```
/************************ASSUMPTION************************
VL is vector length;
PL is the specified partition length, which is multiples of VL.
****************************************************************/
Initialize relevant variables and global memory buffers;
for (each partition of length PL){
  for (the j-th residue of the subject sequence){
    Load the H value of the j-th cell in the last row of the previous partition, and the
    F value of the j-th cell in the first row of this partition;
    Initialize vecF using the above F value;
    Initialize vecH(1, j) using the above H value;

    Perform the inner loop using striped query profile of this partition
    vector segment by vector segment using registers (manually unrolled);

    Perform the lazy-F loop to recalculate F values, where the maximum number
    of iterations is VL -1 with each iteration checking the whole partition;

    The thread corresponding to the leftmost element (the (VL -1)-th element) saves
    the H value of the j-th cell of the last row of this partition, calculates and
    saves the F value of the j-th cell of the first row of the next partition.
  }
}
if (there is one partition of length ≤ PL left){
  Perform the same operations with an above partition, except for storing the H and
  F values of the j-th cell of the last row of this partition;
}
Calculate the alignment score using recursion;
```