

DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER PROTECTION BUREAU  
Metcalf Building, Helena, Montana 59620  
(406) 444-3080

**ENVIRONMENTAL ASSESSMENT (EA)**

**Division/Bureau:** Permitting & Compliance Division, MGWPCS Permits;

**Project or Application:** Thompson River Power (TRP); MTX000159

**Description of Project:** The Department is proposing to issue a Montana Ground Water Pollution Control System (MGWPCS) permit to TRP to authorize the continuous discharge of industrial wastewater-effluent from a 16.5 mega watt wood, wood waste and/or coal fired, steam-generating electric power plant. TRP is located approximately four miles east of Thompson Falls on the south side of Highway 200. The TRP facility is over 700 feet north of the Clark Fork River (CFR).

The industrial wastewater will consist of boiler and cooling tower blowdown (97% average annual contribution), with low volume wastes associated with the floor drains in the plant (3% annual average contribution). Wastewater from the floor drains will be routed through an oil-water separator and be temporarily stored in the existing lined pond (3.2 million gallon capacity) prior to discharge. Plant make-up water will come from a deep (719 feet total depth) production well located approximately 1,000 feet east of the plant on property owned by TRP. Should water right issues be resolved, TRP could potentially use water from the CFR. All industrial wastewater will pass through an arsenic adsorption treatment plant (AdEdge AD26 package treatment plant) where it will be treated for arsenic, iron, manganese, and uranium. When the plant is in full operation, wastewater will be produced at a continuous rate of 60 gallons per minute (gpm) and discharged through two buried 410-foot long, 4-foot deep subsurface drainfield lateral lines (i.e., Outfall 001) to the shallow ground water.

Outfall 001 is located in the NE, NW, SE Section 13, Township 21N, Range 29 West, North Latitude 47° 34' 39.539" and West Longitude -115° 15' 8.568" in Sanders County. The subsurface drainfield lateral lines will be located southeast of the plant and north of the existing lined storage pond.

The permit will require shallow ground water monitoring at this site using the four existing shallow monitoring wells (MW-1 cross gradient to the east, MW-2 upgradient, and MW-3 and TW-2 crossgradient-downgradient to the west). A new monitoring well (MW-4) is required to be installed prior to discharge, hydraulically downgradient-downstream from the southwest corner of the ground water mixing zone as a special condition in the permit.

Shallow ground water beneath the facility is "Class I" ground water according to the Montana Ground Water Quality Standards, Beneficial Use Classifications. A 700-foot, source specific ground water mixing zone for total dissolved solids (TDS), specific conductivity, barium, fluoride, sulfate, and zinc was requested by the permittee.

**Benefits and Purpose of Proposal:**

Adequate treatment of industrial wastewater before discharging to the ground water. To generate power.

**Description and analysis of reasonable alternatives whenever alternatives are reasonably available and prudent to consider:**

None

**Listing and appropriate evaluation of mitigation, stipulations and other controls enforceable by this or another government agency:**

See Fact Sheet.

**Affected Environment and Effects from the Proposed Project:**

<b>Key to Rank</b>	
NA	<i>Not applicable</i>
N	<i>No effects</i>
B	<i>Potentially beneficial effects</i>
A	<i>Potentially adverse effects</i>
M	<i>Corrective action required</i>
P	<i>Additional permits will be required</i>

Rank	Consideration	Remarks
<b>PHYSICAL AND BIOLOGICAL ENVIRONMENT</b>		
N	1. SOIL SUITABILITY, TOPOGRAPHIC AND/OR GEOLOGIC CONSTRAINTS (soil moisture, unstable soils or geologic conditions, steep slopes, erosion potential, subsidence potential, seismic activity)	Discharge will increase moisture in the unsaturated zone. The ground surface in the drainfield area is relatively flat (0.0076 ft/ft) on the topographic bench where the outfall is located, but then slopes rapidly toward and along the steep banks of the Clark Fork River. The area is located in the seismically active mountainous, western one-third of the state.
N	2. HAZARDOUS FACILITIES (power lines, hazardous waste sites, distances from explosive and flammable hazards including chemical/petroleum storage tanks, underground fuel storage tanks and related facilities such as natural gas storage facilities and propane tanks)	This is an industrial plant. Best management operating procedures shall be followed for plant operations dealing with any hazardous materials. TRP property is bounded on the north, east, and west by land owned by Thompson River Lumber (TRL). TRL is a stud mill and operates according to best management practices applicable to their operation and associated materials.
N	3. AIR QUALITY (effects to or from project, dust, odors, emissions)	The facility has a renewed (2/10/09) DEQ Air Quality Permit (No. 3175-06).
N	4. GROUNDWATER RESOURCES & AQUIFERS (quality/nondegradation, quantity/reliability, distribution, uses/rights, number of aquifers, mixing zones)	The shallow ground water quality has been monitored since 2005 (TW-2) and since 2007 in MW-1, MW-2, and MW-3 (see Fact Sheet for details) prior to full plant activation. No impacts to the water quality have been observed in the monitoring wells. Most domestic supply wells are completed in the deeper (approximately 680 feet bgs) basal gravel layer.
N	5. SURFACE WATER RESOURCES (quality/nondegradation, quantity/reliability, distribution, uses/rights, storm water controls, source of community supply, community treatment, mixing zones)	The nearest downgradient surface water from Outfall 001 is the Clark Fork River (CFR), which is over 700 feet south of the discharge area (i.e., subsurface drainfield). There will be no measureable increase of the constituents of concern to the CFR (see Fact Sheet).
N	6. VEGETATION AND WILDLIFE SPECIES AND HABITATS, INCLUDING FISHERIES AND AQUATIC RESOURCES (threatened, endangered, sensitive species, prime habitat, population stability, potential for human wildlife conflicts, effectiveness of post-disturbance plans)	Topsoil consisting mostly of boulders and cobbles with a fine sand matrix will be removed at the construction site for the subsurface drainfield. The natural soil cover will be replaced over the area and the area will be seeded to deter weed growth. There will be no long-term adverse impacts to vegetation and wildlife.
N	7. UNIQUE, ENDANGERED, FRAGILE, OR LIMITED ENVIRONMENTAL RESOURCES (biologic, topographic, wetlands (within one mile), floodplains (within one mile), scenic rivers, natural resource areas, etc.)	According to the Montana Natural heritage Program (MNHP), there are five species of special concern within the township and range and an additional one-mile buffer area. These species of special concern are: <i>oncorhynchus clarki lewisi</i> (Westslope Cutthroat trout), <i>salvelinus confluentus</i> (Bull Trout), <i>felis lynx</i> (Lynx), <i>ursa arctos horribilis</i> (Grizzly Bear), and <i>clarkia rhomboidia</i> (Common Clarkia).

N	8.	LAND USE (waste disposal, agricultural lands [grazing, cropland, forest lands, prime farmland], recreational lands [waterways, parks, playgrounds, open space, federal lands), access, commercial and industrial facilities [production & activity, growth or decline], growth, land-use change, development activity)	This facility is located adjacent to TRL on the west and a solid waste container site to the east, maintaining the existing industrial character to this area. Industrial operations have been ongoing within the existing TRL property for over 50 years. The TRP property was once part of the 165-acre TRL mill property.
N	9.	HISTORICAL, CULTURAL, & ARCHEOLOGICAL (sites, facilities, uniqueness, diversity)	Due to Should cultural materials be inadvertently discovered, the permittee should contact the State Historical Preservation office so the site may be investigated.
N	10.	AESTHETICS (visual quality, nuisances, odors, noise)	Drainfield lateral lines will be below ground surface and will not be visible and will not create aesthetic issues.
N	11.	DEMANDS ON OR CHANGES IN ENVIRONMENTAL RESOURCES INCLUDING LAND, WATER, AIR, OR ENERGY USE (need for new or upgraded energy sources, potential for recycling, etc.) {See (4), (5), and (8).}	Drinking water is supplied by Culligan. Make-up water for the plant will come from the deep Production well ) see <i>Description of the Project</i> , above), until such time as potential water rights to the CFR are determined, then the CFR may be used as part or all of the plant make-up water.

Rank	Consideration	Remarks
<b>IMPACTS ON THE HUMAN POPULATION</b>		
NA	12. CHANGES IN DEMOGRAPHIC CHARACTERISTICS (population quantity, distribution and density, rate of change)	
N	13. GENERAL HOUSING CONDITIONS (quality, quantity and affordability)	
NA	14. POTENTIAL FOR DISPLACEMENT OR RELOCATION OF BUSINESS OR RESIDENTS	
N	15. PUBLIC HEALTH AND SAFETY (medical services and facilities, police, fire protection and hazards [see (2)], emergency medical services [see (8), LAND USE for waste disposal])	No present or future beneficial uses have been identified for the proposed 700-foot ground water mixing zone. Based on treatment of the industrial discharge proposed by the permittee to meet water quality standards and nondegradation criteria set forth as limits in the permit, as well as water quality-based effluent limits for constituents of concern requiring a ground water mixing zone in the permit, there will be no measurable discharge of potential constituents of concern to the CFR due to the discharge to shallow ground water (see Fact Sheet) at the site.
N	16. LOCAL EMPLOYMENT AND INCOME PATTERNS (quantity and distribution of employment, economic impact)	Provides electric power through wood, wood-waste, coal-fired steam generation. Local employment opportunities for positions within the plant and office when facility becomes operational.
NA	17. LOCAL AND STATE TAX BASE AND REVENUES	The facility will be contributing to local and state revenues through property taxes, and sales taxes for equipment and supplies.
NA	18. EFFECTS ON SOCIAL STRUCTURES AND MORES (social conventions/standards of social conduct), DEMANDS ON SOCIAL SERVICES (law enforcement, educational facilities [libraries, schools, colleges, universities], welfare, etc.)	The predominant industrial use of the land in this area will not change.
N	19. TRANSPORTATION NETWORK (condition and use of roads, traffic flow conflicts, rail, airport compatibility, etc.)	Potential for increase in truck traffic hauling wood and wood-waste to the plant. All other activities occur within TRP property boundaries. Fugitive dust and/or emissions are monitored under the Air Quality permit No. 3175-06.

N	20. CONSISTENCY WITH LOCAL ORDINANCES, RESOLUTIONS, OR PLANS (conformance with local comprehensive plans, zoning or capital improvement plans)	The predominant industrial use of the land in this area will not change.
NA	21. REGULATORY RESTRICTIONS ON PRIVATE PROPERTY RIGHTS ( <i>Are we regulating pursuant to a police power? Does the Agency action restrict the use of the property beyond the minimum necessary to achieve compliance with the Act? What are the costs of such additional restrictions resulting from proposed permit conditions? Are there other, less restrictive ways of achieving the same goal? See your assigned legal counsel for assistance preparing this section. [See the Private Property Assessment Act checklist accompanying this permit for details.]</i> )	

**Other groups or governmental agencies contacted or which may have overlapping jurisdiction:**  
DEQ Air Quality Program

**Public Involvement:**  
Thirty-day public comment period

**Individuals or groups contributing to this EA:**  
Scott Mason with Hydrometrics

**Summary of Issues:**  
See Fact Sheet

**Summary of Potential Effects:**  
See Fact Sheet

**Cumulative Effects:**  
None

**Recommendation:**  
Issue Ground Water Discharge permit renewal

**Recommendation for Further Environmental Analysis:**

Prepare an EIS

Prepare a more detailed EA

No further analysis

EA prepared by: Pat Potts

Date: June 15, 2011

**Approved by:**

Jenny Chambers, Bureau Chief  
Water Protection Bureau  
Permitting & Compliance Division

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(Print name and title)

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(Signature)

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(Date)