | -- | -- | -- | ug/l | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U |
| Methyl acetate | -- | -- | 2000 | ug/l | 0.58 U | 0.58 U | 0.58 U | 0.58 U | 0.58 U | 0.58 U | 0.58 U | 0.58 U | 0.58 UJ |
| Methyl tert-butyl ether | 30 | -- | 14 | ug/l | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U |

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**Table 7. Volatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | Sample Location | | CFMW-002 | CFMW-003 | CFMW-003 | CFMW-007 | CFMW-007 | CFMW-008a | CFMW-008a | CFMW-010 | CFMW-010 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sample Date | | 9/12/2016 | 9/14/2016 | 12/9/2016 | 9/21/2016 | 12/12/2016 | 9/15/2016 | 12/16/2016 | 9/12/2016 | 12/15/2016 |
| | | | Sample Designation | | CFMW-002-GW | CFMW-003-GW | CFMW-003-GW | CFMW-007-GW | CFMW-007-GW | CFMW-008a-GW | CFMW-008a-GW | CFMW-010-GW | CFMW-010-GW |
| | | | Sample Round | | Round 1 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| Methylcyclohexane | -- | -- | -- | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Methylene Chloride | 5 | 5 | 11 | ug/l | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| m-Xylene & p-Xylene | -- | -- | -- | ug/l | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| o-Xylene | 10000 | -- | 19 | ug/l | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U |
| Styrene | 100 | 100 | 120 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Tetrachloroethene | 5 | -- | -- | ug/l | 0.12 U | 0.38 J | 0.26 J | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U |
| Toluene | 1000 | 1000 | 110 | ug/l | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.42 J | 0.25 U | 0.25 U |
| trans-1,2-Dichloroethene | 100 | -- | -- | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| trans-1,3-Dichloropropene | 2 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Trichloroethene | 5 | -- | -- | ug/l | 0.22 U | 0.76 J | 0.62 J | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Trichlorofluoromethane | 10000 | -- | 520 | ug/l | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 UJ |
| Vinyl chloride | 0.2 | 2 | 0.019 | ug/l | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U |

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**Table 7. Volatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-011 | CFMW-011 | CFMW-012 | CFMW-012 | CFMW-014 | CFMW-014 | CFMW-015 | CFMW-015 | CFMW-019 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/13/2016 | 12/8/2016 | 9/12/2016 | 12/14/2016 | 9/12/2016 | 12/15/2016 | 9/12/2016 | 12/15/2016 | 9/12/2016 |
| | | | | Sample Designation | CFMW-011-GW | CFMW-011-GW | CFMW-012-GW | CFMW-012-GW | CFMW-014-GW | CFMW-014-GW | CFMW-015-GW | CFMW-015-GW | CFMW-019-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| 1,1,1-Trichloroethane | 200 | 200 | 800 | ug/l | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| 1,1,2,2-Tetrachloroethane | 2 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 UJ | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 UJ |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | -- | -- | 5500 | ug/l | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| 1,1,2-Trichloroethane | 3 | -- | -- | ug/l | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U |
| 1,1-Dichloroethane | 4 | -- | 2.8 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| 1,1-Dichloroethene | 7 | -- | -- | ug/l | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| 1,2,3-Trichlorobenzene | 0.7 | -- | 0.7 | ug/l | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U |
| 1,2,4-Trichlorobenzene | 70 | -- | 0.4 | ug/l | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U |
| 1,2-Dibromo-3-Chloropropane | 0.2 | 0.2 | 0.00033 | ug/l | 0.23 U | 0.23 U | 0.23 U | 0.23 UJ | 0.23 U | 0.23 UJ | 0.23 U | 0.23 UJ | 0.23 U |
| 1,2-Dichlorobenzene | 600 | 600 | 30 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| 1,2-Dichloroethane | 4 | 5 | 0.17 | ug/l | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| 1,2-Dichloropropane | 5 | 5 | 0.44 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| 1,3-Dichlorobenzene | 600 | -- | -- | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| 1,4-Dichlorobenzene | 75 | 75 | 0.48 | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| 2-Butanone (MEK) | -- | -- | 560 | ug/l | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U |
| 2-Hexanone | -- | -- | 3.8 | ug/l | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| 4-Methyl-2-pentanone (MIBK) | -- | -- | 630 | ug/l | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U |
| Acetone | -- | -- | 1400 | ug/l | 1.1 U | 1.1 U | 1.1 U | 1.1 UJ | 1.1 U | 1.1 UJ | 1.1 U | 1.1 UJ | 1.1 U |
| Benzene | 5 | 5 | 0.46 | ug/l | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U |
| Bromoform | 80 | 80 | 3.3 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| Bromomethane | 10 | -- | 0.75 | ug/l | 0.18 UJ | 0.18 U | 0.18 UJ | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 UJ |
| Carbon disulfide | -- | -- | 81 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Carbon tetrachloride | 3 | 5 | 0.46 | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| Chlorobenzene | 100 | 100 | 7.8 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Chlorobromomethane | -- | -- | 8.3 | ug/l | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Chlorodibromomethane | 4 | 80 | 0.87 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Chloroethane | -- | -- | 2100 | ug/l | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U |
| Chloroform | 70 | 80 | 0.22 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Chloromethane | 30 | -- | 19 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| cis-1,2-Dichloroethene | 70 | -- | -- | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| cis-1,3-Dichloropropene | 4 | -- | -- | ug/l | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U |
| Cyclohexane | -- | -- | 1300 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Dichlorobromomethane | 10 | 80 | 0.13 | ug/l | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U |
| Dichlorodifluoromethane | 1000 | -- | 20 | ug/l | 0.14 UJ | 0.14 U | 0.14 UJ | 0.14 U | 0.14 UJ | 0.14 U | 0.14 UJ | 0.14 U | 0.14 UJ |
| Ethylbenzene | 700 | 700 | 1.5 | ug/l | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Ethylene Dibromide | 0.004 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Isopropylbenzene | -- | -- | -- | ug/l | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U |
| Methyl acetate | -- | -- | 2000 | ug/l | 0.58 U | 0.58 U | 0.58 U | 0.58 UJ | 0.58 U | 0.58 UJ | 0.58 U | 0.58 UJ | 0.58 U |
| Methyl tert-butyl ether | 30 | -- | 14 | ug/l | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U |

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**Table 7. Volatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | Sample Location | | CFMW-011 | CFMW-011 | CFMW-012 | CFMW-012 | CFMW-014 | CFMW-014 | CFMW-015 | CFMW-015 | CFMW-019 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sample Date | | 9/13/2016 | 12/8/2016 | 9/12/2016 | 12/14/2016 | 9/12/2016 | 12/15/2016 | 9/12/2016 | 12/15/2016 | 9/12/2016 |
| | | | Sample Designation | | CFMW-011-GW | CFMW-011-GW | CFMW-012-GW | CFMW-012-GW | CFMW-014-GW | CFMW-014-GW | CFMW-015-GW | CFMW-015-GW | CFMW-019-GW |
| | | | Sample Round | | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| Methylcyclohexane | -- | -- | -- | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Methylene Chloride | 5 | 5 | 11 | ug/l | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 1.8 | 0.21 U |
| m-Xylene & p-Xylene | -- | -- | -- | ug/l | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| o-Xylene | 10000 | -- | 19 | ug/l | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U |
| Styrene | 100 | 100 | 120 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Tetrachloroethene | 5 | -- | -- | ug/l | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.56 J+ |
| Toluene | 1000 | 1000 | 110 | ug/l | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| trans-1,2-Dichloroethene | 100 | -- | -- | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| trans-1,3-Dichloropropene | 2 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Trichloroethene | 5 | -- | -- | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Trichlorofluoromethane | 10000 | -- | 520 | ug/l | 0.15 U | 0.15 U | 0.15 U | 0.15 UJ | 0.15 U | 0.15 UJ | 0.15 U | 0.15 UJ | 0.15 U |
| Vinyl chloride | 0.2 | 2 | 0.019 | ug/l | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U |

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**Table 7. Volatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-019 | CFMW-020 | CFMW-020 | CFMW-021 | CFMW-021 | CFMW-022 | CFMW-022 | CFMW-023 | CFMW-023 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/15/2016 | 9/20/2016 | 12/13/2016 | 9/12/2016 | 12/14/2016 | 9/13/2016 | 12/9/2016 | 9/21/2016 | 12/19/2016 |
| | | | | Sample Designation | CFMW-019-GW | CFMW-020-GW | CFMW-020-GW | CFMW-021-GW | CFMW-021-GW | CFMW-022-GW | CFMW-022-GW | CFMW-023-GW | CFMW-023-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| 1,1,1-Trichloroethane | 200 | 200 | 800 | ug/l | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| 1,1,2,2-Tetrachloroethane | 2 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | -- | -- | 5500 | ug/l | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 UJ |
| 1,1,2-Trichloroethane | 3 | -- | -- | ug/l | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U |
| 1,1-Dichloroethane | 4 | -- | 2.8 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| 1,1-Dichloroethene | 7 | -- | -- | ug/l | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| 1,2,3-Trichlorobenzene | 0.7 | -- | 0.7 | ug/l | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U |
| 1,2,4-Trichlorobenzene | 70 | -- | 0.4 | ug/l | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U |
| 1,2-Dibromo-3-Chloropropane | 0.2 | 0.2 | 0.00033 | ug/l | 0.23 UJ | 0.23 U | 0.23 U | 0.23 U | 0.23 UJ | 0.23 U | 0.23 U | 0.23 UJ | 0.23 U |
| 1,2-Dichlorobenzene | 600 | 600 | 30 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| 1,2-Dichloroethane | 4 | 5 | 0.17 | ug/l | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 UJ | 0.25 U |
| 1,2-Dichloropropane | 5 | 5 | 0.44 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| 1,3-Dichlorobenzene | 600 | -- | -- | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| 1,4-Dichlorobenzene | 75 | 75 | 0.48 | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| 2-Butanone (MEK) | -- | -- | 560 | ug/l | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U |
| 2-Hexanone | -- | -- | 3.8 | ug/l | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| 4-Methyl-2-pentanone (MIBK) | -- | -- | 630 | ug/l | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U |
| Acetone | -- | -- | 1400 | ug/l | 1.1 UJ | 1.1 U | 1.1 U | 1.1 U | 1.1 UJ | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| Benzene | 5 | 5 | 0.46 | ug/l | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U |
| Bromoform | 80 | 80 | 3.3 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 UJ | 0.18 U |
| Bromomethane | 10 | -- | 0.75 | ug/l | 0.18 U | 0.18 UJ | 0.18 U | 0.18 U | 0.18 U | 0.18 UJ | 0.18 U | 0.18 U | 0.18 UJ |
| Carbon disulfide | -- | -- | 81 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Carbon tetrachloride | 3 | 5 | 0.46 | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| Chlorobenzene | 100 | 100 | 7.8 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Chlorobromomethane | -- | -- | 8.3 | ug/l | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Chlorodibromomethane | 4 | 80 | 0.87 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 UJ | 0.22 U |
| Chloroethane | -- | -- | 2100 | ug/l | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U |
| Chloroform | 70 | 80 | 0.22 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Chloromethane | 30 | -- | 19 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| cis-1,2-Dichloroethene | 70 | -- | -- | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| cis-1,3-Dichloropropene | 4 | -- | -- | ug/l | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U |
| Cyclohexane | -- | -- | 1300 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Dichlorobromomethane | 10 | 80 | 0.13 | ug/l | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 UJ | 0.15 U |
| Dichlorodifluoromethane | 1000 | -- | 20 | ug/l | 0.14 U | 0.14 U | 0.14 U | 0.14 UJ | 0.14 U | 0.14 UJ | 0.14 U | 0.14 U | 0.14 UJ |
| Ethylbenzene | 700 | 700 | 1.5 | ug/l | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Ethylene Dibromide | 0.004 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Isopropylbenzene | -- | -- | -- | ug/l | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U |
| Methyl acetate | -- | -- | 2000 | ug/l | 0.58 UJ | 0.58 U | 0.58 U | 0.58 U | 0.58 UJ | 0.58 U | 0.58 U | 0.58 U | 0.58 U |
| Methyl tert-butyl ether | 30 | -- | 14 | ug/l | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U |

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**Table 7. Volatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-019 | CFMW-020 | CFMW-020 | CFMW-021 | CFMW-021 | CFMW-022 | CFMW-022 | CFMW-023 | CFMW-023 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/15/2016 | 9/20/2016 | 12/13/2016 | 9/12/2016 | 12/14/2016 | 9/13/2016 | 12/9/2016 | 9/21/2016 | 12/19/2016 |
| | | | | Sample Designation | CFMW-019-GW | CFMW-020-GW | CFMW-020-GW | CFMW-021-GW | CFMW-021-GW | CFMW-022-GW | CFMW-022-GW | CFMW-023-GW | CFMW-023-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| Methylcyclohexane | -- | -- | -- | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 UJ |
| Methylene Chloride | 5 | 5 | 11 | ug/l | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| m-Xylene & p-Xylene | -- | -- | -- | ug/l | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| o-Xylene | 10000 | -- | 19 | ug/l | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U |
| Styrene | 100 | 100 | 120 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Tetrachloroethene | 5 | -- | -- | ug/l | 0.29 J | 0.12 U | 0.12 U | 0.18 J | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U |
| Toluene | 1000 | 1000 | 110 | ug/l | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| trans-1,2-Dichloroethene | 100 | -- | -- | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| trans-1,3-Dichloropropene | 2 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Trichloroethene | 5 | -- | -- | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Trichlorofluoromethane | 10000 | -- | 520 | ug/l | 0.15 UJ | 0.15 U | 0.15 U | 0.15 U | 0.15 UJ | 0.15 U | 0.15 U | 0.15 U | 0.15 U |
| Vinyl chloride | 0.2 | 2 | 0.019 | ug/l | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U |

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**Table 7. Volatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-025b | CFMW-025b | CFMW-026 | CFMW-026 | CFMW-027 | CFMW-027 | CFMW-028 | CFMW-028 | CFMW-029 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/13/2016 | 12/7/2016 | 9/13/2016 | 12/5/2016 | 9/13/2016 | 12/14/2016 | 9/13/2016 | 12/5/2016 | 9/13/2016 |
| | | | | Sample Designation | CFMW-025b-GW | CFMW-025b-GW | CFMW-026-GW | CFMW-026-GW | CFMW-027-GW | CFMW-027-GW | CFMW-028-GW | CFMW-028-GW | CFMW-029-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| 1,1,1-Trichloroethane | 200 | 200 | 800 | ug/l | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| 1,1,2,2-Tetrachloroethane | 2 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | -- | -- | 5500 | ug/l | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| 1,1,2-Trichloroethane | 3 | -- | -- | ug/l | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U |
| 1,1-Dichloroethane | 4 | -- | 2.8 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| 1,1-Dichloroethene | 7 | -- | -- | ug/l | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| 1,2,3-Trichlorobenzene | 0.7 | -- | 0.7 | ug/l | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U |
| 1,2,4-Trichlorobenzene | 70 | -- | 0.4 | ug/l | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U |
| 1,2-Dibromo-3-Chloropropane | 0.2 | 0.2 | 0.00033 | ug/l | 0.23 U | 0.23 U | 0.23 U | 0.23 U | 0.23 U | 0.23 UJ | 0.23 U | 0.23 U | 0.23 U |
| 1,2-Dichlorobenzene | 600 | 600 | 30 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| 1,2-Dichloroethane | 4 | 5 | 0.17 | ug/l | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| 1,2-Dichloropropane | 5 | 5 | 0.44 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| 1,3-Dichlorobenzene | 600 | -- | -- | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| 1,4-Dichlorobenzene | 75 | 75 | 0.48 | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| 2-Butanone (MEK) | -- | -- | 560 | ug/l | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U |
| 2-Hexanone | -- | -- | 3.8 | ug/l | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| 4-Methyl-2-pentanone (MIBK) | -- | -- | 630 | ug/l | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U |
| Acetone | -- | -- | 1400 | ug/l | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 UJ | 1.1 U | 1.1 U | 1.1 U |
| Benzene | 5 | 5 | 0.46 | ug/l | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U |
| Bromoform | 80 | 80 | 3.3 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| Bromomethane | 10 | -- | 0.75 | ug/l | 0.18 UJ | 0.18 U | 0.18 UJ | 0.18 U | 0.18 UJ | 0.18 U | 0.18 UJ | 0.18 U | 0.18 UJ |
| Carbon disulfide | -- | -- | 81 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Carbon tetrachloride | 3 | 5 | 0.46 | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| Chlorobenzene | 100 | 100 | 7.8 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Chlorobromomethane | -- | -- | 8.3 | ug/l | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Chlorodibromomethane | 4 | 80 | 0.87 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Chloroethane | -- | -- | 2100 | ug/l | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U |
| Chloroform | 70 | 80 | 0.22 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Chloromethane | 30 | -- | 19 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| cis-1,2-Dichloroethene | 70 | -- | -- | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| cis-1,3-Dichloropropene | 4 | -- | -- | ug/l | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U |
| Cyclohexane | -- | -- | 1300 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Dichlorobromomethane | 10 | 80 | 0.13 | ug/l | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U |
| Dichlorodifluoromethane | 1000 | -- | 20 | ug/l | 0.14 UJ | 0.14 U | 0.14 UJ | 0.14 U | 0.14 UJ | 0.14 U | 0.14 UJ | 0.14 U | 0.14 UJ |
| Ethylbenzene | 700 | 700 | 1.5 | ug/l | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Ethylene Dibromide | 0.004 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Isopropylbenzene | -- | -- | -- | ug/l | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U |
| Methyl acetate | -- | -- | 2000 | ug/l | 0.58 U | 0.58 U | 0.58 U | 0.58 U | 0.58 U | 0.58 UJ | 0.58 U | 0.58 U | 0.58 U |
| Methyl tert-butyl ether | 30 | -- | 14 | ug/l | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U |

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**Table 7. Volatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-025b | CFMW-025b | CFMW-026 | CFMW-026 | CFMW-027 | CFMW-027 | CFMW-028 | CFMW-028 | CFMW-029 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/13/2016 | 12/7/2016 | 9/13/2016 | 12/5/2016 | 9/13/2016 | 12/14/2016 | 9/13/2016 | 12/5/2016 | 9/13/2016 |
| | | | | Sample Designation | CFMW-025b-GW | CFMW-025b-GW | CFMW-026-GW | CFMW-026-GW | CFMW-027-GW | CFMW-027-GW | CFMW-028-GW | CFMW-028-GW | CFMW-029-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| Methylcyclohexane | -- | -- | -- | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Methylene Chloride | 5 | 5 | 11 | ug/l | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| m-Xylene & p-Xylene | -- | -- | -- | ug/l | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| o-Xylene | 10000 | -- | 19 | ug/l | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U |
| Styrene | 100 | 100 | 120 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Tetrachloroethene | 5 | -- | -- | ug/l | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.21 J | 0.12 U | 0.12 U | 0.12 U | 0.12 U |
| Toluene | 1000 | 1000 | 110 | ug/l | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| trans-1,2-Dichloroethene | 100 | -- | -- | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| trans-1,3-Dichloropropene | 2 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Trichloroethene | 5 | -- | -- | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Trichlorofluoromethane | 10000 | -- | 520 | ug/l | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 UJ | 0.15 U | 0.15 U | 0.15 U |
| Vinyl chloride | 0.2 | 2 | 0.019 | ug/l | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U |

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**Table 7. Volatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-029 | CFMW-029 | CFMW-031 | CFMW-031 | CFMW-032 | CFMW-032 | CFMW-033 | CFMW-033 | CFMW-034 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/13/2016 | 12/14/2016 | 9/15/2016 | 12/9/2016 | 9/15/2016 | 12/13/2016 | 9/15/2016 | 12/6/2016 | 9/14/2016 |
| | | | | Sample Designation | CFMW-DUP1-GW | CFMW-029-GW | CFMW-031-GW | CFMW-031-GW | CFMW-032-GW | CFMW-032-GW | CFMW-033-GW | CFMW-033-GW | CFMW-034-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | FD | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| 1,1,1-Trichloroethane | 200 | 200 | 800 | ug/l | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| 1,1,2,2-Tetrachloroethane | 2 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | -- | -- | 5500 | ug/l | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| 1,1,2-Trichloroethane | 3 | -- | -- | ug/l | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U |
| 1,1-Dichloroethane | 4 | -- | 2.8 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| 1,1-Dichloroethene | 7 | -- | -- | ug/l | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| 1,2,3-Trichlorobenzene | 0.7 | -- | 0.7 | ug/l | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U |
| 1,2,4-Trichlorobenzene | 70 | -- | 0.4 | ug/l | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U |
| 1,2-Dibromo-3-Chloropropane | 0.2 | 0.2 | 0.00033 | ug/l | 0.23 U | 0.23 UJ | 0.23 U | 0.23 U | 0.23 U | 0.23 U | 0.23 U | 0.23 U | 0.23 U |
| 1,2-Dichlorobenzene | 600 | 600 | 30 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| 1,2-Dichloroethane | 4 | 5 | 0.17 | ug/l | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| 1,2-Dichloropropane | 5 | 5 | 0.44 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| 1,3-Dichlorobenzene | 600 | -- | -- | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| 1,4-Dichlorobenzene | 75 | 75 | 0.48 | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| 2-Butanone (MEK) | -- | -- | 560 | ug/l | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U |
| 2-Hexanone | -- | -- | 3.8 | ug/l | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| 4-Methyl-2-pentanone (MIBK) | -- | -- | 630 | ug/l | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U |
| Acetone | -- | -- | 1400 | ug/l | 1.1 U | 1.1 UJ | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| Benzene | 5 | 5 | 0.46 | ug/l | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U |
| Bromoform | 80 | 80 | 3.3 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| Bromomethane | 10 | -- | 0.75 | ug/l | 0.18 UJ | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| Carbon disulfide | -- | -- | 81 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Carbon tetrachloride | 3 | 5 | 0.46 | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| Chlorobenzene | 100 | 100 | 7.8 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Chlorobromomethane | -- | -- | 8.3 | ug/l | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Chlorodibromomethane | 4 | 80 | 0.87 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Chloroethane | -- | -- | 2100 | ug/l | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U |
| Chloroform | 70 | 80 | 0.22 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Chloromethane | 30 | -- | 19 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| cis-1,2-Dichloroethene | 70 | -- | -- | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| cis-1,3-Dichloropropene | 4 | -- | -- | ug/l | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U |
| Cyclohexane | -- | -- | 1300 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Dichlorobromomethane | 10 | 80 | 0.13 | ug/l | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U |
| Dichlorodifluoromethane | 1000 | -- | 20 | ug/l | 0.14 UJ | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U |
| Ethylbenzene | 700 | 700 | 1.5 | ug/l | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Ethylene Dibromide | 0.004 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Isopropylbenzene | -- | -- | -- | ug/l | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U |
| Methyl acetate | -- | -- | 2000 | ug/l | 0.58 U | 0.58 UJ | 0.58 U | 0.58 U | 0.58 U | 0.58 U | 0.58 U | 0.58 U | 0.58 U |
| Methyl tert-butyl ether | 30 | -- | 14 | ug/l | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U |

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**Table 7. Volatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Location | CFMW-029 | CFMW-029 | CFMW-031 | CFMW-031 | CFMW-032 | CFMW-032 | CFMW-033 | CFMW-033 | CFMW-034 |
| | | | | Sample Date | 9/13/2016 | 12/14/2016 | 9/15/2016 | 12/9/2016 | 9/15/2016 | 12/13/2016 | 9/15/2016 | 12/6/2016 | 9/14/2016 |
| | | | | Sample Designation | CFMW-DUP1-GW | CFMW-029-GW | CFMW-031-GW | CFMW-031-GW | CFMW-032-GW | CFMW-032-GW | CFMW-033-GW | CFMW-033-GW | CFMW-034-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| Methylcyclohexane | -- | -- | -- | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Methylene Chloride | 5 | 5 | 11 | ug/l | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| m-Xylene & p-Xylene | -- | -- | -- | ug/l | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| o-Xylene | 10000 | -- | 19 | ug/l | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U |
| Styrene | 100 | 100 | 120 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Tetrachloroethene | 5 | -- | -- | ug/l | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.16 J | 0.12 U | 0.12 U |
| Toluene | 1000 | 1000 | 110 | ug/l | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| trans-1,2-Dichloroethene | 100 | -- | -- | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| trans-1,3-Dichloropropene | 2 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Trichloroethene | 5 | -- | -- | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Trichlorofluoromethane | 10000 | -- | 520 | ug/l | 0.15 U | 0.15 UJ | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U |
| Vinyl chloride | 0.2 | 2 | 0.019 | ug/l | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U |

Preliminary – Under EPA and MDEQ Review

**Table 7. Volatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-034 | CFMW-035 | CFMW-035 | CFMW-037 | CFMW-037 | CFMW-038 | CFMW-038 | CFMW-040 | CFMW-040 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/13/2016 | 9/14/2016 | 12/13/2016 | 9/16/2016 | 12/8/2016 | 9/14/2016 | 12/9/2016 | 9/14/2016 | 12/13/2016 |
| | | | | Sample Designation | CFMW-034-GW | CFMW-035-GW | CFMW-035-GW | CFMW-037-GW | CFMW-037-GW | CFMW-038-GW | CFMW-038-GW | CFMW-040-GW | CFMW-040-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| 1,1,1-Trichloroethane | 200 | 200 | 800 | ug/l | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| 1,1,2,2-Tetrachloroethane | 2 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | -- | -- | 5500 | ug/l | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| 1,1,2-Trichloroethane | 3 | -- | -- | ug/l | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U |
| 1,1-Dichloroethane | 4 | -- | 2.8 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| 1,1-Dichloroethene | 7 | -- | -- | ug/l | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| 1,2,3-Trichlorobenzene | 0.7 | -- | 0.7 | ug/l | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U |
| 1,2,4-Trichlorobenzene | 70 | -- | 0.4 | ug/l | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U |
| 1,2-Dibromo-3-Chloropropane | 0.2 | 0.2 | 0.00033 | ug/l | 0.23 U | 0.23 U | 0.23 U | 0.23 U | 0.23 U | 0.23 U | 0.23 U | 0.23 U | 0.23 U |
| 1,2-Dichlorobenzene | 600 | 600 | 30 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| 1,2-Dichloroethane | 4 | 5 | 0.17 | ug/l | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| 1,2-Dichloropropane | 5 | 5 | 0.44 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| 1,3-Dichlorobenzene | 600 | -- | -- | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| 1,4-Dichlorobenzene | 75 | 75 | 0.48 | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| 2-Butanone (MEK) | -- | -- | 560 | ug/l | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U |
| 2-Hexanone | -- | -- | 3.8 | ug/l | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| 4-Methyl-2-pentanone (MIBK) | -- | -- | 630 | ug/l | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U |
| Acetone | -- | -- | 1400 | ug/l | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| Benzene | 5 | 5 | 0.46 | ug/l | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U |
| Bromoform | 80 | 80 | 3.3 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| Bromomethane | 10 | -- | 0.75 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| Carbon disulfide | -- | -- | 81 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Carbon tetrachloride | 3 | 5 | 0.46 | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| Chlorobenzene | 100 | 100 | 7.8 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Chlorobromomethane | -- | -- | 8.3 | ug/l | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Chlorodibromomethane | 4 | 80 | 0.87 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Chloroethane | -- | -- | 2100 | ug/l | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U |
| Chloroform | 70 | 80 | 0.22 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Chloromethane | 30 | -- | 19 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| cis-1,2-Dichloroethene | 70 | -- | -- | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| cis-1,3-Dichloropropene | 4 | -- | -- | ug/l | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U |
| Cyclohexane | -- | -- | 1300 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Dichlorobromomethane | 10 | 80 | 0.13 | ug/l | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U |
| Dichlorodifluoromethane | 1000 | -- | 20 | ug/l | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U |
| Ethylbenzene | 700 | 700 | 1.5 | ug/l | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Ethylene Dibromide | 0.004 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Isopropylbenzene | -- | -- | -- | ug/l | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U |
| Methyl acetate | -- | -- | 2000 | ug/l | 0.58 U | 0.58 U | 0.58 U | 0.58 U | 0.58 U | 0.58 U | 0.58 U | 0.58 U | 0.58 U |
| Methyl tert-butyl ether | 30 | -- | 14 | ug/l | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U |

Preliminary - Under EPA/MDEQ Review

**Table 7. Volatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | Sample Location | | CFMW-034 | CFMW-035 | CFMW-035 | CFMW-037 | CFMW-037 | CFMW-038 | CFMW-038 | CFMW-040 | CFMW-040 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sample Date | | 12/13/2016 | 9/14/2016 | 12/13/2016 | 9/16/2016 | 12/8/2016 | 9/14/2016 | 12/9/2016 | 9/14/2016 | 12/13/2016 |
| | | | Sample Designation | | CFMW-034-GW | CFMW-035-GW | CFMW-035-GW | CFMW-037-GW | CFMW-037-GW | CFMW-038-GW | CFMW-038-GW | CFMW-040-GW | CFMW-040-GW |
| | | | Sample Round | | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| Methylcyclohexane | -- | -- | -- | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Methylene Chloride | 5 | 5 | 11 | ug/l | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| m-Xylene & p-Xylene | -- | -- | -- | ug/l | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| o-Xylene | 10000 | -- | 19 | ug/l | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U |
| Styrene | 100 | 100 | 120 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Tetrachloroethene | 5 | -- | -- | ug/l | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U |
| Toluene | 1000 | 1000 | 110 | ug/l | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| trans-1,2-Dichloroethene | 100 | -- | -- | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| trans-1,3-Dichloropropene | 2 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Trichloroethene | 5 | -- | -- | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Trichlorofluoromethane | 10000 | -- | 520 | ug/l | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U |
| Vinyl chloride | 0.2 | 2 | 0.019 | ug/l | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U |

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**Table 7. Volatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-042 | CFMW-043 | CFMW-043 | CFMW-044 | CFMW-044 | CFMW-044b | CFMW-044b | CFMW-045 | CFMW-045 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/14/2016 | 9/13/2016 | 12/14/2016 | 9/15/2016 | 12/9/2016 | 9/19/2016 | 12/19/2016 | 9/15/2016 | 12/14/2016 |
| | | | | Sample Designation | CFMW-042-GW | CFMW-043-GW | CFMW-043-GW | CFMW-044-GW | CFMW-044-GW | CFMW-044b-GW | CFMW-044b-GW | CFMW-045-GW | CFMW-045-GW |
| | | | | Sample Round | Round 1 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| 1,1,1-Trichloroethane | 200 | 200 | 800 | ug/l | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| 1,1,2,2-Tetrachloroethane | 2 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | -- | -- | 5500 | ug/l | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 UJ | 0.34 U | 0.34 U |
| 1,1,2-Trichloroethane | 3 | -- | -- | ug/l | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U |
| 1,1-Dichloroethane | 4 | -- | 2.8 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| 1,1-Dichloroethene | 7 | -- | -- | ug/l | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| 1,2,3-Trichlorobenzene | 0.7 | -- | 0.7 | ug/l | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U |
| 1,2,4-Trichlorobenzene | 70 | -- | 0.4 | ug/l | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U |
| 1,2-Dibromo-3-Chloropropane | 0.2 | 0.2 | 0.00033 | ug/l | 0.23 U | 0.23 U | 0.23 UJ | 0.23 U | 0.23 U | 0.23 U | 0.23 U | 0.23 U | 0.23 UJ |
| 1,2-Dichlorobenzene | 600 | 600 | 30 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| 1,2-Dichloroethane | 4 | 5 | 0.17 | ug/l | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.28 J | 0.25 U | 0.25 U | 0.25 U |
| 1,2-Dichloropropane | 5 | 5 | 0.44 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| 1,3-Dichlorobenzene | 600 | -- | -- | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| 1,4-Dichlorobenzene | 75 | 75 | 0.48 | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| 2-Butanone (MEK) | -- | -- | 560 | ug/l | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U |
| 2-Hexanone | -- | -- | 3.8 | ug/l | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| 4-Methyl-2-pentanone (MIBK) | -- | -- | 630 | ug/l | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U |
| Acetone | -- | -- | 1400 | ug/l | 1.1 U | 1.1 U | 1.1 UJ | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 UJ |
| Benzene | 5 | 5 | 0.46 | ug/l | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U |
| Bromoform | 80 | 80 | 3.3 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| Bromomethane | 10 | -- | 0.75 | ug/l | 0.18 U | 0.18 UJ | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 UJ | 0.18 U | 0.18 U |
| Carbon disulfide | -- | -- | 81 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Carbon tetrachloride | 3 | 5 | 0.46 | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| Chlorobenzene | 100 | 100 | 7.8 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Chlorobromomethane | -- | -- | 8.3 | ug/l | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Chlorodibromomethane | 4 | 80 | 0.87 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Chloroethane | -- | -- | 2100 | ug/l | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 UJ | 0.37 U | 0.37 U | 0.37 U |
| Chloroform | 70 | 80 | 0.22 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Chloromethane | 30 | -- | 19 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| cis-1,2-Dichloroethene | 70 | -- | -- | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| cis-1,3-Dichloropropene | 4 | -- | -- | ug/l | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U |
| Cyclohexane | -- | -- | 1300 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Dichlorobromomethane | 10 | 80 | 0.13 | ug/l | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U |
| Dichlorodifluoromethane | 1000 | -- | 20 | ug/l | 0.14 U | 0.14 UJ | 0.14 U | 0.14 U | 0.14 U | 3.1 | 3.5 J | 0.14 U | 0.14 U |
| Ethylbenzene | 700 | 700 | 1.5 | ug/l | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Ethylene Dibromide | 0.004 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Isopropylbenzene | -- | -- | -- | ug/l | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U |
| Methyl acetate | -- | -- | 2000 | ug/l | 0.58 U | 0.58 U | 0.58 UJ | 0.58 U | 0.58 U | 0.58 U | 0.58 U | 0.58 U | 0.58 UJ |
| Methyl tert-butyl ether | 30 | -- | 14 | ug/l | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U |

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**Table 7. Volatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | Sample Location | | CFMW-042 | CFMW-043 | CFMW-043 | CFMW-044 | CFMW-044 | CFMW-044b | CFMW-044b | CFMW-045 | CFMW-045 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sample Date | | 9/14/2016 | 9/13/2016 | 12/14/2016 | 9/15/2016 | 12/9/2016 | 9/19/2016 | 12/19/2016 | 9/15/2016 | 12/14/2016 |
| | | | Sample Designation | | CFMW-042-GW | CFMW-043-GW | CFMW-043-GW | CFMW-044-GW | CFMW-044-GW | CFMW-044b-GW | CFMW-044b-GW | CFMW-045-GW | CFMW-045-GW |
| | | | Sample Round | | Round 1 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| Methylcyclohexane | -- | -- | -- | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 UJ | 0.22 U | 0.22 U |
| Methylene Chloride | 5 | 5 | 11 | ug/l | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.51 J |
| m-Xylene & p-Xylene | -- | -- | -- | ug/l | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| o-Xylene | 10000 | -- | 19 | ug/l | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U |
| Styrene | 100 | 100 | 120 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Tetrachloroethene | 5 | -- | -- | ug/l | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U |
| Toluene | 1000 | 1000 | 110 | ug/l | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| trans-1,2-Dichloroethene | 100 | -- | -- | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| trans-1,3-Dichloropropene | 2 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Trichloroethene | 5 | -- | -- | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Trichlorofluoromethane | 10000 | -- | 520 | ug/l | 0.15 U | 0.15 U | 0.15 UJ | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 UJ |
| Vinyl chloride | 0.2 | 2 | 0.019 | ug/l | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U |

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**Table 7. Volatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-047 | CFMW-047 | CFMW-049 | CFMW-049 | CFMW-049 | CFMW-050 | CFMW-050 | CFMW-053 | CFMW-053 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/14/2016 | 12/15/2016 | 9/21/2016 | 12/15/2016 | 12/15/2016 | 9/19/2016 | 12/15/2016 | 9/14/2016 | 12/12/2016 |
| | | | | Sample Designation | CFMW-047-GW | CFMW-047-GW | CFMW-049-GW | CFMW-049-GW | CFMW-DUP6-GW | CFMW-050-GW | CFMW-050-GW | CFMW-053-GW | CFMW-053-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | FD | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| 1,1,1-Trichloroethane | 200 | 200 | 800 | ug/l | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| 1,1,2,2-Tetrachloroethane | 2 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | -- | -- | 5500 | ug/l | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| 1,1,2-Trichloroethane | 3 | -- | -- | ug/l | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U |
| 1,1-Dichloroethane | 4 | -- | 2.8 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| 1,1-Dichloroethene | 7 | -- | -- | ug/l | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| 1,2,3-Trichlorobenzene | 0.7 | -- | 0.7 | ug/l | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U |
| 1,2,4-Trichlorobenzene | 70 | -- | 0.4 | ug/l | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U |
| 1,2-Dibromo-3-Chloropropane | 0.2 | 0.2 | 0.00033 | ug/l | 0.23 U | 0.23 UJ | 0.23 UJ | 0.23 UJ | 0.23 UJ | 0.23 U | 0.23 UJ | 0.23 U | 0.23 U |
| 1,2-Dichlorobenzene | 600 | 600 | 30 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| 1,2-Dichloroethane | 4 | 5 | 0.17 | ug/l | 0.25 U | 0.25 U | 0.25 UJ | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| 1,2-Dichloropropane | 5 | 5 | 0.44 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| 1,3-Dichlorobenzene | 600 | -- | -- | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| 1,4-Dichlorobenzene | 75 | 75 | 0.48 | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| 2-Butanone (MEK) | -- | -- | 560 | ug/l | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U |
| 2-Hexanone | -- | -- | 3.8 | ug/l | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| 4-Methyl-2-pentanone (MIBK) | -- | -- | 630 | ug/l | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U |
| Acetone | -- | -- | 1400 | ug/l | 10 | 1.1 UJ | 1.1 U | 1.1 UJ | 1.1 UJ | 1.1 U | 1.1 UJ | 1.1 U | 1.1 U |
| Benzene | 5 | 5 | 0.46 | ug/l | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U |
| Bromoform | 80 | 80 | 3.3 | ug/l | 0.18 U | 0.18 U | 0.18 UJ | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| Bromomethane | 10 | -- | 0.75 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| Carbon disulfide | -- | -- | 81 | ug/l | 3 | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Carbon tetrachloride | 3 | 5 | 0.46 | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| Chlorobenzene | 100 | 100 | 7.8 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Chlorobromomethane | -- | -- | 8.3 | ug/l | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Chlorodibromomethane | 4 | 80 | 0.87 | ug/l | 0.22 U | 0.22 U | 0.22 UJ | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Chloroethane | -- | -- | 2100 | ug/l | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 UJ | 0.37 U | 0.37 U | 0.37 U |
| Chloroform | 70 | 80 | 0.22 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Chloromethane | 30 | -- | 19 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| cis-1,2-Dichloroethene | 70 | -- | -- | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| cis-1,3-Dichloropropene | 4 | -- | -- | ug/l | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U |
| Cyclohexane | -- | -- | 1300 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Dichlorobromomethane | 10 | 80 | 0.13 | ug/l | 0.15 U | 0.15 U | 0.15 UJ | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U |
| Dichlorodifluoromethane | 1000 | -- | 20 | ug/l | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U |
| Ethylbenzene | 700 | 700 | 1.5 | ug/l | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Ethylene Dibromide | 0.004 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Isopropylbenzene | -- | -- | -- | ug/l | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U |
| Methyl acetate | -- | -- | 2000 | ug/l | 0.58 U | 0.58 UJ | 0.58 U | 0.58 UJ | 0.58 UJ | 0.58 U | 0.58 UJ | 0.58 U | 0.58 U |
| Methyl tert-butyl ether | 30 | -- | 14 | ug/l | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U |

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**Table 7. Volatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | Sample Location | | CFMW-047 | CFMW-047 | CFMW-049 | CFMW-049 | CFMW-049 | CFMW-050 | CFMW-050 | CFMW-053 | CFMW-053 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sample Date | | 9/14/2016 | 12/15/2016 | 9/21/2016 | 12/15/2016 | 12/15/2016 | 9/19/2016 | 12/15/2016 | 9/14/2016 | 12/12/2016 |
| | | | Sample Designation | | CFMW-047-GW | CFMW-047-GW | CFMW-049-GW | CFMW-049-GW | CFMW-DUP6-GW | CFMW-050-GW | CFMW-050-GW | CFMW-053-GW | CFMW-053-GW |
| | | | Sample Round | | Round 1 | Round 2 | Round 1 | Round 2 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| Methylcyclohexane | -- | -- | -- | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Methylene Chloride | 5 | 5 | 11 | ug/l | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| m-Xylene & p-Xylene | -- | -- | -- | ug/l | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| o-Xylene | 10000 | -- | 19 | ug/l | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U |
| Styrene | 100 | 100 | 120 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Tetrachloroethene | 5 | -- | -- | ug/l | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.14 J | 0.12 U | 0.12 U | 0.12 U |
| Toluene | 1000 | 1000 | 110 | ug/l | 2.2 | 0.66 J | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| trans-1,2-Dichloroethene | 100 | -- | -- | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| trans-1,3-Dichloropropene | 2 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Trichloroethene | 5 | -- | -- | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Trichlorofluoromethane | 10000 | -- | 520 | ug/l | 0.15 U | 0.15 UJ | 0.15 U | 0.15 UJ | 0.15 UJ | 0.15 U | 0.15 UJ | 0.15 U | 0.15 U |
| Vinyl chloride | 0.2 | 2 | 0.019 | ug/l | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U |

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**Table 7. Volatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-054 | CFMW-054 | CFMW-061 | CFMW-061 | CFMW-061 | CFMW-064 | CFMW-064 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/14/2016 | 12/12/2016 | 9/15/2016 | 12/7/2016 | 12/7/2016 | 9/15/2016 | 12/7/2016 |
| | | | | Sample Designation | CFMW-054-GW | CFMW-054-GW | CFMW-061-GW | CFMW-061-GW | CFMW-DUP5-GW | CFMW-064-GW | CFMW-064-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | FD | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | |
| 1,1,1-Trichloroethane | 200 | 200 | 800 | ug/l | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| 1,1,2,2-Tetrachloroethane | 2 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 UJ | 0.19 UJ | 0.19 U | 0.19 U |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | -- | -- | 5500 | ug/l | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| 1,1,2-Trichloroethane | 3 | -- | -- | ug/l | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U | 0.08 U |
| 1,1-Dichloroethane | 4 | -- | 2.8 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| 1,1-Dichloroethene | 7 | -- | -- | ug/l | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| 1,2,3-Trichlorobenzene | 0.7 | -- | 0.7 | ug/l | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U | 0.35 U |
| 1,2,4-Trichlorobenzene | 70 | -- | 0.4 | ug/l | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U | 0.27 U |
| 1,2-Dibromo-3-Chloropropane | 0.2 | 0.2 | 0.00033 | ug/l | 0.23 U | 0.23 U | 0.23 U | 0.23 U | 0.23 U | 0.23 U | 0.23 U |
| 1,2-Dichlorobenzene | 600 | 600 | 30 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| 1,2-Dichloroethane | 4 | 5 | 0.17 | ug/l | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| 1,2-Dichloropropane | 5 | 5 | 0.44 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| 1,3-Dichlorobenzene | 600 | -- | -- | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| 1,4-Dichlorobenzene | 75 | 75 | 0.48 | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| 2-Butanone (MEK) | -- | -- | 560 | ug/l | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U |
| 2-Hexanone | -- | -- | 3.8 | ug/l | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| 4-Methyl-2-pentanone (MIBK) | -- | -- | 630 | ug/l | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U |
| Acetone | -- | -- | 1400 | ug/l | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| Benzene | 5 | 5 | 0.46 | ug/l | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U |
| Bromoform | 80 | 80 | 3.3 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| Bromomethane | 10 | -- | 0.75 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| Carbon disulfide | -- | -- | 81 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Carbon tetrachloride | 3 | 5 | 0.46 | ug/l | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| Chlorobenzene | 100 | 100 | 7.8 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Chlorobromomethane | -- | -- | 8.3 | ug/l | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Chlorodibromomethane | 4 | 80 | 0.87 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Chloroethane | -- | -- | 2100 | ug/l | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U | 0.37 U |
| Chloroform | 70 | 80 | 0.22 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Chloromethane | 30 | -- | 19 | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| cis-1,2-Dichloroethene | 70 | -- | -- | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| cis-1,3-Dichloropropene | 4 | -- | -- | ug/l | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U |
| Cyclohexane | -- | -- | 1300 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Dichlorobromomethane | 10 | 80 | 0.13 | ug/l | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U |
| Dichlorodifluoromethane | 1000 | -- | 20 | ug/l | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U | 0.14 U |
| Ethylbenzene | 700 | 700 | 1.5 | ug/l | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U | 0.3 U |
| Ethylene Dibromide | 0.004 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Isopropylbenzene | -- | -- | -- | ug/l | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U |
| Methyl acetate | -- | -- | 2000 | ug/l | 0.58 U | 0.58 U | 0.58 U | 0.58 UJ | 0.58 UJ | 0.58 U | 0.58 U |
| Methyl tert-butyl ether | 30 | -- | 14 | ug/l | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U | 0.13 U |

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**Table 7. Volatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Location | CFMW-054 | CFMW-054 | CFMW-061 | CFMW-061 | CFMW-061 | CFMW-064 | CFMW-064 |
| | | | | Sample Date | 9/14/2016 | 12/12/2016 | 9/15/2016 | 12/7/2016 | 12/7/2016 | 9/15/2016 | 12/7/2016 |
| | | | | Sample Designation | CFMW-054-GW | CFMW-054-GW | CFMW-061-GW | CFMW-061-GW | CFMW-DUP5-GW | CFMW-064-GW | CFMW-064-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 2 | Round 1 | Round 2 |
| Methylcyclohexane | -- | -- | -- | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Methylene Chloride | 5 | 5 | 11 | ug/l | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| m-Xylene & p-Xylene | -- | -- | -- | ug/l | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U | 0.28 U |
| o-Xylene | 10000 | -- | 19 | ug/l | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U | 0.32 U |
| Styrene | 100 | 100 | 120 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Tetrachloroethene | 5 | -- | -- | ug/l | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U |
| Toluene | 1000 | 1000 | 110 | ug/l | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U | 0.25 U |
| trans-1,2-Dichloroethene | 100 | -- | -- | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |
| trans-1,3-Dichloropropene | 2 | -- | -- | ug/l | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| Trichloroethene | 5 | -- | -- | ug/l | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U | 0.22 U |
| Trichlorofluoromethane | 10000 | -- | 520 | ug/l | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U |
| Vinyl chloride | 0.2 | 2 | 0.019 | ug/l | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U | 0.06 U |

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**Table 8. Semivolatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-002 | CFMW-003 | CFMW-003 | CFMW-007 | CFMW-007 | CFMW-008a | CFMW-008a | CFMW-010 | CFMW-010 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/12/2016 | 9/14/2016 | 12/9/2016 | 9/21/2016 | 12/12/2016 | 9/15/2016 | 12/16/2016 | 9/12/2016 | 12/15/2016 |
| | | | | Sample Designation | CFMW-002-GW | CFMW-003-GW | CFMW-003-GW | CFMW-007-GW | CFMW-007-GW | CFMW-008a-GW | CFMW-008a-GW | CFMW-010-GW | CFMW-010-GW |
| | | | | Sample Round | Round 1 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| 1,1'-Biphenyl | -- | -- | 0.083 | ug/l | 0.63 U | 0.66 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 UJ |
| 1,2,4,5-Tetrachlorobenzene | 0.97 | -- | 0.17 | ug/l | 0.43 U | 0.45 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 UJ |
| 1,4-Dioxane | -- | -- | 0.46 | ug/l | 3.1 U | 3.3 U | 3.1 U | 3.1 UJ | 3.1 U | 3.1 U | 3.1 U | 3.1 U | 3.1 U |
| 2,2'-oxybis[1-chloropropane] | 1400 | -- | -- | ug/l | 0.93 U | 0.97 U | 0.93 U | 0.93 U | 0.93 U | 0.93 U | 0.93 U | 0.93 U | 0.93 U |
| 2,3,4,6-Tetrachlorophenol | -- | -- | 24 | ug/l | 0.69 U | 0.72 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U |
| 2,4,5-Trichlorophenol | 1800 | -- | 120 | ug/l | 0.49 U | 0.51 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U |
| 2,4,6-Trichlorophenol | 30 | -- | 1.2 | ug/l | 0.53 U | 0.55 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U |
| 2,4-Dichlorophenol | 77 | -- | 4.6 | ug/l | 0.63 U | 0.66 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U |
| 2,4-Dimethylphenol | 380 | -- | 36 | ug/l | 0.91 U | 0.95 U | 0.91 U | 0.91 U | 0.91 UJ | 0.91 U | 0.91 U | 0.91 U | 0.91 U |
| 2,4-Dinitrophenol | 69 | -- | 3.9 | ug/l | 2.4 U | 2.5 UJ | 2.4 U | 2.4 U | 2.4 U | 2.4 U | 2.4 U | 2.4 U | 2.4 U |
| 2,4-Dinitrotoluene | 1.1 | -- | 0.24 | ug/l | 1 U | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| 2,6-Dinitrotoluene | 0.5 | -- | 0.049 | ug/l | 0.88 U | 0.92 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U |
| 2-Chloronaphthalene | 1000 | -- | -- | ug/l | 0.61 U | 0.64 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U |
| 2-Chlorophenol | 81 | -- | 9.1 | ug/l | 0.74 U | 0.77 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U |
| 2-Methylnaphthalene | -- | -- | 3.6 | ug/l | 0.88 U | 0.92 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U |
| 2-Methylphenol | -- | -- | -- | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| 2-Nitroaniline | -- | -- | 19 | ug/l | 0.65 U | 0.68 UJ | 0.65 U | 0.65 U | 0.65 U | 0.65 UJ | 0.65 U | 0.65 U | 0.65 U |
| 2-Nitrophenol | -- | -- | -- | ug/l | 0.59 U | 0.62 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U |
| 3 & 4 Methylphenol | -- | -- | -- | ug/l | 0.88 U | 0.92 UJ | 0.88 U | 0.88 U | 0.88 U | 0.88 UJ | 0.88 U | 0.88 U | 0.88 U |
| 3,3'-Dichlorobenzidine | 0.21 | -- | 0.13 | ug/l | 1 U | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| 3-Nitroaniline | -- | -- | -- | ug/l | 0.82 U | 0.86 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U |
| 4,6-Dinitro-2-methylphenol | 13 | -- | -- | ug/l | 2 U | 2.1 U | 2 U | 2 U | 2 U | 2 U | 2 U | 2 U | 2 U |
| 4-Bromophenyl phenyl ether | -- | -- | -- | ug/l | 1 U | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| 4-Chloro-3-methylphenol | 3000 | -- | -- | ug/l | 0.76 U | 0.79 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U |
| 4-Chloroaniline | -- | -- | 0.37 | ug/l | 0.73 U | 0.76 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | ug/l | 0.96 U | 1 U | 0.96 U | 0.96 U | 0.96 U | 0.96 U | 0.96 U | 0.96 U | 0.96 U |
| 4-Nitroaniline | -- | -- | 3.8 | ug/l | 0.48 U | 0.5 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U |
| 4-Nitrophenol | 60 | -- | -- | ug/l | 4.7 U | 4.9 U | 4.7 U | 4.7 U | 4.7 UJ | 4.7 U | 4.7 U | 4.7 U | 4.7 U |
| Acenaphthene | 670 | -- | 53 | ug/l | 0.88 U | 0.92 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 UJ |
| Acenaphthylene | -- | -- | -- | ug/l | 0.65 U | 0.68 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U |
| Acetophenone | -- | -- | 190 | ug/l | 1 U | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Anthracene | 2100 | -- | 180 | ug/l | 0.57 U | 0.6 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U |
| Atrazine | 3 | 3 | 0.3 | ug/l | 0.77 U | 0.81 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U |
| Benzaldehyde | -- | -- | 190 | ug/l | 0.86 U | 0.9 U | 0.86 U | 0.86 U | 0.86 U | 0.86 U | 0.86 U | 0.86 U | 0.86 U |
| Benzo[a]anthracene | 0.5 | -- | -- | ug/l | 0.55 U | 0.58 U | 0.55 U | 0.55 U | 0.55 U | 0.55 U | 0.55 U | 0.55 U | 0.55 U |
| Benzo[a]pyrene | 0.05 | 0.2 | 0.0034 | ug/l | 0.16 U | 0.17 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U |
| Benzo[b]fluoranthene | 0.5 | -- | 0.034 | ug/l | 0.44 U | 0.46 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U |
| Benzo[g,h,i]perylene | -- | -- | -- | ug/l | 0.75 U | 0.78 U | 0.75 U | 0.75 U | 0.75 U | 0.75 U | 0.75 U | 0.75 U | 0.75 U |
| Benzo[k]fluoranthene | 5 | -- | 0.34 | ug/l | 0.18 U | 0.19 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |

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**Table 8. Semivolatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | Sample Location | | CFMW-002 | CFMW-003 | CFMW-003 | CFMW-007 | CFMW-007 | CFMW-008a | CFMW-008a | CFMW-010 | CFMW-010 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sample Date | | 9/12/2016 | 9/14/2016 | 12/9/2016 | 9/21/2016 | 12/12/2016 | 9/15/2016 | 12/16/2016 | 9/12/2016 | 12/15/2016 |
| | | | Sample Designation | | CFMW-002-GW | CFMW-003-GW | CFMW-003-GW | CFMW-007-GW | CFMW-007-GW | CFMW-008a-GW | CFMW-008a-GW | CFMW-010-GW | CFMW-010-GW |
| | | | Sample Round | | Round 1 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | Sample Type | | N | N | N | N | N | N | N | N | N |
| Bis(2-chloroethoxy)methane | -- | -- | 5.9 | ug/l | 0.69 U | 0.72 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U |
| Bis(2-chloroethyl)ether | 0.3 | -- | 0.014 | ug/l | 0.12 U | 0.13 U | 0.12 UJ | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 UJ |
| Bis(2-ethylhexyl) phthalate | 6 | 6 | 5.6 | ug/l | 0.72 U | 0.75 U | 0.72 U | 0.72 U | 0.72 U | 1.1 J | 2.4 | 0.72 U | 0.72 U |
| Butyl benzyl phthalate | 1500 | -- | 16 | ug/l | 0.6 U | 0.63 U | 0.6 U | 0.6 U | 0.6 UJ | 0.6 U | 0.6 U | 0.6 U | 0.6 U |
| Caprolactam | -- | -- | 990 | ug/l | 1.1 U | 1.1 U | 1.1 U | 1.1 UJ | 1.1 UJ | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| Carbazole | -- | -- | -- | ug/l | 0.85 U | 0.89 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U |
| Chrysene | 50 | -- | 3.4 | ug/l | 0.67 U | 0.7 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U |
| Dibenz(a,h)anthracene | 0.05 | -- | 0.0034 | ug/l | 0.09 U | 0.094 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U |
| Dibenzofuran | -- | -- | 0.79 | ug/l | 0.85 U | 0.89 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U |
| Diethyl phthalate | 17000 | -- | -- | ug/l | 1 U | 1 U | 1 U | 1 U | 1 UJ | 1 U | 1 U | 1 U | 1 U |
| Dimethyl phthalate | 270000 | -- | -- | ug/l | 0.98 U | 1 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U |
| Di-n-butyl phthalate | 2000 | -- | -- | ug/l | 0.82 U | 0.86 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U |
| Di-n-octyl phthalate | -- | -- | 20 | ug/l | 0.69 U | 0.72 U | 0.69 U | 0.69 U | 0.69 UJ | 0.69 U | 0.69 U | 0.69 U | 0.69 U |
| Fluoranthene | 130 | -- | 80 | ug/l | 0.72 U | 0.75 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| Fluorene | 1100 | -- | 29 | ug/l | 0.8 U | 0.84 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U |
| Hexachlorobenzene | 0.2 | 1 | 0.0098 | ug/l | 0.47 U | 0.49 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U |
| Hexachlorobutadiene | 5 | -- | 0.14 | ug/l | 0.76 U | 0.79 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U |
| Hexachlorocyclopentadiene | 50 | 50 | 0.041 | ug/l | 0.61 U | 0.64 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U |
| Hexachloroethane | 30 | -- | 0.33 | ug/l | 0.09 U | 0.094 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U |
| Indeno[1,2,3-cd]pyrene | 0.5 | -- | 0.034 | ug/l | 0.21 U | 0.22 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| Isophorone | 400 | -- | 78 | ug/l | 0.67 U | 0.7 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U |
| Naphthalene | 100 | -- | 0.17 | ug/l | 0.8 U | 0.84 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U |
| Nitrobenzene | 17 | -- | 0.14 | ug/l | 0.49 U | 0.51 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U |
| N-Nitrosodi-n-propylamine | 0.5 | -- | 0.011 | ug/l | 0.83 U | 0.87 UJ | 0.83 U | 0.83 U | 0.83 U | 0.83 UJ | 0.83 U | 0.83 U | 0.83 U |
| N-Nitrosodiphenylamine | 33 | -- | 12 | ug/l | 0.74 U | 0.77 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U |
| Pentachlorophenol | 1 | 1 | 0.041 | ug/l | 2.2 U | 2.3 R | 2.2 UJ | 2.2 U | 2.2 UJ | 2.2 U | 2.2 U | 2.2 U | 2.2 UJ |
| Phenanthrene | -- | -- | -- | ug/l | 0.65 U | 0.68 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U |
| Phenol | 300 | -- | 580 | ug/l | 0.41 U | 0.43 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U |
| Pyrene | 830 | -- | 12 | ug/l | 0.83 U | 0.87 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U |

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**Table 8. Semivolatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-011 | CFMW-011 | CFMW-012 | CFMW-012 | CFMW-014 | CFMW-014 | CFMW-015 | CFMW-015 | CFMW-019 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/13/2016 | 12/8/2016 | 9/12/2016 | 12/14/2016 | 9/12/2016 | 12/15/2016 | 9/12/2016 | 12/15/2016 | 9/12/2016 |
| | | | | Sample Designation | CFMW-011-GW | CFMW-011-GW | CFMW-012-GW | CFMW-012-GW | CFMW-014-GW | CFMW-014-GW | CFMW-015-GW | CFMW-015-GW | CFMW-019-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| 1,1'-Biphenyl | -- | -- | 0.083 | ug/l | 0.66 U | 0.63 U | 0.63 U | 0.63 U | 0.68 U | 0.63 UJ | 0.63 U | 0.63 UJ | 0.63 U |
| 1,2,4,5-Tetrachlorobenzene | 0.97 | -- | 0.17 | ug/l | 0.45 U | 0.43 U | 0.43 U | 0.43 U | 0.47 U | 0.43 UJ | 0.43 U | 0.43 UJ | 0.43 U |
| 1,4-Dioxane | -- | -- | 0.46 | ug/l | 3.2 U | 3.1 U | 3.1 U | 3.1 UJ | 3.4 U | 3.1 U | 3.1 U | 3.1 U | 3.1 U |
| 2,2'-oxybis[1-chloropropane] | 1400 | -- | -- | ug/l | 0.97 U | 0.93 U | 0.93 U | 0.93 U | 1 U | 0.93 U | 0.93 U | 0.93 U | 0.93 U |
| 2,3,4,6-Tetrachlorophenol | -- | -- | 24 | ug/l | 0.72 U | 0.69 U | 0.69 U | 0.69 U | 0.75 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U |
| 2,4,5-Trichlorophenol | 1800 | -- | 120 | ug/l | 0.51 U | 0.49 U | 0.49 U | 0.49 U | 0.53 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U |
| 2,4,6-Trichlorophenol | 30 | -- | 1.2 | ug/l | 0.55 U | 0.53 U | 0.53 U | 0.53 U | 0.58 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U |
| 2,4-Dichlorophenol | 77 | -- | 4.6 | ug/l | 0.66 U | 0.63 U | 0.63 U | 0.63 U | 0.68 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U |
| 2,4-Dimethylphenol | 380 | -- | 36 | ug/l | 0.95 U | 0.91 U | 0.91 U | 0.91 U | 0.99 U | 0.91 U | 0.91 U | 0.91 UJ | 0.91 U |
| 2,4-Dinitrophenol | 69 | -- | 3.9 | ug/l | 2.5 UJ | 2.4 U | 2.4 U | 2.4 U | 2.6 U | 2.4 U | 2.4 U | 2.4 U | 2.4 U |
| 2,4-Dinitrotoluene | 1.1 | -- | 0.24 | ug/l | 1.1 U | 1 U | 1 U | 1 U | 1.1 U | 1 U | 1 U | 1 U | 1 U |
| 2,6-Dinitrotoluene | 0.5 | -- | 0.049 | ug/l | 0.92 U | 0.88 U | 0.88 U | 0.88 U | 0.96 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U |
| 2-Chloronaphthalene | 1000 | -- | -- | ug/l | 0.64 U | 0.61 U | 0.61 U | 0.61 U | 0.66 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U |
| 2-Chlorophenol | 81 | -- | 9.1 | ug/l | 0.77 U | 0.74 U | 0.74 U | 0.74 U | 0.8 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U |
| 2-Methylnaphthalene | -- | -- | 3.6 | ug/l | 0.92 U | 0.88 U | 0.88 U | 0.88 U | 0.96 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U |
| 2-Methylphenol | -- | -- | -- | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.4 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| 2-Nitroaniline | -- | -- | 19 | ug/l | 0.68 U | 0.65 U | 0.65 U | 0.65 U | 0.71 U | 0.65 U | 0.65 U | 0.65 UJ | 0.65 U |
| 2-Nitrophenol | -- | -- | -- | ug/l | 0.61 U | 0.59 U | 0.59 U | 0.59 U | 0.64 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U |
| 3 & 4 Methylphenol | -- | -- | -- | ug/l | 0.92 U | 0.88 U | 0.88 U | 0.88 U | 0.96 U | 0.88 U | 0.88 UJ | 0.88 U | 0.88 U |
| 3,3'-Dichlorobenzidine | 0.21 | -- | 0.13 | ug/l | 1.1 U | 1 U | 1 U | 1 U | 1.1 U | 1 U | 1 U | 1 R | 1 U |
| 3-Nitroaniline | -- | -- | -- | ug/l | 0.85 U | 0.82 U | 0.82 U | 0.82 U | 0.89 U | 0.82 U | 0.82 U | 0.82 R | 0.82 U |
| 4,6-Dinitro-2-methylphenol | 13 | -- | -- | ug/l | 2.1 U | 2 U | 2 U | 2 U | 2.2 U | 2 U | 2 U | 2 U | 2 U |
| 4-Bromophenyl phenyl ether | -- | -- | -- | ug/l | 1.1 U | 1 U | 1 U | 1 U | 1.1 U | 1 U | 1 U | 1 U | 1 U |
| 4-Chloro-3-methylphenol | 3000 | -- | -- | ug/l | 0.79 U | 0.76 U | 0.76 U | 0.76 U | 0.83 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U |
| 4-Chloroaniline | -- | -- | 0.37 | ug/l | 0.76 U | 0.73 U | 0.73 U | 0.73 U | 0.79 U | 0.73 U | 0.73 U | 0.73 UJ | 0.73 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | ug/l | 1 U | 0.96 U | 0.96 U | 0.96 U | 1 U | 0.96 U | 0.96 U | 0.96 U | 0.96 U |
| 4-Nitroaniline | -- | -- | 3.8 | ug/l | 0.5 U | 0.48 U | 0.48 U | 0.48 U | 0.52 U | 0.48 U | 0.48 U | 0.48 R | 0.48 U |
| 4-Nitrophenol | 60 | -- | -- | ug/l | 4.8 U | 4.7 U | 4.7 U | 4.7 U | 5.1 U | 4.7 U | 4.7 U | 4.7 U | 4.7 U |
| Acenaphthene | 670 | -- | 53 | ug/l | 0.92 U | 0.88 U | 0.88 U | 0.88 UJ | 0.96 U | 0.88 UJ | 0.88 U | 0.88 UJ | 0.88 U |
| Acenaphthylene | -- | -- | -- | ug/l | 0.68 U | 0.65 U | 0.65 U | 0.65 U | 0.71 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U |
| Acetophenone | -- | -- | 190 | ug/l | 1.1 U | 1 U | 1 U | 1 U | 1.1 U | 1 U | 1 U | 1 U | 1 U |
| Anthracene | 2100 | -- | 180 | ug/l | 0.59 U | 0.57 U | 0.57 U | 0.57 U | 0.62 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U |
| Atrazine | 3 | 3 | 0.3 | ug/l | 0.8 U | 0.77 U | 0.77 U | 0.77 U | 0.84 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U |
| Benzaldehyde | -- | -- | 190 | ug/l | 0.9 U | 0.86 U | 0.86 U | 0.86 U | 0.93 U | 0.86 U | 0.86 U | 0.86 U | 0.86 U |
| Benzo[a]anthracene | 0.5 | -- | -- | ug/l | 0.57 U | 0.55 U | 0.55 U | 0.55 U | 0.6 U | 0.55 U | 0.55 U | 0.55 U | 0.55 U |
| Benzo[a]pyrene | 0.05 | 0.2 | 0.0034 | ug/l | 0.17 U | 0.16 U | 0.16 U | 0.16 U | 0.17 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U |
| Benzo[b]fluoranthene | 0.5 | -- | 0.034 | ug/l | 0.46 U | 0.44 U | 0.44 U | 0.44 U | 0.48 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U |
| Benzo[g,h,i]perylene | -- | -- | -- | ug/l | 0.78 U | 0.75 U | 0.75 U | 0.75 U | 0.82 U | 0.75 U | 0.75 U | 0.75 U | 0.75 U |
| Benzo[k]fluoranthene | 5 | -- | 0.34 | ug/l | 0.19 U | 0.18 U | 0.18 U | 0.18 U | 0.2 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |

Preliminary Under EPA and MDEQ Review

**Table 8. Semivolatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-011 | CFMW-011 | CFMW-012 | CFMW-012 | CFMW-014 | CFMW-014 | CFMW-015 | CFMW-015 | CFMW-019 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/13/2016 | 12/8/2016 | 9/12/2016 | 12/14/2016 | 9/12/2016 | 12/15/2016 | 9/12/2016 | 12/15/2016 | 9/12/2016 |
| | | | | Sample Designation | CFMW-011-GW | CFMW-011-GW | CFMW-012-GW | CFMW-012-GW | CFMW-014-GW | CFMW-014-GW | CFMW-015-GW | CFMW-015-GW | CFMW-019-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Bis(2-chloroethoxy)methane | -- | -- | 5.9 | ug/l | 0.72 U | 0.69 U | 0.69 U | 0.69 U | 0.75 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U |
| Bis(2-chloroethyl)ether | 0.3 | -- | 0.014 | ug/l | 0.13 U | 0.12 UJ | 0.12 U | 0.12 UJ | 0.13 U | 0.12 UJ | 0.12 U | 0.12 UJ | 0.12 U |
| Bis(2-ethylhexyl) phthalate | 6 | 6 | 5.6 | ug/l | 0.75 U | 0.72 U | 0.72 U | 0.72 U | 0.78 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| Butyl benzyl phthalate | 1500 | -- | 16 | ug/l | 0.63 U | 0.6 U | 0.6 U | 0.6 U | 0.65 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U |
| Caprolactam | -- | -- | 990 | ug/l | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| Carbazole | -- | -- | -- | ug/l | 0.89 U | 0.85 U | 0.85 U | 0.85 U | 0.92 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U |
| Chrysene | 50 | -- | 3.4 | ug/l | 0.7 U | 0.67 U | 0.67 U | 0.67 U | 0.73 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U |
| Dibenz(a,h)anthracene | 0.05 | -- | 0.0034 | ug/l | 0.094 U | 0.09 U | 0.09 U | 0.09 U | 0.098 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U |
| Dibenzofuran | -- | -- | 0.79 | ug/l | 0.89 U | 0.85 U | 0.85 U | 0.85 U | 0.92 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U |
| Diethyl phthalate | 17000 | -- | -- | ug/l | 1 U | 1 U | 1 U | 1 U | 1.1 U | 1 U | 1 U | 1 U | 1 U |
| Dimethyl phthalate | 270000 | -- | -- | ug/l | 1 U | 0.98 U | 0.98 U | 0.98 U | 1.1 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U |
| Di-n-butyl phthalate | 2000 | -- | -- | ug/l | 0.85 U | 0.82 U | 0.82 U | 0.82 U | 0.89 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U |
| Di-n-octyl phthalate | -- | -- | 20 | ug/l | 0.72 U | 0.69 U | 0.69 U | 0.69 U | 0.75 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U |
| Fluoranthene | 130 | -- | 80 | ug/l | 0.75 U | 0.72 U | 0.72 U | 0.72 U | 0.78 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| Fluorene | 1100 | -- | 29 | ug/l | 0.83 U | 0.8 U | 0.8 U | 0.8 U | 0.87 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U |
| Hexachlorobenzene | 0.2 | 1 | 0.0098 | ug/l | 0.49 U | 0.47 U | 0.47 U | 0.47 U | 0.51 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U |
| Hexachlorobutadiene | 5 | -- | 0.14 | ug/l | 0.79 U | 0.76 U | 0.76 U | 0.76 U | 0.83 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U |
| Hexachlorocyclopentadiene | 50 | 50 | 0.041 | ug/l | 0.64 U | 0.61 U | 0.61 U | 0.61 U | 0.66 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U |
| Hexachloroethane | 30 | -- | 0.33 | ug/l | 0.094 U | 0.09 U | 0.09 U | 0.09 U | 0.098 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U |
| Indeno[1,2,3-cd]pyrene | 0.5 | -- | 0.034 | ug/l | 0.22 U | 0.21 U | 0.21 U | 0.21 U | 0.23 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| Isophorone | 400 | -- | 78 | ug/l | 0.7 U | 0.67 U | 0.67 U | 0.67 U | 0.73 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U |
| Naphthalene | 100 | -- | 0.17 | ug/l | 0.83 U | 0.8 U | 0.8 U | 0.8 U | 0.87 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U |
| Nitrobenzene | 17 | -- | 0.14 | ug/l | 0.51 U | 0.49 U | 0.49 U | 0.49 U | 0.53 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U |
| N-Nitrosodi-n-propylamine | 0.5 | -- | 0.011 | ug/l | 0.86 U | 0.83 U | 0.83 U | 0.83 U | 0.9 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U |
| N-Nitrosodiphenylamine | 33 | -- | 12 | ug/l | 0.77 U | 0.74 U | 0.74 U | 0.74 UJ | 0.8 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U |
| Pentachlorophenol | 1 | 1 | 0.041 | ug/l | 2.3 R | 2.2 U | 2.2 U | 2.2 UJ | 2.4 U | 2.2 UJ | 2.2 U | 2.2 UJ | 2.2 U |
| Phenanthrene | -- | -- | -- | ug/l | 0.68 U | 0.65 U | 0.65 U | 0.65 U | 0.71 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U |
| Phenol | 300 | -- | 580 | ug/l | 0.43 U | 0.41 U | 0.41 U | 0.41 U | 0.45 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U |
| Pyrene | 830 | -- | 12 | ug/l | 0.86 U | 0.83 U | 0.83 U | 0.83 U | 0.9 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U |

Preliminary Under QA and MFG Review

**Table 8. Semivolatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-019 | CFMW-020 | CFMW-020 | CFMW-021 | CFMW-021 | CFMW-022 | CFMW-022 | CFMW-023 | CFMW-023 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/15/2016 | 9/20/2016 | 12/13/2016 | 9/12/2016 | 12/14/2016 | 9/13/2016 | 12/9/2016 | 9/21/2016 | 12/19/2016 |
| | | | | Sample Designation | CFMW-019-GW | CFMW-020-GW | CFMW-020-GW | CFMW-021-GW | CFMW-021-GW | CFMW-022-GW | CFMW-022-GW | CFMW-023-GW | CFMW-023-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| 1,1'-Biphenyl | -- | -- | 0.083 | ug/l | 0.65 UJ | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.66 UJ |
| 1,2,4,5-Tetrachlorobenzene | 0.97 | -- | 0.17 | ug/l | 0.44 UJ | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.45 U |
| 1,4-Dioxane | -- | -- | 0.46 | ug/l | 3.2 U | 3.1 U | 3.1 U | 3.1 U | 3.1 UJ | 3.1 U | 3.1 U | 3.1 UJ | 3.3 U |
| 2,2'-oxybis[1-chloropropane] | 1400 | -- | -- | ug/l | 0.96 U | 0.93 U | 0.93 U | 0.93 U | 0.93 U | 0.93 U | 0.93 U | 0.93 U | 0.98 U |
| 2,3,4,6-Tetrachlorophenol | -- | -- | 24 | ug/l | 0.71 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.72 U |
| 2,4,5-Trichlorophenol | 1800 | -- | 120 | ug/l | 0.51 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.51 U |
| 2,4,6-Trichlorophenol | 30 | -- | 1.2 | ug/l | 0.55 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.56 U |
| 2,4-Dichlorophenol | 77 | -- | 4.6 | ug/l | 0.65 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.66 U |
| 2,4-Dimethylphenol | 380 | -- | 36 | ug/l | 0.94 U | 0.91 U | 0.91 UJ | 0.91 U | 0.91 U | 0.91 U | 0.91 U | 0.91 U | 0.96 U |
| 2,4-Dinitrophenol | 69 | -- | 3.9 | ug/l | 2.4 U | 2.4 U | 2.4 U | 2.4 U | 2.4 U | 2.4 UJ | 2.4 U | 2.4 U | 2.5 U |
| 2,4-Dinitrotoluene | 1.1 | -- | 0.24 | ug/l | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1.1 U |
| 2,6-Dinitrotoluene | 0.5 | -- | 0.049 | ug/l | 0.91 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.92 U |
| 2-Chloronaphthalene | 1000 | -- | -- | ug/l | 0.63 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.64 U |
| 2-Chlorophenol | 81 | -- | 9.1 | ug/l | 0.76 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.78 U |
| 2-Methylnaphthalene | -- | -- | 3.6 | ug/l | 0.91 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.92 U |
| 2-Methylphenol | -- | -- | -- | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.4 U |
| 2-Nitroaniline | -- | -- | 19 | ug/l | 0.67 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.68 U |
| 2-Nitrophenol | -- | -- | -- | ug/l | 0.61 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.62 U |
| 3 & 4 Methylphenol | -- | -- | -- | ug/l | 0.91 U | 0.88 U | 0.88 U | 0.88 UJ | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.92 U |
| 3,3'-Dichlorobenzidine | 0.21 | -- | 0.13 | ug/l | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1.1 U |
| 3-Nitroaniline | -- | -- | -- | ug/l | 0.85 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.86 U |
| 4,6-Dinitro-2-methylphenol | 13 | -- | -- | ug/l | 2.1 U | 2 U | 2 U | 2 U | 2 U | 2 U | 2 U | 2.2 J | 2.1 U |
| 4-Bromophenyl phenyl ether | -- | -- | -- | ug/l | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1.1 U |
| 4-Chloro-3-methylphenol | 3000 | -- | -- | ug/l | 0.79 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.8 U |
| 4-Chloroaniline | -- | -- | 0.37 | ug/l | 0.75 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.77 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | ug/l | 0.99 U | 0.96 U | 0.96 U | 0.96 U | 0.96 U | 0.96 U | 0.96 U | 0.96 U | 1 U |
| 4-Nitroaniline | -- | -- | 3.8 | ug/l | 0.5 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.5 U |
| 4-Nitrophenol | 60 | -- | -- | ug/l | 4.8 U | 4.7 U | 4.7 UJ | 4.7 U | 4.7 U | 4.7 U | 4.7 U | 4.7 U | 4.9 U |
| Acenaphthene | 670 | -- | 53 | ug/l | 0.91 UJ | 0.88 U | 0.88 UJ | 0.88 U | 0.88 UJ | 0.88 U | 0.88 U | 0.88 U | 0.92 U |
| Acenaphthylene | -- | -- | -- | ug/l | 0.67 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.68 U |
| Acetophenone | -- | -- | 190 | ug/l | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1.1 U |
| Anthracene | 2100 | -- | 180 | ug/l | 0.59 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.6 U |
| Atrazine | 3 | 3 | 0.3 | ug/l | 0.8 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.81 U |
| Benzaldehyde | -- | -- | 190 | ug/l | 0.89 U | 0.86 U | 0.86 U | 0.86 U | 0.86 U | 0.86 U | 0.86 U | 0.86 U | 0.9 U |
| Benzo[a]anthracene | 0.5 | -- | -- | ug/l | 0.57 U | 0.55 U | 0.55 U | 0.55 U | 0.55 U | 0.55 U | 0.55 U | 0.55 U | 0.58 U |
| Benzo[a]pyrene | 0.05 | 0.2 | 0.0034 | ug/l | 0.17 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.17 U |
| Benzo[b]fluoranthene | 0.5 | -- | 0.034 | ug/l | 0.45 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.46 U |
| Benzo[g,h,i]perylene | -- | -- | -- | ug/l | 0.77 U | 0.75 U | 0.75 U | 0.75 U | 0.75 U | 0.75 U | 0.75 U | 0.75 U | 0.79 U |
| Benzo[k]fluoranthene | 5 | -- | 0.34 | ug/l | 0.19 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.19 U |

Preliminary Under DEQ and MDEQ Review

**Table 8. Semivolatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-019 | CFMW-020 | CFMW-020 | CFMW-021 | CFMW-021 | CFMW-022 | CFMW-022 | CFMW-023 | CFMW-023 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/15/2016 | 9/20/2016 | 12/13/2016 | 9/12/2016 | 12/14/2016 | 9/13/2016 | 12/9/2016 | 9/21/2016 | 12/19/2016 |
| | | | | Sample Designation | CFMW-019-GW | CFMW-020-GW | CFMW-020-GW | CFMW-021-GW | CFMW-021-GW | CFMW-022-GW | CFMW-022-GW | CFMW-023-GW | CFMW-023-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Bis(2-chloroethoxy)methane | -- | -- | 5.9 | ug/l | 0.71 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.72 U |
| Bis(2-chloroethyl)ether | 0.3 | -- | 0.014 | ug/l | 0.12 UJ | 0.12 U | 0.12 UJ | 0.12 U | 0.12 UJ | 0.12 U | 0.12 UJ | 0.12 U | 0.13 UJ |
| Bis(2-ethylhexyl) phthalate | 6 | 6 | 5.6 | ug/l | 0.74 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 1.2 J | 0.72 U | 0.76 U |
| Butyl benzyl phthalate | 1500 | -- | 16 | ug/l | 0.62 U | 0.6 U | 0.6 UJ | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.63 U |
| Caprolactam | -- | -- | 990 | ug/l | 1.1 U | 1.1 U | 1.1 UJ | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 UJ | 1.1 U |
| Carbazole | -- | -- | -- | ug/l | 0.88 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.89 U |
| Chrysene | 50 | -- | 3.4 | ug/l | 0.69 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.7 U |
| Dibenz(a,h)anthracene | 0.05 | -- | 0.0034 | ug/l | 0.093 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.095 U |
| Dibenzofuran | -- | -- | 0.79 | ug/l | 0.88 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.89 U |
| Diethyl phthalate | 17000 | -- | -- | ug/l | 1 U | 1 U | 1 UJ | 1 U | 1 U | 1 U | 1 U | 1 U | 1.1 UJ |
| Dimethyl phthalate | 270000 | -- | -- | ug/l | 1 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U | 1 UJ |
| Di-n-butyl phthalate | 2000 | -- | -- | ug/l | 0.85 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 1.2 J | 0.82 U | 0.86 U |
| Di-n-octyl phthalate | -- | -- | 20 | ug/l | 0.71 U | 0.69 U | 0.69 UJ | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.72 U |
| Fluoranthene | 130 | -- | 80 | ug/l | 0.74 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.76 U |
| Fluorene | 1100 | -- | 29 | ug/l | 0.83 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.84 U |
| Hexachlorobenzene | 0.2 | 1 | 0.0098 | ug/l | 0.49 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.49 U |
| Hexachlorobutadiene | 5 | -- | 0.14 | ug/l | 0.79 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.8 U |
| Hexachlorocyclopentadiene | 50 | 50 | 0.041 | ug/l | 0.63 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.64 U |
| Hexachloroethane | 30 | -- | 0.33 | ug/l | 0.093 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.095 U |
| Indeno[1,2,3-cd]pyrene | 0.5 | -- | 0.034 | ug/l | 0.22 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.22 U |
| Isophorone | 400 | -- | 78 | ug/l | 0.69 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.7 U |
| Naphthalene | 100 | -- | 0.17 | ug/l | 0.83 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.84 U |
| Nitrobenzene | 17 | -- | 0.14 | ug/l | 0.51 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.51 U |
| N-Nitrosodi-n-propylamine | 0.5 | -- | 0.011 | ug/l | 0.86 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.87 U |
| N-Nitrosodiphenylamine | 33 | -- | 12 | ug/l | 0.76 U | 0.74 U | 0.74 U | 0.74 U | 0.74 UJ | 0.74 U | 0.74 U | 0.74 U | 0.78 U |
| Pentachlorophenol | 1 | 1 | 0.041 | ug/l | 2.3 UJ | 2.2 U | 2.2 UJ | 2.2 U | 2.2 UJ | 2.2 R | 2.2 UJ | 2.2 U | 2.3 U |
| Phenanthrene | -- | -- | -- | ug/l | 0.67 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.68 U |
| Phenol | 300 | -- | 580 | ug/l | 0.42 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.43 U |
| Pyrene | 830 | -- | 12 | ug/l | 0.86 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.87 U |

Preliminary Under QA and QC Review

**Table 8. Semivolatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-025b | CFMW-025b | CFMW-026 | CFMW-026 | CFMW-027 | CFMW-027 | CFMW-028 | CFMW-028 | CFMW-029 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/13/2016 | 12/7/2016 | 9/13/2016 | 12/5/2016 | 9/13/2016 | 12/14/2016 | 9/13/2016 | 12/5/2016 | 9/13/2016 |
| | | | | Sample Designation | CFMW-025b-GW | CFMW-025b-GW | CFMW-026-GW | CFMW-026-GW | CFMW-027-GW | CFMW-027-GW | CFMW-028-GW | CFMW-028-GW | CFMW-029-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| 1,1'-Biphenyl | -- | -- | 0.083 | ug/l | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.64 U | 0.63 U | 0.63 U | 0.63 U | 0.66 U |
| 1,2,4,5-Tetrachlorobenzene | 0.97 | -- | 0.17 | ug/l | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.44 U | 0.43 U | 0.43 U | 0.43 U | 0.45 U |
| 1,4-Dioxane | -- | -- | 0.46 | ug/l | 3.1 U | 3.1 U | 3.1 U | 3.1 U | 3.2 U | 3.1 UJ | 3.1 U | 3.1 U | 3.2 U |
| 2,2'-oxybis[1-chloropropane] | 1400 | -- | -- | ug/l | 0.93 U | 0.93 U | 0.93 U | 0.93 U | 0.95 U | 0.93 U | 0.93 U | 0.93 U | 0.97 U |
| 2,3,4,6-Tetrachlorophenol | -- | -- | 24 | ug/l | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.7 U | 0.69 U | 0.69 U | 0.69 U | 0.72 U |
| 2,4,5-Trichlorophenol | 1800 | -- | 120 | ug/l | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.5 U | 0.49 U | 0.49 U | 0.49 U | 0.51 U |
| 2,4,6-Trichlorophenol | 30 | -- | 1.2 | ug/l | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.54 U | 0.53 U | 0.53 U | 0.53 U | 0.55 U |
| 2,4-Dichlorophenol | 77 | -- | 4.6 | ug/l | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.64 U | 0.63 U | 0.63 U | 0.63 U | 0.66 U |
| 2,4-Dimethylphenol | 380 | -- | 36 | ug/l | 0.91 U | 0.91 U | 0.91 U | 0.91 U | 0.93 U | 0.91 U | 0.91 U | 0.91 U | 0.95 U |
| 2,4-Dinitrophenol | 69 | -- | 3.9 | ug/l | 2.4 UJ | 2.4 U | 2.4 UJ | 2.4 U | 2.4 UJ | 2.4 U | 2.4 UJ | 2.4 U | 2.5 UJ |
| 2,4-Dinitrotoluene | 1.1 | -- | 0.24 | ug/l | 1 U | 1 U | 1 U | 1 U | 1.1 U | 1 U | 1 U | 1 U | 1.1 U |
| 2,6-Dinitrotoluene | 0.5 | -- | 0.049 | ug/l | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.9 U | 0.88 U | 0.88 U | 0.88 U | 0.92 U |
| 2-Chloronaphthalene | 1000 | -- | -- | ug/l | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.62 U | 0.61 U | 0.61 U | 0.61 U | 0.64 U |
| 2-Chlorophenol | 81 | -- | 9.1 | ug/l | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.76 U | 0.74 U | 0.74 U | 0.74 U | 0.77 U |
| 2-Methylnaphthalene | -- | -- | 3.6 | ug/l | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.9 U | 0.88 U | 0.88 U | 0.88 U | 0.92 U |
| 2-Methylphenol | -- | -- | -- | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| 2-Nitroaniline | -- | -- | 19 | ug/l | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.66 U | 0.65 U | 0.65 U | 0.65 U | 0.68 U |
| 2-Nitrophenol | -- | -- | -- | ug/l | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.6 U | 0.59 U | 0.59 U | 0.59 U | 0.61 U |
| 3 & 4 Methylphenol | -- | -- | -- | ug/l | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.9 U | 0.88 U | 0.88 U | 0.88 U | 0.92 U |
| 3,3'-Dichlorobenzidine | 0.21 | -- | 0.13 | ug/l | 1 U | 1 U | 1 U | 1 U | 1.1 U | 1 U | 1 U | 1 U | 1.1 U |
| 3-Nitroaniline | -- | -- | -- | ug/l | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.84 U | 0.82 U | 0.82 U | 0.82 U | 0.85 U |
| 4,6-Dinitro-2-methylphenol | 13 | -- | -- | ug/l | 2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | 2 U | 2 U | 2.1 U |
| 4-Bromophenyl phenyl ether | -- | -- | -- | ug/l | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1.1 U |
| 4-Chloro-3-methylphenol | 3000 | -- | -- | ug/l | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.78 U | 0.76 U | 0.76 U | 0.76 U | 0.79 U |
| 4-Chloroaniline | -- | -- | 0.37 | ug/l | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.74 U | 0.73 U | 0.73 U | 0.73 U | 0.76 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | ug/l | 0.96 U | 0.96 U | 0.96 U | 0.96 U | 0.98 U | 0.96 U | 0.96 U | 0.96 U | 1 U |
| 4-Nitroaniline | -- | -- | 3.8 | ug/l | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.49 U | 0.48 U | 0.48 U | 0.48 U | 0.5 U |
| 4-Nitrophenol | 60 | -- | -- | ug/l | 4.7 U | 4.7 U | 4.7 U | 4.7 U | 4.7 U | 4.7 U | 4.7 U | 4.7 U | 4.8 U |
| Acenaphthene | 670 | -- | 53 | ug/l | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.9 U | 0.88 UJ | 0.88 U | 0.88 U | 0.92 U |
| Acenaphthylene | -- | -- | -- | ug/l | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.66 U | 0.65 U | 0.65 U | 0.65 U | 0.68 U |
| Acetophenone | -- | -- | 190 | ug/l | 1 U | 1 U | 1 U | 1 U | 1.1 U | 1 U | 1 U | 1 U | 1.1 U |
| Anthracene | 2100 | -- | 180 | ug/l | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.58 U | 0.57 U | 0.57 U | 0.57 U | 0.59 U |
| Atrazine | 3 | 3 | 0.3 | ug/l | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.79 U | 0.77 U | 0.77 U | 0.77 U | 0.8 U |
| Benzaldehyde | -- | -- | 190 | ug/l | 0.86 U | 0.86 U | 0.86 U | 0.86 U | 0.88 U | 0.86 U | 0.86 U | 0.86 U | 0.9 U |
| Benzo[a]anthracene | 0.5 | -- | -- | ug/l | 0.55 U | 0.55 U | 0.55 U | 0.55 U | 0.56 U | 0.55 U | 0.55 U | 0.55 U | 0.57 U |
| Benzo[a]pyrene | 0.05 | 0.2 | 0.0034 | ug/l | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.17 U |
| Benzo[b]fluoranthene | 0.5 | -- | 0.034 | ug/l | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.45 U | 0.44 U | 0.44 U | 0.44 U | 0.46 U |
| Benzo[g,h,i]perylene | -- | -- | -- | ug/l | 0.75 U | 0.75 U | 0.75 U | 0.75 U | 0.77 U | 0.75 U | 0.75 U | 0.75 U | 0.78 U |
| Benzo[k]fluoranthene | 5 | -- | 0.34 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.19 U |

Preliminary Under Final and MDEQ Review

**Table 8. Semivolatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | Sample Location | | CFMW-025b | CFMW-025b | CFMW-026 | CFMW-026 | CFMW-027 | CFMW-027 | CFMW-028 | CFMW-028 | CFMW-029 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sample Date | | 9/13/2016 | 12/7/2016 | 9/13/2016 | 12/5/2016 | 9/13/2016 | 12/14/2016 | 9/13/2016 | 12/5/2016 | 9/13/2016 |
| | | | Sample Designation | | CFMW-025b-GW | CFMW-025b-GW | CFMW-026-GW | CFMW-026-GW | CFMW-027-GW | CFMW-027-GW | CFMW-028-GW | CFMW-028-GW | CFMW-029-GW |
| | | | Sample Round | | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | Sample Type | | N | N | N | N | N | N | N | N | N |
| Bis(2-chloroethoxy)methane | -- | -- | 5.9 | ug/l | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.7 U | 0.69 U | 0.69 U | 0.69 U | 0.72 U |
| Bis(2-chloroethyl)ether | 0.3 | -- | 0.014 | ug/l | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 UJ | 0.12 U | 0.12 U | 0.13 U |
| Bis(2-ethylhexyl) phthalate | 6 | 6 | 5.6 | ug/l | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.73 U | 0.72 U | 0.72 U | 0.72 U | 0.75 U |
| Butyl benzyl phthalate | 1500 | -- | 16 | ug/l | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.61 U | 0.6 U | 0.6 U | 0.6 U | 0.63 U |
| Caprolactam | -- | -- | 990 | ug/l | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| Carbazole | -- | -- | -- | ug/l | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.87 U | 0.85 U | 0.85 U | 0.85 U | 0.89 U |
| Chrysene | 50 | -- | 3.4 | ug/l | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.68 U | 0.67 U | 0.67 U | 0.67 U | 0.7 U |
| Dibenz(a,h)anthracene | 0.05 | -- | 0.0034 | ug/l | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.092 U | 0.09 U | 0.09 U | 0.09 U | 0.094 U |
| Dibenzofuran | -- | -- | 0.79 | ug/l | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.87 U | 0.85 U | 0.85 U | 0.85 U | 0.89 U |
| Diethyl phthalate | 17000 | -- | -- | ug/l | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Dimethyl phthalate | 270000 | -- | -- | ug/l | 0.98 U | 0.98 U | 0.98 U | 0.98 U | 1 U | 0.98 U | 0.98 U | 0.98 U | 1 U |
| Di-n-butyl phthalate | 2000 | -- | -- | ug/l | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.84 U | 0.82 U | 0.82 U | 0.82 U | 0.85 U |
| Di-n-octyl phthalate | -- | -- | 20 | ug/l | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.7 U | 0.69 U | 0.69 U | 0.69 U | 0.72 U |
| Fluoranthene | 130 | -- | 80 | ug/l | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.73 U | 0.72 U | 0.72 U | 0.72 U | 0.75 U |
| Fluorene | 1100 | -- | 29 | ug/l | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.82 U | 0.8 U | 0.8 U | 0.8 U | 0.83 U |
| Hexachlorobenzene | 0.2 | 1 | 0.0098 | ug/l | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.48 U | 0.47 U | 0.47 U | 0.47 U | 0.49 U |
| Hexachlorobutadiene | 5 | -- | 0.14 | ug/l | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.78 U | 0.76 U | 0.76 U | 0.76 U | 0.79 U |
| Hexachlorocyclopentadiene | 50 | 50 | 0.041 | ug/l | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.62 U | 0.61 U | 0.61 U | 0.61 U | 0.64 U |
| Hexachloroethane | 30 | -- | 0.33 | ug/l | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.092 U | 0.09 U | 0.09 U | 0.09 U | 0.094 U |
| Indeno[1,2,3-cd]pyrene | 0.5 | -- | 0.034 | ug/l | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.22 U |
| Isophorone | 400 | -- | 78 | ug/l | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.68 U | 0.67 U | 0.67 U | 0.67 U | 0.7 U |
| Naphthalene | 100 | -- | 0.17 | ug/l | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.82 U | 0.8 U | 0.8 U | 0.8 U | 0.83 U |
| Nitrobenzene | 17 | -- | 0.14 | ug/l | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.5 U | 0.49 U | 0.49 U | 0.49 U | 0.51 U |
| N-Nitrosodi-n-propylamine | 0.5 | -- | 0.011 | ug/l | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.85 U | 0.83 U | 0.83 U | 0.83 U | 0.86 U |
| N-Nitrosodiphenylamine | 33 | -- | 12 | ug/l | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.76 U | 0.74 UJ | 0.74 U | 0.74 U | 0.77 U |
| Pentachlorophenol | 1 | 1 | 0.041 | ug/l | 2.2 R | 2.2 U | 2.2 R | 2.2 U | 2.2 R | 2.2 UJ | 2.2 R | 2.2 U | |
| Phenanthrene | -- | -- | -- | ug/l | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.66 U | 0.65 U | 0.65 U | 0.65 U | 0.68 U |
| Phenol | 300 | -- | 580 | ug/l | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.42 U | 0.41 U | 0.41 U | 0.41 U | 0.43 U |
| Pyrene | 830 | -- | 12 | ug/l | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.85 U | 0.83 U | 0.83 U | 0.83 U | 0.86 U |

Preliminary Under Final and MDEQ Review

**Table 8. Semivolatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-029 | CFMW-029 | CFMW-031 | CFMW-031 | CFMW-032 | CFMW-032 | CFMW-033 | CFMW-033 | CFMW-034 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/13/2016 | 12/14/2016 | 9/15/2016 | 12/9/2016 | 9/15/2016 | 12/13/2016 | 9/15/2016 | 12/6/2016 | 9/14/2016 |
| | | | | Sample Designation | CFMW-DUP1-GW | CFMW-029-GW | CFMW-031-GW | CFMW-031-GW | CFMW-032-GW | CFMW-032-GW | CFMW-033-GW | CFMW-033-GW | CFMW-034-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | FD | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| 1,1'-Biphenyl | -- | -- | 0.083 | ug/l | 0.66 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.66 U |
| 1,2,4,5-Tetrachlorobenzene | 0.97 | -- | 0.17 | ug/l | 0.45 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.45 U |
| 1,4-Dioxane | -- | -- | 0.46 | ug/l | 3.2 U | 3.1 UJ | 3.1 U | 3.1 U | 3.1 U | 3.1 U | 3.1 U | 3.1 U | 3.3 U |
| 2,2'-oxybis[1-chloropropane] | 1400 | -- | -- | ug/l | 0.97 U | 0.93 U | 0.93 U | 0.93 U | 0.93 U | 0.93 U | 0.93 U | 0.93 UJ | 0.97 U |
| 2,3,4,6-Tetrachlorophenol | -- | -- | 24 | ug/l | 0.72 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.72 U |
| 2,4,5-Trichlorophenol | 1800 | -- | 120 | ug/l | 0.51 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.51 U |
| 2,4,6-Trichlorophenol | 30 | -- | 1.2 | ug/l | 0.55 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.55 U |
| 2,4-Dichlorophenol | 77 | -- | 4.6 | ug/l | 0.66 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.66 U |
| 2,4-Dimethylphenol | 380 | -- | 36 | ug/l | 0.95 U | 0.91 U | 0.91 U | 0.91 U | 0.91 U | 0.91 UJ | 0.91 U | 0.91 U | 0.95 U |
| 2,4-Dinitrophenol | 69 | -- | 3.9 | ug/l | 2.5 UJ | 2.4 U | 2.4 U | 2.4 U | 2.4 U | 2.4 U | 2.4 U | 2.4 U | 2.5 UJ |
| 2,4-Dinitrotoluene | 1.1 | -- | 0.24 | ug/l | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1.1 U |
| 2,6-Dinitrotoluene | 0.5 | -- | 0.049 | ug/l | 0.92 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.92 U |
| 2-Chloronaphthalene | 1000 | -- | -- | ug/l | 0.64 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.64 U |
| 2-Chlorophenol | 81 | -- | 9.1 | ug/l | 0.77 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.77 U |
| 2-Methylnaphthalene | -- | -- | 3.6 | ug/l | 0.92 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.92 U |
| 2-Methylphenol | -- | -- | -- | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 UJ | 1.3 U |
| 2-Nitroaniline | -- | -- | 19 | ug/l | 0.68 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 UJ | 0.65 U | 0.68 UJ |
| 2-Nitrophenol | -- | -- | -- | ug/l | 0.61 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.62 U |
| 3 & 4 Methylphenol | -- | -- | -- | ug/l | 0.92 U | 0.88 U | 0.88 UJ | 0.88 U | 0.88 UJ | 0.88 U | 0.88 UJ | 0.88 UJ | 0.92 UJ |
| 3,3'-Dichlorobenzidine | 0.21 | -- | 0.13 | ug/l | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1.1 U |
| 3-Nitroaniline | -- | -- | -- | ug/l | 0.85 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.86 U |
| 4,6-Dinitro-2-methylphenol | 13 | -- | -- | ug/l | 2.1 U | 2 U | 2 U | 2 U | 2 U | 2 U | 2 U | 2 U | 2.1 U |
| 4-Bromophenyl phenyl ether | -- | -- | -- | ug/l | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1.1 U |
| 4-Chloro-3-methylphenol | 3000 | -- | -- | ug/l | 0.79 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.79 U |
| 4-Chloroaniline | -- | -- | 0.37 | ug/l | 0.76 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.76 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | ug/l | 1 U | 0.96 U | 0.96 U | 0.96 U | 0.96 U | 0.96 U | 0.96 U | 0.96 U | 1 U |
| 4-Nitroaniline | -- | -- | 3.8 | ug/l | 0.5 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.5 U |
| 4-Nitrophenol | 60 | -- | -- | ug/l | 4.8 U | 4.7 U | 4.7 UJ | 4.7 U | 4.7 UJ | 4.7 UJ | 4.7 U | 4.7 UJ | 4.9 U |
| Acenaphthene | 670 | -- | 53 | ug/l | 0.92 U | 0.88 UJ | 0.88 U | 0.88 U | 0.88 U | 0.88 UJ | 0.88 U | 0.88 U | 0.92 U |
| Acenaphthylene | -- | -- | -- | ug/l | 0.68 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.68 U |
| Acetophenone | -- | -- | 190 | ug/l | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1.1 U |
| Anthracene | 2100 | -- | 180 | ug/l | 0.59 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.6 U |
| Atrazine | 3 | 3 | 0.3 | ug/l | 0.8 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.81 U |
| Benzaldehyde | -- | -- | 190 | ug/l | 0.9 U | 0.86 U | 0.86 U | 0.86 U | 0.86 U | 0.86 U | 0.86 U | 0.86 U | 0.9 U |
| Benzo[a]anthracene | 0.5 | -- | -- | ug/l | 0.57 U | 0.55 U | 0.55 U | 0.55 U | 0.55 U | 0.55 U | 0.55 U | 0.55 U | 0.58 U |
| Benzo[a]pyrene | 0.05 | 0.2 | 0.0034 | ug/l | 0.17 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.17 U |
| Benzo[b]fluoranthene | 0.5 | -- | 0.034 | ug/l | 0.46 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.46 U |
| Benzo[g,h,i]perylene | -- | -- | -- | ug/l | 0.78 U | 0.75 U | 0.75 U | 0.75 U | 0.75 U | 0.75 U | 0.75 U | 0.75 U | 0.78 U |
| Benzo[k]fluoranthene | 5 | -- | 0.34 | ug/l | 0.19 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.19 U |

Preliminary Under Final Review

**Table 8. Semivolatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Location | CFMW-029 | CFMW-029 | CFMW-031 | CFMW-031 | CFMW-032 | CFMW-032 | CFMW-033 | CFMW-033 | CFMW-034 |
| | | | | Sample Date | 9/13/2016 | 12/14/2016 | 9/15/2016 | 12/9/2016 | 9/15/2016 | 12/13/2016 | 9/15/2016 | 12/6/2016 | 9/14/2016 |
| | | | | Sample Designation | CFMW-DUP1-GW | CFMW-029-GW | CFMW-031-GW | CFMW-031-GW | CFMW-032-GW | CFMW-032-GW | CFMW-033-GW | CFMW-033-GW | CFMW-034-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | FD | N | N | N | N | N | N | N | N |
| Bis(2-chloroethoxy)methane | -- | -- | 5.9 | ug/l | 0.72 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.72 U |
| Bis(2-chloroethyl)ether | 0.3 | -- | 0.014 | ug/l | 0.13 U | 0.12 UJ | 0.12 U | 0.12 UJ | 0.12 U | 0.12 UJ | 0.12 U | 0.12 UJ | 0.13 U |
| Bis(2-ethylhexyl) phthalate | 6 | 6 | 5.6 | ug/l | 0.75 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.75 U |
| Butyl benzyl phthalate | 1500 | -- | 16 | ug/l | 0.63 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 UJ | 0.6 U | 0.6 U | 0.63 U |
| Caprolactam | -- | -- | 990 | ug/l | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 UJ | 1.1 U | 1.1 U | 1.1 U |
| Carbazole | -- | -- | -- | ug/l | 0.89 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.89 U |
| Chrysene | 50 | -- | 3.4 | ug/l | 0.7 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 UJ | 0.7 U |
| Dibenz(a,h)anthracene | 0.05 | -- | 0.0034 | ug/l | 0.094 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.094 U |
| Dibenzofuran | -- | -- | 0.79 | ug/l | 0.89 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.89 U |
| Diethyl phthalate | 17000 | -- | -- | ug/l | 1 U | 1 U | 1 U | 1 U | 1 U | 1 UJ | 1 U | 1 U | 1 U |
| Dimethyl phthalate | 270000 | -- | -- | ug/l | 1 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U | 1 U |
| Di-n-butyl phthalate | 2000 | -- | -- | ug/l | 0.85 U | 0.82 U | 0.82 U | 1.3 J | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.86 U |
| Di-n-octyl phthalate | -- | -- | 20 | ug/l | 0.72 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 UJ | 0.69 U | 0.69 U | 0.72 U |
| Fluoranthene | 130 | -- | 80 | ug/l | 0.75 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.75 U |
| Fluorene | 1100 | -- | 29 | ug/l | 0.83 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.84 U |
| Hexachlorobenzene | 0.2 | 1 | 0.0098 | ug/l | 0.49 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.49 U |
| Hexachlorobutadiene | 5 | -- | 0.14 | ug/l | 0.79 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.79 U |
| Hexachlorocyclopentadiene | 50 | 50 | 0.041 | ug/l | 0.64 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.64 U |
| Hexachloroethane | 30 | -- | 0.33 | ug/l | 0.094 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.094 U |
| Indeno[1,2,3-cd]pyrene | 0.5 | -- | 0.034 | ug/l | 0.22 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.22 U |
| Isophorone | 400 | -- | 78 | ug/l | 0.7 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.7 U |
| Naphthalene | 100 | -- | 0.17 | ug/l | 0.83 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.84 U |
| Nitrobenzene | 17 | -- | 0.14 | ug/l | 0.51 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.51 U |
| N-Nitrosodi-n-propylamine | 0.5 | -- | 0.011 | ug/l | 0.86 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 UJ | 0.83 U | 0.87 UJ |
| N-Nitrosodiphenylamine | 33 | -- | 12 | ug/l | 0.77 U | 0.74 UJ | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.77 U |
| Pentachlorophenol | 1 | 1 | 0.041 | ug/l | 2.3 R | 2.2 UJ | 2.2 U | 2.2 UJ | 2.2 U | 2.2 UJ | 2.2 U | 2.2 U | 2.3 R |
| Phenanthrene | -- | -- | -- | ug/l | 0.68 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.68 U |
| Phenol | 300 | -- | 580 | ug/l | 0.43 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.43 U |
| Pyrene | 830 | -- | 12 | ug/l | 0.86 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.87 U |

Preliminary Under Data and MVQ Review

**Table 8. Semivolatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-034 | CFMW-035 | CFMW-035 | CFMW-037 | CFMW-037 | CFMW-038 | CFMW-038 | CFMW-040 | CFMW-040 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/13/2016 | 9/14/2016 | 12/13/2016 | 9/16/2016 | 12/8/2016 | 9/14/2016 | 12/9/2016 | 9/14/2016 | 12/13/2016 |
| | | | | Sample Designation | CFMW-034-GW | CFMW-035-GW | CFMW-035-GW | CFMW-037-GW | CFMW-037-GW | CFMW-038-GW | CFMW-038-GW | CFMW-040-GW | CFMW-040-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| 1,1'-Biphenyl | -- | -- | 0.083 | ug/l | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.66 U | 0.63 U | 0.64 U | 0.63 U |
| 1,2,4,5-Tetrachlorobenzene | 0.97 | -- | 0.17 | ug/l | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.45 U | 0.43 U | 0.44 U | 0.43 U |
| 1,4-Dioxane | -- | -- | 0.46 | ug/l | 3.1 U | 3.1 U | 3.1 U | 3.1 U | 3.1 U | 3.2 U | 3.1 U | 3.2 U | 3.1 U |
| 2,2'-oxybis[1-chloropropane] | 1400 | -- | -- | ug/l | 0.93 U | 0.93 U | 0.93 U | 0.93 U | 0.93 U | 0.97 U | 0.93 U | 0.95 U | 0.93 U |
| 2,3,4,6-Tetrachlorophenol | -- | -- | 24 | ug/l | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.72 U | 0.69 U | 0.7 U | 0.69 U |
| 2,4,5-Trichlorophenol | 1800 | -- | 120 | ug/l | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.51 U | 0.49 U | 0.5 U | 0.49 U |
| 2,4,6-Trichlorophenol | 30 | -- | 1.2 | ug/l | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.55 U | 0.53 U | 0.54 U | 0.53 U |
| 2,4-Dichlorophenol | 77 | -- | 4.6 | ug/l | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.66 U | 0.63 U | 0.64 U | 0.63 U |
| 2,4-Dimethylphenol | 380 | -- | 36 | ug/l | 0.91 UJ | 0.91 U | 0.91 UJ | 0.91 U | 0.91 U | 0.95 U | 0.91 U | 0.93 U | 0.91 UJ |
| 2,4-Dinitrophenol | 69 | -- | 3.9 | ug/l | 2.4 U | 2.4 UJ | 2.4 U | 2.4 U | 2.4 U | 2.5 UJ | 2.4 U | 2.4 UJ | 2.4 U |
| 2,4-Dinitrotoluene | 1.1 | -- | 0.24 | ug/l | 1 U | 1 U | 1 U | 1 U | 1 U | 1.1 U | 1 U | 1.1 U | 1 U |
| 2,6-Dinitrotoluene | 0.5 | -- | 0.049 | ug/l | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.92 U | 0.88 U | 0.9 U | 0.88 U |
| 2-Chloronaphthalene | 1000 | -- | -- | ug/l | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.64 U | 0.61 U | 0.62 U | 0.61 U |
| 2-Chlorophenol | 81 | -- | 9.1 | ug/l | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.77 U | 0.74 U | 0.76 U | 0.74 U |
| 2-Methylnaphthalene | -- | -- | 3.6 | ug/l | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.92 U | 0.88 U | 0.9 U | 0.88 U |
| 2-Methylphenol | -- | -- | -- | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| 2-Nitroaniline | -- | -- | 19 | ug/l | 0.65 U | 0.65 UJ | 0.65 U | 0.65 UJ | 0.65 U | 0.68 UJ | 0.65 U | 0.66 UJ | 0.65 U |
| 2-Nitrophenol | -- | -- | -- | ug/l | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.61 U | 0.59 U | 0.6 U | 0.59 U |
| 3 & 4 Methylphenol | -- | -- | -- | ug/l | 0.88 U | 0.88 UJ | 0.88 U | 0.88 UJ | 0.88 U | 0.92 UJ | 0.88 U | 0.9 UJ | 0.88 U |
| 3,3'-Dichlorobenzidine | 0.21 | -- | 0.13 | ug/l | 1 U | 1 U | 1 U | 1 U | 1 U | 1.1 U | 1 U | 1.1 U | 1 U |
| 3-Nitroaniline | -- | -- | -- | ug/l | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.85 U | 0.82 U | 0.84 U | 0.82 U |
| 4,6-Dinitro-2-methylphenol | 13 | -- | -- | ug/l | 2 U | 2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | 2.1 U | 2 U |
| 4-Bromophenyl phenyl ether | -- | -- | -- | ug/l | 1 U | 1 U | 1 U | 1 U | 1 U | 1.1 U | 1 U | 1 U | 1 U |
| 4-Chloro-3-methylphenol | 3000 | -- | -- | ug/l | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.79 U | 0.76 U | 0.78 U | 0.76 U |
| 4-Chloroaniline | -- | -- | 0.37 | ug/l | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.76 U | 0.73 U | 0.74 U | 0.73 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | ug/l | 0.96 U | 0.96 U | 0.96 U | 0.96 U | 0.96 U | 1 U | 0.96 U | 0.98 U | 0.96 U |
| 4-Nitroaniline | -- | -- | 3.8 | ug/l | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.5 U | 0.48 U | 0.49 U | 0.48 U |
| 4-Nitrophenol | 60 | -- | -- | ug/l | 4.7 UJ | 4.7 U | 4.7 UJ | 4.7 U | 4.7 U | 4.8 U | 4.7 U | 4.7 U | 4.7 UJ |
| Acenaphthene | 670 | -- | 53 | ug/l | 0.88 UJ | 0.88 U | 0.88 UJ | 0.88 U | 0.88 U | 0.92 U | 0.88 UJ | 0.9 U | 0.88 UJ |
| Acenaphthylene | -- | -- | -- | ug/l | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.68 U | 0.65 U | 0.66 U | 0.65 U |
| Acetophenone | -- | -- | 190 | ug/l | 1 U | 1 U | 1 U | 1 U | 1 U | 1.1 U | 1 U | 1.1 U | 1 U |
| Anthracene | 2100 | -- | 180 | ug/l | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.59 U | 0.57 U | 0.58 U | 0.57 U |
| Atrazine | 3 | 3 | 0.3 | ug/l | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.8 U | 0.77 U | 0.79 U | 0.77 U |
| Benzaldehyde | -- | -- | 190 | ug/l | 0.86 U | 0.86 U | 0.86 U | 0.86 U | 0.86 U | 0.9 U | 0.86 UJ | 0.88 U | 0.86 U |
| Benzo[a]anthracene | 0.5 | -- | -- | ug/l | 0.55 U | 0.55 U | 0.55 U | 0.55 U | 0.55 U | 0.57 U | 0.55 U | 0.56 U | 0.55 U |
| Benzo[a]pyrene | 0.05 | 0.2 | 0.0034 | ug/l | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.17 U | 0.16 U | 0.16 U | 0.16 U |
| Benzo[b]fluoranthene | 0.5 | -- | 0.034 | ug/l | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.46 U | 0.44 U | 0.45 U | 0.44 U |
| Benzo[g,h,i]perylene | -- | -- | -- | ug/l | 0.75 U | 0.75 U | 0.75 U | 0.75 U | 0.75 U | 0.78 U | 0.75 U | 0.77 U | 0.75 U |
| Benzo[k]fluoranthene | 5 | -- | 0.34 | ug/l | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.19 U | 0.18 U | 0.18 U | 0.18 U |

Preliminary Under EPA and MDEQ Review

**Table 8. Semivolatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-034 | CFMW-035 | CFMW-035 | CFMW-037 | CFMW-037 | CFMW-038 | CFMW-038 | CFMW-040 | CFMW-040 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/13/2016 | 9/14/2016 | 12/13/2016 | 9/16/2016 | 12/8/2016 | 9/14/2016 | 12/9/2016 | 9/14/2016 | 12/13/2016 |
| | | | | Sample Designation | CFMW-034-GW | CFMW-035-GW | CFMW-035-GW | CFMW-037-GW | CFMW-037-GW | CFMW-038-GW | CFMW-038-GW | CFMW-040-GW | CFMW-040-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Bis(2-chloroethoxy)methane | -- | -- | 5.9 | ug/l | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.72 U | 0.69 U | 0.7 U | 0.69 U |
| Bis(2-chloroethyl)ether | 0.3 | -- | 0.014 | ug/l | 0.12 UJ | 0.12 U | 0.12 UJ | 0.12 U | 0.12 UJ | 0.13 U | 0.12 UJ | 0.12 U | 0.12 UJ |
| Bis(2-ethylhexyl) phthalate | 6 | 6 | 5.6 | ug/l | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 1.1 J | 0.72 U | 0.73 U | 0.72 U |
| Butyl benzyl phthalate | 1500 | -- | 16 | ug/l | 0.6 UJ | 0.6 U | 0.6 UJ | 0.6 U | 0.6 U | 0.63 U | 0.6 U | 0.61 U | 0.6 UJ |
| Caprolactam | -- | -- | 990 | ug/l | 1.1 UJ | 1.1 U | 1.1 UJ | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 UJ |
| Carbazole | -- | -- | -- | ug/l | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.89 U | 0.85 U | 0.87 U | 0.85 U |
| Chrysene | 50 | -- | 3.4 | ug/l | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.7 U | 0.67 U | 0.68 U | 0.67 U |
| Dibenz(a,h)anthracene | 0.05 | -- | 0.0034 | ug/l | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.094 U | 0.09 U | 0.092 U | 0.09 U |
| Dibenzofuran | -- | -- | 0.79 | ug/l | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.89 U | 0.85 U | 0.87 U | 0.85 U |
| Diethyl phthalate | 17000 | -- | -- | ug/l | 1 UJ | 1 U | 1 UJ | 1 U | 1 U | 1 U | 1 U | 1 U | 1 UJ |
| Dimethyl phthalate | 270000 | -- | -- | ug/l | 0.98 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U | 1 U | 0.98 U | 1 U | 0.98 U |
| Di-n-butyl phthalate | 2000 | -- | -- | ug/l | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.85 U | 0.82 U | 0.84 U | 0.82 U |
| Di-n-octyl phthalate | -- | -- | 20 | ug/l | 0.69 UJ | 0.69 U | 0.69 UJ | 0.69 U | 0.69 U | 0.72 U | 0.69 U | 0.7 U | 0.69 UJ |
| Fluoranthene | 130 | -- | 80 | ug/l | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.75 U | 0.72 U | 0.73 U | 0.72 U |
| Fluorene | 1100 | -- | 29 | ug/l | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.83 U | 0.8 U | 0.82 U | 0.8 U |
| Hexachlorobenzene | 0.2 | 1 | 0.0098 | ug/l | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.49 U | 0.47 U | 0.48 U | 0.47 U |
| Hexachlorobutadiene | 5 | -- | 0.14 | ug/l | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.79 U | 0.76 U | 0.78 U | 0.76 U |
| Hexachlorocyclopentadiene | 50 | 50 | 0.041 | ug/l | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.64 U | 0.61 U | 0.62 U | 0.61 U |
| Hexachloroethane | 30 | -- | 0.33 | ug/l | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.094 U | 0.09 U | 0.092 U | 0.09 U |
| Indeno[1,2,3-cd]pyrene | 0.5 | -- | 0.034 | ug/l | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.22 U | 0.21 U | 0.21 U | 0.21 U |
| Isophorone | 400 | -- | 78 | ug/l | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.7 U | 0.67 U | 0.68 U | 0.67 U |
| Naphthalene | 100 | -- | 0.17 | ug/l | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.83 U | 0.8 U | 0.82 U | 0.8 U |
| Nitrobenzene | 17 | -- | 0.14 | ug/l | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.51 U | 0.49 U | 0.5 U | 0.49 U |
| N-Nitrosodi-n-propylamine | 0.5 | -- | 0.011 | ug/l | 0.83 U | 0.83 UJ | 0.83 U | 0.83 UJ | 0.83 U | 0.86 UJ | 0.83 U | 0.85 UJ | 0.83 U |
| N-Nitrosodiphenylamine | 33 | -- | 12 | ug/l | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.77 U | 0.74 U | 0.76 U | 0.74 U |
| Pentachlorophenol | 1 | 1 | 0.041 | ug/l | 2.2 UJ | 2.2 R | 2.2 UJ | 2.2 U | 2.2 U | 2.3 R | 2.2 U | 2.2 R | 2.2 UJ |
| Phenanthrene | -- | -- | -- | ug/l | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.68 U | 0.65 U | 0.66 U | 0.65 U |
| Phenol | 300 | -- | 580 | ug/l | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.43 U | 0.41 U | 0.42 U | 0.41 U |
| Pyrene | 830 | -- | 12 | ug/l | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.86 U | 0.83 U | 0.85 U | 0.83 U |

Preliminary Under QA and DEQ Review

**Table 8. Semivolatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-042 | CFMW-043 | CFMW-043 | CFMW-044 | CFMW-044 | CFMW-044b | CFMW-044b | CFMW-045 | CFMW-045 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/14/2016 | 9/13/2016 | 12/14/2016 | 9/15/2016 | 12/9/2016 | 9/19/2016 | 12/19/2016 | 9/15/2016 | 12/14/2016 |
| | | | | Sample Designation | CFMW-042-GW | CFMW-043-GW | CFMW-043-GW | CFMW-044-GW | CFMW-044-GW | CFMW-044b-GW | CFMW-044b-GW | CFMW-045-GW | CFMW-045-GW |
| | | | | Sample Round | Round 1 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| 1,1'-Biphenyl | -- | -- | 0.083 | ug/l | 0.66 U | 0.67 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.66 UJ | 0.63 U | 0.63 U |
| 1,2,4,5-Tetrachlorobenzene | 0.97 | -- | 0.17 | ug/l | 0.45 U | 0.46 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.45 U | 0.43 U | 0.43 U |
| 1,4-Dioxane | -- | -- | 0.46 | ug/l | 3.2 U | 3.3 U | 3.1 UJ | 3.1 U | 3.1 U | 3.1 U | 3.3 U | 3.1 U | 3.1 UJ |
| 2,2'-oxybis[1-chloropropane] | 1400 | -- | -- | ug/l | 0.97 U | 0.99 U | 0.93 U | 0.93 U | 0.93 U | 0.93 U | 0.98 U | 0.93 U | 0.93 U |
| 2,3,4,6-Tetrachlorophenol | -- | -- | 24 | ug/l | 0.72 U | 0.73 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.73 U | 0.69 U | 0.69 U |
| 2,4,5-Trichlorophenol | 1800 | -- | 120 | ug/l | 0.51 U | 0.52 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.52 U | 0.49 U | 0.49 U |
| 2,4,6-Trichlorophenol | 30 | -- | 1.2 | ug/l | 0.55 U | 0.56 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.56 U | 0.53 U | 0.53 U |
| 2,4-Dichlorophenol | 77 | -- | 4.6 | ug/l | 0.66 U | 0.67 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.66 U | 0.63 U | 0.63 U |
| 2,4-Dimethylphenol | 380 | -- | 36 | ug/l | 0.95 U | 0.97 U | 0.91 U | 0.91 U | 0.91 U | 0.91 U | 0.96 U | 0.91 U | 0.91 U |
| 2,4-Dinitrophenol | 69 | -- | 3.9 | ug/l | 2.5 UJ | 2.5 UJ | 2.4 U | 2.4 U | 2.4 U | 2.4 U | 2.5 U | 2.4 U | 2.4 U |
| 2,4-Dinitrotoluene | 1.1 | -- | 0.24 | ug/l | 1.1 U | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1.1 U | 1 U | 1 U |
| 2,6-Dinitrotoluene | 0.5 | -- | 0.049 | ug/l | 0.92 U | 0.94 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.93 U | 0.88 U | 0.88 U |
| 2-Chloronaphthalene | 1000 | -- | -- | ug/l | 0.64 U | 0.65 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.64 U | 0.61 U | 0.61 U |
| 2-Chlorophenol | 81 | -- | 9.1 | ug/l | 0.77 U | 0.79 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.78 U | 0.74 U | 0.74 U |
| 2-Methylnaphthalene | -- | -- | 3.6 | ug/l | 0.92 U | 0.94 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.93 U | 0.88 U | 0.88 U |
| 2-Methylphenol | -- | -- | -- | ug/l | 1.3 U | 1.4 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.4 U | 1.3 U | 1.3 U |
| 2-Nitroaniline | -- | -- | 19 | ug/l | 0.68 UJ | 0.69 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.69 U | 0.65 UJ | 0.65 U |
| 2-Nitrophenol | -- | -- | -- | ug/l | 0.61 U | 0.63 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.62 U | 0.59 U | 0.59 U |
| 3 & 4 Methylphenol | -- | -- | -- | ug/l | 0.92 UJ | 0.94 U | 0.88 U | 0.88 UJ | 34 | 0.88 U | 1.4 J | 0.88 UJ | 0.88 U |
| 3,3'-Dichlorobenzidine | 0.21 | -- | 0.13 | ug/l | 1.1 U | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1.1 U | 1 U | 1 U |
| 3-Nitroaniline | -- | -- | -- | ug/l | 0.85 U | 0.87 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.86 U | 0.82 U | 0.82 U |
| 4,6-Dinitro-2-methylphenol | 13 | -- | -- | ug/l | 2.1 U | 2.1 U | 2 U | 2 U | 2 U | 2 U | 2.1 U | 2 U | 2 U |
| 4-Bromophenyl phenyl ether | -- | -- | -- | ug/l | 1.1 U | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1.1 U | 1 U | 1 U |
| 4-Chloro-3-methylphenol | 3000 | -- | -- | ug/l | 0.79 U | 0.81 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.8 U | 0.76 U | 0.76 U |
| 4-Chloroaniline | -- | -- | 0.37 | ug/l | 0.76 U | 0.78 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.77 U | 0.73 U | 0.73 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | ug/l | 1 U | 1 U | 0.96 U | 0.96 U | 0.96 U | 0.96 U | 1 U | 0.96 U | 0.96 U |
| 4-Nitroaniline | -- | -- | 3.8 | ug/l | 0.5 U | 0.51 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.51 U | 0.48 U | 0.48 U |
| 4-Nitrophenol | 60 | -- | -- | ug/l | 4.8 U | 4.9 U | 4.7 U | 4.7 UJ | 4.7 U | 4.7 U | 4.9 U | 4.7 U | 4.7 U |
| Acenaphthene | 670 | -- | 53 | ug/l | 0.92 U | 0.94 U | 0.88 UJ | 0.88 U | 0.88 UJ | 0.88 U | 0.93 U | 0.88 U | 0.88 UJ |
| Acenaphthylene | -- | -- | -- | ug/l | 0.68 U | 0.69 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.69 U | 0.65 U | 0.65 U |
| Acetophenone | -- | -- | 190 | ug/l | 1.1 U | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1.1 U | 1 U | 1 U |
| Anthracene | 2100 | -- | 180 | ug/l | 0.59 U | 0.61 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.6 U | 0.57 U | 0.57 U |
| Atrazine | 3 | 3 | 0.3 | ug/l | 0.8 U | 0.82 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.81 U | 0.77 U | 0.77 U |
| Benzaldehyde | -- | -- | 190 | ug/l | 0.9 U | 0.91 U | 0.86 U | 0.86 U | 0.86 UJ | 0.86 U | 0.91 U | 0.86 U | 0.86 U |
| Benzo[a]anthracene | 0.5 | -- | -- | ug/l | 0.57 U | 0.59 U | 0.55 U | 0.55 U | 0.55 U | 0.55 U | 0.58 U | 0.55 U | 0.55 U |
| Benzo[a]pyrene | 0.05 | 0.2 | 0.0034 | ug/l | 0.17 U | 0.17 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.17 U | 0.16 U | 0.16 U |
| Benzo[b]fluoranthene | 0.5 | -- | 0.034 | ug/l | 0.46 U | 0.47 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.46 U | 0.44 U | 0.44 U |
| Benzo[g,h,i]perylene | -- | -- | -- | ug/l | 0.78 U | 0.8 U | 0.75 U | 0.75 U | 0.75 U | 0.75 U | 0.79 U | 0.75 U | 0.75 U |
| Benzo[k]fluoranthene | 5 | -- | 0.34 | ug/l | 0.19 U | 0.19 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.19 U | 0.18 U | 0.18 U |

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**Table 8. Semivolatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | Sample Location | | CFMW-042 | CFMW-043 | CFMW-043 | CFMW-044 | CFMW-044 | CFMW-044b | CFMW-044b | CFMW-045 | CFMW-045 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sample Date | | 9/14/2016 | 9/13/2016 | 12/14/2016 | 9/15/2016 | 12/9/2016 | 9/19/2016 | 12/19/2016 | 9/15/2016 | 12/14/2016 |
| | | | Sample Designation | | CFMW-042-GW | CFMW-043-GW | CFMW-043-GW | CFMW-044-GW | CFMW-044-GW | CFMW-044b-GW | CFMW-044b-GW | CFMW-045-GW | CFMW-045-GW |
| | | | Sample Round | | Round 1 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | Sample Type | | N | N | N | N | N | N | N | N | N |
| Bis(2-chloroethoxy)methane | -- | -- | 5.9 | ug/l | 0.72 U | 0.73 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.73 U | 0.69 U | 0.69 U |
| Bis(2-chloroethyl)ether | 0.3 | -- | 0.014 | ug/l | 0.13 U | 0.13 U | 0.12 UJ | 0.12 U | 0.12 UJ | 0.12 U | 0.13 UJ | 0.12 U | 0.12 UJ |
| Bis(2-ethylhexyl) phthalate | 6 | 6 | 5.6 | ug/l | 0.75 U | 0.77 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.76 U | 0.72 U | 0.72 U |
| Butyl benzyl phthalate | 1500 | -- | 16 | ug/l | 0.63 U | 0.64 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.63 U | 0.6 U | 0.6 U |
| Caprolactam | -- | -- | 990 | ug/l | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| Carbazole | -- | -- | -- | ug/l | 0.89 U | 0.9 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.9 U | 0.85 U | 0.85 U |
| Chrysene | 50 | -- | 3.4 | ug/l | 0.7 U | 0.71 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.71 U | 0.67 U | 0.67 U |
| Dibenz(a,h)anthracene | 0.05 | -- | 0.0034 | ug/l | 0.094 U | 0.096 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.095 U | 0.09 U | 0.09 U |
| Dibenzofuran | -- | -- | 0.79 | ug/l | 0.89 U | 0.9 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.9 U | 0.85 U | 0.85 U |
| Diethyl phthalate | 17000 | -- | -- | ug/l | 1 U | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1.1 UJ | 1 U | 1 U |
| Dimethyl phthalate | 270000 | -- | -- | ug/l | 1 U | 1 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U | 1 UJ | 0.98 U | 0.98 U |
| Di-n-butyl phthalate | 2000 | -- | -- | ug/l | 0.85 U | 0.87 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.86 U | 0.82 U | 0.82 U |
| Di-n-octyl phthalate | -- | -- | 20 | ug/l | 0.72 U | 0.73 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.73 U | 0.69 U | 0.69 U |
| Fluoranthene | 130 | -- | 80 | ug/l | 0.75 U | 0.77 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.76 U | 0.72 U | 0.72 U |
| Fluorene | 1100 | -- | 29 | ug/l | 0.83 U | 0.85 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.84 U | 0.8 U | 0.8 U |
| Hexachlorobenzene | 0.2 | 1 | 0.0098 | ug/l | 0.49 U | 0.5 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.5 U | 0.47 U | 0.47 U |
| Hexachlorobutadiene | 5 | -- | 0.14 | ug/l | 0.79 U | 0.81 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.8 U | 0.76 U | 0.76 U |
| Hexachlorocyclopentadiene | 50 | 50 | 0.041 | ug/l | 0.64 U | 0.65 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.64 U | 0.61 U | 0.61 U |
| Hexachloroethane | 30 | -- | 0.33 | ug/l | 0.094 U | 0.096 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.095 U | 0.09 U | 0.09 U |
| Indeno[1,2,3-cd]pyrene | 0.5 | -- | 0.034 | ug/l | 0.22 U | 0.22 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.22 U | 0.21 U | 0.21 U |
| Isophorone | 400 | -- | 78 | ug/l | 0.7 U | 0.71 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.71 U | 0.67 U | 0.67 U |
| Naphthalene | 100 | -- | 0.17 | ug/l | 0.83 U | 0.85 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.84 U | 0.8 U | 0.8 U |
| Nitrobenzene | 17 | -- | 0.14 | ug/l | 0.51 U | 0.52 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.52 U | 0.49 U | 0.49 U |
| N-Nitrosodi-n-propylamine | 0.5 | -- | 0.011 | ug/l | 0.86 UJ | 0.88 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.88 U | 0.83 UJ | 0.83 U |
| N-Nitrosodiphenylamine | 33 | -- | 12 | ug/l | 0.77 U | 0.79 U | 0.74 UJ | 0.74 U | 0.74 U | 0.74 U | 0.78 U | 0.74 U | 0.74 UJ |
| Pentachlorophenol | 1 | 1 | 0.041 | ug/l | 2.3 R | 2.3 R | 2.2 UJ | 2.2 U | 2.2 U | 2.2 U | 2.3 U | 2.2 U | 2.2 UJ |
| Phenanthrene | -- | -- | -- | ug/l | 0.68 U | 0.69 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.69 U | 0.65 U | 0.65 U |
| Phenol | 300 | -- | 580 | ug/l | 0.43 U | 0.44 U | 0.41 U | 0.41 U | 1.6 J | 0.41 U | 0.43 U | 0.41 U | 0.41 U |
| Pyrene | 830 | -- | 12 | ug/l | 0.86 U | 0.88 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.88 U | 0.83 U | 0.83 U |

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**Table 8. Semivolatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-047 | CFMW-047 | CFMW-049 | CFMW-049 | CFMW-049 | CFMW-050 | CFMW-050 | CFMW-053 | CFMW-053 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/14/2016 | 12/15/2016 | 9/21/2016 | 12/15/2016 | 12/15/2016 | 9/19/2016 | 12/15/2016 | 9/14/2016 | 12/12/2016 |
| | | | | Sample Designation | CFMW-047-GW | CFMW-047-GW | CFMW-049-GW | CFMW-049-GW | CFMW-DUP6-GW | CFMW-050-GW | CFMW-050-GW | CFMW-053-GW | CFMW-053-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | FD | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| 1,1'-Biphenyl | -- | -- | 0.083 | ug/l | 0.64 U | 0.65 UJ | 0.63 U | 0.64 UJ | 0.65 UJ | 0.63 U | 0.66 UJ | 0.66 U | 0.63 U |
| 1,2,4,5-Tetrachlorobenzene | 0.97 | -- | 0.17 | ug/l | 0.44 U | 0.45 UJ | 0.43 U | 0.44 UJ | 0.44 UJ | 0.43 U | 0.45 UJ | 0.45 U | 0.43 U |
| 1,4-Dioxane | -- | -- | 0.46 | ug/l | 3.2 U | 3.2 U | 3.1 UJ | 3.2 U | 3.2 U | 3.1 U | 3.3 U | 3.3 U | 3.1 U |
| 2,2'-oxybis[1-chloropropane] | 1400 | -- | -- | ug/l | 0.95 U | 0.96 U | 0.93 U | 0.95 U | 0.96 U | 0.93 U | 0.97 U | 0.97 U | 0.93 U |
| 2,3,4,6-Tetrachlorophenol | -- | -- | 24 | ug/l | 0.7 U | 0.72 U | 0.69 U | 0.7 U | 0.71 U | 0.69 U | 0.72 U | 0.72 U | 0.69 U |
| 2,4,5-Trichlorophenol | 1800 | -- | 120 | ug/l | 0.5 U | 0.51 U | 0.49 U | 0.5 U | 0.5 U | 0.49 U | 0.51 U | 0.51 U | 0.49 U |
| 2,4,6-Trichlorophenol | 30 | -- | 1.2 | ug/l | 0.54 U | 0.55 U | 0.53 U | 0.54 U | 0.55 U | 0.53 U | 0.55 U | 0.55 U | 0.53 U |
| 2,4-Dichlorophenol | 77 | -- | 4.6 | ug/l | 0.64 U | 0.65 U | 0.63 U | 0.64 U | 0.65 U | 0.63 U | 0.66 U | 0.66 U | 0.63 U |
| 2,4-Dimethylphenol | 380 | -- | 36 | ug/l | 0.93 U | 0.94 U | 0.91 U | 0.93 U | 0.94 U | 0.91 U | 0.95 U | 0.95 U | 0.91 U |
| 2,4-Dinitrophenol | 69 | -- | 3.9 | ug/l | 2.4 UJ | 2.5 U | 2.4 U | 2.4 U | 2.4 U | 2.4 U | 2.5 U | 2.5 UJ | 2.4 U |
| 2,4-Dinitrotoluene | 1.1 | -- | 0.24 | ug/l | 1.1 U | 1.1 U | 1 U | 1.1 U | 1.1 U | 1 U | 1.1 U | 1.1 U | 1 U |
| 2,6-Dinitrotoluene | 0.5 | -- | 0.049 | ug/l | 0.9 U | 0.91 U | 0.88 U | 0.9 U | 0.91 U | 0.88 U | 0.92 U | 0.92 U | 0.88 U |
| 2-Chloronaphthalene | 1000 | -- | -- | ug/l | 0.62 U | 0.63 U | 0.61 U | 0.62 U | 0.63 U | 0.61 U | 0.64 U | 0.64 U | 0.61 U |
| 2-Chlorophenol | 81 | -- | 9.1 | ug/l | 0.76 U | 0.77 U | 0.74 U | 0.76 U | 0.76 U | 0.74 U | 0.77 U | 0.77 U | 0.74 U |
| 2-Methylnaphthalene | -- | -- | 3.6 | ug/l | 0.9 U | 0.91 U | 0.88 U | 0.9 U | 0.91 U | 0.88 U | 0.92 U | 0.92 U | 0.88 U |
| 2-Methylphenol | -- | -- | -- | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| 2-Nitroaniline | -- | -- | 19 | ug/l | 0.66 UJ | 0.67 U | 0.65 U | 0.66 U | 0.67 U | 0.65 U | 0.68 U | 0.68 UJ | 0.65 U |
| 2-Nitrophenol | -- | -- | -- | ug/l | 0.6 U | 0.61 U | 0.59 U | 0.6 U | 0.61 U | 0.59 U | 0.62 U | 0.62 U | 0.59 U |
| 3 & 4 Methylphenol | -- | -- | -- | ug/l | 0.9 UJ | 0.91 U | 0.88 U | 0.9 U | 0.91 U | 0.88 U | 0.92 U | 0.92 UJ | 0.88 U |
| 3,3'-Dichlorobenzidine | 0.21 | -- | 0.13 | ug/l | 1.1 U | 1.1 U | 1 U | 1.1 U | 1.1 U | 1 U | 1.1 U | 1.1 U | 1 U |
| 3-Nitroaniline | -- | -- | -- | ug/l | 0.84 U | 0.85 U | 0.82 U | 0.84 U | 0.84 U | 0.82 U | 0.86 U | 0.86 U | 0.82 U |
| 4,6-Dinitro-2-methylphenol | 13 | -- | -- | ug/l | 2.1 U | 2.1 U | 2 U | 2.1 U | 2.1 U | 2 U | 2.1 U | 2.1 U | 2 U |
| 4-Bromophenyl phenyl ether | -- | -- | -- | ug/l | 1 U | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1.1 U | 1.1 U | 1 U |
| 4-Chloro-3-methylphenol | 3000 | -- | -- | ug/l | 0.78 U | 0.79 U | 0.76 U | 0.78 U | 0.78 U | 0.76 U | 0.79 U | 0.79 U | 0.76 U |
| 4-Chloroaniline | -- | -- | 0.37 | ug/l | 0.74 U | 0.76 U | 0.73 U | 0.74 U | 0.75 U | 0.73 U | 0.76 U | 0.76 U | 0.73 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | ug/l | 0.98 U | 1 U | 0.96 U | 0.98 U | 0.99 U | 0.96 U | 1 U | 1 U | 0.96 U |
| 4-Nitroaniline | -- | -- | 3.8 | ug/l | 0.49 U | 0.5 U | 0.48 U | 0.49 U | 0.49 U | 0.48 U | 0.5 U | 0.5 U | 0.48 U |
| 4-Nitrophenol | 60 | -- | -- | ug/l | 4.7 U | 4.8 U | 4.7 U | 4.7 U | 4.8 U | 4.7 U | 4.9 U | 4.9 U | 4.7 U |
| Acenaphthene | 670 | -- | 53 | ug/l | 0.9 U | 0.91 UJ | 0.88 U | 0.9 UJ | 0.91 UJ | 0.88 U | 0.92 UJ | 0.92 U | 0.88 U |
| Acenaphthylene | -- | -- | -- | ug/l | 0.66 U | 0.67 U | 0.65 U | 0.66 U | 0.67 U | 0.65 U | 0.68 U | 0.68 U | 0.65 U |
| Acetophenone | -- | -- | 190 | ug/l | 1.1 U | 1.1 U | 1 U | 1.1 U | 1.1 U | 1 U | 1.1 U | 1.1 U | 1 U |
| Anthracene | 2100 | -- | 180 | ug/l | 0.58 U | 0.59 U | 0.57 U | 0.58 U | 0.59 U | 0.57 U | 0.6 U | 0.6 U | 0.57 U |
| Atrazine | 3 | 3 | 0.3 | ug/l | 0.79 U | 0.8 U | 0.77 U | 0.79 U | 0.79 U | 0.77 U | 0.81 U | 0.81 U | 0.77 U |
| Benzaldehyde | -- | -- | 190 | ug/l | 0.88 U | 0.89 U | 0.86 U | 0.88 U | 0.88 U | 0.86 U | 0.9 U | 0.9 U | 0.86 U |
| Benzo[a]anthracene | 0.5 | -- | -- | ug/l | 0.56 U | 0.57 U | 0.55 U | 0.56 U | 0.57 U | 0.55 U | 0.58 U | 0.58 U | 0.55 U |
| Benzo[a]pyrene | 0.05 | 0.2 | 0.0034 | ug/l | 0.16 U | 0.17 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.17 U | 0.17 U | 0.16 U |
| Benzo[b]fluoranthene | 0.5 | -- | 0.034 | ug/l | 0.45 U | 0.46 U | 0.44 U | 0.45 U | 0.45 U | 0.44 U | 0.46 U | 0.46 U | 0.44 U |
| Benzo[g,h,i]perylene | -- | -- | -- | ug/l | 0.77 U | 0.78 U | 0.75 U | 0.77 U | 0.77 U | 0.75 U | 0.78 U | 0.78 U | 0.75 U |
| Benzo[k]fluoranthene | 5 | -- | 0.34 | ug/l | 0.18 U | 0.19 U | 0.18 U | 0.18 U | 0.19 U | 0.18 U | 0.19 U | 0.19 U | 0.18 U |

Preliminary Under EPA and MDEQ Review

**Table 8. Semivolatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | Sample Location | | CFMW-047 | CFMW-047 | CFMW-049 | CFMW-049 | CFMW-049 | CFMW-050 | CFMW-050 | CFMW-053 | CFMW-053 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sample Date | | 9/14/2016 | 12/15/2016 | 9/21/2016 | 12/15/2016 | 12/15/2016 | 9/19/2016 | 12/15/2016 | 9/14/2016 | 12/12/2016 |
| | | | Sample Designation | | CFMW-047-GW | CFMW-047-GW | CFMW-049-GW | CFMW-049-GW | CFMW-DUP6-GW | CFMW-050-GW | CFMW-050-GW | CFMW-053-GW | CFMW-053-GW |
| | | | Sample Round | | Round 1 | Round 2 | Round 1 | Round 2 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | Sample Type | | N | N | N | N | FD | N | N | N | N |
| Bis(2-chloroethoxy)methane | -- | -- | 5.9 | ug/l | 0.7 U | 0.72 U | 0.69 U | 0.7 U | 0.71 U | 0.69 U | 0.72 U | 0.72 U | 0.69 U |
| Bis(2-chloroethyl)ether | 0.3 | -- | 0.014 | ug/l | 0.12 U | 0.12 UJ | 0.12 U | 0.12 UJ | 0.12 UJ | 0.12 U | 0.13 UJ | 0.13 U | 0.12 U |
| Bis(2-ethylhexyl) phthalate | 6 | 6 | 5.6 | ug/l | 0.73 U | 0.75 U | 0.72 U | 0.73 U | 0.74 U | 0.72 U | 0.75 U | 0.75 U | 0.72 U |
| Butyl benzyl phthalate | 1500 | -- | 16 | ug/l | 0.61 U | 0.62 U | 0.6 U | 0.61 U | 0.62 U | 0.6 U | 0.63 U | 0.63 U | 0.6 U |
| Caprolactam | -- | -- | 990 | ug/l | 1.1 U | 1.1 U | 1.1 UJ | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| Carbazole | -- | -- | -- | ug/l | 0.87 U | 0.88 U | 0.85 U | 0.87 U | 0.87 U | 0.85 U | 0.89 U | 0.89 U | 0.85 U |
| Chrysene | 50 | -- | 3.4 | ug/l | 0.68 U | 0.7 U | 0.67 U | 0.68 U | 0.69 U | 0.67 U | 0.7 U | 0.7 U | 0.67 U |
| Dibenz(a,h)anthracene | 0.05 | -- | 0.0034 | ug/l | 0.092 U | 0.093 U | 0.09 U | 0.092 U | 0.093 U | 0.09 U | 0.094 U | 0.094 U | 0.09 U |
| Dibenzofuran | -- | -- | 0.79 | ug/l | 0.87 U | 0.88 U | 0.85 U | 0.87 U | 0.87 U | 0.85 U | 0.89 U | 0.89 U | 0.85 U |
| Diethyl phthalate | 17000 | -- | -- | ug/l | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Dimethyl phthalate | 270000 | -- | -- | ug/l | 1 U | 1 U | 0.98 U | 1 U | 1 U | 0.98 U | 1 U | 1 U | 0.98 U |
| Di-n-butyl phthalate | 2000 | -- | -- | ug/l | 0.84 U | 0.85 U | 0.82 U | 0.84 U | 0.84 U | 0.82 U | 0.86 U | 0.86 U | 0.82 U |
| Di-n-octyl phthalate | -- | -- | 20 | ug/l | 0.7 U | 0.72 U | 0.69 U | 0.7 U | 0.71 U | 0.69 U | 0.72 U | 0.72 U | 0.69 U |
| Fluoranthene | 130 | -- | 80 | ug/l | 0.73 U | 0.75 U | 0.72 U | 0.73 U | 0.74 U | 0.72 U | 0.75 U | 0.75 U | 0.72 U |
| Fluorene | 1100 | -- | 29 | ug/l | 0.82 U | 0.83 U | 0.8 U | 0.82 U | 0.82 U | 0.8 U | 0.84 U | 0.84 U | 0.8 U |
| Hexachlorobenzene | 0.2 | 1 | 0.0098 | ug/l | 0.48 U | 0.49 U | 0.47 U | 0.48 U | 0.48 U | 0.47 U | 0.49 U | 0.49 U | 0.47 U |
| Hexachlorobutadiene | 5 | -- | 0.14 | ug/l | 0.78 U | 0.79 U | 0.76 U | 0.78 U | 0.78 U | 0.76 U | 0.79 U | 0.79 U | 0.76 U |
| Hexachlorocyclopentadiene | 50 | 50 | 0.041 | ug/l | 0.62 U | 0.63 U | 0.61 U | 0.62 U | 0.63 U | 0.61 U | 0.64 U | 0.64 U | 0.61 U |
| Hexachloroethane | 30 | -- | 0.33 | ug/l | 0.092 U | 0.093 U | 0.09 U | 0.092 U | 0.093 U | 0.09 U | 0.094 U | 0.094 U | 0.09 U |
| Indeno[1,2,3-cd]pyrene | 0.5 | -- | 0.034 | ug/l | 0.21 U | 0.22 U | 0.21 U | 0.21 U | 0.22 U | 0.21 U | 0.22 U | 0.22 U | 0.21 U |
| Isophorone | 400 | -- | 78 | ug/l | 0.68 U | 0.7 U | 0.67 U | 0.68 U | 0.69 U | 0.67 U | 0.7 U | 0.7 U | 0.67 U |
| Naphthalene | 100 | -- | 0.17 | ug/l | 0.82 U | 0.83 U | 0.8 U | 0.82 U | 0.82 U | 0.8 U | 0.84 U | 0.84 U | 0.8 U |
| Nitrobenzene | 17 | -- | 0.14 | ug/l | 0.5 U | 0.51 U | 0.49 U | 0.5 U | 0.5 U | 0.49 U | 0.51 U | 0.51 U | 0.49 U |
| N-Nitrosodi-n-propylamine | 0.5 | -- | 0.011 | ug/l | 0.85 UJ | 0.86 U | 0.83 U | 0.85 U | 0.85 U | 0.83 U | 0.87 U | 0.87 UJ | 0.83 U |
| N-Nitrosodiphenylamine | 33 | -- | 12 | ug/l | 0.76 U | 0.77 U | 0.74 U | 0.76 U | 0.76 U | 0.74 U | 0.77 U | 0.77 U | 0.74 U |
| Pentachlorophenol | 1 | 1 | 0.041 | ug/l | 2.2 R | 2.3 UJ | 2.2 U | 2.2 UJ | 2.2 UJ | 2.2 U | 2.3 UJ | 2.3 R | 2.2 U |
| Phenanthrene | -- | -- | -- | ug/l | 0.66 U | 0.67 U | 0.65 U | 0.66 U | 0.67 U | 0.65 U | 0.68 U | 0.68 U | 0.65 U |
| Phenol | 300 | -- | 580 | ug/l | 0.42 U | 0.43 U | 0.41 U | 0.42 U | 0.42 U | 0.41 U | 0.43 U | 0.43 U | 0.41 U |
| Pyrene | 830 | -- | 12 | ug/l | 0.85 U | 0.86 U | 0.83 U | 0.85 U | 0.85 U | 0.83 U | 0.87 U | 0.87 U | 0.83 U |

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**Table 8. Semivolatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-054 | CFMW-054 | CFMW-061 | CFMW-061 | CFMW-061 | CFMW-064 | CFMW-064 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/14/2016 | 12/12/2016 | 9/15/2016 | 12/7/2016 | 12/7/2016 | 9/15/2016 | 12/7/2016 |
| | | | | Sample Designation | CFMW-054-GW | CFMW-054-GW | CFMW-061-GW | CFMW-061-GW | CFMW-DUP5-GW | CFMW-064-GW | CFMW-064-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | FD | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | |
| 1,1'-Biphenyl | -- | -- | 0.083 | ug/l | 0.66 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U |
| 1,2,4,5-Tetrachlorobenzene | 0.97 | -- | 0.17 | ug/l | 0.45 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U | 0.43 U |
| 1,4-Dioxane | -- | -- | 0.46 | ug/l | 3.2 U | 3.1 U | 3.1 U | 3.1 U | 3.1 U | 3.1 U | 3.1 U |
| 2,2'-oxybis[1-chloropropane] | 1400 | -- | -- | ug/l | 0.97 U | 0.93 U | 0.93 U | 0.93 U | 0.93 U | 0.93 U | 0.93 U |
| 2,3,4,6-Tetrachlorophenol | -- | -- | 24 | ug/l | 0.72 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U |
| 2,4,5-Trichlorophenol | 1800 | -- | 120 | ug/l | 0.51 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U |
| 2,4,6-Trichlorophenol | 30 | -- | 1.2 | ug/l | 0.55 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U | 0.53 U |
| 2,4-Dichlorophenol | 77 | -- | 4.6 | ug/l | 0.66 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U | 0.63 U |
| 2,4-Dimethylphenol | 380 | -- | 36 | ug/l | 0.95 U | 0.91 U | 0.91 U | 0.91 U | 0.91 U | 0.91 U | 0.91 U |
| 2,4-Dinitrophenol | 69 | -- | 3.9 | ug/l | 2.5 UJ | 2.4 U | 2.4 U | 2.4 U | 2.4 U | 2.4 U | 2.4 U |
| 2,4-Dinitrotoluene | 1.1 | -- | 0.24 | ug/l | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| 2,6-Dinitrotoluene | 0.5 | -- | 0.049 | ug/l | 0.92 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U |
| 2-Chloronaphthalene | 1000 | -- | -- | ug/l | 0.64 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U |
| 2-Chlorophenol | 81 | -- | 9.1 | ug/l | 0.77 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U |
| 2-Methylnaphthalene | -- | -- | 3.6 | ug/l | 0.92 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U |
| 2-Methylphenol | -- | -- | -- | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| 2-Nitroaniline | -- | -- | 19 | ug/l | 0.68 UJ | 0.65 U | 0.65 UJ | 0.65 U | 0.65 U | 0.65 UJ | 0.65 U |
| 2-Nitrophenol | -- | -- | -- | ug/l | 0.61 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U | 0.59 U |
| 3 & 4 Methylphenol | -- | -- | -- | ug/l | 0.92 UJ | 0.88 U | 0.88 UJ | 0.88 U | 0.88 U | 0.88 UJ | 0.88 U |
| 3,3'-Dichlorobenzidine | 0.21 | -- | 0.13 | ug/l | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| 3-Nitroaniline | -- | -- | -- | ug/l | 0.85 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U | 0.82 U |
| 4,6-Dinitro-2-methylphenol | 13 | -- | -- | ug/l | 2.1 U | 2 U | 2 U | 2 U | 2 U | 2 U | 2 U |
| 4-Bromophenyl phenyl ether | -- | -- | -- | ug/l | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| 4-Chloro-3-methylphenol | 3000 | -- | -- | ug/l | 0.79 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U |
| 4-Chloroaniline | -- | -- | 0.37 | ug/l | 0.76 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U |
| 4-Chlorophenyl phenyl ether | -- | -- | -- | ug/l | 1 U | 0.96 U | 0.96 U | 0.96 U | 0.96 U | 0.96 U | 0.96 U |
| 4-Nitroaniline | -- | -- | 3.8 | ug/l | 0.5 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U | 0.48 U |
| 4-Nitrophenol | 60 | -- | -- | ug/l | 4.8 U | 4.7 U | 4.7 U | 4.7 U | 4.7 U | 4.7 U | 4.7 U |
| Acenaphthene | 670 | -- | 53 | ug/l | 0.92 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U | 0.88 U |
| Acenaphthylene | -- | -- | -- | ug/l | 0.68 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U |
| Acetophenone | -- | -- | 190 | ug/l | 1.1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Anthracene | 2100 | -- | 180 | ug/l | 0.59 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U | 0.57 U |
| Atrazine | 3 | 3 | 0.3 | ug/l | 0.8 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U | 0.77 U |
| Benzaldehyde | -- | -- | 190 | ug/l | 0.9 U | 0.86 U | 0.86 U | 0.86 U | 0.86 U | 0.86 U | 0.86 U |
| Benzo[a]anthracene | 0.5 | -- | -- | ug/l | 0.57 U | 0.55 U | 0.55 U | 0.55 U | 0.55 U | 0.55 U | 0.55 U |
| Benzo[a]pyrene | 0.05 | 0.2 | 0.0034 | ug/l | 0.17 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U | 0.16 U |
| Benzo[b]fluoranthene | 0.5 | -- | 0.034 | ug/l | 0.46 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U | 0.44 U |
| Benzo[g,h,i]perylene | -- | -- | -- | ug/l | 0.78 U | 0.75 U | 0.75 U | 0.75 U | 0.75 U | 0.75 U | 0.75 U |
| Benzo[k]fluoranthene | 5 | -- | 0.34 | ug/l | 0.19 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U | 0.18 U |

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**Table 8. Semivolatile Organic Compounds in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | Sample Location | | CFMW-054 | CFMW-054 | CFMW-061 | CFMW-061 | CFMW-061 | CFMW-064 | CFMW-064 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sample Date | | 9/14/2016 | 12/12/2016 | 9/15/2016 | 12/7/2016 | 12/7/2016 | 9/15/2016 | 12/7/2016 |
| | | | Sample Designation | | CFMW-054-GW | CFMW-054-GW | CFMW-061-GW | CFMW-061-GW | CFMW-DUP5-GW | CFMW-064-GW | CFMW-064-GW |
| | | | Sample Round | | Round 1 | Round 2 | Round 1 | Round 2 | Round 2 | Round 1 | Round 2 |
| | | | Sample Type | | N | N | N | N | FD | N | N |
| Bis(2-chloroethoxy)methane | -- | -- | 5.9 | ug/l | 0.72 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U |
| Bis(2-chloroethyl)ether | 0.3 | -- | 0.014 | ug/l | 0.13 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U | 0.12 U |
| Bis(2-ethylhexyl) phthalate | 6 | 6 | 5.6 | ug/l | 0.75 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| Butyl benzyl phthalate | 1500 | -- | 16 | ug/l | 0.63 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U | 0.6 U |
| Caprolactam | -- | -- | 990 | ug/l | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| Carbazole | -- | -- | -- | ug/l | 0.89 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U |
| Chrysene | 50 | -- | 3.4 | ug/l | 0.7 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U |
| Dibenz(a,h)anthracene | 0.05 | -- | 0.0034 | ug/l | 0.094 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U |
| Dibenzofuran | -- | -- | 0.79 | ug/l | 0.89 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U | 0.85 U |
| Diethyl phthalate | 17000 | -- | -- | ug/l | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U | 1 U |
| Dimethyl phthalate | 270000 | -- | -- | ug/l | 1 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U |
| Di-n-butyl phthalate | 2000 | -- | -- | ug/l | 0.85 U | 0.82 U | 0.82 U | 1.1 J | 0.82 U | 0.82 U | 0.82 U |
| Di-n-octyl phthalate | -- | -- | 20 | ug/l | 0.72 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U | 0.69 U |
| Fluoranthene | 130 | -- | 80 | ug/l | 0.75 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| Fluorene | 1100 | -- | 29 | ug/l | 0.83 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U |
| Hexachlorobenzene | 0.2 | 1 | 0.0098 | ug/l | 0.49 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U | 0.47 U |
| Hexachlorobutadiene | 5 | -- | 0.14 | ug/l | 0.79 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U | 0.76 U |
| Hexachlorocyclopentadiene | 50 | 50 | 0.041 | ug/l | 0.64 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U | 0.61 U |
| Hexachloroethane | 30 | -- | 0.33 | ug/l | 0.094 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U |
| Indeno[1,2,3-cd]pyrene | 0.5 | -- | 0.034 | ug/l | 0.22 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U | 0.21 U |
| Isophorone | 400 | -- | 78 | ug/l | 0.7 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U | 0.67 U |
| Naphthalene | 100 | -- | 0.17 | ug/l | 0.83 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U | 0.8 U |
| Nitrobenzene | 17 | -- | 0.14 | ug/l | 0.51 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U | 0.49 U |
| N-Nitrosodi-n-propylamine | 0.5 | -- | 0.011 | ug/l | 0.86 UJ | 0.83 U | 0.83 UJ | 0.83 U | 0.83 U | 0.83 UJ | 0.83 U |
| N-Nitrosodiphenylamine | 33 | -- | 12 | ug/l | 0.77 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U | 0.74 U |
| Pentachlorophenol | 1 | 1 | 0.041 | ug/l | 2.3 R | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U | 2.2 U |
| Phenanthrene | -- | -- | -- | ug/l | 0.68 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U | 0.65 U |
| Phenol | 300 | -- | 580 | ug/l | 0.43 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U | 0.41 U |
| Pyrene | 830 | -- | 12 | ug/l | 0.86 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U | 0.83 U |

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**Table 9. Metals in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-001 | CFMW-001 | CFMW-002 | CFMW-003 | CFMW-003 | CFMW-003a | CFMW-003a | CFMW-007 | CFMW-007 | CFMW-008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/20/2016 | 12/12/2016 | 9/12/2016 | 9/14/2016 | 12/9/2016 | 9/20/2016 | 12/12/2016 | 9/21/2016 | 12/12/2016 | 9/21/2016 |
| | | | | Sample Designation | CFMW-001-GW | CFMW-001-GW | CFMW-002-GW | CFMW-003-GW | CFMW-003-GW | CFMW-003a-GW | CFMW-003a-GW | CFMW-007-GW | CFMW-007-GW | CFMW-008-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | | |
| Aluminum | -- | -- | 2000 | ug/l | 18.2 U | 18.2 U | 254 | 18.2 U | 18.2 U | 33.8 J | 18.2 U | 18.2 U | 18.2 U | 18.2 U |
| Antimony | 6 | 6 | 0.78 | ug/l | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 J | 0.62 U | 0.62 U | 0.62 U | 0.62 U |
| Arsenic | **10** | 10 | 0.052 | ug/l | 0.64 U | 1.2 J | 0.96 J | 0.64 U | 0.64 U | 5.2 | 3.5 | 0.64 U | 0.64 U | 0.64 U |
| Barium | **1000** | 2000 | 380 | ug/l | 228 | 76.6 | 243 | 28.6 | 24.3 | 53.3 | 39.9 | 163 | 184 | 140 |
| Beryllium | 4 | 4 | 2.5 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Cadmium | 5 | -- | -- | ug/l | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U |
| Calcium | -- | -- | -- | ug/l | 60300 | 54900 | 31800 | 178000 | 184000 | 31000 | 28500 | 50200 | 56600 | 6370 |
| Chromium | 100 | 100 | -- | ug/l | 1.3 U | 1.3 U | 1.9 J | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Cobalt | -- | -- | 0.6 | ug/l | 1.3 U | 1.3 U | 6.1 | 1.3 J | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Copper | 1300 | 1300 | 80 | ug/l | 3.2 J | 1.8 J | 4.2 | 4.8 | 1.8 J | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 J |
| Cyanide, Total | **200** | 200 | 0.15 | ug/l | 2.4 J | 2 U | 2060 J | 15.4 | 19.1 | 2.1 J | 2 U | 2.1 J | 2 U | 2 U |
| Iron | -- | -- | 1400 | ug/l | 42.4 U | 42.4 U | 871 | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 104 J | 42.4 U |
| Lead | 15 | 15 | 15 | ug/l | 0.38 U | 0.38 U | 0.53 J | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U |
| Magnesium | -- | -- | -- | ug/l | 14100 | 13100 | 10900 | 45800 | 49800 | 5380 | 4870 | 12800 | 14100 | 4320 |
| Manganese | -- | -- | -- | ug/l | 2.5 U | 15.7 | 26.8 | 306 | 209 | 56.2 | 52.6 | 11.4 | 80.9 | 11.1 |
| Mercury | 2 | 2 | 0.063 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Nickel | 100 | -- | -- | ug/l | 1.4 U | 1.4 U | 1.4 U | 3 J | 3.1 J | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| Potassium | -- | -- | -- | ug/l | 740 | 737 | 1020 | 2100 | 2040 | 3270 | 4960 | 579 | 668 | 1190 |
| Selenium | 50 | 50 | 10 | ug/l | 0.73 U | 0.73 U | 0.84 J | 7.5 J | 8.9 J | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U |
| Silver | 100 | -- | 9.4 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Sodium | -- | -- | -- | ug/l | 8360 | 4380 | 173000 | 322000 | 360000 | 17500 | 19500 | 3050 | 5970 | 138000 |
| Thallium | 2 | 2 | 0.02 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Vanadium | -- | -- | 8.6 | ug/l | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 3.7 J | 1.9 U | 1.9 U | 1.9 U | 1.9 U |
| Zinc | 2000 | -- | 600 | ug/l | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 11.5 J |

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**Table 9. Metals in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-008 | CFMW-008a | CFMW-008a | CFMW-010 | CFMW-010 | CFMW-011 | CFMW-011 | CFMW-011a | CFMW-011a | CFMW-012 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/16/2016 | 9/15/2016 | 12/16/2016 | 9/12/2016 | 12/15/2016 | 9/13/2016 | 12/8/2016 | 9/20/2016 | 12/14/2016 | 9/12/2016 |
| | | | | Sample Designation | CFMW-008-GW | CFMW-008a-GW | CFMW-008a-GW | CFMW-010-GW | CFMW-010-GW | CFMW-011-GW | CFMW-011-GW | CFMW-011a-GW | CFMW-011a-GW | CFMW-012-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | | |
| Aluminum | -- | -- | 2000 | ug/l | 18.2 U | 107 | 97.6 | 1850 | 18.2 U | 18.2 U | 18.2 U | 27.2 J | 60.9 | 25.7 J |
| Antimony | 6 | 6 | 0.78 | ug/l | 0.62 U | 0.68 J | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U |
| Arsenic | **10** | 10 | 0.052 | ug/l | 0.64 U | 0.64 U | 0.64 U | 5.2 | 6.8 | 0.64 U | 0.64 U | 3.3 | 1.7 J | 15.5 |
| Barium | **1000** | 2000 | 380 | ug/l | 516 | 701 | 970 | 239 | 107 | 186 | 209 | 42.7 | 48.8 | 79.6 |
| Beryllium | 4 | 4 | 2.5 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Cadmium | 5 | -- | -- | ug/l | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U |
| Calcium | -- | -- | -- | ug/l | 38100 | 388000 | 431000 | 35500 | 14800 | 47600 | 52400 | 24600 | 21700 | 8660 |
| Chromium | 100 | 100 | -- | ug/l | 1.3 U | 1.3 U | 1.3 U | 3.6 J | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Cobalt | -- | -- | 0.6 | ug/l | 1.3 U | 1.3 U | 1.3 U | 23.7 | 6.9 | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 7.9 |
| Copper | 1300 | 1300 | 80 | ug/l | 1.4 U | 3.7 J | 3 J | 16.8 | 10 | 3.2 J | 1.4 U | 1.4 U | 1.4 U | 12.6 |
| Cyanide, Total | **200** | 200 | 0.15 | ug/l | 2 U | 2.2 J | 2 U | 7320 J | 2120 | 80.7 | 132 | 2 U | 2 U | 2280 J |
| Iron | -- | -- | 1400 | ug/l | 99600 | 42.4 U | 42.4 U | 4710 | 844 | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 717 |
| Lead | 15 | 15 | 15 | ug/l | 0.38 U | 0.82 J | 0.65 J | 2.8 | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U |
| Magnesium | -- | -- | -- | ug/l | 16300 | 63.6 U | 63.6 U | 16500 | 9810 | 14100 | 16000 | 9010 | 8910 | 4130 |
| Manganese | -- | -- | -- | ug/l | 741 | 2.5 U | 2.5 U | 110 | 2.5 U | 2.5 U | 2.5 U | 13.7 | 30.7 | 2.5 U |
| Mercury | 2 | 2 | 0.063 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Nickel | 100 | -- | -- | ug/l | 1.8 J | 1.4 U | 1.4 U | 5 | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.5 J |
| Potassium | -- | -- | -- | ug/l | 2220 | 18000 | 23200 | 1460 | 890 | 657 | 709 | 2070 | 3120 | 817 |
| Selenium | 50 | 50 | 10 | ug/l | 0.73 U | 0.73 U | 0.73 U | 3.3 J | 1.4 J | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 4.4 J |
| Silver | 100 | -- | 9.4 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Sodium | -- | -- | -- | ug/l | 86000 | 49600 | 66400 | 445000 | 231000 | 9950 | 11200 | 19900 | 24100 | 226000 |
| Thallium | 2 | 2 | 0.02 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Vanadium | -- | -- | 8.6 | ug/l | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 2.8 J | 1.9 U | 19.8 |
| Zinc | 2000 | -- | 600 | ug/l | 20.4 | 12.3 J | 23.6 | 7.5 J | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U |

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**Table 9. Metals in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-012 | CFMW-012a | CFMW-012a | CFMW-012a | CFMW-014 | CFMW-014 | CFMW-015 | CFMW-015 | CFMW-016a |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/14/2016 | 9/15/2016 | 9/15/2016 | 12/13/2016 | 9/12/2016 | 12/15/2016 | 9/12/2016 | 12/15/2016 | 9/21/2016 |
| | | | | Sample Designation | CFMW-012-GW | CFMW-012a-GW | CFMW-DUP2-GW | CFMW-012a-GW | CFMW-014-GW | CFMW-014-GW | CFMW-015-GW | CFMW-015-GW | CFMW-016a-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | FD | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Aluminum | -- | -- | 2000 | ug/l | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 64.8 |
| Antimony | 6 | 6 | 0.78 | ug/l | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.69 J | 0.62 U | 0.62 U |
| Arsenic | **10** | 10 | 0.052 | ug/l | 10.7 | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.82 J | 47.7 | 50.8 | 1.3 J |
| Barium | **1000** | 2000 | 380 | ug/l | 133 | 78.2 | 77.7 | 84.1 | 336 | 354 | 62 | 34 | 99.5 |
| Beryllium | 4 | 4 | 2.5 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Cadmium | 5 | -- | -- | ug/l | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U |
| Calcium | -- | -- | -- | ug/l | 11700 | 51300 | 50800 | 52900 | 44900 | 42000 | 2710 | 1410 | 38100 |
| Chromium | 100 | 100 | -- | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 J | 2 J | 1.3 U | 1.8 J |
| Cobalt | -- | -- | 0.6 | ug/l | 2.4 J | 1.3 U | 1.3 U | 1.3 U | 5.3 | 8.2 | 27.8 | 17.2 | 1.3 U |
| Copper | 1300 | 1300 | 80 | ug/l | 4.6 | 1.4 UJ | 3.3 J | 1.4 U | 5.7 | 10.5 | 46.8 | 29.2 | 3.6 J |
| Cyanide, Total | **200** | 200 | 0.15 | ug/l | 972 | 2 U | 2 U | 2 U | 2750 J | 3360 | 6240 J | 3100 | 2.8 J |
| Iron | -- | -- | 1400 | ug/l | 427 | 42.4 U | 42.4 U | 42.4 U | 927 | 1200 | 2550 | 1330 | 42.4 U |
| Lead | 15 | 15 | 15 | ug/l | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U |
| Magnesium | -- | -- | -- | ug/l | 6070 | 13000 | 13000 | 12900 | 16800 | 16100 | 4010 | 1640 | 4060 |
| Manganese | -- | -- | -- | ug/l | 2.5 U | 21.6 | 21.3 | 5.9 J | 2.5 U | 2.5 U | 4.1 J | 3.3 J | 2.5 U |
| Mercury | 2 | 2 | 0.063 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Nickel | 100 | -- | -- | ug/l | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 7.7 | 4.8 | 1.4 U |
| Potassium | -- | -- | -- | ug/l | 937 | 721 | 726 | 767 | 1120 | 1160 | 2400 | 1520 | 2780 |
| Selenium | 50 | 50 | 10 | ug/l | 1.4 J | 0.73 U | 0.73 U | 0.73 U | 1.7 J | 1.4 J | 13.5 | 9.6 J | 0.73 U |
| Silver | 100 | -- | 9.4 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Sodium | -- | -- | -- | ug/l | 234000 | 6380 | 6190 | 6490 | 168000 | 239000 | 620000 | 365000 | 18600 |
| Thallium | 2 | 2 | 0.02 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Vanadium | -- | -- | 8.6 | ug/l | 15.4 | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 50.4 | 108 | 1.9 J |
| Zinc | 2000 | -- | 600 | ug/l | 7 U | 7 U | 7 U | 7.6 J | 7 U | 7 U | 7 U | 7 U | 7 U |

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**Table 9. Metals in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-016a | CFMW-019 | CFMW-019 | CFMW-019a | CFMW-019a | CFMW-020 | CFMW-020 | CFMW-021 | CFMW-021 | CFMW-022 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/14/2016 | 9/12/2016 | 12/15/2016 | 9/20/2016 | 12/14/2016 | 9/20/2016 | 12/13/2016 | 9/12/2016 | 12/14/2016 | 9/13/2016 |
| | | | | Sample Designation | CFMW-016a-GW | CFMW-019-GW | CFMW-019-GW | CFMW-019a-GW | CFMW-019a-GW | CFMW-020-GW | CFMW-020-GW | CFMW-021-GW | CFMW-021-GW | CFMW-022-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | | |
| Aluminum | -- | -- | 2000 | ug/l | 18.2 U | 18.2 U | 18.2 U | 82.3 | 29.5 J | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 9.1 U |
| Antimony | 6 | 6 | 0.78 | ug/l | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.31 U |
| Arsenic | **10** | 10 | 0.052 | ug/l | 1.3 J | 0.64 U | 0.64 U | 8.3 | 2.2 | 2.1 | 0.64 U | 0.64 U | 0.81 J | 0.32 U |
| Barium | **1000** | 2000 | 380 | ug/l | 143 | 104 | 113 | 56.9 | 56.6 | 74.2 | 266 | 193 | 189 | 102 |
| Beryllium | 4 | 4 | 2.5 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.12 U |
| Cadmium | 5 | -- | -- | ug/l | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.36 U |
| Calcium | -- | -- | -- | ug/l | 31400 | 55100 | 54600 | 15100 | 40100 | 54400 | 65300 | 62300 | 45700 | 27700 |
| Chromium | 100 | 100 | -- | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 0.66 U |
| Cobalt | -- | -- | 0.6 | ug/l | 1.3 U | 3.3 J | 5.1 | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.5 J | 7.2 | 0.65 U |
| Copper | 1300 | 1300 | 80 | ug/l | 1.4 U | 1.4 U | 1.6 J | 1.4 U | 2.6 J | 2.4 J | 1.4 U | 4.2 | 2.9 J | 1.6 J |
| Cyanide, Total | **200** | 200 | 0.15 | ug/l | 2 J | 961 J | 791 | 2 U | 2 U | 2.9 J | 2 U | 400 J | 1560 | 155 |
| Iron | -- | -- | 1400 | ug/l | 42.4 U | 1160 | 260 | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 85.9 J | 660 | 36.1 J |
| Lead | 15 | 15 | 15 | ug/l | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.19 U |
| Magnesium | -- | -- | -- | ug/l | 9330 | 17200 | 17800 | 3700 | 14900 | 13900 | 14700 | 18800 | 14000 | 6720 |
| Manganese | -- | -- | -- | ug/l | 6.1 J | 35.8 | 61.2 | 9.4 | 88.6 | 37.5 | 2.5 U | 2.5 U | 2.5 U | 1.2 U |
| Mercury | 2 | 2 | 0.063 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Nickel | 100 | -- | -- | ug/l | 1.4 U | 1.4 U | 6.8 | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 0.68 U |
| Potassium | -- | -- | -- | ug/l | 1360 | 1520 | 1840 | 8880 | 1520 | 774 | 676 | 1000 | 1070 | 318 |
| Selenium | 50 | 50 | 10 | ug/l | 0.73 U | 0.84 J | 0.77 J | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 1.6 J | 0.37 U |
| Silver | 100 | -- | 9.4 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 0.64 U |
| Sodium | -- | -- | -- | ug/l | 13100 | 104000 | 120000 | 50900 | 10000 | 4810 | 6680 | 54300 | 142000 | 5090 |
| Thallium | 2 | 2 | 0.02 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.13 U |
| Vanadium | -- | -- | 8.6 | ug/l | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 0.95 U |
| Zinc | 2000 | -- | 600 | ug/l | 7 U | 27.8 | 9.3 J | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 3.5 U |

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**Table 9. Metals in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-022 | CFMW-023 | CFMW-023 | CFMW-025a | CFMW-025a | CFMW-025b | CFMW-025b | CFMW-026 | CFMW-026 | CFMW-027 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/9/2016 | 9/21/2016 | 12/19/2016 | 9/13/2016 | 12/5/2016 | 9/13/2016 | 12/7/2016 | 9/13/2016 | 12/5/2016 | 9/13/2016 |
| | | | | Sample Designation | CFMW-022-GW | CFMW-023-GW | CFMW-023-GW | CFMW-025a-GW | CFMW-025a-GW | CFMW-025b-GW | CFMW-025b-GW | CFMW-026-GW | CFMW-026-GW | CFMW-027-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | | |
| Aluminum | -- | -- | 2000 | ug/l | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 22.9 J | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 9.1 U |
| Antimony | 6 | 6 | 0.78 | ug/l | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.31 U |
| Arsenic | **10** | 10 | 0.052 | ug/l | 0.64 U | 0.64 J | 0.71 J | 0.93 J | 2.7 | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.32 U |
| Barium | **1000** | 2000 | 380 | ug/l | 233 | 235 | 212 | 128 | 336 | 320 | 314 | 260 | 289 | 89.1 |
| Beryllium | 4 | 4 | 2.5 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.12 U |
| Cadmium | 5 | -- | -- | ug/l | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.36 U |
| Calcium | -- | -- | -- | ug/l | 59800 | 60700 | 61100 | 38300 | 137000 | 50700 | 46200 | 59900 | 66400 | 24500 |
| Chromium | 100 | 100 | -- | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 0.66 U |
| Cobalt | -- | -- | 0.6 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 2.7 J | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 0.85 J |
| Copper | 1300 | 1300 | 80 | ug/l | 1.4 J | 4.3 | 1.4 U | 2.4 J | 1.4 U | 1.4 U | 3.1 J | 1.4 U | 2.7 J | 1.9 J |
| Cyanide, Total | **200** | 200 | 0.15 | ug/l | 279 | 2.7 J | 2 U | 2 U | 2 U | 2 U | 2 U | 3.9 J | 3.4 J | 603 |
| Iron | -- | -- | 1400 | ug/l | 119 J | 42.4 U | 42.4 U | 174 | 4350 | 101 J | 42.4 U | 42.4 U | 42.4 U | 147 |
| Lead | 15 | 15 | 15 | ug/l | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.19 U |
| Magnesium | -- | -- | -- | ug/l | 14400 | 17700 | 17700 | 24100 | 33000 | 20000 | 20200 | 14600 | 15700 | 7890 |
| Manganese | -- | -- | -- | ug/l | 2.5 U | 2.5 U | 2.5 U | 297 | 1540 | 111 | 69.2 | 65 | 97.6 | 1.2 J |
| Mercury | 2 | 2 | 0.063 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Nickel | 100 | -- | -- | ug/l | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 0.68 U |
| Potassium | -- | -- | -- | ug/l | 685 | 600 | 532 | 2090 | 2500 | 932 | 1040 | 858 | 905 | 520 |
| Selenium | 50 | 50 | 10 | ug/l | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.37 U |
| Silver | 100 | -- | 9.4 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 0.64 U |
| Sodium | -- | -- | -- | ug/l | 15600 | 4100 | 2870 | 8850 | 9180 | 6430 | 6590 | 11600 | 10700 | 31000 |
| Thallium | 2 | 2 | 0.02 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.13 U |
| Vanadium | -- | -- | 8.6 | ug/l | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 0.95 U |
| Zinc | 2000 | -- | 600 | ug/l | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 3.5 U |

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**Table 9. Metals in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-027 | CFMW-028 | CFMW-028 | CFMW-028a | CFMW-028a | CFMW-029 | CFMW-029 | CFMW-029 | CFMW-031 | CFMW-031 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/14/2016 | 9/13/2016 | 12/5/2016 | 9/20/2016 | 12/9/2016 | 9/13/2016 | 9/13/2016 | 12/14/2016 | 9/15/2016 | 12/9/2016 |
| | | | | Sample Designation | CFMW-027-GW | CFMW-028-GW | CFMW-028-GW | CFMW-028a-GW | CFMW-028a-GW | CFMW-029-GW | CFMW-DUP1-GW | CFMW-029-GW | CFMW-031-GW | CFMW-031-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | N | FD | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | | |
| Aluminum | -- | -- | 2000 | ug/l | 18.2 U | 18.2 U | 18.2 U | 34.6 J | 310 | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 18.2 U |
| Antimony | 6 | 6 | 0.78 | ug/l | 0.62 U | 0.62 U | 0.62 U | 1 J | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U |
| Arsenic | **10** | 10 | 0.052 | ug/l | 0.64 U | 0.64 U | 0.64 U | 1.7 J | 8.2 | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U |
| Barium | **1000** | 2000 | 380 | ug/l | 187 | 141 | 152 | 48 | 35.5 | 233 | 225 | 220 | 164 | 217 |
| Beryllium | 4 | 4 | 2.5 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Cadmium | 5 | -- | -- | ug/l | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U |
| Calcium | -- | -- | -- | ug/l | 51500 | 44100 | 48700 | 12200 | 43200 | 52700 | 51100 | 52800 | 47700 | 60300 |
| Chromium | 100 | 100 | -- | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 J | 1.3 U | 1.3 U |
| Cobalt | -- | -- | 0.6 | ug/l | 2 J | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.6 J |
| Copper | 1300 | 1300 | 80 | ug/l | 1.4 U | 4.2 | 1.4 U | 2.2 J | 1.4 U | 4.5 J | 1.4 UJ | 1.4 U | 1.4 U | 1.7 J |
| Cyanide, Total | **200** | 200 | 0.15 | ug/l | 793 | 104 | 195 | 2 J | 2.9 J | 366 | 357 | 186 | 233 | 690 |
| Iron | -- | -- | 1400 | ug/l | 341 | 46.6 J | 80.1 J | 42.4 U | 42.4 U | 172 | 164 | 115 J | 99.8 J | 300 |
| Lead | 15 | 15 | 15 | ug/l | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U |
| Magnesium | -- | -- | -- | ug/l | 16100 | 15900 | 15800 | 8100 | 282 | 18700 | 17800 | 17700 | 13200 | 17300 |
| Manganese | -- | -- | -- | ug/l | 2.5 U | 366 | 10.7 | 2.5 U | 2.5 U | 2.5 U | 2.5 U | 2.5 U | 2.5 U | 2.5 U |
| Mercury | 2 | 2 | 0.063 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Nickel | 100 | -- | -- | ug/l | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| Potassium | -- | -- | -- | ug/l | 1090 | 4230 | 2730 | 3260 | 2080 | 898 | 864 | 923 | 736 | 842 |
| Selenium | 50 | 50 | 10 | ug/l | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U |
| Silver | 100 | -- | 9.4 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Sodium | -- | -- | -- | ug/l | 56500 | 26000 | 24900 | 13600 | 9320 | 35400 | 34200 | 21500 | 29800 | 32200 |
| Thallium | 2 | 2 | 0.02 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Vanadium | -- | -- | 8.6 | ug/l | 1.9 U | 1.9 U | 1.9 U | 7.2 | 22.1 | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U |
| Zinc | 2000 | -- | 600 | ug/l | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U |

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**Table 9. Metals in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-032 | CFMW-032 | CFMW-032a | CFMW-032a | CFMW-033 | CFMW-033 | CFMW-034 | CFMW-034 | CFMW-035 | CFMW-035 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/15/2016 | 12/13/2016 | 9/16/2016 | 12/16/2016 | 9/15/2016 | 12/6/2016 | 9/14/2016 | 12/13/2016 | 9/14/2016 | 12/13/2016 |
| | | | | Sample Designation | CFMW-032-GW | CFMW-032-GW | CFMW-032a-GW | CFMW-032a-GW | CFMW-033-GW | CFMW-033-GW | CFMW-034-GW | CFMW-034-GW | CFMW-035-GW | CFMW-035-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | | |
| Aluminum | -- | -- | 2000 | ug/l | 18.2 U | 18.2 U | 69.3 | 20.5 J | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 18.2 U |
| Antimony | 6 | 6 | 0.78 | ug/l | 0.62 U | 0.62 U | 0.62 U | 0.86 J | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U |
| Arsenic | **10** | 10 | 0.052 | ug/l | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 5.8 | 10.4 |
| Barium | **1000** | 2000 | 380 | ug/l | 147 | 297 | 890 | 269 | 176 | 172 | 199 | 300 | 546 | 582 |
| Beryllium | 4 | 4 | 2.5 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Cadmium | 5 | -- | -- | ug/l | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U |
| Calcium | -- | -- | -- | ug/l | 38800 | 88000 | 628000 | 253000 | 53600 | 53600 | 59100 | 82500 | 76700 | 77200 |
| Chromium | 100 | 100 | -- | ug/l | 1.3 U | 1.3 U | 3.1 J | 8.1 | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Cobalt | -- | -- | 0.6 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Copper | 1300 | 1300 | 80 | ug/l | 2.1 J | 2.9 J | 1.7 J | 1.7 J | 4.1 | 1.4 U | 4.5 | 1.4 U | 1.4 U | 1.4 U |
| Cyanide, Total | **200** | 200 | 0.15 | ug/l | 412 J- | 152 | 2 U | 2 U | 478 | 483 | 327 | 255 | 57.1 | 51.7 |
| Iron | -- | -- | 1400 | ug/l | 198 | 52.2 J | 42.4 U | 42.4 U | 210 | 223 | 148 | 86.2 J | 502 | 1230 |
| Lead | 15 | 15 | 15 | ug/l | 0.38 U | 0.38 U | 0.6 J | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U |
| Magnesium | -- | -- | -- | ug/l | 11700 | 22100 | 63.6 U | 69 J | 16600 | 15600 J | 15500 | 19200 | 32700 | 31100 |
| Manganese | -- | -- | -- | ug/l | 536 | 211 | 2.5 U | 2.5 U | 2.5 U | 2.5 U | 9.4 | 20.5 | 1450 | 1320 |
| Mercury | 2 | 2 | 0.063 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Nickel | 100 | -- | -- | ug/l | 1.4 J | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| Potassium | -- | -- | -- | ug/l | 2630 | 3020 | 21600 | 3860 | 944 | 1040 | 918 | 970 | 2430 | 1930 |
| Selenium | 50 | 50 | 10 | ug/l | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U |
| Silver | 100 | -- | 9.4 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Sodium | -- | -- | -- | ug/l | 155000 | 153000 | 25400 | 11900 | 43500 | 39500 | 27400 | 31500 | 34500 | 32700 |
| Thallium | 2 | 2 | 0.02 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Vanadium | -- | -- | 8.6 | ug/l | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U |
| Zinc | 2000 | -- | 600 | ug/l | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U |

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**Table 9. Metals in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-037 | CFMW-037 | CFMW-038 | CFMW-038 | CFMW-040 | CFMW-040 | CFMW-042 | CFMW-043 | CFMW-043 | CFMW-044 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/16/2016 | 12/8/2016 | 9/14/2016 | 12/9/2016 | 9/14/2016 | 12/13/2016 | 9/14/2016 | 9/13/2016 | 12/14/2016 | 9/15/2016 |
| | | | | Sample Designation | CFMW-037-GW | CFMW-037-GW | CFMW-038-GW | CFMW-038-GW | CFMW-040-GW | CFMW-040-GW | CFMW-042-GW | CFMW-043-GW | CFMW-043-GW | CFMW-044-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | | |
| Aluminum | -- | -- | 2000 | ug/l | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 20.2 J | 18.2 U |
| Antimony | 6 | 6 | 0.78 | ug/l | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U |
| Arsenic | **10** | 10 | 0.052 | ug/l | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U |
| Barium | **1000** | 2000 | 380 | ug/l | 272 | 280 | 253 | 250 | 148 | 150 | 157 | 136 | 142 | 109 |
| Beryllium | 4 | 4 | 2.5 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Cadmium | 5 | -- | -- | ug/l | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U |
| Calcium | -- | -- | -- | ug/l | 49100 | 46700 | 60600 | 60000 | 55700 | 53600 | 56000 | 51600 | 51700 | 50100 |
| Chromium | 100 | 100 | -- | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Cobalt | -- | -- | 0.6 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 J | 1.3 J | 1.3 U | 1.4 J |
| Copper | 1300 | 1300 | 80 | ug/l | 1.4 U | 1.4 U | 1.4 U | 1.5 J | 4 | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| Cyanide, Total | **200** | 200 | 0.15 | ug/l | 66.7 | 40.7 | 260 | 286 | 304 | 288 | 402 | 510 | 423 | 430 |
| Iron | -- | -- | 1400 | ug/l | 42.4 U | 42.4 U | 115 J | 128 | 140 | 96.4 J | 184 | 207 | 185 | 370 |
| Lead | 15 | 15 | 15 | ug/l | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U |
| Magnesium | -- | -- | -- | ug/l | 14200 | 14400 | 16300 | 16900 | 15600 | 15200 | 16200 | 15900 | 15600 | 16200 |
| Manganese | -- | -- | -- | ug/l | 2.5 U | 2.5 U | 2.5 U | 2.5 U | 54.5 | 7.1 J | 2.5 U | 38.8 | 11.4 | 45.4 |
| Mercury | 2 | 2 | 0.063 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Nickel | 100 | -- | -- | ug/l | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| Potassium | -- | -- | -- | ug/l | 807 | 789 | 1030 | 961 | 1180 | 1020 | 1010 | 999 | 960 | 888 |
| Selenium | 50 | 50 | 10 | ug/l | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U |
| Silver | 100 | -- | 9.4 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Sodium | -- | -- | -- | ug/l | 8930 | 9550 | 37300 | 36500 | 34700 | 32500 | 43900 | 44200 | 37900 | 45000 |
| Thallium | 2 | 2 | 0.02 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Vanadium | -- | -- | 8.6 | ug/l | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U |
| Zinc | 2000 | -- | 600 | ug/l | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U |

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**Table 9. Metals in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-044 | CFMW-044a | CFMW-044a | CFMW-044b | CFMW-044b | CFMW-045 | CFMW-045 | CFMW-045a | CFMW-045a |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/9/2016 | 9/19/2016 | 12/19/2016 | 9/19/2016 | 12/19/2016 | 9/15/2016 | 12/14/2016 | 9/19/2016 | 12/9/2016 |
| | | | | Sample Designation | CFMW-044-GW | CFMW-044a-GW | CFMW-044a-GW | CFMW-044b-GW | CFMW-044b-GW | CFMW-045-GW | CFMW-045-GW | CFMW-045a-GW | CFMW-045a-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Aluminum | -- | -- | 2000 | ug/l | 18.2 U | 108 | 41.1 | 18.2 U | 18.2 U | 18.2 U | 18.5 J | 18.2 U | 18.2 U |
| Antimony | 6 | 6 | 0.78 | ug/l | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U |
| Arsenic | **10** | 10 | 0.052 | ug/l | 0.64 U | 0.64 U | 2 | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U |
| Barium | **1000** | 2000 | 380 | ug/l | 119 | 75 | 18.7 | 87.4 | 251 | 150 | 155 | 88.5 | 18.9 |
| Beryllium | 4 | 4 | 2.5 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Cadmium | 5 | -- | -- | ug/l | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U |
| Calcium | -- | -- | -- | ug/l | 45200 | 155000 | 24600 | 13700 | 31300 | 53700 | 52900 | 45800 | 4500 |
| Chromium | 100 | 100 | -- | ug/l | 1.3 U | 4.2 | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 5 |
| Cobalt | -- | -- | 0.6 | ug/l | 1.3 J | 1.3 U | 1.5 J | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Copper | 1300 | 1300 | 80 | ug/l | 1.4 U | 1.9 J | 2.9 J | 1.4 U | 1.4 U | 3.8 J | 2.8 J | 1.4 U | 1.4 U |
| Cyanide, Total | **200** | 200 | 0.15 | ug/l | 220 | 32.8 | 125 | 5.9 J | 8.2 J | 365 | 392 | 56 | 34.8 |
| Iron | -- | -- | 1400 | ug/l | 5120 | 42.4 U | 42.4 U | 732 | 2200 | 152 | 170 | 42.4 U | 42.4 U |
| Lead | 15 | 15 | 15 | ug/l | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U |
| Magnesium | -- | -- | -- | ug/l | 17000 | 121 J | 9190 | 16500 | 21500 | 15600 | 15500 | 13000 | 4800 |
| Manganese | -- | -- | -- | ug/l | 209 | 2.5 U | 2.5 U | 86.2 | 155 | 8.8 | 6.6 J | 23.6 | 2.5 U |
| Mercury | 2 | 2 | 0.063 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Nickel | 100 | -- | -- | ug/l | 2.6 J | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| Potassium | -- | -- | -- | ug/l | 1980 | 1660 | 1120 | 2520 | 1440 | 936 | 986 | 2300 | 3590 |
| Selenium | 50 | 50 | 10 | ug/l | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U |
| Silver | 100 | -- | 9.4 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Sodium | -- | -- | -- | ug/l | 48100 | 40700 | 38700 | 3900 | 4060 | 39000 | 40700 | 31100 | 27700 |
| Thallium | 2 | 2 | 0.02 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Vanadium | -- | -- | 8.6 | ug/l | 1.9 U | 10.3 | 8.6 | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 2.3 J | 4 |
| Zinc | 2000 | -- | 600 | ug/l | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U |

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**Table 9. Metals in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-047 | CFMW-047 | CFMW-049 | CFMW-049 | CFMW-049 | CFMW-049a | CFMW-049a | CFMW-050 | CFMW-050 | CFMW-053 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/14/2016 | 12/15/2016 | 9/21/2016 | 12/15/2016 | 12/15/2016 | 9/16/2016 | 12/15/2016 | 9/19/2016 | 12/15/2016 | 9/14/2016 |
| | | | | Sample Designation | CFMW-047-GW | CFMW-047-GW | CFMW-049-GW | CFMW-049-GW | CFMW-DUP6-GW | CFMW-049a-GW | CFMW-049a-GW | CFMW-050-GW | CFMW-050-GW | CFMW-053-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | N | FD | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | | |
| Aluminum | -- | -- | 2000 | ug/l | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 21.9 J | 18.2 U | 18.2 U | 18.2 U |
| Antimony | 6 | 6 | 0.78 | ug/l | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U |
| Arsenic | **10** | 10 | 0.052 | ug/l | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U |
| Barium | **1000** | 2000 | 380 | ug/l | 232 | 244 | 273 | 278 | 278 | 520 | 224 | 255 | 257 | 147 |
| Beryllium | 4 | 4 | 2.5 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Cadmium | 5 | -- | -- | ug/l | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U |
| Calcium | -- | -- | -- | ug/l | 57100 | 58400 | 47600 | 47200 | 47500 | 198000 | 41100 | 46800 | 46600 | 58200 |
| Chromium | 100 | 100 | -- | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 4 | 1.4 J | 1.3 U | 1.3 U | 1.3 U |
| Cobalt | -- | -- | 0.6 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 J |
| Copper | 1300 | 1300 | 80 | ug/l | 4.1 | 1.4 J | 4 | 1.4 U | 1.4 U | 1.4 U | 3.8 J | 3.8 J | 4.2 | 4.6 |
| Cyanide, Total | **200** | 200 | 0.15 | ug/l | 120 | 145 | 93.2 | 82.9 | 84.6 | 47.1 | 71.5 | 51.7 | 51.6 | 363 |
| Iron | -- | -- | 1400 | ug/l | 55.1 J | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 179 |
| Lead | 15 | 15 | 15 | ug/l | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U |
| Magnesium | -- | -- | -- | ug/l | 15600 | 16600 | 15500 | 15400 | 15300 | 291 | 13600 | 15300 | 15400 | 16600 |
| Manganese | -- | -- | -- | ug/l | 2.5 U | 2.5 U | 2.5 U | 2.5 U | 2.5 U | 2.5 U | 2.5 U | 3.1 J | 3.7 J | 2.5 U |
| Mercury | 2 | 2 | 0.063 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Nickel | 100 | -- | -- | ug/l | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| Potassium | -- | -- | -- | ug/l | 1200 | 972 | 857 | 783 | 804 | 19700 | 3480 | 845 | 844 | 1070 |
| Selenium | 50 | 50 | 10 | ug/l | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U |
| Silver | 100 | -- | 9.4 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Sodium | -- | -- | -- | ug/l | 18500 | 21100 | 10100 | 10200 | 10200 | 25200 | 12000 | 11700 | 10700 | 44000 |
| Thallium | 2 | 2 | 0.02 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Vanadium | -- | -- | 8.6 | ug/l | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 J | 1.9 U | 1.9 U | 1.9 U | 1.9 U |
| Zinc | 2000 | -- | 600 | ug/l | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U |

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**Table 9. Metals in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-053 | CFMW-053a | CFMW-053a | CFMW-054 | CFMW-054 | CFMW-056 | CFMW-056 | CFMW-056 | CFMW-056a |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/12/2016 | 9/19/2016 | 12/19/2016 | 9/14/2016 | 12/12/2016 | 9/20/2016 | 9/20/2016 | 12/13/2016 | 9/20/2016 |
| | | | | Sample Designation | CFMW-053-GW | CFMW-053a-GW | CFMW-053a-GW | CFMW-054-GW | CFMW-054-GW | CFMW-056-GW | CFMW-DUP3-GW | CFMW-056-GW | CFMW-056a-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | N | N | N | FD | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Aluminum | -- | -- | 2000 | ug/l | 18.2 U | 90.6 | 115 | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 43 |
| Antimony | 6 | 6 | 0.78 | ug/l | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.87 J |
| Arsenic | **10** | 10 | 0.052 | ug/l | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 2.2 |
| Barium | **1000** | 2000 | 380 | ug/l | 143 | 4430 | 2390 | 153 | 153 | 144 | 142 | 5.8 | 73.3 |
| Beryllium | 4 | 4 | 2.5 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Cadmium | 5 | -- | -- | ug/l | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U |
| Calcium | -- | -- | -- | ug/l | 55100 | 922000 | 593000 | 59400 | 56200 | 48700 | 49700 | 4800 | 18600 |
| Chromium | 100 | 100 | -- | ug/l | 1.3 U | 11.4 | 1.7 J | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Cobalt | -- | -- | 0.6 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Copper | 1300 | 1300 | 80 | ug/l | 1.4 U | 2.4 J | 4.5 | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 3 J |
| Cyanide, Total | **200** | 200 | 0.15 | ug/l | 386 | 2 U | 2 U | 327 | 382 | 2 U | 2 U | 2 U | 2 U |
| Iron | -- | -- | 1400 | ug/l | 135 | 42.4 U | 42.4 U | 156 | 126 | 516 | 514 | 42.4 U | 42.4 U |
| Lead | 15 | 15 | 15 | ug/l | 0.38 U | 0.62 J | 0.89 J | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.42 J |
| Magnesium | -- | -- | -- | ug/l | 15600 | 63.6 U | 63.6 U | 16500 | 15600 | 18700 | 19000 | 7440 | 7470 |
| Manganese | -- | -- | -- | ug/l | 2.5 U | 2.5 U | 2.5 U | 2.5 U | 2.5 U | 36.7 | 37.4 | 15.6 | 73.3 |
| Mercury | 2 | 2 | 0.063 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Nickel | 100 | -- | -- | ug/l | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| Potassium | -- | -- | -- | ug/l | 918 | 65200 | 13500 | 1050 | 931 | 1570 | 1590 | 1590 | 10800 |
| Selenium | 50 | 50 | 10 | ug/l | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U |
| Silver | 100 | -- | 9.4 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Sodium | -- | -- | -- | ug/l | 41900 | 102000 | 47500 | 38800 | 38900 | 4100 | 4280 | 4590 | 26700 |
| Thallium | 2 | 2 | 0.02 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Vanadium | -- | -- | 8.6 | ug/l | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 5.4 |
| Zinc | 2000 | -- | 600 | ug/l | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7.1 J | 7 U | 7 U |

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**Table 9. Metals in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-056a | CFMW-056a | CFMW-056b | CFMW-056b | CFMW-057 | CFMW-057 | CFMW-057a | CFMW-057a | CFMW-059 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/6/2016 | 12/6/2016 | 9/13/2016 | 12/12/2016 | 9/19/2016 | 12/5/2016 | 9/19/2016 | 12/16/2016 | 9/15/2016 |
| | | | | Sample Designation | CFMW-056a-GW | CFMW-DUP4-GW | CFMW-056b-GW | CFMW-056b-GW | CFMW-057-GW | CFMW-057-GW | CFMW-057a-GW | CFMW-057a-GW | CFMW-059-GW |
| | | | | Sample Round | Round 2 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | FD | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Aluminum | -- | -- | 2000 | ug/l | 21.4 J | 24.6 J | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 168 | 417 | 18.2 U |
| Antimony | 6 | 6 | 0.78 | ug/l | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U |
| Arsenic | **10** | 10 | 0.052 | ug/l | 2.2 | 2.3 | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U |
| Barium | **1000** | 2000 | 380 | ug/l | 111 | 116 | 132 | 132 | 46.3 | 43.6 | 924 | 364 | 140 |
| Beryllium | 4 | 4 | 2.5 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Cadmium | 5 | -- | -- | ug/l | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U |
| Calcium | -- | -- | -- | ug/l | 26400 | 27000 | 69000 | 64900 | 20500 | 19400 | 581000 | 344000 | 69300 |
| Chromium | 100 | 100 | -- | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 16 | 22.3 | 1.3 U |
| Cobalt | -- | -- | 0.6 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Copper | 1300 | 1300 | 80 | ug/l | 1.4 U | 1.4 U | 3.7 J | 1.4 U | 1.4 U | 1.4 U | 7.1 | 3.6 J | 1.4 U |
| Cyanide, Total | **200** | 200 | 0.15 | ug/l | 3.3 J | 2 UJ | 2 U | 2 U | 2 U | 2 U | 2 U | 2 U | 2 U |
| Iron | -- | -- | 1400 | ug/l | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 2290 | 2440 | 42.4 U | 42.4 U | 42.4 U |
| Lead | 15 | 15 | 15 | ug/l | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 1.3 | 0.38 U | 0.38 U |
| Magnesium | -- | -- | -- | ug/l | 10400 J | 10800 J | 17500 | 15400 | 15600 | 15700 | 63.6 U | 63.6 U | 14100 |
| Manganese | -- | -- | -- | ug/l | 241 | 248 | 83.2 | 11.2 | 65.6 | 59.1 | 2.5 U | 2.5 U | 88.4 |
| Mercury | 2 | 2 | 0.063 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Nickel | 100 | -- | -- | ug/l | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| Potassium | -- | -- | -- | ug/l | 6160 | 6500 | 925 | 771 | 1730 | 1690 | 18100 | 6500 | 1150 |
| Selenium | 50 | 50 | 10 | ug/l | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U |
| Silver | 100 | -- | 9.4 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Sodium | -- | -- | -- | ug/l | 18300 | 18200 | 9450 | 7000 | 3700 | 3800 | 48100 | 28200 | 20600 |
| Thallium | 2 | 2 | 0.02 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Vanadium | -- | -- | 8.6 | ug/l | 3.4 J | 3.6 J | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U |
| Zinc | 2000 | -- | 600 | ug/l | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U |

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**Table 9. Metals in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-059 | CFMW-059a | CFMW-059a | CFMW-061 | CFMW-061 | CFMW-061 | CFMW-064 | CFMW-064 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/12/2016 | 9/19/2016 | 12/16/2016 | 9/15/2016 | 12/7/2016 | 12/7/2016 | 9/15/2016 | 12/7/2016 |
| | | | | Sample Designation | CFMW-059-GW | CFMW-059a-GW | CFMW-059a-GW | CFMW-061-GW | CFMW-061-GW | CFMW-DUP5-GW | CFMW-064-GW | CFMW-064-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | FD | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | |
| Aluminum | -- | -- | 2000 | ug/l | 18.2 U | 137 | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 18.2 U | 18.2 U |
| Antimony | 6 | 6 | 0.78 | ug/l | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U | 0.62 U |
| Arsenic | **10** | 10 | 0.052 | ug/l | 0.64 U | 0.64 U | 4 | 0.64 U | 0.64 U | 0.64 U | 0.64 U | 0.64 U |
| Barium | **1000** | 2000 | 380 | ug/l | 154 | 268 | 121 | 220 | 300 | 297 | 312 | 339 |
| Beryllium | 4 | 4 | 2.5 | ug/l | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U | 0.24 U |
| Cadmium | 5 | -- | -- | ug/l | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U | 0.71 U |
| Calcium | -- | -- | -- | ug/l | 72100 | 340000 | 29000 | 50100 | 60700 | 60600 | 47100 | 46400 |
| Chromium | 100 | 100 | -- | ug/l | 1.3 U | 1.3 J | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Cobalt | -- | -- | 0.6 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Copper | 1300 | 1300 | 80 | ug/l | 1.4 U | 3.7 J | 1.4 U | 3.1 J | 1.4 U | 1.4 U | 1.4 U | 1.4 J |
| Cyanide, Total | **200** | 200 | 0.15 | ug/l | 2 U | 2 U | 2 U | 7.7 J | 4 J | 3.8 J | 42.7 | 62.4 |
| Iron | -- | -- | 1400 | ug/l | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 42.4 U | 42.4 U |
| Lead | 15 | 15 | 15 | ug/l | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U | 0.38 U |
| Magnesium | -- | -- | -- | ug/l | 14100 | 63.6 U | 10500 | 16200 | 20600 | 20100 | 17900 | 18700 |
| Manganese | -- | -- | -- | ug/l | 16.8 | 2.5 U | 29.8 | 68 | 15.6 | 15.3 | 19.3 | 6.2 J |
| Mercury | 2 | 2 | 0.063 | ug/l | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U | 0.17 U |
| Nickel | 100 | -- | -- | ug/l | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| Potassium | -- | -- | -- | ug/l | 1000 | 7920 | 1210 | 837 | 871 | 861 | 948 | 982 |
| Selenium | 50 | 50 | 10 | ug/l | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U | 0.73 U |
| Silver | 100 | -- | 9.4 | ug/l | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Sodium | -- | -- | -- | ug/l | 15200 | 15400 | 3430 J+ | 8660 | 11400 | 11100 | 9020 | 10400 |
| Thallium | 2 | 2 | 0.02 | ug/l | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U | 0.26 U |
| Vanadium | -- | -- | 8.6 | ug/l | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U | 1.9 U |
| Zinc | 2000 | -- | 600 | ug/l | 7 U | 7 U | 7 U | 7 U | 7 UJ | 18.2 J | 7 U | 7 U |

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**Table 10. General Chemistry in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-001 | CFMW-001 | CFMW-002 | CFMW-003 | CFMW-003 | CFMW-003a | CFMW-003a | CFMW-007 | CFMW-007 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/20/2016 | 12/12/2016 | 9/12/2016 | 9/14/2016 | 12/9/2016 | 9/20/2016 | 12/12/2016 | 9/21/2016 | 12/12/2016 |
| | | | | Sample Designation | CFMW-001-GW | CFMW-001-GW | CFMW-002-GW | CFMW-003-GW | CFMW-003-GW | CFMW-003a-GW | CFMW-003a-GW | CFMW-007-GW | CFMW-007-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Ammonia | -- | -- | -- | ug/l | 72 U | 72 U | 93 J | 154 | 362 | 72 U | 99 J+ | 72 U | 95.6 J+ |
| Chloride | -- | -- | -- | ug/l | 611 | 799 J+ | 4130 | 39100 J- | 33400 | 8600 | 8600 | 1860 J- | 1480 |
| Fluoride | **4000** | 4000 | 80 | ug/l | 91.7 | 132 | **18900** | 15 U | 536 J- | 312 | 337 | 77 J | 123 |
| Hardness as calcium carbonate | -- | -- | -- | ug/l | 206000 | 228000 | 140000 | 134000 | 736000 | 164000 | 96000 | 184000 | 220000 |
| Nitrate Nitrite as N | **10000** | 10000 | -- | ug/l | 100 U | 100 UJ | **14300** | 5730 | 9560 | 100 U | 108 J- | 100 U | 100 UJ |
| Orthophosphate as P | -- | -- | -- | ug/l | 42 U | | 42 U | 42 UJ | | 42 U | 48 UJ | 42 UJ | 48 UJ |
| Sulfate | -- | -- | -- | ug/l | 6600 | 4980 J- | 14400 | 694000 J- | 618000 J | 36700 | 34700 J- | 5530 | 16100 J- |

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**Table 10. General Chemistry in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-008 | CFMW-008 | CFMW-008a | CFMW-008a | CFMW-010 | CFMW-010 | CFMW-011 | CFMW-011 | CFMW-011a |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/21/2016 | 12/16/2016 | 9/15/2016 | 12/16/2016 | 9/12/2016 | 12/15/2016 | 9/13/2016 | 12/8/2016 | 9/20/2016 |
| | | | | Sample Designation | CFMW-008-GW | CFMW-008-GW | CFMW-008a-GW | CFMW-008a-GW | CFMW-010-GW | CFMW-010-GW | CFMW-011-GW | CFMW-011-GW | CFMW-011a-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Ammonia | -- | -- | -- | ug/l | 322 | 838 | 199 | 639 | 1240 | 477 | 72 U | 72 U | 72 U |
| Chloride | -- | -- | -- | ug/l | 2020 | 3650 J | 8430 J- | 4930 J | 4630 | 442 | 1590 | 681 J | 4070 |
| Fluoride | **4000** | 4000 | 80 | ug/l | 777 | 456 J | 180 | 179 J | 30900 | 3190 | 207 | 241 J | 200 |
| Hardness as calcium carbonate | -- | -- | -- | ug/l | 28000 | 180000 | 1000000 | 1150000 | 168000 | 124000 | 190000 | 210000 | 118000 |
| Nitrate Nitrite as N | **10000** | 10000 | -- | ug/l | 100 U | 100 U | 104 | 121 | **46200** | **21000** | 1260 | 1770 | 100 U |
| Orthophosphate as P | -- | -- | -- | ug/l | 42 UJ | 48 U | 42 UJ | 48 U | 42 U | 48 U | 42 UJ | 48 UJ | 42 U |
| Sulfate | -- | -- | -- | ug/l | 7030 | 15300 J | 20200 | 5440 J | 48000 | 17900 | 4630 | 7350 J- | 12500 |

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**Table 10. General Chemistry in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-011a | CFMW-012 | CFMW-012 | CFMW-012a | CFMW-012a | CFMW-012a | CFMW-014 | CFMW-014 | CFMW-015 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/14/2016 | 9/12/2016 | 12/14/2016 | 9/15/2016 | 9/15/2016 | 12/13/2016 | 9/12/2016 | 12/15/2016 | 9/12/2016 |
| | | | | Sample Designation | CFMW-011a-GW | CFMW-012-GW | CFMW-012-GW | CFMW-012a-GW | CFMW-DUP2-GW | CFMW-012a-GW | CFMW-014-GW | CFMW-014-GW | CFMW-015-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | N | FD | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Ammonia | -- | -- | -- | ug/l | 72 U | 224 | 111 | 72 U | 72 U | 72 U | 110 | 72 U | 23600 |
| Chloride | -- | -- | -- | ug/l | 1130 J | 3490 | 494 J- | 571 J- | 570 J- | 1730 | 2450 | 1610 J | 5770 |
| Fluoride | **4000** | 4000 | 80 | ug/l | 194 J- | 12400 | 5750 J | 54.6 J | 55.8 J | 119 | 8300 | 17300 J- | 38400 |
| Hardness as calcium carbonate | -- | -- | -- | ug/l | 118000 | 48000 | 60000 | 194000 | 196000 | 200000 | 200000 | 192000 | 70000 |
| Nitrate Nitrite as N | **10000** | 10000 | -- | ug/l | 100 U | **16500** | 8170 | 100 U | 100 U | 100 UJ | **18100** | **33500** | **41100** |
| Orthophosphate as P | -- | -- | -- | ug/l | 48 UJ | 42 U | 48 UJ | 42 UJ | 42 UJ | 48 UJ | 42 U | 48 U | 267 |
| Sulfate | -- | -- | -- | ug/l | 4740 | 21500 | 13100 | 5260 | 5740 | 4490 J- | 35000 | 45000 J- | 87400 |

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**Table 10. General Chemistry in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-015 | CFMW-016a | CFMW-016a | CFMW-019 | CFMW-019 | CFMW-019a | CFMW-019a | CFMW-020 | CFMW-020 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/15/2016 | 9/21/2016 | 12/14/2016 | 9/12/2016 | 12/15/2016 | 9/20/2016 | 12/14/2016 | 9/20/2016 | 12/13/2016 |
| | | | | Sample Designation | CFMW-015-GW | CFMW-016a-GW | CFMW-016a-GW | CFMW-019-GW | CFMW-019-GW | CFMW-019a-GW | CFMW-019a-GW | CFMW-020-GW | CFMW-020-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Ammonia | -- | -- | -- | ug/l | 17500 | 674 | 72 U | 72 U | 72 U | 97.7 J | 72 U | 72 U | 72 U |
| Chloride | -- | -- | -- | ug/l | 1570 J | 2280 | 1320 J- | 5930 | 4220 J | 3180 | 1080 J- | 2250 | 640 |
| Fluoride | **4000** | 4000 | 80 | ug/l | 16800 J- | 304 | 293 J- | 2860 | 2890 | 361 | 182 J- | 281 | 301 |
| Hardness as calcium carbonate | -- | -- | -- | ug/l | 30000 | 116000 | 142000 | 228000 | 224000 | 132000 | 192000 | 208000 | 240000 |
| Nitrate Nitrite as N | **10000** | 10000 | -- | ug/l | **18600** | 100 U | 202 | 7230 | 6910 | 100 U | 129 | 256 | 159 J- |
| Orthophosphate as P | -- | -- | -- | ug/l | 48 U | 42 UJ | 48 UJ | 42 U | 48 U | 42 U | 48 UJ | 42 U | 48 UJ |
| Sulfate | -- | -- | -- | ug/l | 44800 J- | 5880 | 6220 | 95000 | 115000 J- | 14300 | 7370 | 20100 | 5470 J- |

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**Table 10. General Chemistry in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-021 | CFMW-021 | CFMW-022 | CFMW-022 | CFMW-023 | CFMW-023 | CFMW-025a | CFMW-025a | CFMW-025b |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/12/2016 | 12/14/2016 | 9/13/2016 | 12/9/2016 | 9/21/2016 | 12/19/2016 | 9/13/2016 | 12/5/2016 | 9/13/2016 |
| | | | | Sample Designation | CFMW-021-GW | CFMW-021-GW | CFMW-022-GW | CFMW-022-GW | CFMW-023-GW | CFMW-023-GW | CFMW-025a-GW | CFMW-025a-GW | CFMW-025b-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Ammonia | -- | -- | -- | ug/l | 72 U | 72 U | 171 | 72.3 J | 72 U | 72 U | 72 U | 72 U | 72 U |
| Chloride | -- | -- | -- | ug/l | 3730 | 4210 J- | 1590 | 500 | 669 J- | 1860 | 1890 | 1470 | 1940 |
| Fluoride | **4000** | 4000 | 80 | ug/l | 1950 | 3120 J- | 432 | 558 J- | 395 | 452 | 399 | 334 J- | 585 |
| Hardness as calcium carbonate | -- | -- | -- | ug/l | 244000 | 188000 | 196000 | 224000 | 236000 | 234000 | 200000 | 540000 | 220000 |
| Nitrate Nitrite as N | **10000** | 10000 | -- | ug/l | 2590 | 9440 | 702 | 1460 | 264 | 100 U | 100 U | 221 | 145 |
| Orthophosphate as P | -- | -- | -- | ug/l | 42 U | 48 UJ | 42 UJ | | 42 UJ | 48 U | 42 UJ | 48 U | 42 UJ |
| Sulfate | -- | -- | -- | ug/l | 57100 | 81000 J- | 5470 | 4870 J- | 5400 | 4250 | 13500 | 10700 J- | 13800 |

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**Table 10. General Chemistry in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-025b | CFMW-026 | CFMW-026 | CFMW-027 | CFMW-027 | CFMW-028 | CFMW-028 | CFMW-028a | CFMW-028a |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/7/2016 | 9/13/2016 | 12/5/2016 | 9/13/2016 | 12/14/2016 | 9/13/2016 | 12/5/2016 | 9/20/2016 | 12/9/2016 |
| | | | | Sample Designation | CFMW-025b-GW | CFMW-026-GW | CFMW-026-GW | CFMW-027-GW | CFMW-027-GW | CFMW-028-GW | CFMW-028-GW | CFMW-028a-GW | CFMW-028a-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Ammonia | -- | -- | -- | ug/l | 72 U | 72 U | 112 | 77.5 J | 259 | 72 U | 72 U | 72 U | 111 |
| Chloride | -- | -- | -- | ug/l | 1960 J | 2720 | 2370 J- | 2220 | 2030 J- | 2090 | 1650 J- | 16900 | 8950 |
| Fluoride | **4000** | 4000 | 80 | ug/l | 970 J- | 1650 | 1440 J- | 2390 | 1970 J- | 3170 J+ | 3130 J- | 1020 | 557 J- |
| Hardness as calcium carbonate | -- | -- | -- | ug/l | 360000 | 220000 | 250000 | 198000 | 260000 | 178000 | 200000 | 66000 | 138000 |
| Nitrate Nitrite as N | **10000** | 10000 | -- | ug/l | 241 | 367 | 415 | 3970 | 4310 | 542 | 930 | 100 U | 100 U |
| Orthophosphate as P | -- | -- | -- | ug/l | 48 UJ | 42 UJ | 48 U | 42 UJ | 48 UJ | 42 UJ | 48 U | 84 U | |
| Sulfate | -- | -- | -- | ug/l | 12300 J- | 20300 | 15800 J- | 27300 | 24700 | 8380 | 7810 J- | 34200 | 38200 J |

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**Table 10. General Chemistry in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-029 | CFMW-029 | CFMW-029 | CFMW-031 | CFMW-031 | CFMW-032 | CFMW-032 | CFMW-032a | CFMW-032a |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/13/2016 | 9/13/2016 | 12/14/2016 | 9/15/2016 | 12/9/2016 | 9/15/2016 | 12/13/2016 | 9/16/2016 | 12/16/2016 |
| | | | | Sample Designation | CFMW-029-GW | CFMW-DUP1-GW | CFMW-029-GW | CFMW-031-GW | CFMW-031-GW | CFMW-032-GW | CFMW-032-GW | CFMW-032a-GW | CFMW-032a-GW |
| | | | | Sample Round | Round 1 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | FD | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Ammonia | -- | -- | -- | ug/l | 113 J | 72.1 J | 72 U | 72 U | 115 | 72 U | 72 U | 95.7 J | 72 U |
| Chloride | -- | -- | -- | ug/l | 1000 | 999 | 623 J- | 1700 J- | 1220 | 2260 | 1930 | 1650 J- | 2150 J |
| Fluoride | **4000** | 4000 | 80 | ug/l | 3370 J+ | 3370 J+ | 4180 J | 2440 | 2100 J- | 5210 J- | 2490 | 49 J- | 225 J |
| Hardness as calcium carbonate | -- | -- | -- | ug/l | 214000 | 214000 | 200000 | 184000 | 240000 | 152000 | 344000 | 1600000 | 990000 |
| Nitrate Nitrite as N | **10000** | 10000 | -- | ug/l | 1850 | 1830 | 1230 | 1280 | 3260 | 2810 | 1700 J- | 100 U | 104 |
| Orthophosphate as P | -- | -- | -- | ug/l | 42 UJ | 42 UJ | 48 UJ | 42 UJ | | 42 UJ | 48 UJ | 42 R | 48 U |
| Sulfate | -- | -- | -- | ug/l | 18300 | 18300 | 13900 | 8390 | 21200 J- | 10900 | 10400 J- | 2820 J- | 8740 J |

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**Table 10. General Chemistry in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-033 | CFMW-033 | CFMW-034 | CFMW-034 | CFMW-035 | CFMW-035 | CFMW-037 | CFMW-037 | CFMW-038 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/15/2016 | 12/6/2016 | 9/14/2016 | 12/13/2016 | 9/14/2016 | 12/13/2016 | 9/16/2016 | 12/8/2016 | 9/14/2016 |
| | | | | Sample Designation | CFMW-033-GW | CFMW-033-GW | CFMW-034-GW | CFMW-034-GW | CFMW-035-GW | CFMW-035-GW | CFMW-037-GW | CFMW-037-GW | CFMW-038-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Ammonia | -- | -- | -- | ug/l | 72 U | 72 U | 142 | 72 U | 72 U | 72 U | 72 U | 87.7 J+ | 72 U |
| Chloride | -- | -- | -- | ug/l | 2390 J- | 1940 | 1810 J- | 1140 | 6880 J- | 4670 | 2760 | 1170 J- | 2810 J |
| Fluoride | **4000** | 4000 | 80 | ug/l | 2340 | 2040 J- | 4530 J- | 60 U | 415 | 305 | 1030 J- | 1060 J | 2590 |
| Hardness as calcium carbonate | -- | -- | -- | ug/l | 208000 | 228000 | 220000 | 304000 | 336000 | 640000 | 194000 | 196000 | 226000 |
| Nitrate Nitrite as N | **10000** | 10000 | -- | ug/l | 2920 | 3140 | 1520 | 1050 J- | 100 U | 100 UJ | 1580 | 781 | 2230 |
| Orthophosphate as P | -- | -- | -- | ug/l | 42 UJ | 48 UJ | 42 UJ | 48 UJ | 42 UJ | 48 UJ | 42 R | 48 UJ | 42 UJ |
| Sulfate | -- | -- | -- | ug/l | 22600 J- | 18800 J | 13800 J+ | 11700 J- | 29500 J- | 24000 J- | 8810 J- | 6120 J- | 16700 J+ |

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**Table 10. General Chemistry in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-038 | CFMW-040 | CFMW-040 | CFMW-042 | CFMW-043 | CFMW-043 | CFMW-044 | CFMW-044 | CFMW-044a |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/9/2016 | 9/14/2016 | 12/13/2016 | 9/14/2016 | 9/13/2016 | 12/14/2016 | 9/15/2016 | 12/9/2016 | 9/19/2016 |
| | | | | Sample Designation | CFMW-038-GW | CFMW-040-GW | CFMW-040-GW | CFMW-042-GW | CFMW-043-GW | CFMW-043-GW | CFMW-044-GW | CFMW-044-GW | CFMW-044a-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Ammonia | -- | -- | -- | ug/l | 72 U | 72 U | 72 U | 72 U | 72 U | 79.3 J | 110 | 7520 | 72 U |
| Chloride | -- | -- | -- | ug/l | 2200 | 3240 J | 2350 | 2940 J- | 2470 | 1880 J- | 2960 J- | 2260 | 5340 |
| Fluoride | **4000** | 4000 | 80 | ug/l | 2400 J- | 2650 | 2360 | 2410 | 2280 | 2050 J- | 2150 | 1670 J- | 1720 |
| Hardness as calcium carbonate | -- | -- | -- | ug/l | 228000 | 214000 | 212000 | 208000 | 206000 | 220000 | 202000 | 194000 | 408000 |
| Nitrate Nitrite as N | **10000** | 10000 | -- | ug/l | 1960 | 2190 | 2280 J- | 2910 | 3000 | 1990 | 2830 | 1880 | 2640 |
| Orthophosphate as P | -- | -- | -- | ug/l | | 42 UJ | 48 UJ | 42 UJ | 42 UJ | 48 UJ | 42 UJ | | 42 R |
| Sulfate | -- | -- | -- | ug/l | 10000 J- | 16700 J+ | 14200 J- | 25500 J- | 26000 | 18600 | 26200 J- | 21900 J- | 63000 |

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**Table 10. General Chemistry in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-044a | CFMW-044b | CFMW-044b | CFMW-045 | CFMW-045 | CFMW-045a | CFMW-045a | CFMW-047 | CFMW-047 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/19/2016 | 9/19/2016 | 12/19/2016 | 9/15/2016 | 12/14/2016 | 9/19/2016 | 12/9/2016 | 9/14/2016 | 12/15/2016 |
| | | | | Sample Designation | CFMW-044a-GW | CFMW-044b-GW | CFMW-044b-GW | CFMW-045-GW | CFMW-045-GW | CFMW-045a-GW | CFMW-045a-GW | CFMW-047-GW | CFMW-047-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Ammonia | -- | -- | -- | ug/l | 72 U | 6400 | 207 | 72 U | 72 U | 72 U | N/A | 72 U | 72 U |
| Chloride | -- | -- | -- | ug/l | 2890 | 3500 | 2030 | 2840 J- | 2150 J- | 2870 | 7770 | 2690 J | 751 J |
| Fluoride | **4000** | 4000 | 80 | ug/l | 2280 | 153 | 142 | 2300 | 1920 J- | 2980 | 1650 J- | 2160 | 1960 |
| Hardness as calcium carbonate | -- | -- | -- | ug/l | 116000 | 108000 | 174000 | 208000 | 212000 | 214000 | 54000 | 208000 | 236000 |
| Nitrate Nitrite as N | **10000** | 10000 | -- | ug/l | 1240 | 100 U | 100 U | 2730 | 3020 | 100 U | N/A | 1300 | 1890 |
| Orthophosphate as P | -- | -- | -- | ug/l | 48 U | 42 R | 48 U | 42 UJ | 48 UJ | 42 R | N/A | 42 UJ | 48 U |
| Sulfate | -- | -- | -- | ug/l | 52000 | 826 | 4820 | 23100 J- | 19300 | 21500 | 21000 J- | 10300 J+ | 7730 |

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**Table 10. General Chemistry in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-049 | CFMW-049 | CFMW-049 | CFMW-049a | CFMW-049a | CFMW-050 | CFMW-050 | CFMW-053 | CFMW-053 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/21/2016 | 12/15/2016 | 12/15/2016 | 9/16/2016 | 12/15/2016 | 9/19/2016 | 12/15/2016 | 9/14/2016 | 12/12/2016 |
| | | | | Sample Designation | CFMW-049-GW | CFMW-049-GW | CFMW-DUP6-GW | CFMW-049a-GW | CFMW-049a-GW | CFMW-050-GW | CFMW-050-GW | CFMW-053-GW | CFMW-053-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | FD | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Ammonia | -- | -- | -- | ug/l | 72 U | 72 U | 72 U | 74.6 J | 72 U | 72 U | 72 U | 72 U | 72 U |
| Chloride | -- | -- | -- | ug/l | 1780 J- | 637 J | 639 J | 2300 J- | 1320 | 30 U | 759 J | 2900 J | 2180 |
| Fluoride | **4000** | 4000 | 80 | ug/l | 861 | 834 | 827 | 470 J- | 433 | 811 | 809 | 1990 | 1870 |
| Hardness as calcium carbonate | -- | -- | -- | ug/l | 188000 | 196000 | 200000 | 700000 | 216000 | 192000 | 212000 | 212000 | 240000 |
| Nitrate Nitrite as N | **10000** | 10000 | -- | ug/l | 759 | 568 | 551 | 442 | 518 | 307 | 447 | 2810 | 3670 J- |
| Orthophosphate as P | -- | -- | -- | ug/l | 42 UJ | 48 U | 48 U | 42 R | 48 U | 42 R | 48 U | 42 UJ | 48 UJ |
| Sulfate | -- | -- | -- | ug/l | 3550 | 3440 | 3440 | 4710 J- | 2820 | 3320 | 3520 | 24800 | 20400 J- |

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**Table 10. General Chemistry in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-053a | CFMW-053a | CFMW-054 | CFMW-054 | CFMW-056 | CFMW-056 | CFMW-056 | CFMW-056a | CFMW-056a |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/19/2016 | 12/19/2016 | 9/14/2016 | 12/12/2016 | 9/20/2016 | 9/20/2016 | 12/13/2016 | 9/20/2016 | 12/6/2016 |
| | | | | Sample Designation | CFMW-053a-GW | CFMW-053a-GW | CFMW-054-GW | CFMW-054-GW | CFMW-056-GW | CFMW-DUP3-GW | CFMW-056-GW | CFMW-056a-GW | CFMW-056a-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | N | FD | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Ammonia | -- | -- | -- | ug/l | 232 | 72 U | 72 U | 72 U | 76.2 J | 80.9 J | 72 U | 72 U | 117 |
| Chloride | -- | -- | -- | ug/l | 6360 | 5210 | 2600 J | 2480 | 459 J+ | 386 | 2690 J- | 17900 | 3470 |
| Fluoride | **4000** | 4000 | 80 | ug/l | 15 U | 537 | 1920 | 1610 | 138 | 131 | 107 | 405 | 400 J- |
| Hardness as calcium carbonate | -- | -- | -- | ug/l | 2220000 | 2800000 | 220000 | 236000 | 202000 | 202000 | 48000 | 102000 | 124000 |
| Nitrate Nitrite as N | **10000** | 10000 | -- | ug/l | 100 U | 186 | 2620 | 1930 J- | 100 U | 100 U | 100 UJ | 100 U | 100 U |
| Orthophosphate as P | -- | -- | -- | ug/l | 42 R | 48 U | 42 UJ | 48 UJ | 42 U | 42 U | 48 UJ | 42 U | 48 UJ |
| Sulfate | -- | -- | -- | ug/l | 1570 | 1510 | 22300 | 20000 J- | 4530 | 4430 | 1030 J- | 96400 | 21700 J |

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**Table 10. General Chemistry in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-056a | CFMW-056b | CFMW-056b | CFMW-057 | CFMW-057 | CFMW-057a | CFMW-057a | CFMW-059 | CFMW-059 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 12/6/2016 | 9/13/2016 | 12/12/2016 | 9/19/2016 | 12/5/2016 | 9/19/2016 | 12/16/2016 | 9/15/2016 | 12/12/2016 |
| | | | | Sample Designation | CFMW-DUP4-GW | CFMW-056b-GW | CFMW-056b-GW | CFMW-057-GW | CFMW-057-GW | CFMW-057a-GW | CFMW-057a-GW | CFMW-059-GW | CFMW-059-GW |
| | | | | Sample Round | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | FD | N | N | N | N | N | N | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | | | |
| Ammonia | -- | -- | -- | ug/l | 89 J | 72 U | 72 U | 209 | 323 | 500 | 1060 | 72 U | 72 U |
| Chloride | -- | -- | -- | ug/l | 3360 | 3160 | 1880 | 630 | 620 J- | 6520 | 3590 J | 30400 J- | 24600 |
| Fluoride | **4000** | 4000 | 80 | ug/l | 394 J- | 156 | 194 | 66.6 J | 127 J- | 15 U | 180 J | 59.5 J | 114 |
| Hardness as calcium carbonate | -- | -- | -- | ug/l | 116000 | 250000 | 240000 | 124000 | 132000 | 1800000 | 1200000 | 236000 | 260000 |
| Nitrate Nitrite as N | **10000** | 10000 | -- | ug/l | 100 U | 443 | 377 J- | 100 U | 100 U | 100 U | 100 U | 3180 | 2180 J- |
| Orthophosphate as P | -- | -- | -- | ug/l | 48 UJ | 42 UJ | 48 UJ | 42 R | 48 U | 42 R | 48 U | 42 UJ | 48 UJ |
| Sulfate | -- | -- | -- | ug/l | 21600 J | 27000 | 9670 J- | 797 | 848 J- | 1080 | 1400 J | 6980 | 4610 J- |

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**Table 10. General Chemistry in Round 1 and Round 2 Groundwater**
**Columbia Falls Aluminum Company, 2000 Aluminum Drive, Columbia Falls, MT**

| | | | | Sample Location | CFMW-059a | CFMW-059a | CFMW-061 | CFMW-061 | CFMW-061 | CFMW-064 | CFMW-064 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Sample Date | 9/19/2016 | 12/16/2016 | 9/15/2016 | 12/7/2016 | 12/7/2016 | 9/15/2016 | 12/7/2016 |
| | | | | Sample Designation | CFMW-059a-GW | CFMW-059a-GW | CFMW-061-GW | CFMW-061-GW | CFMW-DUP5-GW | CFMW-064-GW | CFMW-064-GW |
| | | | | Sample Round | Round 1 | Round 2 | Round 1 | Round 2 | Round 2 | Round 1 | Round 2 |
| | | | | Sample Type | N | N | N | N | FD | N | N |
| Parameter | DEQ-7 Human Health Standards | EPA Risk Based Screening Level Drinking water MCL | EPA Risk Based Screening Level Tapwater RSL | Unit | | | | | | | |
| Ammonia | -- | -- | -- | ug/l | 211 | 103 | 72 U | 72 U | 72 U | 72 U | 72 U |
| Chloride | -- | -- | -- | ug/l | 4270 | 205 J | 2350 J- | 2150 J- | 2120 J- | 2100 J- | 1980 J- |
| Fluoride | **4000** | 4000 | 80 | ug/l | 147 | 198 J | 780 | 669 J- | 640 J- | 303 | 311 J- |
| Hardness as calcium carbonate | -- | -- | -- | ug/l | 1060000 | 124000 | 200000 | 264000 | 260000 | 198000 | 256000 |
| Nitrate Nitrite as N | **10000** | 10000 | -- | ug/l | 100 U | 100 U | 113 | 100 U | 134 | 346 | 507 |
| Orthophosphate as P | -- | -- | -- | ug/l | 42 R | 48 U | 42 UJ | 48 UJ | 48 UJ | 42 UJ | 48 UJ |
| Sulfate | -- | -- | -- | ug/l | 12400 | 10900 J | 7720 | 5410 J- | 5440 J- | 4560 | 4250 J- |

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# PLATES

1. Potentiometric Surface Contour Map, Upper Hydrogeologic Unit, November 29, 2016
2. Concentrations of Total Cyanide in Round 1 and Round 2 Surface Water
3. Concentrations of Fluoride in Round 1 and Round 2 Surface Water
4. Concentrations of Total Cyanide in Round 1 and Round 2 Groundwater
5. Concentrations of Fluoride in Round 1 and Round 2 Groundwater
6. Concentrations of Total Cyanide in Groundwater
7. Concentrations of Fluoride in Groundwater

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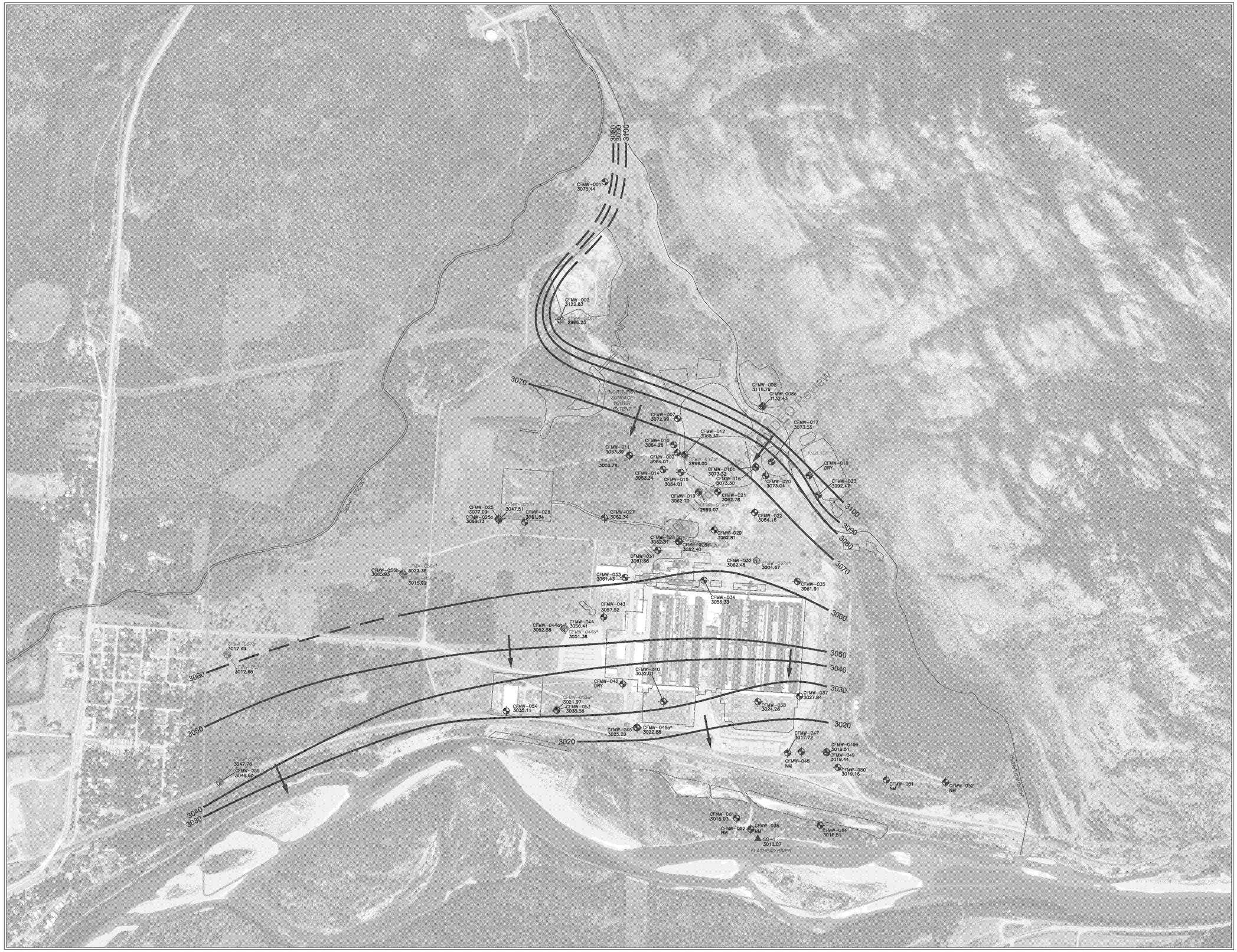



LEGEND

| | |
|---|---|
| | RI/FS SITE BOUNDARY |
| | SURFACE WATER FEATURE |
| | SITE FEATURE |
| CFMW-035 | LOCATION AND DESIGNATION OF MONITORING WELL SCREENED IN UPPER HYDROGEOLOGIC UNIT |
| CFMW-052 | LOCATION AND DESIGNATION OF FORMER PRODUCTION WELL |
| CFMW-032a* | LOCATION AND DESIGNATION OF MONITORING WELL SCREENED BELOW UPPER HYDROGEOLOGIC UNIT |
| SG-1 | LOCATION AND DESIGNATION OF SURFACE WATER STAFF GAUGE |
| 3188.988 | LOCATION WHERE SITE FEATURE WAS SURVEYED |
| 30.52.88 | POTENTIOMETRIC SURFACE IN FEET ABOVE MEAN SEA LEVEL |
| NM | NOT MEASURED |
| * | NOT USED IN CONTOURING |
| 3080 | CONTOUR LINE OF EQUAL POTENTIOMETRIC SURFACE (DASHED WHERE INFERRED) |
| | INFERRED FLOW DIRECTION |

NOTE

MONITORING WELLS SCREENED BELOW THE UPPER HYDROGEOLOGIC UNIT ARE NOT USED IN CONTOURING.

500' 0 500'

Title:

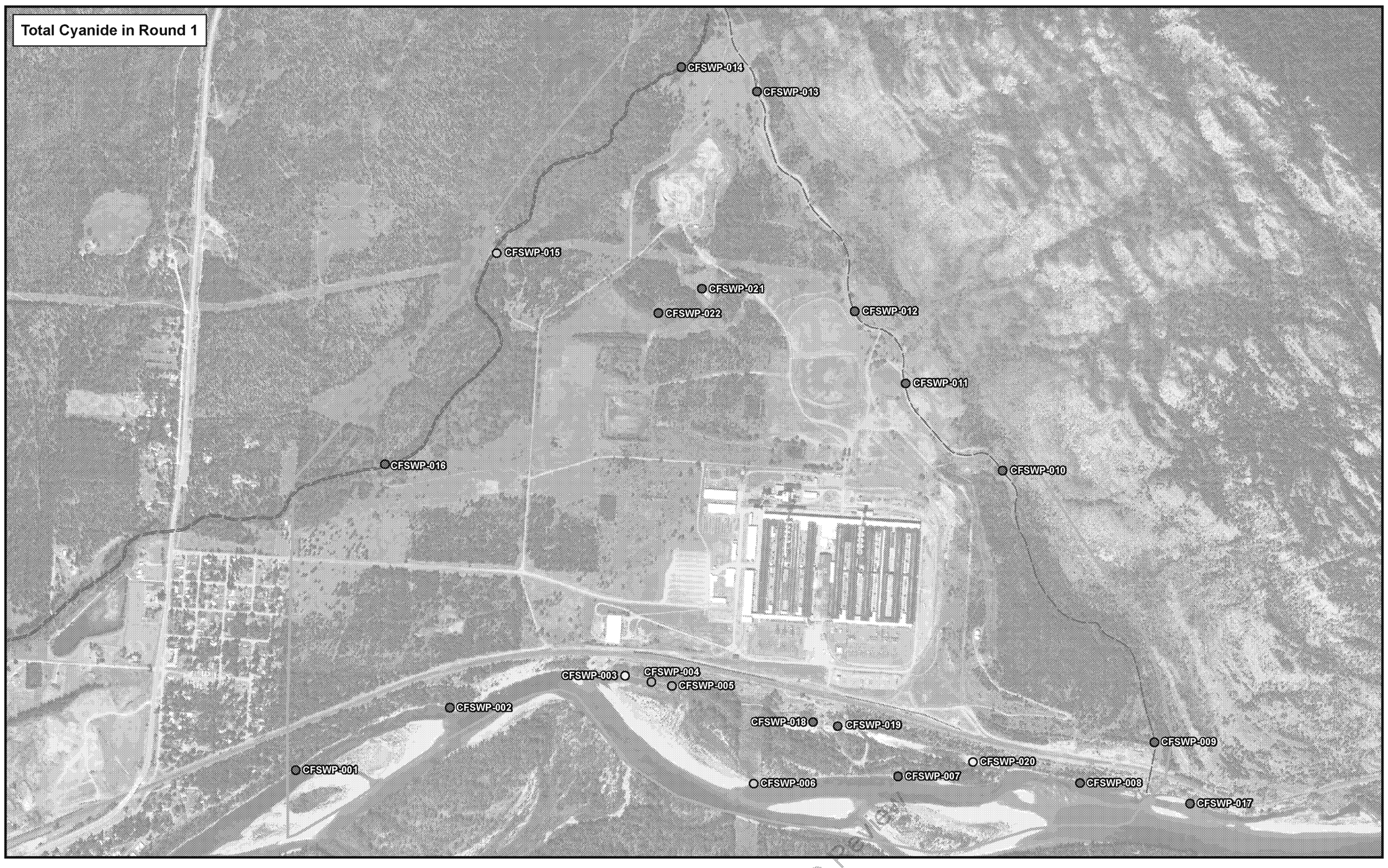
**POTENTIOMETRIC SURFACE CONTOUR MAP**
**UPPER HYDROGEOLOGIC UNIT**
**NOVEMBER 29, 2016**

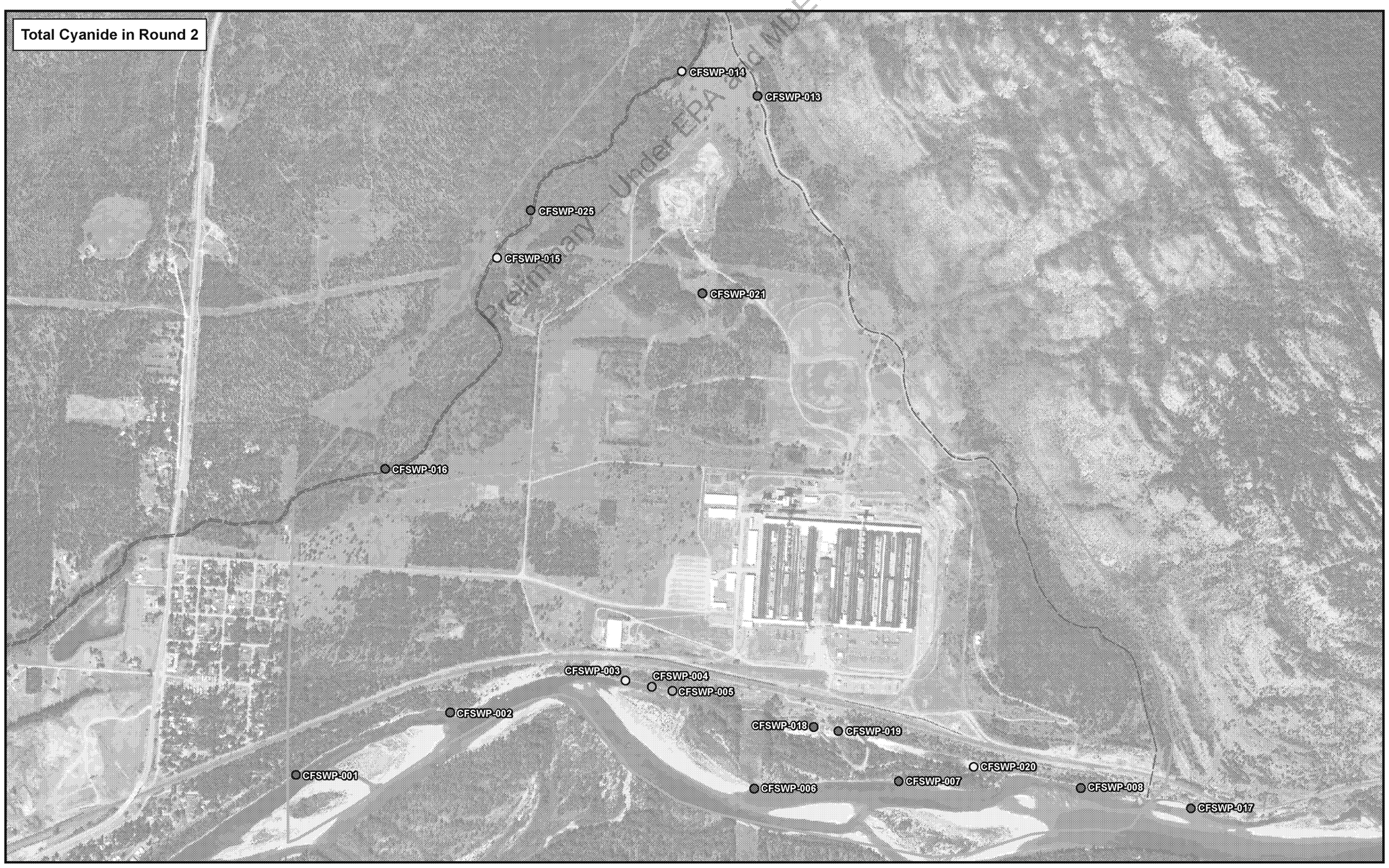
Prepared For:
COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX
ROUX ASSOCIATES, INC.
*Environmental Consulting & Management*

| | | |
|---|---|---|
| Compiled by: L.J. | Date: 11APR17 | PLATE |
| Prepared by: G.M. | Scale: AS SHOWN | 1 |
| Project Mgr: M.R. | Project: 2476.0001Y002 | |
| File: 2476.0001Y154.03.DWG | | |

V:\CAD\PROJECTS\2476\0001\154\2476.0001Y154.03.DWG




Preliminary Under EPA and DEQ Review

## Concentration Legend

- Analyte Not Detected (4U)
- ND – 5.2
- 5.2 – 140
- 140 – 2,000
- >2,000

| Chemical Name | Total Cyanide |
|---|---|
| DEQ–7 Aquatic Life Standards Acute | 22 |
| DEQ–7 Aquatic Life Standards Chronic | 5.2 |
| DEQ–7 Human Health Standards | 140 |
| EPA MCL | 200 |
| EPA Risk Based Screening Level Tapwater RSL | 0.15 |

## Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)
4U – Highest Method Detection Limit (MDL) in Sample Set

N

500 0 500 1,000 Feet

Title:

**CONCENTRATIONS OF TOTAL CYANIDE IN ROUND 1 AND ROUND 2 SURFACE WATER**

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:

COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX
ROUX ASSOCIATES, INC.
Environmental Consulting & Management

| | | |
|---|---|---|
| Compiled by: M.R. | Date: 13APR17 | PLATE |
| Prepared by: M.R. | Scale: AS SHOWN | 2 |
| Project Mgr: M.R. | Project: 2476.0001Y002 | |
| File: 2476.0002Y154.2.mxd | | |

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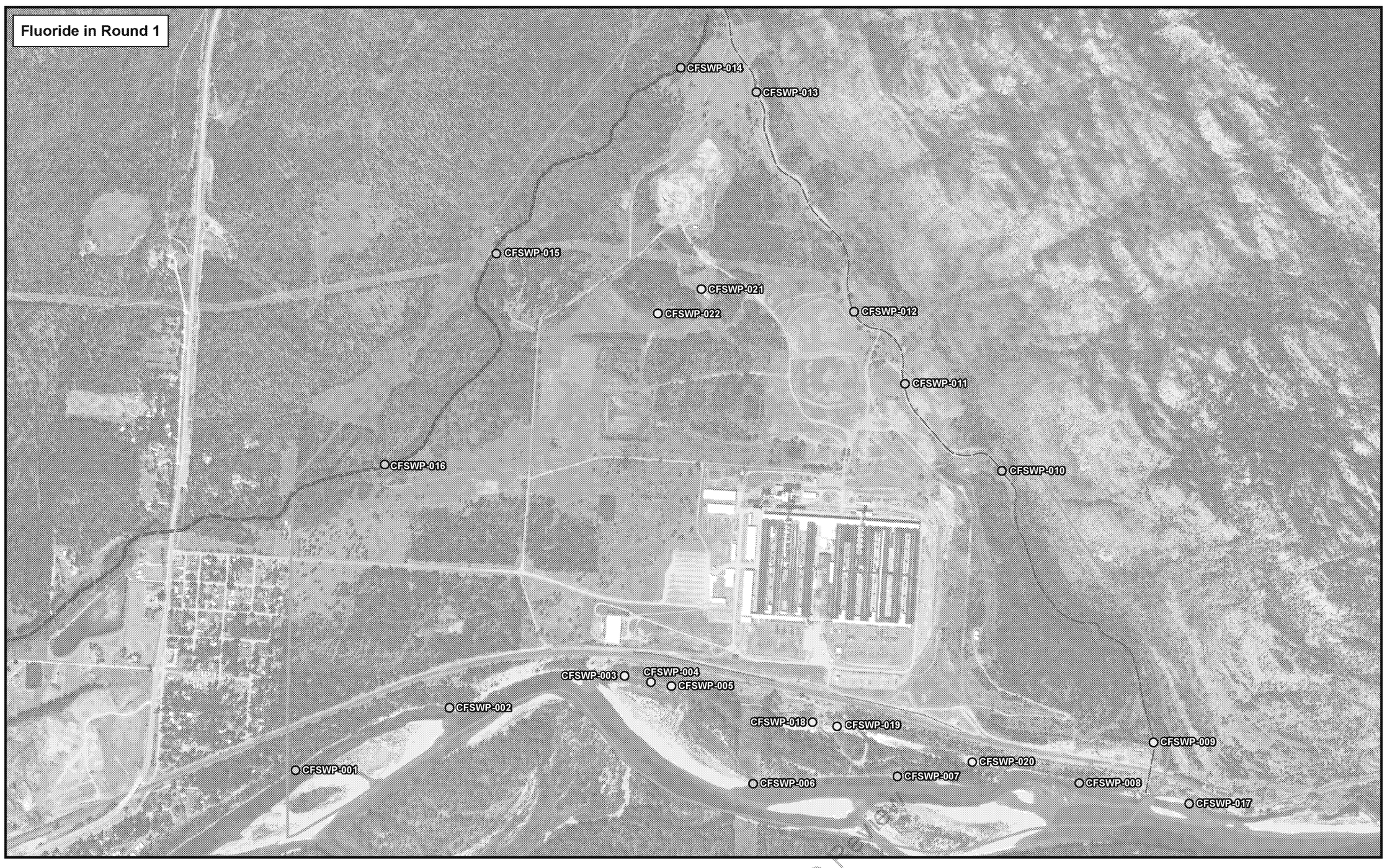


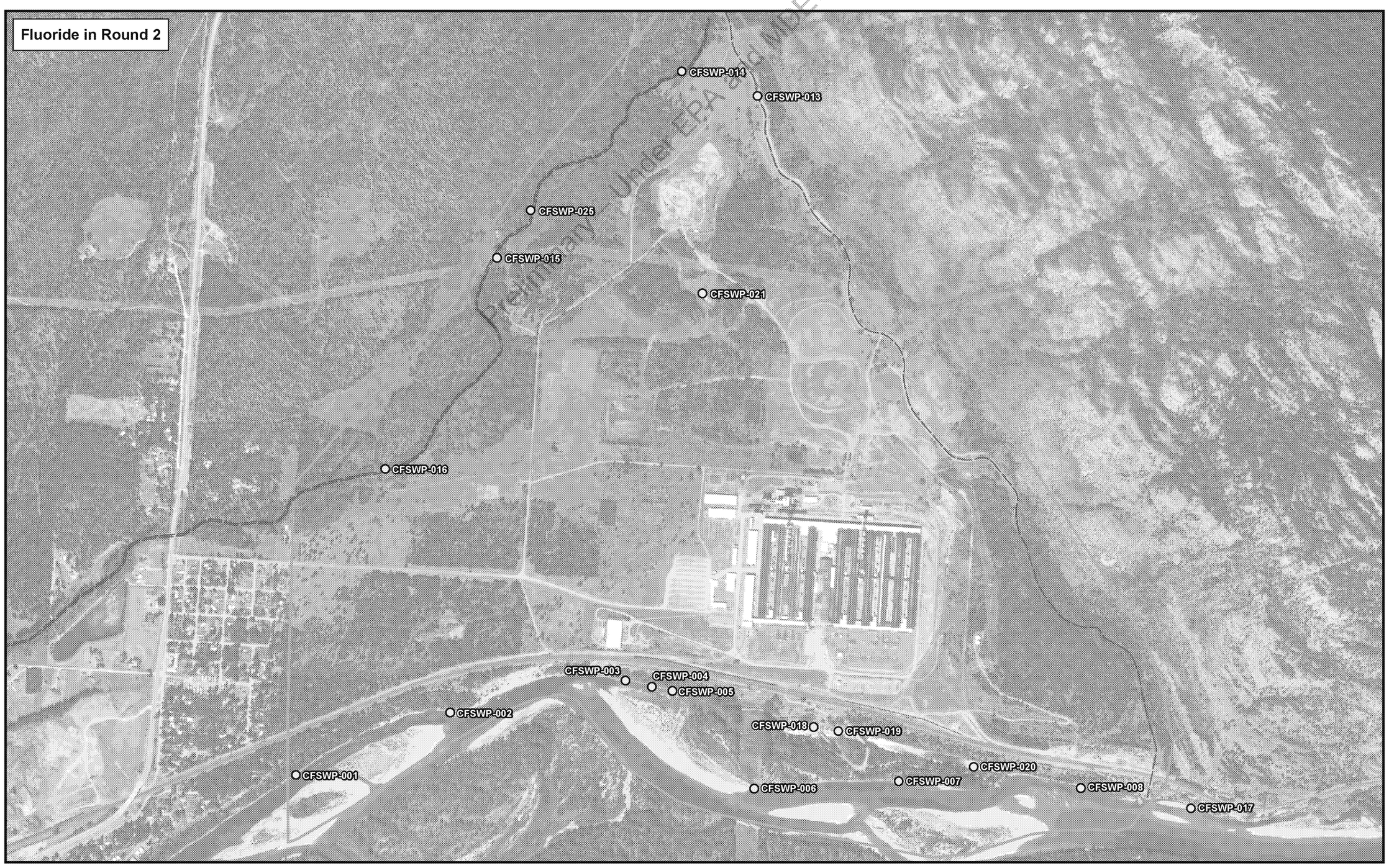


Preliminary Under EPA and DEQ Review

## Concentration Legend

- Analyte Not Detected
- ND – 80
- 80 – 4,000
- 4,000 – 40,000
- >40,000

| Chemical Name | Fluoride |
|---|---|
| DEQ-7 Aquatic Life Standards Acute | -- |
| DEQ-7 Aquatic Life Standards Chronic | -- |
| DEQ-7 Human Health Standards | 4,000 |
| EPA MCL | 4,000 |
| EPA Risk Based Screening Level Tapwater RSL | 80 |

## Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
All Samples are in micrograms per litres (ug/L)

N

500 0 500 1,000 Feet

Title:

**CONCENTRATIONS OF FLUORIDE IN ROUND 1 AND ROUND 2 SURFACE WATER**

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:

COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX
ROUX ASSOCIATES, INC.
*Environmental Consulting & Management*

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| Compiled by: M.R. | Date: 13APR17 | PLATE |
| Prepared by: M.R. | Scale: AS SHOWN | 3 |
| Project Mgr: M.R. | Project: 2476.0001Y002 | |
| File: 2476.0002Y154.3.mxd | | |

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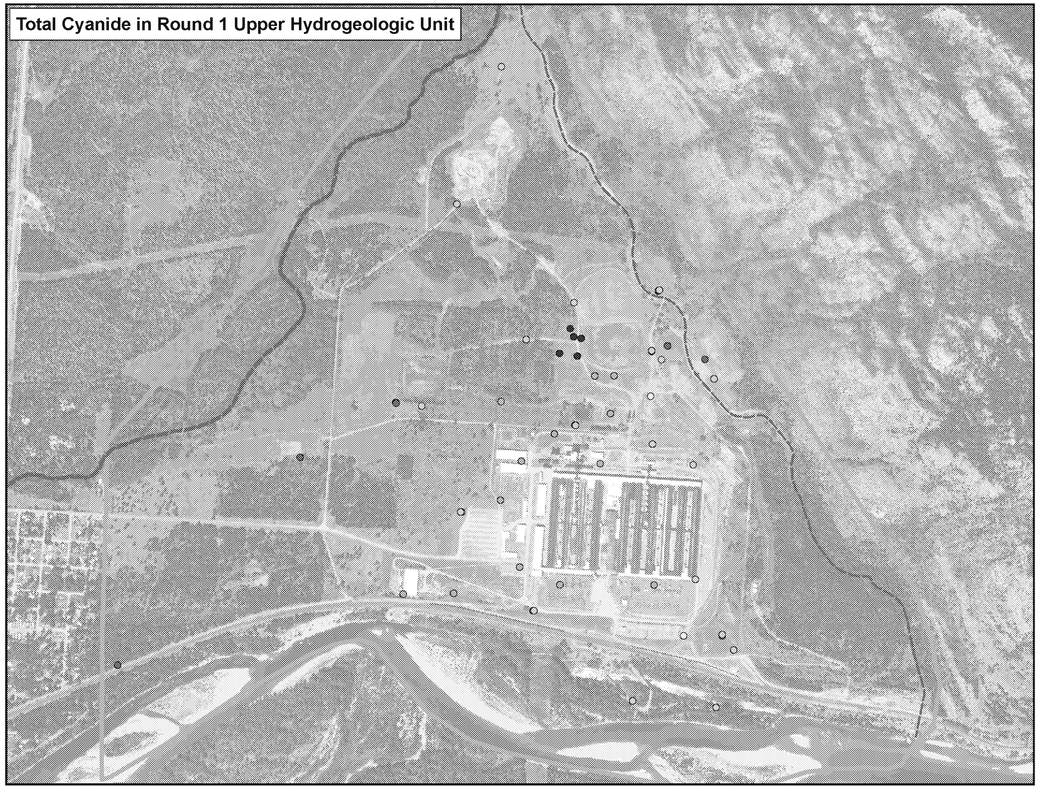


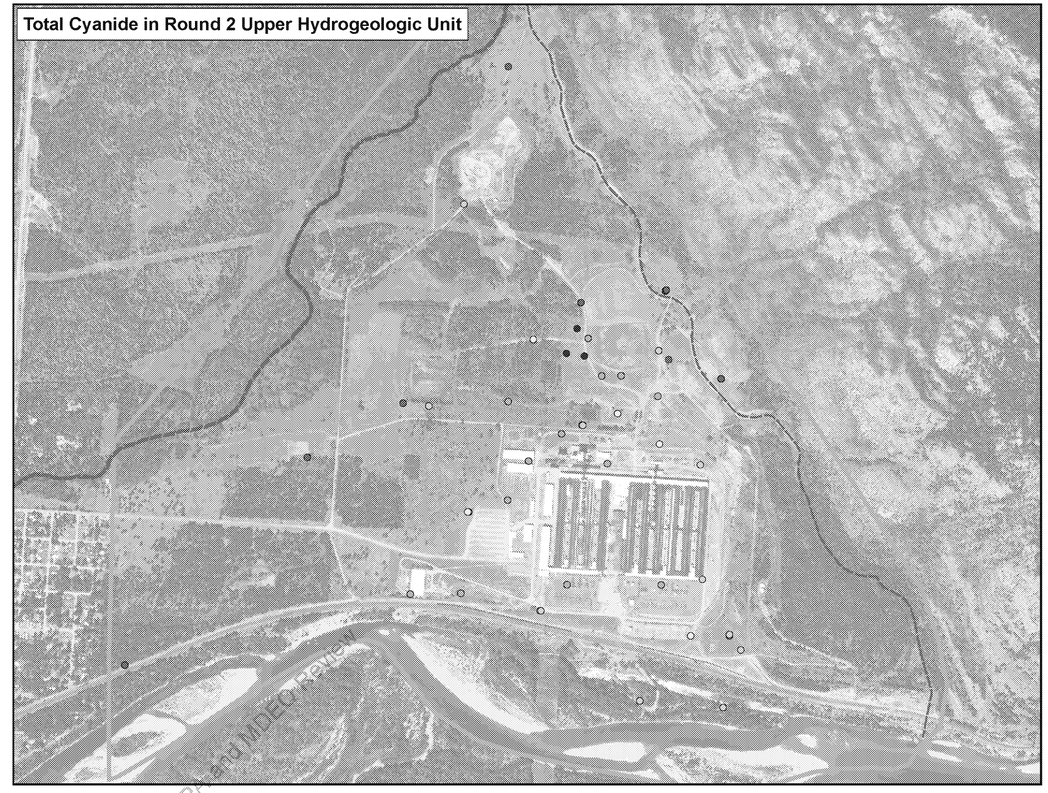


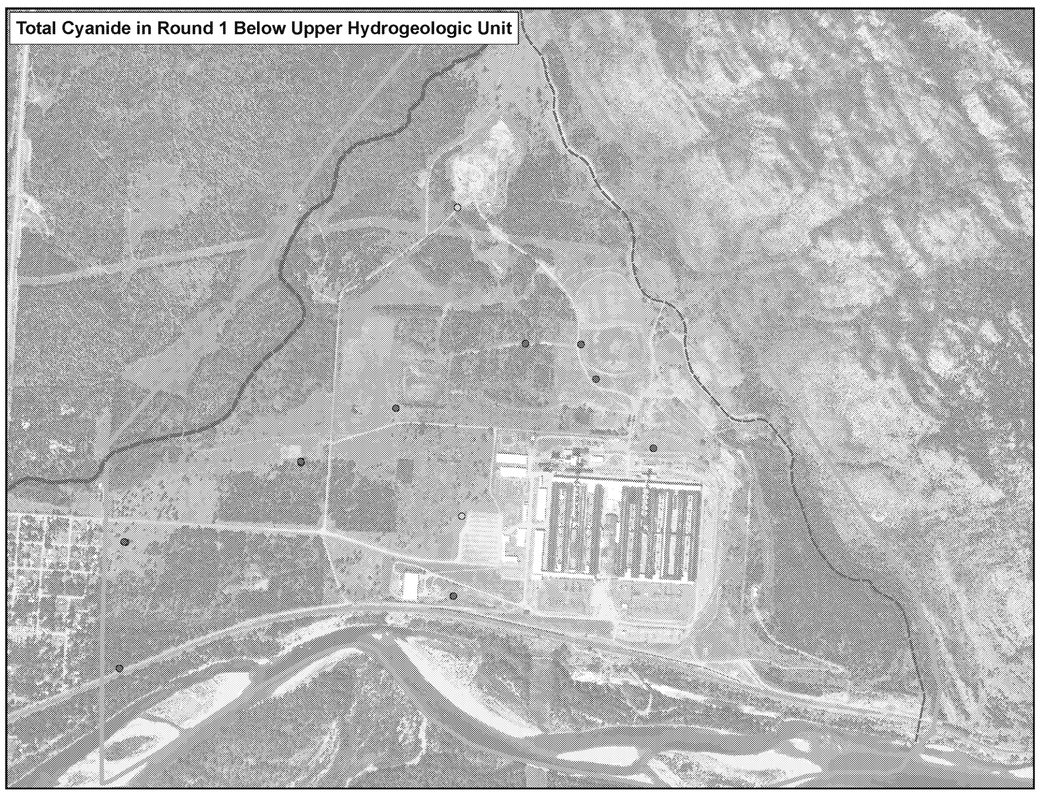


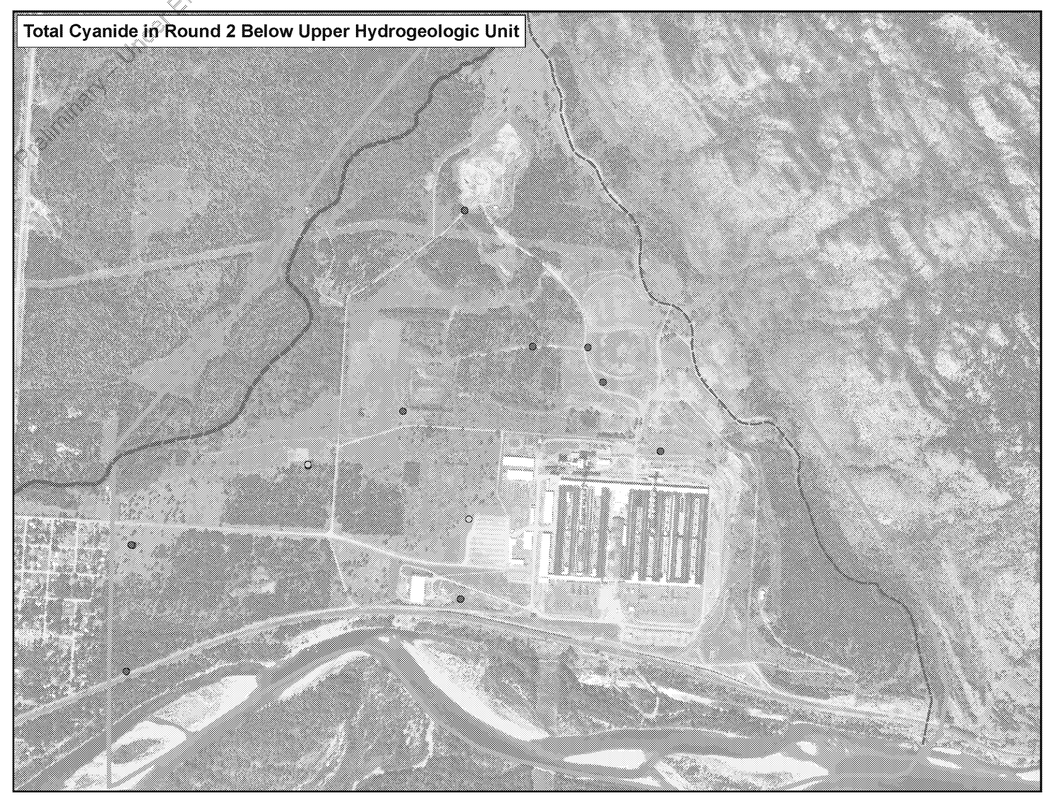


Preliminary - Under EPA and MDEQ Review

N

## Concentration Legend

- Analyte Not Detected (2U)
- ND – 100
- 100 – 200
- 200 – 2,000
- >2,000

| Chemical Name | DEQ-7 Human Health Standards | EPA MCL | EPA Risk Based Screening Level Tapwater RSL |
|---|---|---|---|
| Total Cyanide | 200 | 200 | 0.15 |

## Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
2U – Highest Method Detection Limit (MDL) in Sample Set
All Samples are in micrograms per litres (ug/L)

850 0 850 1,700 Feet

Title:

**CONCENTRATIONS OF TOTAL CYANIDE IN ROUND 1 AND ROUND 2 GROUNDWATER**

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:

COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX
ROUX ASSOCIATES, INC.
*Environmental Consulting & Management*

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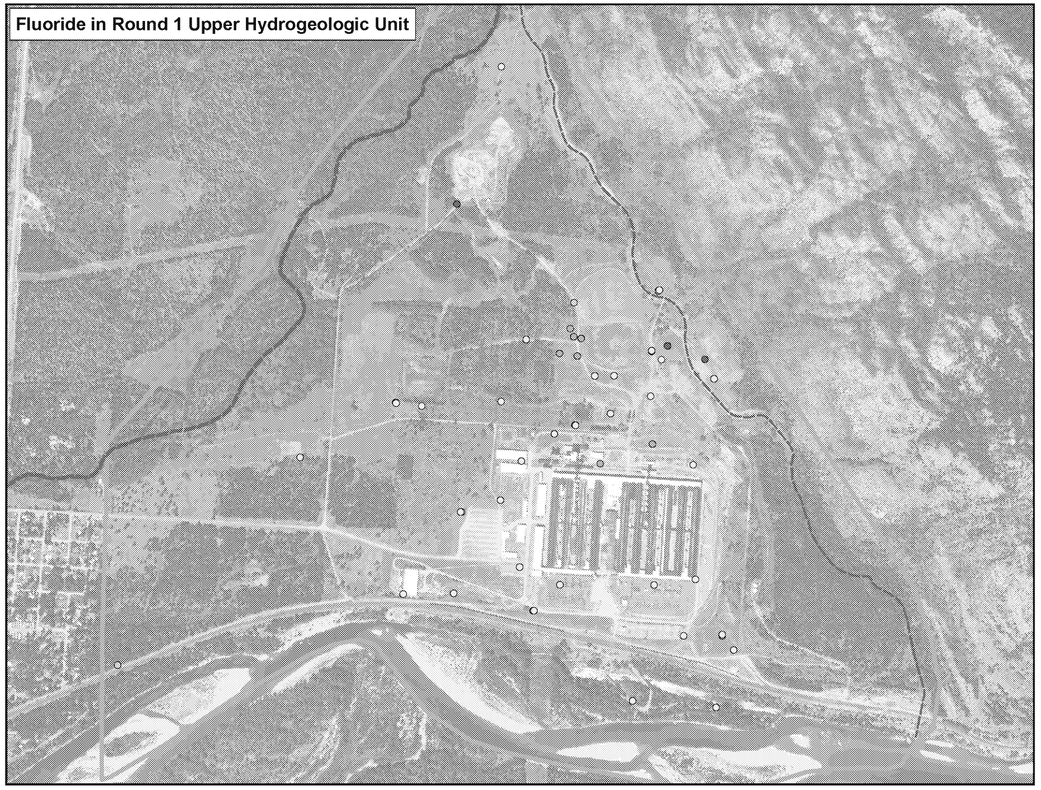
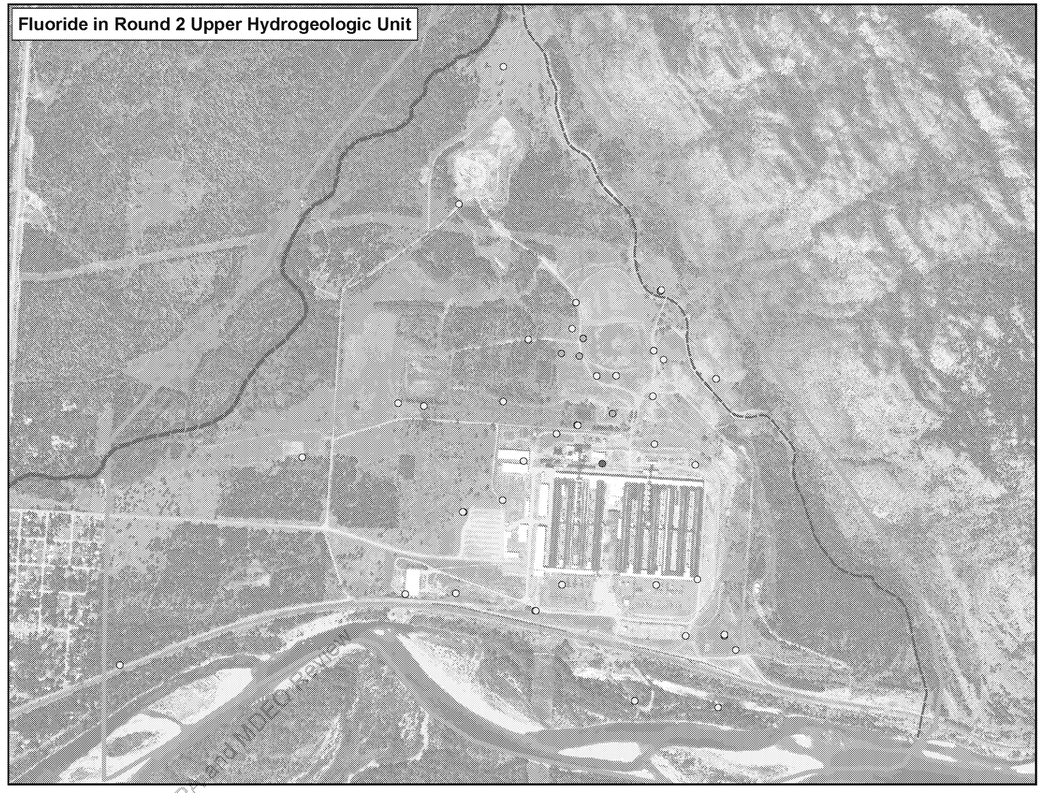
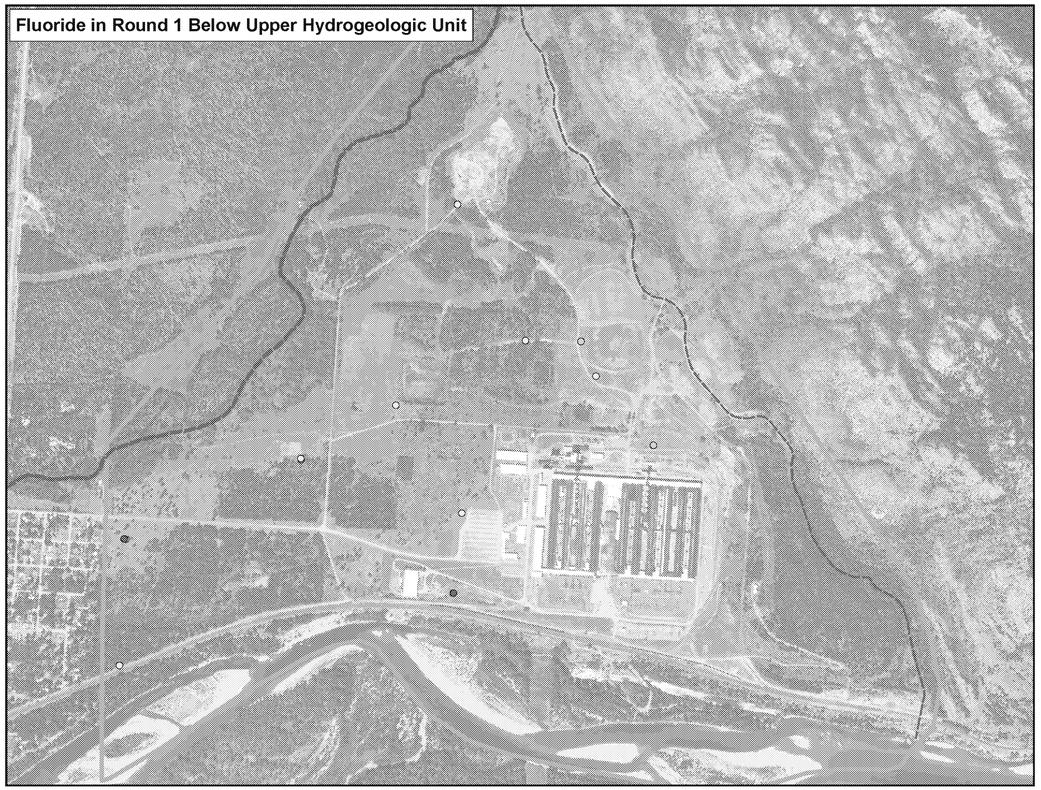
| Compiled by: M.R. | Date: 13APR17 | PLATE |
| Prepared by: M.R. | Scale: AS SHOWN | 4 |
| Project Mgr: M.R. | Project: 2476.0001Y002 | |
| File: 2476.0002Y154.4.mxd | | |



Preliminary – Under EPA and MDEQ Review

N

## Concentration Legend

- Analyte Not Detected (1.5U)
- ND – 80
- 80 – 4,000
- 4,000 – 40,000
- >40,000

| Chemical Name | DEQ-7 Human Health Standards | EPA MCL | EPA Risk Based Screening Level Tapwater RSL |
|---|---|---|---|
| Fluoride | 4,000 | 4,000 | 80 |

## Notes

DEQ – Department of Environmental Quality
EPA – Environmental Protection Agency
MCL – Maximum Contaminant Level
RSL – Regional Screening Levels
ND – Non Detect
1.5U – Highest Method Detection Limit (MDL) in Sample Set
All Samples are in micrograms per litres (ug/L)

850 0 850 1,700 Feet

Title:

**CONCENTRATIONS OF FLUORIDE IN ROUND 1 AND ROUND 2 GROUNDWATER**

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:

COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX
ROUX ASSOCIATES, INC.
*Environmental Consulting & Management*

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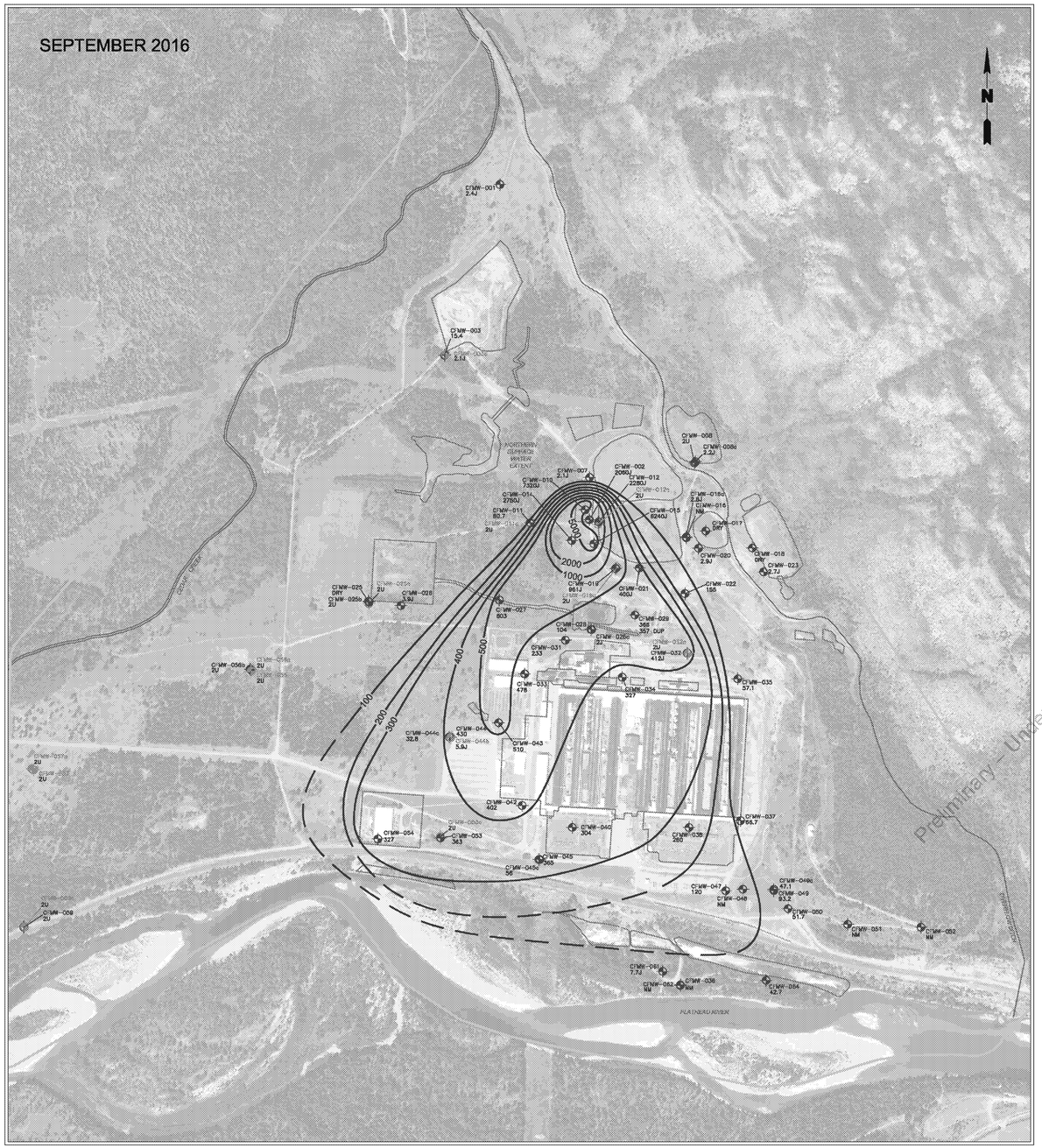
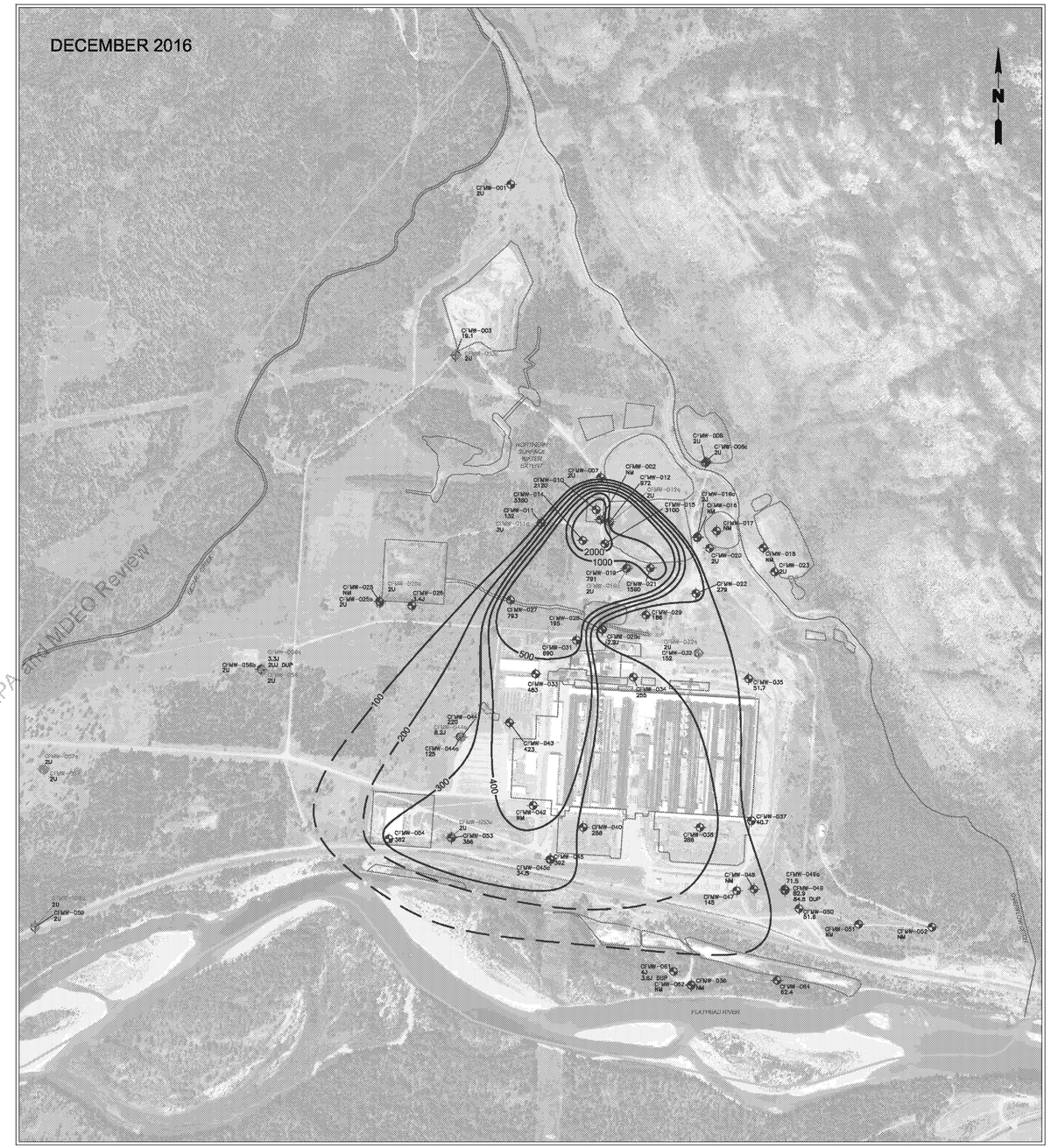
| Compiled by: M.R. | Date: 13APR17 | PLATE |
| Prepared by: M.R. | Scale: AS SHOWN | 5 |
| Project Mgr: M.R. | Project: 2476.0001Y002 | |
| File: 2476.0002Y154.5.mxd | | |




Preliminary – Under EPA and MDEQ Review

LEGEND

- RI/FS SITE BOUNDARY
- SURFACE WATER FEATURE
- SITE FEATURE
- CFMW-035 — LOCATION AND DESIGNATION OF MONITORING WELL SCREENED IN UPPER HYDROGEOLOGIC UNIT
- CFMW-052 — LOCATION AND DESIGNATION OF FORMER PRODUCTION WELL
- CFMW-032c" — LOCATION AND DESIGNATION OF MONITORING WELL SCREENED BELOW UPPER HYDROGEOLOGIC UNIT
- 327 — TOTAL CYANIDE CONCENTRATIONS IN GROUNDWATER (UNITS IN ug/L)
- NM — NOT MEASURED
- 100 — CONTOUR LINE OF TOTAL CYANIDE CONCENTRATION (DASHED WHERE INFERRED)

NOTE

CONTOURS ARE FOR THE UPPER HYDROGEOLOGIC UNIT WELLS ONLY

600' 0 600'

Title:

**CONCENTRATIONS OF TOTAL CYANIDE IN GROUNDWATER**

Prepared For:

COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX
ROUX ASSOCIATES, INC.
*Environmental Consulting & Management*

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| Compiled by: M.R. | Date: 11APR17 | PLATE |
| Prepared by: G.M. | Scale: AS SHOWN | 6 |
| Project Mgr: M.R. | Project: 2476.0001Y002 | |
| File: 2476.0001Y154.01.DWG | | |

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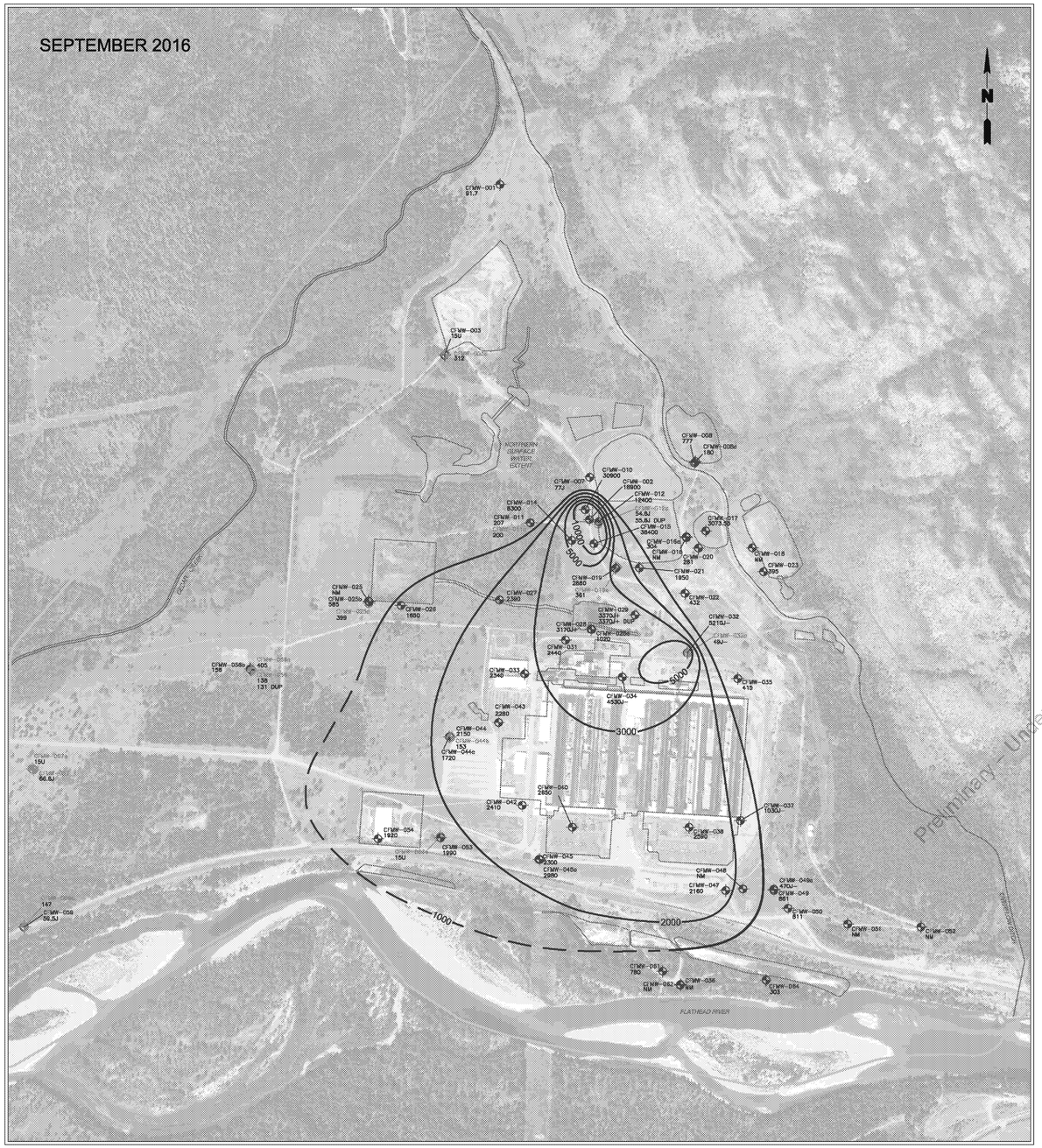


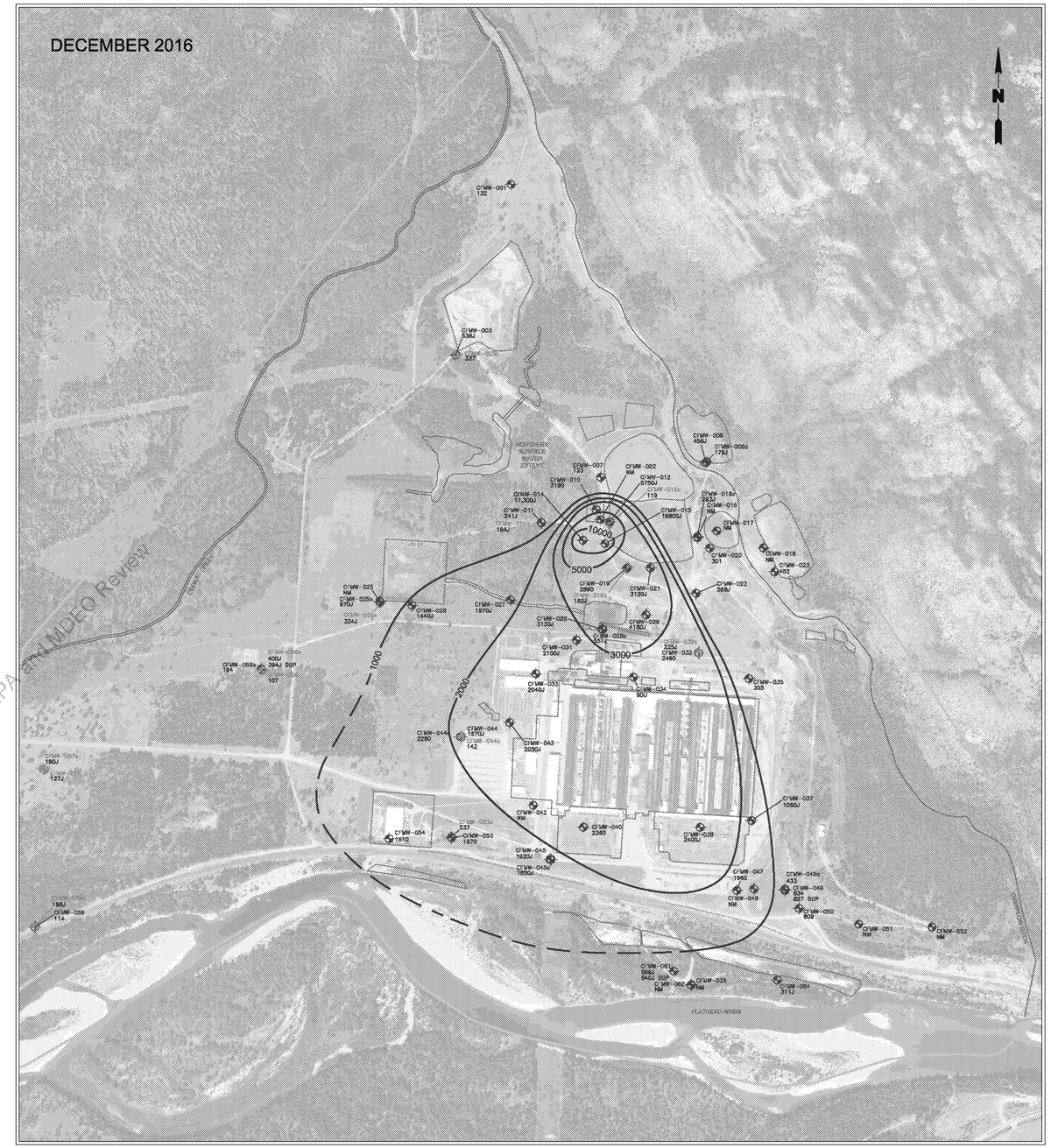


Preliminary – Under EPA and MDEQ Review

LEGEND

- RI/FS SITE BOUNDARY
- SURFACE WATER FEATURE
- SITE FEATURE
- CFMW-035 — LOCATION AND DESIGNATION OF MONITORING WELL SCREENED IN UPPER HYDROGEOLOGIC UNIT
- CFMW-052 — LOCATION AND DESIGNATION OF FORMER PRODUCTION WELL
- CFMW-032s* — LOCATION AND DESIGNATION OF MONITORING WELL SCREENED BELOW UPPER HYDROGEOLOGIC UNIT
- 405 — FLUORIDE CONCENTRATIONS IN GROUNDWATER (UNITS IN ug/L)
- NM — NOT MEASURED
- 100 — CONTOUR LINE OF FLUORIDE CONCENTRATION (DASHED WHERE INFERRED)

NOTE

CONTOURS ARE FOR THE UPPER HYDROGEOLOGIC UNIT WELLS ONLY

600' 0 600'

Title:

**CONCENTRATIONS OF FLUORIDE IN GROUNDWATER**

Prepared For:

COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX
ROUX ASSOCIATES, INC.
*Environmental Consulting & Management*

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|---|---|---|
| Compiled by: M.R. | Date: 11APR17 | PLATE |
| Prepared by: G.M. | Scale: AS SHOWN | 7 |
| Project Mgr: M.R. | Project: 2476.0001Y002 | |
| File: 2476.0001Y154.02.DWG | | |

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