

**DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
MONTANA POLLUTANT DISCHARGE ELIMINATION SYSTEM**

Fact Sheet

Permittee: Lincoln County Port Authority

Permit No.: MT0000221

Receiving Water: Ephemeral Drainage to an Unnamed Tributary to the Kootenai River

Facility Information: Lincoln County Port Authority
Wastewater Treatment Facility

Mailing Address: P.O. Box 1071
Libby, MT 59923

County: Lincoln

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Fee Information:

Type: Minor Publicly Owned Treatment Works

Number of Outfalls: 2 (for fee determination purposes)

Type of Outfall: 002 – Facility Discharge
005 – Dewatering Pump Discharge

I. Permit Status

Montana Pollutant Discharge Elimination System (MPDES) permit MT0000221 was originally issued to Stimson Lumber Company (Stimson) on July 23, 1997 and modified on November 15, 1999. In December 2003 Stimson turned over ownership of their Libby Mill property to Lincoln County Port Authority (LCPA), a public entity, who operated the facilities under the name Kootenai River Business & Recreational Park. On April 27, 2004 the permit was modified to reflect the change of ownership of the property and the new permittee, LCPA/Kootenai River Business & Recreation Park. On May 11, 2005, the Lincoln County Board of Commissioners, by Resolution 701, created an industrial district at the site and resolved that the LCPA would serve as the industrial district board.

On August 25, 2010, the MPDES permit was issued to Lincoln County Port Authority/Kootenai Business Park Industrial District (KBPID). The permit became effective on October 1, 2010 and had an expiration date of September 30, 2015. The Department of Environmental Quality (DEQ) received a complete permit renewal application from LCPA on June 16, 2015, and administratively extended the permit by letter dated August 5, 2015. The administratively extended permit is referenced in this Fact Sheet (FS) as the 2010-issued permit.

II. Facility Information

The LCPA wastewater treatment facility (WWTF) serves the employees, contractors and public associated with the various enterprises that occupy buildings and/or conduct business at the LCPA site. Currently, the operational WWTF consists of a 2-cell, 1.0 acre, 2.1 million gallon (MG) aerated lagoon system [Statement of Basis (SOB) dated 11/99]. The first 0.5 acre cell is aerated and reportedly lined to reduce exfiltration. The second 0.5 acre, unlined cell serves as a polishing cell with some exfiltration. Past description of the first cell being lined notwithstanding, a site visit on April 13, 2010 found the water levels in both cells to be at the same level, in spite of the raw wastewater discharge to the first cell only and no discharge from the first to the second cell in recent history. It appears that the water levels in both cells reflect high groundwater levels in the area and the integrity of the lining of first cell, if it exists, is questionable. Discharge from the facility is through Outfall 002 which discharges to a meandering ephemeral drainage which drains approximately 1,000 feet to where it joins the ditch that carries the discharge from settling ponds (associated with diverted Libby Creek water for fire protection) to the Kootenai River. No effluent disinfection is provided. Although no plans of the facility appear to exist, the facility is estimated to be designed to handle approximately 83,000 gallons per day (gpd) [SOB dated 11/99]. Current influent wastewater flows to the facility are estimated at only 900 gpd [email dated 8/9/2017 from Brett McCully, LCPA]. This facility has not discharged since November 2004 and only discharged in seven months (August 2003 and May through November 2004) since 1998. The few discharges that did occur in 2003/2004 were reported to be the result of excessive groundwater infiltration into the sanitary sewer system.

If a discharge does occur from the WWTF, the location of the point of discharge to the ephemeral drainage is 48°23'23" N latitude, 115°32'26" W longitude, the original location that is without flow measurement capabilities (now capped); or at 48°23'21" N latitude, 115°32'29" W longitude, the location of the discharge structure from the second cell that is equipped with a V-notch weir for flow measurement. Any discharge would combine with the unnamed ditch that carries the discharge from the settling ponds at 48°23'31" N latitude, 115°32'26" W longitude and will ultimately reach the Kootenai River at approximately 48°23'31" N latitude, 115°32'25.5" W longitude.

The LCPA has a second inoperable WWTF, a trickling filter plant, apparently piped to operate independently or in parallel with the aerated lagoon system. When constructed and operated, the trickling filter plant apparently consisted of bar screen, primary and secondary clarifiers, stone media trickling filter bed, chlorine contact chamber, anaerobic digester and control building [SOB dated 11/99]. Discharge was to the same meandering ephemeral drainage that receives the aerated lagoon discharge, only at a point downstream from the aerated lagoon discharge. The

trickling filter plant is beyond repair and will not return to service. The trickling filter plant has not been used or had a reported discharge since June 1981 [SOB dated 11/99].

The dewatering pump discharges groundwater that has a high total recoverable iron (hereinafter called iron) content to state waters. The drainage ditch that directly receives the discharge appears to have been constructed for the purpose of transporting collected storm water as well as the discharge from the groundwater dewatering pump. The point where the ditch enters the first settling pond, at 48°23'19" N latitude, 115°32'18" W longitude, is the point of discharge to state waters. The diverted portion of Libby Creek that flows through the LPCA property to and through the settling pond system is state waters and the water quality standards of the receiving water will have to be maintained. The diverted portion of Libby Creek as it travels through LPCA, the fire pond, the settling ponds and finally flows into the Kootenai River will be identified and referenced in this FS as the unnamed tributary to the Kootenai River (unnamed tributary) for short.

Table 1: Current Design Criteria Summary* – LPCA WWTF	
Facility Description: Two-cell aerated lagoon system with the 2 nd cell serving as a polishing cell.	
Construction Date: 1984	Modification Date: NA
Design Population: Unknown**	Current Population: 56***
Design Flow, Average: 0.083 mgd	Design Flow, Maximum Day: Unknown
Aerated Cell: 0.5 acre, 1.05 MG	Polishing Cell: 0.5 acre, 1.05 MG
Design BOD Load: 185 lb/day (est)	Design TSS Load: 166 lb/day (est)
Collection System: Separate	Disinfection: No
Discharge Method: Intermittent, No Discharge since November 2004	

*Information from SOB dated November 1999, MPDES Applications and Department files. **Number of mill employees at the time of construction was reportedly 1,300 (O & M Manual dated September 2009). ***Email of 8/9/2017 from Brett McCully.

Effluent data for Outfall 002 are summarized in Table 2. These data are based on the discharge monitoring reports (DMR) submitted by Stimson and KBPID for January 1998 through December 2009. The period of record (POR) will be extended through December 2016 for this FS and no discharges have occurred from January 2010 through December 2016. The effluent data summarized in Table 2 are exactly the same as in Table 2 of the SOB dated May 2010.

The scope of renewal of MT0000221 to LPCA will be limited to the discharge of treated domestic wastewater from the wastewater treatment facilities through Outfall 002 and the discharge of groundwater from the groundwater dewatering pump through Outfall 005. The groundwater dewatering pump discharge is not a new or increased point source of pollutants since the discharge was previously covered under MT0000221 [SOB dated 5/2010]. Effluent data for the groundwater dewatering pump discharge through Outfall 005 are summarized in Table 3.

Table 2: Outfall 002 Effluent Characteristics for the Period January 1998 through December 2016						
Parameter	Units	2010-Permit Limits	Minimum	Maximum	Average ¹	Number of Samples
Flow, Daily Average	mgd	-	0	0.17	0.10	216
BOD ₅ ²	mg/L	30/45	1	3	2	6
TSS ²	mg/L	30/45	0.8	11.0	3.5	6
pH	s.u.	-	--	--	--	--
<i>Escherichia coli (E. coli)</i> ^{2,3}	cfu/100 ml	126/252 ⁵	--	--	--	--
<i>Escherichia coli (E. coli)</i> ^{2,4}	cfu/100 ml	630/1,260 ⁵	--	--	--	--
Total Residual Chlorine	mg/L	0.1 ⁵	--	--	--	--
Total Ammonia, as N	mg/L	-	0.01	0.13	0.04	6
Nitrate + Nitrite, as N	mg/L	-	0.02	0.09	0.07	6
Total Kjeldahl Nitrogen, as N	mg/L	-	0.22	0.36	0.28	6
Total Nitrogen, as N	mg/L	-	0.24	0.56	0.34	6
Total Nitrogen, as N	lbs/day	-	0.1	0.4	0.3	6
Total Phosphorus, as P	mg/L	-	0.03	0.06	0.04	6
Total Phosphorus, as P	lbs/day	-	0.01	0.06	0.03	6
Oil and Grease	mg/L	10 ⁵	--	--	--	--

Footnotes:
 1. The aerated lagoon system discharged in only 7 months of the 228-month POR. Effluent samples were taken and reported for discharges in 6 of the 7 months of discharge. The "Average" values presented are the averages for the 6 months of discharge where samples were taken and reported and not the entire 228-month POR.
 2. 30-day average/7-day average.
 3. Limitation applies April 1 through October 31.
 4. Limitation applies November 1 through March 31.
 5. Limits effective October 1, 2010.

Table 3: Outfall 005 (Groundwater Dewatering Pump) Discharge Characteristics November 2013 through October 2016						
Parameter	Units	Previous Permit Limits	Minimum	Maximum	Average	Number of Samples
Flow, Daily Average ⁽¹⁾	mgd	-	0.0162	0.0269	0.0218	48
Total Recoverable Iron	mg/L		4.78	11.10	6.82	47

Footnotes:
 1. Flows estimated, not actual flow measurements. Reported flows always 0.0162 mgd before April 2015 and always 0.0269 mgd from April 2015 forward. Engineering study of pump and drawdown completed March 2012 developed the estimate of 0.0269 mgd on an average basis (48 North,P.C., 3/9/2012).

III. Technology-based Effluent Limits

a. Applicability to Technology-based Effluent Limits

The Montana Board of Environmental Review, in ARM 17.30.1209, adopted by reference 40 CFR 133 which defines minimum treatment requirements for secondary treatment, or the equivalent, for publicly owned treatment works (POTW). Secondary treatment is defined in terms of effluent quality as measured by five-day biochemical oxygen demand (BOD₅), total suspended solids (TSS), percent removal of BOD₅ and TSS, and pH.

These requirements may be modified on a case-by-case basis for facilities that are eligible for treatment equivalent to secondary treatment (TES) or alternative state requirements (ASR) for TSS as provided for in 40 CFR 133.105. To determine if a facility is eligible for TES the facility must meet the requirements of 40 CFR 133.101(g) summarized as follows:

- 1) The BOD₅ and TSS effluent concentrations consistently achievable through proper operation and maintenance of the treatment works exceed the minimum effluent quality described for secondary treatment in 40 CFR 133.102,
- 2) The treatment works utilize a trickling filter or waste stabilization pond, and
- 3) The treatment works utilize biological treatment that consistently achieves a 30-day average of at least 65 % removal.

The technology-based effluent limits (TBELs) in the 2010-issued permit for the discharge from the WWTF, i.e. Outfall 002, are based on the national secondary treatment standards (NSS) for BOD₅, TSS and pH. The 2010-issued permit limits for BOD₅ and TSS are for effluent concentrations plus 85 % percent removal. Both BOD₅ and TSS also have mass limits.

As discussed previously, due to very low sanitary wastewater flows into the WWTF, discharge has occurred in only seven months in the 18-year POR. The discharges that did occur appeared to be caused by excessive infiltration into the sanitary sewer system, creating a very dilute discharge. Regardless, the discharge data show no difficulties in compliance with the effluent limits based on NSS for either BOD₅ or TSS. No influent data exist for either BOD₅ or TSS. If previous discharges resulted from excessive infiltration into the sanitary sewer system, influent levels of BOD₅ and TSS were likely very dilute, making compliance with 85 % removal requirements very difficult.

Proposed TBEL-based effluent limits are shown on Table 4. The BOD₅, TSS and pH limits remain NSS, including 85 % removal of BOD₅ and TSS. Mass limits for both BOD₅ and TSS are included in accordance with ARM 17.30.1345(8)(a) and are based on design flow.

Mass Limit Calculations:

Load (lb/day) = Design Flow (mgd) x Concentration Limit (mg/L) x 8.34 lb/gal

BOD₅: 30-day Ave: Load = (0.083)(30)(8.34) = 20.8 = 21 lb/day
 7-day Ave: Load = (0.083)(45)(8.34) = 31.1 = 31 lb/day

TSS: 30-day Ave: Load = (0.083)(30)(8.34) = 20.8 = 21 lb/day
 7-day Ave: Load = (0.083)(45)(8.34) = 31.1 = 31 lb/day

Table 4: Technology-based Effluent Limits				
Parameter	Units	30-Day Average	7-Day Average	Rationale
BOD ₅	mg/L	30	45	40 CFR 133.102(a)
	lb/day	21	31	
	% removal	85 %	-	
TSS	mg/L	30	45	40 CFR 133.105(b)
	lb/day	21	31	
	% removal	85 %	-	
pH	s.u.	6.0-9.0 (instantaneous)		40 CFR 133.102 (c)

No TBELs are applicable to the groundwater dewatering pump discharge (Outfall 005).

b. Nondegradation Allocated Loads

Nondegradation allocated loads for the WWTF discharge (Outfall 002) were determined for BOD₅ and TSS under previous permitting actions and documented in the SOBs dated November 1999 and May 2010.

Table 5 summarizes the nondegradation allocated loads and the actual calculated average loads discharged from the facility for calendar years 2013, 2014, 2015 and 2016. The data indicate that the facility did not exceed the nondegradation allocated loads for BOD₅ and TSS. Outfall 002 did not discharge during the period 2013 through 2016.

Nondegradation allocated loads for the groundwater dewatering pump discharge (Outfall 005) were not developed in previous permitting actions.

Table 5: Comparison of Allocated Nondegradation Loads & Actual Loads					
Parameter	Allocated Load* (lb/day)	Actual Load (lb/day)			
		2013	2014	2015	2016
BOD ₅	21	0	0	0	0
TSS	69	0	0	0	0

*Original allocated loads as calculated and referenced in SOB dated 11/1999.

IV. Water Quality-based Effluent Limits

a. Scope and Authority

Permits are required to include water quality-based effluent limits (WQBELs) when TEBLs are not adequate to prevent excursions of state water quality standards (40CFR 122.44 and ARM 17.30.1344). ARM 17.30.637(2) states that no wastes may be discharged that can reasonably be expected to violate any state water quality standards. Montana water quality standards (ARM 17.30.601, *et.seq.*) define both water use classifications for all state waters and numeric and narrative standards that protect those designated uses.

b. Receiving Water

The LCPA WWTF discharges treated effluent to an ephemeral drainage tributary to an unnamed tributary to the Kootenai River. The ephemeral drainage and the unnamed tributary are classified as B-1 according to Montana Water Use Classifications [ARM 17.30.609(1)(a)]. Waters classified B-1 are to be maintained suitable for drinking, culinary, and food processing purposes, after conventional treatment; bathing, swimming, and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply [ARM 17.30.623(1)].

The unnamed tributary where it receives the discharge from the LCPA WWTF is located within the Upper Kootenai River watershed identified as United States Geological Survey (USGS) Hydrological Unit Code (HUC) 17010101 and Montana assessment unit MT76D001_010. This assessment unit [Kootenai River] is listed as “not fully supporting uses” on the 2016 303(d) list. The probable impaired use is aquatic life support. The probable causes for impairment were other flow regime alterations and water temperature. The probable sources of impairment were listed as hydrostructure flow regulation/modification and upstream impoundments.

A USGS gaging station in the general vicinity of the LCPA WWTF discharge is on the Kootenai River at Libby. This gaging station is approximately one stream mile downstream from the confluence of the unnamed tributary with the Kootenai River. The 7-day, 10-year low flow (7Q10) at the gaging station is 2,640 cubic feet per second (cfs) (1,705 mgd). The flow of the Kootenai River at this gaging station, since March 21, 1972, has been completely controlled by releases from Libby Dam. The flow of the unnamed tributary, is variable and totally dependent on the amount of flow diverted through LCPA from Libby Creek. Accordingly, a 7Q10 for the unnamed tributary is meaningless and flows can vary from zero to more than 10 mgd. However, based on LCPA flow monitoring data for Outfall 001, as reported on DMR's for 2006 through 2009, the low flow exceeded 90% of the time is 0.7 mgd. Since 2013 the flow for old Outfall 001 is routinely reported as 4.309 mgd in monthly reports (not DMRs). The flows reported on DMRs from 2006 through 2009 appear to be more realistic and the estimated 7Q10 for the unnamed tributary will remain as 0.7 mgd. The direct receiving water, the ephemeral drainage, has a 7Q10 of zero.

The LCPA groundwater dewatering pump discharges directly to the diverted portion of Libby Creek, also classified as B-1. Although no 7Q10 flow exists for the diverted portion of Libby

Creek because the amount diverted is highly variable, as indicated above, the low flow exceeded 90% of the time is 0.7 mgd and this receiving water flow is a reasonable replacement for a 7Q10 flow in this instance for purposes of calculation of reasonable potential to violate water quality standards.

c. Water Quality Standards

Discharges to surface waters classified B-1 are subject to the specific water quality standards of ARM 17.30.623, Circular DEQ-7 (DEQ-7), and the general provisions of ARM 17.30.635 through 637. Discharges are also subject to ARM 17.30 Subchapter 5 (Mixing Zones), Subchapter 7 (Nondegradation of Water Quality), and Circular DEQ-12A (Montana Base Numeric Nutrient Standards).

d. Mixing Zone

A mixing zone is an area where effluent mixes with the receiving water and certain water quality standards may be exceeded [ARM 17.30.502(6)]. A mixing zone must be of the smallest practicable size, have a minimum effect on water uses, and have definable boundaries [MCA 75-5-301(4)]. No mixing zone will be granted that will impair beneficial uses [ARM 17.30.506(1)]. Acute standards for any parameter may not be exceeded in any portion of the mixing zone unless DEQ specifically finds that allowing minimal initial dilution will not threaten or impair existing beneficial uses [ARM 17.30.507(1)(b)].

The discharge must comply with the general prohibitions of ARM 17.30.637(1) which require that state waters, including mixing zones, must be free from substances which will:

- (a) settle to form objectionable sludge deposits or emulsions beneath the surface of the water or upon adjoining shorelines;
- (b) create floating debris, scum, a visible oil film (or be present in concentrations at or in excess of 10 milligrams per liter) or globules of grease or other floating materials;
- (c) produce odors, colors, or other conditions as to which create a nuisance or render undesirable tastes to fish flesh or make fish inedible;
- (d) create concentrations or combinations of materials which are toxic or harmful to human, animal, plant or aquatic life; and
- (e) create conditions which produce undesirable aquatic life.

ARM 17.30.505(1) provides that DEQ will determine the applicability of a mixing zone and, if applicable, its size, configuration, and location. Mixing zones are considered on a case-by-case basis. DEQ may decide to not grant a mixing zone or may decide to grant one of the four types of mixing zones, i.e. nearly-instantaneous, standard, alternative or source-specific mixing zone. Mixing zones are granted on a parameter-by parameter basis only and are not granted for TBELs based on national secondary treatment standards, effluent guidelines or other technology-based standards.

A mixing zone was not authorized in the 2010-issued permit for Outfall 002. The receiving water for Outfall 002 is an ephemeral stream, for which the 7Q10 is zero.

The groundwater dewatering pump discharge (Outfall 005) was also not allowed a mixing zone in the 2010-issued permit. The groundwater dewatering pump discharge, although relatively small (0.0269 mgd since April 2015) is transported to the inlet of the first settling pond by a large 54 inch diameter pipe. The large pipe originally carried large flows from a log pond located in the vicinity of the plywood plant. The 54 inch pipe enters the first settling pond immediately at the end of the pond inlet structure and the top of the pipe is below the level of the inlet structure apron. The fire pond overflow (referenced also as the diverted portion of Libby Creek) enters the pond inlet structure by way of a 36 inch pipe. The 36 inch pipe crosses over the 54 inch pipe immediately before entering the pond inlet structure and discharges to the pond inlet structure. The end of the apron of the pond inlet structure is located essentially immediately above the top of the discharge end of the 54 inch pipe. Flows in the fire pond overflow pipe (carried by the 36 inch pipe) varied between a low of 0.1 mgd and a high of 3.4 mgd in 2006 through 2009, with an average flow of 1.8 mgd. Flows exceeded 0.7 mgd 90 % of the time, which is a close and reasonable approximation of what would be considered a 7Q10 low flow. For purposes of calculating RP to violate water quality standards for iron in the receiving water, because of the configuration of the discharges to the inlet of the first pond, mixing that approximates nearly instantaneous is assumed to exist immediately at the end of the inlet structure apron.

e. Basis for WQBELs (Reasonable Potential and Calculations)

Permits are required to include WQBELs when TBELs are not adequate to protect water quality standards and no wastes may be discharged that can reasonably be expected to violate any standard. The need for WQBELs is determined based on reasonable potential (RP) calculations for certain pollutants to determine if numeric or narrative water quality standards may be exceeded. The Department uses a mass balance equation (Equation 1) to determine reasonable potential based on the *EPA Technical Support Document for Water Quality-based Toxics Control* (TSD) and DEQ-7.

$$C_{RP} = \frac{C_E Q_E + C_S Q_S}{Q_E + Q_S} \quad (\text{Equation 1})$$

Where:

- C_{RP} = receiving water concentration (RWC) after mixing, mg/L
- C_E = effluent concentration, mg/L
- C_S = RWC concentration upstream of discharge, mg/L
- Q_S = applicable receiving water flow, mgd
- Q_E = facility design flow rate, mgd

Pollutants typically present in treated effluent from publicly owned wastewater treatment facilities that may cause or contribute to exceedences of water quality standards include conventional pollutants such as biological material (measured by BOD₅), TSS, oil & grease, *Escherichia coli* (*E. coli*) bacteria and pH; non-conventional pollutants such as total residual chlorine (TRC), ammonia nitrogen, total nitrogen (TN) and total phosphorus (TP).

The ephemeral drainage has no fish species present because of its ephemeral nature. The unnamed tributary flows into the Kootenai River at approximately river mile 97.8. No

information exists as to whether or not any fish species are present in the unnamed tributary, although it is possible that some species are present during at least part of the year since the unnamed tributary typically flows year-round.

For the Kootenai River in the general vicinity of the unnamed tributary, Montana Fisheries Information System (MFISH) lists several species of fish as being abundant or common, including rainbow trout and mountain whitefish, which are salmonids. Other salmonid species that are listed as rare in same vicinity are brook trout, bull trout, westslope cutthroat trout, and kokanee salmon.

Non-salmonid species listed as abundant or common in the vicinity of river mile 97.8 are largescale sucker, longnose dace, longnose sucker, northern pike minnow, redbside shiner and torrent sculpin. Based on “Spawning Times of Montana Fishes,” Don Skaar, Montana FWP, 3/6/01, salmonids (including those species considered rare) may be present in early life stages in the Kootenai River in the vicinity of river mile 97.8 year-round. Abundant and common non-salmonid fishes are likely present in the vicinity of river mile 97.8 in early life stages from March through August, depending on the species. Accordingly, salmonid and non-salmonid fishes are assumed to be present in early life stages in the Kootenai River in the vicinity of the unnamed tributary year-round.

1. Conventional Pollutants – Outfall 002

TSS, BOD₅, and pH – The WWTF is presumed to provide a significant reduction in biological material and solids through secondary treatment as addressed in Section III. No additional WQBELs will be necessary for these parameters. The proposed TBEL-based effluent limitations shown on Table 4 will be effective immediately.

Oil and Grease (O & G) – The 2010-issued permit had a daily maximum limit of 10 mg/L on O & G, along with a twice per year monitoring requirement. The O & G limit and monitoring requirement will be continued in the renewed permit.

E. coli Bacteria – The 2010-issued permit contained both effluent limits and monitoring requirements for *E. coli* bacteria. Effluent limits for *E. coli* bacteria are the water quality standards for the receiving stream and are applied at the end-of-pipe at the point of discharge.

The water quality standards for the ephemeral drainage and the unnamed tributary for *E. coli* are:

- April 1 through October 31, of each year, the geometric mean number of *E. coli* may not exceed 126 colony forming units (cfu) per 100 mL and 10% of the total samples may not exceed 252 cfu per 100 mL during any 30-day period [ARM 17.30.623(2)(a)(i)]; and
- November 1 through March 31, of each year, the geometric mean number of *E. coli* may not exceed 630 cfu per 100 mL and 10% of the samples may not exceed 1,260 cfu per 100 mL during any 30-day period [ARM 17.30.623(2)(a)(ii)].

The *E. coli* bacteria effluent limits of the 2010-issued permit will be included in the renewed permit for any discharge through Outfall 002. At such time that influent sanitary wastewater flows increase to the point that a discharge from the WWTF is likely, LCPA may have to install effluent disinfection facilities in order to comply with the effluent *E. coli* bacteria limits. Effluent monitoring for *E. coli* bacteria will be required.

2. Non-conventional Pollutants – Outfall 002

Total Ammonia-N – There are no ammonia limits in the 2010-issued permit. Total ammonia-N limits are developed based on standards that account for a combination of pH and temperature of the receiving stream, the presence or absence of salmonid fishes (trout, whitefish and salmon), and the presence or absence of fish in early life stages. Because pH and temperature can vary greatly on a seasonal basis, as can the presence or absence of fish in early life stages. Water quality standards for ammonia and the resulting effluent limits are determined on a year-round basis, rather than on a seasonal basis.

No salmonids or non-salmonids and/or fish in early life stages are present in the ephemeral drainage. In addition, it is not known if salmonids or non-salmonids and/or fish in early life stages are present in the unnamed tributary. As can be seen on Table 2, effluent ammonia-N levels are extremely low and reflect the excessive groundwater infiltration that was occurring at the time of discharges. Given that Outfall 002 discharges to an ephemeral drainage and the WWTF has discharged in only 7 months out of the last 18 years and those discharges reportedly only occurred as a result of excessive groundwater infiltration into the sanitary sewer system, ammonia-N effluent limits will not be calculated for this permit cycle.

TRC – The 2010-issued permit included effluent limits for TRC, applicable should chlorination be used for disinfection of the effluent and should a discharge occur through Outfall 002. As with the 2010-issued permit, since disinfection may be required to meet *E. coli* bacteria effluent limits, TRC limits will be developed and included in this renewed permit to comply with ARM 17.30.637 in the ephemeral drainage, should chlorination be used for disinfection of effluent discharged through Outfall 002.

Effluent limits on TRC will be continued at 0.1 mg/L, effective immediately and applicable only if chlorine is used for disinfection of the effluent. Monitoring for TRC will also be required if chlorination is used for effluent disinfection.

Analytical methods in 40 CFR Part 136 require chlorine samples to be analyzed immediately. On-site analysis for TRC using an approved method is required. The method must obtain a minimum detection level of 0.1 mg/L. Analytical results of less than 0.1 mg/L will be considered to be in compliance with the limits.

Nutrients (Total Nitrogen as N and Total Phosphorus as P) – Currently there are no water quality standards for TN and TP for the ephemeral drainage, unnamed tributary or Kootenai River. Since no water quality standard basis exists for TN and TP limits and the discharge is to an ephemeral drainage, it is not possible to calculate RP for nutrients at this time. The permittee will not be required to monitor for nitrogen compounds and total phosphorus this permit cycle.

3. Toxic Pollutants – Outfall 002

Metals – No effluent data for metals were submitted with NPDES Form 2A Application for permit renewal and no industrial dischargers of other than sanitary wastes to the LCPA sanitary sewer system are known to exist. No effluent limits on metals will be included in this permit and monitoring for metals will not be required.

Whole Effluent Toxicity (WET) Testing – ARM 17.30.637(1)(d) requires that state water be free from substances attributable to municipal waste that create conditions which are harmful or toxic to human, animal, plant or aquatic life, except DEQ may allow limited toxicity in a mixing zone provided that there is no acute lethality to organisms. The LCPA is a small discharger of less than 0.083 mgd (design flow) with no identified industrial contributions. In addition, there has been no discharge from the WWTF since November 2004. No WET testing will be required with this permit cycle.

4. Toxic Pollutants – Outfall 005

Metals – The discharge from the groundwater dewatering pump is relatively high in iron content. Although iron is not considered highly toxic, a chronic aquatic life water quality standard for iron of 1,000 µg/L (1.0 mg/L) has been developed in DEQ-7. No acute water quality standard has been developed.

Because this discharge mixes with the diverted portion of Libby Creek at the inlet structure to the first settling pond, mixing that approximates nearly instantaneous mixing appears to occur. With nearly instantaneous mixing and no acute water quality standard for iron, a modified mixing zone determined by DEQ is appropriate for calculation of RP. Equation 1 was used to determine RP, using a (TSD calculated maximum) effluent iron level of 12.2 mg/L, the 0.7 mgd low flow, maximum reported dewatering pump average discharge of 0.027 mgd and a background concentration of iron in the diverted Libby Creek flow of 0.3 mg/L (based on levels reported by the permittee on DMRs from 2007 through 2009). The calculated RP value for chronic toxicity is 0.7 mg/L, which does not exceed water quality standards. Therefore, RP does not exist to exceed the chronic water quality standards for total recoverable iron in the LCPA-diverted portion of Libby Creek and no effluent limits will be included in the renewed permit. However, special conditions will be included in the permit to prohibit accumulation of unsightly iron precipitate in the receiving water.

V. Final Effluent Limits

Outfall 002

Beginning on the effective date of the permit and lasting through the term of the permit, the quality of effluent discharged by the facility through Outfall 002 shall, as a minimum, meet the limits as set forth below:

Table 6: Outfall 002 Final Effluent Limits				
Parameter	Units	Average Monthly Limit ¹	Average Weekly Limit ¹	Maximum Daily Limit
Biochemical Oxygen Demand (BOD ₅)	mg/L	30	45	--
	lbs/day	21	31	--
BOD ₅ , Removal	%	85	--	--
Total Suspended Solids (TSS)	mg/L	30	45	--
	lbs/day	21	31	--
TSS, Removal	%	85	--	--
<i>Escherichia coli</i> (<i>E. coli</i>) ^{2,4}	#/100ml	126	252	--
<i>Escherichia coli</i> (<i>E. coli</i>) ^{3,4}	#/100ml	630	1,260	--
Oil and Grease	mg/L	--	--	10
Total Residual Chlorine (TRC) ⁵	mg/L	--	--	0.1
pH	s.u.	6.0-9.0 (instantaneous) ⁶		
Footnotes:				
1. See Part I.C of permit and Definition section at end of permit for explanation of terms.				
2. This limitation applies from April 1 through October 31.				
3. This limitation applies from November 1 through March 31.				
4. Report Geometric Mean if more than one sample is collected in the reporting period.				
5. Permittee in compliance with effluent limits if the TRC does not exceed the minimum detection level of 0.1 mg/L.				
6. For compliance purposes, any single analysis and/or measurement beyond this limit shall be considered a Violation of the conditions of this permit.				

There shall be no discharge of floating solids or visible foam in other than trace amounts and there shall be no discharge which causes visible oil sheen in the receiving stream.

VI. Self-Monitoring & Other Requirements

a. Self-Monitoring

Outfall 002

Effluent samples are to be taken from the lagoon outfall structure and effluent flow measurements are taken from the V-notch weir in the lagoon outfall structure.

Influent sampling for BOD₅ and TSS are to be taken from the wet well of the main lift station. Influent sampling is required only in months when there is an effluent discharge from the aerated lagoon system.

Outfall 005

Effluent flow measurements and effluent samples for all parameters must be obtained prior to mixing with stormwater or other water carried by the LCPA waste ditch.

Table 7: Outfall 002 Self-Monitoring Requirements

Parameter	Unit	Sample Location	Sample Frequency	Sample Type ¹	Reporting Requirements	ML ⁵
Flow	mgd	Effluent	1/Week	Instantaneous	Ave Day	0.001
Biochemical Oxygen Demand (BOD ₅)	mg/L	Influent	1/Month	Composite	Ave Month	10
	mg/L	Effluent	1/Month	Grab	Ave Month	2
	% Removal ²	NA	1/Month	Calculated	Ave Month	0.1
	lb/day	Effluent	1/Month	Calculated	Ave Month	0.1
Total Suspended Solids (TSS)	mg/L	Influent	1/Month	Composite	Ave Month	10
	mg/L	Effluent	1/Month	Grab	Ave Month	10
	% Removal ²	NA	1/Month	Calculated	Ave Month	0.1
	lb/day	Effluent	1/Month	Calculated	Ave Month	1
pH	s.u.	Effluent	1/Month	Instantaneous	Min & Max	0.1
<i>E. coli</i> Bacteria	#/100ml	Effluent	1/Month	Grab	Geo Mean & Max Month	1
Oil and Grease ³	mg/L	Effluent	2/Year	Grab	Ave Month	1
Total Residual Chlorine (TRC) ⁴	mg/L	Effluent	1/Day	Grab	Ave Month & Max Day	0.1

Footnotes:

1. See Definition section at end of permit for explanation of terms.
2. See narrative discussion in permit for additional details.
3. Use EPA Method 1664, Revision A: N-Hexane Extractable Material (HEM), or equivalent.
4. Permittee is only required to sample for TRC if chlorine is used as a disinfectant in the treatment process. If chlorine is *not* used, use NODI Code 9 on NetDMR for this parameter.
5. ML is the minimum detection level. Analyses for all parameters must be to the ML listed in the permit for the parameter.

Table 8: Outfall 005 Self-Monitoring Requirements						
Parameter	Unit	Sample Location	Sample Frequency	Sample Type ¹	Reporting Requirements	ML ²
Flow	mgd	Effluent	1/Week	Instantaneous	Ave Day	0.001
pH	s.u.	Effluent	1/Month	Instantaneous	Min & Max	0.1
Iron, Total Recoverable ³	mg/L	Effluent	1/Month	Grab	Ave Month	0.02
Footnotes:						
1. See Definition section at end of permit for explanation of terms.						
2. ML is the minimum detection level. Analyses for all parameters must be to the ML listed in the permit for the parameter.						
3. Metals must be analyzed as total recoverable, use EPA Method (Section) 4.1.4 [EPA 600/4-79-020, March 1983] or equivalent.						

b. Sludge Requirements

This permit will contain standard conditions requiring compliance with 40 CFR 503 for any use or disposal of sewage sludge.

c. Pretreatment Program

The facility is not currently operating under the EPA Pretreatment Program. The permit will include standard language restricting introducing certain pollutants to the LCPA WWTF and requiring the facility to provide adequate notice to DEQ if a new source, volume or character of industrial pollutant is introduced to the system.

VII. Nonsignificance Determination

The facility must meet 2010-issued permit effluent limits for BOD₅, TSS, pH, *E. coli*, O & G and TRC. The discharge does not constitute a new or increased source of pollutants pursuant to ARM 17.30.702(17). Therefore, a nonsignificance analysis is not required [ARM 17.30.705(1)].

VIII. Special Conditions

a. No Discharge from Outfall at 48°23'23" N latitude, 115°32'26" W longitude

There shall be no discharge from the original Outfall 002, located immediately north of the separating dike at the lagoons. The lagoon transfer structure gate to the original Outfall 002 shall be closed and remain closed.

b. No Accumulation of Iron Precipitate in Receiving Water

There shall be no accumulation of red or orange colored iron precipitate in the receiving water for Outfall 005, including the first settling pond. The pond system shall be inspected daily

(except week-ends and holidays) for accumulation of iron precipitate and a log kept of daily observations. The permittee shall provide DEQ an annual written report by June 30 of each year summarizing observations and dates and types of corrective actions taken. If routine maintenance does not eliminate precipitate deposits, a compliance schedule may require iron removal treatment of the groundwater dewatering discharge prior to reaching state waters.

c. Lift Station

The permittee is required to permanently repair or replace the lift station that is currently operating with emergency pumping equipment that does not meet minimum state standards for wastewater lift stations by December 31, 2020.

IX. Information Sources

- a. Federal Water Pollution Control Act (Clean Water Act), 33 U.S.C. §§ 1251-1387, October 18, 1972, as amended 1973-1983, 1987, 1988, 1990-1992, 1994, 1995 and 1996.
- b. US Code of Federal Regulations, 40 CFR Parts 122-125, 130-133, & 136.
- c. Montana Code Annotated (MCA), Title 75-5-101, *et seq.*, “Montana Water Quality Act,” 2011.
- d. Administrative Rules of Montana Title 17 Chapter 30 - Water Quality
 - Subchapter 2 - Water Quality Permit and Application Fees.
 - Subchapter 5 - Mixing Zones in Surface and Ground Water.
 - Subchapter 6 - Montana Surface Water Quality Standards and Procedures.
 - Subchapter 7- Nondegradation of Water Quality.
 - Subchapter 12 - Montana Pollutant Discharge Elimination System (MPDES) Standards.
 - Subchapter 13 - MPDES Permits.
- e. Montana Department of Environmental Quality Circular DEQ-7, Montana Numeric Water Quality Standards, October 2012.
- f. Integrated 303(d)/305(b) Water Quality Report for Montana (2016).
- g. McCarthy, P.M., 2016, Streamflow Characteristics Based On Data Through Water Year 2009 For Selected Streamflow Gaging Stations In Or Near Montana: U.S. Geological Survey Scientific Investigations Report 2015-5019-E, XX.
- h. US EPA Technical Support Document for Water Quality-Based Toxics Control, EPA/505/2-30-001, March 1991.
- i. US EPA National Pollutant Discharge Elimination System (NPDES) Permit Writers’ Manual, EPA 833-K-10-001, September 2010.

- j. Montana Department of Fish, Wildlife and Parks, Don Skaar, Spawning Times of Montana Fishes, March 2001.
- k. MPDES Permit Number MT0000221:
 - 1. Administrative Record.
 - 2. Renewal Application DEQ Form 1 and EPA Form 2A, June 2015.
- l. Fraser Management and Consulting, PLLC, Operation and Maintenance Manual (O & M Manual), Standard Operating Procedures, Storm Water Pollution Prevention Plan (SWPPP), 2009.
- m. Montana DEQ Circular DEQ-12A, Montana Base Nutrient Standards, July 2014.

FS Prepared By: James F. Brown, September 2017