# PAYNE DAIRY-JUMPING RUN
# STREAM RESTORATION
# YEAR 2 MONITORING REPORT
# JANUARY 2003

DESIGN BID BUILD PROJECT

CONSULTANT: S & EC

## Introduction

Soil & Environmental Consultants, PA (S&EC) was contracted by the North Carolina Wetland Restoration Program (WRP) to complete the second year monitoring of the Jumping Run Stream Mitigation Site located in Alexander County, North Carolina within the Payne Dairy Property.

Field work was initiated on December 16 and completed on the 17th, 2002. A group of four individual from S&EC completed the field work consisting of the longitudinal and cross-sectional channel profile survey, pebble counts, photographic documentation, vegetation surveys, overall channel conditions and in-channel structure inspection. Extreme attention to detail was employed to replicate the previously utilized methodologies and to locate the established survey locations as depicted on the plan sheets so that the collected data would be comparable to previously compiled and plotted data.

Geomorphic data gathered during the Year 2 monitoring field work was plotted in color along with previously compiled monitoring data (Year 0 and 1) for comparison purposes. Vegetation data was plotted adjacent to last year's survey results.

## Methodology

Prior to the initial site visit of the Jumping Run Stream Mitigation Site, S&EC reviewed the previous year's monitoring report completed and compiled by Kimley-Horn and Associates, Inc (KHA), dated December 2001. This report included the Year 0 ("as built") and Year 1 monitoring reports. During the review of the report, the methodologies previously utilized and survey locations set by KHA were determined so that they could be replicated and located in the field.

Cross-section pins, established by KHA during the "as built" (year 0) survey, were located utilizing the supplied plan sheets and a metal detector. Once the pins were located a wooden stake was driven into the ground and a 100-foot tape was stretched across the cross-section to guide the rod man. S&EC used a total station to collect and compile all of the channel survey data.

## Channel Morphology

### Channel Stability

Based on the observations completed during the inspection of the entire length of restored channel and the multiple grade control structures installed along the alignment, the channel is apparently relatively stable although the vertical profile is still in preliminary stages of adjustment as is evident from the cross-sectional and longitudinal surveys (Areas 1-4) enclosed.

The majority of the rock vanes were functioning properly by holding grade and concentrating flow velocities toward the center of the channel and away from the channel banks. A few of the rock vanes have been damaged by past storm events. A few structures have shifted and in extreme cases sections of the structure have become dislodged and therefore are no longer holding the designed channel invert. The rock vane located downstream of photo point 32 as depicted on the plan sheets has had the primary top rock, which sets the invert elevation, dislodged resulting in the formation of a moderate headcut that has migrated approximately 25 feet upstream. This structure is also piping. Piping is the result of base flow infiltrating through

or under the structure which could potentially lead to more devastating channel damage (i.e. downstream bank erosion and severe headcutting) if it accelerates.

The log structures that were installed perpendicular to stream flow and retrofitted with a base flow notch were observed in similar condition throughout the length of the project. Bank scour was consistently located immediately adjacent to and downstream of the logs resulting in minor near bank erosion and channel scour. Additional channel scour below the structures could eventually result in failure if the scour pool continues to deepen, subsequently undercutting the footing of the structure. An additional concern was the presence of minor piping observed under a few of the log vanes. These structures will need to be closely monitored because failure would result in aggressive headcutting since the log would promote channel bed erosion once flow became established under the structure.

The horizontal alignment of the channel appears to be stable with only minor bank erosion observed throughout the length of the project. No major bank failures or shoot cutoffs were observed during the field reconnaissance.

***Area 1***

The riffle cross-section compared to the two previous surveys has begun to degrade slightly and the pool cross-section continues to aggrade following the trend evident from the previous surveys. The conditions of the banks appear to be relatively stable. Apparently, this section of channel dried up this past summer during the drought for an extended period of time allowing herbaceous plants consisting primarily of *Juncus* and *Carex* spp. to become established within the channel thalweg. As a result the channel has become well vegetated further stabilizing and protecting the banks from potential erosive storm flows. Despite the aggressive vegetation growth, the headcut identified last year at station 2+18 has extended approximately 20 feet upstream. Another trend observed after plotting the Year 2 data over the previous profiles, is that the majority of this reach is degrading and that the longitudinal profile is likely adjusting after every bankfull or near bankfull event.

Although the cumulative pebble count (combination of the pool and riffle pebble counts) for this section shows an increase in particle coarseness, the pool is significantly coarser than the riffle. This may be due to the degradation observed along the majority of this reach compounded by the characteristics of the parent material excavated when the channel was realigned to the current configuration.

Although, the vertical profile is actively adjusting the trend does not currently appear to be detrimental. The recommendation is to closely monitor this section as prescribed and allow the channel to naturally equilibrate.

***Area 2***

The cross-section profiles remain essentially identical to the previous year's data; the most prominent change was the slight increase of the pool depth. As notice in Area 1, the channel longitudinal profile is apparently adjusting and as a result is primarily degrading resulting in the formation of more defined bed features subsequently diversifying channel habitat. Herbaceous vegetation has also become established within the active channel along this section of reach, which has provided bank protection and stability. The horizontal alignment appears to be stable despite the obvious vertical adjustments. Bank slump and erosion was minimal along this area.

Based on the completed pebble count the channel pavement is coarsening. The riffle is significantly coarser than the pool which is what is typically expected.

Based on the field observation and the comparison of the previously compiled monitoring data, the recommendation is to allow this section to continue to vertically adjust naturally without any intervention, while closely monitoring the project.

*Area 3*

The riffle cross-section was essentially identical to the previously plotted profiles from year 0 and 1. The pool cross-section is skewed to the left as compared to previously collected profile data. During the field reconnaissance a depositional feature was observed immediately downstream which may be an indication that the right bank of the pool is becoming undercut and eroding, which could potentially lead to lateral channel migration. This may be the result of a poorly installed and aligned root wad that is refracting storm flows under itself increasing shear stress along the near bank area versus deflecting flows away from the high stress bank as is the intent of this structure.

The longitudinal profile has become more defined as the pools have deepened and the installed grade control structures are effectively holding the invert elevation at those points. Although the pools are becoming deeper, there was no indication that the overall length of channel was becoming degraded.

The channel substrate continues to coarsen over time as depicted by the pebble count data plotted for Area 3 represented by the shift of the graph to the right. The riffle within this section was coarser than the pool.

No maintenance recommendations are being proposed for this section of channel other than continual monitoring.

*Area 4*

The cross-sections surveyed were similar to previous surveys, although the outside bend of the pool cross-section continues to erode as is evident from the plotted cross-section data and the enclosed photographs. The longitudinal profile as observed in the previously discussed channel sections is adjusting vertically and several of the pools located within this segment are apparently elongating. Channel degradation is minimal.

The pebble count indicates that the bed material is continuing to coarsen as indicted with a shift to the right of the Wolman Pebble Count curve.

The only recommendation for this section of channel is to stabilize the outside bend of the pool cross-section, which continues to erode. This could be achieved by flattening the vertical slope, lining it with an erosion control blanket and live staking the area.

## Vegetation

S&EC biologist attempted to replicate the approximate location of the belted transects as indicated on the plan sheets titled Vegetation Plan. Since these sample plots were not surveyed, staked or tied to any reference features on site, the vegetation surveys may not have been

completed along the exact transect as completed during the monitoring years 0 and 1. Transect lengths were replicated per previous specification.

Supplemental plantings of approximately 6,400 individuals were installed April 2002 because of the low survival rate of the bare root specimens previously planted in the flood plain. Species planted included the following: red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), persimmon (*Diospyros virginiana*), green ash (*Fraxinus pennsylvanica*), sugarberry (*Celtis laevigata*), American sycamore (*Platanus occidentalis*), river birch (*Betula nigra*), white oak (*Quercus alba*), willow oak (*Quercus phellos*), buttonbush (*Cephalanthus occidentialis*), elderberry (*Sambucus canadensis*), silky dogwood (*Cornus amomum*), and spicebush (*Lindera benzion*).

### *Recorded Data*

As completed in previous years, the number of live woody stems consisting of bare root or live stakes was recorded per plot by species. Herbaceous cover was not assessed because the field reconnaissance was completed during an inappropriate season to effectively assess cover and species diversity.

Four belted bare root transects were replicated as completed during previous surveys. The average number of stems double from the year 1 results from 2.5 to 4.5 stems per transect. The majority of the individuals located and counted within the plots consisted of the supplemental plantings installed the previous spring – April 2002. Compared to the previous year, which consisted of four species, the year 2 data indicates an increase in diversity of eight species. Despite the installation of the supplemental plantings, target densities of 14 stems per plot are still not being achieved. This may be the result of a combination of environmental factors such as recent catastrophic climatic events (this past summer's record drought), soil pH and chemistry, and mortality resulting from animal browse.

Eight belted transects were completed resulting in and reduction of the average stem count from 23 (Year 1) to 15.6 (Year 2) stems per transect. The number of live stakes present varied from 9 to 23 stems, with Plot #2 encompassing a few of the supplemented bare root stock planted this past spring. A field observation made during the vegetation survey was the presence and potential proliferation of *Ligustrum sinese* across the site since there is a very large and mature population located immediately downstream of Plot #2. Ligustrum was identified in Plots #2 and #9. A positive trend observed was the presence volunteer species consisting of tag alder (*Alnus serrulata*) and black willow located sporadically within the bankfull channel.

## Recommendations

### *Stream Channel*

Because the observed damages to structures are currently minor, no repairs are recommended at this time. It is recommended that a site inspection be completed early to mid-spring preferably following a bankfull event, to confirm stability. The purpose of the inspection would be to verify that no detrimental channel or bank damage is progressing as a result of currently damaged structures. The erosive bank located within Area 4 should be repaired by reducing the slope of the vertical bank, seeding the area, lining the bank with an erosion control blanket and live staking it with willow or silky dogwood. This repair could easily be accomplished manually without the aid of heavy mechanical equipment and the live stakes could be harvested from the site.

*Vegetation*

Bare-root densities are still well below the mitigation requirements although supplemental plantings were installed spring 2002. Additional bare root seedling will need to be installed in order to increase tree densities to target levels. Prior to planting additional bare root specimens, a site visit coordinated with the proposed inspection of the stream proposed for spring 2003 should be completed to visually determine survivability throughout the site during leaf-out. Following the field inspection the appropriate methods of site preparation (i.e. soil amendments) and planting densities can be determined. In areas were *Fescue* is dominate, resulting in poor bare root survival, an herbaceous weed control such as Oust© should be applied in late winter/early spring prior to bud break. The large stand of *Ligustrum*, an invasive woody species, located along the left bank of the stream channel below Area 4 should also be eradicated. This can be achieved by cutting the individual stems down with hand tools or a chain saw followed by spraying each stump with a mix of Garlon© and Arsenal© to kill the root system and prevent re-sprouting. After spring leaf-out, any remaining privet or other invasive species should be sprayed with a systemic herbicide such as Accord©. Removal of the cutting is not necessary if completed prior to the fruiting period (mid to late summer).

Area 1 will need to be re-staked as recommended last year. These live stakes were likely killed by the drought and may also be affected by soil conditions; therefore a soil amendment may be required. A soil sample should be collected within this area and tested for fertility, in order to apply the correct amendment rates.

## Year 2-Vegetation Plots

| Plot #1 (Bareroot) | (10x100) |
|---|---|
| *Pinus taeda* | 2 |
| *Cornus drummondii* | 1 |

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| Plot #2 (Stakes) | (5x50) |
|---|---|
| *Salix nigra* | 15 |
| *Cornus amomum* | 8 |
| *Sambucus canadensis* | 1 |
| *Viburnum dentatum* | 0 |

| Plot #3 (Stakes) | (5x50) |
|---|---|
| *Salix nigra* | 13 |
| *Cornus amomum* | 15 |
| *Sambucus canadensis* | 0 |
| *Viburnum dentatum* | 0 |

| Plot #4 (Bareroot) | (10x100) |
|---|---|
| Cornus drummondii | 3 |
| Juglans nigra | 1 |

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| Plot #5 (Stakes) | (5x100) |
|---|---|
| *Salix nigra* | 27 |
| *Cornus amomum* | 18 |
| *Sambucus canadensis* | 1 |
| *Viburnum dentatum* | 0 |

| Plot #6 (Stakes) | (5x100) |
|---|---|
| *Salix nigra* | 39 |
| *Cornus amomum* | 15 |
| *Sambucus canadensis* | 0 |
| *Viburnum dentatum* | 0 |

| Plot #7 (Bareroot) | (10x100) |
|---|---|
| Pinus virginiana | ~~1~~ |

| Plot #8 (Stakes) | (5x50) |
|---|---|
| *Salix nigra* | 10 |
| *Cornus amomum* | 5 |
| *Sambucus canadensis* | 0 |
| *Viburnum dentatum* | 1 |

| Plot #9 (Stakes) | (5x50) |
|---|---|
| *Salix nigra* | 9 |
| *Cornus amomum* | 3 |
| *Sambucus canadensis* | 0 |
| *Viburnum dentatum* | 0 |

| Plot #10 (Stakes) | (5x50) |
|---|---|
| *Salix nigra* | 11 |
| *Cornus amomum* | 9 |
| *Sambucus canadensis* | 0 |
| *Viburnum dentatum* | 2 |

| Plot #11 (Stakes) | (5x50) |
|---|---|
| *Salix nigra* | 18 |
| *Cornus amomum* | 9 |
| *Sambucus canadensis* | 0 |
| *Viburnum dentatum* | 2 |

| Plot #12 (Bareroot) | (10x100) |
|---|---|
| *Juglans nigra* | 1 |
| *Cornus drummondii* | 1 |

8 (m)

| Plot #1 (Bareroot) | (10x100) |
|---|---|
| *Diospyros virginiana* | 4 |
| *Celtis laevigata* | 1 |

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| Plot #2 (Stakes & bareroot-2002) | (5x50) |
|---|---|
| *Salix nigra* | 2 |
| *Cornus amomum* | 1 |
| *Sambucus canadensis* | 1 |
| *Acer rubrum* | 1 |
| *Quercus phellos* | 2 |
| *Celtis laevigata* | 1 |
| *Ligustrum sinense* | 6 |

| Plot #3 (Stakes & bareroot-2002) | (5x50) |
|---|---|
| *Salix nigra* | 10 |
| *Cornus amomum* | 12 |
| *Alnus serrulata* | 1 |

| Plot #4 (Bareroot) | (10x100) |
|---|---|
| *Cornus amomum* | 1 |
| *Liquidambar styraciflua* | 4 |
| *Quercus alba* | 1 |
| *Quercus phellos* | 1 |
| *Betula nigra* | 1 |

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| Plot #5 (Stakes) | (5X50) |
|---|---|
| *Salix nigra* | 11 |
| *Cornus amomum* | 7 |
| *Sambucus canadensis* | 1 |
| *Alnus serrulata* | 4 |

| Plot #6 (Stakes) | (5x50) |
|---|---|
| *Salix nigra* | 7 |
| *Cornus amomum* | 2 |

| Plot #7 (Bareroot) | (10x100) |
|---|---|
| Pinus virginiana | ~~1~~ |
| Diospyros virginiana | 1 |

4 (m)

| Plot #8 (Stakes) | (5x50) |
|---|---|
| *Salix nigra* | 10 |
| *Cornus amomum* | 4 |
| *Sambucus canadensis* | 2 |
| *Alnus serrulata* | 1 |

| Plot #9 (Stakes) | (5x50) |
|---|---|
| *Salix nigra* | 6 |
| *Cornus amomum* | 6 |
| *Ligustrum sinense* | 4 |

| Plot #10 (Stakes) | (5x50) |
|---|---|
| *Salix nigra* | 4 |
| *Cornus amomum* | 10 |

| Plot #11 (Stakes) | (5x50) |
|---|---|
| *Salix nigra* | 3 |
| *Cornus amomum* | 5 |
| *Alnus serrulata* | 1 |

| Plot #12 (Bareroot) | (10x100) |
|---|---|
| *Liquidambar styraciflua* | ~~1~~ |
| *Quercus phellos* | 1 |
| *Quercus alba* | 1 |

8(m)

$\bar{X}$ = 14 trees/acre

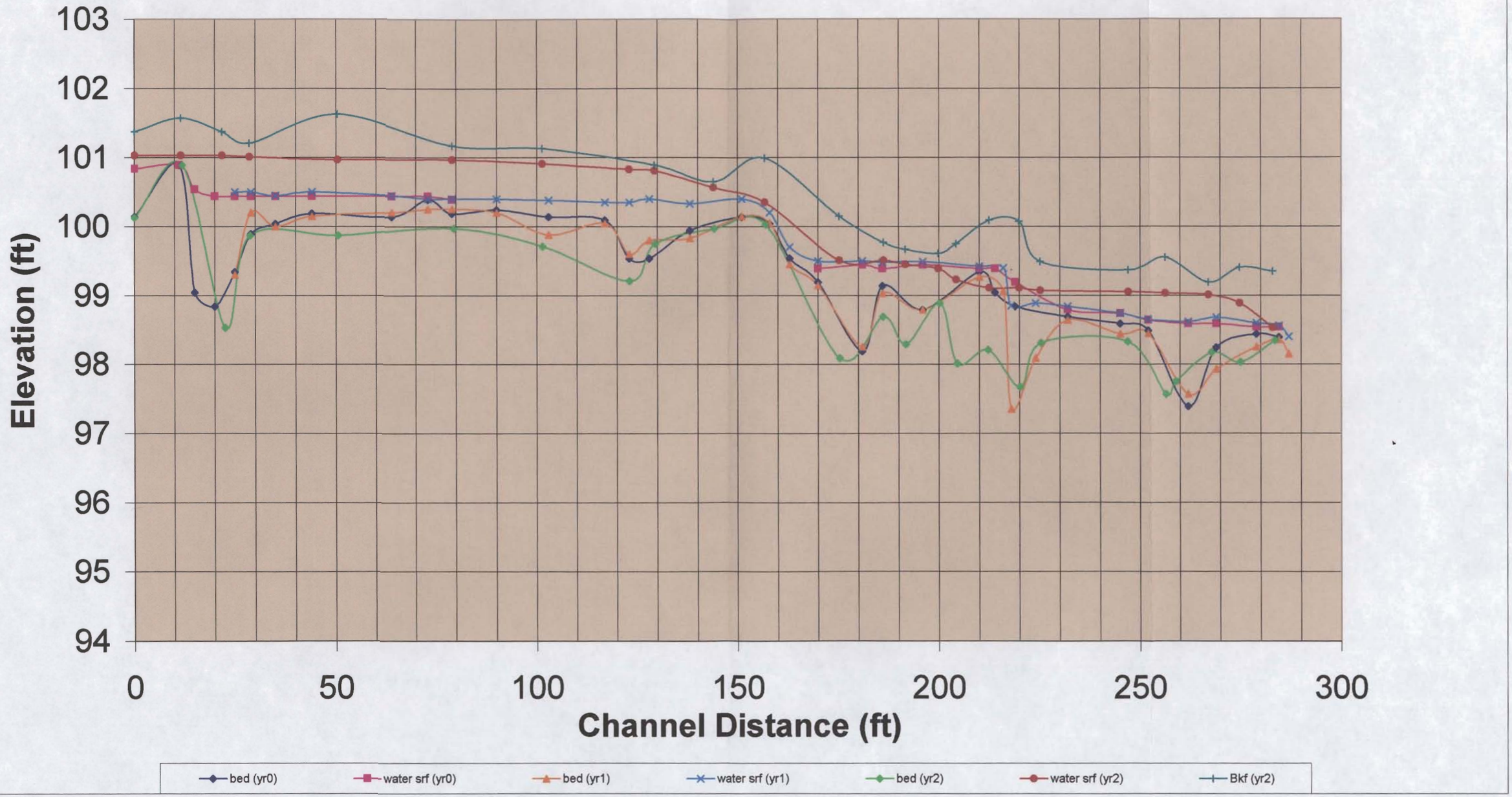
**YEAR 2**

| | PEBBLE COUNT | Combined | | AREA 1 | | | | | AREA 2 | | | | | AREA 3 | | | | | AREA 4 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Metric (mm) | English inches | Particle | Count | Tot # | % Tot | % Cum | | Count | Tot # | % Tot | % Cum | | Count | Tot # | % Tot | % Cum | | Count | Tot # | % Tot | % Cum |
| 0.062 | <.062 | <.002 | Silt/Clay | 18 | 18 | 0.18 | 0.18 | | 11 | 11 | 0.11 | 0.11 | | 1 | 1 | 0.01 | 0.01 | | 4 | 4 | 0.04 | 0.04 |
| 0.125 | .062-.125 | .002-.01 | Very Fine | 13 | 31 | 0.13 | 0.31 | | 13 | 24 | 0.13 | 0.24 | | | 1 | 0.00 | 0.01 | | 4 | 8 | 0.04 | 0.08 |
| 0.25 | .125-.25 | | Fine | 9 | 40 | 0.09 | 0.40 | | 12 | 36 | 0.12 | 0.36 | | 5 | 6 | 0.05 | 0.06 | | 12 | 20 | 0.12 | 0.20 |
| 0.5 | .25-.5 | .01-.02 | Medium | 10 | 50 | 0.10 | 0.50 | | 9 | 45 | 0.09 | 0.45 | | 11 | 17 | 0.11 | 0.17 | | 2 | 22 | 0.02 | 0.22 |
| 1 | .5-1.0 | .02-.04 | Coarse | 8 | 58 | 0.08 | 0.58 | | 8 | 53 | 0.08 | 0.53 | | 8 | 25 | 0.08 | 0.25 | | 8 | 30 | 0.08 | 0.30 |
| 2 | 1.0-2.0 | .04-.08 | Very Coarse | 9 | 67 | 0.09 | 0.67 | | 13 | 66 | 0.13 | 0.66 | | 10 | 35 | 0.10 | 0.35 | | 7 | 37 | 0.07 | 0.37 |
| 4 | 2-4 | .08-.16 | Very Fine | 12 | 79 | 0.12 | 0.79 | | 10 | 76 | 0.10 | 0.76 | | 11 | 46 | 0.11 | 0.46 | | 4 | 41 | 0.04 | 0.41 |
| 5.7 | 4-5.7 | .16-.22 | Fine | 1 | 80 | 0.01 | 0.80 | | 3 | 79 | 0.03 | 0.79 | | 3 | 49 | 0.03 | 0.49 | | 4 | 45 | 0.04 | 0.45 |
| 8 | 5.7-8 | .22-.31 | Fine | 6 | 86 | 0.06 | 0.86 | | 2 | 81 | 0.02 | 0.81 | | 2 | 51 | 0.02 | 0.51 | | 5 | 50 | 0.05 | 0.50 |
| 11.3 | 8-11.3 | .31-.44 | Medium | 4 | 90 | 0.04 | 0.90 | | 2 | 83 | 0.02 | 0.83 | | 4 | 55 | 0.04 | 0.55 | | 2 | 52 | 0.02 | 0.52 |
| 16 | 11.3-16 | .44-.63 | Medium | 9 | 99 | 0.09 | 0.99 | | 6 | 89 | 0.06 | 0.89 | | 5 | 60 | 0.05 | 0.60 | | 10 | 62 | 0.10 | 0.62 |
| 22.6 | 16-22.6 | .63-.89 | Coarse | | 99 | 0.00 | 0.99 | | 3 | 92 | 0.03 | 0.92 | | 10 | 70 | 0.10 | 0.70 | | 7 | 69 | 0.07 | 0.69 |
| 32 | 22.6-32 | .89-1.26 | Coarse | | 99 | 0.00 | 0.99 | | 1 | 93 | 0.01 | 0.93 | | 3 | 73 | 0.03 | 0.73 | | 7 | 76 | 0.07 | 0.76 |
| 45 | 32-45 | 1.26-1.77 | Very Coarse | | 99 | 0.00 | 0.99 | | 3 | 96 | 0.03 | 0.96 | | 7 | 80 | 0.07 | 0.80 | | 10 | 86 | 0.10 | 0.86 |
| 64 | 45-64 | 1.77-2.5 | Very Coarse | 1 | 100 | 0.01 | 1.00 | | 1 | 97 | 0.01 | 0.97 | | 9 | 89 | 0.09 | 0.89 | | 8 | 94 | 0.08 | 0.94 |
| 90 | 64-90 | 2.5-3.5 | Small | | 100 | 0.00 | 1.00 | | 1 | 98 | 0.01 | 0.98 | | 6 | 95 | 0.06 | 0.95 | | 5 | 99 | 0.05 | 0.99 |
| 128 | 90-128 | 3.5-5 | Small | | 100 | 0.00 | 1.00 | | 1 | 99 | 0.01 | 0.99 | | 4 | 99 | 0.04 | 0.99 | | 1 | 100 | 0.01 | 1.00 |
| 180 | 128-180 | 5-7.1 | Large | | 100 | 0.00 | 1.00 | | 1 | 100 | 0.01 | 1.00 | | | 99 | 0.00 | 0.99 | | | 100 | 0.00 | 1.00 |
| 256 | 180-256 | 7.1-10.1 | Large | | 100 | 0.00 | 1.00 | | | 100 | 0.00 | 1.00 | | 1 | 100 | 0.01 | 1.00 | | | 100 | 0.00 | 1.00 |
| 362 | 256-362 | 10.1-14.3 | Small | | 100 | 0.00 | 1.00 | | | 100 | 0.00 | 1.00 | | | 100 | 0.00 | 1.00 | | | 100 | 0.00 | 1.00 |
| 512 | 362-512 | 14.3-20 | Small | | 100 | 0.00 | 1.00 | | | 100 | 0.00 | 1.00 | | | 100 | 0.00 | 1.00 | | | 100 | 0.00 | 1.00 |
| 1024 | 512-1024 | 20-40 | Medium | | 100 | 0.00 | 1.00 | | | 100 | 0.00 | 1.00 | | | 100 | 0.00 | 1.00 | | | 100 | 0.00 | 1.00 |
| 2048 | 1024-2048 | 40-80 | Lg Boulders | | 100 | 0.00 | 1.00 | | | 100 | 0.00 | 1.00 | | | 100 | 0.00 | 1.00 | | | 100 | 0.00 | 1.00 |
| 8192 | Bedrock | Bedrock | Bedrock | | 100 | 0.00 | 1.00 | | | 100 | 0.00 | 1.00 | | | 100 | 0.00 | 1.00 | | | 100 | 0.00 | 1.00 |

**YEAR 2**

| | PEBBLE COUNT | Riffle | | AREA 1 | | | | | AREA 2 | | | | | AREA 3 | | | | | AREA 4 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Metric (mm) | English inches | Particle | Count | Tot # | % Tot | % Cum | | Count | Tot # | % Tot | % Cum | | Count | Tot # | % Tot | % Cum | | Count | Tot # | % Tot | % Cum |
| | <.062 | <.002 | Silt/Clay | 10 | 10 | 0.20 | 0.20 | | 5 | 5 | 0.10 | 0.10 | | | 0 | 0.00 | 0.00 | | | 0 | 0.00 | 0.00 |
| | .062-.125 | .002-.01 | Very Fine | 13 | 23 | 0.26 | 0.46 | | 5 | 10 | 0.10 | 0.20 | | | 0 | 0.00 | 0.00 | | 2 | 2 | 0.04 | 0.04 |
| | .125-.25 | | Fine | 8 | 31 | 0.16 | 0.62 | | 1 | 11 | 0.02 | 0.22 | | 3 | 3 | 0.06 | 0.06 | | 3 | 5 | 0.06 | 0.10 |
| | .25-.5 | .01-.02 | Medium | 7 | 38 | 0.14 | 0.76 | | 4 | 15 | 0.08 | 0.30 | | 5 | 8 | 0.10 | 0.16 | | 1 | 6 | 0.02 | 0.12 |
| | .5-1.0 | .02-.04 | Coarse | 3 | 41 | 0.06 | 0.82 | | 3 | 18 | 0.06 | 0.36 | | 2 | 10 | 0.04 | 0.20 | | 3 | 9 | 0.06 | 0.18 |
| | 1.0-2.0 | .04-.08 | Very Coarse | 1 | 42 | 0.02 | 0.84 | | 8 | 26 | 0.16 | 0.52 | | | 10 | 0.00 | 0.20 | | 4 | 13 | 0.08 | 0.26 |
| | 2-4 | .08-.16 | Very Fine | 5 | 47 | 0.10 | 0.94 | | 8 | 34 | 0.16 | 0.68 | | 1 | 11 | 0.02 | 0.22 | | 2 | 15 | 0.04 | 0.30 |
| | 4-5.7 | .16-.22 | Fine | | 47 | 0.00 | 0.94 | | 3 | 37 | 0.06 | 0.74 | | 1 | 12 | 0.02 | 0.24 | | 3 | 18 | 0.06 | 0.36 |
| | 5.7-8 | .22-.31 | Fine | 1 | 48 | 0.02 | 0.96 | | | 37 | 0.00 | 0.74 | | | 12 | 0.00 | 0.24 | | | 18 | 0.00 | 0.36 |
| | 8-11.3 | .31-.44 | Medium | | 48 | 0.00 | 0.96 | | | 37 | 0.00 | 0.74 | | | 12 | 0.00 | 0.24 | | 2 | 20 | 0.04 | 0.40 |
| | 11.3-16 | .44-.63 | Medium | 1 | 49 | 0.02 | 0.98 | | 4 | 41 | 0.08 | 0.82 | | 1 | 13 | 0.02 | 0.26 | | 4 | 24 | 0.08 | 0.48 |
| | 16-22.6 | .63-.89 | Coarse | | 49 | 0.00 | 0.98 | | 3 | 44 | 0.06 | 0.88 | | 7 | 20 | 0.14 | 0.40 | | 2 | 26 | 0.04 | 0.52 |
| | 22.6-32 | .89-1.26 | Coarse | | 49 | 0.00 | 0.98 | | 1 | 45 | 0.02 | 0.90 | | 3 | 23 | 0.06 | 0.46 | | 7 | 33 | 0.14 | 0.66 |
| | 32-45 | 1.26-1.77 | Very Coarse | | 49 | 0.00 | 0.98 | | 3 | 48 | 0.06 | 0.96 | | 7 | 30 | 0.14 | 0.60 | | 7 | 40 | 0.14 | 0.80 |
| | 45-64 | 1.77-2.5 | Very Coarse | 1 | 50 | 0.02 | 1.00 | | 1 | 49 | 0.02 | 0.98 | | 9 | 39 | 0.18 | 0.78 | | 6 | 46 | 0.12 | 0.92 |
| | 64-90 | 2.5-3.5 | Small | | 50 | 0.00 | 1.00 | | | 49 | 0.00 | 0.98 | | 6 | 45 | 0.12 | 0.90 | | 4 | 50 | 0.08 | 1.00 |
| | 90-128 | 3.5-5 | Small | | 50 | 0.00 | 1.00 | | 1 | 50 | 0.02 | 1.00 | | 4 | 49 | 0.08 | 0.98 | | | 50 | 0.00 | 1.00 |
| | 128-180 | 5-7.1 | Large | | 50 | 0.00 | 1.00 | | | 50 | 0.00 | 1.00 | | | 49 | 0.00 | 0.98 | | | 50 | 0.00 | 1.00 |
| | 180-256 | 7.1-10.1 | Large | | 50 | 0.00 | 1.00 | | | 50 | 0.00 | 1.00 | | 1 | 50 | 0.02 | 1.00 | | | 50 | 0.00 | 1.00 |
| | 256-362 | 10.1-14.3 | Small | | 50 | 0.00 | 1.00 | | | 50 | 0.00 | 1.00 | | | 50 | 0.00 | 1.00 | | | 50 | 0.00 | 1.00 |
| | 362-512 | 14.3-20 | Small | | 50 | 0.00 | 1.00 | | | 50 | 0.00 | 1.00 | | | 50 | 0.00 | 1.00 | | | 50 | 0.00 | 1.00 |
| | 512-1024 | 20-40 | Medium | | 50 | 0.00 | 1.00 | | | 50 | 0.00 | 1.00 | | | 50 | 0.00 | 1.00 | | | 50 | 0.00 | 1.00 |
| | 1024-2048 | 40-80 | Lg Boulders | | 50 | 0.00 | 1.00 | | | 50 | 0.00 | 1.00 | | | 50 | 0.00 | 1.00 | | | 50 | 0.00 | 1.00 |
| | | | Bedrock | | 50 | 0.00 | 1.00 | | | 50 | 0.00 | 1.00 | | | 50 | 0.00 | 1.00 | | | 50 | 0.00 | 1.00 |

## Longitudinal Profile (AREA 1)



**Longitudinal Profile**
**Jumping Run Creek**
**Monitoring Document**
**AREA 1**

BM 100 year0
BM 100 year1

YEAR 0

| Notes | Station | BS | HI | FS TP | FS bed | depth water | FS BKF | FS TOB | FS BKF | FS TOB | ELEV bed | ELEV water surf | ELEV BKF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pool pin at left bank | | 8.34 | 108.34 | | | | | | | | | | |
| | 0 | 8.34 | 108.34 | | 8.2 | 0.7 | | | 6.3 | | 100.14 | 100.84 | |
| top of rock cross vane | 11.1 | 8.34 | 108.34 | | 7.45 | 0 | | 7.93 | | | 100.89 | 100.89 | |
| pool | 15 | 8.34 | 108.34 | | 9.3 | 1.5 | | | | | 99.04 | 100.54 | |
| | 20 | 8.34 | 108.34 | | 9.5 | 1.6 | | | | | 98.84 | 100.44 | |
| | 25 | 8.34 | 108.34 | | 9 | 1.1 | | | | | 99.34 | 100.44 | |
| end pool/begin glide | 29 | 8.34 | 108.34 | | 8.45 | 0.55 | | | | | 99.89 | 100.44 | |
| | 35 | 8.34 | 108.34 | | 8.3 | 0.4 | | | | | 100.04 | 100.44 | |
| | 44 | 8.34 | 108.34 | | 8.15 | 0.25 | | | | | 100.19 | 100.44 | |
| | 64 | 8.34 | 108.34 | | 8.2 | 0.3 | | | | | 100.14 | 100.44 | |
| top riffle/end glide | 73 | 8.34 | 108.34 | | 7.95 | 0.05 | | | | | 100.39 | 100.44 | |
| xsection riffle | 79 | 8.34 | 108.34 | | 8.15 | 0.2 | | | | | 100.19 | 100.39 | |
| end riffle | 90 | 8.34 | 108.34 | | 8.1 | | | | | | 100.24 | | |
| | 103 | 8.34 | 108.34 | | 8.2 | | | | | | 100.14 | | |
| log vane | 117 | 8.34 | 108.34 | | 8.25 | | | | | | 100.09 | | |
| d/s log vane | 123 | 8.34 | 108.34 | | 8.8 | | | | | | 99.54 | | |
| center of pool | 128 | 8.34 | 108.34 | | 8.8 | | | | | | 99.54 | | |
| end pool | 138 | 8.34 | 108.34 | | 8.4 | | | | | | 99.94 | | |
| start riffle | 151 | 8.34 | 108.34 | | 8.2 | | | | | | 100.14 | | |
| center of notch in log | 158 | 8.34 | 108.34 | | 8.3 | | | | | | 100.04 | | |
| | 163 | 8.34 | 108.34 | | 8.8 | | | | | | 99.54 | | |
| | 170 | 8.34 | 108.34 | | 9.15 | 0.2 | | | | | 99.19 | 99.39 | |
| | 181 | 8.34 | 108.34 | | 10.15 | 1.26 | | | | | 98.19 | 99.44 | |
| | 186 | 8.34 | 108.34 | | 9.2 | 0.25 | | | | | 99.14 | 99.39 | |
| center of pool | 196 | 8.34 | 108.34 | | 9.55 | 0.65 | | | | | 98.79 | 99.44 | |
| end pool | 210 | 8.34 | 108.34 | | 9 | 0.05 | | | | | 99.34 | 99.39 | |
| begin riffle | 214 | 8.34 | 108.34 | | 9.3 | 0.35 | | | | | 99.04 | 99.39 | |
| center of riffle | 219 | 8.34 | 108.34 | | 9.5 | 0.35 | | | | | 98.84 | 99.19 | |
| | 232 | 8.34 | 108.34 | | 9.65 | 0.1 | | | | | 98.69 | 98.79 | |
| | 245 | 8.34 | 108.34 | | 9.75 | 0.15 | | | | | 98.59 | 98.74 | |
| end run/begin pool | 252 | 8.34 | 108.34 | | 9.85 | 0.15 | | | | | 98.49 | 98.64 | |
| center of pool | 262 | 8.34 | 108.34 | | 10.95 | 1.2 | | | | | 97.39 | 98.59 | |
| | 269 | 8.34 | 108.34 | | 10.1 | 0.35 | | | | | 98.24 | 98.59 | |
| | 279 | 8.34 | 108.34 | | 9.9 | 0.1 | | | | | 98.44 | 98.54 | |
| center of rock struc | 284.5 | 8.34 | 108.34 | | 9.95 | 0.15 | | | | | 98.39 | 98.54 | |

YEAR 1

| Notes | Station | BS | HI | FS TP | FS bed | depth water | FS BKF | FS TOB | FS BKF | FS TOB | ELEV bed | ELEV water surf | ELEV BKF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pool pin at left bank | | 8.2 | 108.2 | | | | | | | | | | |
| | 0 | 8.2 | 108.2 | | | | | | | | | | |
| | 20 | 8.2 | 108.2 | | | | | | | | | | |
| | 25 | 8.2 | 108.2 | | 8.9 | 1.2 | | | | | 99.3 | 100.5 | |
| | 29 | 8.2 | 108.2 | | 8 | 0.3 | | | | | 100.2 | 100.5 | |
| | 35 | 8.2 | 108.2 | | 8.2 | 0.45 | | | | | 100 | 100.45 | |
| | 44 | 8.2 | 108.2 | | 8.05 | | | | | | 100.15 | 100.5 | |
| | 64 | 8.2 | 108.2 | | 8 | 0.25 | | | | | 100.2 | 100.45 | |
| | 73 | 8.2 | 108.2 | | 7.95 | 0.15 | | | | | 100.25 | 100.4 | |
| | 79 | 8.2 | 108.2 | | 7.95 | 0.15 | | | | | 100.25 | 100.4 | |
| | 90 | 8.2 | 108.2 | | 8 | 0.2 | | | | | 100.2 | 100.4 | |
| | 103 | 8.2 | 108.2 | | 8.32 | 0.5 | | | | | 99.88 | 100.38 | |
| | 117 | 8.2 | 108.2 | | 8.15 | 0.3 | | | | | 100.05 | 100.35 | |
| | 123 | 8.2 | 108.2 | | 8.6 | 0.75 | | | | | 99.6 | 100.35 | |
| | 128 | 8.2 | 108.2 | | 8.4 | 0.6 | | | | | 99.8 | 100.4 | |
| | 138 | 8.2 | 108.2 | | 8.37 | 0.5 | | | | | 99.83 | 100.33 | |
| | 151 | 8.2 | 108.2 | | 8.05 | 0.25 | | | | | 100.15 | 100.4 | |
| check dam | 158 | 8.2 | 108.2 | | 8.15 | 0.15 | | | | | 100.05 | 100.2 | |
| | 163 | 8.2 | 108.2 | | 8.75 | 0.25 | | | | | 99.45 | 99.7 | |
| | 170 | 8.2 | 108.2 | | 9.05 | 0.35 | | | | | 99.15 | 99.5 | |
| 1' u/s of log structure | 181 | 8.2 | 108.2 | | 9.95 | 1.25 | | | | | 98.25 | 99.5 | |
| | 186 | 8.2 | 108.2 | | 9.17 | 0.45 | | | | | 99.03 | 99.48 | |
| | 196 | 8.2 | 108.2 | | 9.41 | 0.7 | | | | | 98.79 | 99.49 | |
| | 210 | 8.2 | 108.2 | | 8.93 | 0.15 | | | | | 99.27 | 99.42 | |
| top of headcut | 216 | 8.2 | 108.2 | | 9.15 | 0.35 | | | | | 99.05 | 99.4 | |
| bottom of headcut | 218 | 8.2 | 108.2 | | 10.85 | 1.5 | | | | | 97.35 | 98.85 | |
| | 224 | 8.2 | 108.2 | | 10.11 | 0.8 | | | | | 98.09 | 98.89 | |
| | 232 | 8.2 | 108.2 | | 9.56 | 0.2 | | | | | 98.64 | 98.84 | |
| | 245 | 8.2 | 108.2 | | 9.76 | 0.3 | | | | | 98.44 | 98.74 | |
| | 252 | 8.2 | 108.2 | | 9.75 | 0.2 | | | | | 98.45 | 98.65 | |
| | 262 | 8.2 | 108.2 | | 10.63 | 1.05 | | | | | 97.57 | 98.62 | |
| | 269 | 8.2 | 108.2 | | 10.27 | 0.75 | | | | | 97.93 | 98.68 | |
| | 279 | 8.2 | 108.2 | | 9.95 | 0.35 | | | | | 98.25 | 98.6 | |
| | 284.5 | 8.2 | 108.2 | | 9.84 | 0.2 | | | | | 98.36 | 98.56 | |
| Rock Structure | 287 | 8.2 | 108.2 | | 10.05 | 0.25 | | | | | 98.15 | 98.4 | |

**Year 1 - Head cut observed at Station 218**

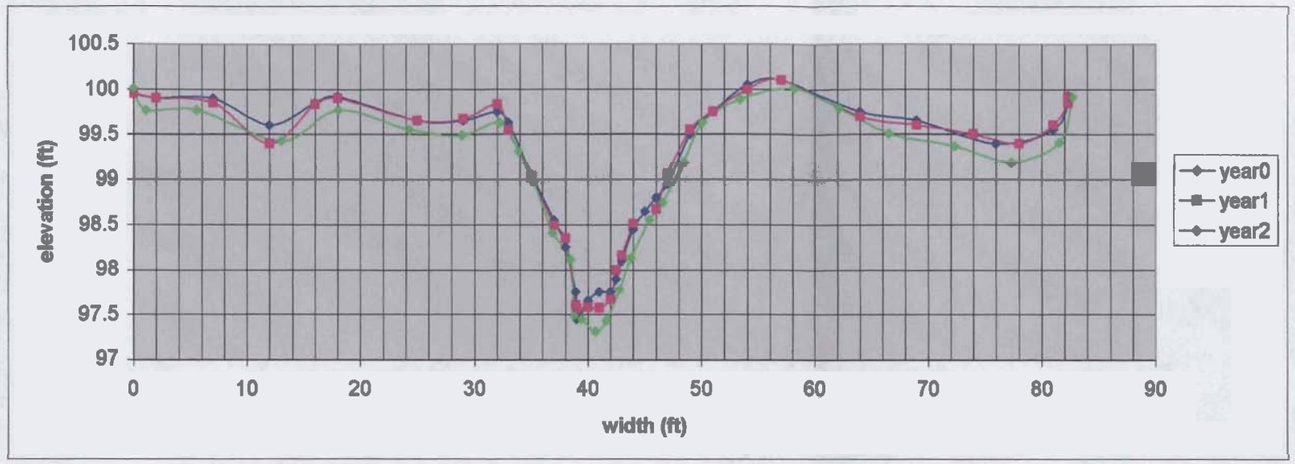
**Year 2**

| Notes | Station | BS | HI | FS TP | FS bed | Station water surf | Station BKF | FS TOB | FS BKF | FS TOB | ELEV bed | ELEV water surf | ELEV BKF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pool pin at left bank-disturbed | | | | | | | | | | | | | |
| TW FNC | 0 | | | | | 0.00 | 0.00 | | | | 100.13 | 101.03 | 101.37 |
| TOP Vane | 11.88 | | | | | 11.53 | 11.53 | | | | 100.89 | 101.03 | 101.57 |
| TWP | 22.59 | | | | | 21.74 | 21.74 | | | | 98.53 | 101.03 | 101.37 |
| TWG | 28.81 | | | | | 28.53 | 28.53 | | | | 99.87 | 101.01 | 101.21 |
| TWR | 50.60 | | | | | 50.35 | 50.35 | | | | 99.87 | 100.97 | 101.63 |
| TW-Riffle X-section | 79.52 | | | | | 79.03 | 79.03 | | | | 99.97 | 100.97 | 101.17 |
| TWR | 101.46 | | | | | 101.34 | 101.34 | | | | 99.71 | 100.91 | 101.13 |
| TWP | 123.12 | | | | | 122.95 | 129.27 | | | | 99.21 | 100.83 | 100.89 |
| TWG | 129.48 | | | | | 129.27 | 143.84 | | | | 99.75 | 100.81 | 100.65 |
| TWRI | 144.03 | | | | | 143.84 | 156.77 | | | | 99.97 | 100.57 | 100.99 |
| TOP Vane | 156.97 | | | | | 156.77 | 175.29 | | | | 100.03 | 100.35 | 100.15 |
| TWR | 175.40 | | | | | 175.29 | 186.24 | | | | 98.09 | 99.51 | 99.77 |
| TWRI | 186.14 | | | | | 186.24 | 191.63 | | | | 98.69 | 99.51 | 99.67 |
| TWP | 191.82 | | | | | 191.63 | 199.82 | | | | 98.29 | 99.45 | 99.61 |
| TWRI | 200.18 | | | | | 199.82 | 204.24 | | | | 98.89 | 99.39 | 99.75 |
| TWS | 204.55 | | | | | 204.24 | 212.50 | | | | 98.01 | 99.23 | 100.09 |
| TWHC | 212.27 | | | | | 212.50 | 219.91 | | | | 98.21 | 99.11 | 100.07 |
| TWS | 220.22 | | | | | 219.91 | 225.15 | | | | 97.67 | 99.11 | 99.49 |
| TWG | 225.44 | | | | | 225.15 | 246.97 | | | | 98.31 | 99.07 | 99.37 |
| TWRI | 246.85 | | | | | 246.97 | 256.33 | | | | 98.33 | 99.05 | 99.55 |
| TW Pool | 256.52 | | | | | 256.33 | 267.01 | | | | 97.57 | 99.03 | 99.19 |
| TW Pool X-section | 259.03 | | | | | 267.01 | 274.78 | | | | 97.75 | 99.01 | 99.41 |
| TWG | 267.81 | | | | | 274.78 | 282.9812 | | | | 98.17 | 98.89 | 99.35 |
| TWRI | 275.06 | | | | | 282.98 | | | | | 98.03 | 98.53 | |
| TOP Vane | 283.6142 | | | | | | | | | | 98.35 | | |

**Cross Section Geometry**
**Jumping Run Creek**
**Monitoring Report**

**AREA 1**
**Section** Riffle **CLASSIFICATION**
**Location** STA 79 (PINS A,B)

H OF I (ft) 105.65 year 0
H OF I (ft) 104.8 year 1

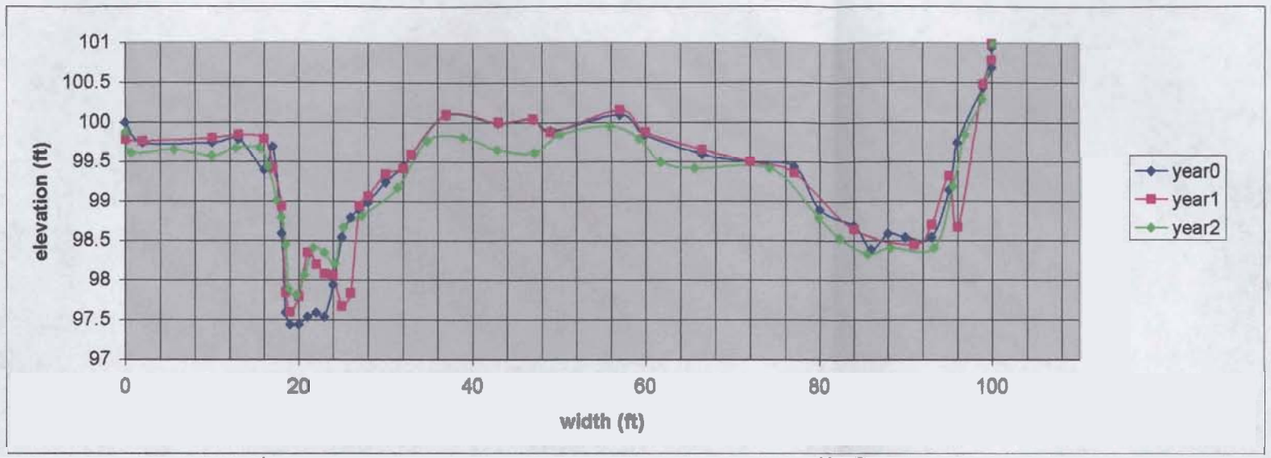



| year 0 | | | | year 1 | | | | year 2 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Notes | Distance (ft) | elevation (ft) | FS (ft) | Notes | Distance (ft) | elevation (ft) | FS (ft) | Notes | Distance (ft) | elevation (ft) |
| grd shot | 0 | 99.95 | 5.7 | grd shot | 0 | 99.95 | 4.85 | PIN-A Disturbed | 0.00 | 100.01 |
| | 2 | 99.9 | 5.75 | | 2 | 99.9 | 4.9 | G | 1.08 | 99.77 |
| | 7 | 99.9 | 5.75 | | 7 | 99.85 | 4.95 | G | 5.54 | 99.77 |
| | 12 | 99.6 | 6.05 | | 12 | 99.4 | 5.4 | G | 13.02 | 99.43 |
| | 16 | 99.85 | 5.8 | | 16 | 99.83 | 4.97 | G | 18.10 | 99.77 |
| | 18 | 99.92 | 5.73 | | 18 | 99.9 | 4.9 | G | 24.31 | 99.55 |
| | 25 | 99.65 | 6 | | 25 | 99.65 | 5.15 | G | 28.94 | 99.49 |
| | 29 | 99.65 | 6 | | 29 | 99.67 | 5.13 | G | 32.24 | 99.63 |
| | 32 | 99.75 | 5.9 | | 32 | 99.83 | 4.97 | G | 33.89 | 99.31 |
| | 33 | 99.63 | 6.02 | | 33 | 99.55 | 5.25 | LBF | 35.15 | 98.99 |
| | 35 | 99.05 | 6.6 | | 35 | 99.03 | 5.77 | G | 36.89 | 98.41 |
| | 37 | 98.55 | 7.1 | | 37 | 98.5 | 6.3 | LEOW | 38.46 | 98.11 |
| | 38 | 98.25 | 7.4 | | 38 | 98.35 | 6.45 | CHN | 38.80 | 97.49 |
| | 38.9 | 97.75 | 7.9 | | 38.9 | 97.6 | 7.2 | CHN | 39.45 | 97.45 |
| | 39 | 97.45 | 8.2 | | 39 | 97.56 | 7.24 | TW | 40.67 | 97.31 |
| | 40 | 97.65 | 8 | | 40 | 97.58 | 7.22 | CHN | 41.64 | 97.43 |
| | 41 | 97.75 | 7.9 | | 41 | 97.57 | 7.23 | CHN | 42.76 | 97.77 |
| | 42 | 97.75 | 7.9 | | 42 | 97.67 | 7.13 | REOW | 43.81 | 98.13 |
| | 42.5 | 97.9 | 7.75 | | 42.5 | 98 | 6.8 | G | 45.43 | 98.55 |
| | 43 | 98.1 | 7.55 | | 43 | 98.16 | 6.64 | RBF | 46.62 | 98.75 |
| | 44 | 98.45 | 7.2 | | 44 | 98.51 | 6.29 | G | 48.46 | 99.19 |
| | 45 | 98.65 | 7 | | 45 | | | G | 50.06 | 99.63 |
| | 46 | 98.8 | 6.85 | | 46 | 98.67 | 6.13 | G | 53.39 | 99.89 |
| | 47 | 98.95 | 6.7 | | 47 | 99.05 | 5.75 | G | 58.14 | 100.01 |
| | 49 | 99.5 | 6.15 | | 49 | 99.55 | 5.25 | G | 62.17 | 99.79 |
| | 51 | 99.75 | 5.9 | | 51 | 99.75 | 5.05 | G | 66.58 | 99.51 |
| | 54 | 100.05 | 5.6 | | 54 | 100 | 4.8 | G | 72.35 | 99.37 |
| | 57 | 100.1 | 5.55 | | 57 | 100.1 | 4.7 | G | 77.33 | 99.19 |
| | 64 | 99.75 | 5.9 | | 64 | 99.7 | 5.1 | G | 81.54 | 99.41 |
| | 69 | 99.65 | 6 | | 69 | 99.6 | 5.2 | PIN-B | 82.72 | 99.91 |
| | 76 | 99.4 | 6.25 | | 74 | 99.5 | 5.3 | | | |
| | 81 | 99.55 | 6.1 | | 78 | 99.4 | 5.4 | | | |
| grd shot | 82.3 | 99.85 | 5.8 | | 81 | 99.6 | 5.2 | | | |
| PIN-B? | 82.3 | 99.93 | 5.72 | grd shot | 82.3 | 99.85 | 4.95 | | | |
| | | 100 | 5.65 | PIN-B? | 82.3 | 99.91 | 4.89 | | | |

**Cross Section Geometry**
**Jumping Run Creek**
**Monitoring Report**

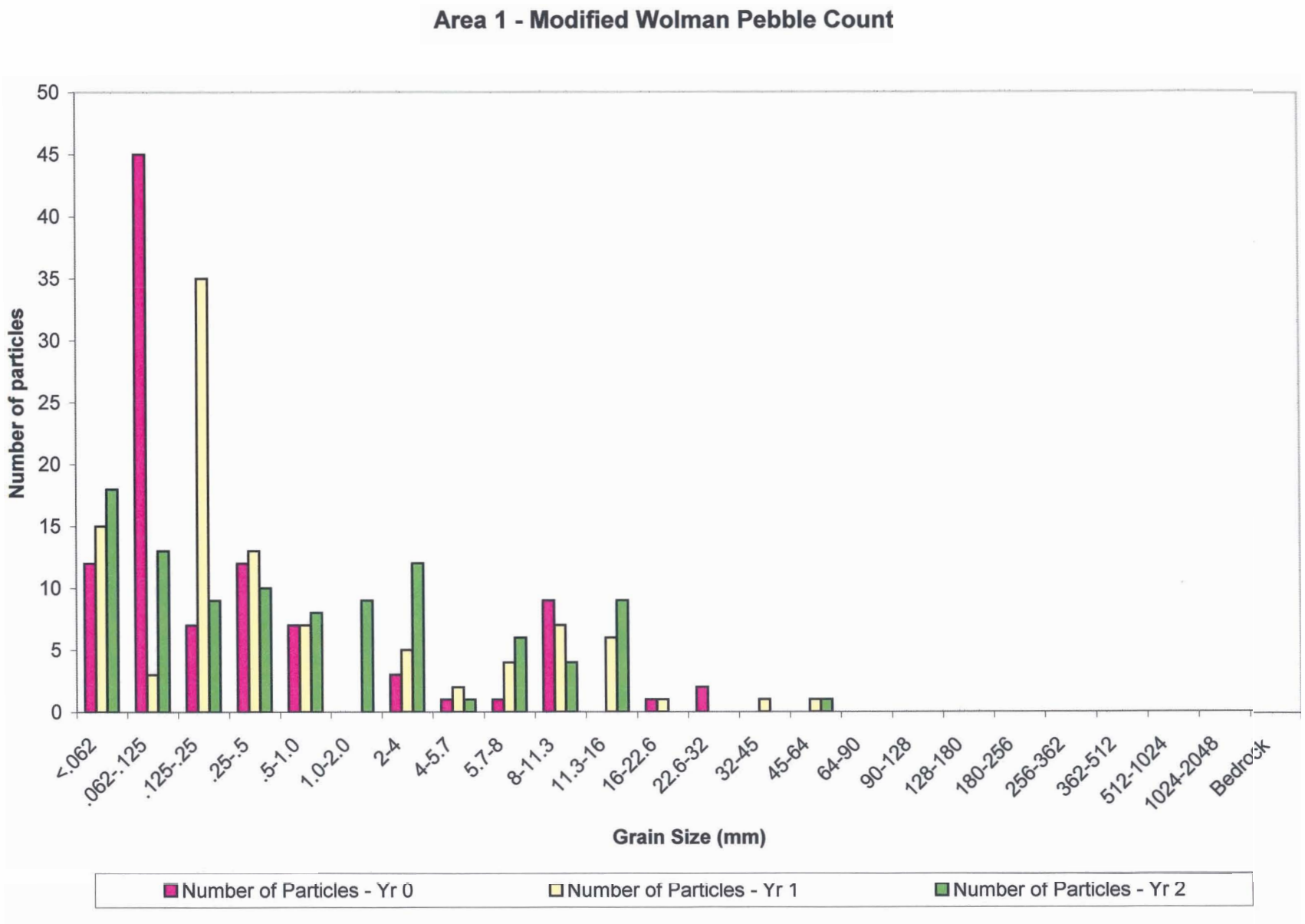
**AREA 1**
Section Pool CLASSIFICATION
Location STA (PINS C,D)

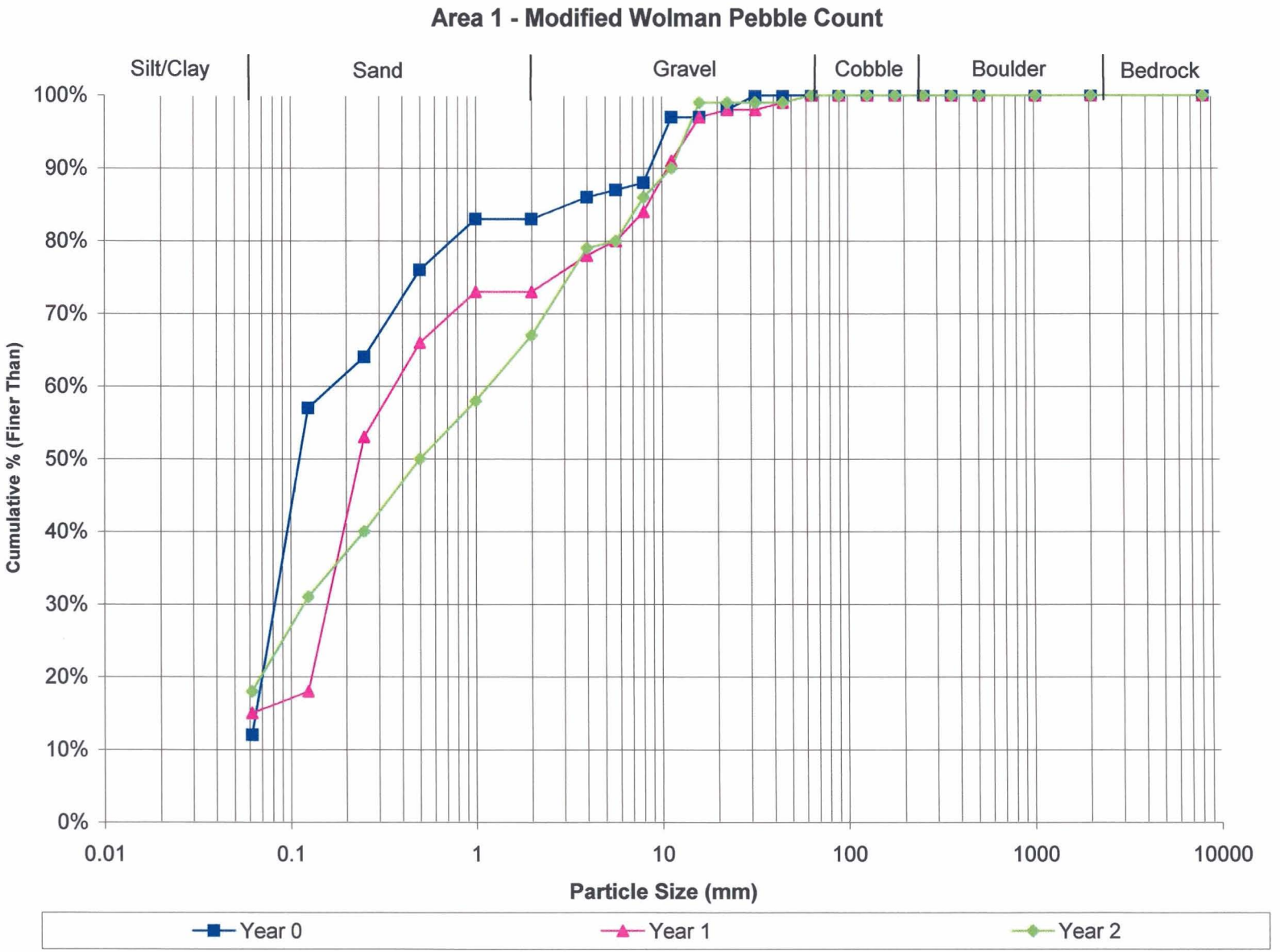
H OF I (ft) 108.34 year 0
H OF I (ft) 107.5 year 1



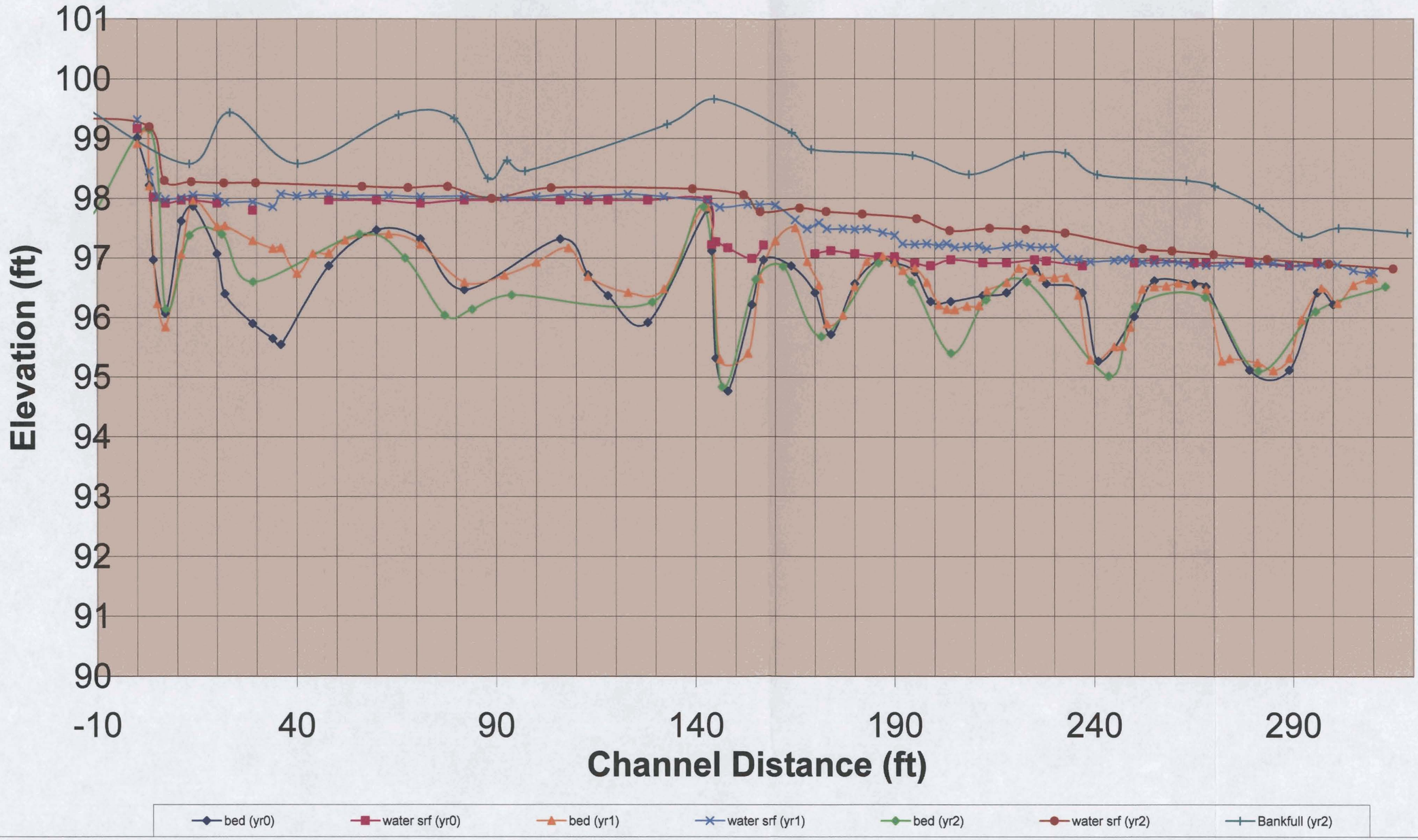

| year 0 | | | | | year 1 | | | | Year 2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Notes | Distance (ft) | elevation (ft) | FS (ft) | Notes | Distance (ft) | elevation (ft) | FS (ft) | | Notes | Distance (ft) | elevation (ft) |
| PIN-C | 0 | 100 | 8.34 | | 0 | 99.78 | 7.72 | | PIN-C Disturbed | 0 | 99.87 |
| | 2 | 99.74 | 8.6 | | 2 | 99.76 | 7.74 | | G | 0.73 | 99.61 |
| | 10 | 99.74 | 8.6 | | 10 | 99.8 | 7.7 | | G | 5.65 | 99.65 |
| | 13 | 99.79 | 8.55 | | 13 | 99.84 | 7.66 | | G | 9.93 | 99.57 |
| | 16 | 99.39 | 8.95 | | 16 | 99.79 | 7.71 | | G | 12.70 | 99.67 |
| | 17 | 99.69 | 8.65 | | 17 | 99.41 | 8.09 | | G | 15.52 | 99.67 |
| | 18 | 98.59 | 9.75 | | 18 | 98.94 | 8.56 | | LBF | 16.47 | 99.43 |
| | 18.5 | 97.59 | 10.75 | | 18.5 | 97.85 | 9.65 | | G | 17.49 | 99.01 |
| | 19 | 97.44 | 10.9 | | 19 | 97.6 | 9.9 | | LEOW | 18.01 | 98.79 |
| | 20 | 97.44 | 10.9 | | 20 | 97.8 | 9.7 | | CHN | 18.45 | 98.45 |
| | 21 | 97.54 | 10.8 | | 21 | 98.35 | 9.15 | | CHN | 18.86 | 97.89 |
| | 22 | 97.59 | 10.75 | | 22 | 98.2 | 9.3 | | CHN | 19.75 | 97.81 |
| | 23 | 97.54 | 10.8 | | 23 | 98.08 | 9.42 | | CHN | 20.65 | 98.07 |
| | 24 | 97.94 | 10.4 | | 24 | 98.07 | 9.43 | | CHN | 21.67 | 98.41 |
| | 25 | 98.54 | 9.8 | | 25 | 97.67 | 9.83 | | CHN | 22.98 | 98.35 |
| | 26 | 98.79 | 9.55 | | 26 | 97.84 | 9.66 | | CHN | 24.22 | 98.21 |
| | 27 | 98.89 | 9.45 | | 27 | 98.94 | 8.56 | | REOW | 25.18 | 98.67 |
| | 28 | 98.99 | 9.35 | | 28 | 99.06 | 8.44 | | G | 27.29 | 98.81 |
| | 30 | 99.24 | 9.1 | | 30 | 99.34 | 8.16 | | G | 31.39 | 99.17 |
| | 32 | 99.44 | 8.9 | | 32 | 99.41 | 8.09 | | RBF | 34.82 | 99.77 |
| | 33 | 99.59 | 8.75 | | 33 | 99.59 | 7.91 | | G | 38.95 | 99.81 |
| | 37 | 100.09 | 8.25 | | 37 | 100.1 | 7.4 | | G | 42.89 | 99.65 |
| | 43 | 99.99 | 8.35 | | 43 | 100 | 7.5 | | G | 47.16 | 99.61 |
| | 47 | 100.04 | 8.3 | | 47 | 100.04 | 7.46 | | G | 50.15 | 99.85 |
| | 49 | 99.89 | 8.45 | | 49 | 99.87 | 7.63 | | G | 55.89 | 99.95 |
| | 57 | 100.09 | 8.25 | | 57 | 100.15 | 7.35 | | G+VP | 59.25 | 99.79 |
| | 60 | 99.84 | 8.5 | | 60 | 99.87 | 7.63 | | G | 61.68 | 99.49 |
| | 66.5 | 99.59 | 8.75 | | 66.5 | 99.65 | 7.85 | | G | 65.61 | 99.41 |
| | 72 | 99.49 | 8.85 | | 72 | 99.5 | 8 | | G | 74.24 | 99.41 |
| | 77 | 99.44 | 8.9 | | 77 | 99.35 | 8.15 | | G | 79.84 | 98.79 |
| | 80 | 98.89 | 9.45 | | 84 | 98.64 | 8.86 | | G | 82.34 | 98.53 |
| | 84 | 98.69 | 9.65 | | 91 | 98.45 | 9.05 | | G | 85.58 | 98.33 |
| | 86 | 98.39 | 9.95 | | 93 | 98.7 | 8.8 | | G | 88.29 | 98.41 |
| | 88 | 98.59 | 9.75 | | 95 | 99.31 | 8.19 | | G | 93.31 | 98.41 |
| | 90 | 98.54 | 9.8 | | 96 | 98.67 | 8.83 | | G | 95.50 | 99.19 |
| | 93 | 98.54 | 9.8 | | 99 | 100.48 | 7.02 | | G+VP | 96.94 | 99.85 |
| | 95 | 99.14 | 9.2 | | 100 | 100.78 | 6.72 | | G | 98.94 | 100.29 |
| | 96 | 99.74 | 8.6 | PIN-D? | 100 | 100.99 | 6.51 | | PIN-D | 100.14 | 100.99 |
| | 99 | 100.44 | 7.9 | | | | | | | | |
| | 100 | 100.69 | 7.65 | | | | | | | | |
| PIN-D | 100 | 100.94 | 7.4 | | | | | | | | |

Reach I Comb Part Size




Area 1 - Modified Wolman Pebble Count
Silt/Clay
Sand
Gravel
Cobble
Boulder
Bedrock
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Cumulative % (Finer Than)
0.01
0.1
1
10
100
1000
10000
Particle Size (mm)
Year 0
Year 1
Year 2

## Longitudinal Profile (AREA 2)



**Longitudinal Profile**
**Jumping Run Creek**
**Monitoring Document**
**AREA 2**

| | | |
|---|---|---|
| BM | 100 | year0 |
| BM | 100 | year1 |

YEAR 0

| Notes | Station | BS | HI | FS TP | FS bed | depth water | FS BKF | FS TOB | FS BKF | FS TOB | ELEV bed | ELEV water surf | ELEV BKF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| riffle pin at left bank | | 6.07 | 106.07 | | | | | | | | | | |
| | 0 | 6.07 | 106.07 | | 7.05 | 0.15 | | | | | 99.02 | 99.17 | |
| top of rock/footer | 3 | 6.07 | 106.07 | | 7.85 | | | | | | 98.22 | | |
| d/s footer | 4 | 6.07 | 106.07 | | 9.1 | 1.05 | | | | | 96.97 | 98.02 | |
| | 7 | 6.07 | 106.07 | | 10 | 1.85 | | | | | 96.07 | 97.92 | |
| | 11 | 6.07 | 106.07 | | 8.45 | 0.35 | | | | | 97.62 | 97.97 | |
| | 14 | 6.07 | 106.07 | | 8.2 | 0.1 | | | | | 97.87 | 97.97 | |
| center of pool | 20 | 6.07 | 106.07 | | 9 | 0.85 | | | | | 97.07 | 97.92 | |
| begin pool | 22 | 6.3 | 106.3 | | 9.9 | | | | | | 96.4 | | |
| center of pool | 29 | 6.3 | 106.3 | | 10.4 | 1.9 | | | | | 95.9 | 97.8 | |
| | 34 | 6.3 | 106.3 | | 10.65 | | | | | | 95.65 | | |
| | 36 | 6.3 | 106.3 | | 10.75 | | | | | | 95.55 | | |
| | 48 | 6.07 | 106.07 | | 9.2 | 1.1 | | | | | 96.87 | 97.97 | |
| | 60 | 6.07 | 106.07 | | 8.6 | 0.5 | | | | | 97.47 | 97.97 | |
| | 71 | 6.07 | 106.07 | | 8.75 | 0.6 | | | | | 97.32 | 97.92 | |
| cross section | 82 | 6.07 | 106.07 | | 9.6 | 1.5 | | | | | 96.47 | 97.97 | |
| | 106 | 6.07 | 106.07 | | 8.75 | 0.65 | | | | | 97.32 | 97.97 | |
| | 113 | 6.07 | 106.07 | | 9.35 | 1.25 | | | | | 96.72 | 97.97 | |
| center of pool | 118 | 6.07 | 106.07 | | 9.7 | 1.6 | | | | | 96.37 | 97.97 | |
| | 128 | 6.07 | 106.07 | | 10.15 | 2.05 | | | | | 95.92 | 97.97 | |
| top of rock structure | 143 | 6.07 | 106.07 | | 8.25 | 0.15 | | | | | 97.82 | 97.97 | |
| top of footer rock | 144 | 6.07 | 106.07 | | 8.95 | 0.1 | | | | | 97.12 | 97.22 | |
| | 145 | 6.07 | 106.07 | | 10.75 | 1.95 | | | | | 95.32 | 97.27 | |
| | 148 | 6.07 | 106.07 | | 11.3 | 2.4 | | | | | 94.77 | 97.17 | |
| | 154 | 6.07 | 106.07 | | 9.85 | 0.77 | | | | | 96.22 | 96.99 | |
| | 157 | 6.07 | 106.07 | | 9.1 | 0.25 | | | | | 96.97 | 97.22 | |
| | 164 | 6.07 | 106.07 | | 9.2 | | | | | | 96.87 | | |
| | 170 | 6.07 | 106.07 | | 9.65 | 0.65 | | | | | 96.42 | 97.07 | |
| center of pool | 174 | 6.07 | 106.07 | | 10.35 | 1.4 | | | | | 95.72 | 97.12 | |
| end pool | 180 | 6.07 | 106.07 | | 9.5 | 0.5 | | | | | 96.57 | 97.07 | |
| begin riffle | 186 | 6.07 | 106.07 | | 9.1 | 0.05 | | | | | 96.97 | 97.02 | |
| center of riffle | 190 | 6.07 | 106.07 | | 9.15 | 0.1 | | | | | 96.92 | 97.02 | |
| end riffle/begin run | 195 | 6.07 | 106.07 | | 9.3 | 0.15 | | | | | 96.77 | 96.92 | |
| end run/begin pool | 199 | 6.07 | 106.07 | | 9.8 | 0.6 | | | | | 96.27 | 96.87 | |
| center of pool | 204 | 6.07 | 106.07 | | 9.8 | 0.7 | | | | | 96.27 | 96.97 | |
| end pool | 212 | 6.07 | 106.07 | | 9.7 | 0.55 | | | | | 96.37 | 96.92 | |
| | 218 | 6.07 | 106.07 | | 9.65 | 0.5 | | | | | 96.42 | 96.92 | |
| center of riffle | 225 | 6.07 | 106.07 | | 9.25 | 0.15 | | | | | 96.82 | 96.97 | |
| end riffle/begin run | 228 | 6.07 | 106.07 | | 9.5 | 0.38 | | | | | 96.57 | 96.95 | |
| end run/begin pool | 237 | 6.07 | 106.07 | | 9.65 | 0.45 | | | | | 96.42 | 96.87 | |
| center of pool | 241 | 6.07 | 106.07 | | 10.8 | | | | | | 95.27 | | |
| | 250 | 6.07 | 106.07 | | 10.05 | 0.9 | | | | | 96.02 | 96.92 | |
| riffle | 255 | 6.07 | 106.07 | | 9.45 | 0.35 | | | | | 96.62 | 96.97 | |
| | 265 | 6.07 | 106.07 | | 9.5 | 0.35 | | | | | 96.57 | 96.92 | |
| begin pool | 268 | 6.07 | 106.07 | | 9.55 | 0.4 | | | | | 96.52 | 96.92 | |
| center of pool | 279 | 6.07 | 106.07 | | 10.95 | 1.8 | | | | | 95.12 | 96.92 | |
| end pool | 289 | 6.07 | 106.07 | | 10.95 | 1.75 | | | | | 95.12 | 96.87 | |
| | 296 | 6.07 | 106.07 | | 9.65 | 0.5 | | | | | 96.42 | 96.92 | |
| | 300 | 6.07 | 106.07 | | 9.85 | | | | | | 96.22 | | |
| rock structure | 313 | 6.07 | 106.07 | | | | | | | | | | |

YEAR 1

| Notes | Station | Station Adjusted* | BS | HI | FS TP | FS bed | depth water | FS BKF | FS TOB | FS BKF | FS TOB | ELEV bed | ELEV water surf | ELEV BKF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| riffle pin at left bank | | | 6.64 | 106.64 | | | | | | | | | | |
| Top of rock structure | 0 | 0 | 6.64 | 106.64 | | 7.72 | 0.4 | | | | | 98.92 | 99.32 | |
| | 2.5 | 2.5 | 6.64 | 106.64 | | 7.45 | | | | | | 99.19 | | |
| | 3 | 3 | 6.64 | 106.64 | | 8.43 | 0.25 | | | | | 98.21 | 98.46 | |
| Top of footer | 5 | 5 | 6.64 | 106.64 | | 10.41 | 1.8 | | | | | 96.23 | 98.03 | |
| Scour pool | 7 | 7 | 6.64 | 106.64 | | 10.8 | 2.15 | | | | | 95.84 | 97.99 | |
| | 11 | 11 | 6.64 | 106.64 | | 9.58 | 0.95 | | | | | 97.06 | 98.01 | |
| | 14 | 14 | 6.64 | 106.64 | | 8.68 | 0.1 | | | | | 97.96 | 98.06 | |
| | 20 | 20 | 6.64 | 106.64 | | 9.11 | 0.5 | | | | | 97.53 | 98.03 | |
| | 22 | 22 | 6.64 | 106.64 | | 9.1 | 0.4 | | | | | 97.54 | 97.94 | |
| | 29 | 29 | 6.64 | 106.64 | | 9.35 | 0.65 | | | | | 97.29 | 97.94 | |
| | 34 | 34 | 6.64 | 106.64 | | 9.48 | 0.7 | | | | | 97.16 | 97.86 | |
| | 36 | 36 | 6.64 | 106.64 | | 9.47 | 0.9 | | | | | 97.17 | 98.07 | |
| | 40 | 40 | 6.64 | 106.64 | | 9.9 | 1.3 | | | | | 96.74 | 98.04 | |
| | 44 | 44 | 6.64 | 106.64 | | 9.57 | 1 | | | | | 97.07 | 98.07 | |
| | 48 | 48 | 6.64 | 106.64 | | 9.56 | 1 | | | | | 97.08 | 98.08 | |
| | 52 | 52 | 6.64 | 106.64 | | 9.34 | 0.75 | | | | | 97.3 | 98.05 | |
| | 63 | 63 | 6.64 | 106.64 | | 9.24 | 0.65 | | | | | 97.4 | 98.05 | |
| | 71 | 71 | 6.64 | 106.64 | | 9.41 | 0.8 | | | | | 97.23 | 98.03 | |
| Center of pool | 82 | 82 | 6.64 | 106.64 | | 10.05 | 1.45 | | | | | 96.59 | 98.04 | |
| | 97 | 92 | 6.64 | 106.64 | | 9.93 | 1.3 | | | | | 96.71 | 98.01 | |
| | 105 | 100 | 6.64 | 106.64 | | 9.71 | 1.1 | | | | | 96.93 | 98.03 | |
| | 113 | 108 | 6.64 | 106.64 | | 9.47 | 0.9 | | | | | 97.17 | 98.07 | |
| | 118 | 113 | 6.64 | 106.64 | | 9.95 | 1.35 | | | | | 96.69 | 98.04 | |
| Center of pool | 128 | 123 | 6.64 | 106.64 | | 10.22 | 1.65 | | | | | 96.42 | 98.07 | |
| | 137 | 132 | 6.64 | 106.64 | | 10.16 | 1.55 | | | | | 96.48 | 98.03 | |
| | 148 | 143 | 6.64 | 106.64 | | 8.79 | 0.1 | | | | | 97.85 | 97.95 | |
| Scour pool | 151 | 146 | 6.64 | 106.64 | | 11.34 | 2.55 | | | | | 95.3 | 97.85 | |
| | 158 | 153 | 6.64 | 106.64 | | 11.24 | 2.5 | | | | | 95.4 | 97.9 | |
| end pool | 161 | 156 | 6.64 | 106.64 | | 9.99 | 1.25 | | | | | 96.65 | 97.9 | |
| | 165 | 160 | 6.64 | 106.64 | | 9.35 | 0.6 | | | | | 97.29 | 97.89 | |
| | 170 | 165 | 6.64 | 106.64 | | 9.13 | 0.13 | | | | | 97.51 | 97.64 | |
| top of pool | 173 | 168 | 6.64 | 106.64 | | 9.7 | 0.55 | | | | | 96.94 | 97.49 | |
| | 176 | 171 | 6.64 | 106.64 | | 10.1 | 1.05 | | | | | 96.54 | 97.59 | |
| Center of pool | 178 | 173 | 6.64 | 106.64 | | 10.75 | 1.6 | | | | | 95.89 | 97.49 | |
| | 182 | 177 | 6.64 | 106.64 | | 10.6 | 1.45 | | | | | 96.04 | 97.49 | |
| | 185 | 180 | 6.64 | 106.64 | | 10.11 | 0.95 | | | | | 96.53 | 97.48 | |
| | 188 | 183 | 6.64 | 106.64 | | 9.7 | 0.55 | | | | | 96.94 | 97.49 | |
| | 192 | 187 | 6.64 | 106.64 | | 9.61 | 0.4 | | | | | 97.03 | 97.43 | |
| | 195 | 190 | 6.64 | 106.64 | | 9.71 | 0.45 | | | | | 96.93 | 97.38 | |
| | 197 | 192 | 6.64 | 106.64 | | 9.85 | 0.45 | | | | | 96.79 | 97.24 | |
| | 200 | 195 | 6.64 | 106.64 | | 9.81 | 0.4 | | | | | 96.83 | 97.23 | |
| | 203 | 198 | 6.64 | 106.64 | | 10.05 | 0.65 | | | | | 96.59 | 97.24 | |
| | 206 | 201 | 6.64 | 106.64 | | 10.43 | 1 | | | | | 96.21 | 97.21 | |
| | 208 | 203 | 6.64 | 106.64 | | 10.5 | 1.1 | | | | | 96.14 | 97.24 | |
| | 210 | 205 | 6.64 | 106.64 | | 10.51 | 1.05 | | | | | 96.13 | 97.18 | |
| | 213 | 208 | 6.64 | 106.64 | | 10.45 | 1 | | | | | 96.19 | 97.19 | |
| | 216 | 211 | 6.64 | 106.64 | | 10.44 | 1 | | | | | 96.2 | 97.2 | |
| | 218 | 213 | 6.64 | 106.64 | | 10.19 | 0.7 | | | | | 96.45 | 97.15 | |
| | 223 | 218 | 6.64 | 106.64 | | 10.05 | 0.6 | | | | | 96.59 | 97.19 | |
| | 226 | 221 | 6.64 | 106.64 | | 9.81 | 0.4 | | | | | 96.83 | 97.23 | |
| | 229 | 224 | 6.64 | 106.64 | | 9.85 | 0.4 | | | | | 96.79 | 97.19 | |
| | 232 | 227 | 6.64 | 106.64 | | 9.96 | 0.5 | | | | | 96.68 | 97.18 | |
| | 235 | 230 | 6.64 | 106.64 | | 9.97 | 0.5 | | | | | 96.67 | 97.17 | |
| | 238 | 233 | 6.64 | 106.64 | | 9.96 | 0.3 | | | | | 96.68 | 96.98 | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 241 | 236 | 6.64 | 106.64 | 10.26 | 0.6 | | | 96.38 | 96.98 |
| | 244 | 239 | 6.64 | 106.64 | 11.35 | 1.65 | | | 95.29 | 96.94 |
| | 248 | 245 | 6.64 | 106.64 | 11.13 | 1.45 | | | 95.51 | 96.96 |
| | 250 | 247 | 6.64 | 106.64 | 11.12 | 1.45 | | | 95.52 | 96.97 |
| | 252 | 249 | 6.64 | 106.64 | 10.8 | 1.15 | | | 95.84 | 96.99 |
| | 255 | 252 | 6.64 | 106.64 | 10.16 | 0.45 | | | 96.48 | 96.93 |
| | 258 | 255 | 6.64 | 106.64 | 10.12 | 0.4 | | | 96.52 | 96.92 |
| | 261 | 258 | 6.64 | 106.64 | 10.11 | 0.4 | | | 96.53 | 96.93 |
| | 264 | 261 | 6.64 | 106.64 | 10.06 | 0.35 | | | 96.58 | 96.93 |
| | 267 | 264 | 6.64 | 106.64 | 10.1 | 0.35 | | | 96.54 | 96.89 |
| top of pool | 271 | 268 | 6.64 | 106.64 | 10.16 | 0.4 | | | 96.48 | 96.88 |
| | 275 | 272 | 6.64 | 106.64 | 11.37 | 1.6 | | | 95.27 | 96.87 |
| | 277 | 274 | 6.64 | 106.64 | 11.33 | 1.6 | | | 95.31 | 96.91 |
| | 284 | 281 | 6.64 | 106.64 | 11.4 | 1.65 | | | 95.24 | 96.89 |
| | 288 | 285 | 6.64 | 106.64 | 11.53 | 1.8 | | | 95.11 | 96.91 |
| | 292 | 289 | 6.64 | 106.64 | 11.32 | 1.55 | | | 95.32 | 96.87 |
| | 295 | 292 | 6.64 | 106.64 | 10.68 | 0.9 | | | 95.96 | 96.86 |
| | 300 | 297 | 6.64 | 106.64 | 10.15 | 0.4 | | | 96.49 | 96.89 |
| | 304 | 301 | 6.64 | 106.64 | 10.4 | 0.65 | | | 96.24 | 96.89 |
| | 308 | 305 | 6.64 | 106.64 | 10.1 | 0.25 | | | 96.54 | 96.79 |
| | 312 | 309 | 6.64 | 106.64 | 10 | 0.1 | | | 96.64 | 96.74 |
| Top of rock structure | 313 | 310 | 6.64 | 106.64 | 9.98 | 0.1 | | | 96.66 | 96.76 |

*Station Adjusted to match exisitng Stationing from year 0 at physical features (I.e. structures). In accuracies in stationing due to the way the tape is laid down the centerline of the stream

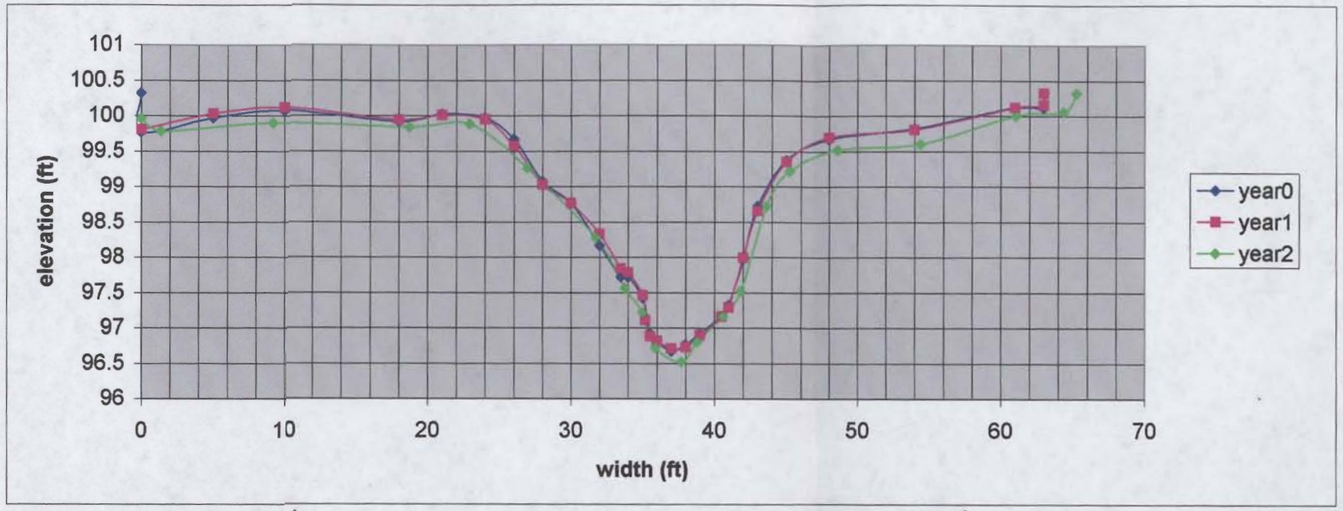
YEAR 2

| Notes | Station | Station Adjusted* | BS | Pin elev. | FS TP | FS bed | Station water | Station BKF | FS TOB | FS BKF | FS TOB | ELEV bed | ELEV water surf | ELEV BKF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| riffle pin at left bank | NA | | | 100 | | | | | | | | | | |
| TWP | -53.16 | | | | | | -51.10 | -43.50 | | | | 97.84 | 99.32 | 99.98 |
| TWG | -40.56 | | | | | | -38.38 | -29.28 | | | | 98.1 | 99.32 | 100.1 |
| TWR | -23.82 | | | | | | -22.01 | -16.10 | | | | 98.46 | 99.32 | 99.84 |
| TWP | -13.42 | | | | | | -13.75 | -10.08 | | | | 97.58 | 99.34 | 99.4 |
| TOP Vane | 3.00 | | | | | | 3.00 | 13.08 | | | | 99.16 | 99.2 | 98.58 |
| TWP | 7.08 | | | | | | 6.76 | 23.23 | | | | 96.14 | 98.3 | 99.44 |
| TWG | 13.08 | | | | | | 13.54 | 40.24 | | | | 97.38 | 98.28 | 98.58 |
| TWRI | 21.21 | | | | | | 21.74 | 65.53 | | | | 97.4 | 98.26 | 99.4 |
| TWP | 29.08 | | | | | | 29.73 | 79.48 | | | | 96.6 | 98.26 | 99.34 |
| TWRI | 55.66 | | | | | | 56.33 | 87.90 | | | | 97.4 | 98.2 | 98.34 |
| TWR | 67.17 | | | | | | 67.87 | 92.77 | | | | 97 | 98.18 | 98.64 |
| TWP | 77.10 | | | | | | 77.85 | 97.18 | | | | 96.04 | 98.2 | 98.46 |
| Pool X-sec. | 83.99 | | | | | | 88.86 | 132.86 | | | | 96.14 | 98 | 99.24 |
| TWP | 93.84 | | | | | | 103.69 | 144.59 | | | | 96.38 | 98.18 | 99.66 |
| TWP | 129.13 | | | | | | 139.21 | 164.19 | | | | 96.26 | 98.16 | 99.1 |
| TOP Vane | 141.98 | | | | | | 151.95 | 169.07 | | | | 97.86 | 98.06 | 98.82 |
| TWP | 146.57 | | | | | | 156.12 | 194.49 | | | | 94.84 | 97.78 | 98.72 |
| TWG | 155.00 | | | | | | 166.16 | 208.51 | | | | 96.64 | 97.84 | 98.4 |
| TWRI | 161.94 | | | | | | 172.81 | 222.34 | | | | 96.86 | 97.78 | 98.72 |
| TWP | 171.61 | | | | | | 181.90 | 232.77 | | | | 95.68 | 97.74 | 98.76 |
| TWRI | 185.93 | | | | | | 195.50 | 240.78 | | | | 96.92 | 97.66 | 98.4 |
| TWR | 194.17 | | | | | | 203.75 | 263.08 | | | | 96.6 | 97.46 | 98.3 |
| TWP | 204.03 | | | | | | 213.71 | 270.34 | | | | 95.4 | 97.5 | 98.2 |
| TWG | 212.80 | | | | | | 222.81 | 281.55 | | | | 96.3 | 97.48 | 97.84 |
| Riffle X-sec. | 223.11 | | | | | | 232.67 | 292.08 | | | | 96.6 | 97.42 | 97.36 |
| TWP | 243.61 | | | | | | 252.09 | 301.34 | | | | 95.02 | 97.16 | 97.5 |
| TWG | 250.23 | | | | | | 259.43 | 318.51 | | | | 96.18 | 97.12 | 97.42 |
| TWRI | 267.82 | | | | | | 269.91 | | | | | 96.34 | 97.06 | |
| TWP | 281.22 | | | | | | 283.44 | | | | | 95.1 | 96.98 | |
| TWG | 295.59 | | | | | | 298.83 | | | | | 96.1 | 96.9 | |
| TOP Vane | 313.00 | | | | | | 314.95 | | | | | 96.52 | 96.82 | |

## Cross Section Geometry
## Jumping Run Creek
## Monitoring Report

**AREA 2**
**Section** Riffle **CLASSIFICATION**
**Location** STA (PINS E,F)

H OF I (ft) 106.07 year 0
H OF I (ft) 106.64 year 1

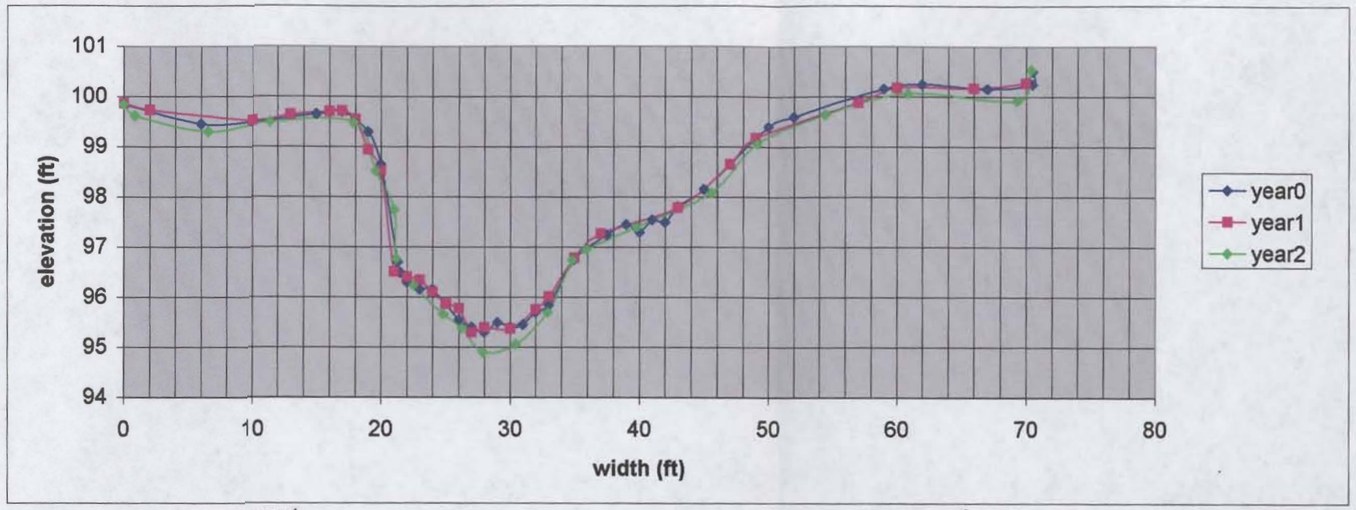



| year 0 | | | | year 1 | | | | year 2 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Notes | Distance (ft) | elevation (ft) | FS (ft) | Notes | Distance (ft) | elevation (ft) | FS (ft) | Notes | Distance (ft) | elevation (ft) |
| PIN-E? | 0 | 100.32 | 5.75 | | 0 | 99.8 | 6.84 | PIN-E Distrubed | 0 | 99.96 |
| | 0 | 99.77 | 6.3 | | 5 | 100.03 | 6.61 | G | 1.40 | 99.78 |
| | 5 | 99.97 | 6.1 | | 10 | 100.12 | 6.52 | G | 9.22 | 99.9 |
| | 10 | 100.07 | 6 | | 18 | 99.94 | 6.7 | G | 18.74 | 99.84 |
| | 18 | 99.92 | 6.15 | | 21 | 100.01 | 6.63 | G | 22.94 | 99.88 |
| | 21 | 100.02 | 6.05 | | 24 | 99.95 | 6.69 | G | 26.93 | 99.26 |
| | 24 | 99.97 | 6.1 | | 26 | 99.58 | 7.06 | LBF | 31.73 | 98.28 |
| | 26 | 99.67 | 6.4 | | 28 | 99.03 | 7.61 | G | 33.78 | 97.56 |
| | 28 | 99.07 | 7 | | 30 | 98.77 | 7.87 | LEOW | 35.00 | 97.22 |
| | 30 | 98.77 | 7.3 | | 32 | 98.33 | 8.31 | CHN | 35.90 | 96.72 |
| | 32 | 98.17 | 7.9 | | 33.5 | 97.84 | 8.8 | TW | 37.71 | 96.52 |
| | 33.5 | 97.72 | 8.35 | | 34 | 97.78 | 8.86 | CHN | 38.84 | 96.8 |
| | 34 | 97.72 | 8.35 | | 35 | 97.46 | 9.18 | REOW | 40.60 | 97.16 |
| | 35 | 97.42 | 8.65 | | 35.2 | 97.11 | 9.53 | RBF | 41.83 | 97.52 |
| | 35.5 | 96.92 | 9.15 | | 35.5 | 96.88 | 9.76 | G | 43.64 | 98.72 |
| | 36 | 96.82 | 9.25 | | 36 | 96.82 | 9.82 | G | 45.24 | 99.22 |
| | 37 | 96.67 | 9.4 | | 37 | 96.71 | 9.93 | G | 48.62 | 99.52 |
| | 38 | 96.77 | 9.3 | | 38 | 96.73 | 9.91 | G | 54.42 | 99.6 |
| | 39 | 96.92 | 9.15 | | 39 | 96.9 | 9.74 | G | 61.05 | 100 |
| | 40.5 | 97.17 | 8.9 | | 40.5 | 97.16 | 9.48 | G | 64.39 | 100.06 |
| | 41 | 97.32 | 8.75 | | 41 | 97.29 | 9.35 | PIN-F | 65.27 | 100.32 |
| | 42 | 97.97 | 8.1 | | 42 | 97.99 | 8.65 | | | |
| | 43 | 98.72 | 7.35 | | 43 | 98.66 | 7.98 | | | |
| | 45 | 99.37 | 6.7 | | 45 | 99.35 | 7.29 | | | |
| | 48 | 99.67 | 6.4 | | 48 | 99.69 | 6.95 | | | |
| | 54 | 99.82 | 6.25 | | 54 | 99.8 | 6.84 | | | |
| | 61 | 100.12 | 5.95 | | 61 | 100.12 | 6.52 | | | |
| | 63 | 100.12 | 5.95 | | 63 | 100.15 | 6.49 | | | |
| PIN-F? | 63 | 100.32 | 5.75 | | 63 | 100.32 | 6.32 | | | |

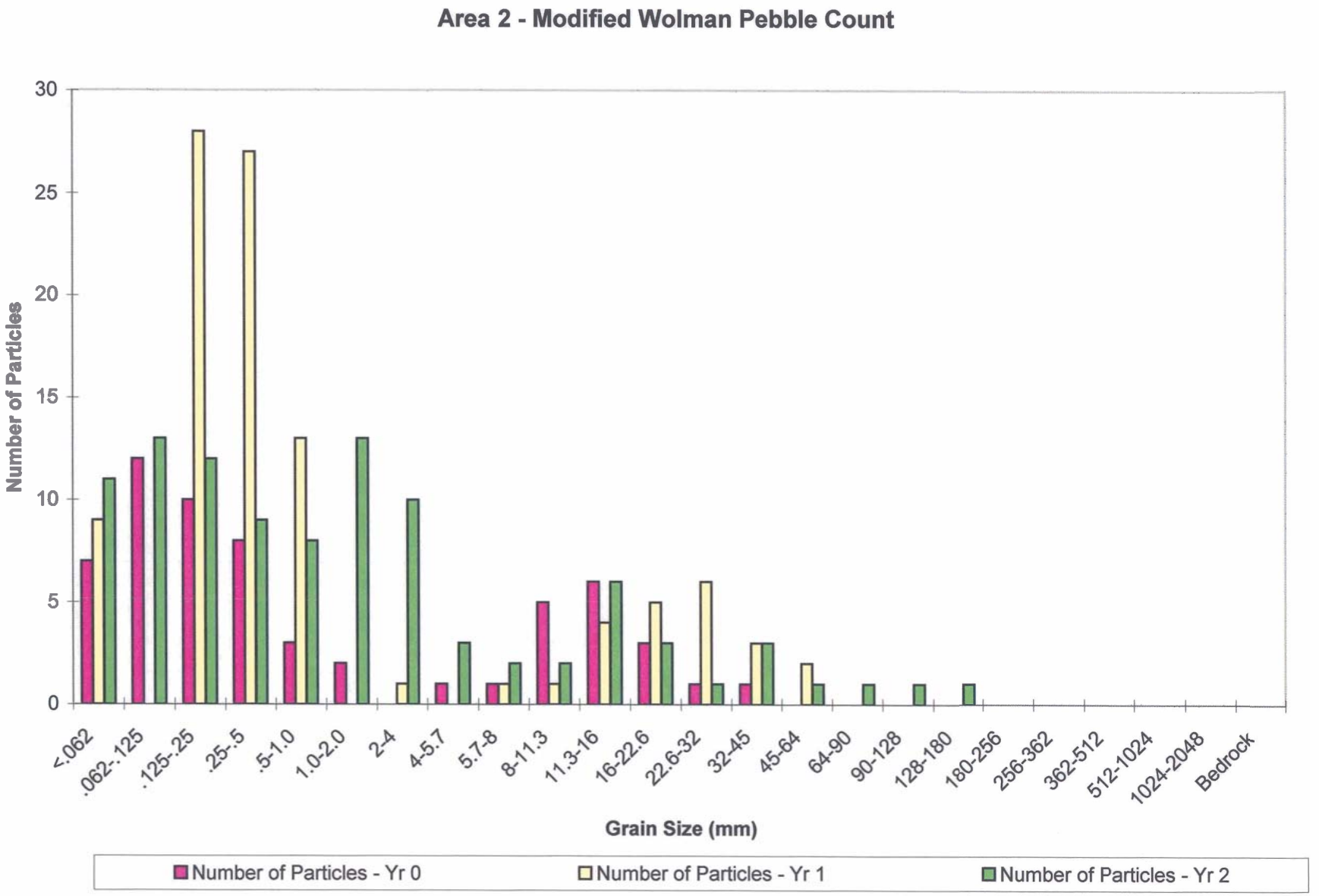
**Cross Section Geometry**
**Jumping Run Creek**
**Monitoring Report**

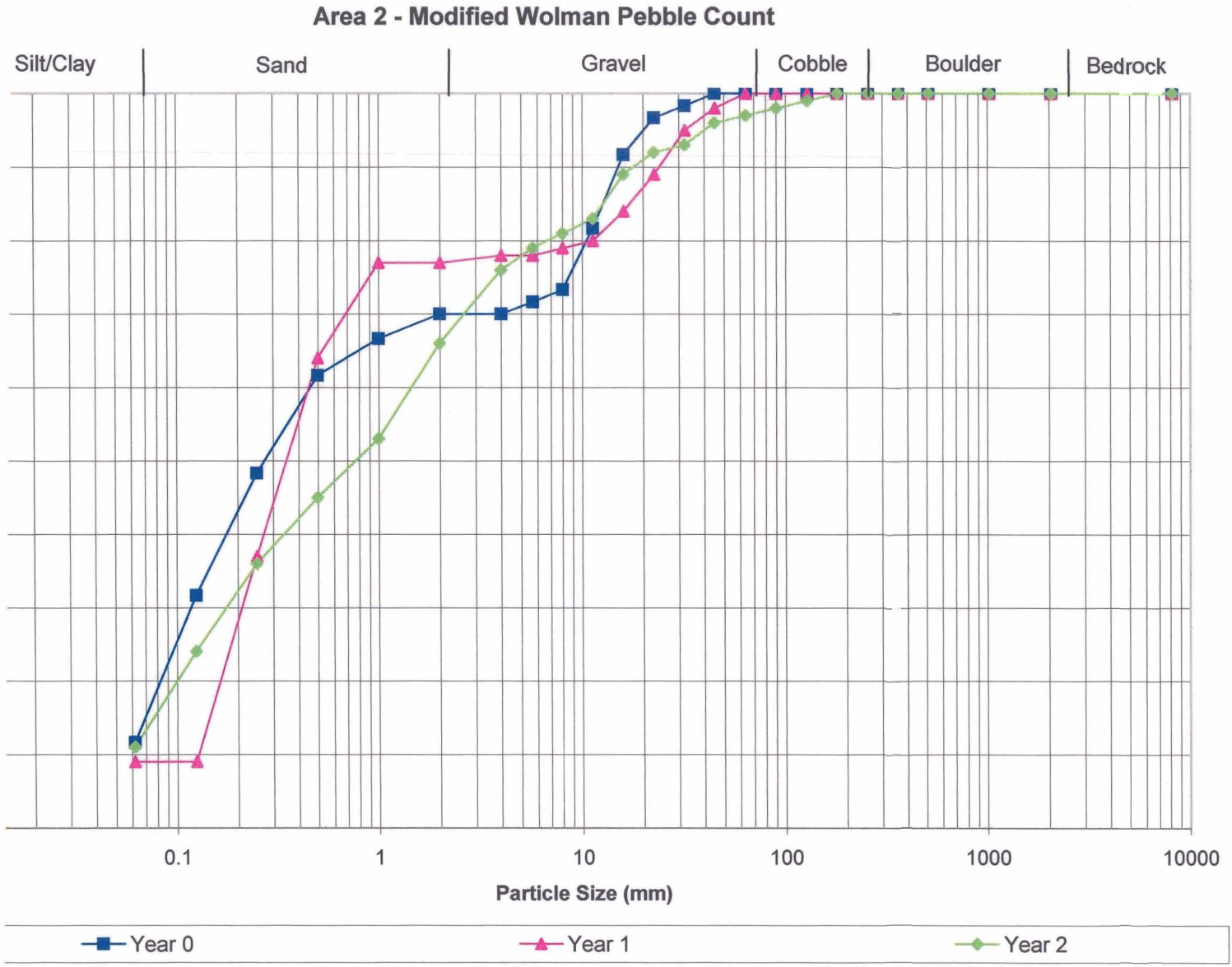
**AREA 2**
**Section** Pool **CLASSIFICATION**
**Location** STA (PINS G,H)

H OF I (ft) 104.85 year 0
H OF I (ft) 105.4 year 1

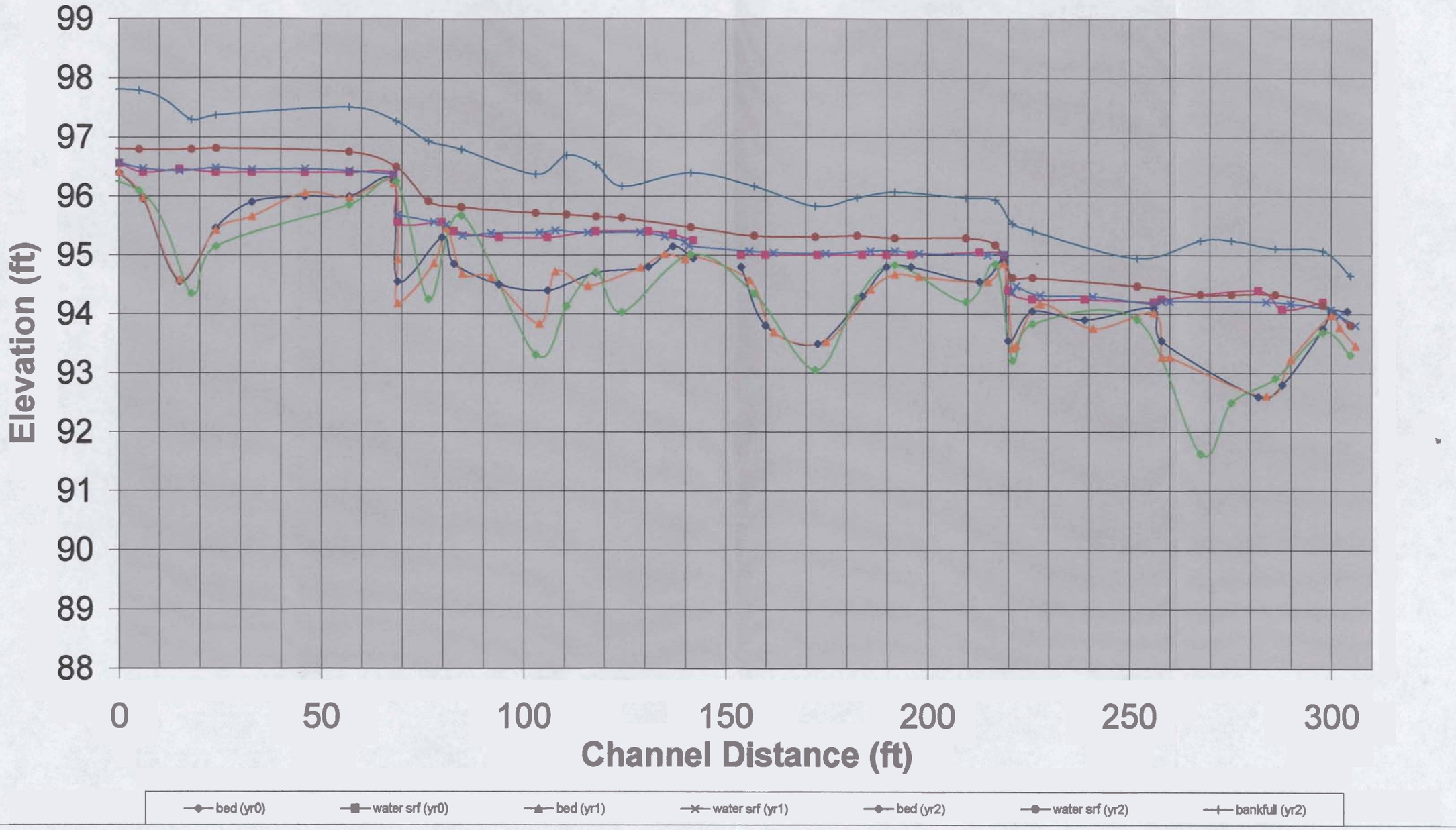



| year 0 | | | | year 1 | | | | year 2 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Notes | Distance (ft) | elevation (ft) | FS (ft) | Notes | Distance (ft) | elevation (ft) | FS (ft) | Notes | Distance (ft) | elevation (ft) |
| | 0 | 99.85 | 5 | | 0 | 99.87 | 5.53 | PIN-G Distrubed | 0 | 99.85 |
| | 6 | 99.45 | 5.4 | | 2 | 99.73 | 5.67 | G | 0.88 | 99.62 |
| | 10 | 99.5 | 5.35 | | 10 | 99.53 | 5.87 | G | 6.58 | 99.3 |
| | 15 | 99.65 | 5.2 | | 13 | 99.64 | 5.76 | G | 11.39 | 99.5 |
| | 17 | 99.7 | 5.15 | | 16 | 99.7 | 5.7 | G | 17.86 | 99.48 |
| | 19 | 99.3 | 5.55 | | 17 | 99.71 | 5.69 | G | 19.59 | 98.52 |
| | 20 | 98.65 | 6.2 | | 18 | 99.55 | 5.85 | LBF | 21.02 | 97.74 |
| | 21.3 | 96.7 | 8.15 | | 19 | 98.94 | 6.46 | LEOW | 21.19 | 96.76 |
| | 21.5 | 96.5 | 8.35 | | 20 | 98.53 | 6.87 | CHN | 22.51 | 96.24 |
| | 22 | 96.3 | 8.55 | | 21 | 96.51 | 8.89 | CHN | 24.80 | 95.66 |
| | 23 | 96.15 | 8.7 | | 22 | 96.4 | 9 | CHN | 26.23 | 95.38 |
| | 24 | 96.15 | 8.7 | | 23 | 96.34 | 9.06 | TW | 27.92 | 94.9 |
| | 26 | 95.55 | 9.3 | | 24 | 96.1 | 9.3 | TW | 30.44 | 95.06 |
| | 27 | 95.4 | 9.45 | | 25 | 95.87 | 9.53 | CHN | 32.94 | 95.7 |
| | 28 | 95.3 | 9.55 | | 26 | 95.77 | 9.63 | REOW | 34.83 | 96.74 |
| | 29 | 95.5 | 9.35 | | 27 | 95.3 | 10.1 | G | 35.90 | 96.96 |
| | 30 | 95.4 | 9.45 | | 28 | 95.39 | 10.01 | RBF | 39.81 | 97.4 |
| | 31 | 95.45 | 9.4 | | 30 | 95.37 | 10.03 | G | 45.55 | 98.08 |
| | 32 | 95.7 | 9.15 | | 32 | 95.75 | 9.65 | G | 49.11 | 99.06 |
| | 33 | 95.85 | 9 | | 33 | 96.01 | 9.39 | G | 54.46 | 99.64 |
| | 35 | 96.75 | 8.1 | | 35 | 96.78 | 8.62 | G | 60.88 | 100.06 |
| | 37.5 | 97.25 | 7.6 | | 37 | 97.27 | 8.13 | G | 69.31 | 99.92 |
| | 39 | 97.45 | 7.4 | | 43 | 97.78 | 7.62 | PIN-H | 70.37 | 100.54 |
| | 40 | 97.3 | 7.55 | | 47 | 98.65 | 6.75 | | | |
| | 41 | 97.55 | 7.3 | | 49 | 99.18 | 6.22 | | | |
| | 42 | 97.5 | 7.35 | | 57 | 99.88 | 5.52 | | | |
| | 43 | 97.8 | 7.05 | | 60 | 100.18 | 5.22 | | | |
| | 45 | 98.15 | 6.7 | | 66 | 100.17 | 5.23 | | | |
| | 50 | 99.4 | 5.45 | | 70 | 100.27 | 5.13 | | | |
| | 52 | 99.6 | 5.25 | | | 100.5 | 4.9 | | | |
| | 59 | 100.15 | 4.7 | | | | | | | |
| | 62 | 100.25 | 4.6 | | | | | | | |
| | 67 | 100.15 | 4.7 | | | | | | | |
| | 70.5 | 100.25 | 4.6 | | | | | | | |
| PIN-H? | 70.5 | 100.51 | 4.34 | | | | | | | |


Area 2 - Modified Wolman Pebble Count
Number of Particles
30
25
20
15
10
5
0
<.062
.062-.125
.125-.25
.25-.5
.5-1.0
1.0-2.0
2-4
4-5.7
5.7-8
8-11.3
11.3-16
16-22.6
22.6-32
32-45
45-64
64-90
90-128
128-180
180-256
256-362
362-512
512-1024
1024-2048
Bedrock
Grain Size (mm)
Number of Particles - Yr 0
Number of Particles - Yr 1
Number of Particles - Yr 2


Area 2 - Modified Wolman Pebble Count
Silt/Clay
Sand
Gravel
Cobble
Boulder
Bedrock
0.1
1
10
100
1000
10000
Particle Size (mm)
Year 0
Year 1
Year 2

## Longitudinal Profile (AREA 3)



**Longitudinal Profile**
**Jumping Run Creek**
**Monitoring Document**
**AREA 3**

| | | |
|---|---|---|
| BM | 100 | year0 |
| BM | 100 | year1 |

YEAR 0

| Notes | Station | BS | HI | FS TP | FS bed | depth water | FS BKF | FS TOB | FS BKF | FS TOB | ELEV bed | ELEV water surf | ELEV BKF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pin u/s of tributary (BM) | | 4.9 | 104.9 | | | | | | | | | | |
| riffle | 0 | 4.9 | 104.9 | | 8.5 | 0.15 | | | | | 96.4 | 96.55 | |
| | 6 | 4.9 | 104.9 | | 8.95 | 0.45 | | | | | 95.95 | 96.4 | |
| center of pool (tributary) | 15 | 4.9 | 104.9 | | 10.35 | 1.9 | | | | | 94.55 | 96.45 | |
| | 24 | 4.9 | 104.9 | | 9.45 | 0.85 | | | | | 95.45 | 96.4 | |
| | 33 | 4.9 | 104.9 | | 9 | 0.5 | | | | | 95.9 | 96.4 | |
| | 46 | 4.9 | 104.9 | | 8.9 | 0.4 | | | | | 96 | 96.4 | |
| | 57 | 4.9 | 104.9 | | 8.9 | 0.4 | | | | | 96 | 96.4 | |
| top of notch in log | 68 | 4.9 | 104.9 | | 8.65 | 0.1 | | | | | 96.25 | 96.35 | |
| | 69 | 4.9 | 104.9 | | 10.35 | 1 | | | | | 94.55 | 95.55 | |
| logvane | 80 | 4.9 | 104.9 | | 9.6 | 0.25 | | | | | 95.3 | 95.55 | |
| below logvane | 83 | 4.9 | 104.9 | | 10.05 | 0.55 | | | | | 94.85 | 95.4 | |
| begin pool | 94 | 4.9 | 104.9 | | 10.4 | 0.8 | | | | | 94.5 | 95.3 | |
| | 106 | 4.9 | 104.9 | | 10.5 | 0.9 | | | | | 94.4 | 95.3 | |
| end of pool/begin glide | 118 | 4.9 | 104.9 | | 10.2 | 0.7 | | | | | 94.7 | 95.4 | |
| | 131 | 4.9 | 104.9 | | 10.1 | 0.6 | | | | | 94.8 | 95.4 | |
| top of riffle | 137 | 4.9 | 104.9 | | 9.75 | 0.2 | | | | | 95.15 | 95.35 | |
| center of riffle | 142 | 4.9 | 104.9 | | 9.95 | 0.3 | | | | | 94.95 | 95.25 | |
| xsection riffle | 143 | 4.9 | 104.9 | | | | | | | | | | |
| end riffle/begin run | 154 | 4.9 | 104.9 | | 10.1 | 0.2 | | | | | 94.8 | 95 | |
| end run/begin pool | 160 | 4.9 | 104.9 | | 11.1 | 1.2 | | | | | 93.8 | 95 | |
| center of pool | 173 | 4.9 | 104.9 | | 11.4 | 1.5 | | | | | 93.5 | 95 | |
| end pool | 184 | 4.9 | 104.9 | | 10.6 | 0.7 | | | | | 94.3 | 95 | |
| | 190 | 4.9 | 104.9 | | 10.1 | 0.2 | | | | | 94.8 | 95 | |
| | 196 | 4.9 | 104.9 | | 10.1 | 0.2 | | | | | 94.8 | 95 | |
| | 213 | 4.9 | 104.9 | | 10.35 | 0.5 | | | | | 94.55 | 95.05 | |
| top of notch in log | 219 | 4.9 | 104.9 | | 10 | 0.1 | | | | | 94.9 | 95 | |
| | 220 | 4.9 | 104.9 | | 11.35 | 0.85 | | | | | 93.55 | 94.4 | |
| | 226 | 4.9 | 104.9 | | 10.85 | 0.2 | | | | | 94.05 | 94.25 | |
| | 239 | 4.9 | 104.9 | | 11 | 0.35 | | | | | 93.9 | 94.25 | |
| top of log vane | 256 | 4.9 | 104.9 | | 10.8 | 0.1 | | | | | 94.1 | 94.2 | |
| | 258 | 4.9 | 104.9 | | 11.35 | 0.7 | | | | | 93.55 | 94.25 | |
| center of pool/xsection | 282 | 4.9 | 104.9 | | 12.3 | 1.8 | | | | | 92.6 | 94.4 | |
| | 288 | 4.9 | 104.9 | | 12.1 | 1.28 | | | | | 92.8 | 94.08 | |
| | 298 | 4.9 | 104.9 | | 11.15 | 0.45 | | | | | 93.75 | 94.2 | |
| top of riffle | 300 | 4.9 | 104.9 | | 10.85 | | | | | | 94.05 | | |
| center of riffle | 304 | 4.9 | 104.9 | | 10.85 | | | | | | 94.05 | | |

YEAR 1

| Notes | Station | Station Adjusted* | BS | HI | FS TP | FS bed | depth water | FS BKF | FS TOB | FS BKF | FS TOB | ELEV bed | ELEV water surf | ELEV BKF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pin u/s of tributary (BM) | | | 4.68 | 104.68 | | | | | | | | | | |
| | 0 | 0 | 4.68 | 104.68 | | 8.27 | 0.15 | | | | | 96.41 | 96.56 | |
| | 6 | 6 | 4.68 | 104.68 | | 8.71 | 0.5 | | | | | 95.97 | 96.47 | |
| center of pool, trib | 15 | 15 | 4.68 | 104.68 | | 10.1 | 1.85 | | | | | 94.58 | 96.43 | |
| | 24 | 24 | 4.68 | 104.68 | | 9.25 | 1.05 | | | | | 95.43 | 96.48 | |
| | 33 | 33 | 4.68 | 104.68 | | 9.03 | 0.8 | | | | | 95.65 | 96.45 | |
| | 46 | 46 | 4.68 | 104.68 | | 8.62 | 0.4 | | | | | 96.06 | 96.46 | |
| | 57 | 57 | 4.68 | 104.68 | | 8.7 | 0.45 | | | | | 95.98 | 96.43 | |
| top of log | 68 | 68 | 4.68 | 104.68 | | 8.46 | 0.15 | | | | | 96.22 | 96.37 | |
| d/s log | 69 | 69 | 4.68 | 104.68 | | 9.75 | | | | | | 94.93 | | |
| scour pool | 71 | 69 | 4.68 | 104.68 | | 10.5 | 1.5 | | | | | 94.18 | 95.68 | |
| | 80 | 78 | 4.68 | 104.68 | | 9.82 | 0.7 | | | | | 94.86 | 95.56 | |
| top of log vane | 83 | 81 | 4.68 | 104.68 | | 9.22 | 0.05 | | | | | 95.46 | 95.51 | |
| | 87 | 85 | 4.68 | 104.68 | | 10 | 0.65 | | | | | 94.68 | 95.33 | |
| | 94 | 92 | 4.68 | 104.68 | | 10.06 | 0.75 | | | | | 94.62 | 95.37 | |
| pool | 106 | 104 | 4.68 | 104.68 | | 10.85 | 1.55 | | | | | 93.83 | 95.38 | |
| top of glide | 110 | 108 | 4.68 | 104.68 | | 9.96 | 0.7 | | | | | 94.72 | 95.42 | |
| | 118 | 116 | 4.68 | 104.68 | | 10.2 | 0.9 | | | | | 94.48 | 95.38 | |
| top of riffle | 131 | 129 | 4.68 | 104.68 | | 9.89 | 0.6 | | | | | 94.79 | 95.39 | |
| | 137 | 135 | 4.68 | 104.68 | | 9.66 | 0.3 | | | | | 95.02 | 95.32 | |
| center of pool | 142 | 140 | 4.68 | 104.68 | | 9.75 | 0.3 | | | | | 94.93 | 95.23 | |
| riffle | 143 | 141 | 4.68 | 104.68 | | 9.67 | 0.15 | | | | | 95.01 | 95.16 | |
| end riffle/begin run | 154 | 156 | 4.68 | 104.68 | | 10.11 | 0.5 | | | | | 94.57 | 95.07 | |
| end run/begin pool | 160 | 162 | 4.68 | 104.68 | | 10.99 | 1.35 | | | | | 93.69 | 95.04 | |
| pool | 173 | 175 | 4.68 | 104.68 | | 11.15 | 1.5 | | | | | 93.53 | 95.03 | |
| end pool/begin glide | 184 | 186 | 4.68 | 104.68 | | 10.26 | 0.65 | | | | | 94.42 | 95.07 | |
| | 190 | 192 | 4.68 | 104.68 | | 10.01 | 0.4 | | | | | 94.67 | 95.07 | |
| | 196 | 198 | 4.68 | 104.68 | | 10.05 | 0.4 | | | | | 94.63 | 95.03 | |
| u/s log | 213 | 215 | 4.68 | 104.68 | | 10.13 | 0.45 | | | | | 94.55 | 95 | |
| | 217 | 219 | 4.68 | 104.68 | | 9.82 | 0.15 | | | | | 94.86 | 95.01 | |
| top of log | 219 | 221 | 4.68 | 104.68 | | 11.26 | 0.95 | | | | | 93.42 | 94.37 | |
| scour pool | 220 | 222 | 4.68 | 104.68 | | 11.21 | 1 | | | | | 93.47 | 94.47 | |
| riffle | 226 | 228 | 4.68 | 104.68 | | 10.51 | 0.15 | | | | | 94.17 | 94.32 | |
| run | 239 | 241 | 4.68 | 104.68 | | 10.93 | 0.55 | | | | | 93.75 | 94.3 | |
| top of log vane | 254 | 256 | 4.68 | 104.68 | | 10.66 | 0.15 | | | | | 94.02 | 94.17 | |
| d/s log | | 258 | 4.68 | 104.68 | | 11.41 | 0.95 | | | | | 93.27 | 94.22 | |
| | 258 | 260 | 4.68 | 104.68 | | 11.41 | 0.95 | | | | | 93.27 | 94.22 | |
| pool | 282 | 284 | 4.68 | 104.68 | | 12.07 | 1.6 | | | | | 92.61 | 94.21 | |
| glide | 288 | 290 | 4.68 | 104.68 | | 11.45 | 0.95 | | | | | 93.23 | 94.18 | |
| riffle | 298 | 300 | 4.68 | 104.68 | | 10.7 | 0.1 | | | | | 93.98 | 94.08 | |
| riffle | 300 | 302 | 4.68 | 104.68 | | 10.91 | 0.2 | | | | | 93.77 | 93.97 | |
| top of log | 304 | 306 | 4.68 | 104.68 | | 11.22 | 0.35 | | | | | 93.46 | 93.81 | |

*Station Adjusted to match exisitng Stationing from year 0 at physical features (i.e. structures). In accuracies in stationing due to the way the tape is laid down the centerline of the stream

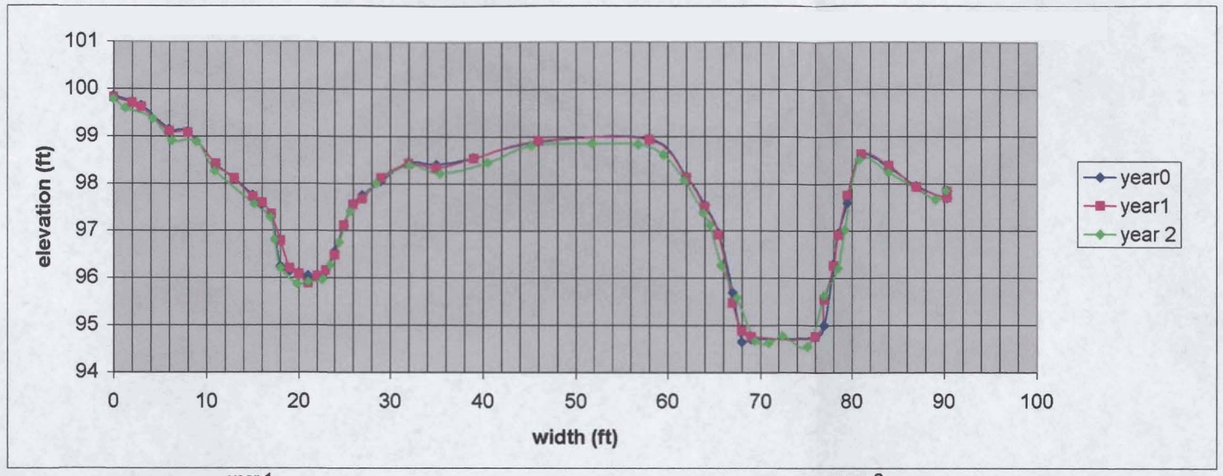
YEAR 2

| Notes | Station | Station Adjusted* | BS | HI | FS TP | FS bed | depth water | FS BKF | FS TOB | FS BKF | FS TOB | ELEV bed | ELEV water surf | ELEV BKF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TWRI | | -30.41 | | | | | | | | | | 96.45 | 96.89 | 97.69 |
| TWR | | 5.01 | | | | | | | | | | 96.09 | 96.79 | 97.79 |
| TWP | | 18.00 | | | | | | | | | | 94.35 | 96.79 | 97.29 |
| TWG | | 24.06 | | | | | | | | | | 95.15 | 96.81 | 97.37 |
| TWR | | 56.91 | | | | | | | | | | 95.85 | 96.75 | 97.51 |
| TOP Vane | | 66.67 | | | | | | | | | | 96.25 | 96.49 | 97.27 |
| TWP | | 76.62 | | | | | | | | | | 94.25 | 95.91 | 96.93 |
| TOP Vane | | 84.74 | | | | | | | | | | 95.67 | 95.81 | 96.79 |
| TWP | | 103.08 | | | | | | | | | | 93.31 | 95.71 | 96.37 |
| TWG | | 110.67 | | | | | | | | | | 94.13 | 95.69 | 96.69 |
| TWRI | | 118.07 | | | | | | | | | | 94.71 | 95.65 | 96.53 |
| TWP | | 124.40 | | | | | | | | | | 94.03 | 95.63 | 96.17 |
| Riffle X-Sect. | | 141.43 | | | | | | | | | | 95.01 | 95.47 | 96.39 |
| TWR | | 157.17 | | | | | | | | | | 94.35 | 95.33 | 96.17 |
| TWP | | 172.38 | | | | | | | | | | 93.05 | 95.31 | 95.83 |
| TWG | | 182.75 | | | | | | | | | | 94.27 | 95.33 | 95.97 |
| TWR | | 192.02 | | | | | | | | | | 94.83 | 95.29 | 96.07 |
| TWR | | 209.61 | | | | | | | | | | 94.21 | 95.29 | 95.97 |
| TOP Vane | | 216.83 | | | | | | | | | | 94.85 | 95.17 | 95.93 |
| TWP | | 221.09 | | | | | | | | | | 93.21 | 94.61 | 95.53 |
| TWG | | 226.14 | | | | | | | | | | 93.83 | 94.61 | 95.41 |
| TOP Vane | | 251.93 | | | | | | | | | | 93.91 | 94.47 | 94.95 |
| TWP | | 267.70 | | | | | | | | | | 91.63 | 94.33 | 95.25 |
| Pool X-Sect. | | 275.45 | | | | | | | | | | 92.5 | 94.33 | 95.25 |
| TWG | | 286.26 | | | | | | | | | | 92.91 | 94.33 | 95.11 |
| TWRI | | 297.97 | | | | | | | | | | 93.69 | 94.15 | 95.07 |
| TOP Vane | | 304.73 | | | | | | | | | | 93.31 | 93.81 | 94.65 |

## Cross Section Geometry
## Jumping Run Creek
## Monitoring Report

AREA 3
Section Riffle CLASSIFICATION
Location STA (PINS I,J)

H OF I (ft) 105.85 year 0
H OF I (ft) 105.63 year 1

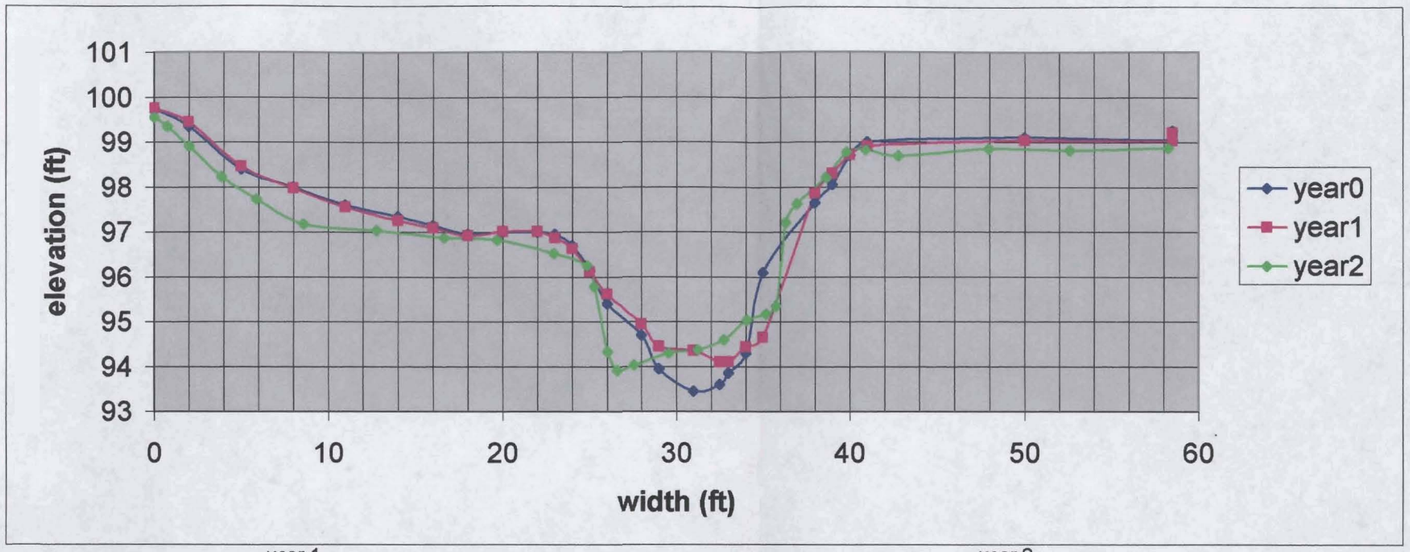



| year 0 | | | | year 1 | | | | year 2 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Notes | Distance (ft) | elevation (ft) | FS (ft) | Notes | Distance (ft) | elevation (ft) | FS (ft) | Notes | Distance (ft) | elevation (ft) |
| | 0 | 99.85 | 6 | | 0 | 99.82 | 5.81 | PIN-I Disturbed | 0.00 | 99.79 |
| | 3 | 99.65 | 6.2 | | 2 | 99.7 | 5.93 | G | 1.31 | 99.59 |
| | 6 | 99.15 | 6.7 | | 3 | 99.61 | 6.02 | G | 4.24 | 99.37 |
| | 8 | 99.1 | 6.75 | | 6 | 99.11 | 6.52 | G | 6.27 | 98.91 |
| | 11 | 98.4 | 7.45 | | 8 | 99.07 | 6.56 | G | 8.93 | 98.89 |
| | 13 | 98.1 | 7.75 | | 11 | 98.41 | 7.22 | G | 10.91 | 98.27 |
| | 15 | 97.75 | 8.1 | | 13 | 98.11 | 7.52 | G | 15.16 | 97.57 |
| | 16 | 97.55 | 8.3 | | 15 | 97.72 | 7.91 | LBF | 16.88 | 97.29 |
| | 17 | 97.35 | 8.5 | | 16 | 97.59 | 8.04 | G | 17.41 | 96.81 |
| | 18 | 96.25 | 9.6 | | 17 | 97.35 | 8.28 | LEOW | 18.03 | 96.21 |
| | 19 | 96.15 | 9.7 | | 18 | 96.78 | 8.85 | CHN | 19.87 | 95.87 |
| | 20 | 96.1 | 9.75 | | 19 | 96.2 | 9.43 | TW | 21.01 | 95.91 |
| | 21 | 96.05 | 9.8 | | 20 | 96.08 | 9.55 | CHN | 22.61 | 95.97 |
| | 22 | 96.05 | 9.8 | | 21 | 95.88 | 9.75 | REOW | 23.52 | 96.27 |
| | 23 | 96.15 | 9.7 | | 22 | 96.04 | 9.59 | G | 24.49 | 96.75 |
| | 24 | 96.55 | 9.3 | | 23 | 96.16 | 9.47 | RBF | 25.76 | 97.41 |
| | 25 | 97.1 | 8.75 | | 24 | 96.49 | 9.14 | G | 28.53 | 98.01 |
| | 26 | 97.55 | 8.3 | | 25 | 97.12 | 8.51 | G | 32.08 | 98.39 |
| | 27 | 97.75 | 8.1 | | 26 | 97.55 | 8.08 | G | 35.40 | 98.21 |
| | 29 | 98.05 | 7.8 | | 27 | 97.68 | 7.95 | G | 40.54 | 98.45 |
| | 32 | 98.45 | 7.4 | | 29 | 98.12 | 7.51 | G | 45.24 | 98.81 |
| | 35 | 98.4 | 7.45 | | 32 | 98.43 | 7.2 | G | 51.83 | 98.85 |
| | 39 | 98.55 | 7.3 | | 35 | 98.34 | 7.29 | G | 56.78 | 98.83 |
| | 46 | 98.9 | 6.95 | | 39 | 98.53 | 7.1 | G | 59.55 | 98.61 |
| | 58 | 98.95 | 6.9 | | 46 | 98.91 | 6.72 | G | 61.76 | 98.07 |
| | 62 | 98.15 | 7.7 | | 58 | 98.93 | 6.7 | G | 63.83 | 97.39 |
| | 64 | 97.55 | 8.3 | | 62 | 98.13 | 7.5 | G+VP | 64.51 | 97.13 |
| | 65.5 | 96.95 | 8.9 | | 64 | 97.51 | 8.12 | G | 65.78 | 96.27 |
| | 67 | 95.7 | 10.15 | | 65.5 | 96.92 | 8.71 | G | 67.40 | 95.59 |
| | 68 | 94.65 | 11.2 | | 67 | 95.48 | 10.15 | G | 69.39 | 94.67 |
| | 69 | 94.7 | 11.15 | | 68 | 94.88 | 10.75 | G | 70.87 | 94.63 |
| | 76 | 94.75 | 11.1 | | 69 | 94.76 | 10.87 | G | 72.46 | 94.77 |
| | 77 | 95 | 10.85 | | 76 | 94.76 | 10.87 | G | 75.16 | 94.55 |
| | 78 | 96.3 | 9.55 | | 77 | 95.55 | 10.08 | G | 77.00 | 95.63 |
| | 78.5 | 96.95 | 8.9 | | 78 | 96.27 | 9.36 | G | 78.49 | 96.21 |
| | 79.5 | 97.6 | 8.25 | | 78.5 | 96.92 | 8.71 | G+VP | 79.21 | 97.03 |
| | 81 | 98.6 | 7.25 | | 79.5 | 97.75 | 7.88 | G | 80.74 | 98.51 |
| | 84 | 98.35 | 7.5 | | 81 | 98.62 | 7.01 | G | 83.95 | 98.25 |
| | 87 | 97.95 | 7.9 | | 84 | 98.38 | 7.25 | G | 89.09 | 97.67 |
| | 90.33 | 97.7 | 8.15 | | 87 | 97.93 | 7.7 | PIN-J | 90.21 | 97.85 |
| | 90.33 | 97.85 | 8 | | 90.33 | 97.71 | 7.92 | | | |
| | | | | | 90.33 | 97.83 | 7.8 | | | |

**Cross Section Geometry**
**Jumping Run Creek**
**Monitoring Report**

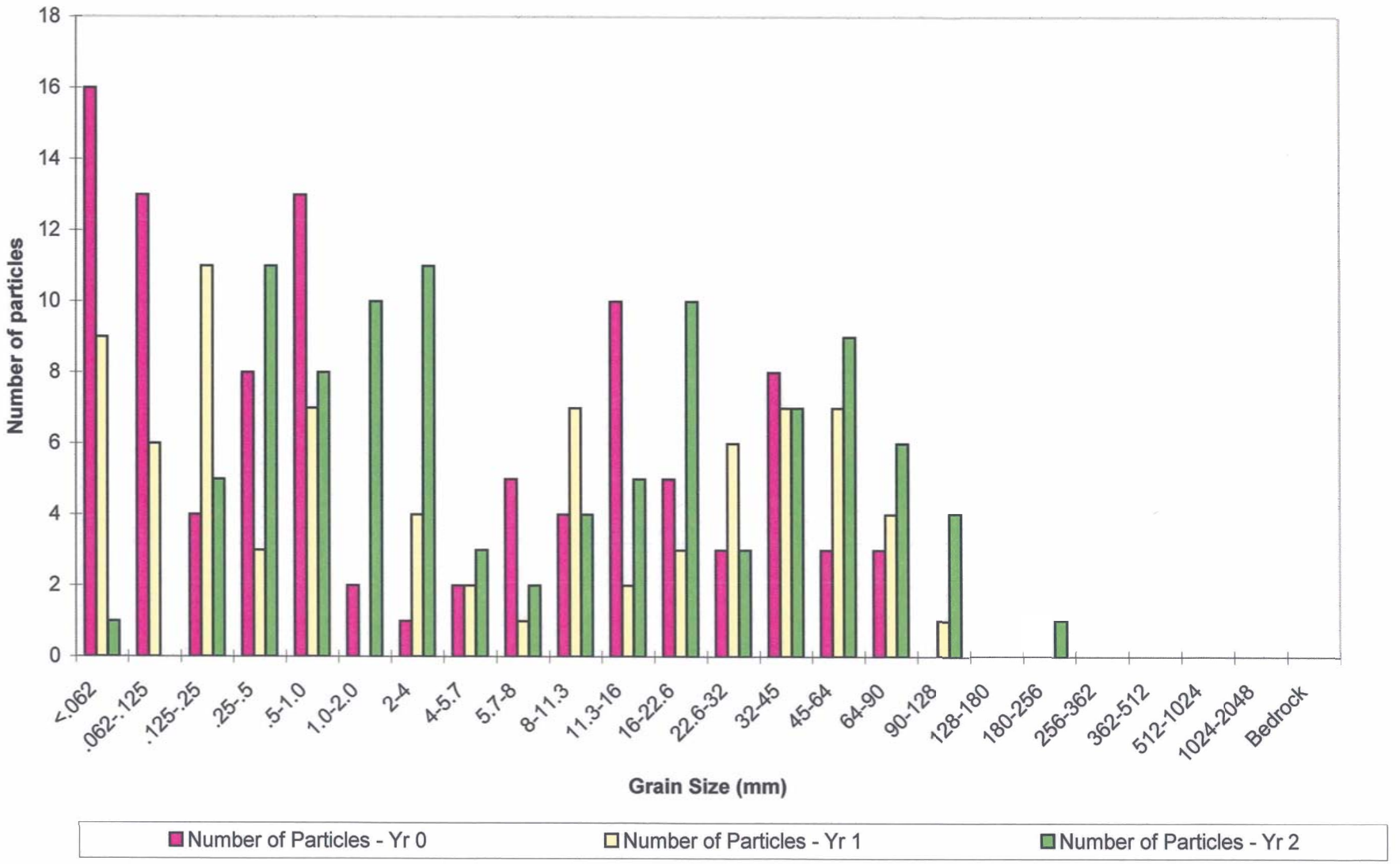
**AREA 3**
**Section** Pool **CLASSIFICATION**
**Location** STA (PINS K,L)

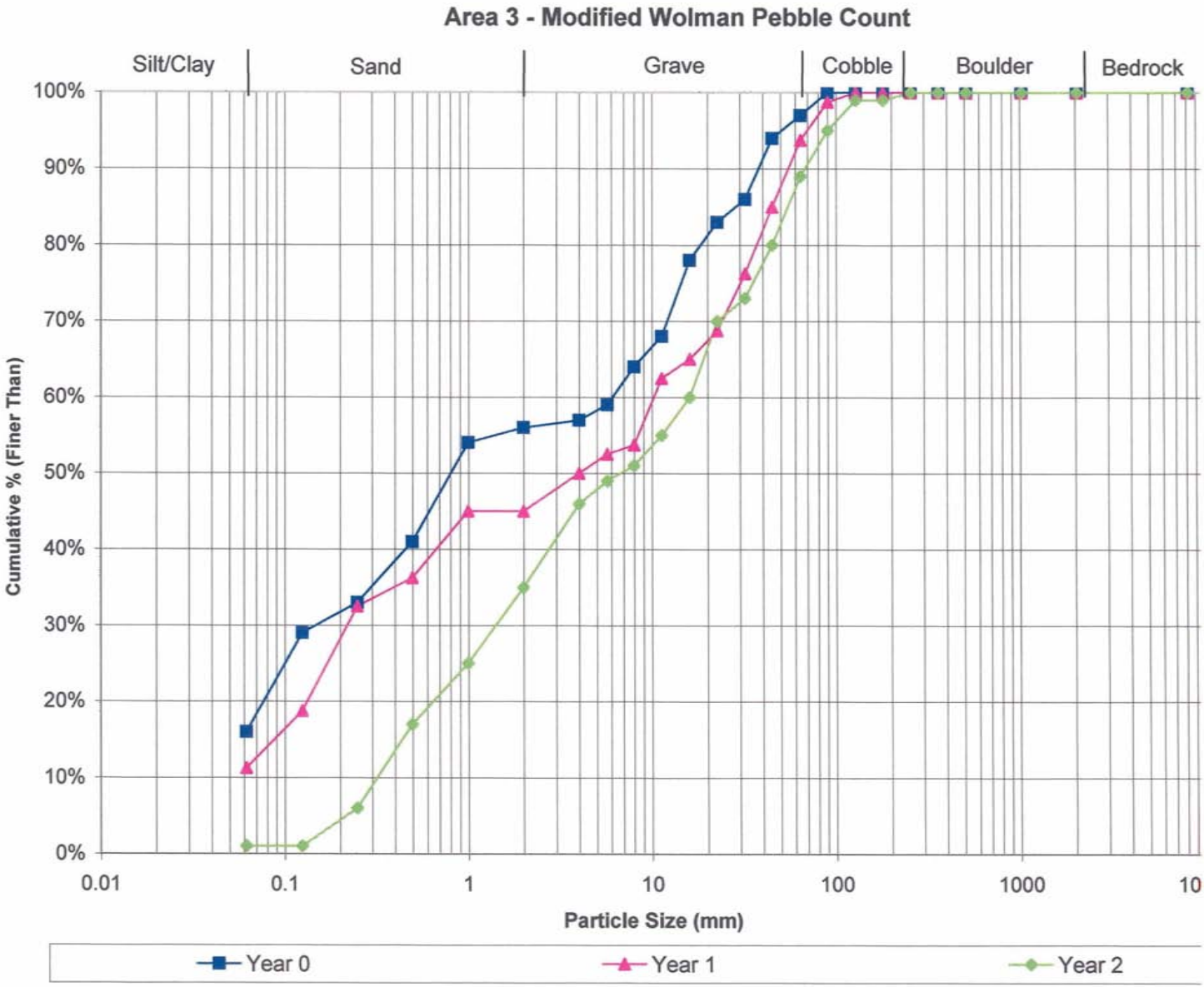
H OF I (ft) 106.9 year 0
H OF I (ft) 106.65 year 1



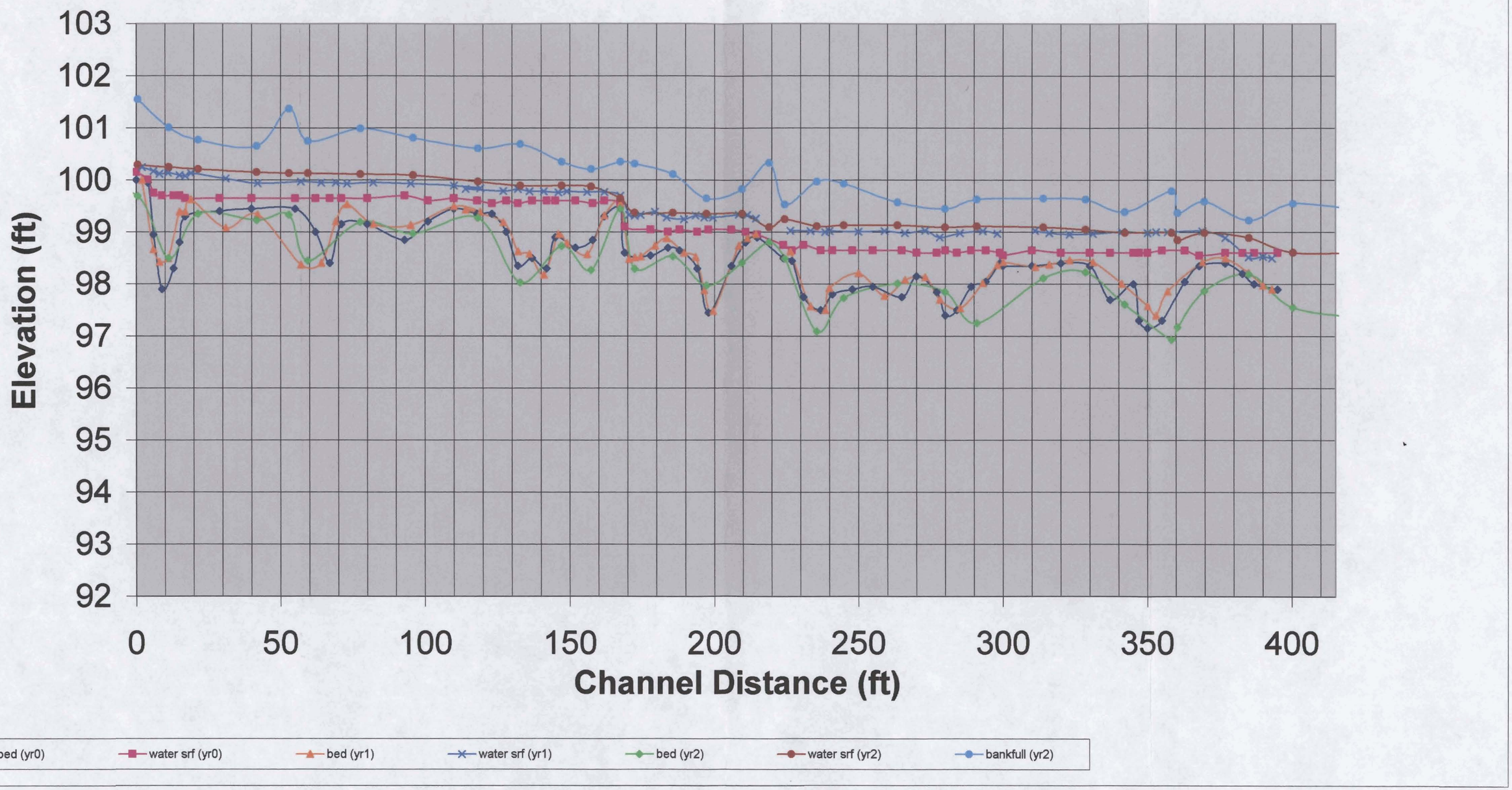

| year 0 | | | | year 1 | | | | year 2 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Notes | Distance (ft) | elevation (ft) | FS (ft) | Notes | Distance (ft) | elevation (ft) | FS (ft) | Notes | Distance (ft) | elevation (ft) |
| | 0 | 99.75 | 7.15 | PIN-K? | 0 | 99.75 | 6.9 | PIN-K | 0 | Bad shot |
| | 2 | 99.35 | 7.55 | | 2 | 99.44 | 7.21 | G | 0.77 | 99.55 |
| | 5 | 98.4 | 8.5 | | 5 | 98.46 | 8.19 | G | 2.03 | 99.35 |
| | 8 | 98 | 8.9 | | 8 | 97.97 | 8.68 | G | 3.90 | 98.91 |
| | 11 | 97.6 | 9.3 | | 11 | 97.56 | 9.09 | G | 5.89 | 98.23 |
| | 14 | 97.35 | 9.55 | | 14 | 97.25 | 9.4 | G | 8.61 | 97.73 |
| | 16 | 97.15 | 9.75 | | 16 | 97.09 | 9.56 | G | 12.78 | 97.17 |
| | 18 | 96.95 | 9.95 | | 18 | 96.92 | 9.73 | G | 16.65 | 97.03 |
| | 20 | 97 | 9.9 | | 20 | 97.01 | 9.64 | G | 19.66 | 96.87 |
| | 22 | 97 | 9.9 | | 22 | 97.01 | 9.64 | LBF | 22.94 | 96.83 |
| | 23 | 96.95 | 9.95 | | 23 | 96.87 | 9.78 | G | 24.86 | 96.53 |
| | 24 | 96.7 | 10.2 | | 24 | 96.63 | 10.02 | LEOW | 25.27 | 96.25 |
| | 25 | 96.15 | 10.75 | | 25 | 96.11 | 10.54 | CHN | 26.03 | 95.79 |
| | 26 | 95.4 | 11.5 | | 26 | 95.61 | 11.04 | CHN | 26.61 | 94.33 |
| | 28 | 94.7 | 12.2 | | 28 | 94.94 | 11.71 | CHN | 27.59 | 93.91 |
| | 29 | 93.95 | 12.95 | | 29 | 94.45 | 12.2 | CHN | 29.58 | 94.03 |
| | 31 | 93.45 | 13.45 | | 31 | 94.35 | 12.3 | CHN | 31.23 | 94.29 |
| | 32.5 | 93.6 | 13.3 | | 32.5 | 94.1 | 12.55 | CHN | 32.73 | 94.37 |
| | 33 | 93.85 | 13.05 | | 33 | 94.1 | 12.55 | CHN | 34.05 | 94.59 |
| | 34 | 94.3 | 12.6 | | 34 | 94.43 | 12.22 | CHN | 35.20 | 95.03 |
| | 35 | 96.1 | 10.8 | | 35 | 94.65 | 12 | CHN | 35.77 | 95.17 |
| | 38 | 97.65 | 9.25 | | 38 | 97.85 | 8.8 | CHN | 36.31 | 95.35 |
| | 39 | 98.05 | 8.85 | | 39 | 98.29 | 8.36 | RBF | 36.98 | 97.21 |
| | 40 | 98.7 | 8.2 | | 40 | 98.71 | 7.94 | G | 38.65 | 97.63 |
| | 41 | 99 | 7.9 | | 41 | 98.91 | 7.74 | G | 39.81 | 98.21 |
| | 50 | 99.1 | 7.8 | | 50 | 99.03 | 7.62 | G | 40.91 | 98.77 |
| | 58.5 | 99.05 | 7.85 | | 58.5 | 99.04 | 7.61 | G | 42.81 | 98.83 |
| PIN-L | 58.5 | 99.25 | 7.65 | | 58.5 | 99.21 | 7.44 | G | 47.99 | 98.69 |
| | | | | | | | | G | 52.62 | 98.85 |
| | | | | | | | | G | 58.27 | 98.81 |
| | | | | | | | | PIN-L Disturbed | 58.87 | 98.87 |

## Area 3 - Modified Wolman Pebble Count




Area 3 - Modified Wolman Pebble Count
Silt/Clay
Sand
Grave
Cobble
Boulder
Bedrock
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Cumulative % (Finer Than)
0.01
0.1
1
10
100
1000
10
Particle Size (mm)
Year 0
Year 1
Year 2

## Longitudinal Profile (AREA 4)



**AREA 4**

| | | |
|---|---|---|
| BM | 100 | year0 |
| BM | 100 | year1 |

YEAR 0

| Notes | Station Original Field | BS | HI | FS TP | FS bed | depth water | FS BKF | FS TOB | FS BKF | FS TOB | ELEV bed | ELEV water surf | ELEV BKF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pin at fence between fence pst | | 7.35 | 107.35 | | | | | | | | | | |
| | 0 | 7.35 | 107.35 | | 7.35 | 0.15 | | | | | 100 | 100.15 | |
| top of rock vane | 4 | 7.35 | 107.35 | | 7.4 | 0.05 | | | | | 99.95 | 100 | |
| | 6 | 7.35 | 107.35 | | 8.4 | 0.8 | | | | | 98.95 | 99.75 | |
| | 9 | 7.35 | 107.35 | | 9.45 | 1.8 | | | | | 97.9 | 99.7 | |
| | 13 | 7.35 | 107.35 | | 9.05 | 1.4 | | | | | 98.3 | 99.7 | |
| | 15 | 7.35 | 107.35 | | 8.55 | 0.9 | | | | | 98.8 | 99.7 | |
| | 17 | 7.35 | 107.35 | | 8.05 | 0.35 | | | | | 99.3 | 99.65 | |
| | 29 | 7.35 | 107.35 | | 7.95 | 0.25 | | | | | 99.4 | 99.65 | |
| | 40 | 7.35 | 107.35 | | 7.9 | 0.2 | | | | | 99.45 | 99.65 | |
| | 55 | 7.35 | 107.35 | | 7.9 | 0.2 | | | | | 99.45 | 99.65 | |
| | 62 | 7.35 | 107.35 | | 8.35 | 0.65 | | | | | 99 | 99.65 | |
| | 67 | 7.35 | 107.35 | | 8.95 | 1.25 | | | | | 98.4 | 99.65 | |
| | 71 | 7.35 | 107.35 | | 8.2 | 0.5 | | | | | 99.15 | 99.65 | |
| | 80 | 7.35 | 107.35 | | 8.2 | 0.5 | | | | | 99.15 | 99.65 | |
| | 93 | 7.35 | 107.35 | | 8.5 | 0.85 | | | | | 98.85 | 99.7 | |
| | 101 | 7.35 | 107.35 | | 8.15 | 0.4 | | | | | 99.2 | 99.6 | |
| | 110 | 7.35 | 107.35 | | 7.9 | 0.2 | | | | | 99.45 | 99.65 | |
| | 118 | 7.35 | 107.35 | | 8 | 0.25 | | | | | 99.35 | 99.6 | |
| | 123 | 7.35 | 107.35 | | 8 | 0.2 | | | | | 99.35 | 99.55 | |
| | 128 | 7.35 | 107.35 | | 8.35 | 0.6 | | | | | 99 | 99.6 | |
| | 132 | 7.35 | 107.35 | | 9 | 1.2 | | | | | 98.35 | 99.55 | |
| | 137 | 7.35 | 107.35 | | 8.85 | 1.1 | | | | | 98.5 | 99.6 | |
| | 142 | 7.35 | 107.35 | | 9.05 | 1.3 | | | | | 98.3 | 99.6 | |
| | 145 | 7.35 | 107.35 | | 8.45 | 0.7 | | | | | 98.9 | 99.6 | |
| | 152 | 7.35 | 107.35 | | 8.65 | 0.9 | | | | | 98.7 | 99.6 | |
| | 158 | 7.35 | 107.35 | | 8.5 | 0.7 | | | | | 98.85 | 99.55 | |
| | 162 | 7.35 | 107.35 | | 8.05 | 0.3 | | | | | 99.3 | 99.6 | |
| center of notch in log | 167.5 | 7.35 | 107.35 | | 7.9 | 0.1 | | | | | 99.45 | 99.55 | |
| d/s log | 169 | 7.35 | 107.35 | | 8.75 | 0.5 | | | | | 98.6 | 99.1 | |
| | 178 | 7.35 | 107.35 | | 8.8 | 0.5 | | | | | 98.55 | 99.05 | |
| | 184 | 7.35 | 107.35 | | 8.65 | 0.3 | | | | | 98.7 | 99 | |
| | 188 | 7.35 | 107.35 | | 8.7 | 0.4 | | | | | 98.65 | 99.05 | |
| | 194 | 7.35 | 107.35 | | 9.05 | 0.7 | | | | | 98.3 | 99 | |
| | 198 | 7.35 | 107.35 | | 9.9 | 1.6 | | | | | 97.45 | 99.05 | |
| | 206 | 7.35 | 107.35 | | 9 | 0.7 | | | | | 98.35 | 99.05 | |
| | 211 | 7.35 | 107.35 | | 8.55 | 0.2 | | | | | 98.8 | 99 | |
| | 215 | 7.35 | 107.35 | | 8.45 | 0.05 | | | | | 98.9 | 98.95 | |
| riffle xsection at 223 | 224 | 7.35 | 107.35 | | 8.85 | 0.25 | | | | | 98.5 | 98.75 | |
| | 227 | 7.35 | 107.35 | | 8.9 | 0.2 | | | | | 98.45 | 98.65 | |
| | 231 | 7.35 | 107.35 | | 9.6 | 1 | | | | | 97.75 | 98.75 | |
| | 237 | 7.35 | 107.35 | | 9.85 | 1.15 | | | | | 97.5 | 98.65 | |
| | 241 | 7.35 | 107.35 | | 9.55 | 0.85 | | | | | 97.8 | 98.65 | |
| | 248 | 7.35 | 107.35 | | 9.45 | 0.75 | | | | | 97.9 | 98.65 | |
| | 255 | 7.35 | 107.35 | | 9.4 | 0.7 | | | | | 97.95 | 98.65 | |
| | 265 | 7.35 | 107.35 | | 9.6 | 0.9 | | | | | 97.75 | 98.65 | |
| | 270 | 7.35 | 107.35 | | 9.2 | 0.45 | | | | | 98.15 | 98.6 | |
| | 277 | 7.35 | 107.35 | | 9.5 | 0.75 | | | | | 97.85 | 98.6 | |
| | 280 | 7.35 | 107.35 | | 9.95 | 1.25 | | | | | 97.4 | 98.65 | |
| | 284 | 7.35 | 107.35 | | 9.85 | 1.1 | | | | | 97.5 | 98.6 | |
| | 289 | 7.35 | 107.35 | | 9.4 | 0.7 | | | | | 97.95 | 98.65 | |
| | 294 | 7.35 | 107.35 | | 9.3 | 0.6 | | | | | 98.05 | 98.65 | |
| | 299 | 7.35 | 107.35 | | 8.95 | 0.2 | | | | | 98.4 | 98.6 | |
| | 300 | 7.35 | 107.35 | | 9 | 0.2 | | | | | 98.35 | 98.55 | |
| | 310 | 7.35 | 107.35 | | 9 | 0.3 | | | | | 98.35 | 98.65 | |
| | 320 | 7.35 | 107.35 | | 8.95 | 0.2 | | | | | 98.4 | 98.6 | |
| | 330 | 7.35 | 107.35 | | 9 | 0.25 | | | | | 98.35 | 98.6 | |
| | 337 | 7.35 | 107.35 | | 9.65 | 0.9 | | | | | 97.7 | 98.6 | |
| | 345 | 7.35 | 107.35 | | 9.35 | 0.6 | | | | | 98 | 98.6 | |
| | 347 | 7.35 | 107.35 | | 10.05 | 1.3 | | | | | 97.3 | 98.6 | |
| | 350 | 7.35 | 107.35 | | 10.2 | 1.45 | | | | | 97.15 | 98.6 | |
| pool xsection at 353 | 355 | 7.35 | 107.35 | | 10.05 | 1.35 | | | | | 97.3 | 98.65 | |
| | 363 | 7.35 | 107.35 | | 9.3 | 0.6 | | | | | 98.05 | 98.65 | |
| | 368 | 7.35 | 107.35 | | 9 | 0.2 | | | | | 98.35 | 98.55 | |
| | 377 | 7.35 | 107.35 | | 8.95 | 0.2 | | | | | 98.4 | 98.6 | |
| | 383 | 7.35 | 107.35 | | 9.15 | 0.4 | | | | | 98.2 | 98.6 | |
| | 387 | 7.35 | 107.35 | | 9.35 | 0.6 | | | | | 98 | 98.6 | |
| | 395 | 7.35 | 107.35 | | 9.45 | 0.7 | | | | | 97.9 | 98.6 | |

YEAR 1

| Notes | Station | Station Adjusted* | BS | HI | FS TP | FS bed | depth water | FS BKF | FS TOB | FS BKF | FS TOB | ELEV bed | ELEV water surf | ELEV BKF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pin at fence between fence pst | | | 7.63 | 107.63 | | | | | | | | | | |
| | 0 | 2 | 7.63 | 107.63 | | 7.63 | 0.25 | | | | | 100 | 100.25 | |
| | 4 | 6 | 7.63 | 107.63 | | 8.96 | 1.5 | | | | | 98.67 | 100.17 | |
| | 6 | 8 | 7.63 | 107.63 | | 9.21 | 1.7 | | | | | 98.42 | 100.12 | |
| | 9 | 11 | 7.63 | 107.63 | | 9.14 | 1.65 | | | | | 98.49 | 100.14 | |
| pool | 13 | 15 | 7.63 | 107.63 | | 8.24 | 0.7 | | | | | 99.39 | 100.09 | |
| | 15 | 17 | 7.63 | 107.63 | | 8.25 | 0.7 | | | | | 99.38 | 100.08 | |
| | 17 | 19 | 7.63 | 107.63 | | 8 | 0.5 | | | | | 99.63 | 100.13 | |
| begin run | 29 | 31 | 7.63 | 107.63 | | 8.55 | 0.95 | | | | | 99.08 | 100.03 | |
| | 40 | 42 | 7.63 | 107.63 | | 8.29 | 0.6 | | | | | 99.34 | 99.94 | |
| center of pool, rootwd at 58 | 55 | 57 | 7.63 | 107.63 | | 9.26 | 1.6 | | | | | 98.37 | 99.97 | |
| center of pool | 62 | 64 | 7.63 | 107.63 | | 9.23 | 1.55 | | | | | 98.4 | 99.95 | |
| start glide | 67 | 69 | 7.63 | 107.63 | | 8.43 | 0.75 | | | | | 99.2 | 99.95 | |
| | 71 | 73 | 7.63 | 107.63 | | 8.1 | 0.4 | | | | | 99.53 | 99.93 | |
| | 80 | 82 | 7.63 | 107.63 | | 8.48 | 0.8 | | | | | 99.15 | 99.95 | |
| middle glide | 93 | 95 | 7.63 | 107.63 | | 8.5 | 0.8 | | | | | 99.13 | 99.93 | |
| end glide | 101 | 110 | 7.63 | 107.63 | | 8.14 | 0.4 | | | | | 99.49 | 99.89 | |
| | 110 | 119 | 7.63 | 107.63 | | 8.24 | 0.45 | | | | | 99.39 | 99.84 | |
| riffle | 118 | 114 | 7.63 | 107.63 | | 8.2 | 0.4 | | | | | 99.43 | 99.83 | |
| outside bend/end run | 123 | 127 | 7.63 | 107.63 | | 8.44 | 0.6 | | | | | 99.19 | 99.79 | |
| begin pool | 128 | 132 | 7.63 | 107.63 | | 9 | 1.2 | | | | | 98.63 | 99.83 | |
| center of pool | 132 | 136 | 7.63 | 107.63 | | 9.05 | 1.2 | | | | | 98.58 | 99.78 | |
| edge of pool | 137 | 141 | 7.63 | 107.63 | | 9.45 | 1.6 | | | | | 98.18 | 99.78 | |
| | 142 | 146 | 7.63 | 107.63 | | 8.67 | 0.8 | | | | | 98.96 | 99.76 | |
| begin glide | 145 | 149 | 7.63 | 107.63 | | 8.85 | 1 | | | | | 98.78 | 99.78 | |
| center of glide | 152 | 156 | 7.63 | 107.63 | | 9.06 | 1.2 | | | | | 98.57 | 99.77 | |
| riffle | 158 | 162 | 7.63 | 107.63 | | 8.31 | 0.45 | | | | | 99.32 | 99.77 | |
| top of log notch | 162 | 167.5 | 7.63 | 107.63 | | 8.08 | 0.15 | | | | | 99.55 | 99.7 | |
| | 165 | 170.5 | 7.63 | 107.63 | | 9.15 | 0.85 | | | | | 98.48 | 99.33 | |
| | 167 | 172.5 | 7.63 | 107.63 | | 9.12 | 0.8 | | | | | 98.51 | 99.31 | |
| | 169 | 174.5 | 7.63 | 107.63 | | 9.1 | 0.8 | | | | | 98.53 | 99.33 | |
| | 174 | 179.5 | 7.63 | 107.63 | | 8.89 | 0.65 | | | | | 98.74 | 99.39 | |
| | 178 | 183.5 | 7.63 | 107.63 | | 8.75 | 0.4 | | | | | 98.88 | 99.28 | |
| | 184 | 189.5 | 7.63 | 107.63 | | 9.03 | 0.65 | | | | | 98.6 | 99.25 | |
| pool | 188 | 193.5 | 7.63 | 107.63 | | 9.11 | 0.8 | | | | | 98.52 | 99.32 | |
| center of pool | 191 | 196.5 | 7.63 | 107.63 | | 9.75 | 1.4 | | | | | 97.88 | 99.28 | |
| persimmon tree | 194 | 199.5 | 7.63 | 107.63 | | 10.15 | 1.8 | | | | | 97.48 | 99.28 | |
| | 203 | 208.5 | 7.63 | 107.63 | | 8.89 | 0.6 | | | | | 98.74 | 99.34 | |
| begin glide | 206 | 211.5 | 7.63 | 107.63 | | 8.75 | 0.45 | | | | | 98.88 | 99.33 | |
| top of riffle | 209 | 214.5 | 7.63 | 107.63 | | 8.67 | 0.3 | | | | | 98.96 | 99.26 | |
| xsection riffle | 219 | 224.5 | 7.63 | 107.63 | | | | | | | | | | |
| end riffle | 221 | 226.5 | 7.63 | 107.63 | | 9 | 0.4 | | | | | 98.63 | 99.03 | |
| end run/begin pool | 228 | 233.5 | 7.63 | 107.63 | | 10.06 | 1.45 | | | | | 97.57 | 99.02 | |
| center of pool | 233 | 238.5 | 7.63 | 107.63 | | 10.13 | 1.5 | | | | | 97.5 | 99 | |
| end pool/begin glide (roodwd | 240 | 240 | 7.63 | 107.63 | | 9.71 | 1.1 | | | | | 97.92 | 99.02 | |
| glide | 250 | 250 | 7.63 | 107.63 | | 9.42 | 0.8 | | | | | 98.21 | 99.01 | |
| persimmon tree | 259 | 259 | 7.63 | 107.63 | | 9.86 | 1.25 | | | | | 97.77 | 99.02 | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 266 | 266 | 7.63 | 107.63 | 9.55 | 0.9 | | | | 98.08 | 98.98 |
| | 273 | 273 | 7.63 | 107.63 | 9.5 | 0.9 | | | | 98.13 | 99.03 |
| | 278 | 278 | 7.63 | 107.63 | 9.93 | 1.2 | | | | 97.7 | 98.9 |
| center of pool | 285 | 285 | 7.63 | 107.63 | 10.1 | 1.45 | | | | 97.53 | 98.98 |
| | 293 | 293 | 7.63 | 107.63 | 9.61 | 1 | | | | 98.02 | 99.02 |
| | 298 | 298 | 7.63 | 107.63 | 9.26 | 0.6 | | | | 98.37 | 98.97 |
| holly tree | 300 | 300 | 7.63 | 107.63 | 9.21 | | | | | 98.42 | |
| | 311 | 311 | 7.63 | 107.63 | 9.3 | 0.7 | | | | 98.33 | 99.03 |
| | 316 | 316 | 7.63 | 107.63 | 9.25 | 0.6 | | | | 98.38 | 98.98 |
| begin run | 323 | 323 | 7.63 | 107.63 | 9.17 | 0.5 | | | | 98.46 | 98.96 |
| center run | 331 | 331 | 7.63 | 107.63 | 9.21 | 0.55 | | | | 98.42 | 98.97 |
| end run/begin pool | 341 | 341 | 7.63 | 107.63 | 9.62 | 1 | | | | 98.01 | 99.01 |
| erosion | 350 | 350 | 7.63 | 107.63 | 10.05 | 1.4 | | | | 97.58 | 98.98 |
| xsection pool | 358 | 353 | 7.63 | 107.63 | 10.23 | 1.6 | | | | 97.4 | 99 |
| end pool/begin glide | 362 | 357 | 7.63 | 107.63 | 9.77 | 1.14 | | | | 97.86 | 99 |
| end glide/begin riffle | 374 | 369 | 7.63 | 107.63 | 9.21 | 0.6 | | | | 98.42 | 99.02 |
| begin riffle | 382 | 377 | 7.63 | 107.63 | 9.14 | 0.4 | | | | 98.49 | 98.89 |
| begin run | 390 | 385 | 7.63 | 107.63 | 9.41 | 0.3 | | | | 98.22 | 98.52 |
| run | 395 | 390 | 7.63 | 107.63 | 9.65 | 0.55 | | | | 97.98 | 98.53 |
| run | 398 | 393 | 7.63 | 107.63 | 9.73 | 0.6 | | | | 97.9 | 98.5 |

*Station Adjusted to match exisitng Stationing from year 0 at physical features (I.e. structures). In accuracies in stationing due to the way the tape is laid down the centerline of the stream

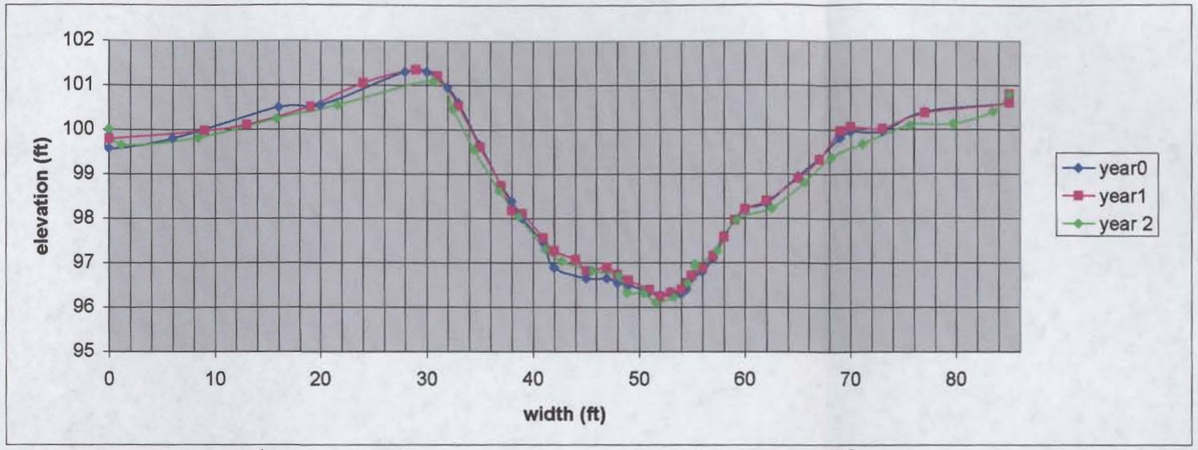
YEAR 2

| Notes | Station | Station Adjusted* | BS | HI | FS TP | FS bed | depth water | FS BKF | FS TOB | FS BKF | FS TOB | ELEV bed | ELEV water surf | ELEV BKF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TW | 0.00 | -20.36 | | | | 99.87 | | | | | | | 0 | 0 |
| TWR | 20.84 | 0.48 | | | | 99.69 | | | | | | | 100.29 | 101.55 |
| TWP | 31.65 | 11.29 | | | | 98.49 | | | | | | | 100.25 | 101.01 |
| TWG | 41.83 | 21.47 | | | | 99.35 | | | | | | | 100.21 | 100.77 |
| TWR | 62.01 | 41.65 | | | | 99.23 | | | | | | | 100.15 | 100.65 |
| TWR | 73.25 | 52.89 | | | | 99.33 | | | | | | | 100.13 | 101.37 |
| TWP | 79.74 | 59.38 | | | | 98.45 | | | | | | | 100.13 | 100.75 |
| TWG | 97.87 | 77.51 | | | | 99.19 | | | | | | | 100.11 | 100.99 |
| TWR | 116.13 | 95.77 | | | | 98.97 | | | | | | | 100.09 | 100.81 |
| TWR | 138.60 | 118.24 | | | | 99.27 | | | | | | | 99.97 | 100.61 |
| TWP | 153.15 | 132.79 | | | | 98.03 | | | | | | | 99.89 | 100.69 |
| TWG | 167.50 | 147.14 | | | | 98.73 | | | | | | | 99.89 | 100.35 |
| TWS | 177.71 | 157.35 | | | | 98.27 | | | | | | | 99.87 | 100.21 |
| **Top of Log Vane** | **187.86** | **167.50** | | | | **99.45** | | | | | | | **99.65** | **100.35** |
| TWS | 192.81 | 172.45 | | | | 98.29 | | | | | | | 99.37 | 100.31 |
| TWRI | 206.02 | 185.66 | | | | 98.53 | | | | | | | 99.37 | 100.11 |
| TWP | 217.62 | 197.26 | | | | 97.97 | | | | | | | 99.35 | 99.65 |
| TWG | 230.06 | 209.70 | | | | 98.41 | | | | | | | 99.35 | 99.83 |
| TW | 239.51 | 219.15 | | | | 98.81 | | | | | | | 99.09 | 100.33 |
| **TW-Riffle X-section** | **244.82** | **224.46** | | | | **98.49** | | | | | | | **99.25** | **99.53** |
| TWP | 256.03 | 235.67 | | | | 97.09 | | | | | | | 99.11 | 99.97 |
| TWR | 265.28 | 244.92 | | | | 97.73 | | | | | | | 99.13 | 99.93 |
| TWR | 283.81 | 263.45 | | | | 98.01 | | | | | | | 99.13 | 99.57 |
| TWR | 300.25 | 279.89 | | | | 97.85 | | | | | | | 99.09 | 99.45 |
| TWP | 311.30 | 290.94 | | | | 97.25 | | | | | | | 99.11 | 99.63 |
| TWG | 334.20 | 313.84 | | | | 98.11 | | | | | | | 99.09 | 99.65 |
| TWRI | 348.81 | 328.45 | | | | 98.23 | | | | | | | 99.05 | 99.63 |
| TWR | 362.45 | 342.09 | | | | 97.61 | | | | | | | 98.99 | 99.39 |
| TW | 378.77 | 358.41 | | | | 96.93 | | | | | | | 98.99 | 99.79 |
| **TW-Pool X-section** | **380.73** | **360.37** | | | | **97.17** | | | | | | | **98.85** | **99.37** |
| TWG | 390.04 | 369.68 | | | | 97.87 | | | | | | | 98.99 | 99.59 |
| TWRI | 405.47 | 385.11 | | | | 98.19 | | | | | | | 98.89 | 99.23 |
| TWR | 420.61 | 400.25 | | | | 97.55 | | | | | | | 98.61 | 99.55 |
| TWP | 446.45 | 426.09 | | | | 97.39 | | | | | | | 98.61 | 99.45 |
| TWG | 459.92 | 439.56 | | | | 97.65 | | | | | | | 98.55 | 99.69 |
| TWRI | 472.97 | 452.61 | | | | 97.95 | | | | | | | 98.29 | 99.55 |

**Cross Section Geometry**
**Jumping Run Creek**
**Monitoring Report**

**AREA 4**
**Section** Riffle **CLASSIFICATION**
**Location** STA (PINS M,N)

H OF I (ft) 105 year 0
H OF I (ft) 105.21 year 1

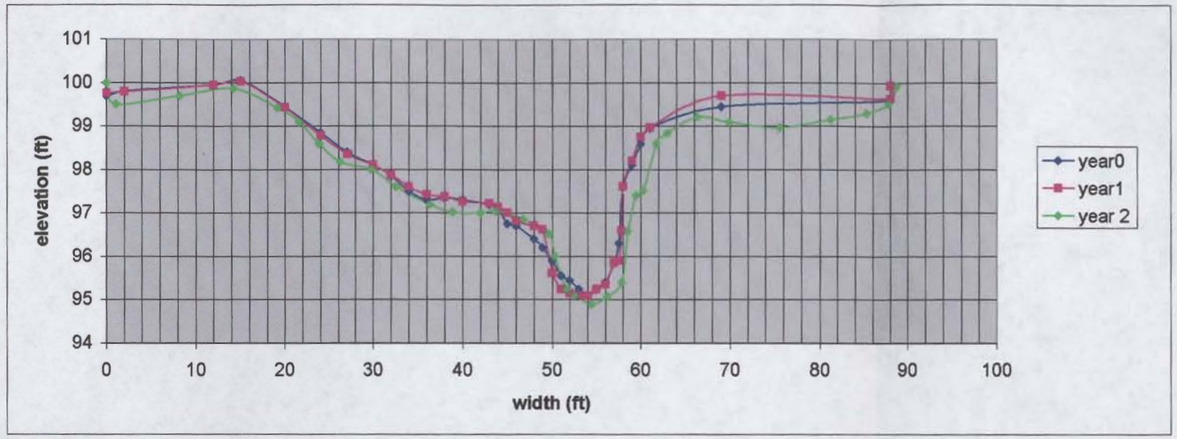



| year 0 | | | | | year 1 | | | | year 2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Notes | Distance (ft) | elevation (ft) | FS (ft) | | Notes | Distance (ft) | elevation (ft) | FS (ft) | Notes | Distance (ft) | elevation (ft) |
| PIN-M | 0 | 100 | 5 | | | 0 | 99.79 | 5.42 | PIN-M | 0.00 | 100.01 |
| | 0 | 99.58 | 5.42 | | | 9 | 99.98 | 5.23 | G | 1.20 | 99.65 |
| | 6 | 99.8 | 5.2 | | | 13 | 100.11 | 5.1 | G | 8.44 | 99.81 |
| | 16 | 100.5 | 4.5 | | | 19 | 100.51 | 4.7 | G | 15.82 | 100.25 |
| | 20 | 100.55 | 4.45 | | | 24 | 101.05 | 4.16 | G | 21.63 | 100.55 |
| | 28 | 101.3 | 3.7 | | | 29 | 101.35 | 3.86 | TOB | 30.62 | 101.09 |
| | 30 | 101.3 | 3.7 | | | 31 | 101.21 | 4 | G | 32.47 | 100.47 |
| | 32 | 100.95 | 4.05 | | | 33 | 100.53 | 4.68 | G | 34.48 | 99.55 |
| | 33 | 100.6 | 4.4 | | | 35 | 99.61 | 5.6 | G | 36.79 | 98.63 |
| | 35 | 99.65 | 5.35 | | | 37 | 98.73 | 6.48 | G | 38.68 | 98.05 |
| | 37 | 98.75 | 6.25 | | | 38 | 98.17 | 7.04 | LBF | 41.19 | 97.31 |
| | 38 | 98.4 | 6.6 | | | 39 | 98.11 | 7.1 | G | 42.73 | 97.03 |
| | 39 | 98 | 7 | | | 41 | 97.56 | 7.65 | G | 45.62 | 96.83 |
| | 41 | 97.45 | 7.55 | | | 42 | 97.27 | 7.94 | LEOW | 48.08 | 96.71 |
| | 42 | 96.9 | 8.1 | | | 44 | 97.07 | 8.14 | CHN | 48.94 | 96.33 |
| | 45 | 96.65 | 8.35 | | | 45 | 96.81 | 8.4 | CHN | 50.53 | 96.31 |
| | 47 | 96.65 | 8.35 | | | 47 | 96.89 | 8.32 | TW | 51.62 | 96.11 |
| | 48 | 96.55 | 8.45 | | | 48 | 96.73 | 8.48 | CHN | 53.33 | 96.23 |
| | 49 | 96.5 | 8.5 | | | 49 | 96.6 | 8.61 | REOW | 54.62 | 96.55 |
| | 51 | 96.35 | 8.65 | | | 51 | 96.39 | 8.82 | G | 55.31 | 96.97 |
| | 52 | 96.25 | 8.75 | | | 52 | 96.25 | 8.96 | G | 55.31 | 96.93 |
| | 53 | 96.35 | 8.65 | | | 53 | 96.32 | 8.89 | RBF | 57.39 | 97.27 |
| | 54 | 96.3 | 8.7 | | | 54 | 96.4 | 8.81 | G | 59.15 | 97.97 |
| | 54.5 | 96.4 | 8.6 | | | 54.5 | 96.55 | 8.66 | G | 62.50 | 98.23 |
| | 55 | 96.65 | 8.35 | | | 55 | 96.71 | 8.5 | G | 65.60 | 98.81 |
| | 56 | 96.8 | 8.2 | | | 56 | 96.88 | 8.33 | G | 68.20 | 99.37 |
| | 57 | 97.1 | 7.9 | | | 57 | 97.16 | 8.05 | G | 71.15 | 99.67 |
| | 58 | 97.6 | 7.4 | | | 58 | 97.58 | 7.63 | G | 75.68 | 100.09 |
| | 60 | 98.2 | 6.8 | | | 59 | 97.96 | 7.25 | G | 79.68 | 100.13 |
| | 62 | 98.35 | 6.65 | | | 60 | 98.21 | 7 | G | 83.46 | 100.41 |
| | 65 | 98.95 | 6.05 | | | 62 | 98.39 | 6.82 | PIN N | 84.98 | 100.79 |
| | 67 | 99.35 | 5.65 | | | 65 | 98.91 | 6.3 | | | |
| | 69 | 99.81 | 5.19 | | | 67 | 99.32 | 5.89 | | | |
| | 70 | 99.95 | 5.05 | | | 69 | 99.96 | 5.25 | | | |
| | 73 | 99.95 | 5.05 | | | 70 | 100.06 | 5.15 | | | |
| | 77 | 100.4 | 4.6 | | | 73 | 100.01 | 5.2 | | | |
| | 85 | 100.6 | 4.4 | | | 77 | 100.37 | 4.84 | | | |
| PIN-N | 85 | 100.79 | 4.21 | | PIN-N? | 85 | 100.61 | 4.6 | | | |
| | | | | | | 85 | 100.8 | 4.41 | | | |

**Cross Section Geometry**
**Jumping Run Creek**
**Monitoring Report**

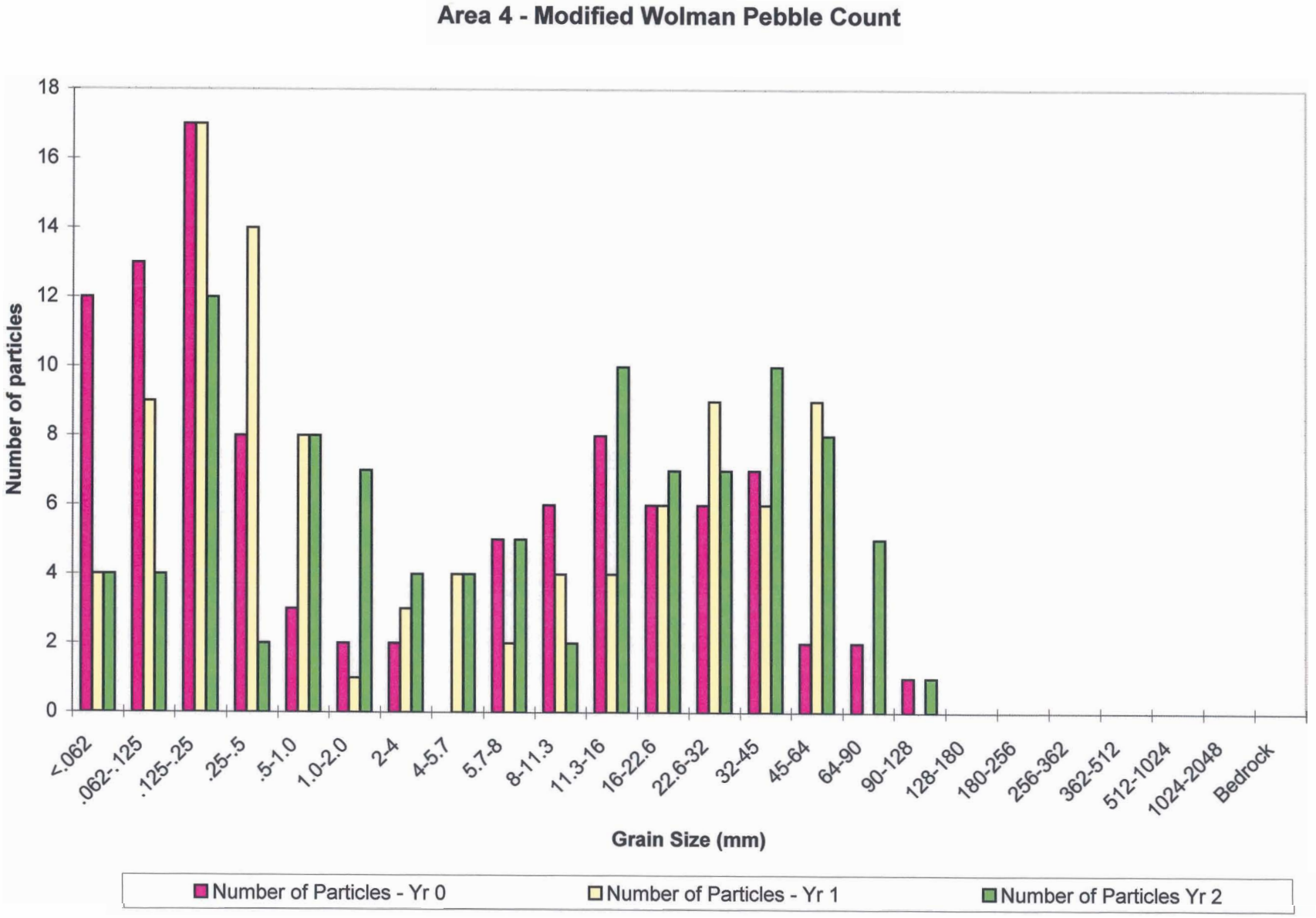
**AREA 4**
**Section** Pool **CLASSIFICATION**
**Location** STA (PINS O,P)

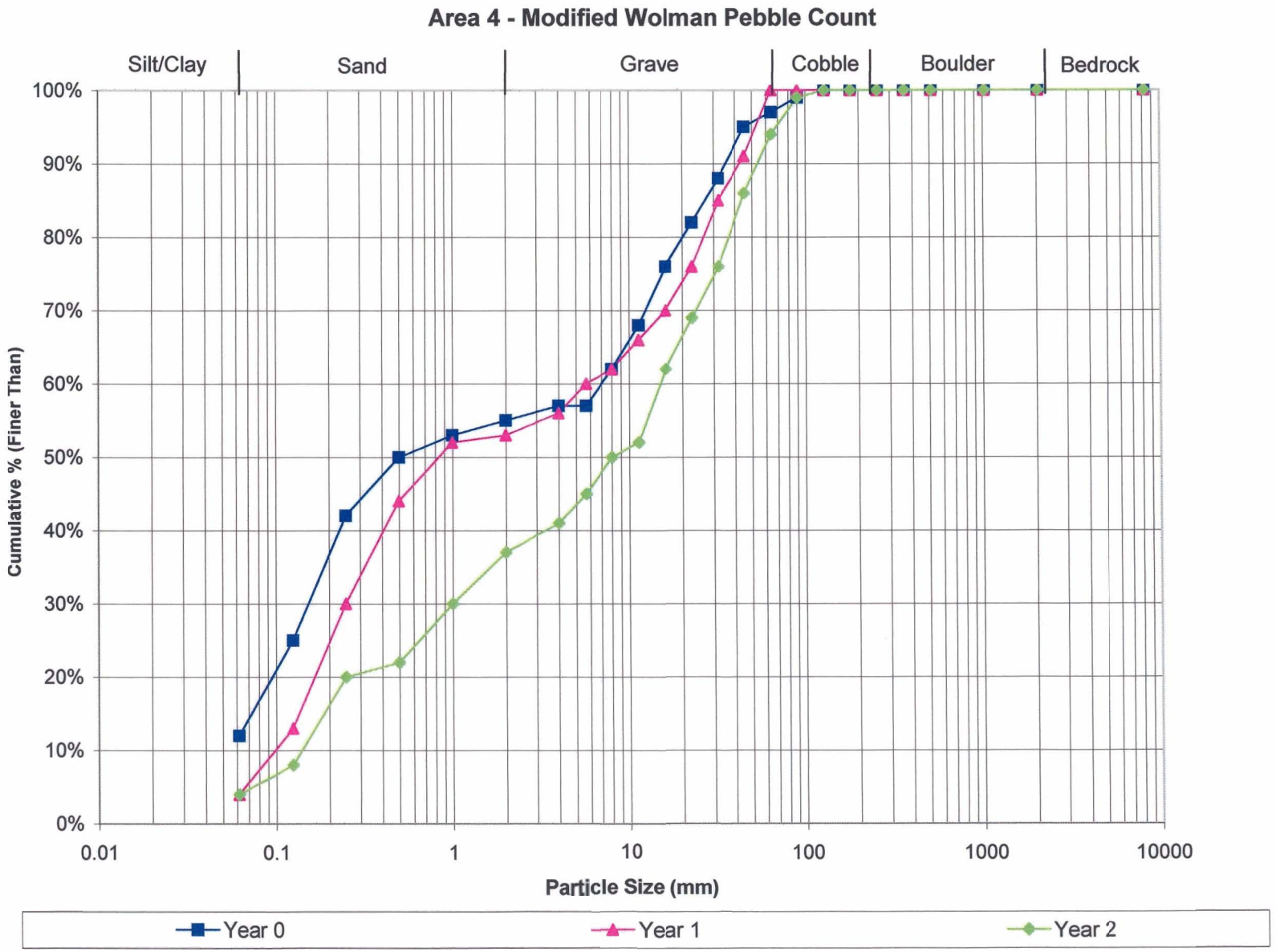
H OF I (ft) 105.15 year 0
H OF I (ft) 105.35 year 1




| year 0 | | | | year 1 | | | | year 2 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Notes | Distance (ft) | elevation (ft) | FS (ft) | Notes | Distance (ft) | elevation (ft) | FS (ft) | Notes | Distance (ft) | elevation (ft) |
| PIN-O | 0 | 100 | 5.15 | | 0 | 99.76 | 5.59 | PIN-O | 0 | 100 |
| | 0 | 99.7 | 5.45 | | 2 | 99.79 | 5.56 | G | 1.07 | 99.5 |
| | 2 | 99.8 | 5.35 | | 12 | 99.95 | 5.4 | G | 8.24 | 99.7 |
| | 12 | 99.95 | 5.2 | | 15 | 100.03 | 5.32 | G | 14.24 | 99.86 |
| | 15 | 100.05 | 5.1 | | 20 | 99.43 | 5.92 | G | 19.19 | 99.42 |
| | 20 | 99.45 | 5.7 | | 24 | 98.79 | 6.56 | G | 21.57 | 99.1 |
| | 24 | 98.85 | 6.3 | | 27 | 98.35 | 7 | G | 23.81 | 98.6 |
| | 27 | 98.4 | 6.75 | | 30 | 98.1 | 7.25 | G | 26.21 | 98.18 |
| | 30 | 98.1 | 7.05 | | 32 | 97.86 | 7.49 | G | 29.83 | 98 |
| | 32 | 97.85 | 7.3 | | 34 | 97.6 | 7.75 | G | 32.58 | 97.6 |
| | 34 | 97.5 | 7.65 | | 36 | 97.42 | 7.93 | G | 36.32 | 97.2 |
| | 36 | 97.3 | 7.85 | | 38 | 97.38 | 7.97 | G | 38.91 | 97.02 |
| | 38 | 97.35 | 7.8 | | 40 | 97.27 | 8.08 | G | 42.03 | 97 |
| | 40 | 97.3 | 7.85 | | 43 | 97.22 | 8.13 | LBF | 43.71 | 97.04 |
| | 43 | 97.2 | 7.95 | | 44 | 97.13 | 8.22 | G | 46.78 | 96.86 |
| | 44 | 97.1 | 8.05 | | 45 | 97 | 8.35 | LEOW | 49.61 | 96.52 |
| | 45 | 96.75 | 8.4 | | 46 | 96.81 | 8.54 | CHN | 50.31 | 96 |
| | 46 | 96.7 | 8.45 | | 48 | 96.71 | 8.64 | CHN | 51.61 | 95.24 |
| | 48 | 96.4 | 8.75 | | 49 | 96.62 | 8.73 | CHN | 52.54 | 95.1 |
| | 49 | 96.2 | 8.95 | | 50 | 95.62 | 9.73 | TW | 54.46 | 94.9 |
| | 50 | 95.9 | 9.25 | | 51 | 95.25 | 10.1 | CHN | 56.22 | 95.08 |
| | 51 | 95.55 | 9.6 | | 52 | 95.15 | 10.2 | CHN | 57.85 | 95.4 |
| | 52 | 95.45 | 9.7 | | 53 | 95.1 | 10.25 | REOW | 58.54 | 96.58 |
| | 53 | 95.25 | 9.9 | | 54 | 95.09 | 10.26 | G | 59.49 | 97.4 |
| | 54 | 95.1 | 10.05 | | 55 | 95.24 | 10.11 | RBF | 60.28 | 97.52 |
| | 55 | 95.25 | 9.9 | | 56 | 95.35 | 10 | G | 61.78 | 98.6 |
| | 56 | 95.4 | 9.75 | | 57 | 95.85 | 9.5 | G | 62.96 | 98.84 |
| | 57 | 95.85 | 9.3 | | 57.5 | 95.9 | 9.45 | G | 66.34 | 99.2 |
| | 57.5 | 96.3 | 8.85 | | 57.8 | 96.6 | 8.75 | G | 69.96 | 99.08 |
| | 58 | 97.6 | 7.55 | | 58 | 97.61 | 7.74 | G | 75.60 | 98.96 |
| | 59 | 98.1 | 7.05 | | 59 | 98.2 | 7.15 | G | 81.24 | 99.14 |
| | 60 | 98.6 | 6.55 | | 60 | 98.75 | 6.6 | G | 85.34 | 99.3 |
| | 61 | 98.95 | 6.2 | | 61 | 98.97 | 6.38 | G | 87.86 | 99.52 |
| | 69 | 99.45 | 5.7 | | 69 | 99.69 | 5.66 | PIN-P | 88.75 | 99.92 |
| | 88 | 99.6 | 5.55 | | 88 | 99.63 | 5.72 | | | |
| PIN-P | 88 | 99.93 | 5.22 | PIN-P? | 88 | 99.94 | 5.41 | | | |

Reach IV Comb Part Size




Area 4 - Modified Wolman Pebble Count
Silt/Clay
Sand
Grave
Cobble
Boulder
Bedrock
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Cumulative % (Finer Than)
0.01
0.1
1
10
100
1000
10000
Particle Size (mm)
Year 0
Year 1
Year 2

Year 2


Photo Point 1: Riffle cross-section facing downstream


Photo Point 2: Riffle cross- section facing upstream (project origin)


Photo Point 3: Pool cross-section facing upstream


Photo Point 4: Pool cross-section facing downstream


Photo Point 15: Riffle cross-section facing downstream


Photo Point 16: Riffle cross-section facing upstream


Photo Point 19: Pool cross-section facing upstream


Photo Point 20: Pool cross-section facing downstream


Photo Point 39: Riffle cross-section facing upstream


Photo Point 40: Riffle cross-section facing downstream near Henry Road


Photo Point 42: Pool cross-section facing upstream


Photo Point 42: Pool cross-section facing downstream


Photo Point 46: Pool cross-section facing upstream


Photo Point 47: Pool cross-section facing downstream

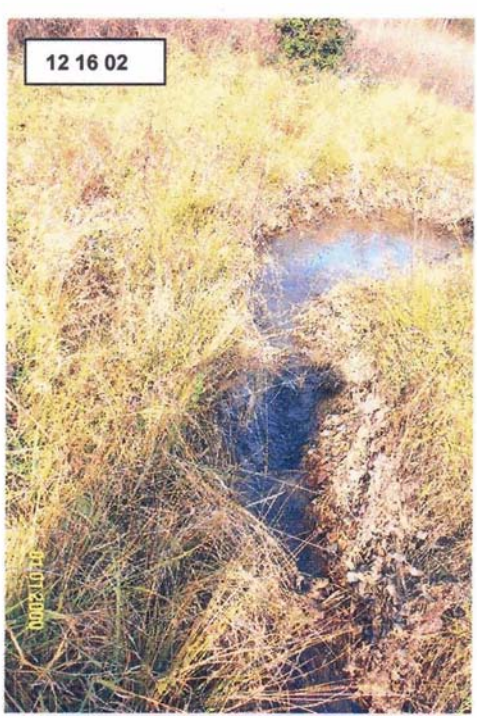

Photo Point 48: Riffle cross-section facing upstream


Photo Point 49: Riffle cross-section facing downstream


Photo Point 50: Looking upstream towards Paul Payne Store Road

Area 1 – Headcut observed at Year 1

Area 1-Migrating headcut at Year 2



Area 4 – Severe Bank Erosion Observed – Year 1

Area 4: Continuing bank erosion-Year 2