

# Citizens for a Clean Columbia

Our mission: to advocate for a clean Columbia River ecosystem

## NEWSLETTER JULY 2013

Who are we?

Citizens for a Clean Columbia (CCC) is a volunteer organization focused on advocating for the health of the Upper Columbia River and Lake Roosevelt. Visit us at [www.cleancolumbia.org](http://www.cleancolumbia.org).

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### News in Brief

#### Removal Action Completed for Young America Mine

- In October and November 2012, the areas of lead contamination on the former Young America Mine site and surrounding properties were covered by procedures including crushing the mill buildings in place, consolidating the exposed tailings around and below the mill buildings, removing the previous cap on the impoundment and capping the tailings and contaminated soil with a liner and local material.

#### Recreational Consumption and Resource Use Survey for the Upper Columbia River

- Draft final results demonstrated an 83% response rate (N=2,394 individuals)
- Information on boating, beach, camping and fishing activities are reported below.
- Overall, only about 40% of respondents were aware of the UCR fish consumption advisories and only 20.1% reported changing how often they eat fish from the UCR due to the advisory.

- 146 of 199 anglers (73.4%) approached completed at least one month of the fish consumption diary. Respondents consumed an average of 2.6 UCR fish meals/month (range 0-14/month); the majority caught walleye (58.4%) and rainbow trout (37.1%).

#### Black Sand Beach Monitoring Update

- This is the second contour survey since cleanup of Black Sand Beach in 2010 in which approximately 6500 cubic yards of contaminated slag material was removed and replaced with a approximately 6900 cubic yards of clean material.
- Compared to the 2011 elevation contour survey that showed a total erosion of 401 cubic yards from the beach, the 2012 survey showed an additional loss of 77 cubic yards from the beach. Yearly changes included areas of both erosion and deposition, with more overall erosion occurring than deposition.

#### Technical Advisor Update

- Joe worked with CCC to provided comments on the final report drafts of the Recreational Consumption and Resource Use Survey in October, Draft Final Surface Water Data Summary and Data Gap Report in November, and the DRAFT Upper Columbia River Beach Sediment Study Field Sampling and Data Summary Report in January.
- Joe also reviewed documents related to development of the second draft of the sediment toxicity study quality assurance project plan and reviewed draft final reports on the Tribal

## Consumption and Use Survey.

### Teck Toxic Plume and Spill News

- The remediation plan for Teck's toxic groundwater plume has been submitted and is awaiting approval by Environment Canada.

## Removal Action Completed for Young America Mine

In the July newsletter, we reported on the early lead cleanup activity of the Young America Mine (YAM) located on Hutson Jones Way in Evans, Washington. Lead-contaminated tailings were identified around the ore mill and on four properties on Hutson Jones Road north of Evans, Washington. The concern is that lead dust from these areas, once air borne, can be inhaled and ingested by land owners and visitors, including young children possibly resulting in lead poisoning. Lead concentrations in the road dust were found to exceed 5,630 mg lead per kg soil (ppm) and lead in the soil near the mill buildings was found to be as high as 21,822 ppm.

The EPA plan was to crush the old mill buildings in place, consolidate the exposed tailings around and below the mill buildings, remove the current cap on the impoundment area, and recap the tailings and contaminated soil with a liner and local material. These actions were conducted between October 10<sup>th</sup> and November 3<sup>rd</sup> 2012.

A field portable X-ray fluorescence (XRF) analyzer was used to delineate the contamination along the south side of the southern berm, around the water tower, and in the sand dune area along the northern boundary of the impoundment. Workers also dug exploratory trenches and holes to identify the depth of cover and tailings on the edge of the impoundment.

The slope above the repository was graded and contaminated soil was removed from the upper slope and placed in a central repository. The perimeter of the tailings impoundment was also graded and the top of the existing cap on the impoundment area removed. Some trees were cut and the wood left for firewood in an agreed upon location on the adjacent property. The wood/stump waste was buried on site. The water tower was drained and temporarily moved to allow removal of contaminated soil beneath. While placing cap material over the liner in the impoundment area, workers started building a road between the repository and the impoundment area. The road was built up four feet to give the power company room to dig in clean fill to install an extended power line. Finally, mulch, slash and seed were placed on the slope area.



Kathy Parker, the EPA on-scene coordinator, after discussion with property-owners about their concerns, agreed to place a smoother surface of soil on the flat areas of their properties and to reimburse them for the purchase of up to ten, young, fast-growing shade trees that would re-establish some privacy on their property. Soil was prepared with a donation of two pick-up loads of 3 year-aged horse manure mixed with sandy forest soil.

The total cost of the project was about \$542,000.

Mindy Smith, MD, MS

#### Recreational Consumption and Resource Use Survey for the Upper Columbia River

The purpose of this study was to provide site-specific data on recreational visitors to the Upper Columbia River (UCR) and anglers that would allow EPA to characterize the population with respect to activities (boating, beach/swimming, camping, fishing) that may involve health risks due to exposure to UCR-related contaminants.

The final draft results of the survey were released for comments August 24, 2012. The response rate was quite high with 2,394 of the 2,908 individuals approached (82.3%) completing the survey. About 20% of the surveys were completed in the Upper UCR, 42 % in the Middle UCR, and 38 % in the Lower UCR.

**Boating:** Of boating trips, there was an average of 3 occupants per boat (range 1-14; median 2) and trips lasted an average of 14.9 hours (median 6.2 hours). The most common activity during the peak season was spending time on the beach (43% of Lower UCR boaters, 30.2% of Middle UCR boaters, and 21.7% of Upper UCR boaters) followed by wading, and swimming.

**Beach:** Among beach visitors, the number of people in each beach group averaged 5.2 (range 1 to 119; median 4). The average length of a beach day trip was 2.4 hours (median of 2.1 hours). Only 16% of the beach day trips lasted longer than four hours. Activities included spending time on the beach (58%-72%), wading, and swimming (45.5% of Lower UCR beach visitors, 26.8% of Middle UCR beach visitors, and 19.9% of Upper UCR beach visitors with an

average number of minutes swimming between 34 and 52 minutes).

**Camping:** For campers, there was an average of 4.2 visitors per campsite (range 1-65; median of two). Approximately two-thirds of the trips lasted fewer than four days, with 31% lasting only one or two days. Thirteen percent of the trips lasted four to six days, 7% lasted six to eight days, 7% lasted eight to fourteen days, and 4% lasted longer than fourteen days. Time was spent in the tent, camper or RV, followed by the beach (about half), wading, swimming (22% to 40%) and waterskiing or tubing.

**Fishing:** Overall, 31.9% of respondents ate fish from the UCR. Among anglers and fish consumers, 41.5% shared fish with children. Rainbow trout and walleye were the most popular fish consumed (average consumption rates of 2.6 meals/year and 2.5 meals/year, respectively) followed by bass and kokanee (average consumption rates of 0.8 meals/year and 0.5 meals/year, respectively). The average total consumption across all species was 6.4 meals/year. The vast majority (85% of respondents) reported consuming 10 or fewer meals over the last 12 months, approximately 10% reported consuming between 11 and 20 meals, and the remaining 5% consumed more than 20 meals. The location of the particular fish species is listed in the report.

With respect to meal size, about 78% reported that the typical UCR fish meal size was either six ounces (39% of respondents) or eight ounces (39%). Ten percent reported a typical meal size of 10 ounces, while the remaining respondents reported a typical meal size that was either larger than 10 ounces (5%) or smaller than six ounces (8%).

**Fish Advisories:** Overall, only 38.9% of respondents indicated that they were aware of the UCR fish consumption advisories and only 20.1% of these

respondents indicated that they had changed how often they eat fish from the UCR due to the advisory. Major sources of information about the regulations were fishing regulations (33.2%), the newspaper (28.2%), and posted signs (24.9%).

**Fish Consumption by Anglers:** Of the 199 respondents who consumed at least 10 fish meals from the UCR over the past 12 month and were invited to participate, 146 completed at least one month of the fish consumption diary (response rate 73.4%). Diary participants consumed an overall average of 2.6 UCR fish meals per month (range 0-14 per month). Of the 1,055 UCR fish meals reported, the majority were walleye (58.4%), 37.1% were rainbow trout, 10.1% were bass, 2.8% were kokanee (silvers), 0.2% were burbot, and 0.1% were perch. Just under half of the fish meals were caught in the Lower UCR and nearly three quarters were caught in the months of July to October.

For participants in the diary study, the distribution of meal sizes is largely centered on the 8-oz fillet (31.3% of meals), followed by the 10-oz fillet (25.7% of meals) and the 6-oz fillet (21.6% of meals). Only 4.8% reported that their meal size was smaller than the 6-oz fillet 17.2% reported that the meal was and larger than the 10-oz fillet.

**Discussion:** Several items warrant consideration in the interpretation of these data:

- The heavy snow melt and large 2011 drawdown resulted in fewer boat launches (about half the number) and beach sites being available for visitors. There were also many areas along the shoreline where anglers and swimmers used the UCR where surveyors were not available, so these visitors may have been missed. Users who left the beaches after 6 p.m. would not have been included.

- Fish consumption diaries were only kept for 3 months and most were distributed in the summer so there is far less data on fish consumption at other times of the year.
- Being that the fish advisories do not appear to be reaching the majority of visitors and anglers and of those who do consume fish, have limited effect on their fish consumption, better ways are needed to inform and encourage the public to follow these advisories.
- Finally, data have not been analyzed by zip code and we asked for these additional analyses so we might understand whether or not patterns of use are different for the local residents compared to visitors surveyed.

### Black Sand Beach Monitoring

Black sand beach has weathered two consecutive high water spring melts since the clean up by Teck America, Incorporated (TAI) in Fall 2010. Water levels during both the 2011 and 2012 high altitude melts completely submerged the beach for several weeks. The contour of the beach was reformed by both of these high water events.

A monitoring program was put in place by TAI in March of 2011 to follow any changes to the beach for three to five years after the clean up. The monitoring program included a yearly elevation (beach contour) survey and photographic documentation of the beach. The yearly monitoring occurs in mid- to late-October to coincide with the clean up completion date in 2010. The elevation survey established a minimum of 21 GPS-determined survey points to create a topographic contour of the beach. The elevation surveys have been used to compare the yearly change from the finished clean up grade contour of the beach. Eleven GPS points and directions were also established in March, 2011

for taking yearly comparison photographs. Unfortunately, photographs were not taken from these points before the clean up.

During the 2010 Black Sand Beach cleanup, workers removed approximately 6500 cubic yards of slag contaminated material and replaced it with approximately 6900 cubic yards of clean material comprised of large cobbles, small cobbles, gravel and sand. The elevation contour survey of fall 2011 showed a total erosion of 401 cubic yards from the beach. The elevation contour survey of 2012 showed an additional loss of 77 cubic yards from the beach. Yearly changes included areas of both erosion and deposition, with more overall erosion occurring than deposition.

Prior to the clean up, the portion of the beach downstream from the rock outcrop was characterized by a very steep slope to the waterline and a depression in the upper portion of the beach that formed a pool for several weeks to months after high water melt events. The final contour of this section of the beach after clean up was a gradual slope up from the water line to a relatively large flat area that included the area of the previous pool and then a gradual slope up to the tree line. The two spring melt events since the clean up have removed material from the flat portion of the downstream beach, particularly just below the rock outcrop and have deposited material, increasing the slope of the beach at the water line. The pool appears to be gradually reforming, but slightly closer to the river than prior to the clean up. The beach area upstream from the rock outcrop has undergone much less change from the finished clean up grade.

The reforming of the beach by the river is shown for the downstream beach shoreline in the series of three photos (2010, 2011, 2012).



The upstream beach section for the same three years are shown next (2010, 2011, 2012).



Submitted by a concerned citizen

Remedial Investigation/Feasibility Study  
(RI/FS) Update

Coming up next is an opportunity to provide comments on the Sturgeon final draft reports and plans for this year's field season for sediment.

### Technical Advisor Report

During the past six months, I reviewed and provided CCC with formal comments on three Upper Columbia River Remedial Investigation and Feasibility Study (UCR-RI/FS) draft reports. CCC used my reviews as the basis of their comments to EPA on these draft reports. I also discussed several final report drafts with CCC. I continued to pursue data analysis goals with EPA concerning their "Beach Study on the Upper Columbia River" fact sheet released in April 2012.

CCC provided comments on the final report draft of "Recreational Consumption and Resource Use Survey for the Upper Columbia River Site Human Health Risk Assessment and Remedial Investigation/Feasibility Study, August 24, 2012" in October 2012. CCC felt additional discussion was warranted on the effect of abnormally high river levels and abnormally low lake levels in spring and early summer on survey participation and the failure to survey recreational users at less frequently used walk-in and boat-in beaches and unofficial camp sites. CCC requested that this fact be addressed in the appropriate beach and camping sections of the report.

CCC provided review comments on the report "Draft Final Surface Water Data Summary and Data Gap Report, August 2012" to EPA in November. The original study design allowed for the "pooling" or averaging of replicate sample analyses under certain circumstances. CCC requested that data averaging not be allowed in situations where any of the replicate sample concentrations were at or above the minimum level of potential concern. CCC

requested that analytical results for the disturbed water samples be discussed in the same detail as is done for undisturbed sample results. Some replicate samples were collected in 2010 but not analyzed due to study modification agreements between EPA and Teck America, Inc. (TAI). CCC requested that the database identification for these original samples be clarified to show that additional results for replicate sample analyses do not exist. CCC suggested a number of additional clarifications for the report to assist first time readers in their understanding of the study and results.

CCC provided review comments on the report "DRAFT Upper Columbia River Beach Sediment Study Field Sampling and Data Summary Report, September 30, 2011" to EPA in January. CCC suggested that data gaps be addressed in this report as was done for the 2009 fish tissue study and the 2009 through 2010 surface water study data summary reports. CCC requested that core sample data be discussed in the same detail that surface composite sample results are discussed. In these comments CCC requested for a second time that arsenic and lead levels be determined in the 250 micron ( $\mu\text{m}$ ) to 2 millimeter (mm), 125  $\mu\text{m}$  to 250  $\mu\text{m}$ , 63  $\mu\text{m}$  to 125  $\mu\text{m}$ , and <63  $\mu\text{m}$  sieve size fractions for the four unanalyzed, sieved composite sediment samples for Black Sand Beach, R.V. Park, Swimming Hole, Northport Beach, Dalles Orchard, China Bend, Evans Campground, Summer Island, Lyons Beach, Bradbury Beach and Mitchell Point. These beaches show arsenic and/or lead levels increasing above the preliminary remediation goal as sieve size decreases. Analysis of these samples would ensure that all arsenic and lead exposure risk evaluations for these beaches of potential concern are performed with analytically determined data rather than extrapolated data.

An ongoing dialogue with EPA since July has resulted in a comparison of arsenic and lead levels in the 0-6" depth of core samples to the levels in the surface composite samples for the 26 beaches sampled in 2011. Beaches with arsenic or lead levels above background levels showed no significant differences between the two sample groups. This finding supports the EPA position that contamination at each beach is uniformly distributed. CCC has requested that a similar analysis be performed for the seven beaches sampled in 2009 and 2010.

I spent some time reviewing documents related to development of the second draft of the sediment toxicity study quality assurance project plan (QAPP). This project was postponed when disagreements between TAI and EPA and the participating parties delayed development of the second draft of the QAPP until 2013.

Draft final reports on the Tribal Consumption and Use Survey were issued by Westat for the EPA and by Environmental International, Ltd. (EI) for the Confederated Tribes of the Colville Reservation. Neither report provides direct consumption rates for foods, making risk assessments complicated. The Westat report provides an overall summary of the study process and lists the various classifications of foods and the percentage of respondents who ate the foods. The EI report is divided into two parts. One part lists each survey question concerning foods and summarizes survey responses. The second part lists each survey question concerning resource use and summarizes survey responses. EPA is currently analyzing the data to develop risk assessments for fish consumption. This process has been complicated by the lower than expected rate of fish consumption.

In November, EPA tasked TAI with determining the extent of contamination at the Bossburg beach site, including mapping the contamination above the

beach onto the flat, down river to Evans Campground and on the west side of the river. As an additional part of the study, TAI will examine the area between the nearby Young America mill site and the river for possible contamination. A draft study QAPP is expected to be issued for this project in February 2013.

The upland soil QAPP is expected to be issued this spring. This study will investigate the extent of potential aerial contamination of soils in the Upper Columbia River watershed. The level of effort memorandum, which are the guidelines for developing this study, was sent to TAI in November.

Draft final reports for the two complimentary sturgeon sediment toxicity studies performed in 2010 were issued by the United States Geologic Survey in December and by TAI in January, 2013.

Joe Wichmann, PhD; CCC Technical Advisor

## Spill News and Teck PLUME

- No new spills to report.
- Teck has submitted a remediation plan for the toxic groundwater plume to Environment Canada. Interestingly, the contaminated ground water is following the original river bed not the current river flow. In an informal conversation with Teck representatives, the plan involves drilling wells to capture the effluent and piping the material up to the treatment facility for reprocessing. Once the report has been accepted by Environment Canada, Teck intends to post it on their corporate website.
- Two CCC members and our technical advisor went on a tour of the Teck facility in January 2013. We

spent an hour and ½ with Catherine Adair and Richard Deane who were very helpful in providing information about Teck's many products and handling of waste, and answering our questions. They noted that getting after old piping has been an ongoing effort and that Teck spent \$5.8 million modifying 245 entry points and \$1.2 million for online monitoring of effluent streams. Also, in answer to a question posed by a CCC member, the bubbling water visible below the plant is due to a malfunction of an outfall that is allowing air to mix with the effluent cooling water and storm water runoff; it poses no danger and is low priority for repair. Many thanks to Catherine and Richard!

Mindy Smith, MD, MS

## Want to be More Involved?

CCC welcomes new members; you can join on our website ([www.cleancolumbia.org](http://www.cleancolumbia.org)). You can also find meeting minutes and links to other organizations involved in protecting the environment.

Our next General Member Meeting will be in the spring at the Museum in Colville. We will post updated information on the website. Please join us.

You can also write to our new EPA project managers Laura Buelow ([buelow.laura@epa.gov](mailto:buelow.laura@epa.gov)), Matt Wilkening ([wilkening.matt@epa.gov](mailto:wilkening.matt@epa.gov)) or the EPA region 10 administrator Dennis McLerran ([McLerran.Dennis@epa.gov](mailto:McLerran.Dennis@epa.gov))

For contact information with Washington State Department of Ecology John Roland ([jrol461@ecy.wa.gov](mailto:jrol461@ecy.wa.gov)) or your legislators, see our January 2011 newsletter