



Water-Data Report 2008

**463837111585801 PRICKLY PEAR CREEK BELOW HELENA EFFLUENT CANAL, NEAR HELENA, MT**

Upper Missouri Basin  
Upper Missouri Subbasin

LOCATION.--Lat 46°38'37", long 111°58'58" referenced to North American Datum of 1927, in NE ¼ NE ¼ SW ¼ sec.9, T.10 N., R.3 W., Lewis and Clark County, MT, Hydrologic Unit 10030101.

**WATER-QUALITY RECORDS**

PERIOD OF RECORD.--March 2007 to April 2008.

GAGE.--None. Elevation at sampling site is 3,705 ft, referenced to the National Geodetic Vertical Datum of 1929.

REMARKS.--This is one of five sites sampled as part of a reconnaissance of organic wastewater compounds in Prickly Pear Creek near Helena. This site was sampled during water-years 2007 and 2008, but the water-year 2007 data were not available for publication until water year 2008. The data collected in both water-years, 2007 and 2008, are presented in the tables below. On March 16, 2007, a composited water sample was collected by using width- and depth-integrating methods. On April 8, 2007, a composited bed-sediment sample was collected. On April 3, 2008, a water sample was collected by simple grab near the centroid of flow.

**WATER-QUALITY DATA  
WATER YEARS OCTOBER 2006 TO SEPTEMBER 2008**

Part 1 of 9

Date	Time	Instantaneous discharge, ft <sup>3</sup> /s (00061)	Turbidity white light, det ang 90+/-30 corrctd NTRU (63676)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd, µS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Ammonia water, fltrd, mg/L as N (00608)	Nitrate + nitrite water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Total nitrogen, wat unfltrd by analysis, mg/L (62855)
Mar 2007													
16...	1125	50	5.3	670	12.2	7.8	316	7.0	5.0	E.019	1.21	.008	1.56
Apr 2008													
03...	1145	--	--	--	--	--	--	--	--	--	--	--	--

**WATER-QUALITY DATA  
WATER YEARS OCTOBER 2006 TO SEPTEMBER 2008**

Part 2 of 9

[Remark codes: <, less than; E, estimated; M, presence verified but not quantified.]

Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd, mg/L as P (00665)	1,4-Dichlorobenzene, water, fltrd, µg/L (34572)	1-Methylnaphthalene, water, fltrd, µg/L (62054)	2,6-Dimethylnaphthalene, water, fltrd, µg/L (62055)	2-Methylnaphthalene, water, fltrd, µg/L (62056)	3-beta-Coprostanol, water, fltrd, µg/L (62057)	3-Methyl-1H-indole, water, fltrd, µg/L (62058)	3-tert-Butyl-4-hydroxyanisole, wat flt, µg/L (62059)	4-Cumylphenol, water, fltrd, µg/L (62060)	4-EC-cycline HCl, water, fltrd, µg/L (63731)	4-Epi-tetra-cycline HCl, water, fltrd, µg/L (63729)	4-Epi-tetra-cycline HCl, water, fltrd, µg/L (63727)
Mar 2007													
16...	.525	.635	M	<.1	<.2	<.1	<.2	M	<.6	<.14	<.010	<.010	<.010
Apr 2008													
03...	--	--	--	--	--	--	--	--	--	--	<.010	<.010	<.010

## 463837111585801 PRICKLY PEAR CREEK BELOW HELENA EFFLUENT CANAL, NEAR HELENA, MT—Continued

**WATER-QUALITY DATA**  
**WATER YEARS OCTOBER 2006 TO SEPTEMBER 2008**

Part 3 of 9

[Remark codes: &lt;, less than; E, estimated; M, presence verified but not quantified.]

Date	4-n-Octyl-phenol, water, fltrd, µg/L (62061)	4-Nonyl-phenol, all isomers, wat flt µg/L (62085)	4-Nonyl-di-ethoxylate, wat flt µg/L (62083)	4t-Octylphenol, di-ethoxylate, wat flt µg/L (61705)	4t-Octylphenol, mono-ethoxylate, wat flt µg/L (61706)	4-tert-Octyl-phenol, water, fltrd, µg/L (62062)	5-Methyl-1H-benzotriazole, wat flt µg/L (62063)	9,10-Anthraquinone, water, fltrd, µg/L (62066)	Acetophenone, water, fltrd, µg/L (62064)	AHTN, water, fltrd, µg/L (62065)	Anhydro-erythromycin, water, fltrd, µg/L (63674)	Anthracene, water, fltrd, µg/L (34221)	Azithromycin, water, fltrd, µg/L (62792)
Mar 2007 16...	<.16	E2	<5	M	M	M	M	<.2	<.1	M	.051	<.1	<.005
Apr 2008 03...	--	--	--	--	--	--	--	--	--	--	.087	--	.083

**WATER-QUALITY DATA**  
**WATER YEARS OCTOBER 2006 TO SEPTEMBER 2008**

Part 4 of 9

[Remark codes: &lt;, less than; E, estimated; M, presence verified but not quantified.]

Date	Benzo[a]-pyrene, water, fltrd, µg/L (34248)	Benzo-phenone, water, fltrd, µg/L (62067)	beta-Sitosterol, water, fltrd, µg/L (62068)	beta-Stigmas tanol, water, fltrd, µg/L (62086)	Bisphenol A, water, fltrd, µg/L (62069)	Bromacil, water, fltrd, µg/L (04029)	Caffeine, water, fltrd, µg/L (50305)	Camphor, water, fltrd, µg/L (62070)	Carbamazepine, water, fltrd, µg/L (62793)	Carbaryl, water, fltrd, 0.7u GF µg/L (82680)	Carbazole, water, fltrd, µg/L (62071)	Chloramphenicol, water, fltrd, µg/L (65194)	Chlorotetracycline, water, fltrd, µg/L (61744)
Mar 2007 16...	<.1	<.2	<2	<2	M	<.4	<.2	<.1	.099	<1	<.1	<.010	<.010
Apr 2008 03...	--	--	--	--	--	--	--	--	.150	--	--	<.100	<.010

**WATER-QUALITY DATA**  
**WATER YEARS OCTOBER 2006 TO SEPTEMBER 2008**

Part 5 of 9

[Remark codes: &lt;, less than; E, estimated; M, presence verified but not quantified.]

Date	Chlorpyrifos, water, fltrd, µg/L (38933)	Cholesterol, water, fltrd, µg/L (62072)	Ciprofloxacin, water, fltrd, µg/L (62898)	DEET, water, fltrd, µg/L (62082)	Diazinon, water, fltrd, µg/L (39572)	D-Limonene, water, fltrd, µg/L (62073)	Doxycycline, water, fltrd, 0.7u GF µg/L (62694)	Enrofloxacin, water, fltrd, µg/L (66495)	Erythromycin, water, fltrd, µg/L (62797)	Fluoranthene, water, fltrd, µg/L (34377)	HHCB, water, fltrd, µg/L (62075)	Ibuprofen, water, fltrd, µg/L (62014)	Indole, water, fltrd, µg/L (62076)
Mar 2007 16...	<.2	M	.006	M	<.2	<.1	<.010	<.005	.061	<.1	E.3	<.050	<.1
Apr 2008 03...	--	--	.015	--	--	--	<.010	<.005	.021	--	--	.114	--

## 463837111585801 PRICKLY PEAR CREEK BELOW HELENA EFFLUENT CANAL, NEAR HELENA, MT—Continued

**WATER-QUALITY DATA**  
**WATER YEARS OCTOBER 2006 TO SEPTEMBER 2008**

Part 6 of 9

[Remark codes: &lt;, less than; E, estimated.]

Date	Isobor- neol, water, fltrd, µg/L (62077)	Iso- chlor- tetra- cycline wat flt µg/L (64175)	Isoepi- chloro- tetra- cycline water, fltrd, µg/L (64047)	Iso- phorone water, fltrd, µg/L (34409)	Iso- propyl- benzene water, fltrd, µg/L (62078)	Iso- quin- oline, water, fltrd, µg/L (62079)	Linco- mycin, water, fltrd, µg/L (62894)	Lome- flox- acin, water, fltrd, µg/L (62900)	Menthol water, fltrd, µg/L (62080)	Meta- laxyl, water, fltrd, µg/L (50359)	Methyl salicy- late, water, fltrd, µg/L (62081)	Metola- chlor, water, fltrd, µg/L (39415)	Naphth- alene, water, fltrd, µg/L (34443)
Mar 2007 16...	<.1	<.010	<.010	<.1	<.1	<.4	<.005	<.005	<.2	<.2	<.2	<.2	<.1
Apr 2008 03...	--	<.010	<.010	--	--	--	<.005	<.005	--	--	--	--	--

**WATER-QUALITY DATA**  
**WATER YEARS OCTOBER 2006 TO SEPTEMBER 2008**

Part 7 of 9

[Remark codes: &lt;, less than; M, presence verified but not quantified.]

Date	Nor- flox- acin, water, fltrd 0.7u GF µg/L (62757)	Oflox- acin, water, fltrd, µg/L (62899)	Ormet- oprim, water, fltrd, µg/L (62962)	Oxy- tetra- cycline water, fltrd, µg/L (61759)	p- Cresol, water, fltrd, µg/L (62084)	Phenan- threne, water, fltrd, µg/L (34462)	Prome- ton, water, fltrd, µg/L (04037)	Pyrene, water, fltrd, µg/L (34470)	Rox- ithro- mycin, water, fltrd, µg/L (62895)	Sara- flox- acin, water, fltrd 0.7u GF µg/L (62771)
Mar 2007 16...	<.005	.035	<.005	<.010	M	<.1	<.4	<.1	<.005	<.005
Apr 2008 03...	<.005	.114	<.005	<.010	--	--	--	--	<.005	<.005

**WATER-QUALITY DATA**  
**WATER YEARS OCTOBER 2006 TO SEPTEMBER 2008**

Part 8 of 9

[Remark codes: &lt;, less than; E, estimated; M, presence verified but not quantified.]

Date	Sulfa- chlor- pyrid- azine, wat flt gf 0.7u µg/L (62774)	Sulfa- diazine water, fltrd, µg/L (62963)	Sulfa- dimeth- oxine, water, fltrd 0.7u GF µg/L (62776)	Sulfa- meth- azine, water, fltrd, µg/L (61762)	Sulfa- methox- azole, water, fltrd 0.7u GF µg/L (62775)	Sulfa- thi- azole, water, fltrd 0.7u GF µg/L (62778)	Tetra- chloro- ethene, water, fltrd, µg/L (34476)	Tetra- cycline water, fltrd 0.7u GF µg/L (62781)	Tri- bromo- methane water, fltrd, µg/L (34288)	Tri- butyl phos- phate, water, fltrd, µg/L (62089)	Triclo- san, water, fltrd, µg/L (62090)
Mar 2007 16...	<.005	.061	<.005	<.005	.244	<.020	<.2	.021	<.1	M	M
Apr 2008 03...	<.005	<.100	<.005	<.005	.456	<.050	--	.011	--	--	--

## 463837111585801 PRICKLY PEAR CREEK BELOW HELENA EFFLUENT CANAL, NEAR HELENA, MT—Continued

## WATER YEARS OCTOBER 2006 TO SEPTEMBER 2008

Part 9 of 9

[Remark codes: &lt;, less than; E, estimated.]

Date	Tri-ethyl citrate water, fltrd, µg/L (62091)	Tri-meth- oprim, water, fltrd, µg/L (62023)	Tri-phenyl phos- phate, water, fltrd, µg/L (62092)	Tris(2- butoxy- ethyl) phate, wat flt µg/L (62093)	Tris(2- chloro- ethyl) phate, wat flt µg/L (62087)	Tris(di chloro- i-Pr) phate, wat flt µg/L (62088)	Tylosin water, fltrd, µg/L (62896)	Vir- ginia- mycin, water, fltrd, µg/L (62897)
<b>Mar 2007</b>								
16...	E.1	.050	M	<.5	M	E.1	<.005	<.005
<b>Apr 2008</b>								
03...	--	.210	--	--	--	--	<.008	<.005

## BED SEDIMENT DATA

## WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Part 1 of 5

[Remark codes: &lt;, less than; E, estimated.]

Date	Time	1,4-Di- chloro- benzene solids, ug/kg (63163)	1- Methyl- naphth- alene, solids, ug/kg (63165)	2,6-Di- methyl- naphth- alene, solids, ug/kg (63167)	2- Methyl- naphth- alene, solids, ug/kg (63168)	3-beta- Copros- tanol, solids, ug/kg (63170)	3- Methyl- 1H- indole, solids, ug/kg (63171)	3-tert- Butyl- 4-hy- droxy- anisole solids, ug/kg (63172)	4- Cumyl- phenol, solids, ug/kg (63173)	4-n- Octyl- phenol, solids, ug/kg (63174)	4- Nonyl- phenol, all isomers solids, ug/kg (63175)	4-Nonyl -phenol di- ethox- ylate, solids, ug/kg (63200)	4-Nonyl -phenol mono- ethox- ylate, solids, ug/kg (63221)
<b>Apr 2007</b>													
08...	1300	<980	<980	<980	<980	E2,900	<980	<2,900	<980	<980	<15,000	E6,100	<9,800

## WATER-QUALITY DATA

## WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Part 2 of 5

[Remark codes: &lt;, less than; E, estimated.]

Date	4t-Octy lphenol di- ethox- ylate, solids, ug/kg (63201)	4t-Octy lphenol mono- ethox- ylate, solids, ug/kg (63206)	4-tert- Octyl- phenol, solids, ug/kg (63176)	9,10- Anthra- quinone solids, ug/kg (63181)	Aceto- phenone solids, ug/kg (63178)	Acetyl hexaMe tetraH naphth- alene, solids, ug/kg (63179)	Anthra- cene, solids, ug/kg (63180)	Atra- zine, solids, ug/kg (63182)	Benzo- [a]- pyrene, solids, ug/kg (63183)	Benzo- phenone solids, ug/kg (63184)	beta- Sitos- terol, solids, ug/kg (63185)	beta- Stigmas tanol, solids, ug/kg (63186)	Bis(2- ethyl- hexyl) phthal- ate, solids, ug/kg (63187)
<b>Apr 2007</b>													
08...	<980	<4,900	<980	<980	<2,900	E250	<980	<2,000	<980	<980	E24,000	E3,600	<4,900

463837111585801 PRICKLY PEAR CREEK BELOW HELENA EFFLUENT CANAL, NEAR HELENA, MT—Continued

**BED SEDIMENT DATA**  
**WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**

Part 3 of 5

[Remark codes: <, less than; E, estimated.]

Date	Brom- acil, solids, ug/kg (63189)	Camphor solids, ug/kg (63192)	Car- bazole, solids, ug/kg (63194)	Chlor- pyrifos solids, ug/kg (63195)	Chol- esterol solids, ug/kg (63196)	DEET, solids, ug/kg (63219)	Di- azinon, solids, ug/kg (63198)	Di- ethyl- phthal- ate, solids, ug/kg (63202)	D-Li- monene, solids, ug/kg (63203)	Fluoran thene, solids, ug/kg (63208)	HHCB, solids, ug/kg (63209)	Indole, solids, ug/kg (63210)	Iso- borneol solids, ug/kg (63211)
Apr 2007 08...	<9,800	<980	<980	<980	E11,000	<2,000	<980	<2,000	<980	<980	E240	E1,100	<980

**BED SEDIMENT DATA**  
**WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**

Part 4 of 5

[Remark codes: <, less than; E, estimated.]

Date	iso- phorone solids, ug/kg (63212)	Iso- propyl- benzene solids, ug/kg (63213)	Isoquin- oline, solids, ug/kg (63214)	Menthol solids, ug/kg (63215)	Metola- chlor, solids, ug/kg (63218)	Naphth- alene, solids, ug/kg (63220)	p- Cresol, solids, ug/kg (63222)	Phenan- threne, solids, ug/kg (63224)	Phenol, solids, ug/kg (63225)	Pro- meton, solids, ug/kg (63226)	Pyrene, solids, ug/kg (63227)
Apr 2007 08...	<980	<2,000	<2,000	<980	<980	<980	E1,100	<980	<980	<980	<980

**BED SEDIMENT DATA**  
**WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**

Part 5 of 5

[Remark codes: <, less than; E, estimated.]

Date	Tributy phos- phate, solids, ug/kg (63231)	Tri- closan, solids, ug/kg (63232)	Tri- phenyl phos- phate, solids, ug/kg (63234)	Tris(2- butoxy- ethyl) phos- phate, solids, ug/kg (63229)	Tris(2- chloro- ethyl) phos- phate, solids, ug/kg (63230)	Tris- (diCl- i-Pr) phos- phate, solids, ug/kg (63235)
Apr 2007 08...	<980	<975	<980	<2,900	<2,000	<2,000