

Draft for 1st Quarter Report Example 4/8/09

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Chelan Ranger District
Mitchell Creek Campground
Erosion Control Treatment Site 59
2009

Licensing & Compliance

Site 59 is the first erosion site treated under the Lake Chelan Hydroelectric Project No.637-022, under Article 401. The treatment followed the site specific plans for this site filed November 7, 2007 by Chelan PUD with the Federal Energy Regulatory Commission's (FERC) for approval of the Erosion Control Implementation and Erosion Monitoring and Maintenance Plan (Erosion Control treatment Plans) and the Site-Specific Erosion Control Plan (Site-Specific plan for site 59). On December 14, 2007, FERC issued the Order approving these plans.

Site permits and contracting actions were acquired and administered by the Forest Service, through a funding collection agreement with Public Utility District No. 1 of Chelan County (Chelan PUD). This site is addressed by under Nationwide Permit (NWP) 13 and permitted under reference # NWS 2007 1652 CRC Department of the Army, Seattle District, Corps of Engineers. Sixteen large pieces of The contract was awarded to LKE Corporation of Washougal Washington. The Mitchell Creek site was awarded for \$93,534.50.

This report is intended to address permit requirement for large woody debris (LWD) placement, monitoring of the LWD and treatments, and provide Chelan PUD an accomplishment report of how funds were administered. Sixteen large pieces of LWD approximately 655 square feet are part of our required mitigation.

Eight hundred fifty eight tons of rock were used at this site what follows is a pictorial summary of the treatments, of special note is the anchoring of the Large Woody Debris that was used in the treatments.



LWD was pre-stage at the uplake portion of the treatment site 568 tons of rock were pre-stage at this site during early December 2008. Approximately 356 linear feet of shoreline were treated on the up lake side of site 59 with 241 linear feet treated on the down lake portion of the site.



Placement of rock started and was completed in March of 2009. A Komat'su 220 excavator was the primary rock moving machine. All full treatment areas used Geotex 801 fabric cloth 12 feet wide was placed over coir wattles that were placed at 1100 and 1104 elevations, fabric was placed near the top of the treatment and into the toe trench. A small toe trench was excavated below 1100 feet with approximately $\frac{1}{2}$ of the excavated material going upslope to create a softer slope and some be pulled in front of the toe of the trench.

The following photograph shows (LWD# 1).



LWD # 1

The photograph shows (LWD# 1) our first rock anchored piece of LWD it has 3 large rock on top of the log and is side pinned by rock. This is treatment area "A" which called for single large rock. We had additional rock and beefed up the treatment.



(LWD #2)

This shows a shoreline view of LWD # 2 (ends are at orange stakes) the piece is down at 1099 feet of elevation and pinned under large rocks. Smaller woody debris that was not of suitable size but naturally washed up in this bay is re-distributed behind and in front of treatment with no attempt to anchor it.



(Top view of LWD #2 pinned with rock)



(LWD # 3 half buried at 1099 feet elevation (note close flagged lathe), 2 large and 2 med rocks pin the log, medium piece “trapped” with one pin point behind anchored LWD. This top log is not a counted mitigation piece of LWD, but still pinned. This is the beginning of treatment C a full T1 type of treatment with fabric cloth and waddles.



(LWD # 4) LWD #4 is between flagged stakes and pinned with 2 large rock with minor LWD placed behind anchored log. The intent here is that # 4 is anchored at 1099 feet elevation and will be under water, anchoring rock should keep minor LWD behind it but allow some movement.



(LWD # 5) LWD #5 is one of the larger pieces of LWD it is double cabled to large rock with ½ inch stainless steel cable and epoxy cemented into rock with Hilti HY 150 adhesive. Shoreline texture of this area was deliberately left rough to mimic original conditions recorded in the 1999 survey photographs CD31 FR 13 and CD 31 FR14.



(LWD # 6) LWD # 6 (between flagged stakes) is a large 30 foot x 18 inch diameter tree bole that is double rocked and double cabled to rocks it is at the very toe of the treatment approximately 1098.5 -1099. Feet of elevation. Smaller woody debris has been placed on top of treated area to help naturalize the site with scattered pieces of “beached” wood. Recreational rock steps (B1) from the upland campsite are right of the old historic steel piling in the photograph.



(Treatment B1) Rock steps for recreational access to water, treatment zone C1 ends at root wad right of the lathe and flagging. Large 4-5 foot relatively flat rock was used to create recreational access path.



(LWD # 8 front with pink flagged lathe, and LWD # 7 behind, beach view)
Both LWD pieces are cabled with LWD # 7 partially buried below 1100 Feet elevation.
LWD # 8 is at 1099 approximately top of log. This is treatment zone D1 planned as a
single large rock with LWD treatment, however due to having additional rock available

we choose to improve and beef up this treatment area. Note large blackish rock behind LWD # 8.



(LWD #7 and #8 side view)

This picture shows double cables on piece #7 (behind large black rock) and rock pinning downlake end. LWD piece # 8 is partially buried with rock on the buried end, with cable on the downlake end.



(LWD #10 foreground and LWD # 9 with large root wad)

Both left ends of these logs are partially buried LWD #10 is buried under the root wad of # 8. Rocks on top of and cables are used on both pieces of LWD. This is still treatment zone D1. LWD pieces # 11 and 12 are located behind # 9's large root wad.



(LWD # 11 and 12)

These pieces of LWD have rock placed on top of the down lake end and are trapped behind the large root wad of LWD # 9.



(B2 Recreational Rock Steps)

This photograph shows treatment zones C2 and B2, C2 is the full treatment left of the steps. At the base of the large point rock is approximately 40 yards of surplus rock for additional repairs should they be needed.



(Side view of surplus rock)

Site C3 full treatment continued on the other side of the rock for 17 feet.

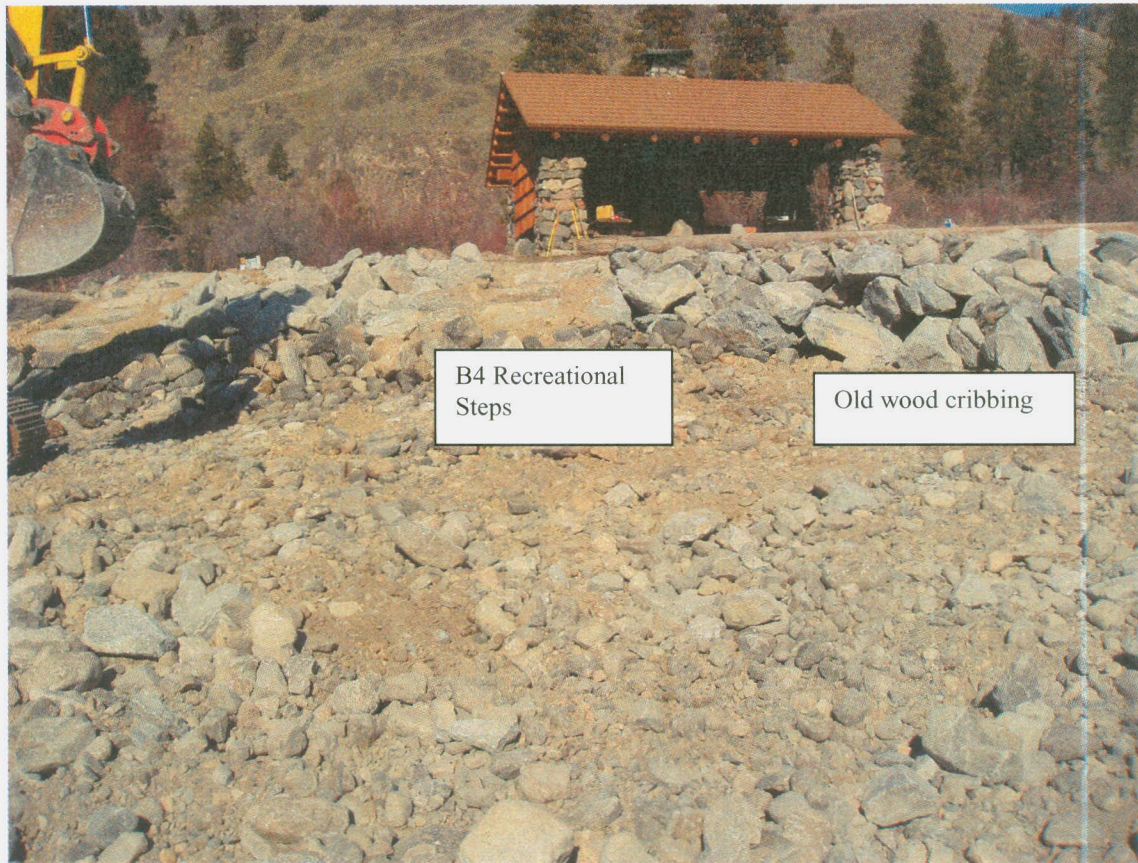


Approximately 190 tons of pre-placed rock for treatments D2 – E2, for treating 148 feet of erosion control repair.

Top photo is approximately 20 feet of spot rock treatment in area D2.



B3 recreational steps are right of the large black rock followed by treatment area E1 a fully treated area with fabric cloth and waddles.



Since Mitchell Creek Shelter is the hub all shoreline water activities 3 different sets of rock steps were planned to facilitate user access to the Lake via the constructed steps; two in front and one along side of Mitchell Creek.



B5 recreational steps leading from Mitchell Shelter area to Lake Chelan and Mitchell Creek. Rock next to creek to pink flagged lathe is rock over exposed wire basket gabion from 1980's



Top view of treated area around Mitchell Creek Shelter.



(LWD # 13 and # 14)

These pieces of LWD are down lake of Mitchell Creek. They are anchored by rock piles over the LWD.



Upper end of LWD # 13 anchored with large single rock on top of LWD.



(LWD # 15)

LWD # 15 is anchored by two large piles of rock. Treatment areas F and G approximately 66 feet are treated with a double row of rock and this one large anchored piece of LWD. Despite having extra rock the decision was made to stay with the two forms of proposed treatments.



(LWD # 16)

LWD # 16 is anchored by a large single rock centered on top of the log between two other large rocks.



Mitchell Creek site 59 end of treatment, F1 single rock treatment.



Storage location of rock to beef up future treatments approximately 45 yds.