DENNY WAY CSO NEARSHORE INTERIM SEDIMENT CLEANUP PROJECT CLOSURE REPORT

Prepared by the
King County Department of Natural Resources and Parks
Wastewater Treatment Division

October 2008

Denny Way CSO Nearshore
Interim Sediment Cleanup Project
Closure Report

Prepared for:
King County Department of Natural Resources and Parks
Wastewater Treatment Division

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TABLE OF CONTENTS

1.0 INTRODUCTION 1

1.1. BACKGROUND 1
1.2. OBJECTIVES 5

2.0 CONSTRUCTION ACTIVITIES 7

2.1. TIMELINE 7
2.2. CONTRACTOR SELECTION 7
2.2.1 Lessons Learned 7
2.3. GENERAL CONSTRUCTION PROCEDURES 7
2.4. DREDGING OPERATIONS 8
2.4.1 Equipment 8
2.4.2 Sequencing 9
2.4.3 Lessons Learned 12
2.5. DISPOSAL ACTIVITIES 13
2.6. DECONTAMINATION 15
2.7. BACKFILLING OPERATIONS 15
2.7.1 Lessons Learned 20

3.0 COMPLIANCE MONITORING 21

3.1. PROTECTION MONITORING 21
3.1.1 Water Quality Monitoring 21
3.2. PERFORMANCE MONITORING 28
3.2.1 Post-Dredge, Post-Base Backfill, and Post-Habitat Mix Surveys 28
3.2.2 Sediment Sampling 29
3.3. CONFIRMATIONAL MONITORING 39

4.0 SURVEYS 40

4.1 PRE-CONSTRUCTION, POST-DREDGE, POST-BASE BACKFILL, AND POST-HABITAT MIX SURVEYS 40
4.2 CONTRACTOR DAILY PROGRESS SURVEYS 40
4.3 QUANTITIES 41

5.0 DEVIATIONS FROM PLANS 42

6.0 POST-CONSTRUCTION AND LONG-TERM MONITORING 43

6.1 SEDIMENT CHEMISTRY STATION ON BACKFILL SURFACE IN CLEANUP AREAS A AND B 43

7.0 SUMMARY OF LESSONS LEARNED 45

8.0 AFFIDAVIT 46

9.0 REFERENCES 47

Tables

Table 1	Water Quality Monitoring Exceedance During Dredging
Table 2	Water Quality Monitoring Exceedances During Backfilling
Table 3	Chemicals that Exceeded SMS at Seven Stations Beyond the Site Boundary Before and After Construction
Table 4	Changes in PCB Dry Weight and SMS Values at Seven Stations Beyond the Site Boundary After Construction
Table 5	Chemicals that Exceeded SMS at Six Stations at the Post-dredge Surface
Table 6	Quantities of Backfilling Materials

Figures

Figure 1	Vicinity Map
Figure 2	Cleanup Areas A and B
Figure 3	Dredge Plan
Figure 4	Offloading Facility
Figure 5	Target Base Backfill Plan
Figure 6	Armor Rock and Contingency Cover Placement Areas
Figure 7	Water Quality Monitoring Buoy and Seattle Aquarium Reference Station
Figure 8	Post-Construction Changes in PCB Dry Weight Concentrations at 7 Stations Beyond Site Boundary
Figure 9	Post-Dredge Surface and Subsurface Sample Locations within Site Boundary
Figure 10	Backfill Monitoring Station for Areas A and B

Appendices

Appendix A	Photos
Appendix B	Contractor Daily Reports
Appendix C	King County Inspector Daily Reports
Appendix D	Hourly Averaged Water Quality Monitoring Data
Appendix E	Complete Daily Water Quality Reports from Water Quality Monitoring Stations
Appendix F	Water Quality Monitoring Sampling and Analysis Plan
Appendix G	Dredging and Backfilling Operations Sediment Monitoring Sampling and Analysis Plan
Appendix H	Denny Way CSO and Elliott West CSO Treatment Facility, Post Operation Sediment Monitoring, Year 3, Denny Way CSO Areas A and B Nearshore Sediment Remediation Project Post-Construction Sediment Monitoring, Areas C, D, and E Monitoring Sampling and Analysis Plan
Appendix I	QA1 Reports
Appendix J	Lab Reports
Appendix K	eTrac Engineering, L.L.C. Surveys

Denny Way CSO Nearshore Interim Sediment Cleanup Project
Closure Report

1.0 Introduction

This Closure Report documents the work performed during the Denny Way Combined Sewer Overflow (CSO) Nearshore Interim Sediment Cleanup Project in Elliott Bay in Seattle, Washington (Figure 1). Cleanup requirements at the site were more specifically described in the Agreed Order No. DE 5068, dated November 2007, issued by the State of Washington, Department of Ecology (Ecology) and pursuant to the Model Toxics Control Act (MTCA). The remedial activities at the site were performed in compliance with the Washington Administrative Code (WAC), Washington's Sediment Management Standards (SMS) (Ecology 1995, WAC 173-204), and MTCA (Ecology 2001, WAC 173-340). This Closure Report describes the dredging, transport, disposal, and backfilling activities that occurred between November 2007 and February 2008.

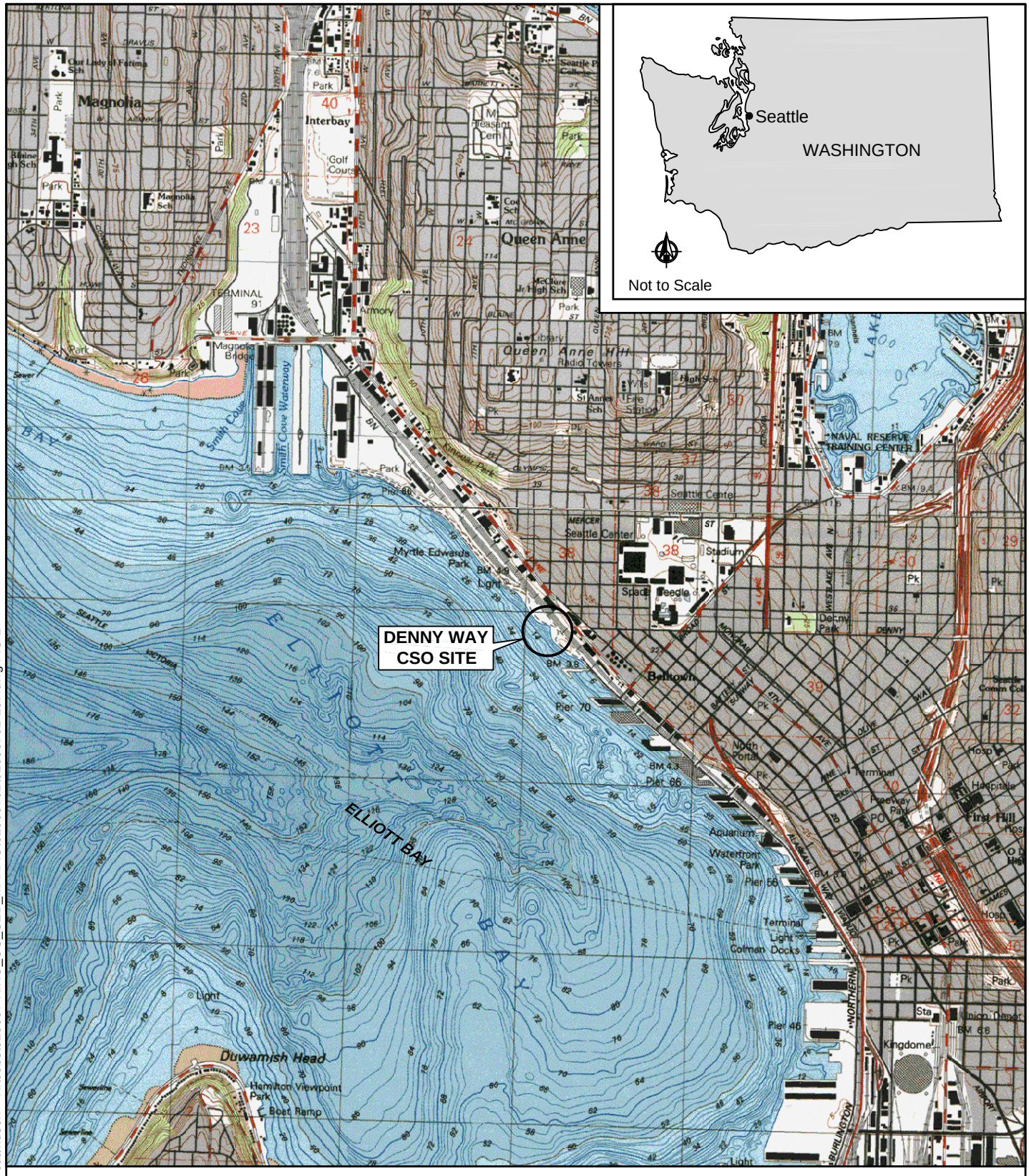
1.1. BACKGROUND

At the turn of the century, raw sewage discharge at the Denny Way site was common until the construction of the Denny Way CSO. The Denny Way CSO was constructed in the 1960s when the Municipality of Metropolitan Seattle (Metro; now King County) built the present system of interceptors and treatment plants that collect, transport, and treat wastewater in the greater Seattle area. The CSO site is located along the northeastern shoreline of Elliott Bay and is adjacent to Myrtle Edwards Park at the foot of Denny Way in Seattle, Washington (Figure 1). The Denny Way CSO regulator station is located at 3165 Alaskan Way. Until 2004, the discharge point of the Denny Way CSO was at the shoreline. This outfall was previously exposed during normal low tide and frequently discharged directly across exposed intertidal sediment. Since 2005, the Denny Way CSO outfall has discharged roughly one untreated discharge annually (approximately 8 million gallons per year) and about 8 to 12 treated discharges (approximately 567 million gallons per year) from a new offshore outfall.

In 1986, Metro began a trial program to identify and reduce toxicant inputs to the sewer system discharging through the Denny Way CSO. In 1990, King County and the U.S. Army Corps of Engineers (Corps) sponsored the Denny Way CSO capping project to test the feasibility of capping contaminated sediments in Elliott Bay with clean dredged material from the Duwamish Waterway. A 3-foot layer of clean sand, dredged from the upper Duwamish Waterway during routine maintenance, was placed over a 3-acre area in water depths ranging from approximately -25 to -60 feet mean lower low water (MLLW).

King County has monitored the effectiveness of the cap at containing contaminated sediment for the past 17 years. Results show that the cap is stable, is not eroding, and has successfully isolated the underlying contaminated sediments (King County 2005).

However, chemical concentrations on the cap surface layer (offshore of the Denny Way CSO) increased after cap construction, suggesting possible recontamination from the continued CSO discharges from Denny Way, or potential redistribution of remaining contaminated sediments from the intertidal area and the inshore edge of the cap.



Note: Base map prepared from Terrain Navigator Pro USGS 7.5 minute quadrangle map(s) of Seattle North and South, Washington.

Jun 22, 2008 10:30am cdavidson K:\Jobs\020067-KING_CO_SED_MANAG\02006701\02006701-107.dwg FIG 1

ANCHOR ENVIRONMENTAL, L.L.C.

Figure 1
Vicinity Map
Denny Way CSO Nearshore Interim Sediment Cleanup Project

In 1997, King County characterized the nature and extent of surface and subsurface sediment contamination in the outfall area, as well as areas inshore and offshore of the existing sediment cap (SEA 1997). Follow-up sediment sampling conducted by King County in 2005 demonstrated that chemical concentrations in the offshore areas declined over time due to a combination of natural processes, including biodegradation of chemicals, accumulation and mixing of clean sediment, and reduction of contaminant sources (King County 2005). Thus, monitored natural recovery is a prospective cleanup remedy for the offshore areas. These areas will continue to be evaluated by Ecology and King County to determine if a more active cleanup remedy is required.

In 1997, sediments sampled within inshore areas of the site contained concentrations of cadmium, copper, lead, mercury, silver, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), bis(2-ethylhexyl)phthalate, and butyl benzyl phthalate that exceeded Sediment Quality Standards (SQS) chemical criteria. Contaminant concentrations above SQS chemical criteria were present to a depth of approximately 10 feet below the existing mudline. Unlike offshore areas of the site, natural recovery rates in the inshore sediment areas appeared to be progressing relatively slowly. In order to accelerate cleanup of the site and minimize the risk of future recontamination to other site areas, including the offshore cap, an interim sediment cleanup action plan for the site was developed by King County and Ecology in 2007, including dredging to the maximum extent practicable to remove impacted sediments, and backfilling to restore the grade to close to pre-project conditions.

The Denny Way CSO interim action remediated contaminated sediment present in two nearshore areas in the immediate vicinity of the former Denny Way CSO outfall (Areas A and B). A combination of dredging, backfilling, and armoring was employed to remediate the nearshore areas.

In the initial design, approximately 17,000 cubic yards (cy) of contaminated sediments and associated side slopes were to be dredged from approximately +10 feet MLLW to approximately -35 feet MLLW within the 1.2-acre interim action area. A change order during dredging decreased the overall dredge footprint by over-steepening the side slopes to minimize the disturbance and removal of the riprap seawall. After the change order, approximately 13,700 cubic yards (cy) of contaminated sediments and associated side slopes were dredged. The material within the dredge footprint was mechanically dredged using a clamshell bucket deployed from a derrick barge. Removal of rock armor and concrete from the seawall was performed with a barge-mounted excavator and 414 tons of recyclable concrete material was recovered from 1,918 tons of mixed concrete, rock, and sediment. The dredged area was backfilled and armored with an average thickness of more than 8 feet of material. Approximately 11,886 cy of well-graded clean sand was armored with approximately 4,821 cy of sandy-gravel habitat mix, as well as large cobbles and boulders. An additional 1,540 cy of well-graded clean sand was placed in an approximate 6-inch-thick layer around the perimeter of the dredge prism to address any residuals that may have resulted from the dredging.

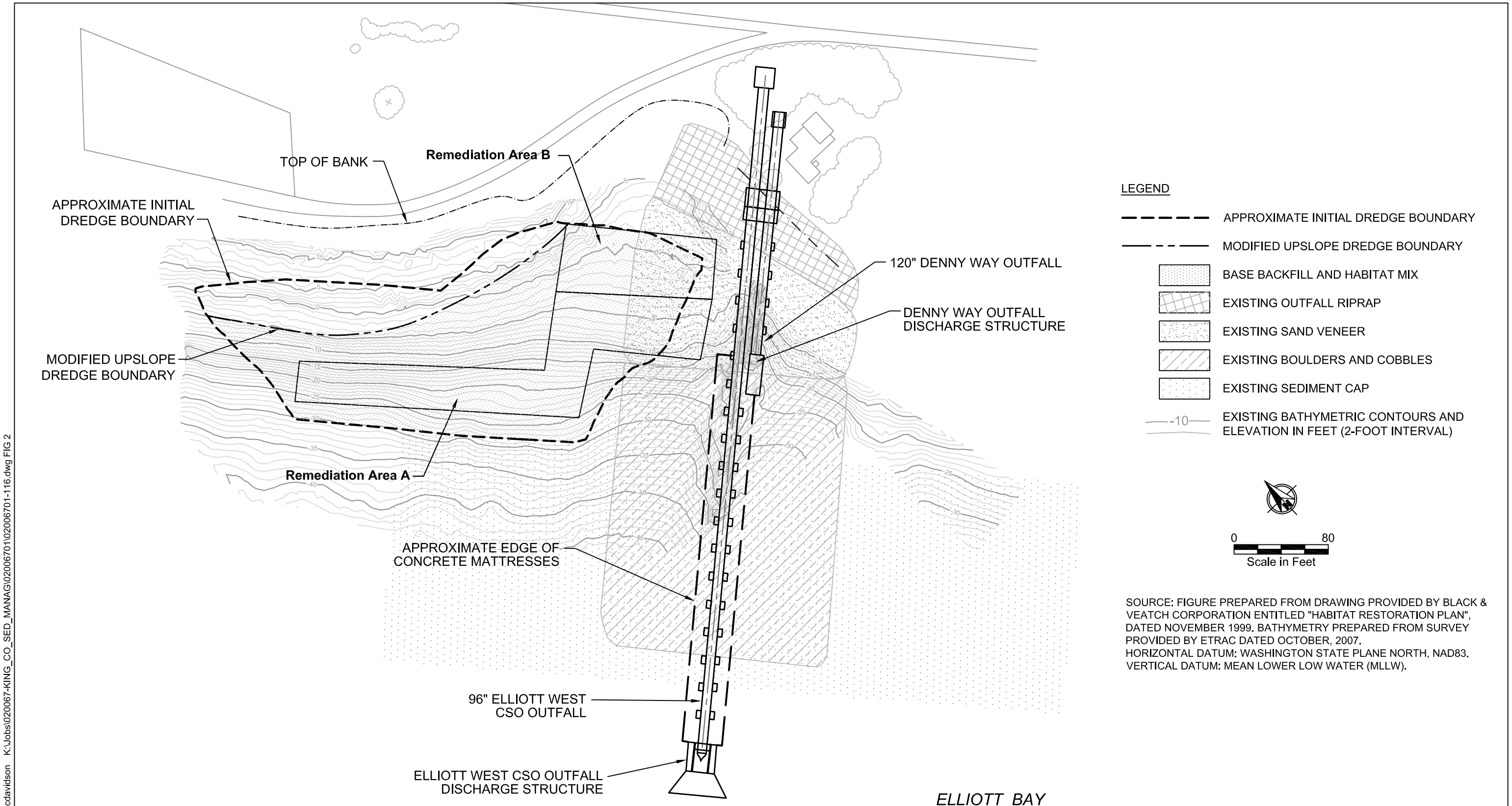
This Closure Report discusses the construction activities performed to implement the cleanup.

1.2. OBJECTIVES

The objective of the project was to remediate contaminated sediment in two inshore remediation areas (Areas A and B) in the immediate vicinity of the former Denny Way CSO outfall that exceeded SQS chemical criteria promulgated under the SMS. The two rectangular cleanup areas (Areas A and B) are adjacent to each other and are located immediately offshore of the Denny Way historical CSO as shown in Figure 2. Cleanup Area A is the larger of the two areas at about 0.48 acres, and is located offshore and adjacent to Area B. Cleanup Area B is smaller in size at about 0.16 acres, and is located immediately offshore of the Denny Way historical CSO. Sediments in both cleanup areas had concentrations that exceeded SQS chemical criteria for mercury, silver, cadmium, copper, lead, PCBs, PAHs, bis(2-ethylhexyl)phthalate, and butyl benzyl phthalate. The extent of contaminated sediment removal for the site is shown in Figure 2. As previously discussed, the 1997 sediment characterization study identified contaminants at concentrations above SQS chemical criteria in Areas A and B to a depth of 8 feet below mudline (SEA 1999). More recent characterization (Anchor 2005) indicated that contaminated sediments are present at depths greater than 10 feet.

The vertical limit of the dredge prism was the maximum practicable removal, which entailed a sloping dredge cut on the order of 10 feet deep. Deeper dredging would have required removal of large areas of the existing upland shoreline, which was not considered practicable without adverse impact on the Myrtle Edwards Park shoreline. The southern boundary of the project was constrained by the presence of the existing outfall structures (and armoring) and the dredge prism here was offset to avoid impacting these features.

The cleanup action for Areas A and B involved first removing contaminated sediment from both cleanup areas to the maximum extent practicable, followed by placing a layer of backfill material. The remaining contaminated sediments within each cleanup area were covered with an average of 8 feet of backfill material (maximum of 13 feet) to isolate the remaining chemicals from the environment and return the site to approximately the bottom elevations that existed prior to dredging.



SOURCE: FIGURE PREPARED FROM DRAWING PROVIDED BY BLACK & VEATCH CORPORATION ENTITLED "HABITAT RESTORATION PLAN", DATED NOVEMBER 1999. BATHYMETRY PREPARED FROM SURVEY PROVIDED BY ETRAC DATED OCTOBER, 2007.
HORIZONTAL DATUM: WASHINGTON STATE PLANE NORTH, NAD83.
VERTICAL DATUM: MEAN LOWER LOW WATER (MLLW).

Jun 23, 2008 11:45am cdavidson K:\Jobs\020067-KING_CO_SED_MANAG\020067\01\020067701-116.dwg FIG 2

ANCHOR ENVIRONMENTAL, L.L.C.

Figure 2
Cleanup Areas A and B
Denny Way CSO Nearshore Interim Sediment Cleanup Project

2.0 Construction Activities

2.1. TIMELINE

The contractor began mobilizing their equipment to the site on November 29, 2007, and started dredging on November 30, 2007, at about 12:30 p.m. Dredging was conducted from November 30, 2007, to January 12, 2008. Backfilling was conducted from January 17 to February 25, 2008. The contractor demobilized from the site on February 26, 2008.

2.2. CONTRACTOR SELECTION

The Request for Bids to construct the Denny Way CSO Nearshore Interim Sediment Cleanup Project was advertised in the Seattle Times, other local newspapers, and the King County Procurement website. A pre-bid conference was held on August 22, 2007, in the eighth floor conference room of the Exchange Building at 821 Second Avenue in Seattle. Sealed bids were required to be submitted to King County at the third floor Contracts Counter at the New County Office Building by 1:30 p.m. on September 25, 2007.

Two bids were received and were opened on September 25, 2007. The lowest responsive bid was submitted by American Civil Constructors West Coast, Inc. (ACC), of Seattle, Washington, for $3,276,234. The engineer's estimate for this project was $3,250,000. ACC was selected as the prime contractor and Notice to Proceed was issued on November 9, 2007.

2.2.1 Lessons Learned

Contractor selection was largely influenced by prequalification requirements implemented by King County to limit participation during the bidding process to contractors with substantial experience dredging contaminated sediments. Bids were also limited by insurance requirements set by King County. Comments received during the pre-bid period expressed concern regarding the specifications, and, also indicated that the construction window was too short to complete the work, and that there were too many amendments during the bid process. Other active construction contracts at the time of bidding may also have impacted contractor participation.

2.3. GENERAL CONSTRUCTION PROCEDURES

The contractor was required to dredge using a clamshell bucket and dredge beginning with the inshore, higher elevation material, and then move offshore. Sloughing of slope material and the spread of contaminated sediment was minimized by dredging generally from upslope to downslope. As designed, the dredge prism included a substantial amount of shoreline armor material overlying potentially clean sediment upslope of the Area A and B boundaries to accommodate stable dredge cut side slopes. During construction, the

contractor indicated that steeper stable side slopes could be achieved, which would have reduced the volume of clean side slope armor and additional side slope material dredged to accommodate the remedy. In consideration of this factor, a change order (RCO No. 001) was issued by King County featuring a revised dredge prism footprint and including removal and disposal of concrete debris, and replacement of armor rock on the upslope portion of the dredge prism. The change order was accepted by Ecology to be consistent with the cleanup action.

When dredging operations were complete, the contractor was allowed to begin backfilling operations. The backfill consisted of two different layers. A base backfill layer primarily composed of sand was placed first to cover all remaining sediment contamination. This was followed by a more erosion-resistant surface layer of larger sized habitat mix. Finally, armor rock was placed in areas where it had been removed along the seawall and contingency cover sand was placed in areas where dredge residuals may have migrated outside the dredge prism boundary.

King County provided construction management, inspection of all construction activities, and water quality monitoring services throughout the project.

2.4. DREDGING OPERATIONS

2.4.1 Equipment

The contractor mobilized a derrick (*Pam Tay*), tug (*Jennifer H*), flat-deck barges (*KP-1, KP-2,* and *H-9*), work skiff, and hydrographic survey vessel to the site. The *Pam Tay* is 200 feet long by 50 feet wide, with a 12-foot draft. It is equipped with an American 9310 crawler crane with a 3-cy clamshell bucket. The derrick is equipped with a differential global positioning system (DGPS) with an antenna on the tip of the boom over the bucket. Dredgepack® software was used to allow the operator to know where the horizontal position of the bucket was relative to the dredge plan at any given time. The vertical position of the dredge bucket was determined by 1-foot markings on the cable and an electronic tide gauge that displayed real-time tide information. The *Pam Tay* was typically positioned using two spuds measuring 90 feet in length, and when spuds were not used, a mooring winch and anchor system was used off the stern of the *Pam Tay*. The spuds were positioned outside of the dredge boundary and no spuds were placed inside the dredge prism. The small tug (*Jennifer H*) periodically moved the *Pam Tay* so the derrick could be repositioned within the dredge prism.

Dredged sediment was placed in one of three flat-deck barges that were brought onto the site at different times (*KP-1, KP-2,* and *H-9,* with 2,000-cy capacity each) and taken to the offloading facility for offloading, transport, and disposal. Scuppers on the flat-deck barges were covered with filter fabric and hay bales, which filtered suspended solids from dewatering effluent before re-entering Elliott Bay.

From the start of dredging activities, the contractor encountered difficulty using the 3-cy dredge bucket to remove armor rock and concrete on the upslope portion of the dredge

prism along the seawall. Change order RCO No. 001 instructed the contractor to remove armor rock and concrete on the upslope portion of the dredge prism. To complete the change order work, the contractor mobilized a barge-mounted excavator (*Hitachi EX800H* and *34 Spud Barge*) with the tug *Diane H*, and a material barge (*ITB-166*) for the removal and stockpiling of armor rock and concrete debris. The additional equipment was on site for 13 days until the concrete debris had been sufficiently removed from the dredge prism. Concrete armor material that was removed was stockpiled on the barge for transfer to a concrete recycling facility.

There were no upland contractor support equipment and facilities at the dredge site. The contractor stored the derrick, barges, and equipment on site at an offshore location in the vicinity of the dredge prism. Personnel were transferred on and off the derrick and barges by boarding from the shore using a work skiff. The King County inspector was set up in the construction trailer located shoreward of the Denny Way CSO regulator station and continuously monitored dredging from the trailer located on shore.

A turbidity exceedance was observed once during the dredging operations and is discussed further in Section 3.1.1.1. Although only one water quality exceedance occurred during dredging, actions were taken as necessary in an attempt to reduce turbidity throughout dredging whenever the monitoring equipment noted a rise in turbidity. Such actions included slowing the rate of dredging, slowing the rate of bucket movement through the water, not overfilling the bucket, and periodically pausing and resuming work operations.

2.4.2 Sequencing

The dredge plan is shown in Figure 3. On November 24, 2007, before dredging work had been initiated, the contractor submitted a letter to King County stating that there was a change of conditions at the site due to a large volume of concrete and debris present on the upslope portion of the dredge prism. At about 12:30 p.m. on November 30, 2007, the contractor began dredging the northern inshore area of the dredge prism between stations 1+00 and 1+75. The contractor identified rock and concrete armor material from the inshore dredge prism boundary at elevation +10 feet MLLW down to elevation -5 feet MLLW. The contractor attempted to remove armor material, but progressed slowly with the 3-cy bucket because the bucket had difficulty picking up the concrete material. The approximate area of rock and concrete armor was previously delineated by contractor surveys and the contractor continued to dredge downslope of the rock and concrete armor area between elevations -5 and -35 feet MLLW. Dredging generally occurred in the upslope to downslope direction to maintain slope stability and moved from north to south within the dredge prism (from stations 0+00 to 4+50). The width of each dredge pass was approximately 50 feet wide and the dredge cut was typically between 2 to 4 feet deep. The time to complete a dredge cycle was, on average, 1 minute 30 seconds for the dredge operator to position the clamshell bucket, lower the bucket to the sediment surface and take a bite of sediment, raise the bucket above the water surface, and release the material onto the flat-deck barge.

REVISED CONTROL POINT LOCATIONS		
NUMBER	EASTING	NORTHING
A	1263412.56	229557.10
B	1263478.10	229473.41
C	1263553.89	229414.39
D	1263618.16	229409.49
E	1263683.77	229405.23
F	1263426.75	229516.38
G	1263465.47	229461.08
H	1263705.62	229382.63

⚠1

PATH

TOP OF BANK

APPROXIMATE INITIAL DREDGE BOUNDARY

MODIFIED UPLOPE DREDGE BOUNDARY

ELLIOTT BAY

EL. -35

1H:1V

2H:1V

3H:1V

4H:1V

5H:1V

0+00 1+00 2+00 3+00 4+00

LEGEND

- EXISTING OUTFALL RIPRAP
- EXISTING SAND VENEER
- EXISTING BOULDERS AND COBBLES
- EXISTING SEDIMENT CAP
- -10 EXISTING BATHYMETRIC CONTOURS AND ELEVATION IN FEET (2-FOOT INTERVAL)
- 6 / -14 DREDGE COORDINATE / DREDGE BOUNDARY / REQUIRED DREDGE ELEVATION IN FEET (MLLW)

NUMBER	EASTING	NORTHING
1	1263419.05	229584.32
2	1263568.48	229439.52
3	1263633.11	229435.36
4	1263706.89	229384.31
5	1263730.85	229352.56
6	1263748.29	229306.31
7	1263570.67	229263.18
8	1263403.26	229446.17
9	1263424.46	229445.48
10	1263427.34	229534.53
11	1263549.42	229404.29
12	1263618.26	229392.15
13	1263685.87	229356.69
14	1263704.89	229336.40
15	1263707.42	229329.68
16	1263691.18	229314.46
17	1263571.49	229288.62
18	1263541.75	229320.35

⚠1 MODIFICATION TO DREDGE DESIGN

NOTES:
1. FIGURE PREPARED FROM DRAWING PROVIDED BY BLACK & VEATCH CORPORATION ENTITLED "HABITAT RESTORATION PLAN", DATED NOVEMBER 1999.
2. BATHYMETRY PREPARED FROM SURVEY PROVIDED BY eTRAC DATED OCTOBER 2007.
3. HORIZONTAL DATUM: SP NAD 83 WA N
4. VERTICAL DATUM: MLLW

0 40
Scale in Feet

Jun 24, 2008 10:46am cdavidson K:\Jobs\020067-KING_CO_SED_MANAG\02006701\02006701-117.dwg FIG 3

ANCHOR ENVIRONMENTAL, L.L.C.

Figure 3
Dredge Plan
Denny Way CSO Nearshore Interim Sediment Cleanup Project

On December 18, 2008, King County issued a change order (RCO No. 001) that reduced the dredge prism side slope footprint and minimized the removal of armor rock and concrete on the upslope area by changing the dredge cut from the design 2 horizontal to 1 vertical (2H:1V) slope to a 1H:1V slope cut, which was demonstrated to be stable by the contractor. The change order scope of work also included the replacement of the seawall armoring. On December 28, 2008, the barge-mounted crane was mobilized onto the site to remove armor rock and concrete material within the modified dredge prism. It was anticipated that the excavator would pick up pieces of armor rock and concrete material and stockpile them in a separate barge. The excavator bucket frequently picked up a mixture of sediment and some small debris, and there was noticeable sediment loss from the excavator bucket. The material barge *ITB-166* used to stockpile the armor rock and concrete material had a high perimeter fence, which contributed to sediment loss from the excavator bucket because clearing the high fence increased winnowing of material from the excavator bucket. During the use of the excavator, turbidity was visibly higher and the one turbidity exceedance during dredging activities occurred during its operation (see Section 3.1). The excavator was operated from January 3 to January 8, 2008, and removed approximately 1,636 tons of mixed concrete, rock, and sediment. The *ITB-166* material barge left the site on January 8, 2008, and was loaded with 1,087 tons of mixed material. Armor rock and concrete removal activities continued until January 10, 2008, with the clamshell, and an additional 282 tons of mixed concrete, rock, and sediment were removed. The excavator remained on site until January 15, 2008. A total of 1,918 tons of mixed concrete, rock, and sediment was removed and 414 tons of concrete were recovered and transferred to a concrete recycling facility. The remaining material was transferred to the disposal site.

On January 9, 2008, dredging activities with the 3-cy clamshell bucket resumed between station 2+50 and 4+25 and proceeded to dredge remaining high spots in the dredge prism. The contractor performed a cleanup pass on January 12, 2008. The post-dredge confirmatory survey (see Section 4.1) conducted on January 13, 2008, showed relatively minor high spots above the required dredge line along with relatively minor low spots below the non-paid allowable overdepth line and was accepted as complete by the engineer and Ecology. Photos of the dredging and construction activities, contractor daily reports, and King County Inspector reports are located in Appendices A, B, and C, respectively.

The contractor typically worked 10- to 12-hour days including Saturdays during the dredging phase of the project. Dredging typically occurred from 7:00 a.m. to 4:00 p.m. Weather days and equipment maintenance days accounted for approximately 3 days of lost time during dredging activities. The rate of dredging was limited by the rate containers could be loaded onto trains by Rabanco. Therefore, the offloading subcontractor, could not unload the material barges and transfer material to containers at a rate higher than approximately 800 cy per day. There were 5 holiday days when no work occurred during dredging.

Dredging occurred over 32 days and removed approximately 14,376 cy of material (including debris and overdredge). The contractor spent approximately 179 hours dredging the 14,376 cy of material. This time only includes actual dredging time and equates to a gross production rate of 80 cy per hour. The total production time to dredge the 14,376 cy was 348 hours. This time includes dredging, equipment movement, maintenance, downtime, and other non-productive time. Therefore, the net production rate was 41 cy per hour.

2.4.3 Lessons Learned

From a design standpoint, the lessons learned are associated with change order RCO No. 001, which was required in part due to potential misinterpretation of the design plans by the contractor. The following are some of the lessons learned associated with the change order:

- The design plans did not demarcate an approximate area of the existing armor rock and concrete on the upslope portion of the dredge prism, leaving the contractor to determine the extent of the armor based on a description in the Technical Specifications and a pre-bid site investigation required of the contractor by the Contract Documents.
- In addition to delineating the area of armor rock and concrete on the plans, it may have been beneficial to make the removal, stockpile, and/or disposal of the armor rock and concrete a separate bid item so that the contractor's interpretation of the scope for that portion of the work could be evaluated.
- Additional site characterization information could have been collected by King County so that the delineation of the armor rock and concrete was better known.
- The change order reduced the dredge prism to minimize the removal of armoring material, which worked well in this situation because the contractor was able to demonstrate that material would not slough or fail at the proposed 1H:1V slope. However, because a temporary slope as steep as 1H:1V is typically only marginally stable in a marine environment, designing a dredge prism using side slopes as steep as 1H:1V would have been non-conservative during design, and could have resulted in under-predicting dredge volumes. This would potentially lead to negative impacts on permitting and project cost.
- The contractor used an excavator with limited success to execute the change order and presented no alternate solution other than using the clamshell to continue dredge work. The change order could have included language that based payment on a specified level of performance, such that there is more risk sharing between the contractor and King County.

In addition, contractor daily progress surveys were not performed and, consequently, the progress surveys were performed generally at the contractor's discretion unless specifically requested by King County. The contractor requested reduction in survey frequency because of safety concerns with the small surveying boat. The contractor's progress surveys should be strictly enforced to adequately monitor dredging progress, slope stability, and overdredging below the allowable overdepth line established in the

Technical Specifications. Low spots in the dredge prism may have been generated by the removal of large debris pieces to meet the minimum elevation.

In general, the Technical Specifications were viewed by project personnel as containing adequate language that strengthened the ability to control the contractor's methods, water quality, and achieve good performance without hindering project progress.

2.5. DISPOSAL ACTIVITIES

The offloading and disposal operation was performed by the contractor under a subcontractor agreement with Rabanco. Figure 4 shows the layout of the offloading facility, located at the Duwamish Marine Center located at 16 S. Michigan in Seattle, Washington. The Duwamish Marine Center property is permitted to handle bulk material and contaminated waste and had been used previously to unload dredged material from barges to containers.

Dredged sediments were removed from each barge with a front-end loader, which transferred sediment directly into a lined, 20-foot open-top intermodal shipping container. The front-end loader and container were placed onto the dredge material barge in a small cleared area left open by the dredge operator, and typically positioned in the center of the barge. The liner used to line the shipping container was a 6-mil liner and was secured to the top of each container to prevent leakage. To prevent spillage out of the top, each container was limited to about 30 tons of sediment (approximately two-thirds full) to allow for adequate free board. Once filled, the container was removed from the flat-deck barge by a land-based crawler crane. The crane was positioned over the container and four cables were secured to the corners of the container before lifting the container off the barge and placing it either directly onto a truck or on the ground in the transloading dock area. The process of transferring sediment into a container and offloading the container onto a truck was at an approximate rate of 5 containers per hour.

A spill plate between the material barge and the offloading dock was not necessary because the system of loading containers on the material barge precluded the need for a spill plate and eliminated the possibility of any material being spilled during the offload and transfer process.

Pacific Freight Express, Inc., a King County-approved Small Contractors and Suppliers Firm, hauled the containers loaded with sediment to the Rabanco-operated Recycling and Transfer station located at 2733 Third Avenue S. Seattle, Washington, where the containers were loaded onto railcars.

Burlington Northern Santa Fe Railway Company (BNSF) then transported the loaded containers to Roosevelt, Washington, in Klickitat County, for disposal at Roosevelt Regional Landfill, a Resource Conversation and Recovery Act (RCRA) Subtitle D landfill. A total of 21,238 tons of sediment and debris were disposed of at Roosevelt Regional Landfill. The resulting weight to volume conversion factor was approximately 1.5 tons per cy.

J:\Jobs\000111-DSI\Maps\2008_06\Fig_4_OffloadFac.mxd SMS 06/11/2008 9:30 AM

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Figure 4
Offloading Facility
Denny Way CSO Nearshore
Interim Sediment Cleanup Project

2.6. DECONTAMINATION

The haul barges were decontaminated at the offloading facility with the use of a front-end loader and manual labor to scrape and remove all sediment on the barge deck and place it into a lined container for upland disposal. The barge deck was not washed or sprayed down. The deck was swept to remove any loose material. Filter fabric and hay bales used to line the sideboards and scuppers around the perimeter of the deck line were also disposed of into a lined container for upland disposal.

2.7. BACKFILLING OPERATIONS

After all of the dredging was complete and the elevations were confirmed by the post-dredge survey, backfilling operations were allowed to begin. The modified backfill plan per RCO No. 001 is shown on Figure 5. Base backfill, habitat mix, and contingency cover sand and armor were obtained from the Glacier Northwest, Inc. quarry located in Dupont, Washington, and transported to the site by flat-deck haul barges. The armor rock was obtained by Glacier Northwest, Inc. from Texada Island, British Columbia.

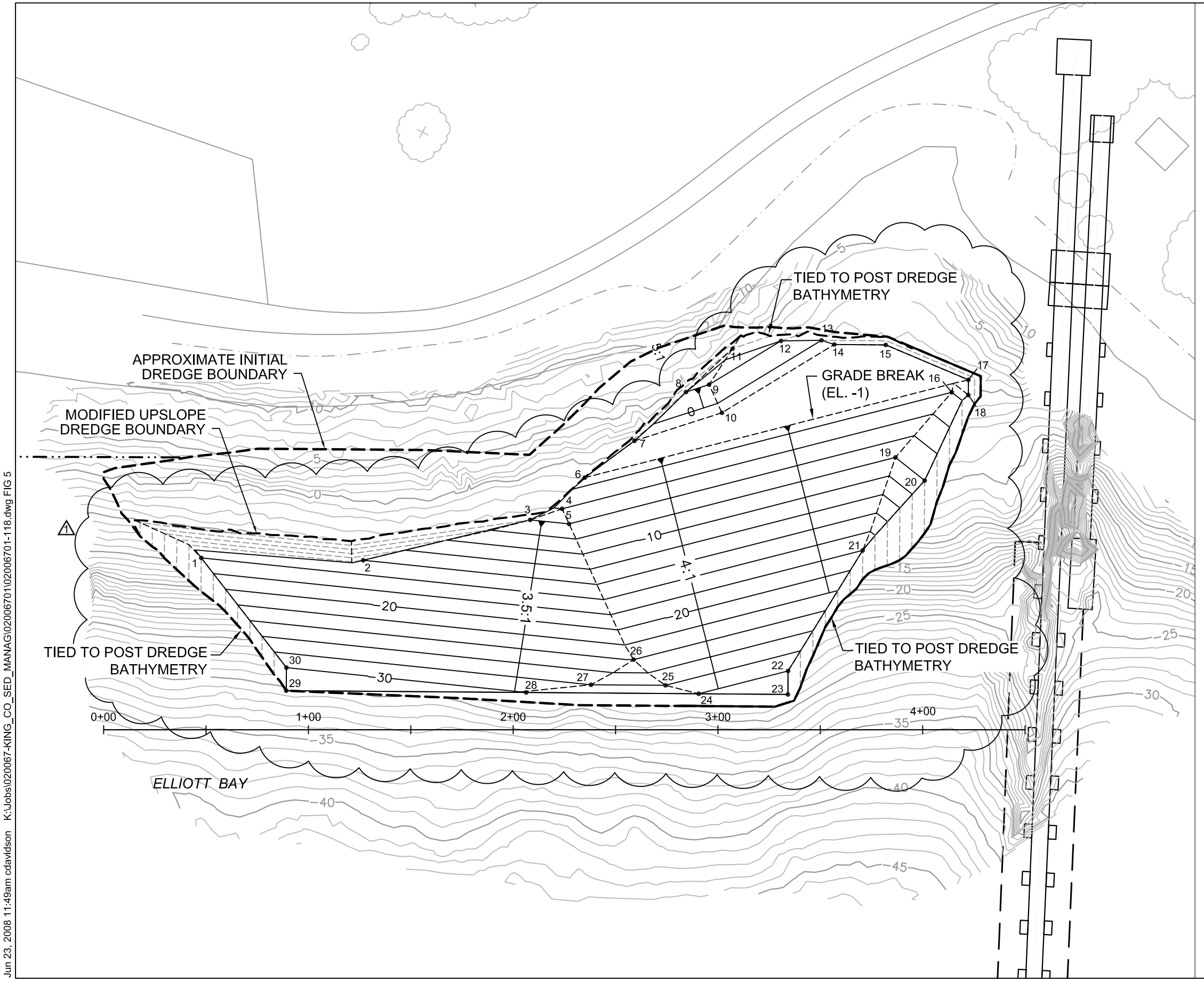
The contractor attempted to use beneficial reuse material from the Duwamish turning basin maintenance dredging, which was concurrently in construction. The maintenance dredging material that met the percent fines content requirement (less than 10 percent) in the Technical Specifications had already been dredged a few days before it could have been transferred to the Contractor to be used in the backfilling operations at the Denny Way site.

On January 16, 2008, the contractor attempted to load the "pocket barge" *S. Helens* with base backfill sand. The pocket barge had multiple controllable hoppers to deliver the backfill material capable of delivering a large volume of backfill material at once. The pocket barge was not able to contain the sand in the hoppers and approximately 1,000 cy of sand was lost through the hoppers into the surrounding waters at the loading facility. The pocket barge *S. Helens* was unloaded and was not used for the remainder of the project. All backfill materials were placed using the derrick *Pam Tay* with an ACC-built "skip box." The skip box was a rectangular structure with a 6-cy capacity measuring 12 feet by 6 feet by 2 feet with controllable bottom doors that could be partially opened for a controlled release of material, or fully opened to allow larger aggregate to pass through. A front-end loader operated on each backfill material barge and loaded material directly into the skip box. A front-end loader could load the skip box at an approximate rate of 6 cy in 30 seconds. King County performed water quality monitoring throughout backfilling operations and the results are located in Section 3.1.1.2.

Backfill material was generally released at mid-water column depth and placed in 2-foot lifts working from downslope to upslope. The contractor ordered material continually as it was needed based on the contractor's progress surveys. The procedure of placing backfill materials, surveying, and reviewing continued until the entire site was backfilled.

The post-backfill confirmatory survey (see Section 4.0) showed minor low spots. These low spots were corrected by placing additional backfill to grade, and an additional contractor survey was performed and accepted. The contractor placed habitat mix over the base backfill layer, which was confirmed by a post-backfill survey (see Section 4.0) that was also reviewed and accepted. Rock armor was placed on the upslope area to approximate pre-project armoring conditions after the habitat mix layer was complete.

All dredging results in the resuspension of particulate material (USACE 2008) and the backfill design required the evaluation for the need of a contingency cover layer in areas adjacent to and outside the dredge. Post-dredge sampling showed that there was dredge residual outside of the dredge boundary at the closest monitoring station and showed the need for the placement of contingency cover material. A 6-inch contingency cover layer of sand was placed outside the dredge boundary as shown in Figure 6.



LEGEND

- 20 — TARGET BASE BACKFILL MATERIAL CONTOURS
- APPROXIMATE BACKFILL BOUNDARY
- -10 — EXISTING BATHYMETRIC CONTOURS AND ELEVATION IN FEET (2-FOOT INTERVAL)
- APPROXIMATE POST-DREDGE CONTOUR
- 6 — BACKFILL COORDINATE
- BACKFILL BOUNDARY

NUMBER	EASTING	NORTHING
1	1263421.59	229520.92
2	1263475.27	229462.84
3	1263545.77	229417.34
4	1263560.44	229409.78
5	1263557.43	229402.23
6	1263579.08	229412.26
7	1263608.82	229407.03
8	1263643.43	229405.25
9	1263653.83	229399.58
10	1263648.20	229385.56
11	1263674.43	229403.36
12	1263693.50	229388.83
13	1263707.35	229374.72
14	1263710.17	229368.78
15	1263727.39	229350.41
16	1263732.83	229311.14
17	1263742.84	229309.43
18	1263737.46	229304.38
19	1263690.83	229309.14
20	1263692.50	229291.02
21	1263646.95	229289.44
22	1263579.19	229275.27
23	1263570.81	229267.42
24	1263540.99	229299.23
25	1263532.82	229313.79
26	1263531.19	229333.70
27	1263507.92	229340.36
28	1263483.39	229360.68
29	1263403.26	229446.17
30	1263411.46	229453.86

1

NOTES:
1. FIGURE PREPARED FROM DRAWING PROVIDED BY BLACK & VEATCH CORPORATION ENTITLED "HABITAT RESTORATION PLAN", DATED NOVEMBER 1999.
2. BATHYMETRY PREPARED FROM SURVEY PROVIDED BY eTRAC DATED OCTOBER 30, 2007.
3. HORIZONTAL DATUM: SP NAD 83 WA N
4. VERTICAL DATUM: MLLW

1 MODIFICATION TO DREDGE DESIGN

0 50
SCALE IN FEET

Jun 23, 2008 11:49am cdavidson K:\Jobs\020067-KING_CO_SED_MANAG\02006701\02006701-118.dwg FIG 5

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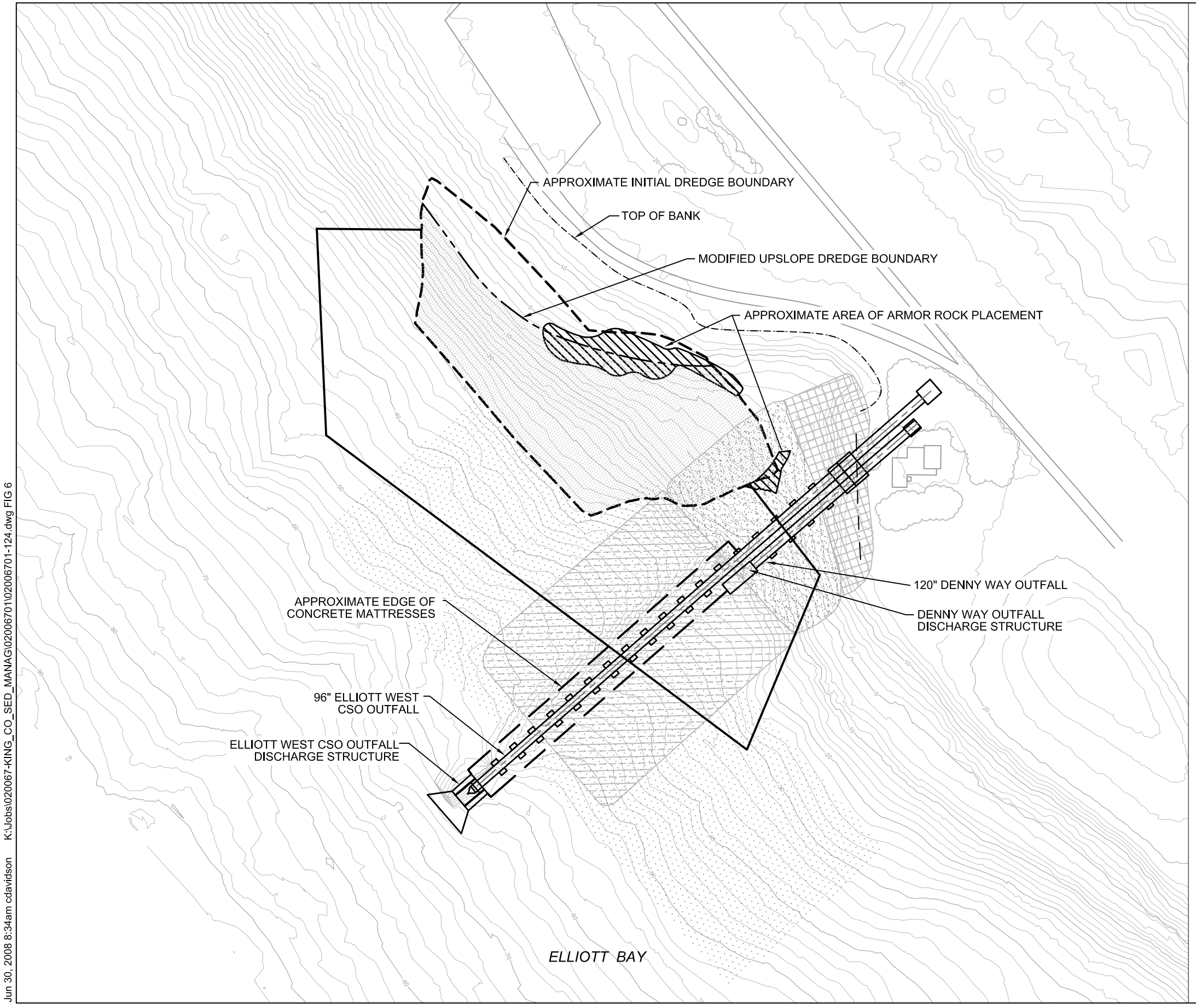
Figure 5
Target Base Backfill Plan
Denny Way CSO Nearshore Interim Sediment Cleanup Project



LEGEND

- APPROXIMATE INITIAL DREDGE BOUNDARY
- MODIFIED UPSLOPE DREDGE BOUNDARY
- BASE BACKFILL AND HABITAT MIX
- CONTINGENCY COVER BOUNDARY
- APPROXIMATE AREA OF ARMOR ROCK PLACEMENT
- EXISTING OUTFALL RIPRAP
- EXISTING SAND VENEER
- EXISTING BOULDERS AND COBBLES
- EXISTING SEDIMENT CAP
- 10 EXISTING BATHYMETRIC CONTOURS AND ELEVATION IN FEET (2-FOOT INTERVAL)

N

0 100

SCALE IN FEET

NOTES:

1. FIGURE PREPARED FROM DRAWING PROVIDED BY BLACK & VEATCH CORPORATION ENTITLED "HABITAT RESTORATION PLAN", DATED NOVEMBER 1999.
2. BATHYMETRY PREPARED FROM SURVEY PROVIDED BY BWE DATED SEPTEMBER 10, 2005.
3. HORIZONTAL DATUM: SP NAD 83/91 WA N
4. VERTICAL DATUM: MLLW

Jun 30, 2008 8:34am cdavidson K:\Jobs\020067-KING_CO_SED_MANAG\020067\02006701\02006701-124.dwg FIG 6

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Figure 6

Armor Rock and Contingency Cover Placement Areas
Denny Way CSO Nearshore Interim Sediment Cleanup Project

Backfill material placement occurred over 26 days with approximately 19,460 cy of material placed. The average production rate of all material placed was approximately 748 cy per day. The contractor encountered some equipment and mechanical problems during backfilling that slowed the production rate. The DGPS system for determining horizontal positioning of the clamshell bucket relative to the dredge plan did not function correctly at various times during backfilling. The front-end loader used to load the skip box needed maintenance on land, halting the backfilling. The skip box doors were damaged during the placement of the armor rock and had to be fixed before proceeding with armor rock placement. Foul weather days also contributed to slowed production rates during backfill activities. Operational controls (cycle time) to limit the effects of resuspension and pausing work to allow turbidity to decrease also limited the production rate. Several turbidity exceedances occurred during backfilling, and the contractor stopped backfilling work for short periods of time to re-position work barges to allow the turbidity readings to decrease (see Section 3.0). During backfilling, unavailability of backfill material accounted for 3.5 days of lost time; however, at most stages of backfill activities materials were readily available from the quarry. The production rate was not restrained by the time required to review and approve confirmatory surveys, which typically took less than 24 hours to complete.

Base backfill material placement occurred over 12 10- to 15-hour days, with approximately 11,886 cy placed. The contractor spent approximately 63 hours placing the 11,886 cy of base backfill material. This time only includes actual backfilling time, and equates to a gross production rate of 189 cy per hour. The total production time to place the 11,886 cy was 138 hours. This time includes backfilling, equipment movement, maintenance, downtime, and other non-productive time. Therefore, the net production rate was 86 cy per hour.

Habitat mix placement occurred over 8.5 10-hour days, with approximately 4,821 cy placed. The contractor spent approximately 30.5 hours placing the 4,821 cy of habitat mix material. This time only includes actual backfilling time, and equates to a gross production rate of 158 cy per hour. The total production time to place the 4,821 cy was 85 hours. This time includes backfilling, equipment movement, maintenance, downtime, and other non-productive time. Therefore, the net production rate was 56 cy per hour.

Armor rock placement occurred over 3 10-hour days, with approximately 758 tons placed. The contractor spent approximately 7 hours placing the 758 tons of armor rock material. This time only includes actual backfilling time, and equates to a gross production rate of 108 tons per hour. The total production time to place the 758 tons was 30 hours. This time includes backfilling, equipment movement, maintenance, downtime, and other non-productive time. Therefore, the net production rate was 25 tons per hour.

Contingency cover material placement occurred over 2 12-hour days and 1 10-hour day, with approximately 1,540 cy placed. The contractor spent approximately 19 hours placing the 1,540 cy of contingency cover material. This time only includes actual

backfilling time, and equates to a gross production rate of 81 cy per hour. The total production time to place the 1,540 cy was 34 hours. This time includes backfilling, equipment movement, maintenance, downtime, and other non-productive time. Therefore, the net production rate was 45 cy per hour.

Backfilling activities occurred from January 17 to February 25, 2008. A permit extension was issued to work beyond the beginning of the fish window closure from February 16 to March 1. The contractor used only 5 in-water work days after February 15 to complete remaining backfilling activities.

2.7.1 Lessons Learned

The opportunity to beneficially reuse acceptable dredge material may have been achieved with closer coordination of the projects. Such coordination will likely require project management coordination during the construction phase as the contractors are too busy with their individual projects.

Water quality exceedances during backfilling may have been minimized by further increasing the cycle time, or releasing the backfill material near the mudline, which would have likely impacted the contractor's schedule. However, based on past project experience with placing sand from an upland source into the aquatic environment, turbidity is a frequent occurrence during this type of operation.

Similar to during dredging, contractor progress surveys were not submitted in a timely manner and may have contributed to high spots near the toe of the dredge boundary.

Project personnel decided to place contingency cover material after post-dredge sampling at perimeter stations had occurred but before post-backfill confirmatory sampling had taken place due to timing constraints with the fish window. This decision was contrary to the Technical Specifications, which stated that the contingency cover material would be based on post-backfill confirmatory sampling that included a 7-day standby time as a bid item, during which time the confirmatory samples would be analyzed and reviewed. It may benefit future projects to base decisions to place contingency cover material on post-dredge sampling, or build in such flexibility in the Technical Specifications.

3.0 Compliance Monitoring

The MTCA requires three types of compliance monitoring to be performed in order to confirm the adequacy of a remedial action (WAC 173-340-410). These include protection monitoring, performance monitoring, and confirmational monitoring. The compliance monitoring performed during the Denny Way CSO Nearshore Interim Sediment Cleanup Project is discussed in this section. The King County Department of Natural Resources and Parks (KCDNRP) produced two sampling and analysis plans in September 2007, which describe the water quality monitoring activities and the sediment monitoring activities, and a third long-term sediment sampling and analysis plan was produced in March 2008. These three plans (KCDNRP 2007a, 2007b, and 2008) are included in Appendices F, G, and H, respectively, and should be consulted for the details of the sampling design and procedures used to collect the compliance monitoring samples.

3.1. PROTECTION MONITORING

Protection monitoring is performed to confirm that human health and the environment are adequately protected during construction of the cleanup action as described in the contractor's specific safety and health plan (WAC 173-340-410(a)). No deviations from the contractor's health and safety plan were reported or observed.

Water quality monitoring of Elliott Bay in the vicinity of the project site was required in the Ecology Agreed Order DE No. 5068. During construction, turbidity and dissolved oxygen (DO) had to be maintained within applicable water quality standards listed in WAC 173-201A at a point 300 feet from the location of dredging or backfill material release into Elliott Bay. Details of the water quality monitoring were included in the Agreed Order DE No. 5068 and in the *Dredging and Backfilling Operations Construction Water Quality Monitoring Plan* (KCDNRP 2007a). Additionally, water quality monitoring was required as part of the Biological Evaluation (Anchor 2007a).

3.1.1 Water Quality Monitoring

Water quality monitoring was performed in accordance with the approved *Dredging and Backfilling Operations Construction Water Quality Monitoring Plan* (KCDNRP 2007a). King County monitored water quality proximal to the construction site through the use of a monitoring buoy deployed approximately 300 feet northwest of the site, down-current of construction activities, in approximately 35 feet of water (referenced to MLLW). Previous studies have shown that the net current flow in the vicinity of the site is in a northwesterly direction, following the Seattle waterfront shoreline (Ebbesmeyer et al. 1998). Surface water in this part of Elliott Bay is influenced by discharges from the Duwamish River, which follow the net prevailing currents along the waterfront shoreline.

The instrument used for water quality monitoring on this project was the YSI 6600EDS multi-parameter sonde. A YSI 6600EDS sonde consists of a cylindrical pressure-

resistant body with a cable connection on one end and temperature, conductivity, pressure (depth), dissolved oxygen, and turbidity probes on the opposite end. The sonde was deployed at a depth of 1 meter below the surface, and the depth remained constant during tidal fluctuations. Figure 7 shows the location of the water quality monitoring buoy in relation to the site and construction area. Background water quality information for Elliott Bay was collected by a second water quality monitoring system located at the Seattle Aquarium, which allowed King County staff to compare real-time water quality data between the site and background Elliott Bay conditions. Figure 7 shows the relative location of the Denny Way and Seattle Aquarium monitoring stations.

Both water quality monitoring systems included a real-time data acquisition system (DAS) consisting of a multi-parameter data sonde and telemetry system that allowed for data collection, storage, and review via the internet. Data collection occurred every 15 minutes with hourly data transferral via the DAS to a YSI Econet web interface. The data were transmitted to a secure server and posted directly to a customizable web site. The data could be downloaded in a number of ways, including automatic or customizable graphs, HTML, or CSV formats.

One week prior to the start of construction, throughout the first 14 days of construction, and when the *in situ* monitoring system was not operational, King County collected manual daily water samples for laboratory analysis of both turbidity and DO from a location in the proximity of the water quality monitoring systems. Manual samples were collected and submitted to Ecology instead of data collected from the water quality monitoring systems during the first 14 days of construction because the water quality monitoring systems needed continuing calibration and encountered technical difficulties. Manual water sample collection and analysis served as a calibration check for the *in situ* monitoring systems and as an alternative data-collection method when the *in situ* systems were not functioning correctly.

It was anticipated that the *in situ* monitoring sensors would perform according to the manufacturer's specifications. As such, the field quality control (QC) samples were reduced to weekly collection, as a calibration check, following the first 14 days of construction for the remainder of the monitoring period.

Weekly water quality data reports were prepared and submitted to Ecology. The weekly water quality reports included a summary of the continuous *in situ* data, along with results of QC sample analysis for turbidity and DO, and a description of how the QC results impacted the *in situ* data.

As discussed in the *Dredging and Backfilling Operations Construction Water Quality Monitoring Plan* (KCDNRP 2007a), a turbidity exceedance was recorded if the average turbidity at the site buoy measured over a 1-hour time period was more than 5 Nephelometric Turbidity Units (NTU) higher than the average turbidity measured over the same 1-hour period at the background (Seattle Aquarium) monitoring station when the background turbidity was 50 NTU or less, or if the average turbidity at the site buoy

measured over a 1-hour time period increased more than 10 percent when background turbidity was greater than 50 NTU. Similarly, DO was averaged hourly at the site buoy and compared to applicable DO standards for Elliott Bay.

Jun 23, 2008 11:58am cdavidson K:\Jobs\020067-KING_CO_SED_MANAG\02006701\02006701-123.dwg FIG 7

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Figure 7
Water Quality Monitoring Buoy and Seattle Aquarium Reference Station
Denny Way CSO Nearshore Interim Sediment Cleanup Project

3.1.1.1 Results of Water Quality Monitoring During Dredging

Appendix D of this report contains the 1-hour average water quality monitoring turbidity data collected by the site water quality monitoring buoy, and Appendix E contains the complete water quality monitoring dataset generated from the on-site buoy. Dredging activities were conducted between November 30, 2007, and January 12, 2008. Only one water quality exceedance was recorded during the dredging activities, which occurred on January 8, 2008. The date, time, tidal condition associated with the water quality exceedance, and turbidity value above background (site buoy value minus background value) are shown in Table 1.

Table 1
Water Quality Monitoring Exceedance During Dredging

Date	Time	Tide	Site Turbidity Measurement Referenced to Background (NTU)
Tuesday, January 8, 2008	4:00pm	ebb	5.7

The turbidity exceedance occurred during the 1-hour average for 4:00 p.m., but the contractor had already voluntarily stopped dredging at approximately 3:45 p.m. due to elevated turbidity readings before the exceedance occurred. From January 3 to January 8, 2008, increases in turbidity were observed that were directly related to the use of the barge-mounted excavator (deployed under change order to remove armor rock), which typically lost up to half of the mixed armor and sediment material from each bite into the water column or near the water surface. The excavator bucket was ineffective at selecting concrete debris and resulted in a mix of water and sediment and minimal amounts of concrete with each bucket brought to the surface. Heavy losses of material from the excavator bucket occurred during the handling period as it was raised over the fence on the material barge to reach the flat deck area of the hull. When turbidity measurement increases were observed, the contractor was notified immediately and the contractor responded with a change in best management practices (BMPs) whenever possible. In most cases, the operational response was to stop the operation for a short period of time (e.g., 15 to 30 minutes) or stop working for the day. Typically, increases in turbidity measurements were correlated to the ebb tide, and the contractor attempted to use the excavator during the flood tide to contain the turbidity plume near the dredge platform. Turbidity measurements during the use of the clamshell bucket were relatively low, and no exceedances were recorded during its use. There were no impacts to DO observed such that there were no noticeable decreases in DO during dredging activities.

3.1.1.2 Results of Water Quality Monitoring During Backfilling

Appendix D of this report contains the 1-hour average water quality monitoring turbidity data collected by the site water quality monitoring buoy, and Appendix E contains the

complete water quality monitoring dataset generated from the on-site buoy. Backfilling activities were conducted between January 17 and February 23, 2008. Twenty turbidity water quality exceedances were recorded during the backfilling activities. The dates, times, tidal condition associated with the water quality exceedances, and turbidity exceedance values above background (site buoy value minus background value) are shown in Table 2.

Table 2
Water Quality Monitoring Exceedances During Backfilling

Date	Time	Tide	Site Turbidity Measurement Referenced to Background (NTU)
January 17, 2008	12:00pm	ebb	7.15
January 17, 2008	1:00pm	ebb	5.27
January 17, 2008	3:00pm	ebb	5.78
January 22, 2008	8:00am	ebb	8.18
January 22, 2008	9:00am	ebb	9.68
January 24, 2008	11:00am	flood	6.95
January 24, 2008	12:00pm	flood	14.28
January 24, 2008	3:00pm	flood	5.05
January 28, 2008	10:00am	ebb	7.85
January 28, 2008	1:00pm	ebb	5.08
January 28, 2008	2:00pm	ebb	9.22
January 29, 2008	10:00am	ebb	12.45
January 29, 2008	11:00am	ebb	6.01
January 29, 2008	1:00pm	ebb	6.75
January 29, 2008	2:00pm	ebb	16.82
January 29, 2008	7:00pm	ebb	5.32
February 5, 2008	11:00am	flood	5.67
February 7, 2008	6:00am	ebb	11.78
February 7, 2008	7:00am	ebb	10.63
February 13, 2008	7:00am	ebb	6.4

Water quality exceedances during backfilling activities were associated with the spread of clean backfill material beyond the dredge boundary. Fine-grained particles in the backfill materials contributed to the increased turbidity measurements during backfill material placement and continued to impact water quality throughout placement of backfill until habitat mix material placement had been completed. Water quality exceedances during backfilling typically occurred during the ebb tide as shown in Table 2. It was observed in the field that turbidity generated during backfill placement appeared to be contained near the dredge equipment platform during the flood tide and that turbidity plumes moved toward the site buoy during the ebb tide. The contractor typically tried to place backfill material during the flood tide to minimize turbidity exceedances during the work shift. When turbidity increases were noted and exceedances occurred, the contractor would stop the placement of backfill for a short period of time (e.g., 15 to 30 minutes) to allow the turbidity to decrease. Fourteen of the water quality exceedances occurred during placement of base backfill material and four exceedances occurred during placement of habitat mix. The turbidity exceedance for 7:00pm on January 29, 2008 occurred approximately 3 hours after backfilling activities had stopped for the day and rough weather may have contributed to the resuspension of backfill material such that turbidity was generated. Two turbidity exceedances that occurred on February 7, 2008 were measured before the work crew arrived at the site and no work was being performed.

3.1.1.3 Lessons Learned

Water quality monitoring with the real-time systems was viewed by project personnel as a success during its use at the site. Once correctly calibrated and functioning normally, the systems were effective at producing frequent water quality data that were available to all project personnel.

Water quality monitoring performed manually typically results in one to two samples taken during construction activities and targets areas where plumes exist in the water column. The disadvantage of the manual sampling approach is that it results in a much smaller water quality dataset when compared to the use of an on-site water quality station that provides continual monitoring. The advantage of continual monitoring is that it captures real-time water quality information, which is useful in determining impacts to water quality at any time during construction. A disadvantage of the continual monitoring approach is that it cannot target multi-directional plumes that cannot be tracked by the stationary buoy.

The use of a water quality monitoring buoy may have other deficiencies that should be taken into account before deployment at a different site. A turbidity plume may not have accurately been captured since the buoy was only collecting data at 1 meter below the water surface and turbidity plumes may affect the water column at lower depths. Unique site conditions may have more complex current patterns where a single fixed buoy may not adequately collect representative water quality data because the buoy is not accurately capturing the plume of turbidity downstream of the work. Hydroacoustic surveys could be used at the site during the initial startup of construction activities and could provide

information to enhance the placement of a site buoy, and the use of upper, middle, and bottom water quality sondes would capture a more complete dataset representative of the entire water column. The use of multiple buoys on a site would generate more data, which could increase the possibility of capturing water quality exceedances, and an appropriate strategy (e.g., up-front agency education and planning) would need to be in place so that work could be performed efficiently; however, multiple buoys may still not accurately characterize turbidity plumes if the movement of the plumes is not fully understood at a given site. Additional buoys may also hinder movement of construction by limiting movement of equipment and may also obstruct vessel navigation.

Environmental effects at the site including tides, wind, and nearby large vessel activity also influenced the water quality monitoring measurements at the site buoy and may not have been accurately accounted for due to the stationary position of the site buoy. An example of these environmental influences during backfilling activities occurred when turbidity exceedances were observed during ebb tide, which periodically occurred in the afternoon. In this example, turbidity may have been contained near the derrick platform during flood tide (during the morning before the ebb tide occurred) or it is possible that turbidity may have been moving in the opposite direction (upstream direction) away from the buoy until the tide changed to ebb tide. But ultimately, with the net currents flowing toward the site buoy, turbidity exceedances were noted at the site buoy.

The water quality data collected at the background monitoring system located at the Seattle Aquarium may have been influenced locally by the Duwamish River or nearby stormwater discharges, and may not have been an accurate indicator of background conditions. For example, at various times during the project, the background turbidity measurements were higher than the site turbidity measurements, indicating that a background buoy placed at distance from the site did not always characterize project-specific background water quality conditions.

3.1.1.4 Real-Time Monitoring

The near-real-time remote data acquisition system allowed project personnel to monitor water quality constantly during construction activities, and detect almost immediately if construction activities had an impact on turbidity or DO concentrations. Ecology valued the real-time monitoring data and viewed it as a success for the project.

3.2. PERFORMANCE MONITORING

Performance monitoring is conducted to confirm that the cleanup action has attained cleanup standards or other performance standards (WAC 173-340-410 (b)).

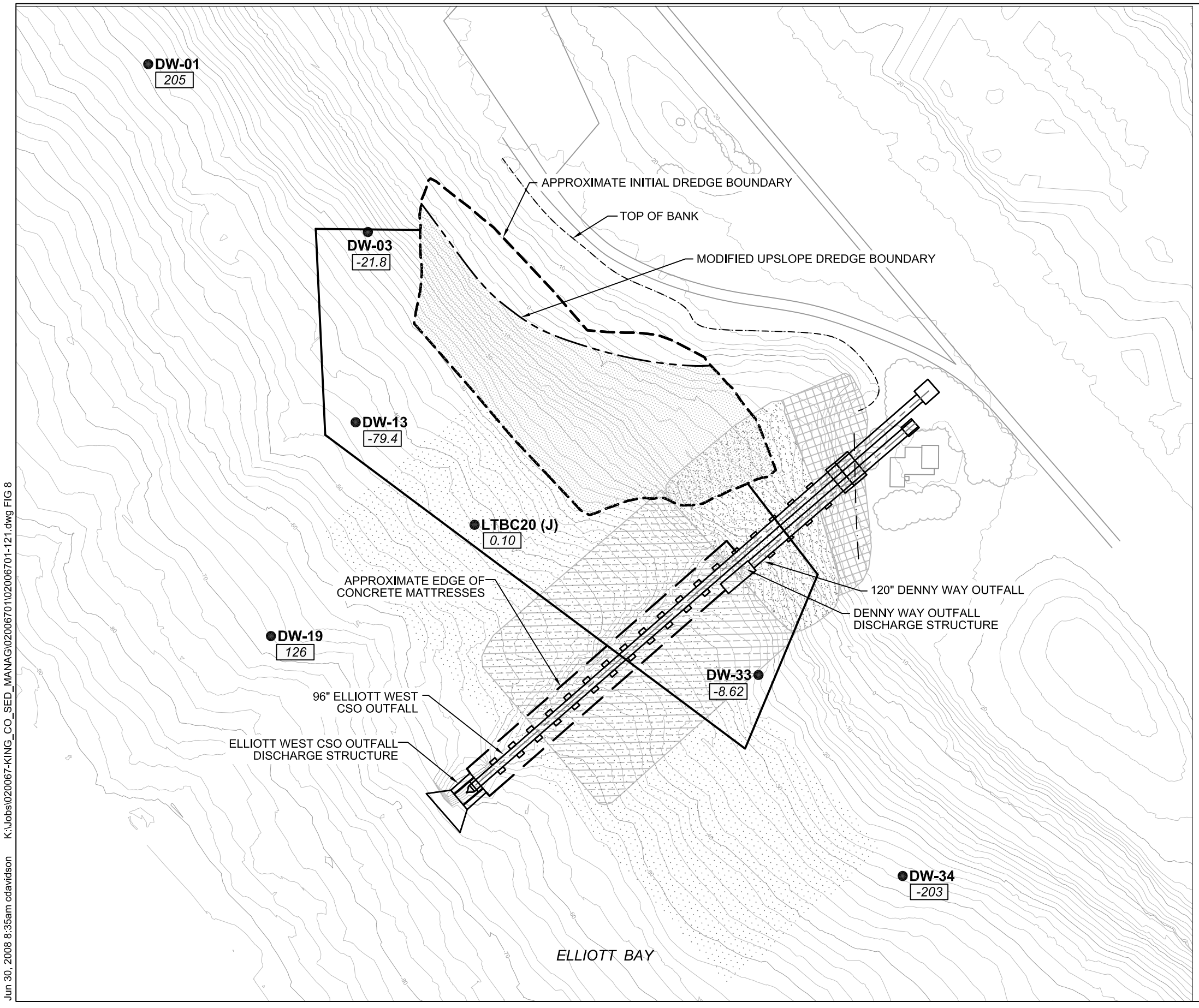
3.2.1 Post-Dredge, Post-Base Backfill, and Post-Habitat Mix Surveys

Throughout the dredging and backfilling operation, bottom surveys performed by the contractor were submitted to King County's project engineer and reviewed for compliance with the Contract Drawings. When all high spots identified by the contractor's surveys had been removed, a post-dredge survey was conducted by eTrac

Engineering, L.L.C. (eTrac) to independently confirm the dredging results. The post-dredge survey showed that the contractor removed sediments to the required elevations shown in the Contract Drawings and as described in the Technical Specifications. Similarly, the contractor's surveys were used to confirm that each backfill material thickness was sufficient before eTrac conducted the post-base backfill and post-habitat mix surveys. These surveys showed that the base backfill and habitat mix layers were placed in accordance with the Contract Drawings and Technical Specifications. Surveys are discussed further in Section 4.0.

3.2.2 Sediment Sampling

When the *Dredging and Backfilling Operations Sediment Monitoring Sampling and Analysis Plan* (KCDNRP 2007b; Appendix G) was prepared for the project, Ecology required sediment sampling beyond the site boundary to document any changes in chemical concentrations of surface sediments due to dredge material moving beyond the site boundary. Ecology also required post-dredge sampling within the dredge boundary in areas where backfill would be less than 3 feet thick to characterize post-dredge surface sediment quality conditions after dredging activities were completed and before backfilling activities were initiated. A total of seven monitoring stations were established beyond the site boundary and sampled before and after the project was implemented to document potential changes over time. A total of five stations were established within the dredge prism to evaluate the sediment at the post-dredge surface. Figure 8 shows that stations DW-01, DW-03, DW-13, DW-19, DW-33, DW-34, and LTBC20 (J) were spaced upstream, downstream, and offshore of the dredge site and ranged from 50 to 400 feet from the boundary of the dredge prism, as requested by Ecology. Figure 9 shows the five grab stations (DWPD-01, DWPD-02, DWPD-03, DWPD-04, and DWPD-05) as requested by Ecology and one core station (DW105) located within the dredge footprint. At stations where samples were mostly gravel, multiple sediment grabs were necessary to obtain an adequate sample volume for chemistry analysis. To verify reproducibility of the grab samples, a field replicate was obtained at one station (LTBC20 (J)) before construction. No field replicate was collected at the sampling event following construction.



LEGEND

- APPROXIMATE INITIAL DREDGE BOUNDARY
- MODIFIED UPSLOPE DREDGE BOUNDARY
- BASE BACKFILL AND HABITAT MIX
- CONTINGENCY COVER BOUNDARY
- DW-01 ● ACTUAL SURFACE SEDIMENT GRAB LOCATION
- 205 DIFFERENCE BETWEEN PRE- AND POST-CONSTRUCTION PCB SURFACE SEDIMENT CONCENTRATION (µg/kg DRY WEIGHT)
- APPROXIMATE AREA OF ROCK ARMOR PLACEMENT
- EXISTING OUTFALL RIPRAP
- EXISTING SAND VENEER
- EXISTING BOULDERS AND COBBLES
- EXISTING SEDIMENT CAP
- 10 EXISTING BATHYMETRIC CONTOURS AND ELEVATION IN FEET (2-FOOT INTERVAL)

N

0 100

SCALE IN FEET

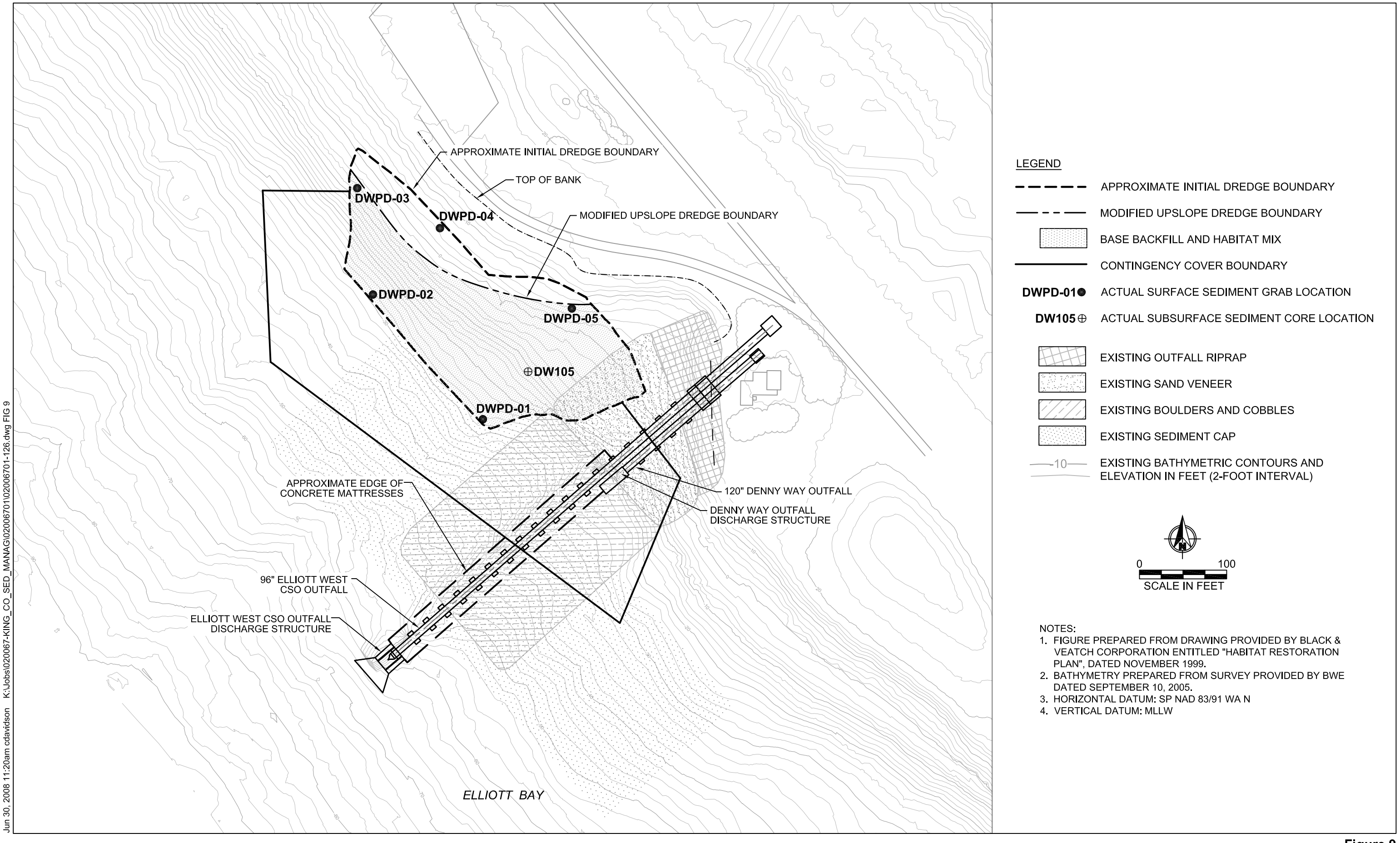
NOTES:
1. FIGURE PREPARED FROM DRAWING PROVIDED BY BLACK & VEATCH CORPORATION ENTITLED "HABITAT RESTORATION PLAN", DATED NOVEMBER 1999.
2. BATHYMETRY PREPARED FROM SURVEY PROVIDED BY BWE DATED SEPTEMBER 10, 2005.
3. HORIZONTAL DATUM: SP NAD 83/91 WA N
4. VERTICAL DATUM: MLLW

Jun 30, 2008 8:35am cdavidson K:\Jobs\020067-KING_CO_SED_MANAG\020067\02006701-121.dwg FIG 8

Figure 8

Post-Construction Changes in PCB Dry Weight Concentrations at 7 Stations Beyond Site Boundary
Denny Way CSO Nearshore Interim Sediment Cleanup Project

ANCHOR ENVIRONMENTAL, L.L.C.



NOTES:
1. FIGURE PREPARED FROM DRAWING PROVIDED BY BLACK & VEATCH CORPORATION ENTITLED "HABITAT RESTORATION PLAN", DATED NOVEMBER 1999.
2. BATHYMETRY PREPARED FROM SURVEY PROVIDED BY BWE DATED SEPTEMBER 10, 2005.
3. HORIZONTAL DATUM: SP NAD 83/91 WA N
4. VERTICAL DATUM: MLLW

Jun 30, 2008 11:20am cdavidson K:\Jobs\020067-KING_CO_SED_MANAG\020067011\020067011-126.dwg FIG 9

ANCHOR ENVIRONMENTAL, L.L.C.

Figure 9
Post-Dredge Surface and Subsurface Sample Locations within Site Boundary
Denny Way CSO Nearshore Interim Sediment Cleanup Project

3.2.2.1 Sediment Analyses

All sediment samples collected beyond the site boundary for before and after comparisons, and sediment samples collected within the dredge prism at the dredge surface were submitted to the King County Environmental Laboratory for analysis of standard SMS sediment characterization parameters (PCBs, base/neutral/acid extractable semi-volatiles [BNAs], mercury, SMS metals, and the sediment conventional parameters of total organic carbon [TOC], total solids, and particle size distribution [PSD]). The analytical methods used for various parameters are listed in Appendices G and H. All analyses were performed under QA1 guidance (Ecology 1989) per the methods described in the *Dredging and Backfilling Operations Sediment Monitoring Sampling and Analysis Plan*(KCDNRP 2007b) for the pre-construction and post-dredge (inside prism) sampling events, and the *Denny Way CSO and Elliott West CSO Treatment Facility, Post Operation Sediment Monitoring, Year 3, Denny Way CSO Areas A and B Nearshore Sediment Remediation Project Post-Construction Sediment Monitoring, Areas C, D, and E Monitoring Sampling and Analysis Plan* (KCDNRP 2008) for the post-construction sampling event (See section 6.0). The resulting data underwent QA1 review, presented in Appendix I. Results of the analyses are presented in Tables 3 to 5 and are discussed below.

Table 3
Chemicals that Exceeded SMS at Seven Stations Beyond the Site Boundary
Before and After Construction

	PCBs		BEHP		BBP		Mercury	
Stations	**Before**	**After**	**Before**	**After**	**Before**	**After**	**Before**	**After**
DW-01	SQS	SQS	SQS	NE	SQS	NE	CSL	CSL
DW-03	NE	NE*	NE	NE**	NE	NE***	NE	NE
DW-13	NE	NE*	NE	NE**	SQS	NE***	NE	NE
DW-19	SQS	SQS	SQS	NE	NE	NE	CSL	SQS
DW-33	NE	NE*	NE	NE**	NE	NE***	NE	NE
DW-34	SQS	SQS	CSL	NE	SQS	NE	SQS	NE
LTBC20 (J)	NE	NE*	NE	NE**	SQS	NE***	NE	NE
LTBC20 (J) Rep	NE	NS	SQS	NS	NE	NS	NE	NS
Stations>SQS	3>SQS	3>SQS	3>SQS	--	4>SQS	--	1>SQS	1>SQS
Stations>CSL	--	--	1>CSL	--	--	--	2>CSL	1>CSL

BBP = butylbenzylphthalate
BEHP = bis(2 ethylhexyl)phthalate
CSL = Cleanup Screening Level
NE = No Exceedance
NS = Not Sampled
PCB = polychlorinated biphenyl
SQS = Sediment Quality Standards
* Low total organic carbon (TOC) for this sample; NE based on comparing dry weight concentrations to lowest apparent effects threshold (LAET) and second lowest apparent effects threshold (2LAET) criteria (130 and 1,000 micrograms per kilogram [µg/kg], respectively) for total PCBs (Sediment Management Standards [SMS])
** Low TOC for this sample; NE based on comparing dry weight concentrations to LAET and 2LAET criteria (1,300 and 1,900 µg/kg, respectively) for BEHP
*** Low TOC for this sample; NE based on comparing dry weight concentrations to LAET and 2LAET criteria (63 and 900 µg/kg, respectively) for BBP

Table 4
Changes in PCB Dry Weight and SMS Values at Seven Stations
Beyond the Site Boundary After Construction

Stations	PCB Concentration (µg/kg dry weight) #				PCB Concentration (mg/kg OC)			
	Before	After	Increase	Decrease	Before	After	Increase	Decrease
DW-01	504	709	205	--	24.3*	35.2*	10.9	--
DW-19	286	412	126	--	15.0*	14.7*	--	0.3
LTBC20 (J)	34.0	34.1	0.1	--	3.40	low TOC	--	--
LTBC20 (J) Rep	60.9	NS	N/AV	N/AV	3.81	NS	N/AV	N/AV
DW-33	9.82	<1.2	--	8.62	0.89	low TOC	--	--
DW-03	35.2	13.4	--	21.8	1.46	low TOC	--	--
DW-13	80.5	<1.1	--	79.4	4.74	low TOC	--	--
DW-34	585	382	--	203	39.0*	15.9*	--	23.1

Stations	Total Solids (percent dry weight)				TOC (percent dry weight)			
	Before	After	Increase	Decrease	Before	After	Increase	Decrease
DW-01	52.7	53.2	0.5	--	2.07	2.01	--	0.06
DW-19	53.3	58	4.7	--	1.93	1.95	0.02	--
LTBC20 (J)	69.3	79	9.7	--	0.95	0.18	--	0.77
LTBC20 (J) Rep	63.2	NS	N/AV	N/AV	1.61	NS	N/AV	N/AV
DW-33	90.0	86.3	--	3.7	1.11	<0.05	--	1.06
DW-03	75.9	79.2	3.3	--	2.42	0.10	--	2.32
DW-13	59.6	92.5	32.9	--	1.68	<0.05	--	1.63
DW-34	66.6	60.2	--	6.4	1.45	2.38	0.93	--

= Values rounded to three significant figures
* = Value exceeds Sediment Quality Standards (SQS)
µg/kg = microgram per kilogram
mg/kg = milligrams per kilogram
NS = Not Sampled
N/AV = Not Available
OC = organic carbon-normalized
PCB = polychlorinated biphenyl
TOC = total organic carbon

Table 5
Chemicals that Exceeded SMS at Six Stations at the Post-dredge Surface

Stations	PCBs	BEHP	BBP	Mercury	Cadmium	Lead	Silver	Zinc	Acenap-hthene	1,4-Dichloro-benzene	Fluorene	Phen-anthrene	Anthra-cene
DWPD-01	NE	NE	NE	SQS	NE	NE	NE	NE	NE	NE	NE	NE	NE
DWPD-02*	SQS	NE	NE	CSL	CSL	CSL	CSL	CSL	NE	NE	CSL	SQS	CSL
DWPD-03	SQS	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
DWPD-04	SQS	CSL	NE	CSL	NE	NE	NE	NE	NE	SQS	NE	NE	NE
DWPD-05*	SQS	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
DW105 (0 to 1 foot)	SQS	CSL	NE	CSL	NE	NE	CSL	NE	NE	CSL	NE	NE	NE
DW105 (1 to 2 feet)	SQS	CSL	SQS	CSL	NE	NE	NE	NE	SQS	CSL	NE	NE	NE
Stations>SQS	6>SQS	--	1>SQS	1>SQS	--	--	--	--	1>SQS	1>SQS	--	1>SQS	--
Stations>CSL	--	3>CSL	--	4>CSL	1>CSL	1>CSL	2>CSL	1>CSL	--	2>CSL	--	--	1>CSL

Stations	Total LPAH	Fluor-anthene	Pyrene	Benzo(a)-anthracene	Chyrysene	Benzo(a)-pyrene	Ideno(1,2,3-Cd)pyrene	Dibenzo(a,h)-anthracene	Benzo(g,h,i)-perylene	Total HPAH	Total Benzo-fluoranthenes
DWPD-01	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
DWPD-02*	CSL	CSL	CSL	CSL	CSL	CSL	CSL	CSL	CSL	CSL	CSL
DWPD-03	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
DWPD-04	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
DWPD-05*	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
DW105 (0 to 1 foot)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
DW105 (1 to 2 feet)	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

Stations	Total LPAH	Fluor-anthene	Pyrene	Benzo(a)-anthracene	Chyrysene	Benzo(a)-pyrene	Ideno(1,2,3-Cd)pyrene	Dibenzo(a,h)-anthracene	Benzo(g,h,i)-perylene	Total HPAH	Total Benzo-fluoranthenes
Stations>SQS	--	--	--	--	--	--	--	--	--	--	--
Stations>CSL	1>CSL	1>CSL	1>CSL	1>CSL	1>CSL	1>CSL	1>CSL	1>CSL	1>CSL	1>CSL	1>CSL

BBP = butylbenzylphthalate
BEHP = bis(2 ethylhexyl)phthalate
CSL = Cleanup Screening Level
NE = No Exceedance
PCB = polychlorinated biphenyl
SQS = Sediment Quality Standards
* High total organic carbon (TOC) for this sample; results for this sample compared on a dry weight basis to lowest apparent effects threshold (LAET) and second lowest apparent effects threshold (2LAET) criteria from the Lower Duwamish Waterway Group AETs.

3.2.2.2 Discussion of Sampling Results Before and After Construction Samples Beyond Site Boundary

The complete listing of analytical results for sediment samples collected before and after construction is included in Appendix J for dry weight values. A summary of all chemicals that exceed SMS criteria is included in Table 3, and individual results for PCBs are included in Table 4. Corresponding TOC and total solids values are also included in Table 4.

For PCBs, Table 3 shows that three stations (DW-01, DW-19, and DW-34) exceeded SMS criteria before construction, with all three stations greater than SQS criteria. After construction, the same three stations exceeded SQS criteria, and there were no exceedances of Cleanup Screening Level (CSL) criteria. Of the seven stations sampled after construction, four stations (DW-03, DW-13, DW-33, and LTBC20) had TOC values that were below the acceptable TOC value (0.5 percent dry weight TOC) for reporting data on an organic carbon-normalized basis. For these samples, accepted dry weight basis lowest apparent effects threshold (LAET) and second lowest apparent effects threshold (2LAET) criteria were used as shown in Table 3.

For bis(2 ethylhexyl)phthalate (BEHP), Table 3 shows that four stations exceeded SMS criteria before construction, with three stations (DW-01, DW-19, and LTBC20(J)Rep) greater than SQS criteria and one station (DW-34) greater than CSL criteria. After construction, there were no exceedances of SQS or CSL criteria for BEHP. For butylbenzylphthalate (BBP), Table 3 shows that four stations exceeded SQS criteria. After construction, there were no exceedances of SQS or CSL criteria for BBP. For mercury, Table 3 shows that three stations exceeded SMS criteria before construction, with one station (DW-34) greater than SQS criteria, and two stations (DW-01 and DW-19) greater than CSL criteria. After construction, there was one exceedance of SQS criteria (DW-19), and one station (DW-01) exceeded CSL criteria.

The most accurate way to identify changes produced by the two transport processes that affect chemical concentrations beyond the site boundary (i.e., dredge sediment transport and backfill sand transport) is to look for spatial differences in the change in dry weight concentrations at each station. To assist in this analysis, the stations in Table 4 were arranged in progressive order starting with the greatest increase and progressing to the largest decrease in PCB dry weight. In Figure 8, the observed changes in PCB dry weight values were plotted next to the station numbers to show the spatial differences. Dry weight concentrations increased at two stations (DW-01 and DW-19), and the increase observed at station LTBC20 (J) is too small (0.1 part per billion [ppb]) to be considered as a change in total PCB concentration. The highest increase (205 ppb) occurred at station DW-01, which is located approximately 350 feet north of the northern edge of the dredge prism boundary and downstream of the site. The second highest increase (126 ppb) occurred at station DW-19, which is located approximately 300 feet west of the western edge of the dredge prism boundary. While these values are potentially within the acceptable error of Aroclor analytical methods, the results indicate some increase likely occurred. The relatively low increases in PCB concentrations show

that the migration of dredge material reached the outermost sampling stations and the direction of the migration correlates with the direction of tidal currents at the site.

Four stations (DW-03, DW-13, DW-33, and DW-34) showed a reduction in PCB dry weight values. A reduction in PCB values can occur when backfill sand is transported onto the station or contingency cover material is placed, which either buries all the underlying contaminated sediment (DW-13 and DW-33) or partially dilutes the 10-centimeter (cm)-deep sample (DW-03 and DW-34). A 6-inch layer of contingency cover sand was placed in an area that covered Stations DW-03, DW-13, LTBC20 (J), and DW-33 as shown in Figure 8. Station LTBC20 (J) showed no change in PCB concentration, while stations DW-03, DW-13, and DW-33 showed reductions in PCB concentrations (21.8 ppb, 79.4 ppb, and 8.62 ppb, respectively). The highest reduction in PCB concentration occurred upstream of the site at Station DW-34 where the PCB concentration was reduced by 203 ppb. It is reasonable to assume that sand migrated during or after the placement of backfill or contingency cover sand material to reduce the PCB concentrations near station DW-34 because backfill was predominately placed during flood tide and may have migrated in the upstream direction due to tidally influenced currents.

3.2.2.3 Discussion of Sampling Results for Post-Dredge Surface Samples Within Site Boundary

Ecology required surface sediment sampling inside and around the dredge boundary immediately following dredging activities in areas where backfill would be less than 3 feet thick, and these sample locations are shown in Figure 9. One subsurface core was also collected near the boundary of cleanup Areas A and B. The complete listing of analytical results for sediment samples collected after dredging activities at the post-dredge surface are included in Appendix J for dry weight values. A summary of all chemicals that exceed SMS criteria is included in Table 5.

For PCBs, Table 5 shows that five stations (DWPD-02, DWPD-03, DWPD-04, DWPD-05, and DW-105 [0 to 1 and 1 to 2 feet]) exceeded SQS criteria, and there were no exceedances of CSL criteria for PCBs. Of the six stations sampled after construction, two stations (DWPD-02 and DWPD-05) had TOC values that was above the acceptable TOC value (3.0 percent dry weight TOC) for reporting data on an organic carbon-normalized basis. For this sample, accepted dry weight basis LAET and 2LAET criteria were used to compare to SMS criteria.

For BEHP, Table 5 shows that two stations exceeded SMS criteria with both stations (DWPD-04 and DW-105 [0 to 1 and 1 to 2 feet]) greater than CSL criteria. For BBP, Table 5 shows that one station (DW-105 [1 to 2 feet]) exceeded SQS criteria.

For mercury, Table 5 shows that four stations exceeded SMS criteria at the post-dredge surface, with one station (DWPD-01) greater than SQS criteria, and three stations (DWPD-02, DWPD-04, and DW-105 [0 to 1 and 1 to 2 feet]) greater than CSL criteria. For cadmium, Table 5 shows that only one station (DWPD-02) exceeded the CSL criteria

at the post-dredge surface. For silver, Table 5 shows that two stations (DWPD-02 and DW-105 [0 to 1 foot]) exceeded the CSL criteria. For lead and zinc, Table 5 shows that only one station (DWPD-02) exceeded the CSL criteria.

For acenaphthene, Table 5 shows that one station (DW-105 [1 to 2 feet]) exceeded the CSL criteria. For 1,4-dichlorobenzene, Table 5 shows that two stations (DWPD-04 and DW-105 [0 to 1 and 1 to 2 feet]) exceeded the SMS criteria, with one station (DWPD-04) greater than SQS criteria and one station (DW-105 [1 to 2 feet]) greater than CSL criteria. Numerous PAH compounds exceeded the SMS criteria at station DWPD-02 as shown in Table 5. Phenanthrene exceeded the SQS criteria at station DWPD-02, and fluorene, anthracene, total low-molecular-weight polycyclic aromatic hydrocarbons (LPAHs), fluoranthene, pyrene, benzo(a)anthracene, chyrysene, benzo(a)pyrene, ideno(1,2,3-Cd)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene, total benzofluoranthenes, and total high-molecular-weight polycyclic aromatic hydrocarbons (HPAHs) exceeded the CSL criteria at station DWPD-02.

3.3. CONFIRMATIONAL MONITORING

Cleanup regulations require confirmational monitoring be performed to confirm the long-term effectiveness of the cleanup action, once cleanup standards and other performance standards have been attained (WAC 173-340-410 (c)). Long-term confirmation testing of the chemical levels on surfaces of cleanup Areas A and B began in April 2008, and will continue for 4 years until 2012. Sampling during the long-term monitoring will occur once each year. A separate report will be issued with the sediment chemistry results for each year sampled; however, Section 6 of this report details the April 2008 sampling effort at the one monitoring station on the backfill area. Appendix H details the long-term sediment monitoring sampling and analysis plan (KCDNRP 2008) for cleanup Areas A and B.

4.0 Surveys

4.1 PRE-CONSTRUCTION, POST-DREDGE, POST-BASE BACKFILL, AND POST-HABITAT MIX SURVEYS

King County hired an independent hydrographic surveyor (eTrac) to perform site surveys at key times during the project. Surveys were performed before construction began at the site, after the dredging was complete, after the base backfill layer was complete, and after the habitat mix layer was complete. These surveys were used to verify that the depths of dredging and elevations for backfilling were achieved as required in the Contract Documents. These surveys were also used as the basis for computing dredge quantities and base backfill layer quantities for contractor payment. Each survey was performed using a multi-beam survey-grade fathometer with survey lines approximately every 25 feet across the site. Tidal corrections were made based on periodic reading of an electronic tide gauge installed near the site at Pier 70. Horizontal location control was provided by using a DGPS that utilized the U.S. Coast Guard corrector station and locally surveyed monuments. The horizontal datum used in the surveys was North American Datum of 1983 (NAD83) and the vertical datum was the U.S. Army Corps of Engineers' MLLW. The King County surveys typically took less than half a day to acquire the survey data and less than 24 hours to process the raw data and approve the survey. Copies of the surveys are included in Appendix K; these surveys function as the as-builts required by MTCA (WAC 173-340-400(b)).

A reconnaissance survey was performed on September 10, 2005, by Blue Water Engineering. This survey was used to develop the final plans included in the Technical Specifications. A confirmational pre-dredge survey was performed on October 30, 2007. The post-dredge survey was performed on January 13, 2008. The post-base backfill survey was performed on February 4, 2008. The post-habitat mix survey was performed on February 15, 2008.

4.2 CONTRACTOR DAILY PROGRESS SURVEYS

As described in the Contract Documents, the contractor was required to perform daily progress surveys over the entire area dredged to date during dredging operations, but typically the contractor performed the progress surveys two to three times per week. The contractor used a Hemisphere V10 DGPS receiver for horizontal positioning and a single-beam Odom Echotrack dual-frequency survey-grade echosounder for recording water depth. Laptop computers with Hypack® software processed the data. Soundings were corrected for the tides based on a project-established electronic tide gauge at Pier 70. The contractor performed a pre-dredge survey about 1 month after eTrac performed King County's pre-dredge survey. The two surveys were in substantial agreement. The contractor's final post-dredge survey was also in substantial agreement with eTrac's post-dredge survey.

During backfilling operations, the contractor's progress surveys were used to monitor whether each backfill layer had adequate thickness. The contractor's final post-base backfill survey agreed with the eTrac post-base backfill survey.

4.3 QUANTITIES

A comparison between the pre-dredge survey and the post-dredge survey shows that 14,376 cy were removed during the entire project (including the debris and overdredge quantities). The final pay volume for the dredging portion of the work was 13,701 cy. The backfilling quantities were measured by material type and paid by different units of measurement as shown in Table 6. The contractor delivered and placed 11,886 cy of base backfill, 4,821 cy of habitat mix (paid as lump sum), 758 tons of armor rock (light loose riprap), and 8,815 square yards of contingency cover material (Table 6). These quantities were measured either by hydrographic survey, at the quarry based on barge displacement and using certified displacement curves, or by using bucket mark maps to confirm square yards placed.

Table 6
Quantities of Backfilling Materials

Material Type (Paid Unit)	Original Bid	Revised Estimate	Final Construction	Final Pay Quantity
Base Backfill (CY)	12,800	10,810	11,886	11,886
Habitat Mix (LS)	Lump Sum	Lump Sum	4,821	Lump Sum
Rock Armor (TON)	--	--	758	758
Contingency Cover (SY)	6,200	8,815	8,815	8,815

CY = cubic yards
LS = lump sum
SY = square yards

5.0 Deviations From Plans

The following deviations were noted from the Design Analysis Report (Anchor 2007b), Contract Drawings, and Technical Specifications and were approved by Ecology:

- Request for Change Order No. 001 (RCO No. 001) stated that the concrete material present on the upper slope of the dredge prism along the sea wall was considered to be a change of site conditions. The change order included a scope of work and revisions to the Contract Drawings (C102 to C105) that revised the dredge side slopes and cross sections. The modifications to the dredge plan and target base backfill plan are shown in Figures 3 and 5 respectively. The revision included modifying the toe of the dredge cut along the shoreline, and steeping the dredge cut to a planned 1H:1V. The revision minimized the removal of concrete material in the upslope area and reduced the dredge prism volume from approximately 17,100 cy to 15,100 cy, or a difference of 2,000 cy. The scope of work required the contractor to remove and dispose of concrete debris present in the revised dredge footprint that was acting as slope armoring, and furnish and replace armor rock as determined by the engineer.
- The habitat mix placed on site did not meet the Technical Specification for Habitat Mix material. The material specified was not readily available at the time of constructing the habitat mix layer, and an alternative habitat mix specification was approved by the Washington Department of Fish and Wildlife (WDFW):

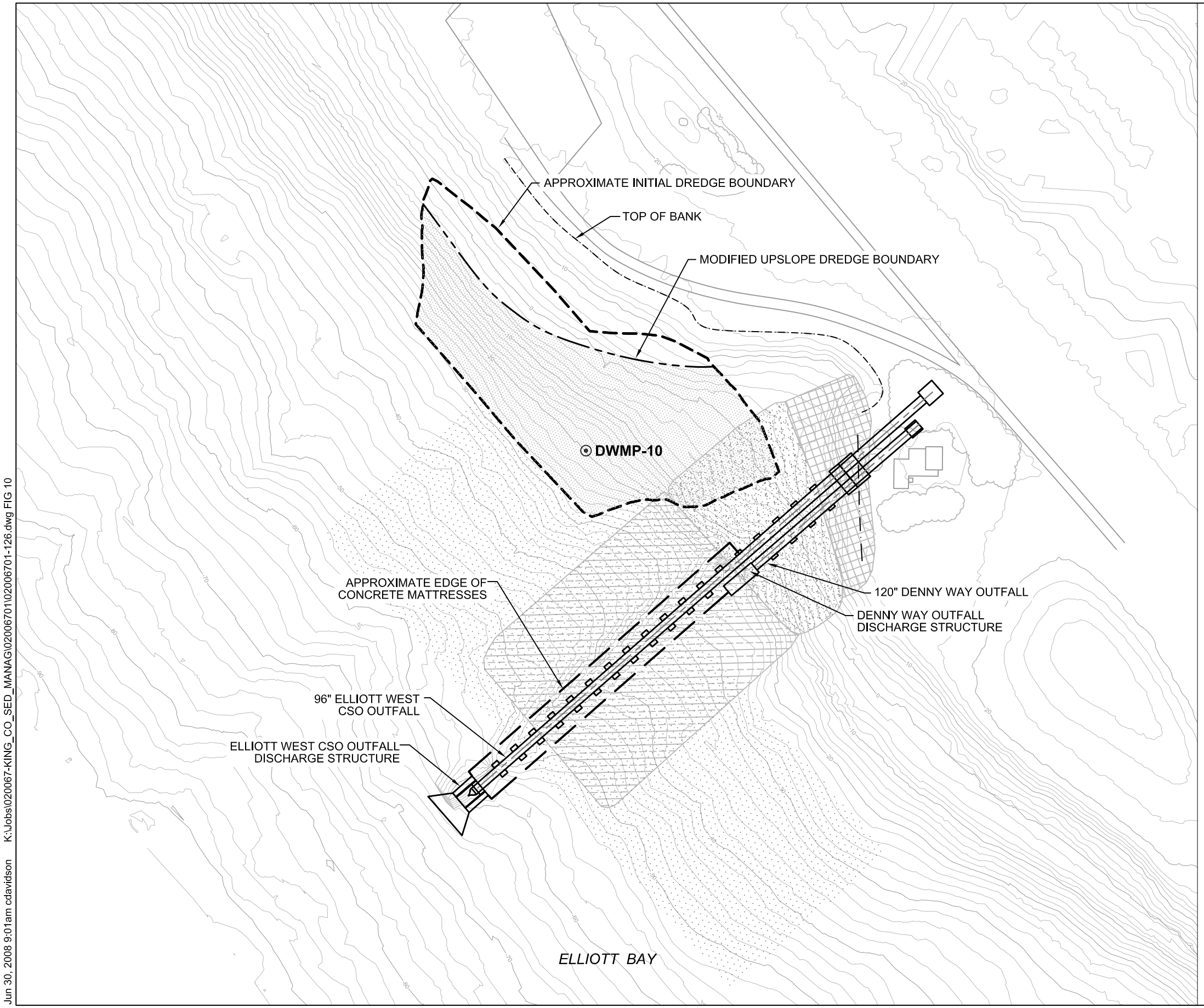
Size	Percent Passing
2”	100
1.5”	80-95
¾”	50-80
US No.4	30-50
#200	0-8

  The change helped the contractor stay on schedule.
- Contractor progress surveys were required to be performed daily by the Technical Specifications. The contractor requested to decrease the progress survey frequency, reducing the number of surveys to three per week to improve the contractor’s construction schedule. King County agreed that this reduced survey frequency was acceptable, which ultimately helped the contractor’s schedule.
- The contingency layer was placed based on the results of sampling before backfilling instead of based on post-construction sampling as contained in the Technical Specifications. King County requested this change because, at that time, the backfilling (and post construction sampling) was not projected to be completed before the end of the fish window. An extension to the fish window from February 16 to February 28 was requested from WDFW and received. Taking the samples pre-backfill allowed the decision on whether or not to place the contingency cover to be made prior to completion of backfilling and reduced the period the project extended into the fish window (5 days) by up to 7 days.

6.0 Post-Construction and Long-Term Monitoring

6.1 SEDIMENT CHEMISTRY STATION ON BACKFILL SURFACE IN CLEANUP AREAS A AND B

The *Denny Way CSO and Elliott West CSO Treatment Facility, Post Operation Sediment Monitoring, Year 3, Denny Way CSO Areas A and B Nearshore Sediment Remediation Project Post-Construction Sediment Monitoring, Areas C, D, and E Monitoring Sampling and Analysis Plan* (KCDNRP 2008) is included in Appendix G and contains long-term monitoring requirements for changes in the surface sediment chemistry of one station within cleanup Areas A and B to evaluate the potential for recontamination of the backfill over time. Surface samples will be collected from station DWMP-10 annually in April for a 5-year period, from 2008 through 2012. Figure 10 shows the one surface sediment monitoring station located in Area A. An attempt to collect the first-year baseline sample was conducted on April 1, 2008 (Year 0 sampling event). Three casts of the grab sampler that produced only rock and gravel were made at Station DWMP-10, and no collectable sediment was available. Station DWMP-10 is located in an area covered with habitat mix that contains a large amount of gravel and makes it difficult to collect a representative sample. No sample was submitted to the laboratory for this station for this year.



LEGEND

- APPROXIMATE INITIAL DREDGE BOUNDARY
- MODIFIED IUPSLOPE DREDGE BOUNDARY
- BASE BACKFILL AND HABITAT MIX
- DWMP-10 BACKFILL MONITORING STATION
- EXISTING OUTFALL RIPRAP
- EXISTING SAND VENEER
- EXISTING BOULDERS AND COBBLES
- EXISTING SEDIMENT CAP
- 10 EXISTING BATHYMETRIC CONTOURS AND ELEVATION IN FEET (2-FOOT INTERVAL)

0 100
SCALE IN FEET

NOTES:
1. FIGURE PREPARED FROM DRAWING PROVIDED BY BLACK & VEATCH CORPORATION ENTITLED "HABITAT RESTORATION PLAN", DATED NOVEMBER 1999.
2. BATHYMETRY PREPARED FROM SURVEY PROVIDED BY BWE DATED SEPTEMBER 10, 2005.
3. HORIZONTAL DATUM: SP NAD 83/91 WA N
4. VERTICAL DATUM: MLLW

Jun 30, 2008 9:01am cdavidson K:\Jobs\020067-KING_CO_SED_MANAG\020067010\020067010-126.dwg FIG 10

ANCHOR ENVIRONMENTAL, L.L.C.

Figure 10
Backfill Monitoring Station for Areas A and B
Denny Way CSO Nearshore Interim Sediment Cleanup Project

7.0 Summary of Lessons Learned

Overall, the cooperation of project personnel helped the construction stay on schedule, and the cleanup was completed in a relatively short construction window. A longer construction window may have improved contractor bid response, would have eased the schedule, and may have allowed for stricter enforcement of the Technical Specifications (e.g., required contractor daily progress surveys, contractor sourcing habitat mix that met the material specification). Increases in bid responses from contractors may also improve with a decrease in King County's insurance requirements, which are generally higher than the industry standard.

The change order was effectively managed with a modification to the design that minimized the increase in project costs from the change order, but could have included strengthened performance language pertaining to the use of the excavator that was used to remove pieces of armor rock and concrete. Collection of more information before the design phase that would assist in delineating the armor rock and concrete area may have clarified the design, but could have also increased bid prices. In addition, further delineation of the armor material or for "debris" in general may not have actually averted a change order. A separate bid item for the removal of the armor rock and concrete would have allowed for a more complete evaluation of the contractor's interpretation for this portion of the work.

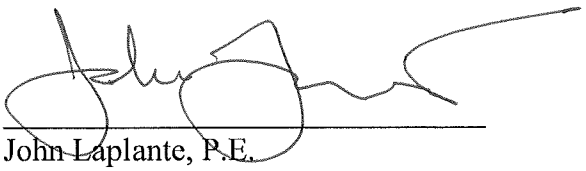
Overdredging during marine construction is currently being subjected to more public and regulatory agency (e.g., Corps) scrutiny, and the daily contractor surveys provide more timely evidence of overdredging; therefore, it is important to receive these progress surveys in the schedule specified in the Technical Specifications in order to effectively minimize overdredging.

The method of offloading sediment at the offloading facility was effective at maintaining a clean operation, but influenced dredging production because of slower offloading rates. To improve offloading rates under this scenario, available land could be leased to store containers loaded with sediment, so that sediment could be offloaded from the material barges independent of the transportation schedule of available trains destined for the landfill.

King County introduced the use of the real-time water quality monitoring buoys on this project and the buoys were viewed as a success by project personnel and regulatory agencies (i.e., Ecology). The frequency of data available in real-time allowed for close monitoring of the water quality impacts due to construction activities. The shortcomings of using a stationary buoy are that it may not be the most accurate water quality indicator because turbidity plumes may not be measured at the correct depth or location. Increasing the number of sondes on each buoy may be beneficial to future projects so that water quality is characterized for more of the water column.

8.0 Affidavit

The interim cleanup action for the contaminated sediments at the Denny Way CSO Nearshore Interim Sediment Cleanup Project site in Elliott Bay has been completed in substantial compliance with the Design Analysis Report dated July 2007 and the Technical Specifications dated August 2007.



John Laplante, P.E.
Project Manager
Anchor Environmental, L.L.C.

9.0 References

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Appendices

Appendix A.	Photos
Appendix B.	Contractor Daily Reports
Appendix C.	King County Inspector Daily Reports
Appendix D.	Hourly Averaged Water Quality Monitoring Data
Appendix E.	Complete Daily Water Quality Reports from Water Quality Monitoring Stations
Appendix F.	Water Quality Monitoring Sampling and Analysis Plan
Appendix G.	Dredging and Backfilling Operations Sediment Monitoring Sampling and Analysis Plan
Appendix H.	Denny Way CSO and Elliott West CSO Treatment Facility, Post Operation Sediment Monitoring, Year 3, Denny Way CSO Areas A and B Nearshore Sediment Remediation Project Post-Construction Sediment Monitoring, Areas C, D, and E Monitoring Sampling and Analysis Plan
Appendix I.	QA1 Reports
Appendix J.	Lab Reports
Appendix K.	eTrac Engineering, L.L.C. Surveys

Appendix A

Photos

Clamshell Dredging Operations

Loading the Barge

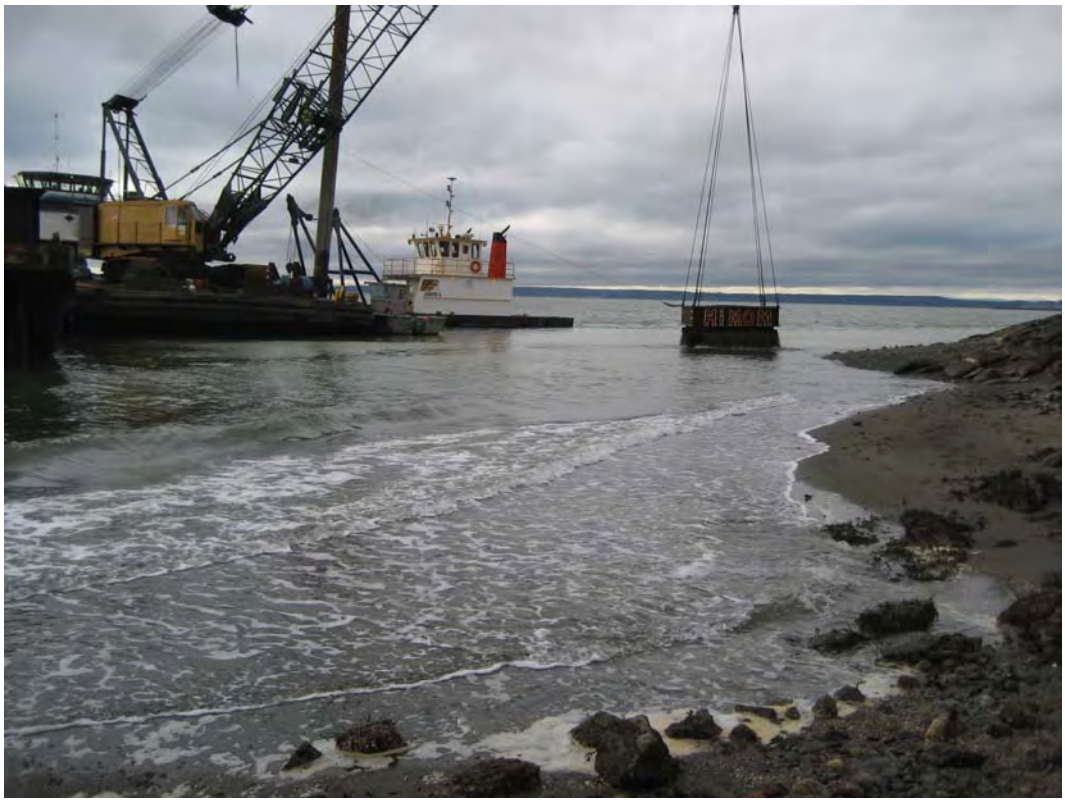
Excavator Dredging Operations

Offloading Operations

Offloading Operations – Lined Container

Offloading Operations – Transfer of Filled Container to Truck

Backfill Operations



Backfill Operations – Habitat Mix Material Placement

Armor Rock placed Over Habitat Mix Layer

Appendix B

Contractor Daily Reports

C00190C07

20-02.02
20-06.01

HURLEN CONSTRUCTION COMPANY

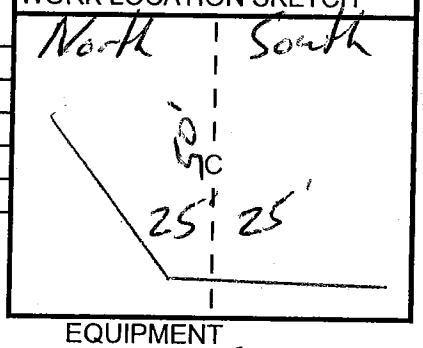
FOREMAN: _____ DATE: 11-30-07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 1

WEATHER: Overcast WIND: N DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
1+00	1+75	3'	50'	50'	-25
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND ✓ SILT___ ROCK___ MUD___ OTHER Concrete Chunks

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	3.5 hr.
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	5 hr
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	
DREDGE MAINTENANCE	
BUCKET REPAIR / Size	3cu yd
Line Barge	1.5 hr

EQUIPMENT

DREDGE	REG	3.5	HRS
	ST	6.5	HRS
LOADER	REG		HRS
	ST		HRS
TUG	REG	4	HRS
	ST	4	HRS

LABOR

FOREMAN	10	HRS
CRANE OPERATOR	10	HRS
TUG OPERATOR		HRS
LOADER OPERATOR	10	HRS
PILEBUCK	10	HRS

BOW
8'10" PORT STARBOARD 8'11"

KP-2
BARGE NAME

FREEBOARD 9'1"
DRAFT 2'11"

9'3" PORT STARBOARD 9'5"
STERN

BOW
6'3" PORT STARBOARD 7'0"

KP-2
BARGE NAME

FREEBOARD 7'6.75"
DRAFT 4'5.25"

8'5" PORT STARBOARD 9'4"
STERN

369 TNS
238 cu yds
3100 lb to the cu yd.

Daily Contractor Quality Control Report

Contract No: C00190C07

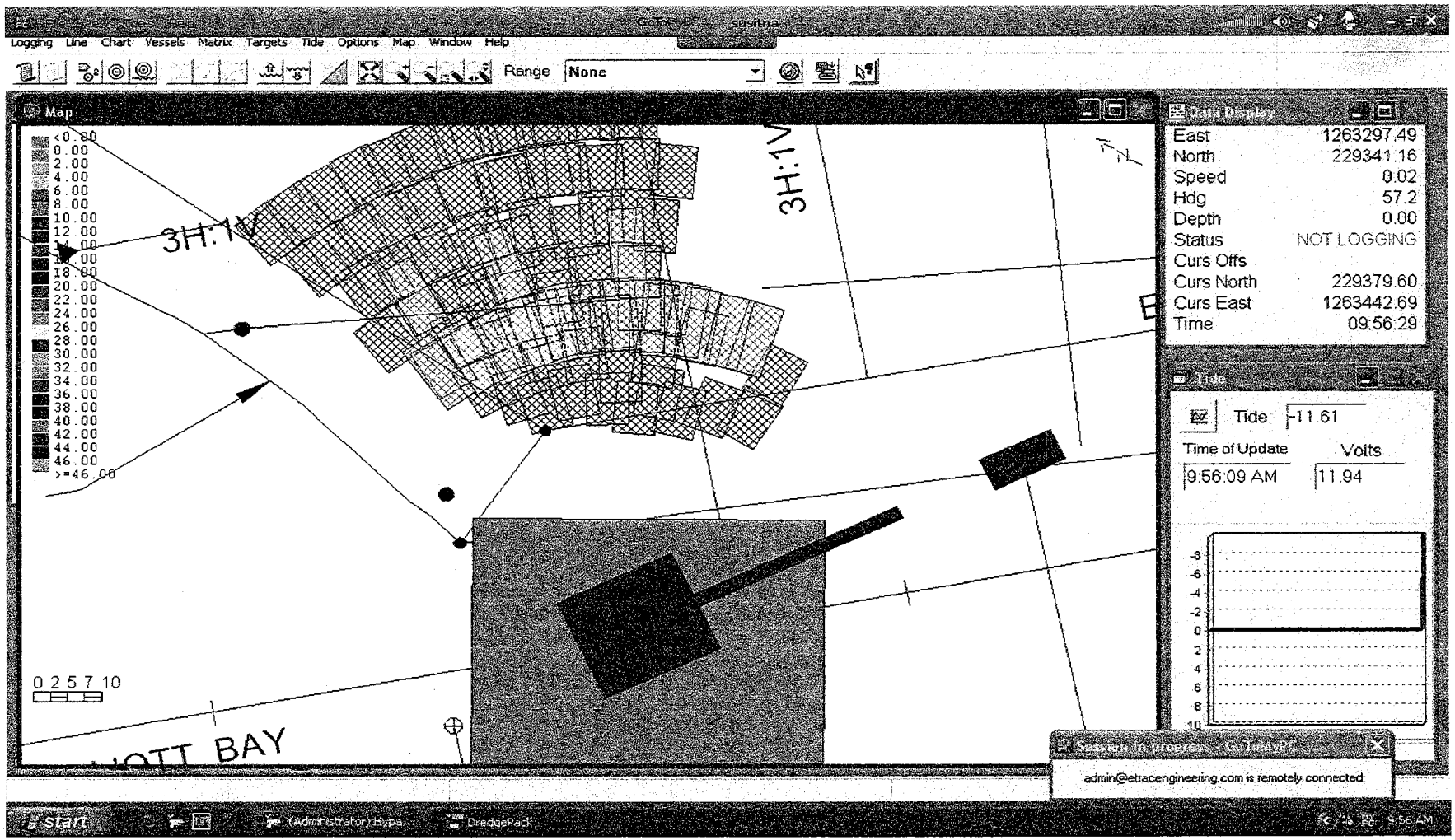
American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Marty L
Keith C
Dave G
Dustin S
Cody H

Equipment on Site
PamTay 9310
KP-2 material barge
Tug Jean Gr H
Work skiff
Work Boat
3 cu yd digging bucket

Temperature	Weather
46° to 50°	overcast

Description of Work Performed	Time	Type of Material Removed	Quanity
Run anchors, set up on north end of dredge prism. Work on GPS.	4 hr		
	1 hr		
Prep. KP-2 material barge	1.5 hr		
Dredge	3.5 hr	Sand/concrete Chunks	238 cu yds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>=46.00
0 2.5 7 10
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North 229341.16
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Hdg 57.2
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Curs Offs
Curs North 229379.60
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Time of Update
Volts
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10
admin@etracengineering.com is remotely connected
start
(Administrator) Hypa...
DredgePack

C00190C07

HURLEN CONSTRUCTION COMPANY

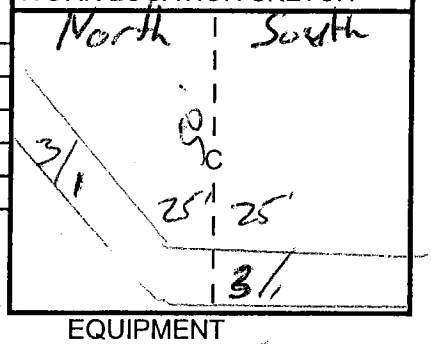
FOREMAN: _____ DATE: 12-01-07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 2

WEATHER: Overcast WIND: S DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
1+00	1+75	2'	50'	50'	-27
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND____ SILT✓ ROCK___ MUD_____ OTHER Concrete Chunks

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	6 hr
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	
DREDGE MAINTENANCE	
BUCKET REPAIR / SIZE	3 cu yd
Tram Barge	1 hr
Compute	2 hr

EQUIPMENT

DREDGE	REG	6 HRS
	ST	HRS
LOADER	REG	HRS
	ST	HRS
TUG	REG	HRS
No Tug	ST	HRS

LABOR

FOREMAN	10	HRS
CRANE OPERATOR	10	HRS
TUG OPERATOR		HRS
LOADER OPERATOR	10	HRS
PILEBUCK	10	HRS

BOW
6'3" PORT STARBOARD 7'0"

KP-2
BARGE NAME

FREEBOARD	7' 6.75"
DRAFT	4' 5.25"

8'5" PORT STARBOARD 9'4"
STERN

BOW
4'8" PORT STARBOARD 6'0"

KP-2
BARGE NAME

FREEBOARD	5'9"
DRAFT	6'3"

5'5" PORT STARBOARD 7'0"
STERN

466 tns
300 cu yds

Daily Contractor Quality Control Report

Contract No: C00190C07

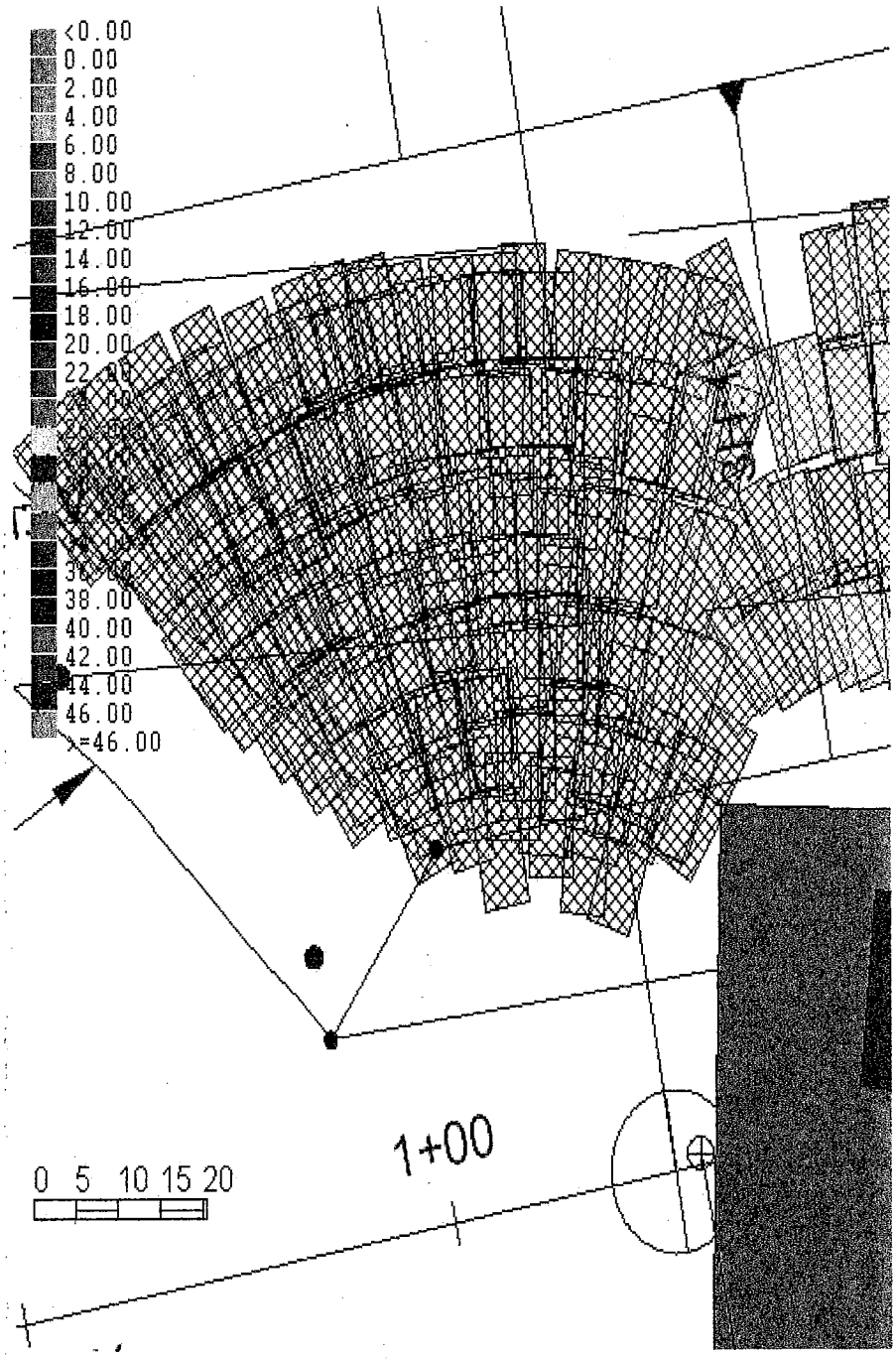
American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Marty L
Keith C
Dave G
Dustin S
Cody H

Equipment on Site
Pontoon 9310
3 cu yd digging bucket
KP-2 material barge
Work skiff
Work boat

Temperature	Weather
32° to 40°	Snowy/windy

Description of Work Performed	Time	Type of Material Removed	Quanity
GPS adjustments	2 hr		
Dredging	6 hr	Sandy/Big pieces of concrete	300 cu yds
Barge shift	1 hr		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>=46.00
0 5 10 15 20
1+00

L0018C07

HURLEN CONSTRUCTION COMPANY

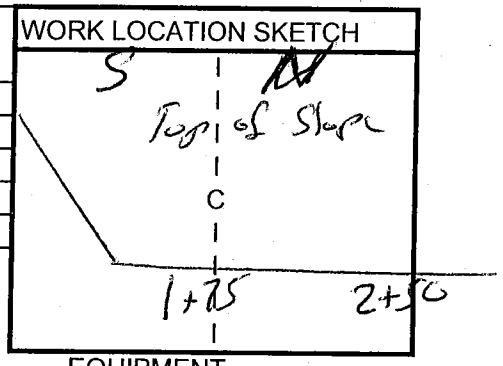
FOREMAN: _____ DATE: 12-03-01

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 3

WEATHER: Rainy WIND: SW DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
1+75	2+50	4'	50'	50'	-29
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND ✓ SILT___ ROCK___ MUD___ OTHER Concrete Chunks

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	6
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1.5
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	2
SCOW CHANGE	1.5
DREDGE MAINTENANCE	
BUCKET REPAIR	

EQUIPMENT

DREDGE	REG	6	HRS
	ST		HRS
LOADER	REG		HRS
	ST		HRS
TUG	REG	4	HRS
	ST		HRS

LABOR

FOREMAN	11	HRS
CRANE OPERATOR	11	HRS
TUG OPERATOR	4	HRS
LOADER OPERATOR	11	HRS
PILEBUCK	11	HRS

BOW
4'8" PORT STARBOARD 6'0"

KP-2
BARGE NAME

FREEBOARD	5'9"
DRAFT	6'3"

5'5" PORT STARBOARD 7'0"
STERN

BOW
2'0" PORT STARBOARD 3'0"

KP 2
BARGE NAME

FREEBOARD	2'6"
DRAFT	9'6"

2'0" PORT STARBOARD 3'0"
STERN

885 tns
570 cu yds

Total
1874 tns
1212 cu yds

Daily Contractor Quality Control Report

Contract No: C00190C07

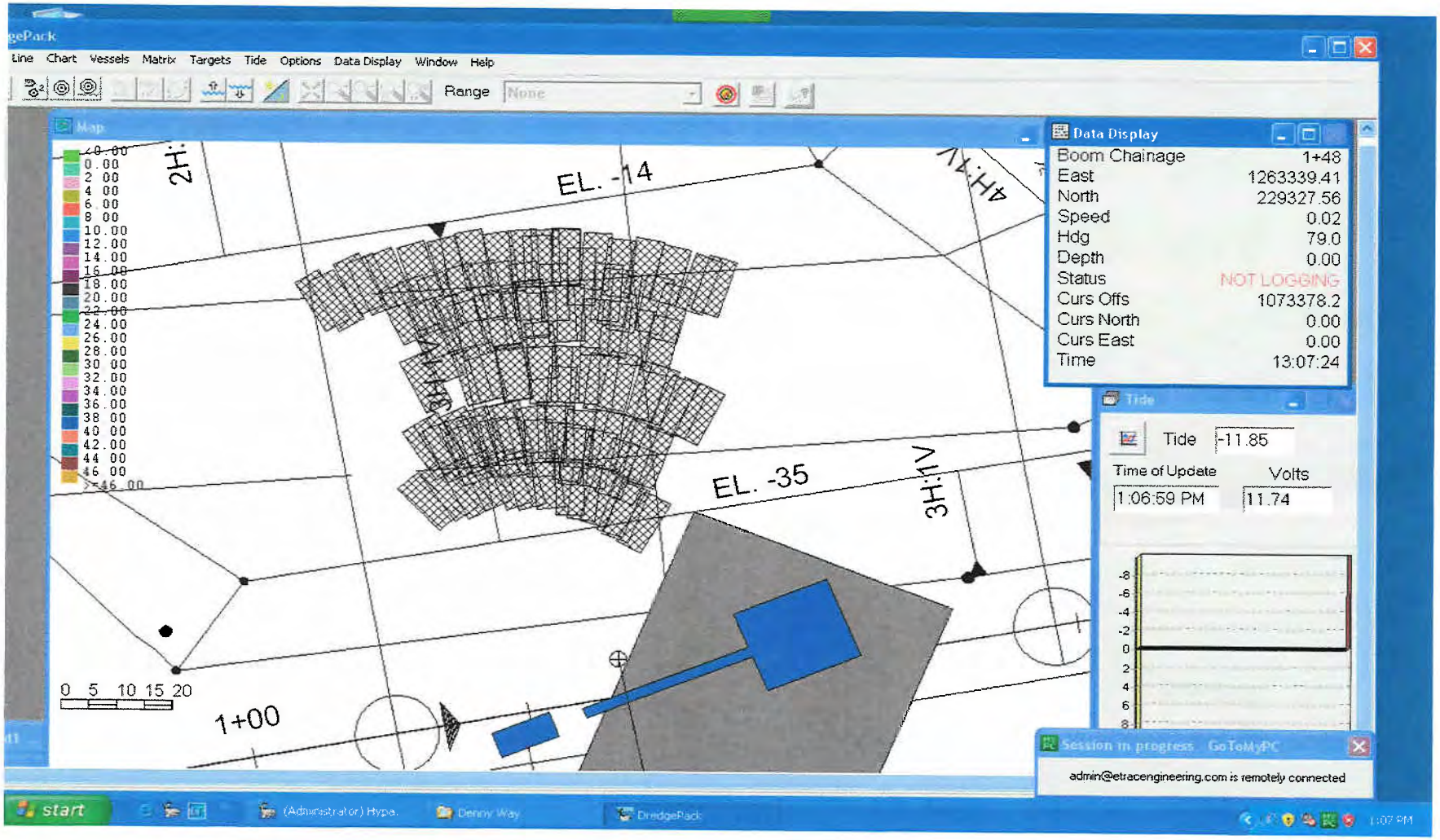
American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Dave G
Keith C
Marty L
Cody H
Dustin S

Equipment on Site
Ram Jay 9310
3 cu yd Bucket
KP-2 material barge
work boat
work Skiff
Tug Gretchen

Temperature	Weather
50°	Rainy/windy

Description of Work Performed	Time	Type of Material Removed	Quanity
Move rig setting to South	1.5		
Start up / set up to dredge	1.5		
Dredge	6.5	Sandy / Concrete Chunks	570 cu yds
~~Utilities~~ Weather	2		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Curs East 0.00
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Volts 11.74
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admin@etracengineering.com is remotely connected
start
DredgePack

20-02.02

L00190607

20-02.02
20-06.01

HURLEN CONSTRUCTION COMPANY

FOREMAN:

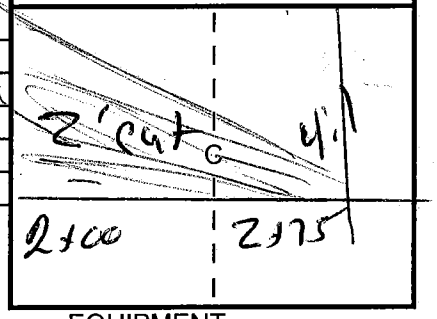
DATE: 12-04-07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 4

WEATHER: Rainy WIND: SW DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
2+00	2+75	2'	90'	50'	-27
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND ✓ SILT ✓ ROCK___ MUD___ OTHER___

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	5
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	3
SCOW CHANGE	2
DREDGE MAINTENANCE	
BUCKET REPAIR	

EQUIPMENT

DREDGE	REG	5	HRS
	ST		HRS
LOADER	REG		HRS
	ST		HRS
TUG	REG	8	HRS
	ST		HRS

LABOR

FOREMAN	//	HRS
CRANE OPERATOR	//	HRS
TUG OPERATOR	8	HRS
LOADER OPERATOR	//	HRS
PILEBUCK	//	HRS

BOW
9'0" PORT STARBOARD 9'0"

H-9
BARGE NAME

FREEBOARD 8'0"
DRAFT 4'0"

9'0" PORT STARBOARD 9'0"
STERN

BOW
5'6" PORT STARBOARD 5'0"

H-9
BARGE NAME

FREEBOARD 6'4"
DRAFT 5'8"

7'8" PORT STARBOARD 7'2"
STERN

418 hrs
209 cu yds

Daily Contractor Quality Control Report

Contract No: C00190C07

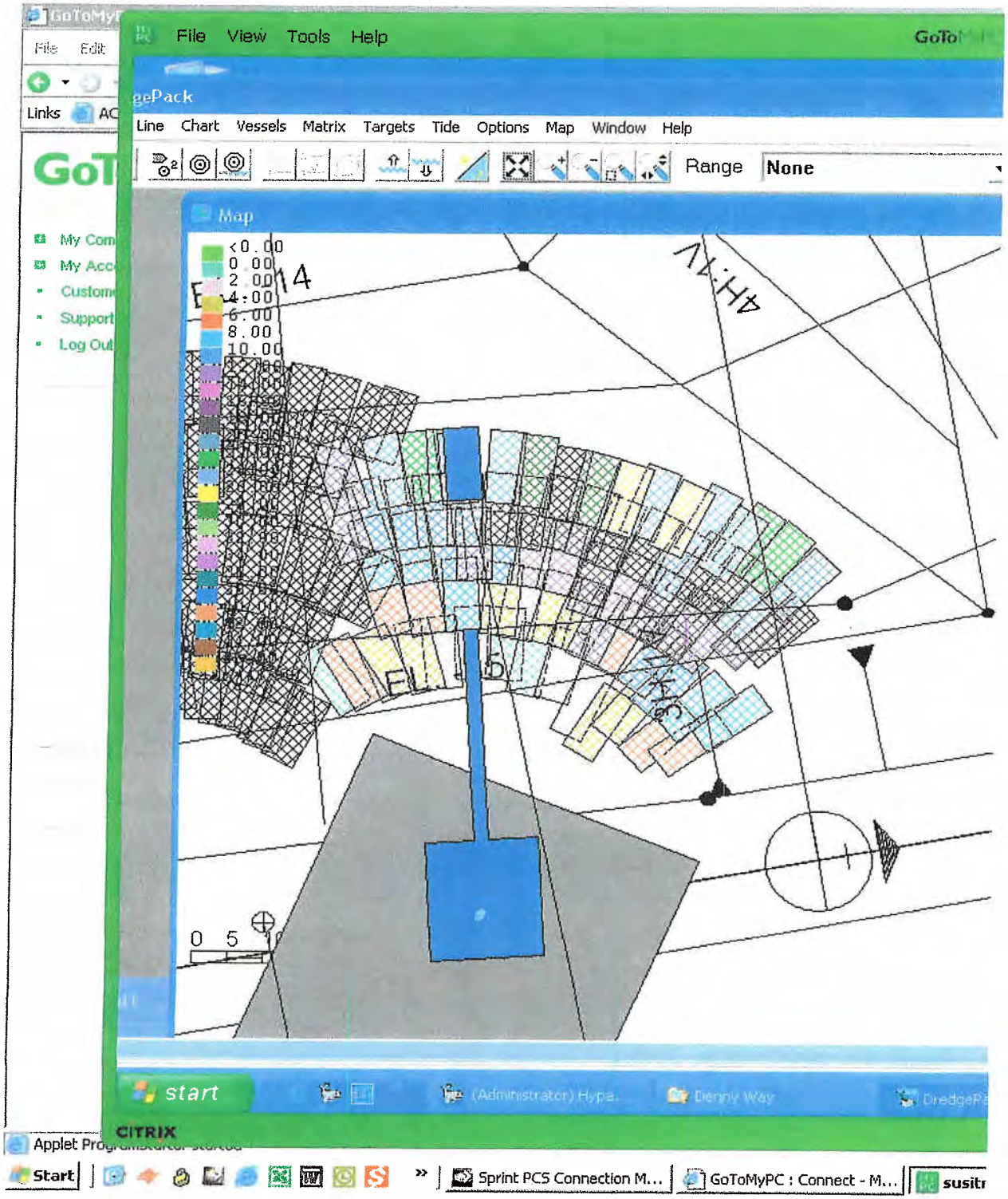
American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Mady L
Keith C
Dave G
Dustin S
Cody H

Equipment on Site
PamTag 9310
H-9 Material barge
Work boat
Work Skiff
3 cy clamshell bucket
Tug Jennifer

Temperature	Weather
60°	Windy/Rainy

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	1		
Barge change	2		
Derrick Shift	2		
Dredge	5	Sandy/Silty	269 cu yds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20-02.02

C00190C07
20-02.02
20-06.01

HURLEN CONSTRUCTION COMPANY

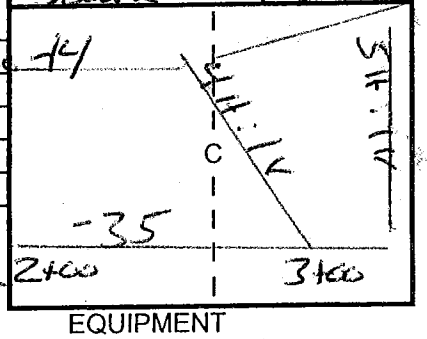
FOREMAN: _____ DATE: 12-05-07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 5

WEATHER: Overcast Light rain WIND: S DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
2+00	3+00	3'	50'	50'	-10 to -3
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND ✓ SILT ___ ROCK ___ MUD ___ OTHER Concrete Chunks

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	8
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	
DREDGE MAINTENANCE	1.5
BUCKET REPAIR	

EQUIPMENT

DREDGE	REG	10	HRS
	ST		HRS
LOADER	REG		HRS
	ST		HRS
TUG	REG	6	HRS
	ST		HRS

LABOR

FOREMAN	10	HRS
CRANE OPERATOR	10	HRS
TUG OPERATOR		HRS
LOADER OPERATOR	10	HRS
PILEBUCK	10	HRS

BOW
5'6" PORT STARBOARD 5'0"

H-9
BARGE NAME

FREEBOARD 6'4"
DRAFT 5'8"

7'8" PORT STARBOARD 7'2"
STERN

BOW
2'11" PORT STARBOARD 5'2"

H-9
BARGE NAME

FREEBOARD 4'11"
DRAFT 7'1"

4'8" PORT STARBOARD 6'9"
STERN

371 Tns
239 cu yds
Total 1214 c.

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

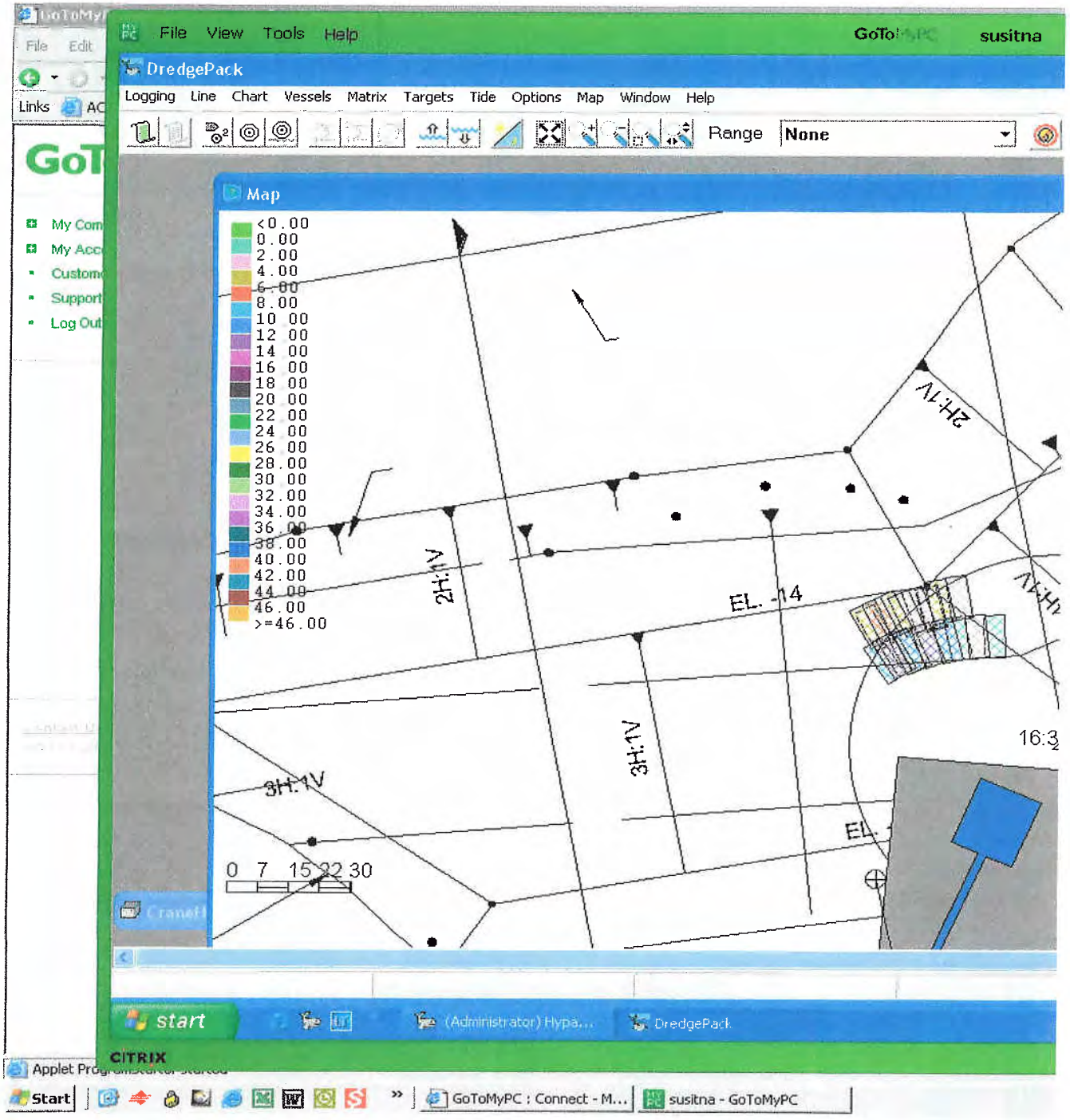
Personnel on Site
Greg A
Marty L
Keith C
Dave G
Dustin S
Cody H

Equipment on Site
PanTay 9310
3 cu yd bucket
work boat
work Skiff
Tug Jennifer

Temperature	Weather
55° to 65°	Light rain

Work
Clean in dredge material

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up and move into location	2		
Dredge	8	Sandy Concrete chunks	239 cu yds
Replace air cans on closing line	1		
H-G Tug Jennifer Took up river to disposal	1.5		


File View Tools Help
GoToMyPC
susitna
DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
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2H:1V
EL. -14
3H:1V
0 7 15 22 30
start
(Administrator) Hypa...
DredgePack
CITRIX
Start
GoToMyPC : Connect - M...
susitna - GoToMyPC

ACC C00190C07

HURLEN CONSTRUCTION COMPANY

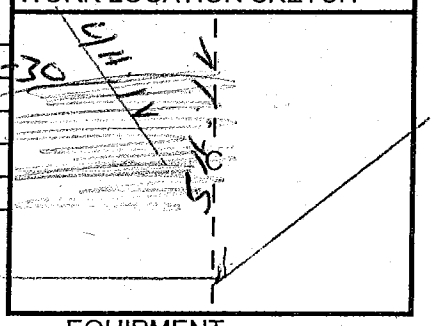
FOREMAN: DATE: 12-06-07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 6

WEATHER: light rain WIND: N DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
2+75	3+25	4'	50'	50'	-20 & -30
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND ✓ SILT___ ROCK___ MUD___ OTHER General Channel

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	8
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	1
DREDGE MAINTENANCE	
BUCKET REPAIR	
Line barge	1

EQUIPMENT

DREDGE	REG	11	HRS
	ST		HRS
LOADER	REG		HRS
	ST		HRS
TUG	REG	4	HRS
	ST		HRS

LABOR

FOREMAN	11	HRS
CRANE OPERATOR	11	HRS
TUG OPERATOR	4	HRS
LOADER OPERATOR	11	HRS
PILEBUCK	11	HRS

BOW
7'5" PORT STARBOARD 7'5"

KP-2
BARGE NAME

FREEBOARD	7'2.5"
DRAFT	4'9.5"

7'0" PORT STARBOARD 7'0"
STERN

BOW
6'2" PORT STARBOARD 6'2"

KP-2
BARGE NAME

FREEBOARD	4'2"
DRAFT	7'10"

2'0" PORT STARBOARD 2'0"
STERN

805 tons
519 cu yd

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Keith C
Dave G
Marty L
Dustin S
Cody H

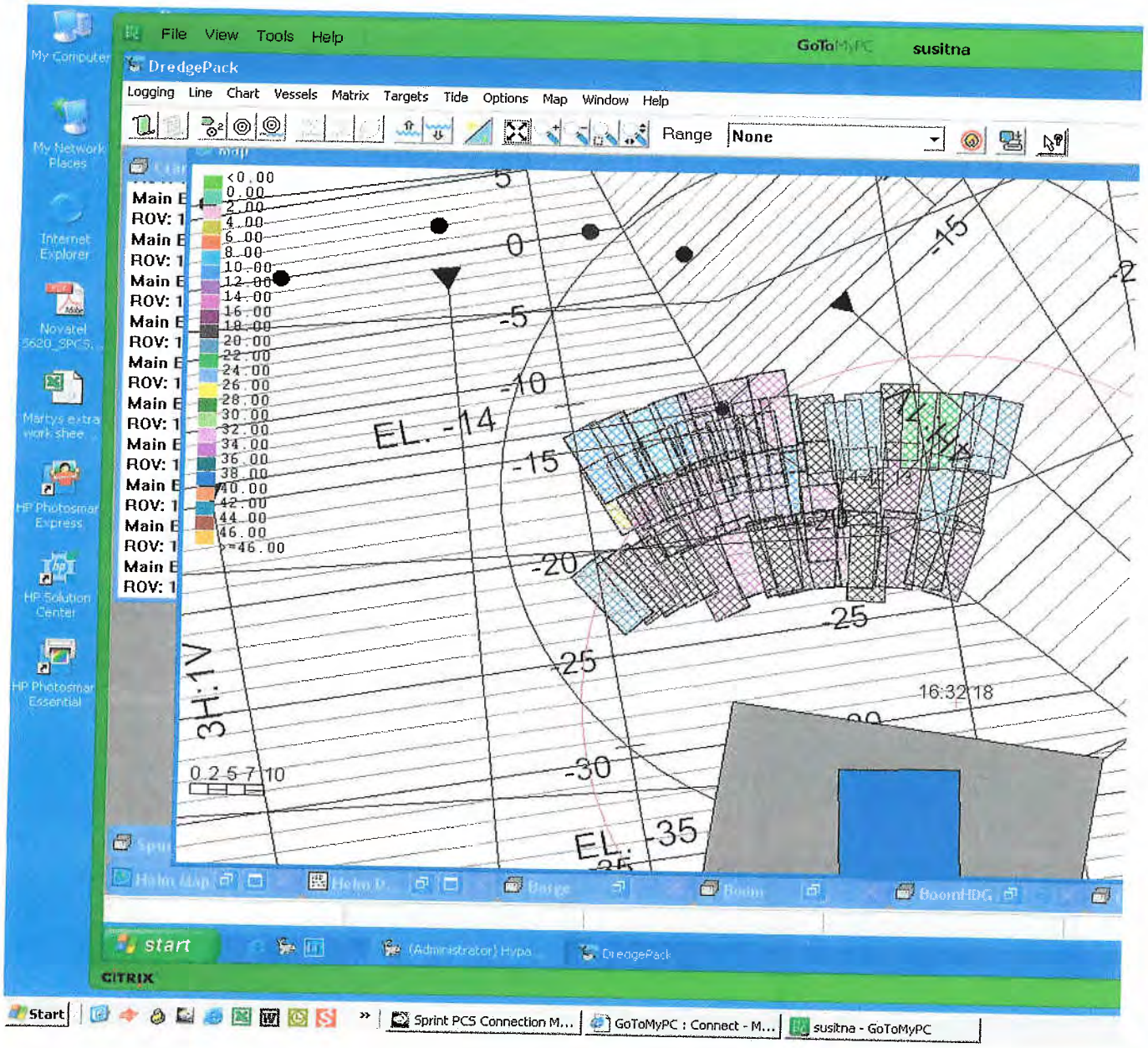
Equipment on Site
PomTag 9310
3 cu yd bucket
Work boat
Work Skiff
Tug Jennifer
Survey Boat

Temperature	Weather
50° to 51°	light rain NW wind.

Note

Tug Jennifer arrived with KP-2 barge 7:00 am had material left on board. Notice sheen on barge from dredge material, lots of debris tires, concrete chunks, wood.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up line KP-2 material barge	2		
Dredge	8	Sandy, Silty Chunks Concrete	519 cy
Survey	1		


File View Tools Help
GoToMyPC
susitna
DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
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EL. -14
EL. -35
3H:1V
0 2 5 7 10
16:32:18
start
CITRIX
Start
Sprint PCS Connection M...
GoToMyPC : Connect - M...
susitna - GoToMyPC

C00190C07

HURLEN CONSTRUCTION COMPANY

FOREMAN:

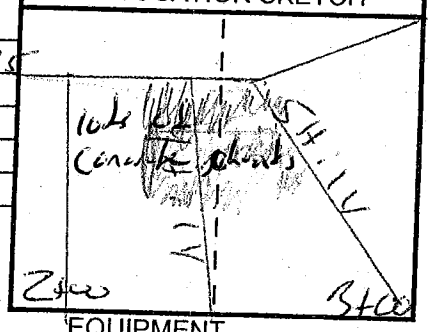
DATE: 12-07-07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 7

WEATHER: Overcast WIND: W DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
2+50	3+25	3'	25'	40'	-10 to -15
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND ✓ SILT___ ROCK___ MUD___ OTHER Concrete Chunks

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	6
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	1
DREDGE MAINTENANCE	3
BUCKET REPAIR	
Camera underwater	1

EQUIPMENT

DREDGE	REG	6 HRS
	ST	HRS
LOADER	REG	HRS
	ST	HRS
TUG	REG	4 HRS
	ST	HRS

LABOR

FOREMAN	11 HRS
CRANE OPERATOR	11 HRS
TUG OPERATOR	4 HRS
LOADER OPERATOR	11 HRS
PILEBUCK	11 HRS

BOW
6' 2" PORT STARBOARD 6' 2"

KP-1
BARGE NAME

FREEBOARD 4' 2"
DRAFT 7' 10"

2' 0" PORT STARBOARD 2' 0"
STERN

BOW
1' 4" PORT STARBOARD 0' 10"

KP-2
BARGE NAME

FREEBOARD 1' 10"
DRAFT 10' 2"

2' 9" PORT STARBOARD 2' 6"
STERN

C54 Fms
421 cu yds

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Marty L
Kevin C
Dave G
Dustin S
Cody H

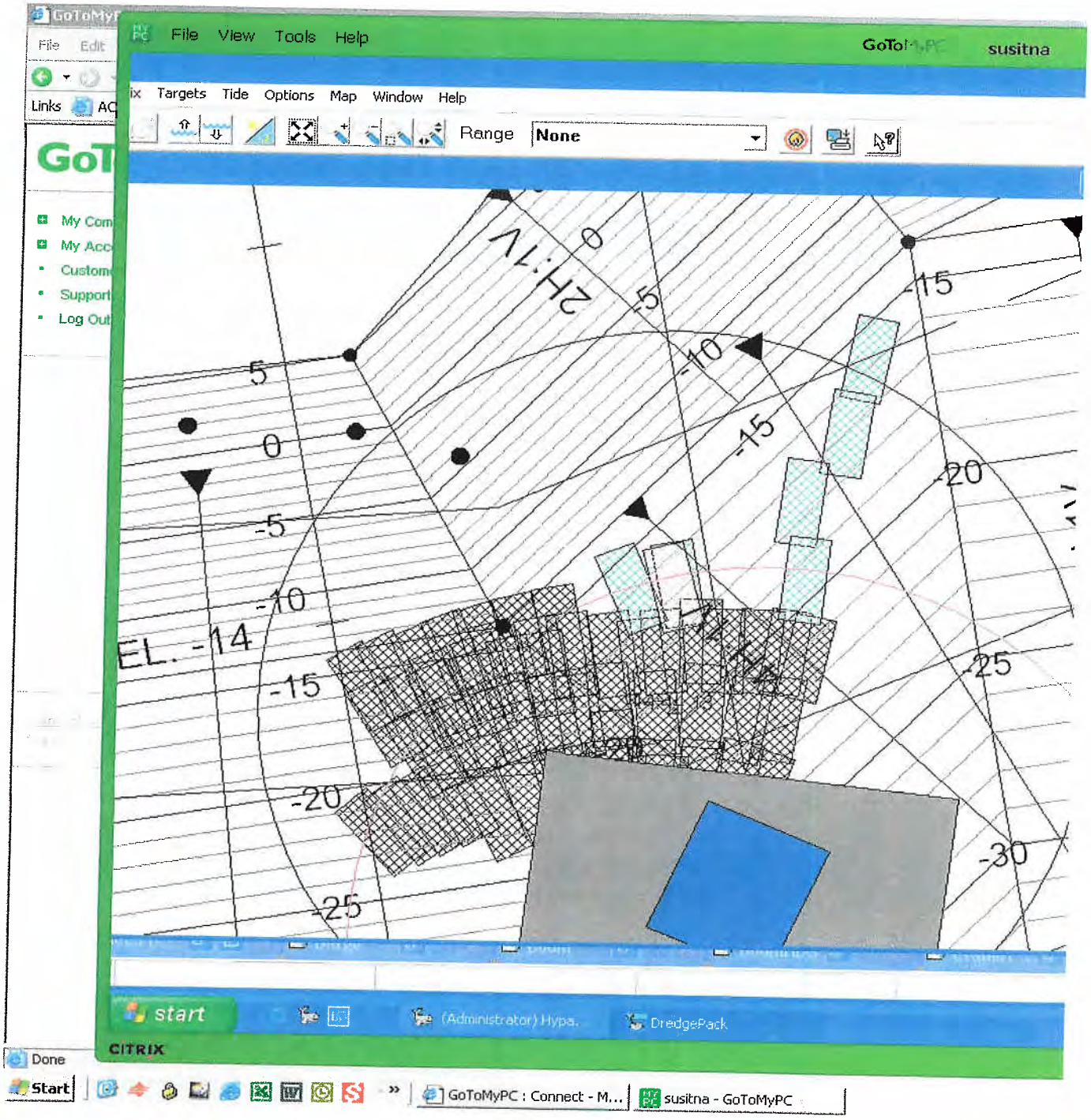
Equipment on Site
9310 Barge
3 cu yd bucket
work boat
work skiff
Tug Sentinel

Temperature	Weather
45° to 50°	Overcast light wind

Note

Large concrete chunks
Under water camera surveyed concrete
loaded KP-2 barge, lots of
debri concrete, bricks, wood.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up move into location	1		
Dredge	2	Large concrete chunks	150 cu yds
Weir under water camera Concrete	1		
Dredge	4		300 cu yds


File View Tools Help
susitna
Targets Tide Options Map Window Help
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start
(Administrator) Hypa...
DredgePack
CITRIX
Done
Start
GoToMyPC : Connect - M...
susitna - GoToMyPC

C00190C07

20-02.02
20-06.01

HURLEN CONSTRUCTION COMPANY

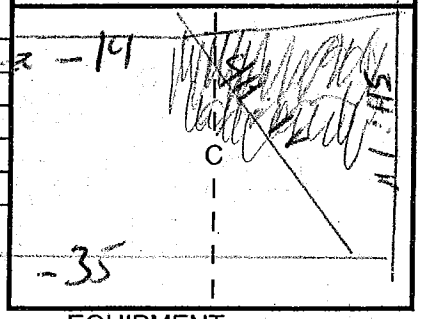
FOREMAN: _____ DATE: 12-08-07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 8

WEATHER: Sunny WIND: N DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
2+75	3+25	2	30'	30'	-14 to -2
		TOTAL:			

WORK LOCATION SKETCH



roughly grade

MATERIAL TYPE:
SAND ✓ SILT___ ROCK___ MUD___ OTHER Concrete chunks debri

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	6
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	1
DREDGE MAINTENANCE	
BUCKET REPAIR	
Line barge KP 1	1

EQUIPMENT

DREDGE	REG	6 HRS
	ST	HRS
LOADER	REG	HRS
	ST	HRS
TUG	REG	4 HRS
	ST	HRS

LABOR

FOREMAN	9 HRS
CRANE OPERATOR	9 HRS
TUG OPERATOR	HRS
LOADER OPERATOR	9 HRS
PILEBUCK	9 HRS

BOW
10'0" PORT STARBOARD 10'6"

KP-1
BARGE NAME

FREEBOARD 10'0"
DRAFT 7'0"

10'0" PORT STARBOARD 10'0"
STERN

BOW
3'0" PORT STARBOARD 4'0"

KP-1
BARGE NAME

FREEBOARD 7'6"
DRAFT 4'6"

11'0" PORT STARBOARD 12'0"
STERN

549 tons
354 cy yd

Daily Contractor Quality Control Report

Contract No: C00190C07

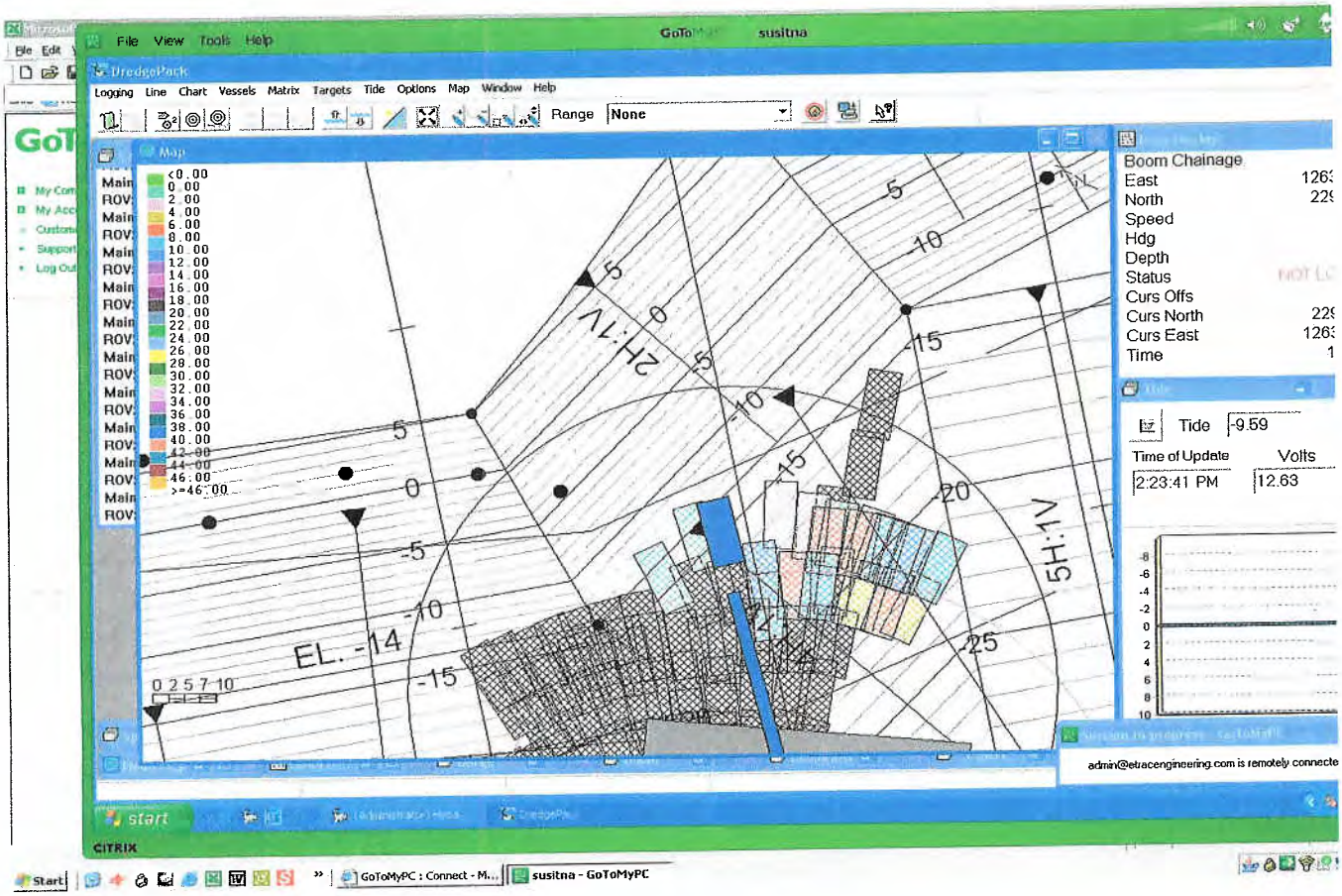
American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Mady L
Kelk C
Dave G
Dustin S
Cody H
Mark L

Equipment on Site
Barge 9310
3 cu yd bucket
Work boat
work skiff
KP-1 material barge
Jug Dawg

Temperature	Weather
35° to 45°	Sunny light wind N

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up & line barge	1.5		
Dredge	6	Sand / gravel Chunks & debri	354 cu yds
Scow moving / weld end fence	1.5		


File View Tools Help
susitna
DredgePack
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5H:1V
EL. -14
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Boom Chainage
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North
Speed
Hdg
Depth
Status
Curs Offs
Curs North
Curs East
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Tide -9.59
Time of Update
Volts
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admin@etracengineering.com is remotely connecte
start
CITRIX
Start
GoToMyPC : Connect - M...
susitna - GoToMyPC

C00190C07

HURLEN CONSTRUCTION COMPANY

FOREMAN:

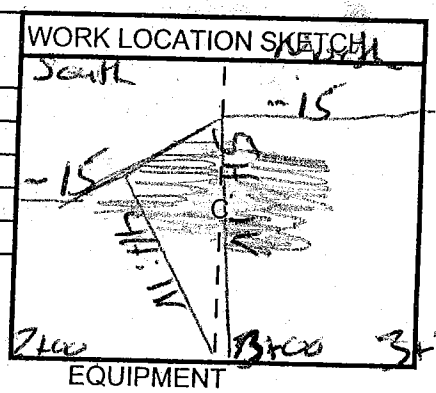
DATE: 12-10-07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 9

WEATHER: Sunny WIND: Clam DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
3+00	3+25	4'	22'	50'	-15
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND ✓ SILT ✓ ROCK ___ MUD ___ OTHER Concrete Chunks & Slag

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	8
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1.5
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	
DREDGE MAINTENANCE	.5
BUCKET REPAIR	
Survey	1

EQUIPMENT

DREDGE	REG	11	HRS
	ST		HRS
LOADER	REG		HRS
	ST		HRS
TUG	REG	4	HRS
	ST		HRS

LABOR

FOREMAN	11	HRS
CRANE OPERATOR	11	HRS
TUG OPERATOR	4	HRS
LOADER OPERATOR	11	HRS
PILEBUCK	11	HRS

BOW
3' 0" PORT STARBOARD 4' 0"

KP-1
BARGE NAME

FREEBOARD 7' 6"
DRAFT 4' 6"

11' 0" PORT STARBOARD 12' 0"
STERN

BOW
2' 6" PORT STARBOARD 2' 6"

KP-1
BARGE NAME

FREEBOARD 3' 9"
DRAFT 8' 3"

5' 0" PORT STARBOARD 5' 0"
STERN

981 tons
632 cu yds

Daily Contractor Quality Control Report

Contract No: C00190C07

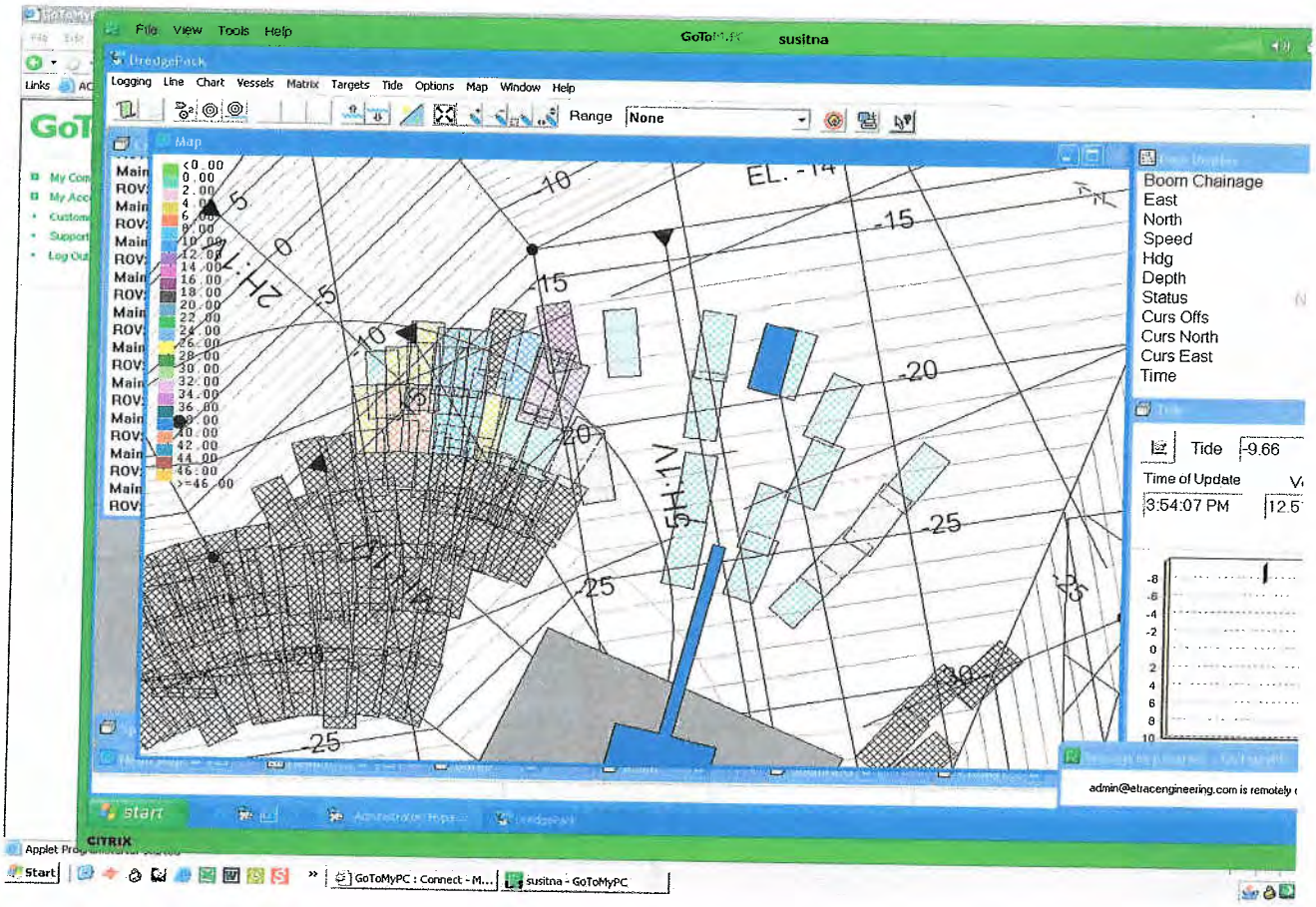
American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Marty Locke
Kirk C
Dave G
Dustin S
Codey H

Equipment on Site
PamTag 9310
KP-1 material barge
3 cu yd bucket
work boat
work skiff
Tug Tenacity

Temperature	Weather
50° to 60°	Sunny light wind

Description of Work Performed	Time	Type of Material Removed	Quanity
Dredge	2		
Turn barge / shift brg.	1.5		
Dredge	6	Shady / Concrete Chunks	632 cu yd
Survey / start up	1	Noticeable Sheen	


File View Tools Help
susitna
DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Boom Chainage
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Depth
Status
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admin@etracengineering.com is remotely
start
CITRIX
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susitna - GoToMyPC

HURLEN CONSTRUCTION COMPANY

FOREMAN:

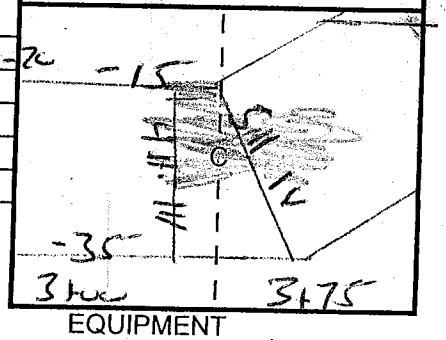
DATE: 12-11-07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 10

WEATHER: Sunny WIND: N DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
3+00	3+75	3'	30'	30'	-15 n-2c
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND ✓ SILT___ ROCK___ MUD___ OTHER Concrete chunks oil sheen

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	4.5
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	2
DREDGE MAINTENANCE	3
BUCKET REPAIR	
Start up	.5

EQUIPMENT

DREDGE	REG	11 HRS
	ST	HRS
LOADER	REG	HRS
	ST	HRS
TUG	REG	8 HRS
	ST	HRS

LABOR

FOREMAN	11 HRS
CRANE OPERATOR	11 HRS
TUG OPERATOR	8 HRS
LOADER OPERATOR	11 HRS
PILEBUCK	11 HRS

BOW
2' 6" PORT STARBOARD 2' 6"

KP-1
BARGE NAME

FREEBOARD 3' 9"
DRAFT 8' 3"

5'0" PORT STARBOARD 5'0"
STERN

BOW
1'6" PORT STARBOARD 1'6"

KP-1
BARGE NAME

FREEBOARD 1' 9"
DRAFT 10'4"

1'10" PORT STARBOARD 1'10"
STERN

588 tons
379 cu yd

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

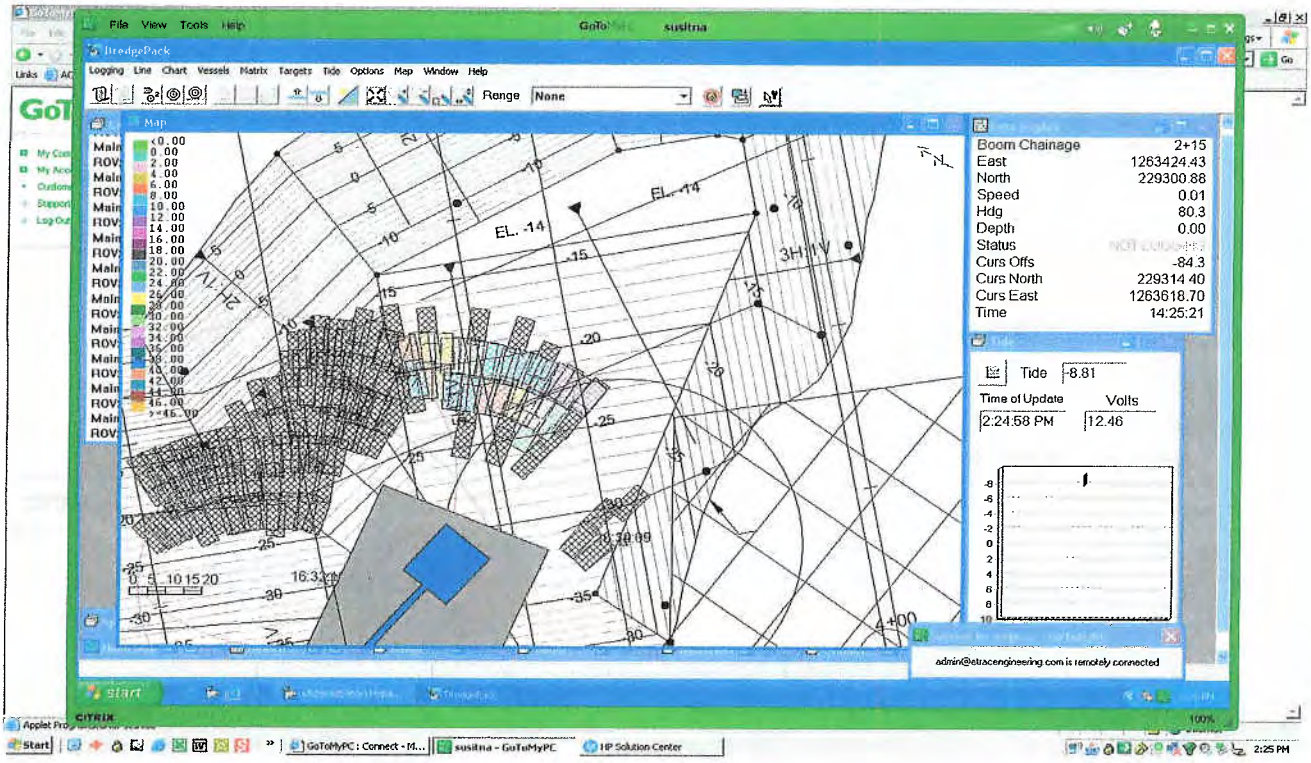
Personnel on Site
Greg A
Marty L
Dave G
Keith C
Dustin S
Cody H

Equipment on Site
PamTag 9310
3 cu yd bucket
KP-1 material barge
work boat
work skiff
Tug Jennifer H

Temperature	Weather
40° to 50°	Sunny light north wind

KP-1 shifted up river for off load KP-2 shifted down river light 0.1 sheen on water large concrete chunks at -15' cut.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	.5		
Dredge	4.5	Sand/Concrete	379 cu yds
Barge change and line	2	0.1 sheen on water.	
Maintance	3		


File View Tools Help
susitna
DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
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North 229300.88
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Hdg 80.3
Depth 0.00
Status
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Curs North 229314.40
Curs East 1263618.70
Time 14:25:21
Tide -8.81
Time of Update 2:24:58 PM
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admin@etracengineering.com is remotely connected
EL. -14
3H:1V
2H:1V
start
CITRIX
Start
GoToMyPC : Connect - M...
susitna - GoToMyPC
HP Solution Center
2:25 PM

C00190C07

HURLEN CONSTRUCTION COMPANY

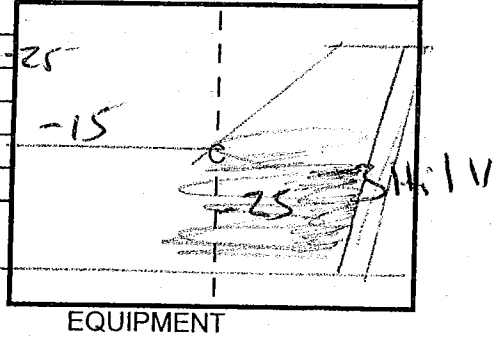
FOREMAN: _____ DATE: 12-12-07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 11

WEATHER: Overcast WIND: S DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
3+25	4+00	6'	50'	50'	-20 to -25
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND ✓ SILT___ ROCK___ MUD___ OTHER Concrete chunks.

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	8
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	2
DREDGE MAINTENANCE	1
BUCKET REPAIR	

EQUIPMENT

DREDGE	REG	8	HRS
	ST		HRS
LOADER	REG		HRS
	ST		HRS
TUG	REG	4	HRS
	ST		HRS

LABOR

FOREMAN	11	HRS
CRANE OPERATOR	11	HRS
TUG OPERATOR		HRS
LOADER OPERATOR	11	HRS
PILEBUCK	11	HRS

BOW
9' 6" PORT STARBOARD 9' 6"

KP-2
BARGE NAME

FREEBOARD 9' 1"
DRAFT 2' 11"

8' 8" PORT STARBOARD 8' 8"
STERN

BOW
9' 0" PORT STARBOARD 8' 8"

KP 2
BARGE NAME

FREEBOARD 5' 10"
DRAFT 2' 2"

3' 0" PORT STARBOARD 2' 8"
STERN

972 Tons
627 cu yds

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

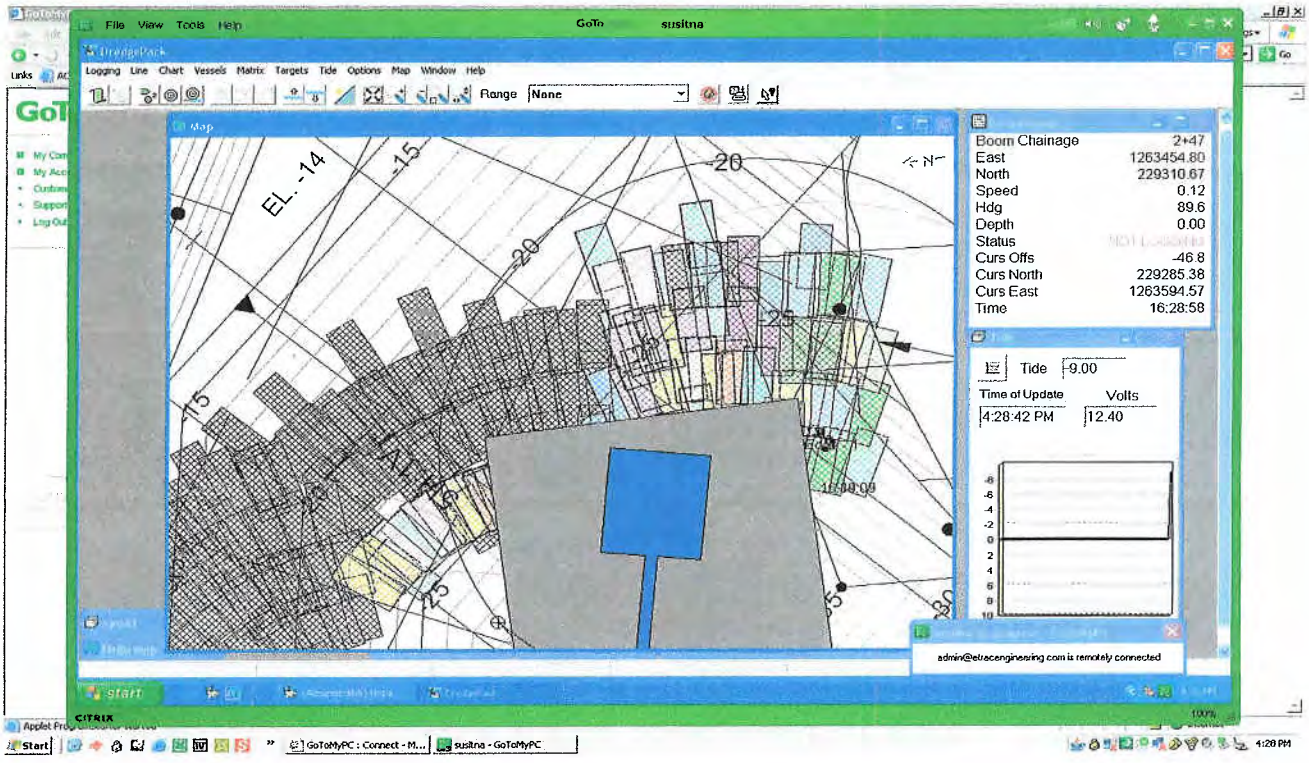
Personnel on Site
Greg A
Marty L
Keith C
Dave G
Dustin S
Cody H

Equipment on Site
Ramtay 9310
3 cu yd bucket
KP-2 Material barge
work boat
work Skiff
Survey boat
Tug Seattle

Temperature	Weather
40° to 50°	overcast light South wind

Notes
Pieces of concrete, Oil Sheen Noticeable. Meeting with King Co on Dedri.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	.5		
Surrey	.5		
Dredge	8	Sandy/concrete chunks	627 cu yds
Shift & Scow change	2		


File View Tools Help
GoTo
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EL. -14
-15
-20
-25
Boom Chainage 2+47
East 1263454.80
North 229310.67
Speed 0.12
Hdg 89.6
Depth 0.00
Status
Curs Offs -46.8
Curs North 229285.38
Curs East 1263594.57
Time 16:28:58
Tide -9.00
Time of Update
Volts
4:28:42 PM
12.40
admin@eltraceengineering.com is remotely connected
start
CITRIX
GoToMyPC : Connect - M...
susitna - GoToMyPC
4:28 PM

C00190C07

20-02.02

20-06.01

HURLEN CONSTRUCTION COMPANY

FOREMAN:

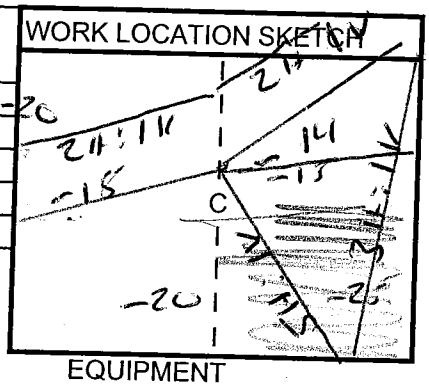
DATE: 12-13-07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 12

WEATHER: Overcast WIND: S DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
3+50	4+00	5'	30'	50'	-15 to -20
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND ✓ SILT ✓ ROCK ___ MUD ___ OTHER Gravel Cobbles Fines

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	7
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	2
DREDGE MAINTENANCE	1
BUCKET REPAIR	

EQUIPMENT

DREDGE	REG	8 HRS
	ST	HRS
LOADER	REG	HRS
	ST	HRS
TUG	REG	8 HRS
	ST	HRS

LABOR

FOREMAN	12 HRS
CRANE OPERATOR	12 HRS
TUG OPERATOR	HRS
LOADER OPERATOR	12 HRS
PILEBUCK	12 HRS

BOW
9'0" PORT STARBOARD 8'9"

KP-2
BARGE NAME

FREEBOARD	5'10"
DRAFT	6'2"

3'0" PORT STARBOARD 2'8"
STERN

BOW
2'0" PORT STARBOARD 2'0"

KP-2
BARGE NAME

FREEBOARD	2'6"
DRAFT	9'6"

3'0" PORT STARBOARD 3'0"
STERN

907 tons
731 cu yds
Weight material
2450 lb
To cu yd

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

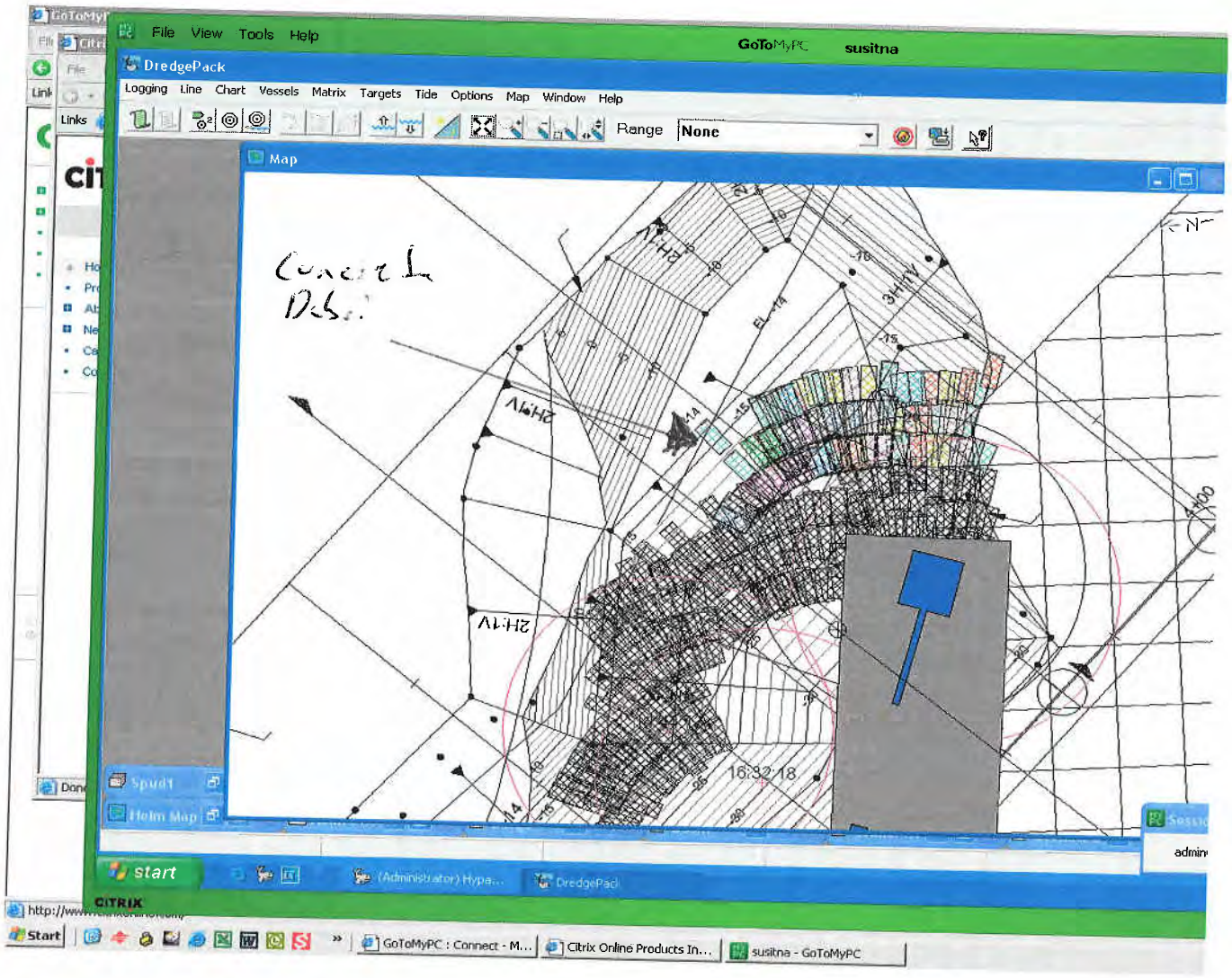
Personnel on Site
Greg A
Marty L
Keith C
Dave G
Dustin S
Cody H

Equipment on Site
PAmTay 9310
KP-2 Material barge
3 cu yd bucket
work boat
work skiff
Tug Senator H

Temperature	Weather
35° to 50°	light South wind & overcast

Note:
Lots of debri Tires, concrete blocks, chain, cable, oil sheen
Weight material 2400 lbs per cu yd.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up / shift material barge	1		
Dredge	4	Sandy / Concrete Chunks	400 cu yds
Maintance	1		
Dredging	3	Sandy/silty	331 cu yd
Scow change	2	lots of debri Tires, Blocks, Cable	


File View Tools Help
GoToMyPC susitna
DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Concrete Dock
16:32:18
Spudt
Helm Map
start
(Administrator) Hypa...
DredgePack
CITRIX
Start
GoToMyPC : Connect - M...
Citrix Online Products In...
susitna - GoToMyPC

C00190C07

20-02.02
20-06.01

HURLEN CONSTRUCTION COMPANY

FOREMAN:

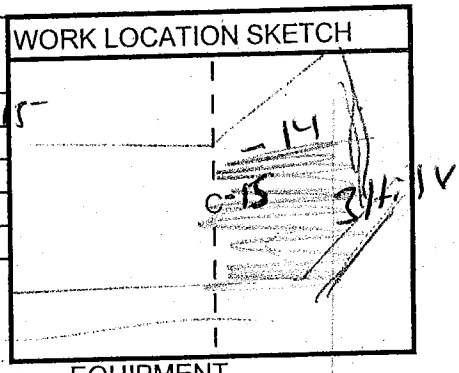
DATE: 12-14-07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 13

WEATHER: Light overcast WIND: S DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
3+50	4+00	6'	40'	30'	-5 to -15
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND ✓ SILT___ ROCK___ MUD___ OTHER @rock fines 0.1 sheen

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	8
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	1
DREDGE MAINTENANCE	
BUCKET REPAIR	

EQUIPMENT

DREDGE	REG	8 HRS
	ST	HRS
LOADER	REG	HRS
	ST	HRS
TUG	REG	8 HRS
	ST	HRS

LABOR

FOREMAN	11 HRS
CRANE OPERATOR	11 HRS
TUG OPERATOR	8 HRS
LOADER OPERATOR	11 HRS
PILEBUCK	11 HRS

BOW
7'0" PORT STARBOARD 7'0"

KP-1
BARGE NAME

FREEBOARD	7'0"
DRAFT	5'0"

7'0" PORT STARBOARD 7'0"
STERN

BOW
2'0" PORT STARBOARD 2'4"

KP-1
BARGE NAME

FREEBOARD	2'11"
DRAFT	9'1"

3'6" PORT STARBOARD 3'10"
STERN

1087 TN
779 cu y
2790 lbs c
y d.

Daily Contractor Quality Control Report

Contract No: C00190C07

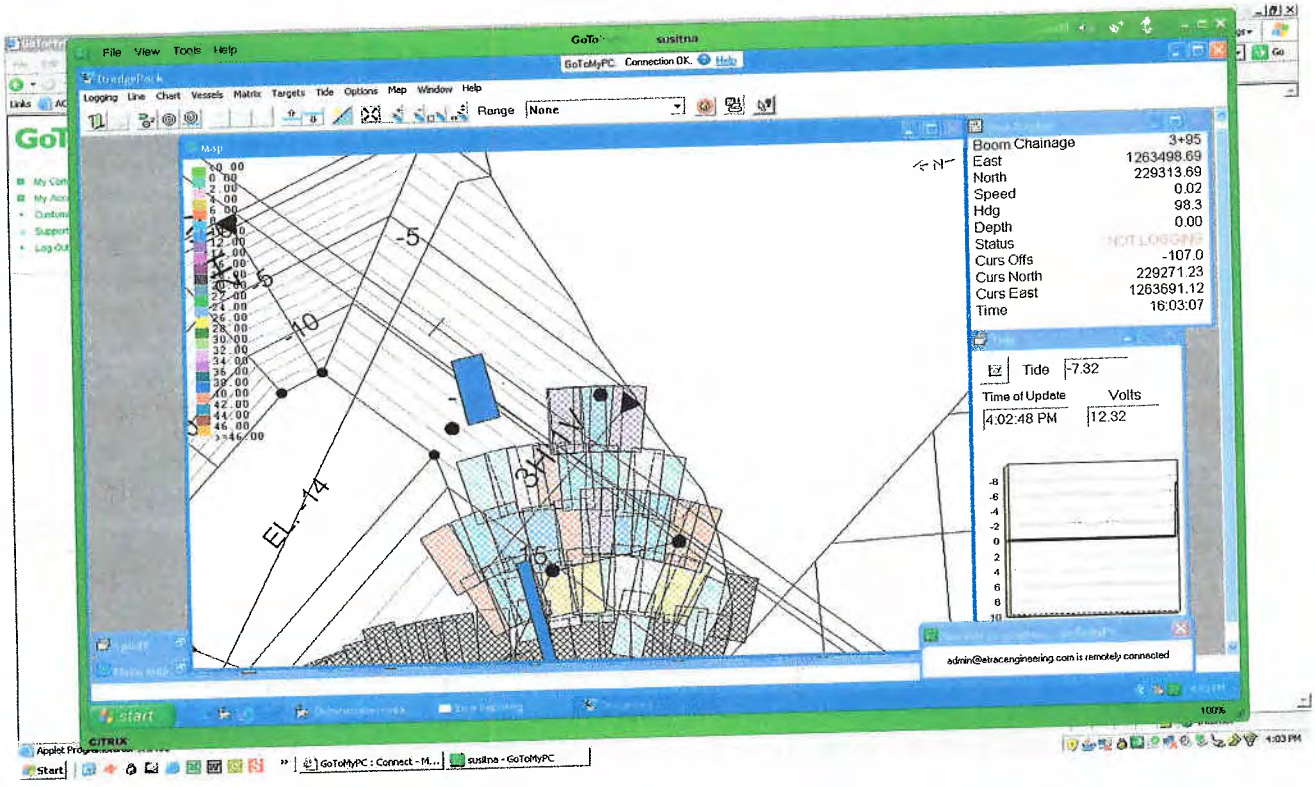
American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Marty L
Keith C
Dave G
Dustin S
Cody H

Equipment on Site
Pan Jay 9310
3 cu yd bucket
KP-1 material barge
Work boat
work skiff
Tug Seniter

Temperature	Weather
45° to 75°	Light SW wind

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up / shift	1.5		
Dredge	4		309 cu yds
Shift / Turn barge	1.5		
Dredge	4		309 cu yd


File View Tools Help
GoTo susitna
GoToMyPC Connection OK.
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Boom Chainage 3+95
East 1263498.69
North 229313.69
Speed 0.02
Hdg 98.3
Depth 0.00
Status NOT LOGGING
Curs Offs -107.0
Curs North 229271.23
Curs East 1263691.12
Time 16:03:07
Tide -7.32
Time of Update
4:02:48 PM
Volts
12.32
admin@etracengineering.com is remotely connected
EL -14
start
GoToMyPC : Connect - M...
susitna - GoToMyPC

C00190C07

HURLEN CONSTRUCTION COMPANY

FOREMAN: _____ DATE: 12-15-07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 14

WEATHER: Rainy WIND: S DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
	No	Dredge			
		TOTAL:			

WORK LOCATION SKETCH

No Dredge

MATERIAL TYPE:
SAND____ SILT____ ROCK___ MUD_____ OTHER_____

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	4
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	
DREDGE MAINTENANCE	4
BUCKET REPAIR	

EQUIPMENT

DREDGE	REG	HRS
	ST	HRS
LOADER	REG	HRS
	ST	HRS
TUG	REG	HRS
	ST	HRS

LABOR

FOREMAN	0 HRS
CRANE OPERATOR	0 HRS
TUG OPERATOR	8 HRS
LOADER OPERATOR	0 HRS
PILEBUCK	0 HRS

BOW
7'6" PORT STARBOARD 7'6"

KP-1
BARGE NAME

FREEBOARD 7'0"
DRAFT 5'0"

7'6" PORT STARBOARD 7'6"
STERN

BOW
2'6" PORT STARBOARD 2'4"

KP-1
BARGE NAME

FREEBOARD 2'11"
DRAFT 9'1"

3'6" PORT STARBOARD 3'10"
STERN

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Marty L
Dave G
Keith C
Dustin S
Cody H

Equipment on Site
9310 Pontoon
3 cu yd bucket
KP-1 Material barge
work boat
work skiff
Jay Trimble

Temperature	Weather
40° to 45°	S Highwinds

Note
Move rig for survey over intake Dredge area. Fix power down cyclens

Description of Work Performed	Time	Type of Material Removed	Quanity
Move Rig for Survey	4/		
Maintenance	4/		

C00190C07

20-02.02
20-06.01

HURLEN CONSTRUCTION COMPANY

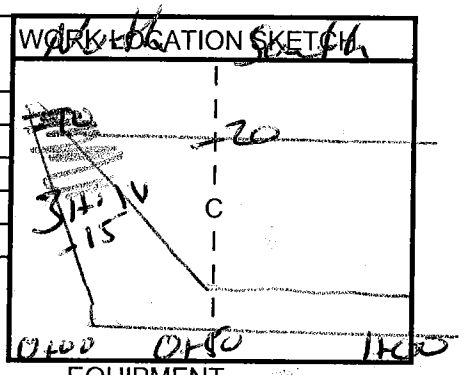
FOREMAN: _____ DATE: 12-17-07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 15

WEATHER: Rainy WIND: S DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
0+00	0+75	3'	20'	20'	-20
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND ✓ SILT ___ ROCK ___ MUD ___ OTHER Concrete Chunks Tires

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	3
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	2
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	4
DREDGE MAINTENANCE	
BUCKET REPAIR	
line barge	2

EQUIPMENT

DREDGE	REG	12	HRS
	ST		HRS
LOADER	REG		HRS
	ST		HRS
TUG	REG	8	HRS
	ST		HRS

LABOR

FOREMAN	12	HRS
CRANE OPERATOR	12	HRS
TUG OPERATOR	8	HRS
LOADER OPERATOR	12	HRS
PILEBUCK	12	HRS

BOW
2'0" PORT STARBOARD 2'4"

KP-1
BARGE NAME

FREEBOARD 2'11"
DRAFT 4'1"

3'6" PORT STARBOARD 3'10"
STERN

BOW
0'6" PORT STARBOARD 0'6"

KP-1
BARGE NAME

FREEBOARD 2'3"
DRAFT 4'9"

4'0" PORT STARBOARD 4'0"
STERN

189 TNS
121 cu yds

KP-1 to eff at 12:00 noon

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

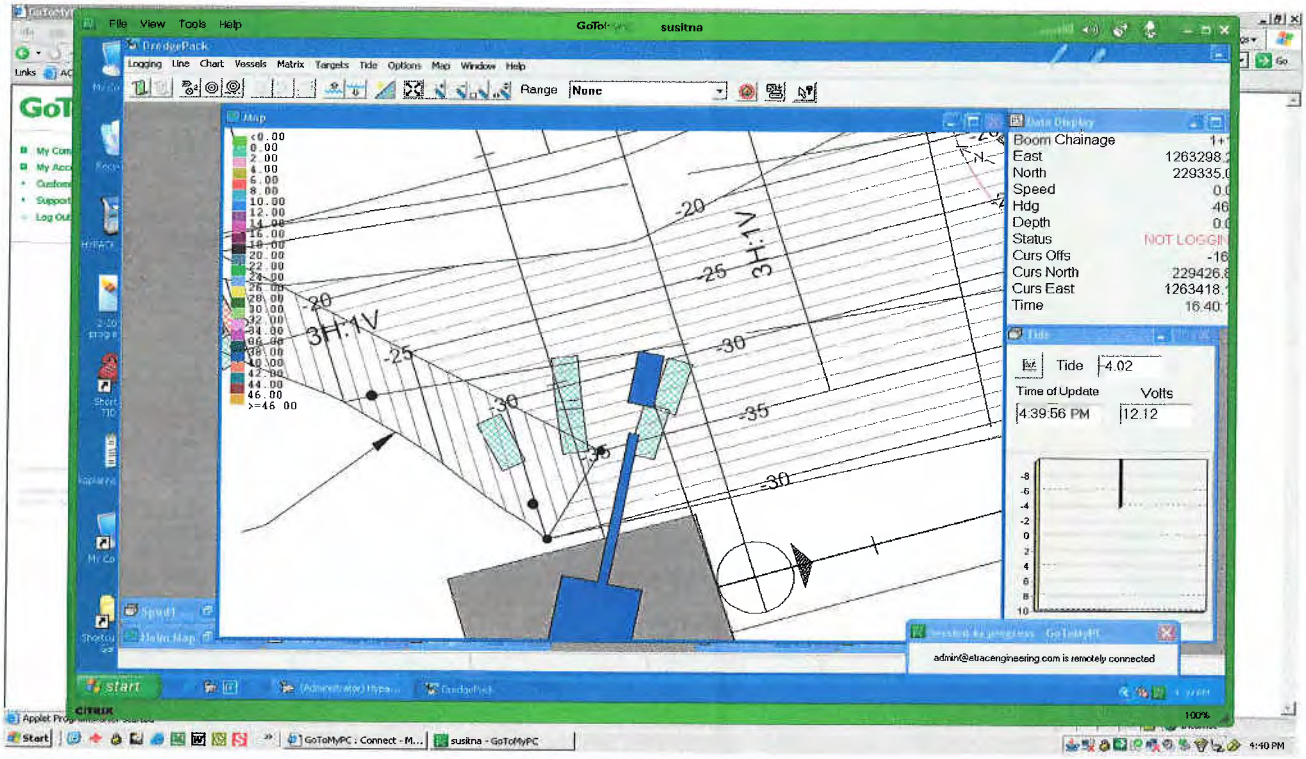
Personnel on Site
Greg A
Marty L
Keith C
Dave G
Dustin S
Cody H

Equipment on Site
PAMTag 9310
3 cu yd bucket
KP-1 material barge
work boat
work skiff
Tug Ding H

Temperature	Weather
40° to 50°	

Notes
KP-1 shift to off load.
KP-2 To ray lined and ready for Dredge

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up / survey	1		
Move into position / North end Dredge	2		
	2		121 cu yds
Barge Change out KP-1 to off load site.	4		
Line Barge	1		
Dredge	1		


File View Tools Help
susitna
DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Data Display
Boom Chainage
East
North
Speed
Hdg
Depth
Status
Curs Offs
Curs North
Curs East
Time
Tide
Tide -4.02
Time of Update
Volts
4:39:56 PM
12.12
3H:1V
admin@stracengineering.com is remotely connected
start
GoToMyPC : Connect - M...
susitna - GoToMyPC
4:40 PM

C00190C07

HURLEN CONSTRUCTION COMPANY

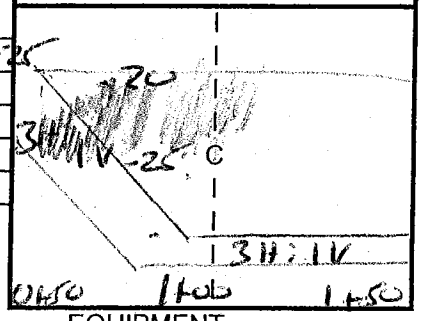
FOREMAN: _____ DATE: 12-19-07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 16

WEATHER: rainy WIND: N DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
0+50	1+00	C1'	20'	50'	-20 to -25
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND ✓ SILT___ ROCK___ MUD___ OTHER Concrete chunks Debri

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	8
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	
DREDGE MAINTENANCE	2
BUCKET REPAIR	

EQUIPMENT

DREDGE	REG	12 HRS
	ST	HRS
LOADER	REG	HRS
	ST	HRS
TUG	REG	HRS
	ST	HRS

LABOR

FOREMAN	12 HRS
CRANE OPERATOR	12 HRS
TUG OPERATOR	HRS
LOADER OPERATOR	12 HRS
PILEBUCK	12 HRS

BOW
9'0" PORT STARBOARD 9'0"

KP-2
BARGE NAME

FREEBOARD	8'10"
DRAFT	3'2"

8'8" PORT STARBOARD 8'8"
STERN

BOW
5'2" PORT STARBOARD 5'2"

KP-2
BARGE NAME

FREEBOARD	4'10"
DRAFT	7'2"

4'6" PORT STARBOARD 4'6"
STERN

1062 TONS
685 cu yds

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

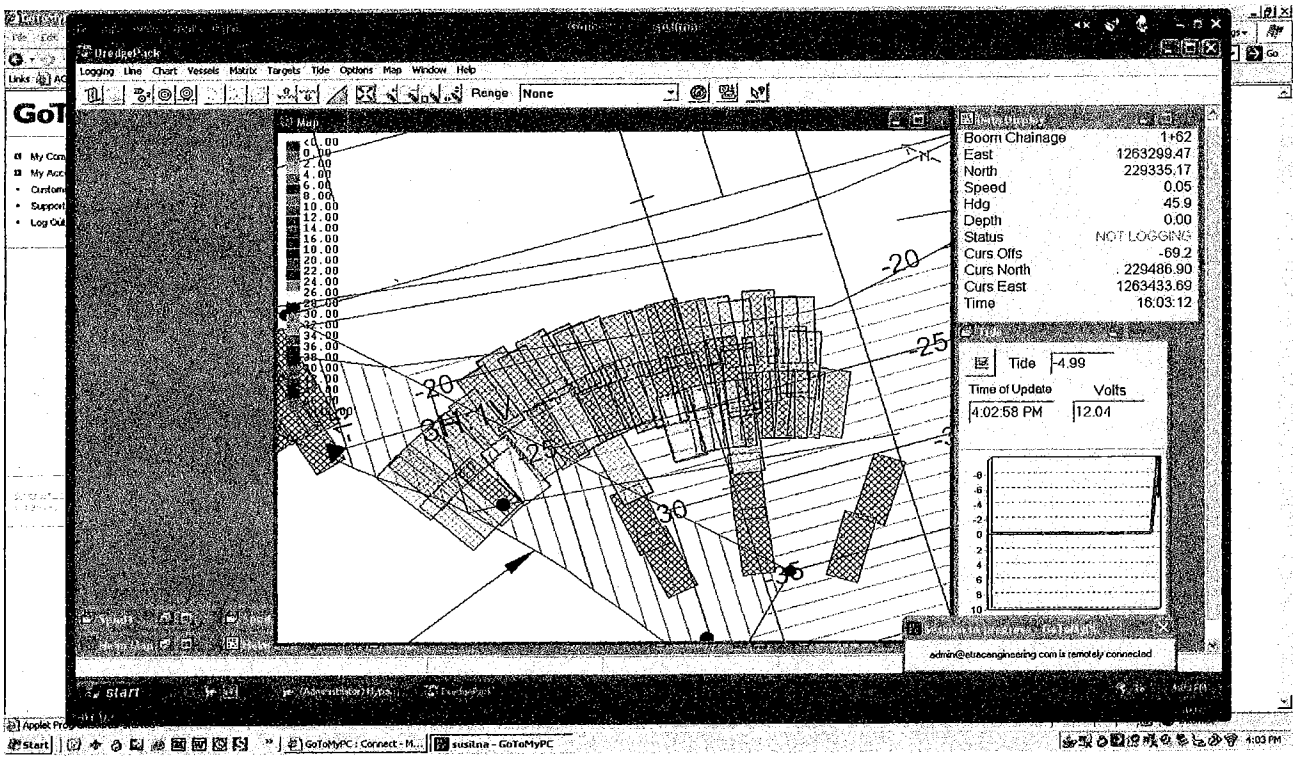
Personnel on Site
Greg A
Marty L
Dave G
Keith C
Dustin S
Cody H

Equipment on Site
PonTay 9310
3 cu yd bucket
KP-2 material barge
work boat
work skiff

Temperature	Weather
38° to 45°	Light Northwind

Note
Concrete chunks down at a -27. GPS boom tip, change out. Keith called 5:00pm said they had a spike on water temp-ty, We Stopped Dredging at 4:30pm.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	1		
Dredge	4	Sandy / concrete Chunks	342 cu yds
Work on GPS	2		
Dredge	4	Sandy / concrete chunks	342 cu yds


DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Boom Chainage 1+62
East 1263299.47
North 229335.17
Speed 0.05
Hdg 45.9
Depth 0.00
Status NOT LOGGING
Curs Offs -69.2
Curs North 229486.90
Curs East 1263433.69
Time 16:03:12
Tide 4.99
Time of Update
Volts
4:02:58 PM
12.04
admin@etracengineering.com is remotely connected
-20
-25
-30
-35
Start
GoToMyPC : Connect - M...
susitna - GoToMyPC
4:03 PM

C00190C07

HURLEN CONSTRUCTION COMPANY

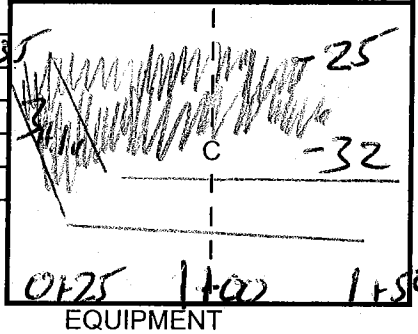
FOREMAN: _____ DATE: 12-19-07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 17

WEATHER: Rainy WIND: SW DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
0+25	1+25	4'	30'	30'	-25 to -35
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND ✓ SILT___ ROCK___ MUD___ OTHER concrete chunks

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	3
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	.5
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	1
SCOW CHANGE	.5
DREDGE MAINTENANCE	3
BUCKET REPAIR	

EQUIPMENT

DREDGE	REG	8	HRS
	ST		HRS
LOADER	REG		HRS
	ST		HRS
TUG	REG	8	HRS
	ST		HRS

LABOR

FOREMAN	8	HRS
CRANE OPERATOR	8	HRS
TUG OPERATOR	8	HRS
LOADER OPERATOR	8	HRS
PILEBUCK	8	HRS

BOW
5'2" PORT STARBOARD 5'2"

KP-2
BARGE NAME

FREEBOARD	4'10"
DRAFT	7'2"

4'6" PORT STARBOARD 4'6"
STERN

BOW
5'4" PORT STARBOARD 5'4"

KP-1
BARGE NAME

FREEBOARD	3'8"
DRAFT	8'4"

2'0" PORT STARBOARD 2'0"
STERN

267 TNS
172 cu yds

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

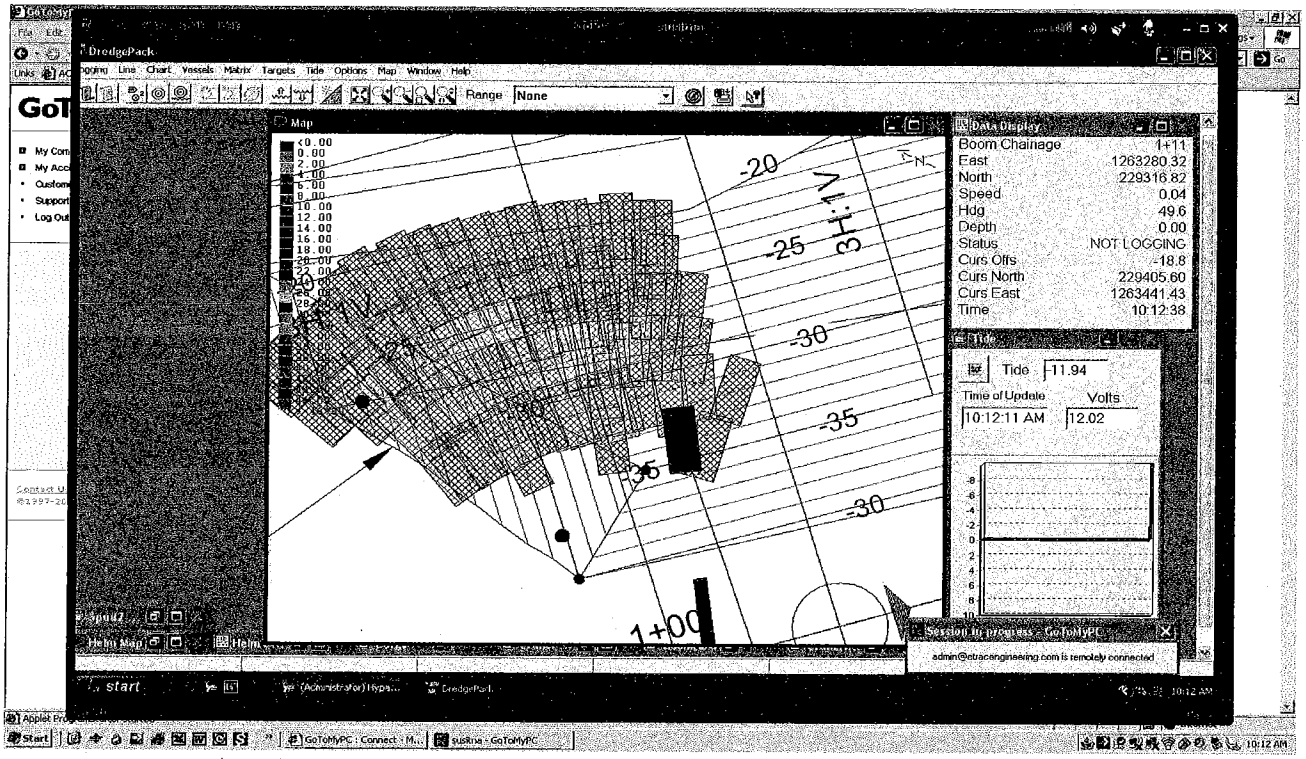
Personnel on Site
Greg A
Marty L
Keith C
Dave G
Dustin S
Cody H

Equipment on Site
PanTex 9210
3 cu yd bucket
KP-2 material barge
Work boat
work skiff
Tug Seattle

Temperature	Weather
40° to 45°	windy South

Notes
Lots of concrete chunks at -33 at 1+25. Strong & Gusty South West wind shut down KP-2 up river & off load 11:15 am.

Description of Work Performed	Time	Type of Material Removed	Quanity
~~Start~~ Start up	.5		
Dredge	3	Sandy/large concrete chunks	172 cu yds
Shift	.5		
Maintence			


DredgePack
Range
None
Map
Data Display
Boom Chainage 1+11
East 1263280.32
North 229316.82
Speed 0.04
Hdg 49.6
Depth 0.00
Status NOT LOGGING
Curs Offs -18.8
Curs North 229405.60
Curs East 1263441.43
Time 10:12:38
Tide
Tide -11.94
Time of Update
10:12:11 AM
Volts
12.02
-20
-25
-30
-35
-36
1+00
Session in progress - GoToMyPC
admin@etracengineering.com is remotely connected
start

C00190C07

HURLEN CONSTRUCTION COMPANY

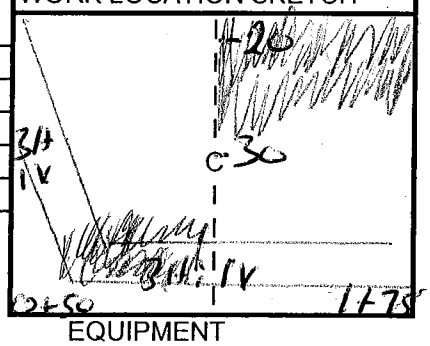
FOREMAN: _____ DATE: 12/20/07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 18

WEATHER: overcast windy WIND: SW DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
0+50	1+75	21'	20'	50'	-35
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND ___ SILT ___ ROCK ___ MUD ___ OTHER Concrete Debris
Clay

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	5
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	1
DREDGE MAINTENANCE	5.5
BUCKET REPAIR	
line barge	.5

EQUIPMENT

DREDGE	REG	12	HRS
	ST		HRS
LOADER	REG		HRS
	ST		HRS
TUG	REG	4	HRS
	ST		HRS

LABOR

FOREMAN	12	HRS
CRANE OPERATOR	12	HRS
TUG OPERATOR	4	HRS
LOADER OPERATOR	12	HRS
PILEBUCK	12	HRS

BOW
10'0" PORT STARBOARD 10'0"

KP-1
BARGE NAME

FREEBOARD 10'0"
DRAFT 2'0"

10'0" PORT STARBOARD 10'0"
STERN

BOW
8'6" PORT STARBOARD 8'0"

KP-1
BARGE NAME

FREEBOARD 5'9"
DRAFT 6'3"

5'6" PORT STARBOARD 3'0"
STERN

994 tons

641 cu yds

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

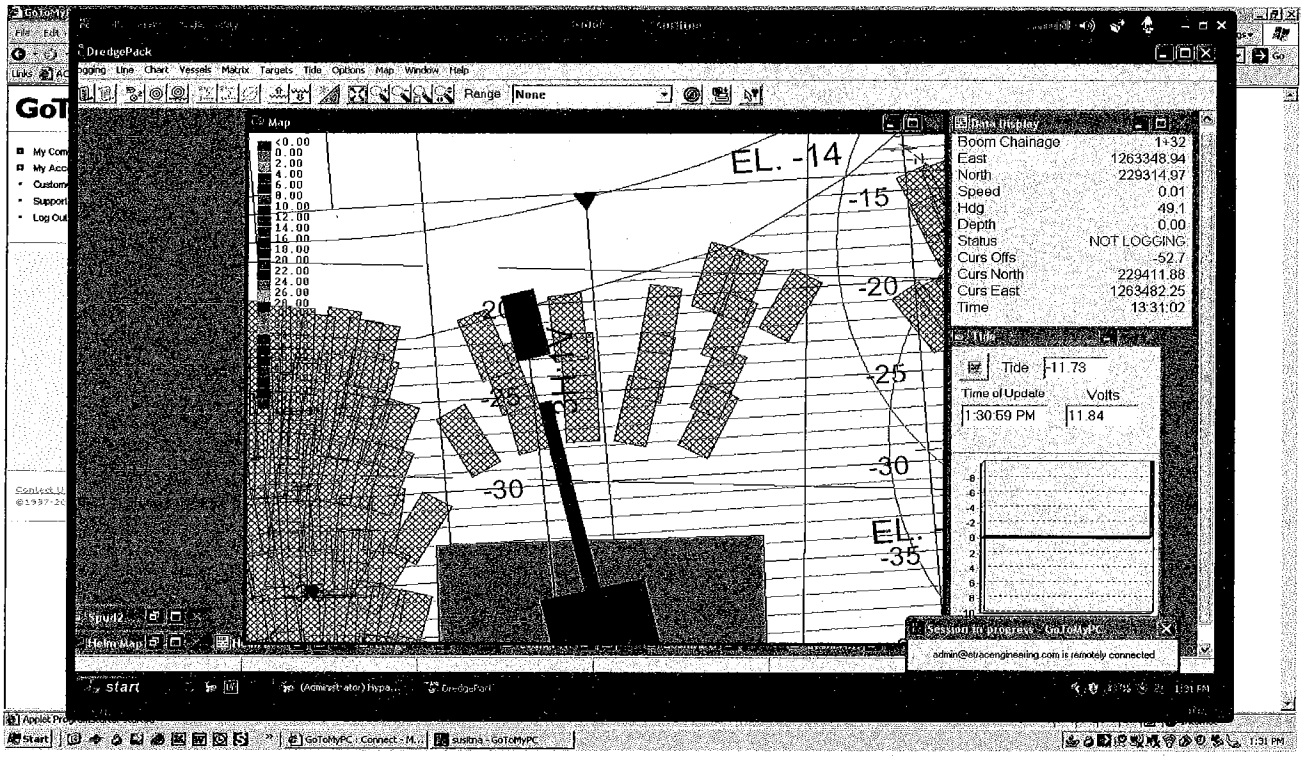
Personnel on Site
Greg A
Marty L
Keith C
Dave G
Dustin S
Cody H

Equipment on Site
Pontoon 9310
3 cu yd bucket
KPI material barge
Work boat
Work skiff
Tug Seminole II

Temperature	Weather
38° to 46°	Windy SW

Notes
Water Quality high, lots of debris, pipe, concrete, steel, wood, bucket not able to close all the way. KPI arrived 7:30 am. Clutch slipping on 9310.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up / Line barge	1		
Dredge	5	Sand / Debris / concrete chunks	Full cycles
Shift rig	.5		
Work on clutch	5.5		


DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Data Display
Boom Chainage 1+32
East 1263348.94
North 229314.97
Speed 0.01
Hdg 49.1
Depth 0.00
Status NOT LOGGING
Curs Offs -52.7
Curs North 229411.88
Curs East 1263482.25
Time 13:31:02
Tide 11.73
Time of Update
1:30:59 PM
Volts
11.84
EL. -14
-15
-20
-25
-30
EL. -35
Session in progress - GoToMyPC
admin@etraceengineering.com is remotely connected
Spud2
Helm Map
start
1:31 PM

C00190 C07

HURLEN CONSTRUCTION COMPANY

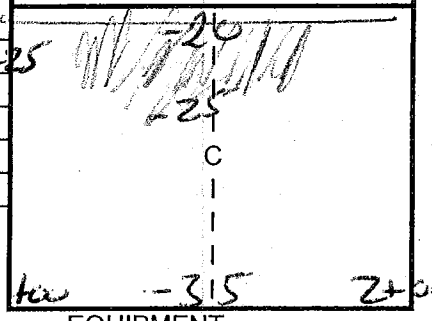
FOREMAN: DATE: 12/21/07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 19

WEATHER: Overcast WIND: SW DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
1400	2400	2'	20'	50'	-17 to -25
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND____ SILT____ ROCK___ MUD / OTHER Concrete Debr. / Clay

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	3
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	
DREDGE MAINTENANCE	6
BUCKET REPAIR	

EQUIPMENT

DREDGE	REG	10 HRS
	ST	HRS
LOADER	REG	HRS
	ST	HRS
TUG	REG	HRS
	ST	HRS

LABOR

FOREMAN	10 HRS
CRANE OPERATOR	10 HRS
TUG OPERATOR	HRS
LOADER OPERATOR	10 HRS
PILEBUCK	10 HRS

BOW
7'6" PORT STARBOARD 7'0"

KP-1
BARGE NAME

FREEBOARD 5'9"
DRAFT 6'3"

5'6" PORT STARBOARD 3'0"
STERN

BOW
8'0" PORT STARBOARD 3'0"

KP-1
BARGE NAME

FREEBOARD 5'6"
DRAFT 6'6"

8'0" PORT STARBOARD 3'0"
STERN

66 TAS

66 cu yds

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

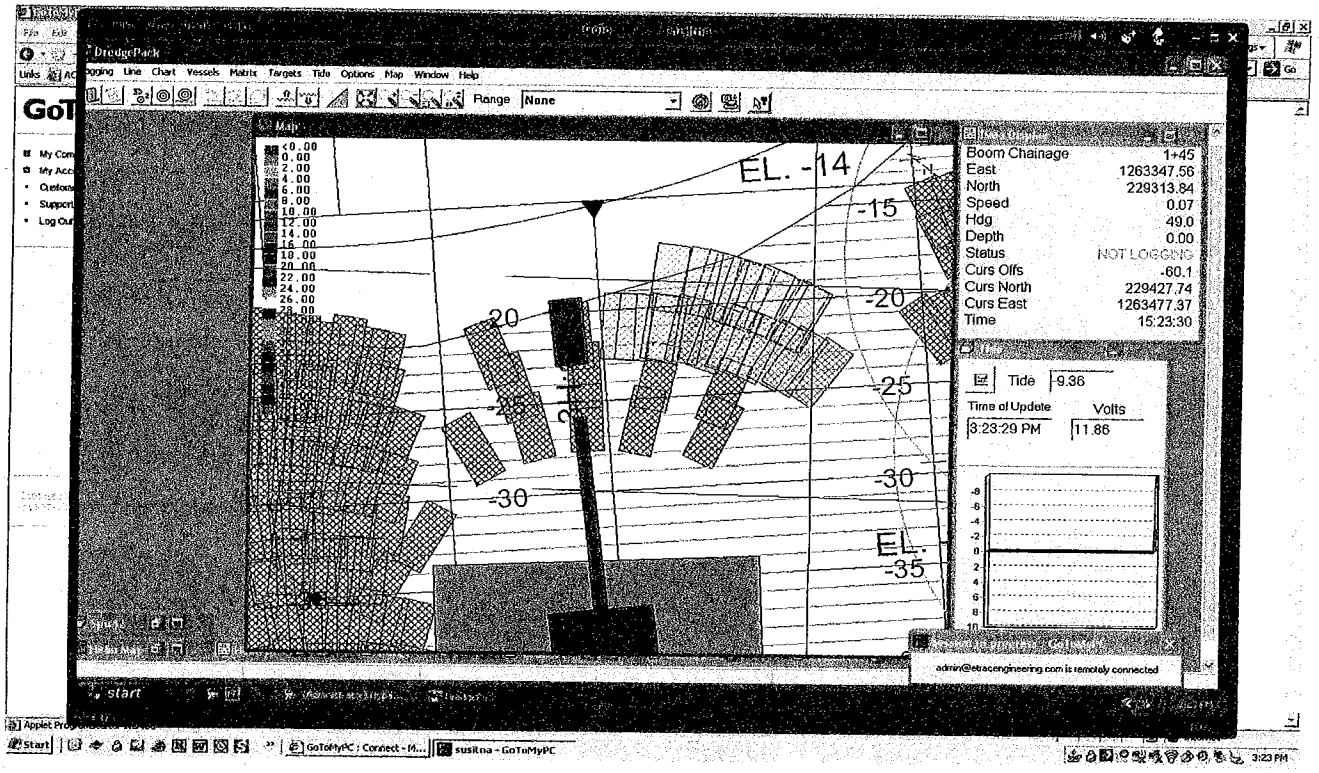
Personnel on Site
Greg A
Kent C
Marty L
Dustin S
Cody H

Equipment on Site
Pantoy 9310
3 cu yd bucket
KP-1 material barge
Work boat
Work Skiff

Temperature	Weather
38° to 45°	windy SW

Note
Black clay material, oil sheen, large chunks of concrete
Worked on clutch on 9310, ran and ajusted,

Description of Work Performed	Time	Type of Material Removed	Quanity
Work on Clutch 9310	6		
Dredge	3	Muddy Clay	66 cu yds


DredgePack
Range None
Map
EL. -14
-15
-20
-25
-30
EL. -35
Boom Chainage 1+45
East 1263347.56
North 229313.84
Speed 0.07
Hdg 49.0
Depth 0.00
Status NOT LOGGING
Curs Offs -60.1
Curs North 229427.74
Curs East 1263477.37
Time 15:23:30
Tide 9.36
Time of Update
Volts
3:23:29 PM
11.86
admin@etracengineering.com is remotely connected
start

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg H
Keith C
Marty L
Dustin S
Cody

Equipment on Site
Ramtay 9310
3 cu yd bucket
KP-1 material barge
work boat
work skiff
Survey boat
Tug Scrubber II

Temperature	Weather
36° to 45°	Windy SW

Note
KP-1 barge shifted up river to dock load 4:00 pm.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	.5		
Dredge	7	Clay / Debris / concrete	639 cu yds
Shift rig	1		
Shift barge	.5		

HURLEN CONSTRUCTION COMPANY

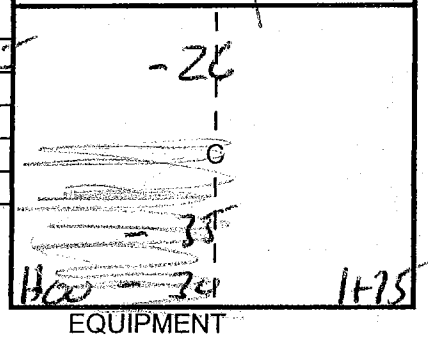
FOREMAN: _____ DATE: 12-22-07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 26

WEATHER: Rainy WIND: SW DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
1+00	2+00	4"	50'	50'	-25-33
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND____ SILT____ ROCK____ MUD / OTHER Concrete Chunks Debris Clay

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	7
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	1
DREDGE MAINTENANCE	
BUCKET REPAIR	

EQUIPMENT

DREDGE	REG	10 HRS
	ST	HRS
LOADER	REG	HRS
	ST	HRS
TUG	REG	8 HRS
	ST	HRS

LABOR

FOREMAN	10 HRS
CRANE OPERATOR	10 HRS
TUG OPERATOR	HRS
LOADER OPERATOR	10 HRS
PILEBUCK	10 HRS

BOW
8'0" PORT STARBOARD 3'0"

KP-1
BARGE NAME

FREEBOARD 5'6"
DRAFT 6'6"

8'0" PORT STARBOARD 3'0"
STERN

BOW
2'1" PORT STARBOARD 1'7"

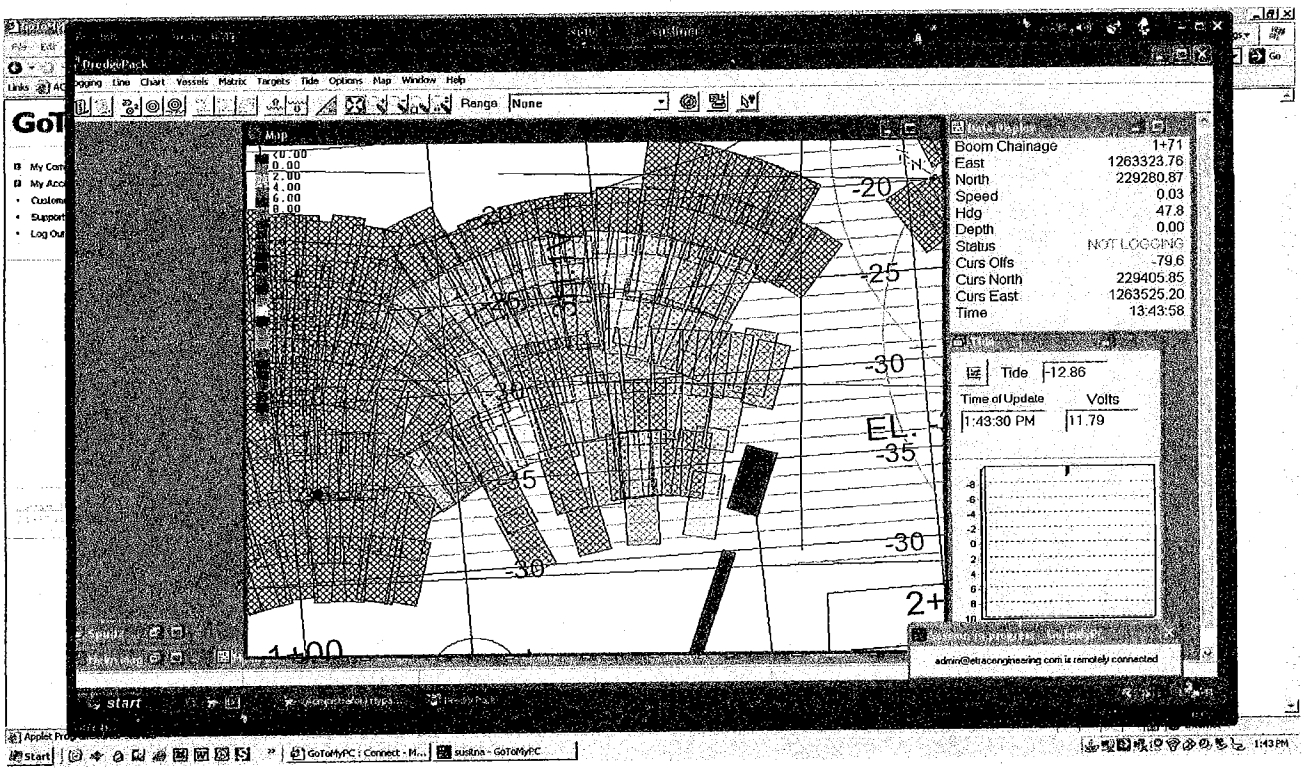
KP-1
BARGE NAME

FREEBOARD 1'11"
DRAFT 10'1"

2'3" PORT STARBOARD 1'9"
STERN

986 tns
639 cy yd

Shelted up river to offload


Range None
Map
Boom Chainage 1+71
East 1263323.76
North 229280.87
Speed 0.03
Hdg 47.8
Depth 0.00
Status NOT LOGGING
Curs Offs -79.6
Curs North 229405.85
Curs East 1263525.20
Time 13:43:58
Tide -12.86
Time of Update
1:43:30 PM
Volts
11.79
-20
-25
-30
EL.
-35
-30
2+
1+00
admin@etraceengineering.com is remotely connected
start
GoToMyPC : Connect - M...
sustina - GoToMyPC
1:43 PM

C00190C07

HURLEN CONSTRUCTION COMPANY

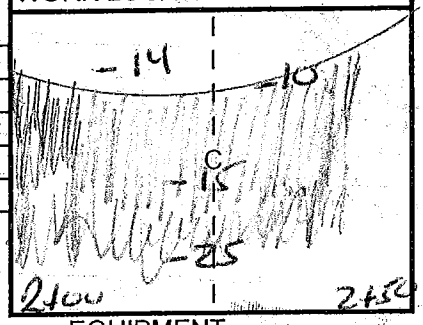
FOREMAN: _____ DATE: 12/27/07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 21

WEATHER: Overcast WIND: S DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
2+00	2+50	4'	60'	50'	-10 ±
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND____ SILT____ ROCK____ MUD ✓ OTHER Concrete Debris

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	8
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	.5
DREDGE MAINTENANCE	.5
BUCKET REPAIR	
Time barge	1

EQUIPMENT

DREDGE	REG	12	HRS
	ST		HRS
LOADER	REG		HRS
	ST		HRS
TUG	REG	8	HRS
	ST		HRS

LABOR

FOREMAN	12	HRS
CRANE OPERATOR	12	HRS
TUG OPERATOR	8	HRS
LOADER OPERATOR	12	HRS
PILEBUCK	12	HRS

BOW
9'0" PORT STARBOARD 9'0"

KP-2
BARGE NAME

FREEBOARD	9'0"
DRAFT	3'0"

9'0" PORT STARBOARD 9'0"
STERN

876 cys

BOW
6'0" PORT STARBOARD 5'6"

KP-2
BARGE NAME

565 cu yds

FREEBOARD	5'6"
DRAFT	6'6"

6'0" PORT STARBOARD 5'0"
STERN

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

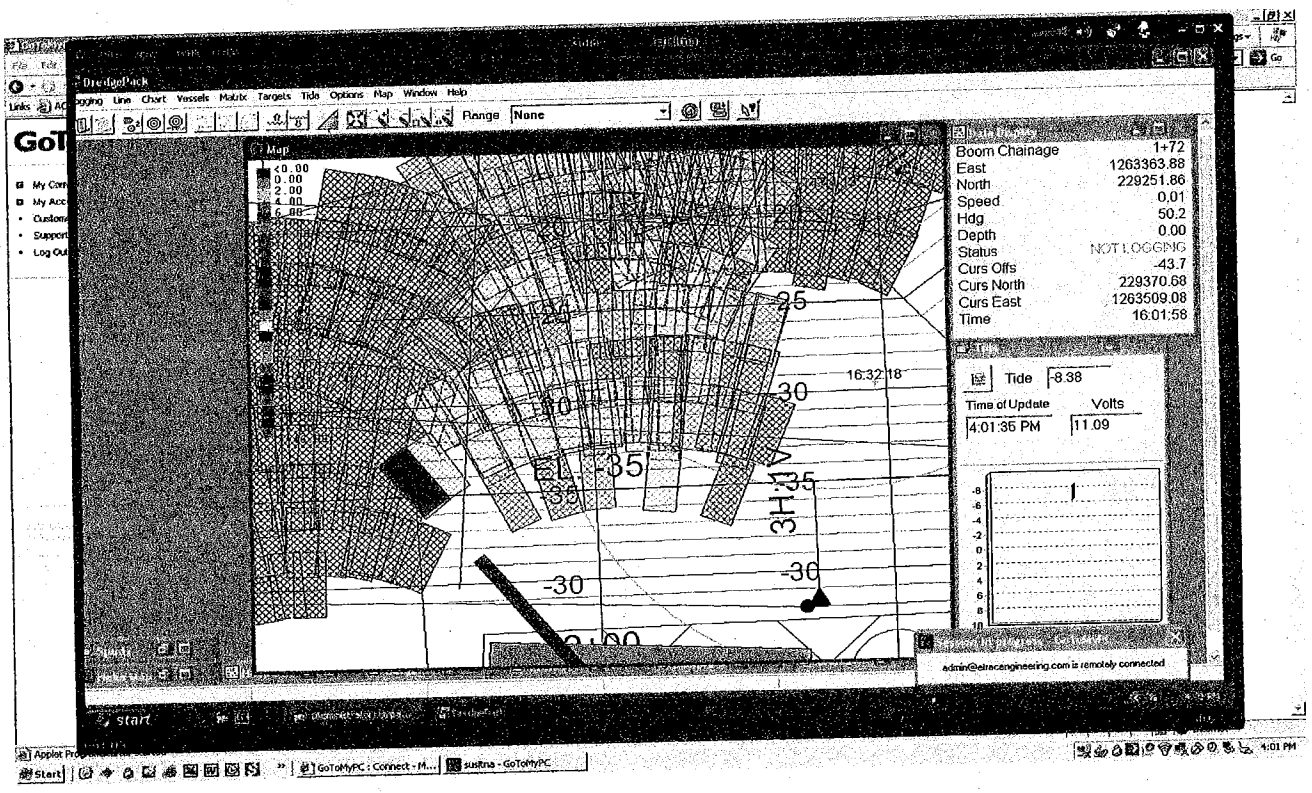
Personnel on Site
Greg A
Marty L
Keith C
Dustin S
Cody H

Equipment on Site
Pantzy 9710
3 cu yd bucket
KP-2 Material barge
work boat
work skiff
Tug Jennifer H

Temperature	Weather
40° to 45°	Windy South

Note
Oil sheen on water, Black clay material

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up / shift rig	1		
line barge	1		
Dredge	8	Black clay oily	565 cu yds
Maintance	1		


DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Boom Chainage 1+72
East 1263363.88
North 229251.86
Speed 0.01
Hdg 50.2
Depth 0.00
Status NOT LOGGING
Curs Offs -43.7
Curs North 229370.68
Curs East 1263509.08
Time 16:01:58
16:32:18
Tide -8.38
Time of Update
4:01:36 PM
Volts
11.09
admin@etracengineering.com is remotely connected
-25
-30
-35
3H:1V
Start
GoToMyPC : Connect - M...
susitna - GoToMyPC
4:01 PM

HURLEN CONSTRUCTION COMPANY

C00190C07

FOREMAN:

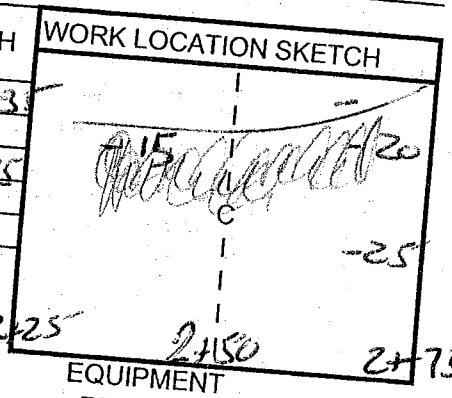
JOB # 1507043 LOCATION: ELLIOT BAY DATE: 12-28-07

WEATHER: Overcast WIND: SW REPORT # 22

DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
1+75	2+25	4'	30'	50'	-30 to 35
2+25	2+50	2'	20'	60'	-15 to 25
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND___ SILT___ ROCK___ MUD / OTHER Sheen 0.1
Black Clay

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	4
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	.5
DREDGE MAINTENANCE	
BUCKET REPAIR	6

34 hours

EQUIPMENT

DREDGE	REG	12 HRS
	ST	HRS
LOADER	REG	HRS
	ST	HRS
TUG	REG	8 HRS
	ST	HRS

LABOR

FOREMAN	12 HRS
CRANE OPERATOR	12 HRS
TUG OPERATOR	8 HRS
LOADER OPERATOR	12 HRS
PILEBUCK	12 HRS

BOW
6'0" PORT STARBOARD 5'0"

KP-2
BARGE NAME

FREEBOARD	5'6"
DRAFT	6'6"

4'0" PORT STARBOARD 5'0"
STERN

BOW
3'4" PORT STARBOARD 2'5"

KP-2
BARGE NAME

FREEBOARD	2'5"
DRAFT	9'7"

2'5" PORT STARBOARD 1'8"
STERN

943 TNS

658 cu yds

2560 lb to the yd.

KP-2 up over to dock load

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Marty L
Keith C
Dustin S
Cody H

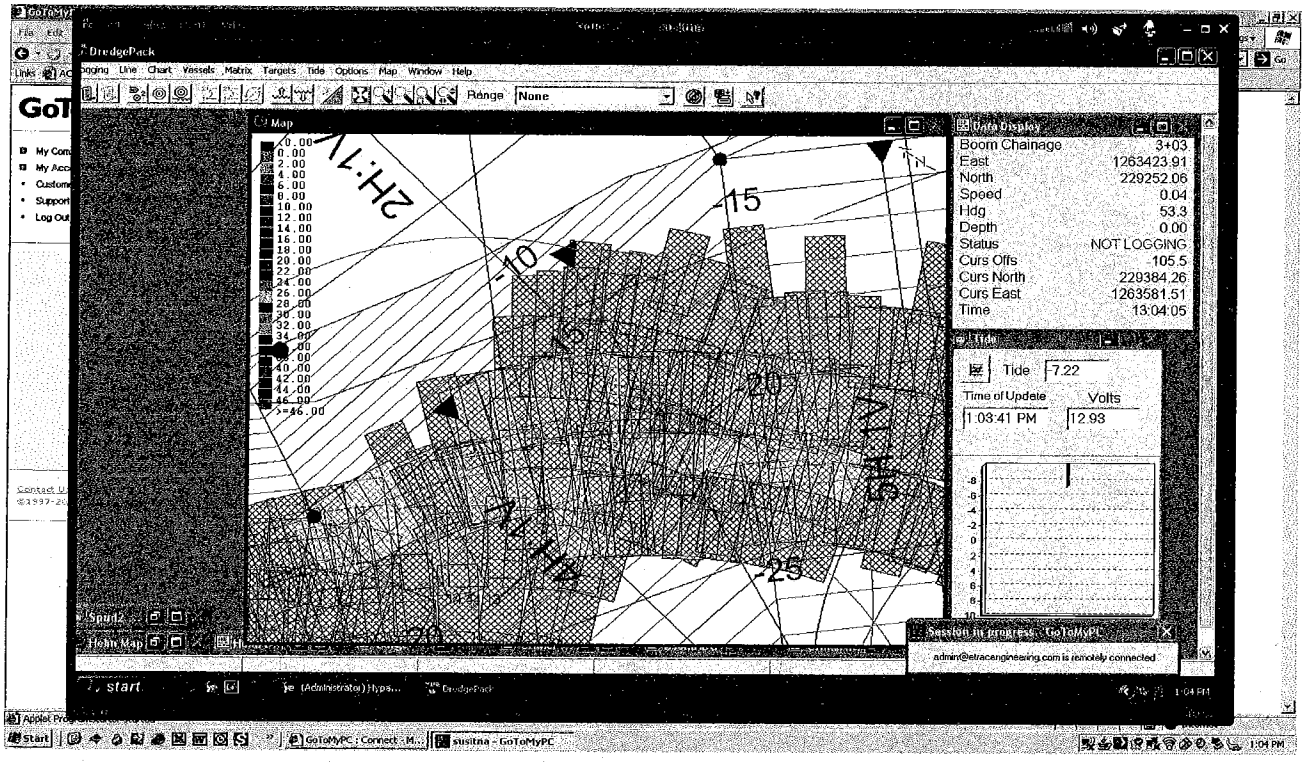
Equipment on Site
Pantheon 9310
3 cu yd bucket
KP-2 material barge
work boat
work skiff
Tug Dian H
Survey boat

Temperature	Weather
38° to 45°	Windy Sun

Notes

Heavy oil sheen on water
Windy Tied up 34 Berth at Eastlake, shifted over 1:00 pm, spudded down at North end.
KP-2 loaded

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	.5		
Dredge	4	Black Clay	650 cu yd
Shift brg	1		
Turn Material barge	.5		


DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Data Display
Boom Chainage 3+03
East 1263423.91
North 229252.06
Speed 0.04
Hdg 53.3
Depth 0.00
Status NOT LOGGING
Curs Offs 105.5
Curs North 229384.26
Curs East 1263581.51
Time 13:04:05
Tide 7.22
Time of Update
1:03:41 PM
Volts
12.98
Session in progress - GoToMyPC
admin@etracengineering.com is remotely connected
Spud2
Main Map
start
1:04 PM

C00190C07

HURLEN CONSTRUCTION COMPANY

FOREMAN:

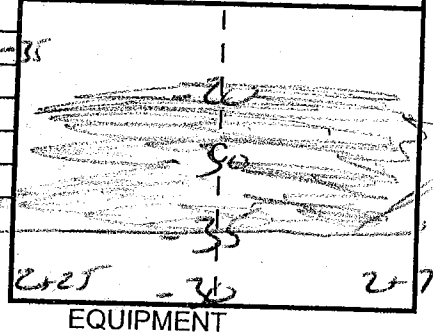
DATE: 12-29-07

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 23

WEATHER: Sunny WIND: SLS DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
2+25	2+75	4'	50'	50'	-25 to -35
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND____ SILT____ ROCK____ MUD / OTHER Heavy oil sheen Black Clay

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	7
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	.5
DREDGE MAINTENANCE	
BUCKET REPAIR	
Inc Barge	.5

EQUIPMENT

DREDGE	REG	10 HRS
	ST	HRS
LOADER	REG	HRS
	ST	HRS
TUG	REG	8 HRS
	ST	HRS

LABOR

FOREMAN	10 HRS
CRANE OPERATOR	10 HRS
TUG OPERATOR	8 HRS
LOADER OPERATOR	10 HRS
PILEBUCK	10 HRS

BOW
10' 0" PORT STARBOARD 10' 0"

KP-1
BARGE NAME

FREEBOARD 10' 0"
DRAFT 2' 0"

10' 0" PORT STARBOARD 10' 0"
STERN

BOW
7' 0" PORT STARBOARD 6' 0"

KP-1
BARGE NAME

FREEBOARD 6' 4"
DRAFT 5' 8"

6' 8" PORT STARBOARD 5' 8"
STERN

843 tons
658 cu yds
2560 lb to the cu yd

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

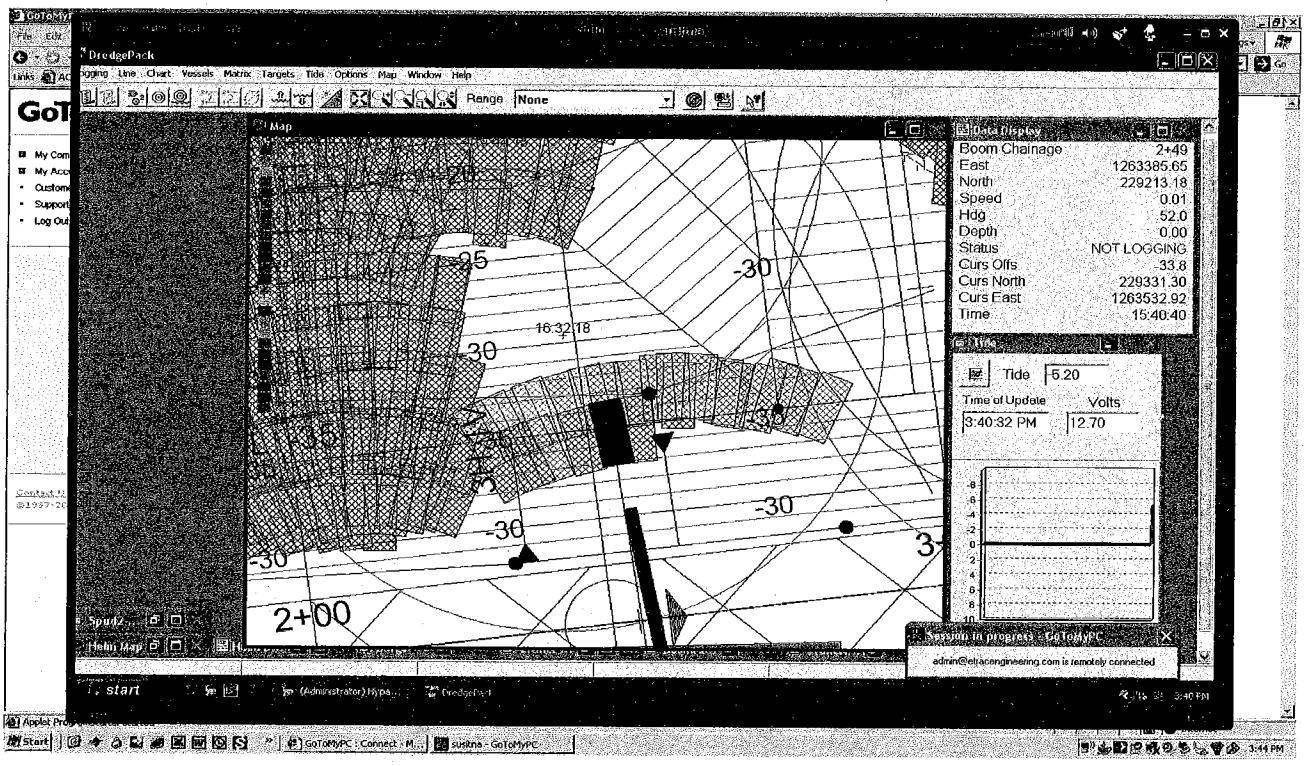
Personnel on Site
Corey H
Marty L
Keith C
Dustin S
Cody H

Equipment on Site
Ps. Tug 9310 3yd bucket
KP-1 material barge
34 Barge 200 excavator
work boat
work skiff
Tug Diana H

Temperature	Weather
32° to 40°	SW wind

Note
Heavy oil sheen, creo pole and debris.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	.5		
line KP-1	.5		
Dredge	7	oily Black clay	658 cu yds
Shift rig	.1		
Turn Barge	.5		


DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Data Display
Boom Chainage 2+49
East 1263385.65
North 229213.18
Speed 0.01
Hdg 52.0
Depth 0.00
Status NOT LOGGING
Curs Offs -33.6
Curs North 229331.30
Curs East 1263532.92
Time 15:40:40
Tide
Tide 5.20
Time of Update 3:40:32 PM
Volts 12.70
16:32:18
2+00
Session in progress - GoToMyPC
admin@eltracengineering.com is remotely connected
start

C00190C07

HURLEN CONSTRUCTION COMPANY

FOREMAN:

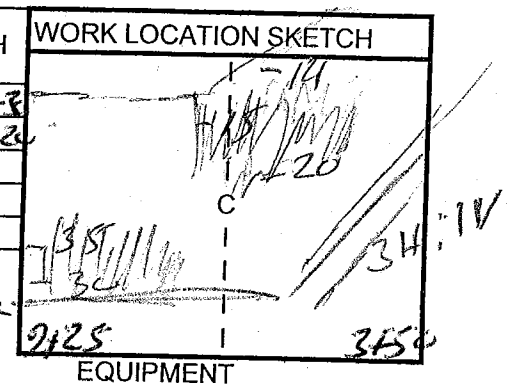
DATE: 1-02-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 24

WEATHER: overcast WIND: SW DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
2+25	2+75	4'	20'	50'	-35 to -3
2+75	3+50	2'	20'	50'	-15 to -2
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND___ SILT___ ROCK___ MUD / OTHER Concrete Debris Clay

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	7
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	.5
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	.5
DREDGE MAINTENANCE	4
BUCKET REPAIR	

EQUIPMENT

DREDGE	REG	12 HRS
	ST	HRS
LOADER	REG	HRS
	ST	HRS
TUG	REG	6 HRS
	ST	HRS

LABOR

FOREMAN	12 HRS
CRANE OPERATOR	12 HRS
TUG OPERATOR	6 HRS
LOADER OPERATOR	12 HRS
PILEBUCK	12 HRS

BOW
7'0" PORT STARBOARD 6'0"

KP-1
BARGE NAME

FREEBOARD	6'4"
DRAFT	5'8"

6'8" PORT STARBOARD 5'9"
STERN

BOW
7'0" PORT STARBOARD 1'0"

KP-1
BARGE NAME

FREEBOARD	2'7"
DRAFT	9'5"

4'3" PORT STARBOARD 3'3"
STERN

10 1/2 hrs
790 cu yds

up river to dk bnd sch
3:40pm

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Marty L
Kelly C
Dustin S
Cody H

Equipment on Site
Ranger 9310
3 cu yd bucket
KP-1 Material barge
34 spud Barge w/ excavator
Work boat
Work Skiff
Tug Jennifer H
ITB 165 material barge

Temperature	Weather
40° to 45°	SW windy

Note
KP-1 left 3:00pm up river to offload. Heavy oil sheen on water. Iskut's Tug Allison brought in ITB 165 material barge for concrete

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	.5		
Dredge	7	Muddy Clay	790 cu yds
Shift rig	.5		

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Marty L
Keith C
Dustin S
Cody H

Equipment on Site
Pontoon 9310 3cu yd.
34 Barge 200 excavator
ITB-166 material barge
work boat
work Skiff
Tug Scout-ter H
KP-2 material barge

Temperature	Weather
40° to 48°	SW windy

Note
Remove concrete debri from upper slope. Water turbidity creeping up.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up / line Barge KP-2	1.5		
Set up Barge Straw / silt curtain	2		
Shift Pontoon	1.5		
Shift 34 Barge	2		
remove concrete	2	Concrete	96 TNS
Work on 200 excavator	2		

C00190C07

HURLEN CONSTRUCTION COMPANY

FOREMAN:

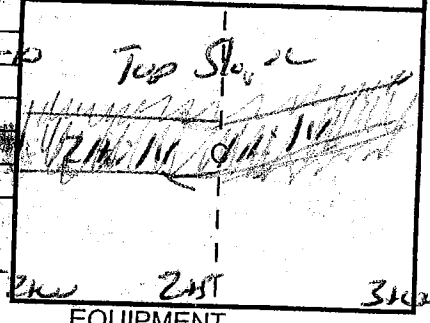
DATE: 1-03-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 25

WEATHER: Overcast WIND: SW DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
2+00	3+00	3'	60'	100'	-15 to -0
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND____ SILT____ ROCK__ MUD____ OTHER Concrete Debris

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	2
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	4
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	2
DREDGE MAINTENANCE	2
BUCKET REPAIR	
Line Bucket	2

EQUIPMENT

DREDGE	REG	12 HRS
	ST	HRS
LOADER	REG	HRS
	ST	HRS
TUG	REG	10 HRS
	ST	HRS

LABOR

FOREMAN	12 HRS
CRANE OPERATOR	12 HRS
TUG OPERATOR	10 HRS
LOADER OPERATOR	12 HRS
PILEBUCK	12 HRS

BOW
9' 9" PORT STARBOARD 9' 9"

ITB 166
BARGE NAME

FREEBOARD	9'6"
DRAFT	2'6"

9' 3" PORT STARBOARD 9' 3"
STERN

BOW
9' 8" PORT STARBOARD 9' 8"

ITB 166
BARGE NAME

FREEBOARD	9' 1"
DRAFT	2' 11"

8' 6" PORT STARBOARD 9' 6"
STERN

96 TNS removed concrete from upper slope

C00190C07

HURLEN CONSTRUCTION COMPANY

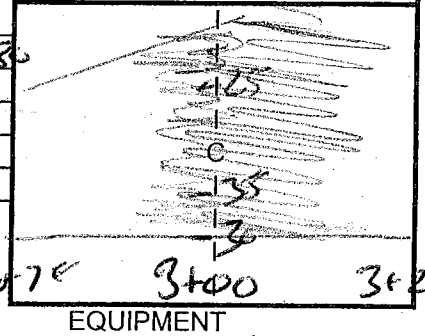
FOREMAN: _____ DATE: 1-04-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 26

WEATHER: Overcast WIND: SW DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
2+75	3+25	4'		50'	-25 a -3
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND____ SILT____ ROCK____ MUD ✓ OTHER_____

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	8
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	2
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	.5
DREDGE MAINTENANCE	
BUCKET REPAIR	

EQUIPMENT

DREDGE	REG	12	HRS
	ST		HRS
LOADER	REG		HRS
	ST		HRS
TUG	REG	10	HRS
	ST		HRS

LABOR

FOREMAN	12	HRS
CRANE OPERATOR	12	HRS
TUG OPERATOR	10	HRS
LOADER OPERATOR	12	HRS
PILEBUCK	12	HRS

BOW
9'0" PORT STARBOARD 9'0"

KP-2
BARGE NAME

FREEBOARD	9'0"
DRAFT	3'0"

9'0" PORT STARBOARD 9'0"
STERN

BOW
4'0" PORT STARBOARD 4'0"

KP-2
BARGE NAME

FREEBOARD	5'9"
DRAFT	8'3"

3'6" PORT STARBOARD 3'6"
STERN

1323 tons

1033 cu yds

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

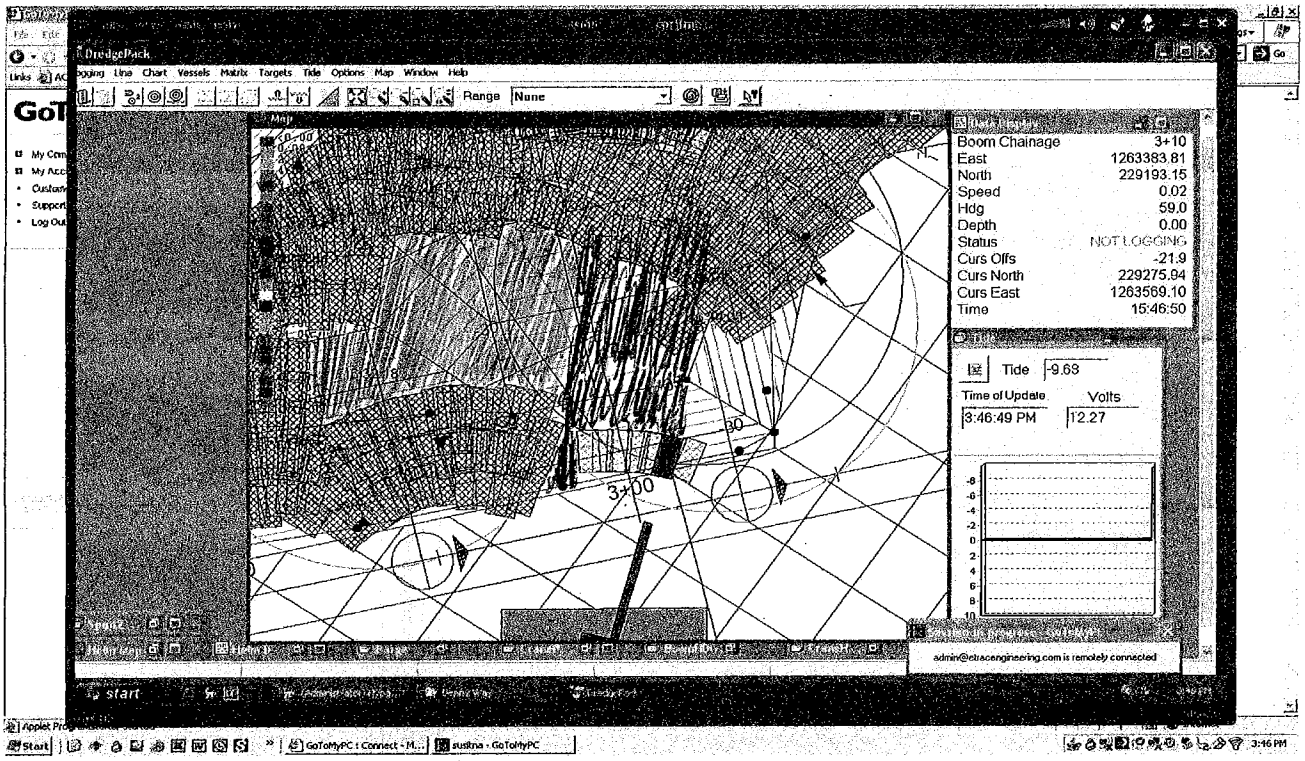
Personnel on Site
Greg A
Marty L
Keith C
Dustin S
Cody H

Equipment on Site
Ranger 936 3cu yd bucket
KP-2 material barge
314 Barge 320 excavator
ITB KC material barge
work boat
Work skiff
Tug Seminole H

Temperature	Weather
40° to 49°	SW windy

Note
Heavy oil Sheen on water, crew smell.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	.5		
Shift rig	1		
Dredge	8	Sandy Mud	1033 cu yds
Shift 314 Barge	1		
Shift material Barges KP-2 & ITB KC	.5		


DredgePack
Range
None
Boom Chainage 3+10
East 1263383.81
North 229193.15
Speed 0.02
Hdg 59.0
Depth 0.00
Status NOT LOGGING
Curs Offs -21.9
Curs North 229275.94
Curs East 1263569.10
Time 15:46:50
Tide -9.68
Time of Update
Volts
3:46:49 PM
12.27
3+00
admin@dracengineering.com is remotely connected
start

C00190C07

HURLEN CONSTRUCTION COMPANY

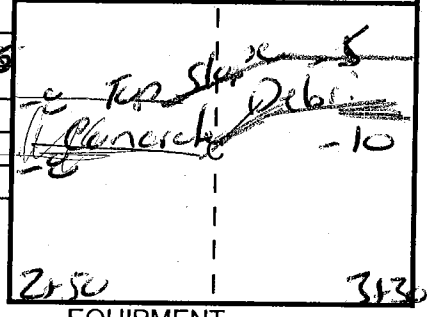
FOREMAN: _____ DATE: 1-05-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 27

WEATHER: Rainy Headwinds WIND: SW DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
2+50	3+30	3'	90'	20'	-8 to -15
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND____ SILT____ ROCK___ MUD_____ OTHER Conrock Debris

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	2.5
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1.5
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	1
SCOW CHANGE	
DREDGE MAINTENANCE	1
BUCKET REPAIR	

EQUIPMENT

DREDGE	REG	8 HRS
	ST	HRS
LOADER	REG	8 HRS
	ST	HRS
TUG	REG	8 HRS
	ST	HRS

LABOR

FOREMAN	8 HRS
CRANE OPERATOR	8 HRS
TUG OPERATOR	8 HRS
LOADER OPERATOR	8 HRS
PILEBUCK	8 HRS

BOW
6'2" PORT STARBOARD 10'0"

ITB 166
BARGE NAME

FREEBOARD	8'1"
DRAFT	4'11"

6'2" PORT STARBOARD 10'0"
STERN

BOW
6'2" PORT STARBOARD 10'0"

ITB 166
BARGE NAME

FREEBOARD	8'1"
DRAFT	4'11"

6'2" PORT STARBOARD 10'0"
STERN

132 TNS

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

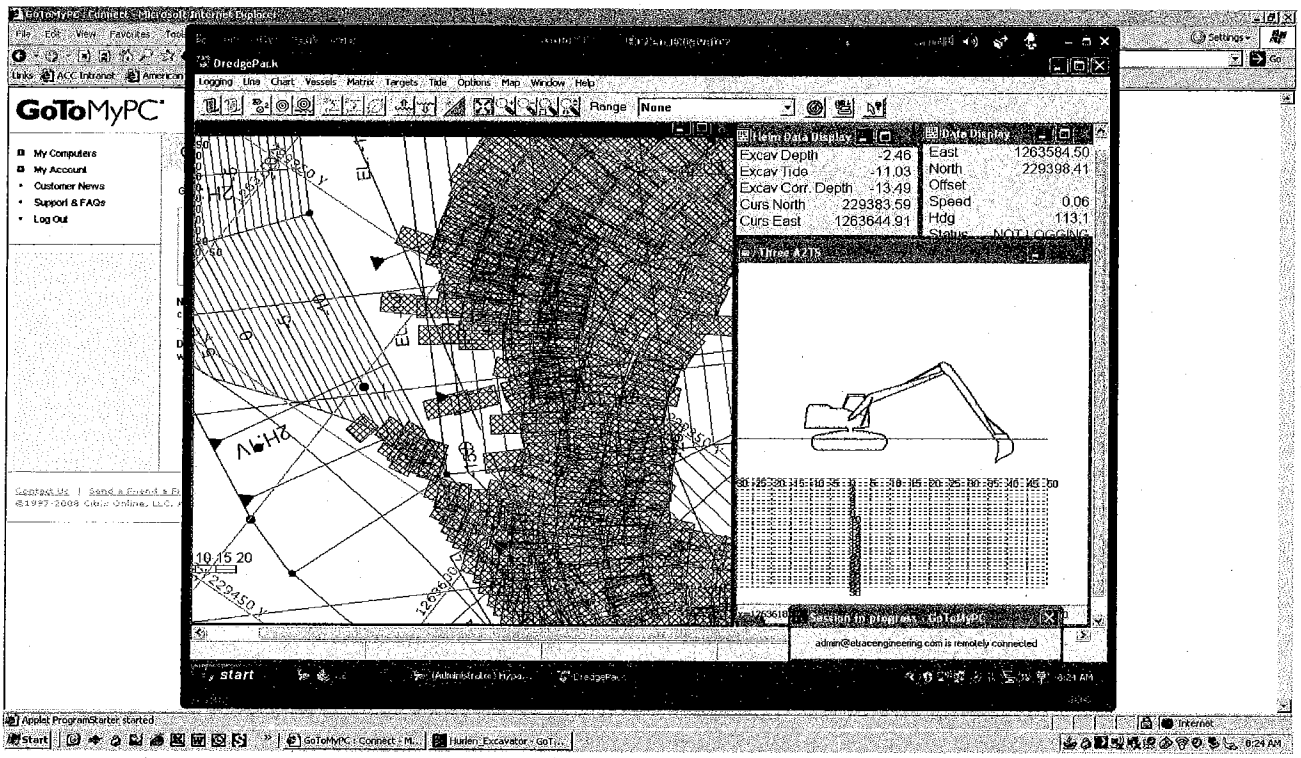
Personnel on Site
Greg A
Marty L
Keith C
Dustin S
Cody H

Equipment on Site
Pontoon 9310 3x 45
34 Barge Excavator
KP-2 material barge
ITB 166 material barge
work boat
work skiff
Tug Scanter

Temperature	Weather
	High winds SW

Notes
High winds. KP-2 up river to OLL load

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	.5		
Shift 34 & Material barge	1.5		
Remove concrete	2.5	Concrete chunks	132 TNS
Scow Change	1		


GoToMyPC
My Computers
My Account
Customer News
Support & FAQs
Log Out
DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Helm Data Display
Excav Depth -2.46
Excav Tide -11.03
Excav Corr. Depth -13.49
Curs North 229383.59
Curs East 1263644.91
Pile Display
East 1263584.50
North 229398.41
Offset
Speed 0.06
Hdg 113.1
Three A21k
Session in progress - GoToMyPC
admin@eluceengineering.com is remotely connected
start

C00190 C07

HURLEN CONSTRUCTION COMPANY

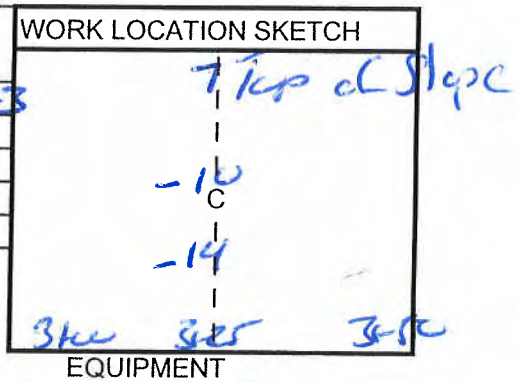
FOREMAN: _____ DATE: 1-07-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 29

WEATHER: Overcast / windy WIND: SW DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
3+00	3+50	3'	50'	50'	-14 MLLW
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND____ SILT____ ROCK___ MUD_____ OTHER Concrete Debris

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	4
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	2.5
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	2
DREDGE MAINTENANCE	
BUCKET REPAIR	
Line Barge	1

EQUIPMENT

DREDGE	REG	10	HRS
	ST		HRS
LOADER	REG	10	HRS
	ST		HRS
TUG	REG	10	HRS
	ST		HRS

LABOR

FOREMAN	10	HRS
CRANE OPERATOR	10	HRS
TUG OPERATOR	10	HRS
LOADER OPERATOR	10	HRS
PILEBUCK	10	HRS

BOW
6'2" PORT STARBOARD 10'0"

ITB 166
BARGE NAME

FREEBOARD	~~8'1"~~ 8'1"
DRAFT	~~3'11"~~ 3'3"

6'2" PORT STARBOARD 10'0"
STERN

BOW
4'0" PORT STARBOARD 6'8"

ITB 166
BARGE NAME

FREEBOARD	4'4"
DRAFT	7'0"

2'0" PORT STARBOARD 4'8"
STERN

859 (m)

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

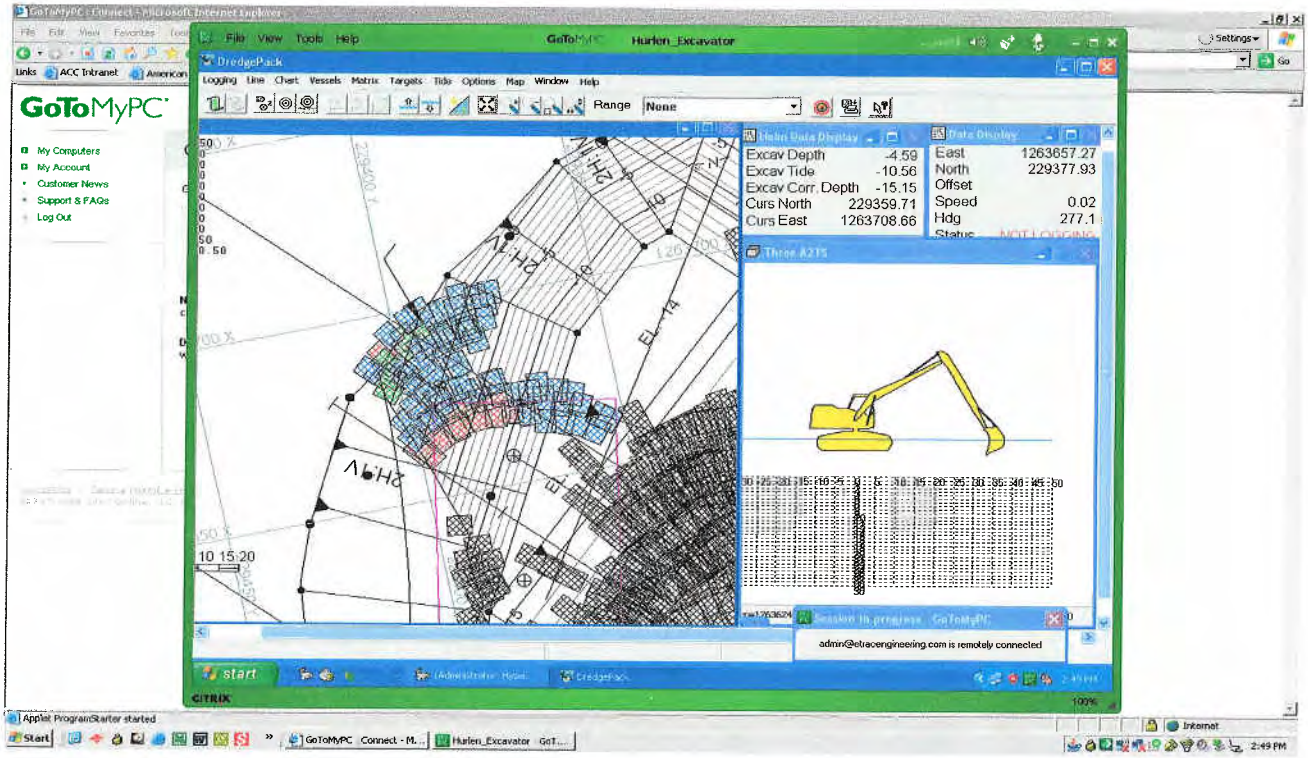
Personnel on Site
Greg A
Marty L
Keith C
Dustin S
Cody H

Equipment on Site
PanTay 9310 3cu yd bucket
34 Barge Cat excavator
ITB 166 material barge
Work boat
Work skiff
Tug Scrafter H
KP-1 material barge

Temperature	Weather

Note
Complaints on ITB 166 barge water run off with no S.H curtain. KP-1 arrived 3:30pm with 938 loader to start concrete.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	.5		
SL SL 34 Barge & Material barge	2.5		
Remove Concrete and Debris	4	Concrete debris	859 cy
Screw change	2		
line KP-1 material barge	1		

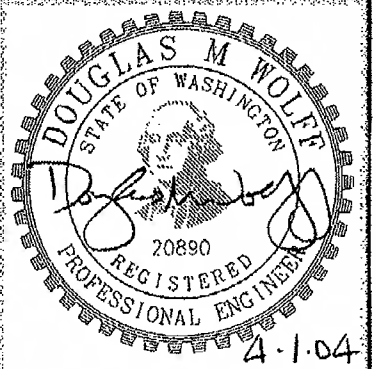

GoToMyPC
My Computers
My Account
Customer News
Support & FAQs
Log Out
File View Tools Help
Hurlen_Excavator
DredgePack
Range
None
Excav Depth -4.59
Excav Tide -10.56
Excav Corr. Depth -15.15
Curs North 229359.71
Curs East 1263708.66
East 1263657.27
North 229377.93
Offset
Speed 0.02
Hdg 277.1
admin@etraceengineering.com is remotely connected
start
CITRIX
Applet ProgramStarter started
Start
GoToMyPC Connect - M...
Hurlen_Excavator GoT...
Internet
2:49 PM

ITB/60 SERIES
DECK BARGE

DISPLACEMENT TABLE - SALT WATER

Average Draft	Displmnt	Average Draft	Displmnt	Average Draft	Displmnt	Average Draft	Displmnt
1'-0"	194.2	3'-11"	805.8	6'-10"	1,480.6	9'-9"	2,213.7
1'-1"	210.9	4'-0"	823.1	6'-11"	1,500.8	9'-10"	2,234.9
1'-2"	227.5	4'-1"	841.7	7'-0"	1,521.0	9'-11"	2,256.1
1'-3"	244.2	4'-2"	860.3	7'-1"	1,541.5	10'-0"	2,277.3
1'-4"	260.9	4'-3"	878.8	7'-2"	1,562.0	10'-1"	2,298.5
1'-5"	277.6	4'-4"	897.4	7'-3"	1,582.5	10'-2"	2,319.7
1'-6"	294.2	4'-5"	916.0	7'-4"	1,603.0	10'-3"	2,340.9
1'-7"	311.2	4'-6"	934.6	7'-5"	1,623.5	10'-4"	2,362.1
1'-8"	328.2	4'-7"	953.5	7'-6"	1,644.0	10'-5"	2,383.3
1'-9"	345.2	4'-8"	972.4	7'-7"	1,664.9	10'-6"	2,404.5
1'-10"	362.2	4'-9"	991.3	7'-8"	1,685.7	10'-7"	2,425.7
1'-11"	379.2	4'-10"	1,010.2	7'-9"	1,706.6	10'-8"	2,446.9
2'-0"	396.2	4'-11"	1,029.1	7'-10"	1,727.4	10'-9"	2,468.1
2'-1"	413.5	5'-0"	1,048.0	7'-11"	1,748.3	10'-10"	2,489.3
2'-2"	430.8	5'-1"	1,067.2	8'-0"	1,769.1	10'-11"	2,510.5
2'-3"	448.1	5'-2"	1,086.5	8'-1"	1,790.2	11'-0"	2,531.7
2'-4"	465.4	5'-3"	1,105.7	8'-2"	1,811.2	11'-1"	2,552.9
2'-5"	482.7	5'-4"	1,124.9	8'-3"	1,832.3	11'-2"	2,574.1
2'-6"	500.0	5'-5"	1,144.2	8'-4"	1,853.3	11'-3"	2,595.3
2'-7"	517.6	5'-6"	1,163.4	8'-5"	1,874.5	11'-4"	2,616.5
2'-8"	535.3	5'-7"	1,183.0	8'-6"	1,895.7		
2'-9"	552.9	5'-8"	1,202.5	8'-7"	1,916.9		
2'-10"	570.5	5'-9"	1,222.1	8'-8"	1,938.1		
2'-11"	588.2	5'-10"	1,241.6	8'-9"	1,959.3		
3'-0"	605.8	5'-11"	1,261.2	8'-10"	1,980.5		
3'-1"	624.7	6'-0"	1,280.7	8'-11"	2,001.7		
3'-2"	643.5	6'-1"	1,300.6	9'-0"	2,022.9		
3'-3"	662.4	6'-2"	1,320.4	9'-1"	2,044.1		
3'-4"	681.3	6'-3"	1,340.3	9'-2"	2,065.3		
3'-5"	700.2	6'-4"	1,360.1	9'-3"	2,086.5		
3'-6"	719.0	6'-5"	1,380.0	9'-4"	2,107.7		
3'-7"	736.4	6'-6"	1,399.8	9'-5"	2,128.9		
3'-8"	753.7	6'-7"	1,420.0	9'-6"	2,150.1		
3'-9"	771.1	6'-8"	1,440.2	9'-7"	2,171.3		
3'-10"	788.4	6'-9"	1,460.4	9'-8"	2,192.5		

Weight given in short tons. Values based on dimensions of 159'x50'x11.33' with 3' headlogs and 20' straight rake each end.



4-1-04

EXPIRES 7/12/04

C00190C07

HURLEN CONSTRUCTION COMPANY

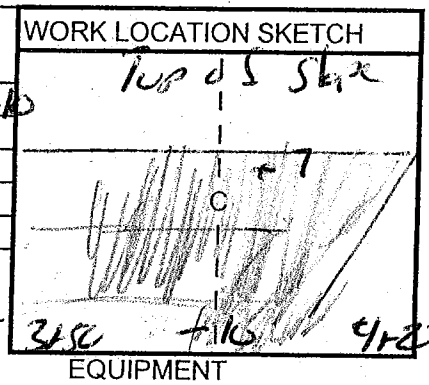
FOREMAN: DATE: 1-08-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 29

WEATHER: Rainy / Snow WIND: SW DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
3+50	4+25	4	75'	50'	+3 to -10
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND____ SILT____ ROCK____ MUD ✓ OTHER Concrete Debris

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	8
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	2
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	1
DREDGE MAINTENANCE	
BUCKET REPAIR	

EQUIPMENT

DREDGE	REG	12 HRS
	ST	HRS
LOADER	REG	12 HRS
	ST	HRS
TUG	REG	10 HRS
	ST	HRS

LABOR

FOREMAN	12 HRS
CRANE OPERATOR	12 HRS
TUG OPERATOR	10 HRS
LOADER OPERATOR	12 HRS
PILEBUCK	12 HRS

BOW
10'0" PORT STARBOARD 10'0"

KP-1
BARGE NAME

FREEBOARD 10'0"
DRAFT 2'0"

10'0" PORT STARBOARD 10'0"
STERN

BOW
8'0" PORT STARBOARD 8'0"

KP-1
BARGE NAME

FREEBOARD 7'6"
DRAFT 4'6"

7'0" PORT STARBOARD 7'0"
STERN

549 cys

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

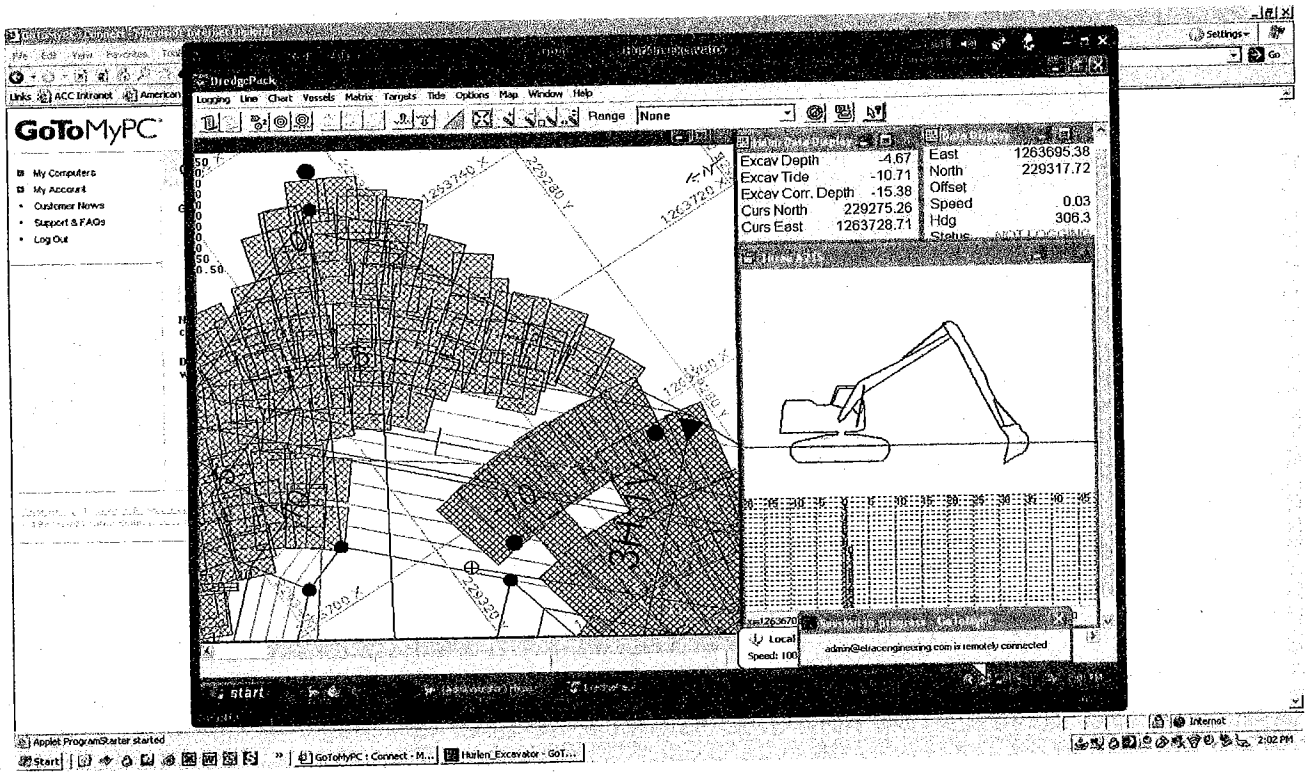
Personnel on Site
Corey A
Marty L
Keith C
Dustin S
Cody H

Equipment on Site
Bantry 9310 3cu yd bucket
34 Barge Ecko excavator
KP-1 material barge
ITB material barge
work boat
work skiff
Tug Tenacity H

Temperature	Weather
35° to 45°	overcast, light rain

Note
ITB 166 up river to dock load.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up shaft rig	1.5		
shift barge	.5		
Remove Concrete debris	8	Concrete/mud	549 cys
Shift rig off shore	.5		
Sh. St KP-1 to Pantry	.5		


DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Excav Depth -4.67
Excav Tide -10.71
Excav Corr. Depth -15.38
Curs North 229275.26
Curs East 1263728.71
East 1263695.38
North 229317.72
Offset
Speed 0.03
Hdg 306.3
admin@elracengineering.com is remotely connected
Speed: 100
GoToMyPC
My Computers
My Account
Customer News
Support & FAQs
Log Out
Start
Applet ProgramStarter started
GoToMyPC : Connect - M...
Harlen_Excavator - GoT...
2:02 PM

E00190 C07

HURLEN CONSTRUCTION COMPANY

FOREMAN:

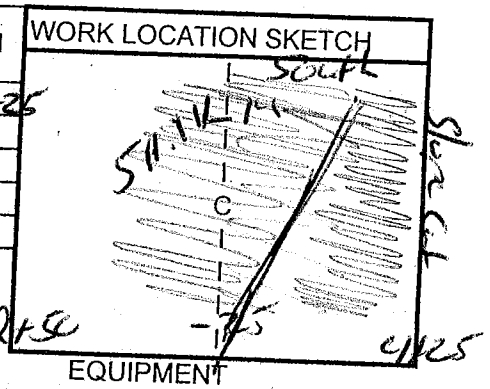
DATE: 1-09-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 30

WEATHER: Overcast windy WIND: SW DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
2+30	4+25	4'	80'	50'	-44 to -25
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND____ SILT____ ROCK___ MUD ✓ OTHER Concrete Debri

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	6
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	3
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	.5
DREDGE MAINTENANCE	3
BUCKET REPAIR	3

EQUIPMENT

DREDGE	REG	12 HRS
	ST	HRS
LOADER	REG	HRS
	ST	HRS
TUG	REG	10 HRS
	ST	HRS

LABOR

FOREMAN	12 HRS
CRANE OPERATOR	12 HRS
TUG OPERATOR	10 HRS
LOADER OPERATOR	12 HRS
PILEBUCK	12 HRS

BOW
8'0" PORT STARBOARD 8'0"

KP-1
BARGE NAME

FREEBOARD	7'6"
DRAFT	4'6"

7'0" PORT STARBOARD 7'0"
STERN

BOW
4'10" PORT STARBOARD 5'0"

KP-1
BARGE NAME

FREEBOARD	4'11"
DRAFT	7'1"

2'10" PORT STARBOARD 3'0"
STERN

665 in

519 cu yd

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

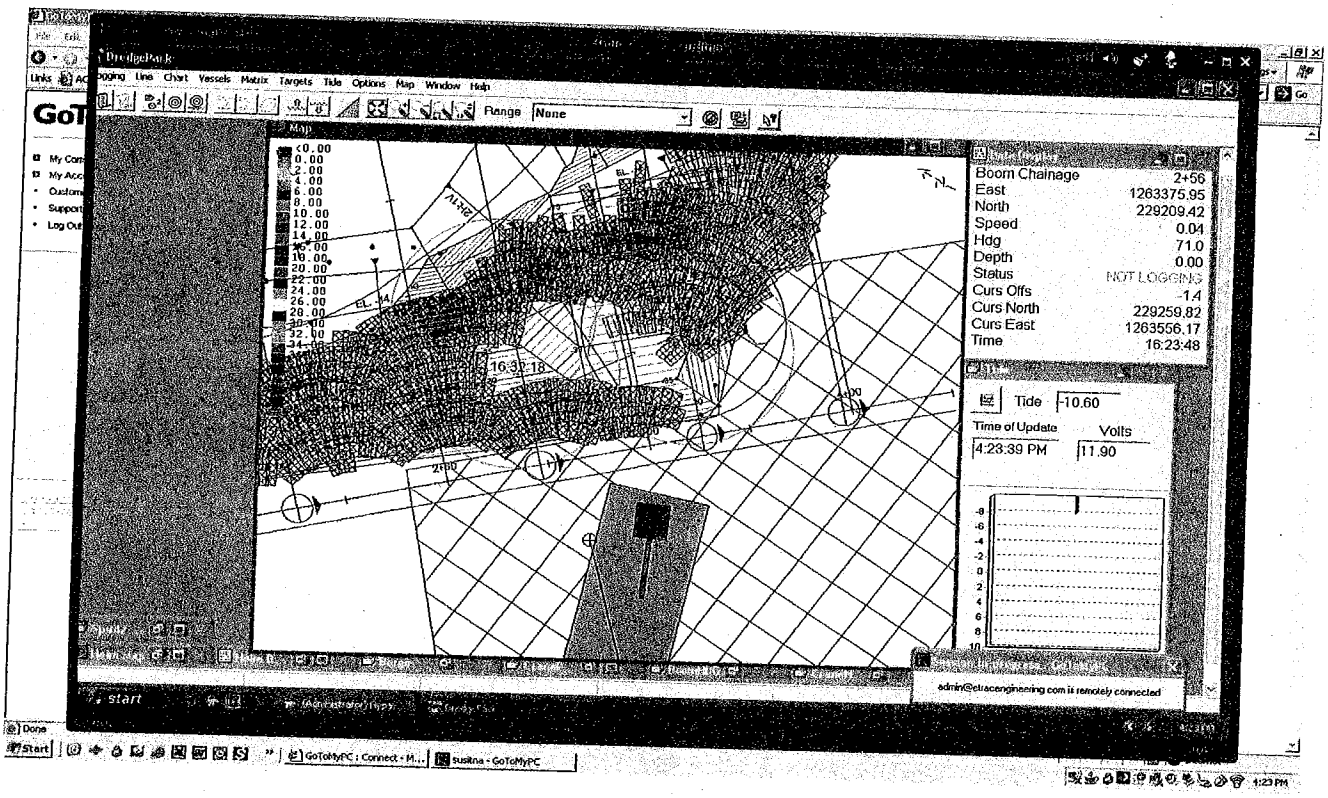
Personnel on Site
Greg A
Marty L
Keith C
Dustin S
Cody H

Equipment on Site
Bantry 9310 3cu yd bucket
34 Barge Gov excavator
KP-1 material barge
work boat
work skiff
Tug Semiahmoo
Survey Boat

Temperature	Weather
39° to 45°	SW wind

Note
Broke closure line on bucket
Shifted rig out, for full
Survey.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up shift rig	3.5		
Dredge	5	Sandy Mud	519 cu yds
Bucket repair / closure line	3		
Scow shift	.5		


Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Boom Chainage 2+56
East 1263375.95
North 229209.42
Speed 0.04
Hdg 71.0
Depth 0.00
Status NOT LOGGING
Curs Offs -1.4
Curs North 229259.82
Curs East 1263556.17
Time 16:23:48
Tide -10.60
Time of Update 4:23:39 PM
Volts 11.90
admin@etraceengineering.com is remotely connected
Start
GoToMyPC : Connect - H...
susitna - GoToMyPC
1:23 PM

C00190C07

HURLEN CONSTRUCTION COMPANY

FOREMAN:

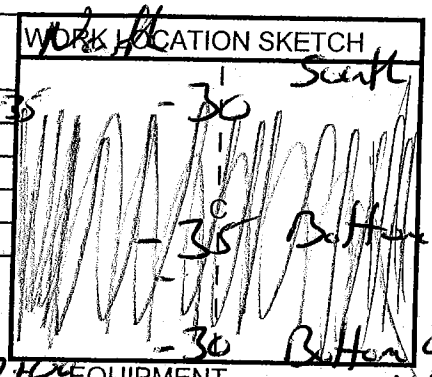
DATE: 1-10-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 31

WEATHER: Rainy WIND: SW DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
2+00	4+20	1' & 2'	220'	20'	-30 & -35
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND____ SILT__✓__ ROCK___ MUD__✓__ OTHER_____

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	6
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	2.5
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	1.5
DREDGE MAINTENANCE	
BUCKET REPAIR	
Tore Barge fabric strap	1

EQUIPMENT

DREDGE	REG	10 HRS
	ST	HRS
LOADER	REG	HRS
	ST	HRS
TUG	REG	10 HRS
	ST	HRS

LABOR

FOREMAN	10 HRS
CRANE OPERATOR	10 HRS
TUG OPERATOR	10 HRS
LOADER OPERATOR	10 HRS
PILEBUCK	10 HRS

BOW
4'10" PORT STARBOARD 5'0"

KP-1
BARGE NAME

FREEBOARD	4'11"
DRAFT	7'1"

2'10" PORT STARBOARD 3'0"
STERN

BOW
2'4" PORT STARBOARD 2'7"

KP-1
BARGE NAME

FREEBOARD	2'10"
DRAFT	9'2"

3'1" PORT STARBOARD 3'9"
STERN

571 cys
446 cuyds

HURLEN CONSTRUCTION COMPANY

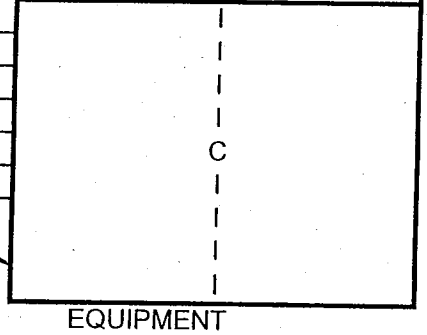
FOREMAN: _____ DATE: 1-10-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # _____

WEATHER: _____ WIND: _____ DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND____ SILT____ ROCK___ MUD_____ OTHER Gravel Debris

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	
DREDGE MAINTENANCE	
BUCKET REPAIR	

EQUIPMENT

DREDGE	REG	HRS
	ST	HRS
LOADER	REG	HRS
	ST	HRS
TUG	REG	HRS
	ST	HRS

LABOR

FOREMAN	HRS
CRANE OPERATOR	HRS
TUG OPERATOR	HRS
LOADER OPERATOR	HRS
PILEBUCK	HRS

9'0" PORT BOW STARBOARD 9'0"

KP-2
BARGE NAME

FREEBOARD	9'0"
DRAFT	3'0"

9'0" PORT STERN STARBOARD 9'0"

5'9" PORT BOW STARBOARD 5'9"

KP-2
BARGE NAME

FREEBOARD	7'10"
DRAFT	4'2"

10'0" PORT STERN STARBOARD 10'0"

282 m

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

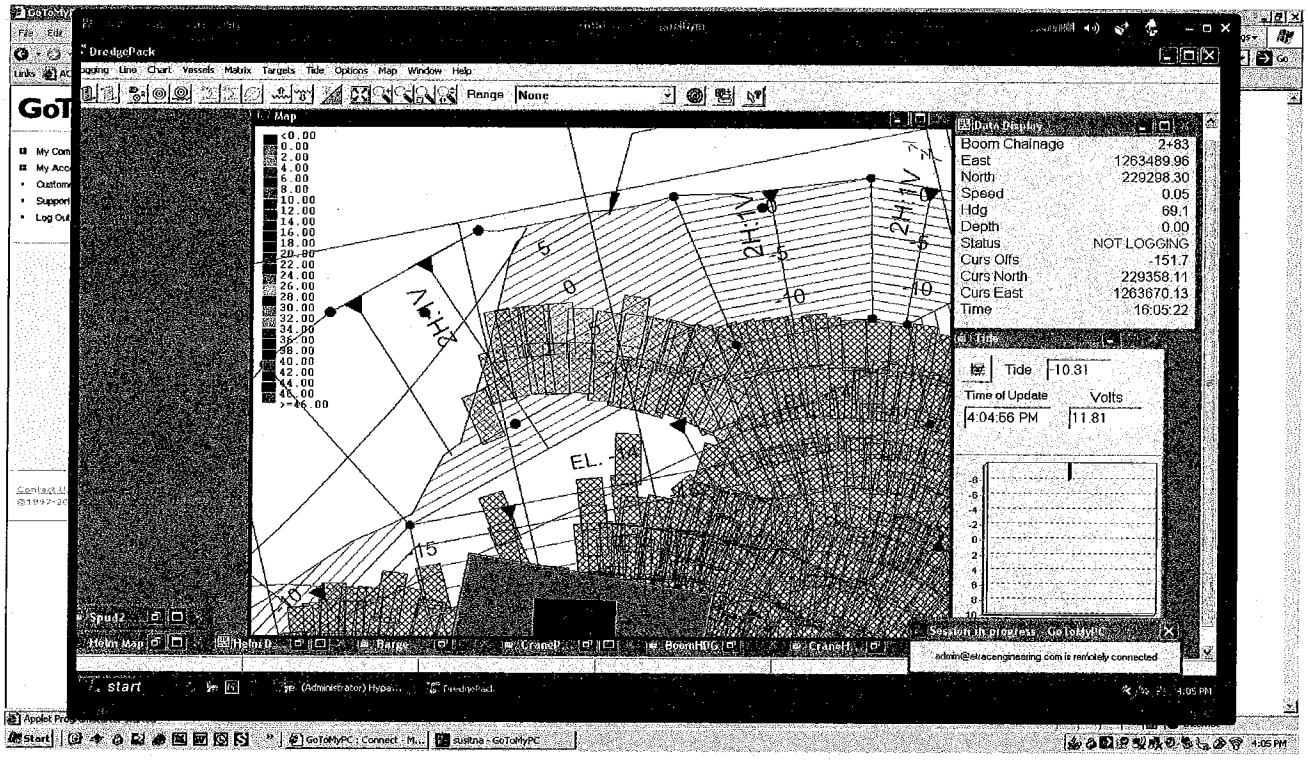
Personnel on Site
Greg A
Marty L
Keith C
Dustin S
Cody H

Equipment on Site
PanTay 9310 3cu yd bucket
34 Barge 200 excavator
KP-1 material barge
KP-2 material barge
work boat
work skiff
Tug Jennifer H

Temperature	Weather
42° to 46°	Rainy SSE 17mph

Work
KP-1 up river, KP-2 along side sig silicoam. Water Quality crew up shut down below, to high

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up skiff rig	2.5		
Dredge	4	Sandy Mud	446 cu yds
Scow change	1.5		
Remove Concrete	2	Concrete Debris	282 Tons
line barge	1		


DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Data Display
Boom Chainage 2+83
East 1263489.96
North 229298.30
Speed 0.05
Hdg 69.1
Depth 0.00
Status NOT LOGGING
Curs Offs -151.7
Curs North 229358.11
Curs East 1263670.13
Time 16:05:22
Tide
Tide -10.31
Time of Update 4:04:66 PM
Volts 11.81
Session in progress - GoToMyPC
admin@elvaengineering.com is remotely connected
start
4:05 PM

C00190C07

HURLEN CONSTRUCTION COMPANY

FOREMAN:

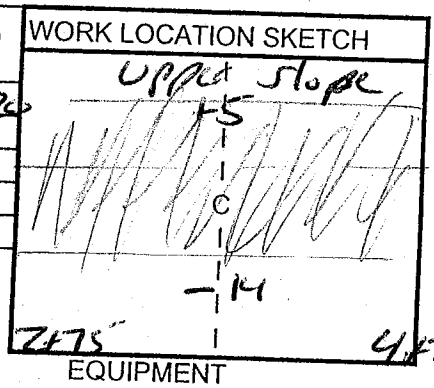
DATE: 1-11-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 32

WEATHER: Overcast & Sunny WIND: SW 4-7 knots DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
2275	4+20	2' in 4'	110'	50'	+5 to -20
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND____ SILT____ ROCK___ MUD ✓ OTHER Cyprus Debris

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	5
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	2
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	1
DREDGE MAINTENANCE	
BUCKET REPAIR	
Slow Down Water Qu	3

EQUIPMENT

DREDGE	REG	12 HRS
	ST	HRS
LOADER	REG	HRS
	ST	HRS
TUG	REG	10 HRS
	ST	HRS

LABOR

FOREMAN	12 HRS
CRANE OPERATOR	12 HRS
TUG OPERATOR	12 HRS
LOADER OPERATOR	12 HRS
PILEBUCK	12 HRS

BOW
5' 0" PORT STARBOARD 5' 0"

KP-2
BARGE NAME

FREEBOARD	7' 10"
DRAFT	4' 2"

10' 0" PORT STARBOARD 10' 0"
STERN

BOW
6' 0" PORT STARBOARD 6' 0"

KP-2
BARGE NAME

FREEBOARD	5' 9"
DRAFT	6' 3"

5' 6" PORT STARBOARD 5' 6"
STERN

94 cy
C21 cycle

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Marty L
Keith C
Dustin S
Cody H

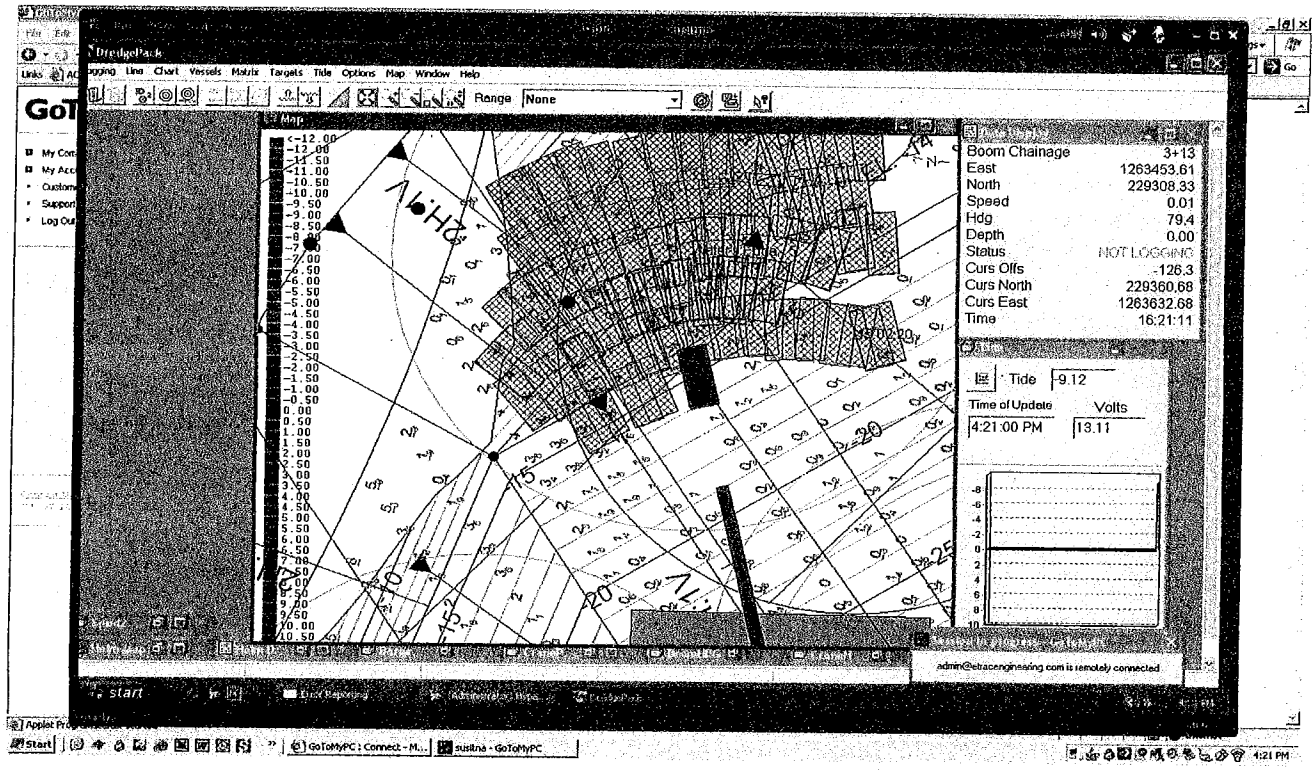
Equipment on Site
Bantry 9310 Jaw & bucket
24 Berg 200 excavator
KP-2 Material barge
work boat
work skiff
Tug Semiahmoo H

Temperature	Weather
43° to 47°	Windy Sun

Note

Going over upper slope, where excavator was digging, King County. Lots of concrete debris still on slope. Water Quality high Slow, down and Stop digging.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up			
Shift rig			
Crew change			
Dredge			
Remove Concrete	2	Mud	
	3	Concrete Debris	421 cuyds
			200 lns


DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Boom Chainage 3+13
East 1263453.61
North 229308.33
Speed 0.01
Hdg 79.4
Depth 0.00
Status NOT LOGGING
Curs Offs -126.3
Curs North 229360.68
Curs East 1263632.68
Time 16:21:11
Tide -9.12
Time of Update
Volts
4:21:00 PM
13.11
admin@etracengineering.com is remotely connected
start
GoToMyPC : Connect - M...
susitna - GoToMyPC
4:21 PM

C00190C07

HURLEN CONSTRUCTION COMPANY

FOREMAN:

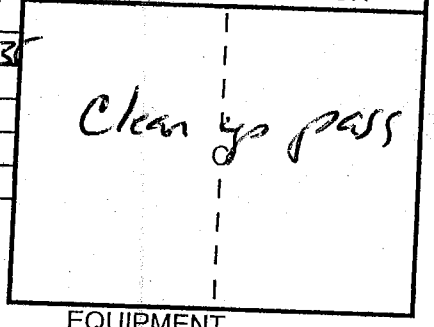
DATE 1-12-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 33

WEATHER: Sunny WIND: SW DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
2400	3450	1 & 3'	150'	80'	-15 & -3
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND____ SILT____ ROCK___ MUD ✓ OTHER concrete Debri

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	4
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	4
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	1
DREDGE MAINTENANCE	1
BUCKET REPAIR	

EQUIPMENT

DREDGE	REG	8 HRS
	ST	HRS
LOADER	REG	8 HRS
	ST	HRS
TUG	REG	8 HRS
	ST	HRS

LABOR

FOREMAN	10 HRS
CRANE OPERATOR	10 HRS
TUG OPERATOR	10 HRS
LOADER OPERATOR	10 HRS
PILEBUCK	10 HRS

6'0" BOW
6'0" PORT STARBOARD 6'0"

KP-2
BARGE NAME

FREEBOARD 5'9"
DRAFT 6'3"

5'6" PORT STARBOARD 5'6"
STERN

4'6" BOW
4'6" PORT STARBOARD 5'6"

KP-2
BARGE NAME

FREEBOARD 3'6"
DRAFT 3'6"

1'6" PORT STARBOARD 2'6"
STERN

605 ton

424 cu yd

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

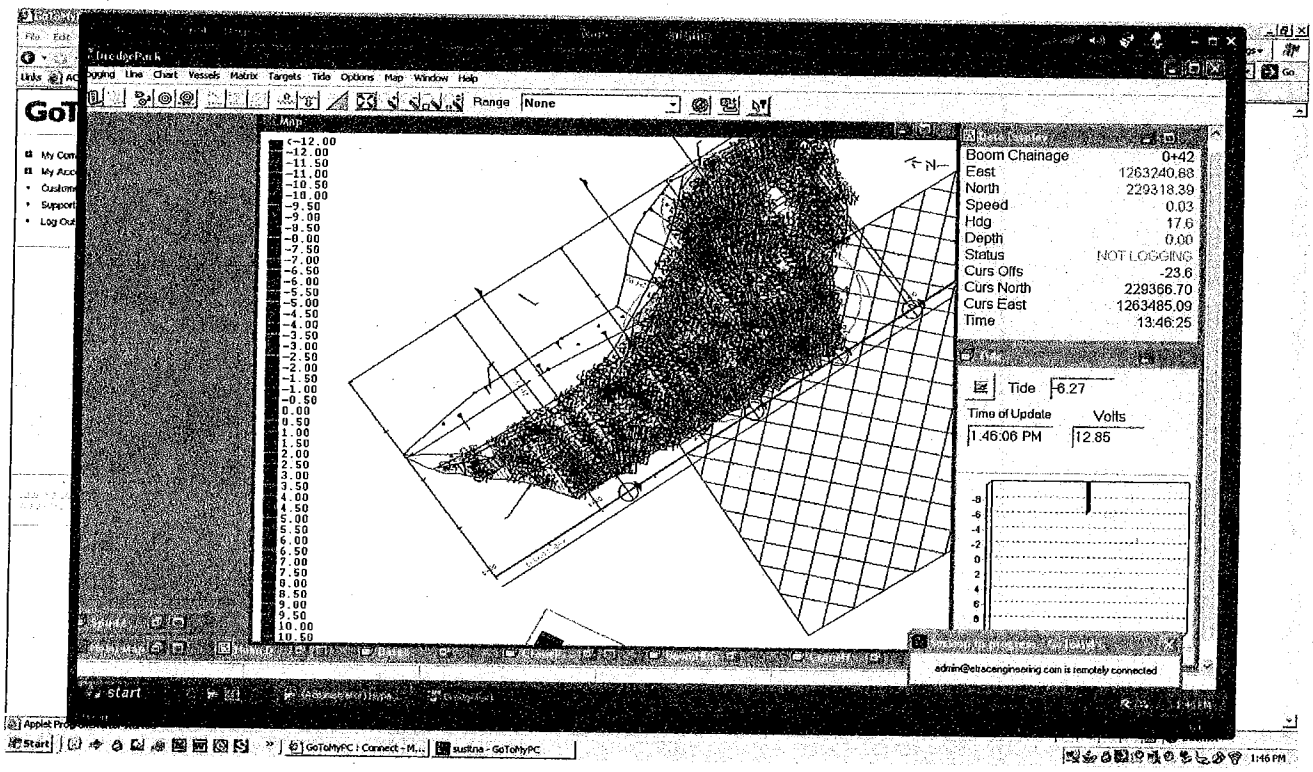
Personnel on Site
Greg A
Marty L
Keith C
Dustin S
Cody H

Equipment on Site
Pontoon 930 3cu yd bucket
34 Barge 320 excavator
KP-2 material barge
work boat
work skiff
Tug Jennifer H

Temperature	Weather
42° to 46°	SW windy

Note
Windy, water Quality ok.
0.1 sheen on water.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up Skiff etc	4		
Spot Dredge clean up pass	4	Sand/gravel Debris	424 cu yds


Range None
Map
Boom Chainage 0+42
East 1263240.88
North 229318.39
Speed 0.03
Hdg 17.6
Depth 0.00
Status NOT LOGGING
Curs Offs -23.6
Curs North 229366.70
Curs East 1263485.09
Time 13:46:25
Tide 6.27
Time of Update 1:46:06 PM
Volts 12.85
admin@eltaceengineering.com is remotely connected

C00190C07

First day of Base Backfill

HURLEN CONSTRUCTION COMPANY

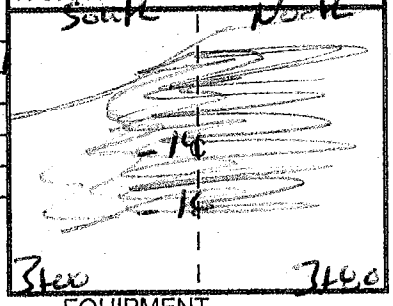
FOREMAN: _____ DATE: 1-17-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 34

WEATHER: Overcast WIND: Light SW

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
3+00	3+80	10'	80'	50'	+2 to -4
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE: ✓ HABITAT MIX: _____ CONTINGENCY: _____

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	8
HABITAT MIX PLACEMENT	
CONTINGENCY PLACEMENT	
RIP-RAP PLACEMENT	
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	
CAPPING MAINTENANCE	2
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	8	HRS
	ST	2	HRS
LOADER	REG		HRS
	ST		HRS
TUG	REG		HRS
	ST		HRS

LABOR

FOREMAN	12	HRS
CRANE OPERATOR	12	HRS
TUG OPERATOR	10	HRS
LOADER OPERATOR	12	HRS
PILEBUCK	12	HRS

BOW
2'6" PORT STARBOARD 2'6"

KP-1
BARGE NAME

FREEBOARD 2'0"
DRAFT 10'0"

1'6" PORT STARBOARD 1'6"
STERN

BOW
10'0" PORT STARBOARD 10'0"

KP-1
BARGE NAME

FREEBOARD 10'0"
DRAFT 2'0"

10'0" PORT STARBOARD 10'0"
STERN

206 tons Sand

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

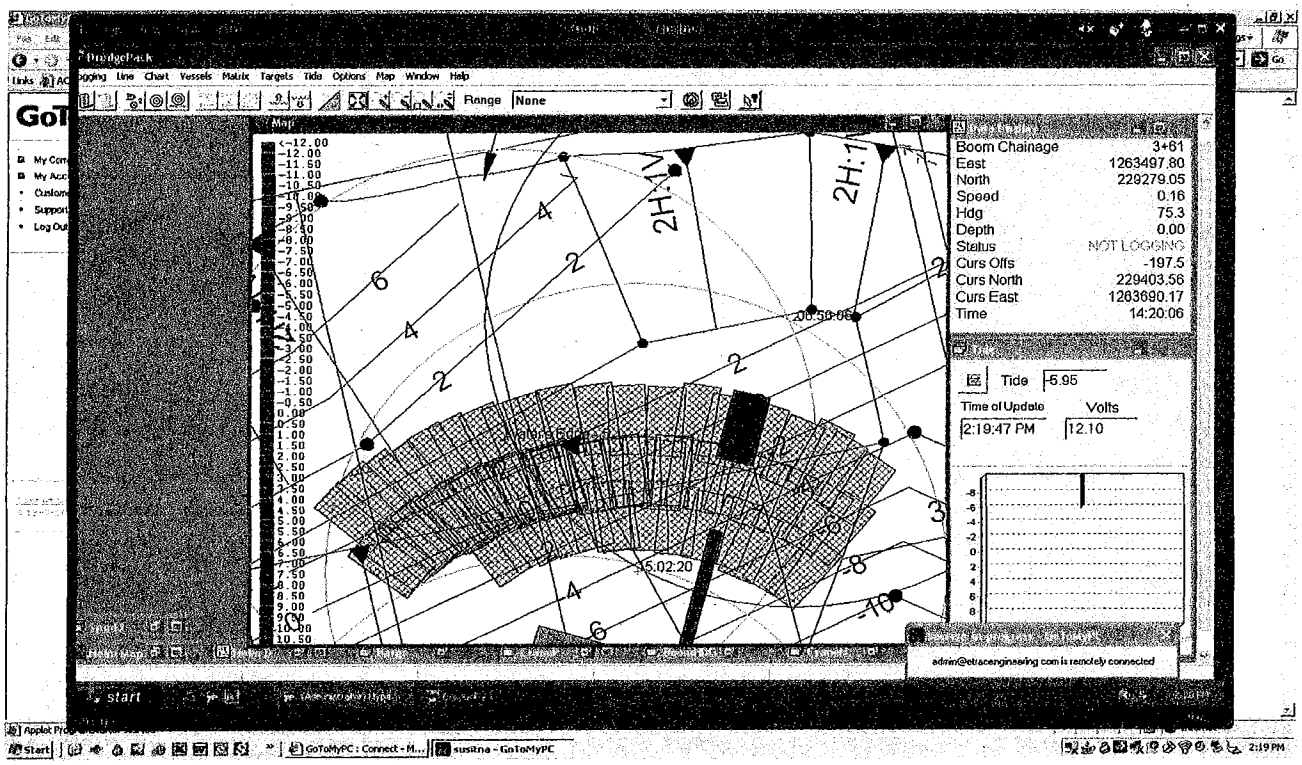
Personnel on Site
Greg B
Matt L
Keith C
Dustin S
Cody H

Equipment on Site
Komatsu 6310
Excavator Skip buckets
KP-1 Material Barge
work boat
work skiff
Turbidity Sensor H

Temperature	Weather
35° - 40°	overcast

Note
High turbidity slow down and stopped to let settle down.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	1.5		
Set-up rip	1		
Back fill	8	Sand	2016 tons
Shut downs / slow downs	2 hr		


DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Boom Chainage 3+61
East 1263497.80
North 229279.05
Speed 0.16
Hdg 75.3
Depth 0.00
Status NOT LOGGING
Curs Offs -197.5
Curs North 229403.56
Curs East 1263690.17
Time 14:20:06
Tide -6.95
Time of Update
2:19:47 PM
Volts
12.10
2H:1V
2H:1V
admin@etraceengineering.com is remotely connected
start
GoToMyPC : Connect - M...
susana - GoToMyPC
2:19 PM

C00190C07 Base Backfill 2nd day

HURLEN CONSTRUCTION COMPANY

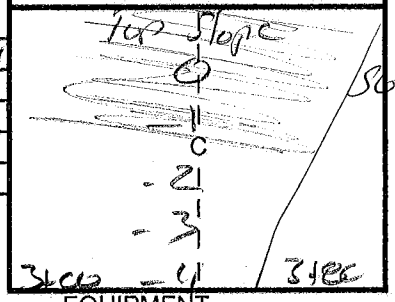
FOREMAN: _____ Friday DATE: 1-18-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 35

WEATHER: Cloudy WIND: Light SW

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
3+00	3+80	4'	40'	50'	0 - 4
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE: ✓ HABITAT MIX: _____ CONTINGENCY: _____

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	3
HABITAT MIX PLACEMENT	
CONTINGENCY PLACEMENT	
RIP-RAP PLACEMENT	
MOB./DEMOB KP-2	6
MOVING (LOCATION/ANCHORS)	1
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	1
CAPPING MAINTENANCE	
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	12 HRS
	ST	HRS
LOADER	REG	12 HRS
	ST	HRS
TUG	REG	12 HRS
	ST	HRS

LABOR

FOREMAN	12 HRS
CRANE OPERATOR	12 HRS
TUG OPERATOR	12 HRS
LOADER OPERATOR	12 HRS
PILEBUCK	12 HRS

BOW
8'6" PORT STARBOARD 2'6"

KP-1
BARGE NAME

FREEBOARD 2' 1/2"
DRAFT 9' 11 1/2"

1'7" PORT STARBOARD 1'7"
STERN

2000 tns Sand Deposit

BOW
6'6" PORT STARBOARD 6'6"

KP-1
BARGE NAME

FREEBOARD 5' 3"
DRAFT 6' 9"

4'6" PORT STARBOARD 4'6"
STERN

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Corey A
Marty L
Keith C
Dustin S
Cody H

Equipment on Site
Pontoon 9310
Crane Skip box's
KP-1 material barge
950 loader
work boat
work skiff
Tug Jenny H

Temperature	Weather
40° & 43°	Cloudy light SW

Water Quality went out at about 3:30pm, off loaded 925 tons.

Description of Work Performed	Time	Type of Material Removed	Quanity
Clean up KP-2	6		
Start up Skiff	1		
Place Sand Cap	3	Capping Sand	925 tons

20-02-02 C00190C07 Base Backfill 3rd Day

HURLEN CONSTRUCTION COMPANY

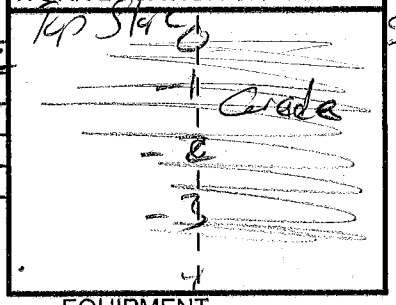
FOREMAN: _____ Monday DATE: 1-21-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 36

WEATHER: Sunny Cold WIND: light SW

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
2+50	4+20	8'	130'	50'	12" 2
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE: ✓ HABITAT MIX: _____ CONTINGENCY: _____

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	6.5
HABITAT MIX PLACEMENT	
CONTINGENCY PLACEMENT	
RIP-RAP PLACEMENT	
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1.5
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	6
CAPPING MAINTENANCE	
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	12 HRS
	ST	HRS
LOADER	REG	12 HRS
	ST	HRS
TUG	REG	8 HRS
	ST	HRS

LABOR

FOREMAN	12 HRS
CRANE OPERATOR	12 HRS
TUG OPERATOR	8 HRS
LOADER OPERATOR	12 HRS
PILEBUCK	12 HRS

BOW
6'0" PORT STARBOARD 6'0"

KP-1
BARGE NAME

FREEBOARD 5'3"
DRAFT 6'9"

4'6" PORT STARBOARD 4'6"
STERN

BOW
10'0" PORT STARBOARD 10'0"

KP-1
BARGE NAME

FREEBOARD 10'0"
DRAFT 2'0"

10'0" PORT STARBOARD 10'0"
STERN

Daily Contractor Quality Control Report

Contract No: C00190C07

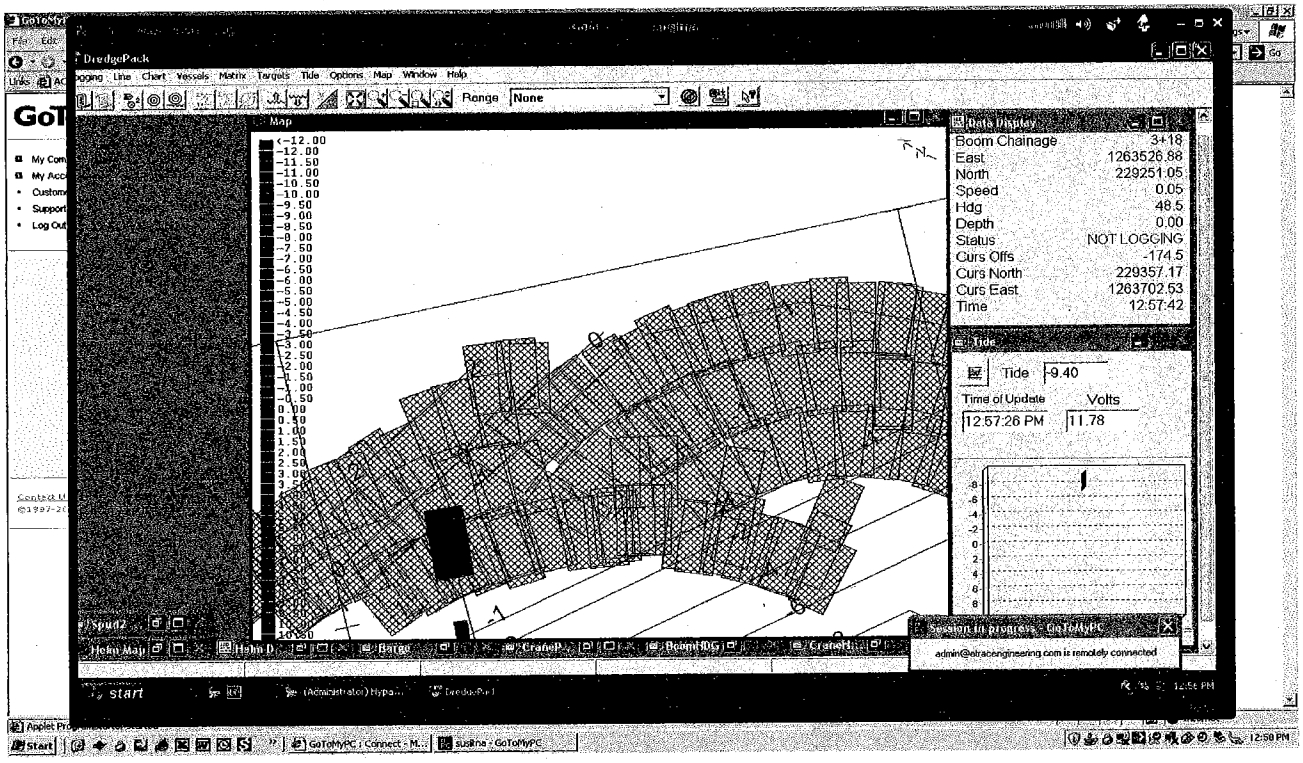
American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Marty L
Keith C
Dustin S
Cody H

Equipment on Site
Penisy 9310 6 cu yd bkts
938F loader
KP-1 material barge
work boat
work skiff
Tug Seneca II

Temperature	Weather
29° to 35°	Sunny light SW/calm

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	.5		
Shift aug	1		
Cap Sand	4.5	Sand	1125 cys


DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Data Display
Boom Chainage 3+18
East 1263526.88
North 229251.05
Speed 0.05
Hdg 48.5
Depth 0.00
Status NOT LOGGING
Curs Offs -174.5
Curs North 229357.17
Curs East 1263702.53
Time 12:57:42
Tide
Tide -9.40
Time of Update 12:57:26 PM
Volts 11.78
Section in progress - GoToMyPC
admin@elraceengineering.com is remotely connected
start
12:58 PM

C00190C07 "Base Backfill"

HURLEN CONSTRUCTION COMPANY

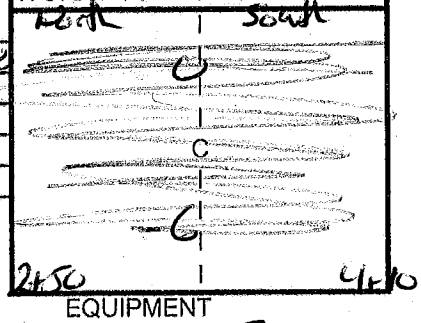
FOREMAN: _____ DATE: 1-22-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 37

WEATHER: Sunny WIND: Light N

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
2+50	4+10	8	100'	50'	0 - 2
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE: / HABITAT MIX: _____ CONTINGENCY: _____

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	8
HABITAT MIX PLACEMENT	
CONTINGENCY PLACEMENT	
RIP-RAP PLACEMENT	
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1.5
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	1.5
CAPPING MAINTENANCE	
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	12 HRS
	ST	HRS
LOADER	REG	12 HRS
	ST	HRS
TUG	REG	12 HRS
	ST	HRS

LABOR

FOREMAN	12 HRS
CRANE OPERATOR	12 HRS
TUG OPERATOR	12 HRS
LOADER OPERATOR	12 HRS
PILEBUCK	12 HRS

BOW
1' 8" PORT STARBOARD 1' 8"

KP-2
BARGE NAME

FREEBOARD 1' 6"
DRAFT 10' 6"

1' 4" PORT STARBOARD 1' 4"
STERN

BOW
9' 0" PORT STARBOARD 9' 0"

KP-2
BARGE NAME

FREEBOARD 9' 0"
DRAFT 3' 0"

9' 0" PORT STARBOARD 9' 0"
STERN

2082 ins

C00190C07 Backfill "Base"

HURLEN CONSTRUCTION COMPANY

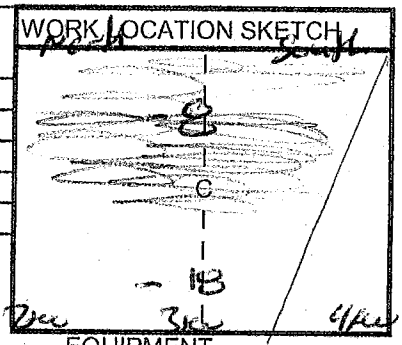
FOREMAN: _____ DATE: 1-23-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 38

WEATHER: Sunny Cold WIND: Light N

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
4+00	2+00	10'	50'	50'	8"
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE: ✓ HABITAT MIX: _____ CONTINGENCY: _____

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	4.5
HABITAT MIX PLACEMENT	
CONTINGENCY PLACEMENT	
RIP-RAP PLACEMENT	
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	3
CAPPING MAINTENANCE	7.5
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	15	HRS
	ST		HRS
LOADER	REG	4.5	HRS
	ST		HRS
TUG	REG	15	HRS
	ST		HRS

LABOR

FOREMAN	15	HRS
CRANE OPERATOR	15	HRS
TUG OPERATOR	15	HRS
LOADER OPERATOR	15	HRS
PILEBUCK	15	HRS

BOW
2'0" PORT STARBOARD 2'0"

KP-1
BARGE NAME

FREEBOARD 1'10"
DRAFT 10'2"

1'8" PORT STARBOARD 1'9"
STERN

2070 Tons

BOW
10'0" PORT STARBOARD 10'0"

KP-1
BARGE NAME

FREEBOARD 10'0"
DRAFT 2'0"

10'0" PORT STARBOARD 10'0"
STERN

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

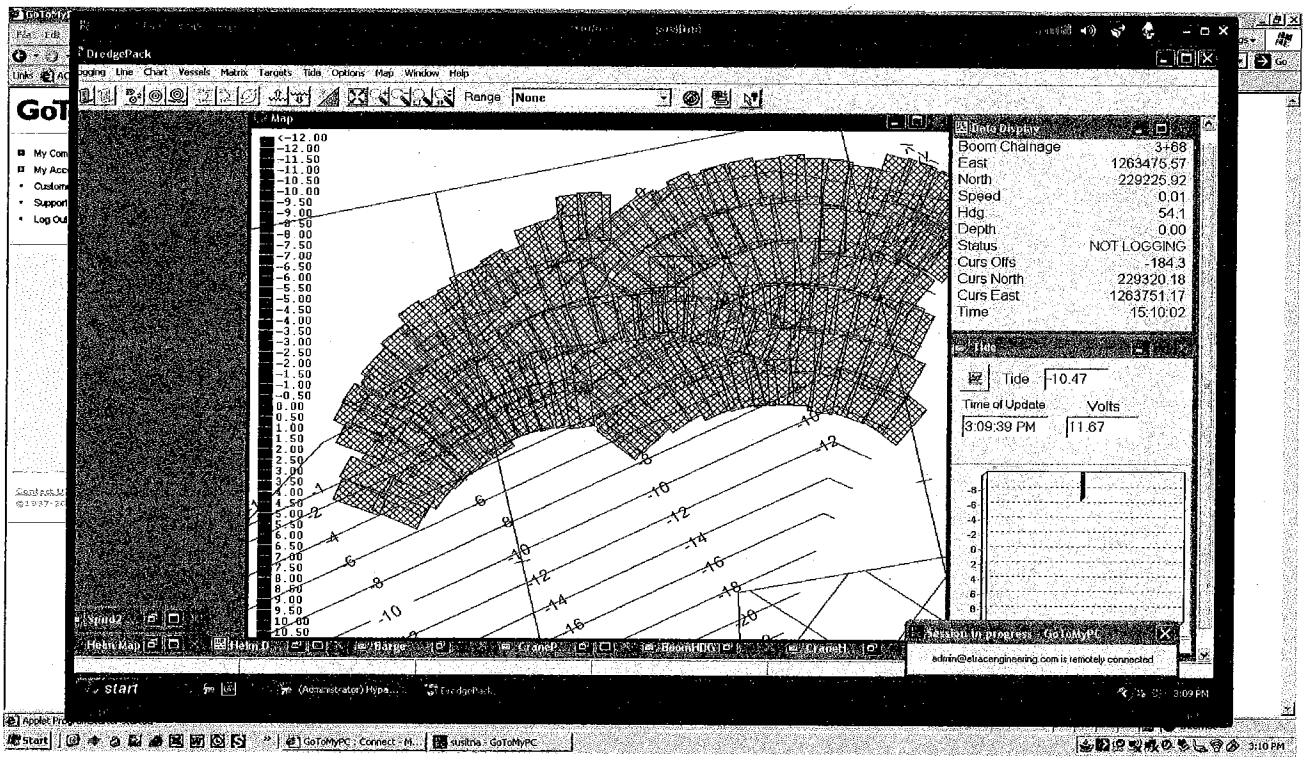
Personnel on Site
Greg A
Marty L
Keith C
Dustin S
Cody H

Equipment on Site
Bantay 9310 Excavator
KP-2 material barge
938F loader
Work boat
work skiff
Tug Jean-Lyn H

Temperature	Weather
20° to 30°	Sunny light N wind

Note
Turbidity went up at 9:42 am. Shutter rig shut down for 15 min KP-1 arrived 1300 hr. depart out 1500 hr.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	.5		
Cap Sand	2	Sand (Base)	200 2 TONS
Screw change	1		
Shutter rig	1.5		


DredgePack
Range
None
Map
Data Display
Boom Chainage 3+68
East 1263475.57
North 229225.92
Speed 0.01
Hdg 54.1
Depth 0.00
Status NOT LOGGING
Curs Offs -184.3
Curs North 229320.18
Curs East 1263751.17
Time 15:10:02
Tide -10.47
Time of Update
3:09:39 PM
Volts
11.67
admin@elracengineering.com is remotely connected
start
3:09 PM
3:10 PM

Daily Contractor Quality Control Report

Contract No: C00190C07

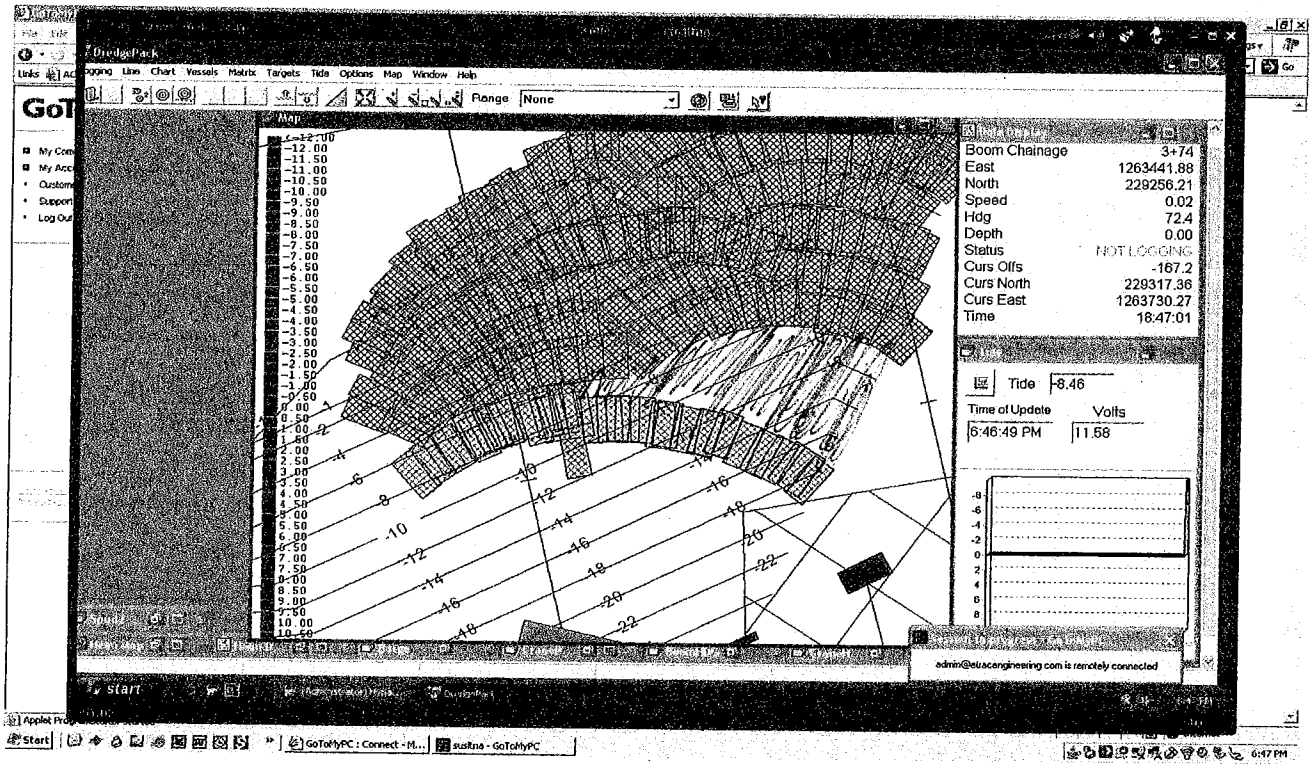
American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Marty L
Kurt C
Dustin S
Cody M

Equipment on Site
Pumper 9310 boom & bas
938F loader
KP-1 material barge
work boat
work skiff
Tug Kristen A

Temperature	Weather
30° to 33°	Sunny light W

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	.5		
Down Time loader tires	7.5		
Cap Sand	4	Sand cap	2070 Tons
CPS	1.5		
Snow change	1.5		


DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Boom Chainage 3+74
East 1263441.88
North 229256.21
Speed 0.02
Hdg 72.4
Depth 0.00
Status NOT LOGGING
Curs Offs -167.2
Curs North 229317.36
Curs East 1263730.27
Time 18:47:01
Tide -8.46
Time of Update
Volts
6:46:49 PM
11.58
admin@eliacengineering.com is remotely connected
start
Start
GoToMyPC : Connect - M...
susitna - GoToMyPC
6:47 PM

HURLEN CONSTRUCTION COMPANY

C00190 C07 Base Backfill

FOREMAN:

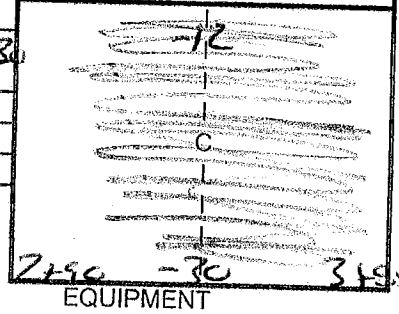
DATE: 1-24-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 39

WEATHER: Sunny Cold WIND: Light N wind

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
3+85	2+90	10'	100'	50'	-12 to -30
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE: ✓ HABITAT MIX:____ CONTINGENCY:____

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	7
HABITAT MIX PLACEMENT	
CONTINGENCY PLACEMENT	
RIP-RAP PLACEMENT	
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	
CAPPING MAINTENANCE	1.5
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	12	HRS
	ST		HRS
LOADER	REG	12	HRS
	ST		HRS
TUG	REG	12	HRS
	ST		HRS

LABOR

FOREMAN	13	HRS
CRANE OPERATOR	13	HRS
TUG OPERATOR	13	HRS
LOADER OPERATOR	13	HRS
PILEBUCK	13	HRS

BOW
1'6" PORT STARBOARD 1'6"

KP-2
BARGE NAME

FREEBOARD 1'7"
DRAFT 11'8"

1'6" PORT STARBOARD 1'6"
STERN

BOW
9'0" PORT STARBOARD 9'0"

KP-2
BARGE NAME

FREEBOARD 9'0"
DRAFT 3'0"

9'0" PORT STARBOARD 9'0"
STERN

195 CYS

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

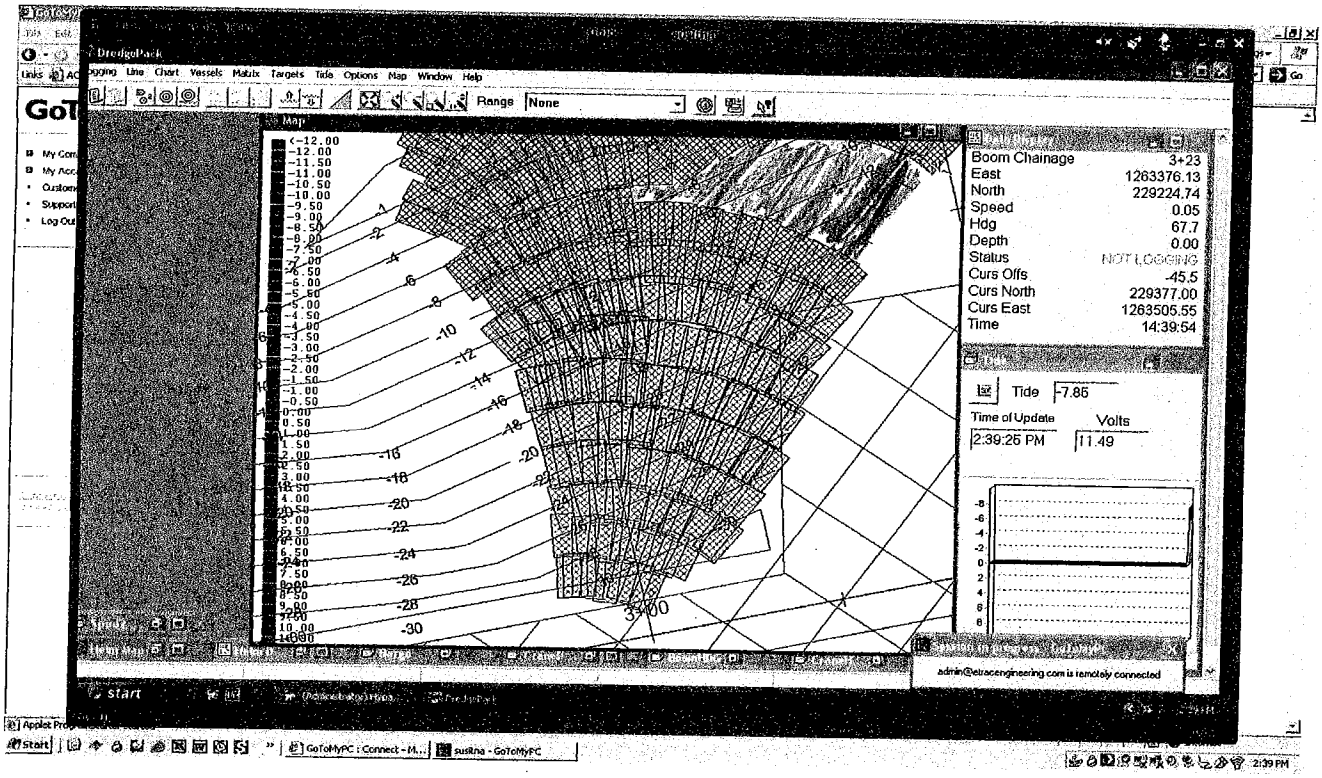
Personnel on Site
Greg A
Marty L
Keith C
Dustin S
Cody H

Equipment on Site
9310 Barnhart Crane and bucket
938F loader
work boat
work skiff
Tug Scamper II
KP-2 material barge

Temperature	Weather
21° to 35°	Sunny light N wind

Note
Shut down 45 min. turbidity.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	.5		
Place cap	7	Sand	
Shift rig	2		1950 lbs
Repair	3.5		


DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Boom Chainage 3+23
East 1263376.13
North 229224.74
Speed 0.05
Hdg 67.7
Depth 0.00
Status NOT LOGGING
Curs Offs -45.5
Curs North 229377.00
Curs East 1263505.55
Time 14:39:54
Tide -7.85
Time of Update
2:39:26 PM
Volts
11.49
admin@etracengineering.com is remotely connected
start
GoToMyPC : Connect - M...
susitna - GoToMyPC
2:39 PM

C00190C07

HURLEN CONSTRUCTION COMPANY

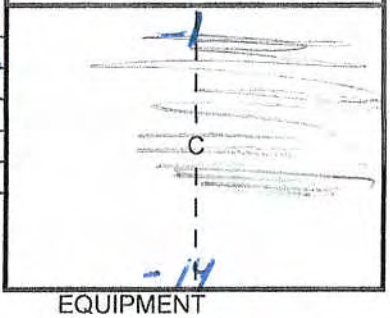
FOREMAN: _____ DATE: 1-25-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 40

WEATHER: Sunny Cold WIND: light SW

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
2+60	12+23	10'	60'	47'	-11 to -16
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE: / HABITAT MIX:_____ CONTINGENCY:_____

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	5
HABITAT MIX PLACEMENT	
CONTINGENCY PLACEMENT	
RIP-RAP PLACEMENT	
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	2
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	2
CAPPING MAINTENANCE	1
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	10	HRS
	ST		HRS
LOADER	REG	10	HRS
	ST		HRS
TUG	REG	10	HRS
	ST		HRS

LABOR

FOREMAN	10	HRS
CRANE OPERATOR	10	HRS
TUG OPERATOR	10	HRS
LOADER OPERATOR	10	HRS
PILEBUCK	10	HRS

BOW
2'0" PORT STARBOARD 2'0"

KP-1
BARGE NAME

FREEBOARD 2'0"
DRAFT 10'0"

2'0" PORT STARBOARD 2'0"
STERN

BOW
10'0" PORT STARBOARD 10'0"

KP-1
BARGE NAME

FREEBOARD 10'0"
DRAFT 2'0"

10'0" PORT STARBOARD 10'0"
STERN

2022 Tons

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

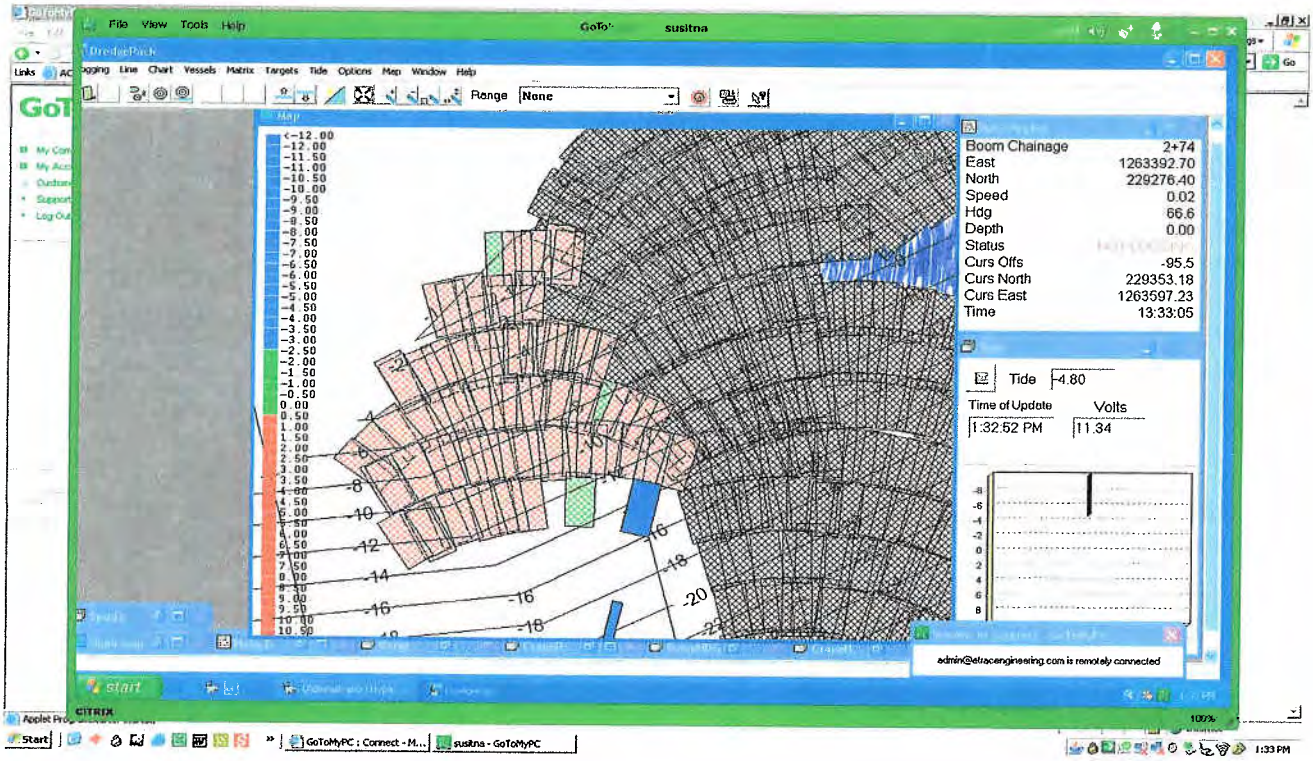
Personnel on Site
Greg H
Marty L
Keith C
Dustin S
Cody H

Equipment on Site
Pantay 9310 Excavator
KP-1 natural beige
938F loader
work boat
work skiff
Eng Tech Lv 14

Temperature	Weather
21° to 35°	Sunny, light W wind

Note
Turbidity high 11:30 slow Down 12:00 shut down 20 min.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up			
CSP	.5		
Screen change	5	Sand	2022 lbs
Shift rep	2		
	2		


File View Tools Help
GoTo: susitna
DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Boom Chainage 2+74
East 1263392.70
North 229276.40
Speed 0.02
Hdg 66.6
Depth 0.00
Status
Curs Offs -95.5
Curs North 229353.18
Curs East 1263597.23
Time 13:33:05
Tide -4.80
Time of Update 1:32:52 PM
Volts 11.34
admin@etraceengineering.com is remotely connected
start
CITRIX
GoToMyPC : Connect - M...
susitna - GoToMyPC
1:33 PM

C00190C07

HURLEN CONSTRUCTION COMPANY

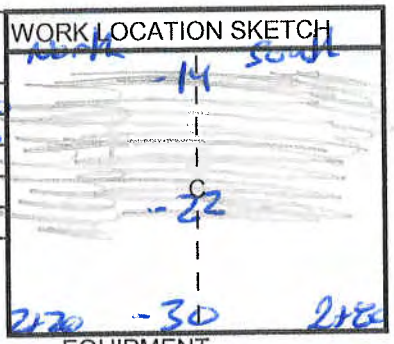
FOREMAN: _____ DATE: 1-28-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 411

WEATHER: Snowy WIND: light N _____

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
2+20	2+80	10'	60'	60'	-14 to -3
1+80	2+20	10'		50'	-4 to -10
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE: ✓ HABITAT MIX: _____ CONTINGENCY: _____

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	6
HABITAT MIX PLACEMENT	
CONTINGENCY PLACEMENT	
RIP-RAP PLACEMENT	
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1.5
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	.5
CAPPING MAINTENANCE	
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	8 HRS
	ST	HRS
LOADER	REG	8 HRS
	ST	HRS
TUG	REG	8 HRS
	ST	HRS

LABOR

FOREMAN	12 HRS
CRANE OPERATOR	12 HRS
TUG OPERATOR	8 HRS
LOADER OPERATOR	12 HRS
PILEBUCK	12 HRS

BOW
1'9" PORT STARBOARD 1'9"

KP-2
BARGE NAME

FREEBOARD 1'7"
DRAFT 10'3"

1'6" PORT STARBOARD 1'6"
STERN

BOW
9'0" PORT STARBOARD 9'0"

KP-2
BARGE NAME

FREEBOARD 9'0"
DRAFT 3'0"

9'0" PORT STARBOARD 9'0"
STERN

206 TAS

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr
Seattle, WA 98107

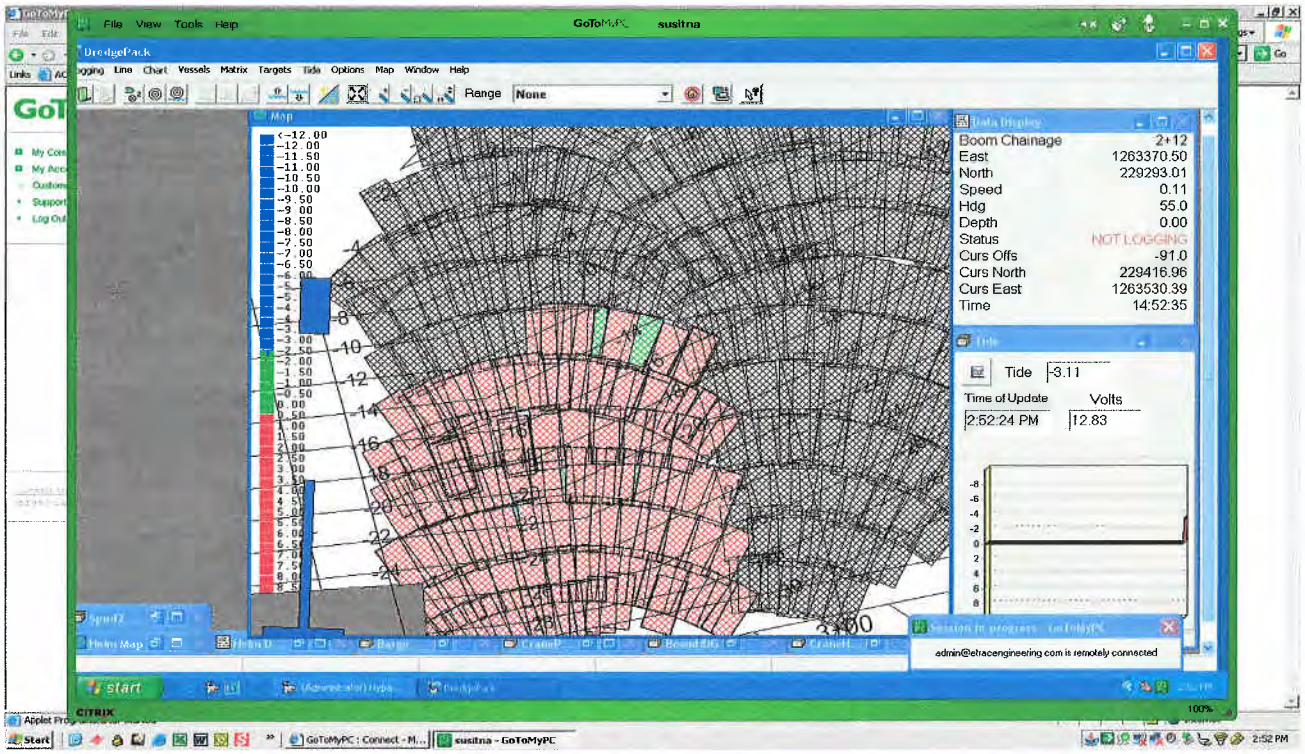
Personnel on Site
Greg B
Marty L
Kelly C
Dustin S
Cody H

Equipment on Site
Pantby 9310 Excavator
930 F Loader
KP-2 material barge
work boat
work skiff
Tug Survivor II

Temperature	Weather
30° to 35°	Snowy / light N wind

Note:
Dupont called no work on Tues. the 29th. Turbidity high from shut downs

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up / shift prep	1.5		
Shut Down Turbidity	8	Sand with shut down	2 cubic yards
Shut Down Turbidity 10:30	to 11:00	(.5)	
Shut Down Turbidity 13:50	to 14:16	(20 min)	
Shut Down turbidity 14:49	15:15	(26 min)	


File View Tools Help
GoToMyPC
susitna
DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Data Display
Boom Chainage 2+12
East 1263370.50
North 229293.01
Speed 0.11
Hdg 55.0
Depth 0.00
Status NOT LOGGING
Curs Offs -91.0
Curs North 229416.96
Curs East 1263530.39
Time 14:52:35
Tide
Tide -3.11
Time of Update 2:52:24 PM
Volts 12.83
admin@ehracengineering.com is remotely connected
start
CITRIX
100%
GoToMyPC : Connect - M...
susitna - GoToMyPC
2:52 PM

C00190C07

HURLEN CONSTRUCTION COMPANY

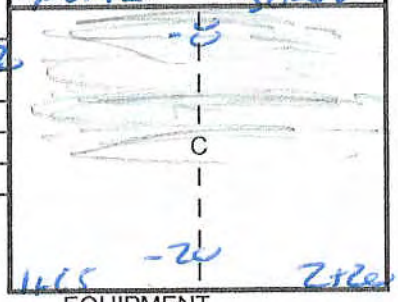
FOREMAN: _____ DATE: 1-29-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 42

WEATHER: Overcast windy WIND: SW 20 - 30

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
1+65	2+20	10'	60'	90'	-8m-2
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE: / HABITAT MIX: _____ CONTINGENCY: _____

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	7
HABITAT MIX PLACEMENT	
CONTINGENCY PLACEMENT	
RIP-RAP PLACEMENT	
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	1
CAPPING MAINTENANCE	2
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	9	HRS
	ST		HRS
LOADER	REG	8	HRS
	ST		HRS
TUG	REG	8	HRS
	ST		HRS

LABOR

FOREMAN	11	HRS
CRANE OPERATOR	11	HRS
TUG OPERATOR	8	HRS
LOADER OPERATOR	11	HRS
PILEBUCK	11	HRS

BOW
2'0" PORT STARBOARD 2'0"

KP-1
BARGE NAME

FREEBOARD 1'9"
DRAFT 10'3"

1'6" PORT STARBOARD 1'6"
STERN

BOW
10'0" PORT STARBOARD 10'0"

KP-1
BARGE NAME

FREEBOARD 10'0"
DRAFT 2'0"

10'0" PORT STARBOARD 10'0"
STERN

2094 TAS

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

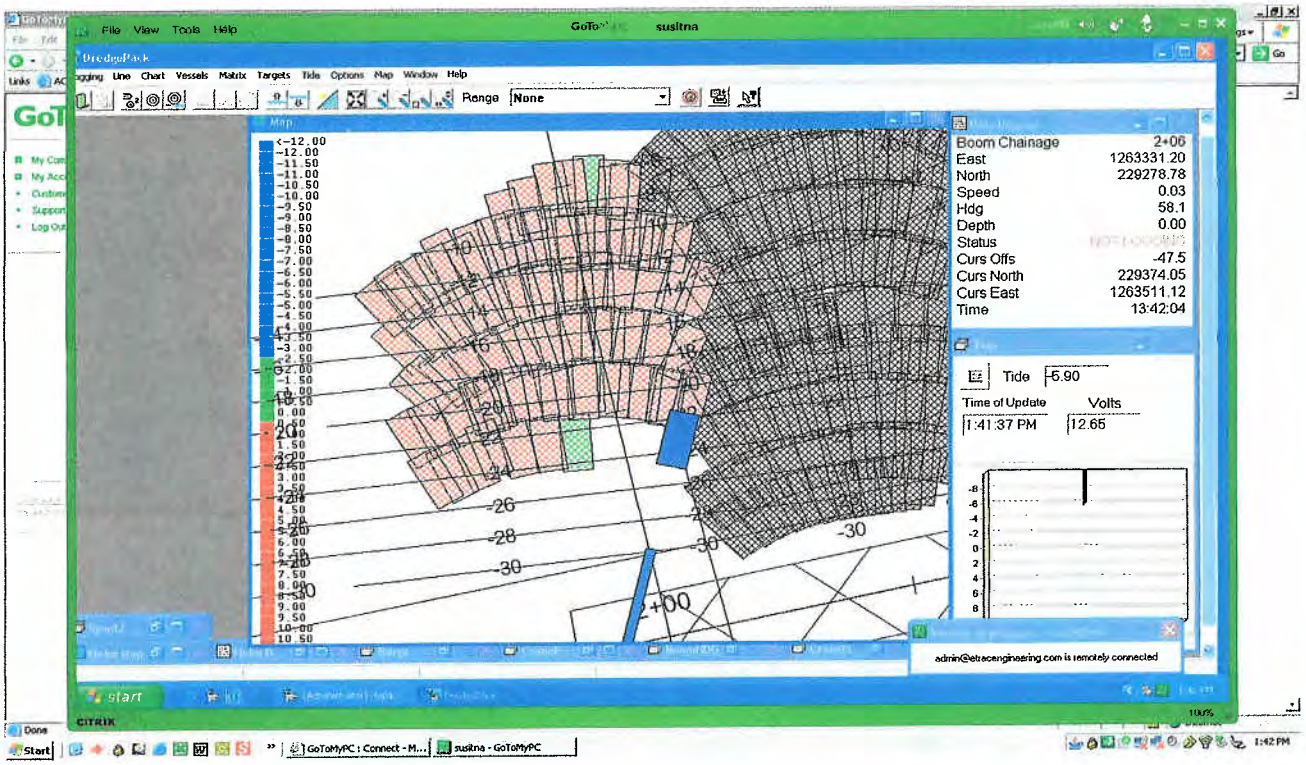
Personnel on Site
Greg A
Marty L
Keith C
Dustin S
Cody H

Equipment on Site
Sumitomo 9310 Excavator
938F loader
KP-1 material barge
work boat
work skiff
Tug Jennifer M

Temperature	Weather
75° & 43°	Windy

Note
Turbidity high shut down to lower.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up / skiff ready	1		
Cap	7	2094 Steel	2094 lbs
Shut Down Turbidity	20 min		
Shut Down Turbidity	30 min		


File View Tools Help
susitna
Range None
Boom Chainage 2+06
East 1263331.20
North 229278.78
Speed 0.03
Hdg 58.1
Depth 0.00
Status
Curs Offs -47.5
Curs North 229374.05
Curs East 1263511.12
Time 13:42:04
Tide -6.90
Time of Update 1:41:37 PM
Volts 12.65
admin@etracengineering.com is remotely connected
start
GoToMyPC : Connect - M...
susitna - GoToMyPC

C00190C07

HURLEN CONSTRUCTION COMPANY

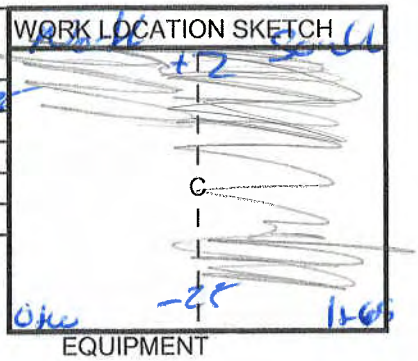
FOREMAN: _____ DATE: 1-31-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 43

WEATHER: Overcast windy WIND: SW

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
0+00	1+69	10'	100'	100'	-40 -28
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE: / HABITAT MIX: _____ CONTINGENCY: _____

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	6
HABITAT MIX PLACEMENT	
CONTINGENCY PLACEMENT	
RIP-RAP PLACEMENT	
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	2
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	1
CAPPING MAINTENANCE	
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	10	HRS
	ST		HRS
LOADER	REG	10	HRS
	ST		HRS
TUG	REG	10	HRS
	ST		HRS

LABOR

FOREMAN	10	HRS
CRANE OPERATOR	10	HRS
TUG OPERATOR	10	HRS
LOADER OPERATOR	10	HRS
PILEBUCK	10	HRS

BOW
1'8" PORT STARBOARD 1'8"

KC-1
BARGE NAME

FREEBOARD 1'8"
DRAFT 10'4"

1'8" PORT STARBOARD 1'8"
STERN

BOW
10'0" PORT STARBOARD 10'0"

KC-1
BARGE NAME

FREEBOARD 10'0"
DRAFT 2'0"

10'0" PORT STARBOARD 10'0"
STERN

218 tons

Daily Contractor Quality Control Report

Contract No: C00190C07

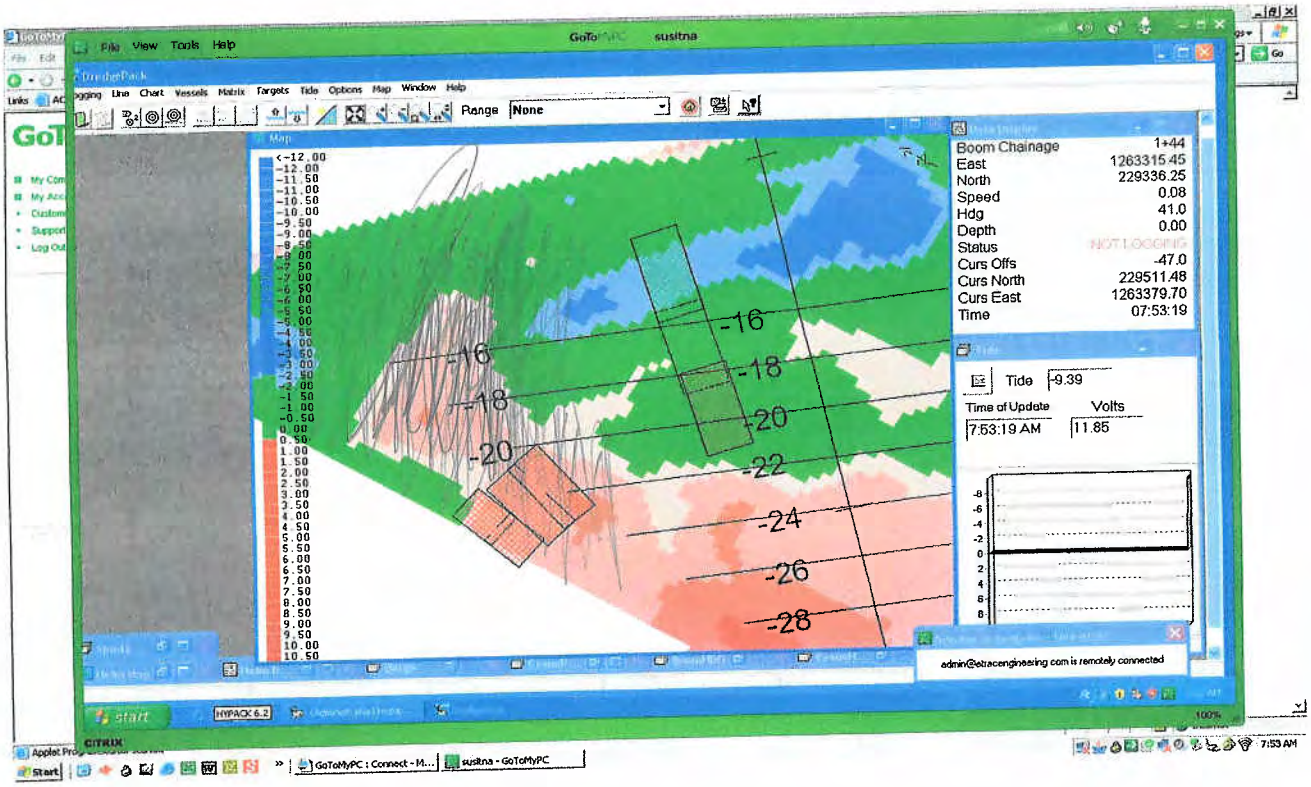
American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Mark L
Kelly C
Dustin S
Cody H

Equipment on Site
Dump Truck 930 Loader Backhoe
930F loader
KC-1 material hauler
Work truck
work truck
Tug Scraper A

Temperature	Weather
35° to 40°	Windy

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	.5		
Cap Seal	6	Sand	2116 ft
Shift rig	2		
Screw change	1		


File View Tools Help
susitna
Range None
Boom Chainage 1+44
East 1263315.45
North 229336.25
Speed 0.08
Hdg 41.0
Depth 0.00
Status NOT LOGGING
Curs Offs -47.0
Curs North 229511.48
Curs East 1263379.70
Time 07:53:19
Tide -9.39
Time of Update
7:53:19 AM
Volts
11.85
-16
-18
-20
-22
-24
-26
-28
admin@ebraceengineering.com is remotely connected
start
HYPACK 6.2
GoToMyPC : Connect - M...
susitna - GoToMyPC
7:53 AM

C00190 C07

HURLEN CONSTRUCTION COMPANY

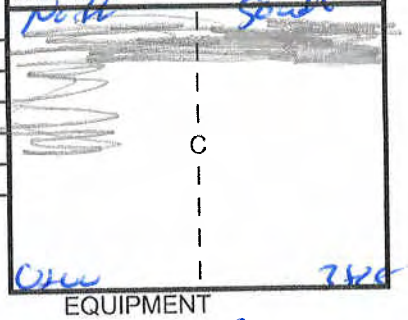
FOREMAN: _____ DATE: 2/1/08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 44

WEATHER: Overcast wind WIND: SW

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
Open	3+25	4'	325	25'	Mat
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE: / HABITAT MIX:_____ CONTINGENCY:_____

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	4
HABITAT MIX PLACEMENT	
CONTINGENCY PLACEMENT	
RIP-RAP PLACEMENT	
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	
CAPPING MAINTENANCE	4
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	8 HRS
	ST	HRS
LOADER	REG	4 HRS
	ST	HRS
TUG	REG	8 HRS
	ST	HRS

LABOR

FOREMAN	10 HRS
CRANE OPERATOR	HRS
TUG OPERATOR	8 HRS
LOADER OPERATOR	10 HRS
PILEBUCK	10 HRS

BOW
1'8" PORT STARBOARD 1'8"

KP-2
BARGE NAME

FREEBOARD 1' 7"
DRAFT 16' 7"

1'6" PORT STARBOARD 1'6"
STERN

2142 TNS

BOW
4'6" PORT STARBOARD 4'0"

KP-2
BARGE NAME

FREEBOARD 4'0"
DRAFT 8'0"

4'0" PORT STARBOARD 4'0"
STERN

1461 TNS

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Marty L
Keith C
Dustin S
Cody H

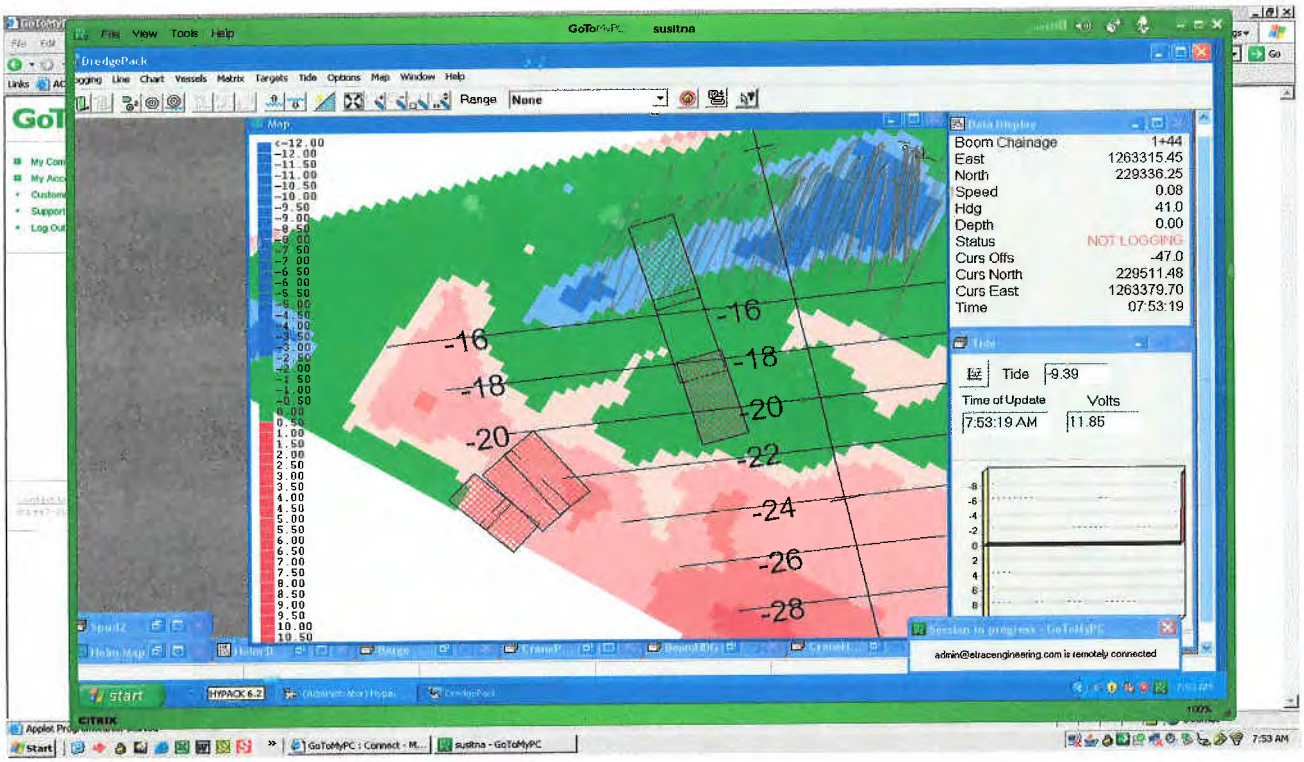
Equipment on Site
Pontoon 9310 Conyd bkt
938F loader
KP-2 material barge
Work boat
Work skiff
Tug Jennifer H

Temperature	Weather
35° to 42°	Windy SW

Note

Place sand on top of dredge area outside of prism. No sand was dropped in, or on sand.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	.5		
Cap	2	Sand	341 TNC
Survey	4		
Hit low spots (up on slope)	~~3.5~~ 2	Sand	340 TNS


GoToMyPC
susitna
DredgePack
Range
None
Map
Data Display
Boom Chainage 1+44
East 1263315.45
North 229336.25
Speed 0.08
Hdg 41.0
Depth 0.00
Status NOT LOGGING
Curs Offs -47.0
Curs North 229511.48
Curs East 1263379.70
Time 07:53:19
Tide
Tide -9.39
Time of Update 7:53:19 AM
Volts 11.85
-16
-18
-20
-22
-24
-26
-28
admin@etracengineering.com is remotely connected
start
HYPACK 6.2
CITRIX
7:53 AM

C00190C07

Habitat Mix backfill

HURLEN CONSTRUCTION COMPANY

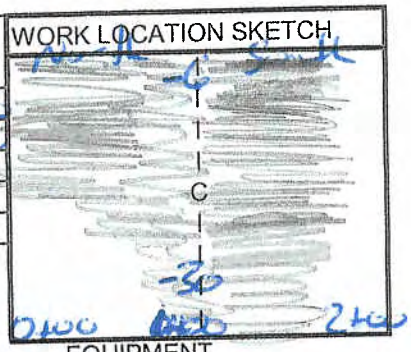
FOREMAN: _____ DATE: 2-5-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 45

WEATHER: Overcast windy WIND: SW

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
0+00	11+00	2'	100'	50'	-2 to -3
11+00	11+60	2'		60'	-6 to -7
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE:____ HABITAT MIX:__✓__ CONTINGENCY:____

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	
HABITAT MIX PLACEMENT	6.5
CONTINGENCY PLACEMENT	
RIP-RAP PLACEMENT	
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1.5
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	.5
CAPPING MAINTENANCE	
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	8	HRS
	ST		HRS
LOADER	REG	8	HRS
	ST		HRS
TUG	REG	8	HRS
	ST		HRS

LABOR

FOREMAN	10	HRS
CRANE OPERATOR	10	HRS
TUG OPERATOR	8	HRS
LOADER OPERATOR	10	HRS
PILEBUCK	10	HRS

BOW
1'6" PORT STARBOARD 1'6"

KP-1
BARGE NAME

FREEBOARD 1'3"
DRAFT 10'5"

1'0" PORT STARBOARD 1'0"
STERN

2238 tns

BOW
10'0" PORT STARBOARD 10'0"

KP-1
BARGE NAME

FREEBOARD 10'0"
DRAFT 2'0"

10'0" PORT STARBOARD 10'0"
STERN

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

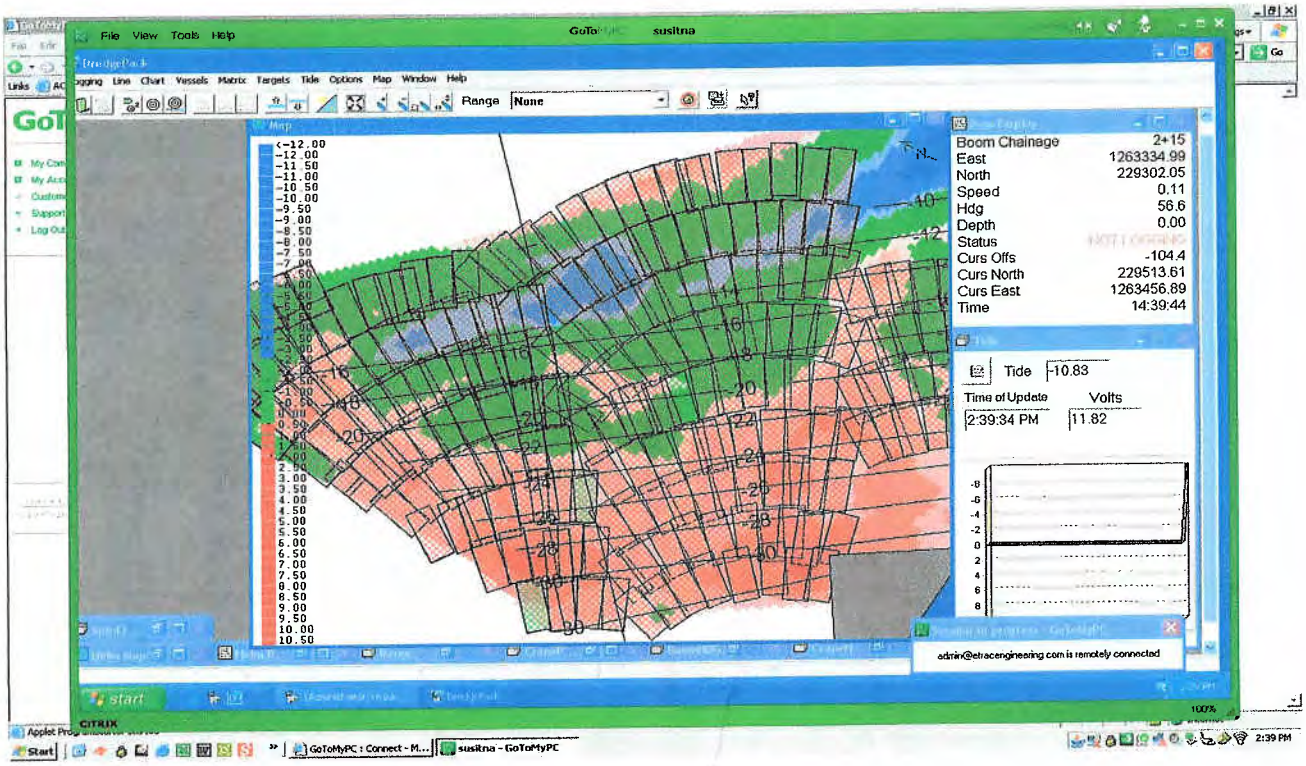
Personnel on Site
Greg A
Marty L
Keith C
Dustin S
Cody H

Equipment on Site
Pan Tray 930 Cat w/ box
930 F loader
KP-1 material barge
work boat
work Skiff
Trq Serv. Sc. H

Temperature	Weather
39° to 44°	mostly SW

Note
High winds SW

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up Shuttle	1.5		
Place Habitat Mix 2' lift	6.5	Habitat Mix	223 cy
Shift	1.5		


File View Tools Help
susitna
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Boom Chainage 2+15
East 1263334.99
North 229302.05
Speed 0.11
Hdg 56.6
Depth 0.00
Status
Curs Offs -104.4
Curs North 229513.61
Curs East 1263456.89
Time 14:39:44
Tide -10.83
Time of Update 2:39:34 PM
Volts 11.82
adrian@etracengineering.com is remotely connected
start
GoToMyPC : Connect - M...
susitna - GoToMyPC
2:39 PM

C00190C07
Habitat Mix

HURLEN CONSTRUCTION COMPANY

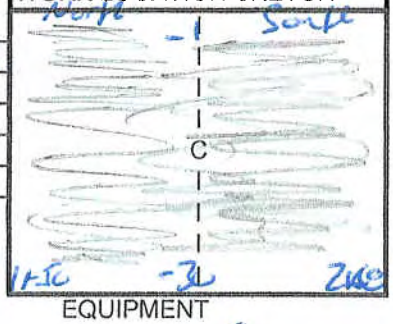
FOREMAN: _____ DATE: 2-6-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 46

WEATHER: Overcast WIND: SW

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
1+50	2+69	2'	118'	50'	-1 & -3
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE:____ HABITAT MIX:✓ CONTINGENCY:____

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	
HABITAT MIX PLACEMENT	6
CONTINGENCY PLACEMENT	
RIP-RAP PLACEMENT	
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	4
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	
CAPPING MAINTENANCE	
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	8	HRS
	ST		HRS
LOADER	REG	8	HRS
	ST		HRS
TUG	REG	6	HRS
	ST		HRS

LABOR

FOREMAN	10	HRS
CRANE OPERATOR	10	HRS
TUG OPERATOR	10	HRS
LOADER OPERATOR	10	HRS
PILEBUCK	10	HRS

BOW
2'0" PORT STARBOARD 2'0"

KP-1
BARGE NAME

FREEBOARD 1'9"
DRAFT 10'3"

1'6" PORT STARBOARD 1'6"
STERN

BOW
10'0" PORT STARBOARD 10'0"

KP-1
BARGE NAME

FREEBOARD 10'0"
DRAFT 2'0"

10'0" PORT STARBOARD 10'8"
STERN

2094 Tac

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr
Seattle, WA 98107

Personnel on Site
Greg N
Marty L
Keith C
Dustin S
Cody N

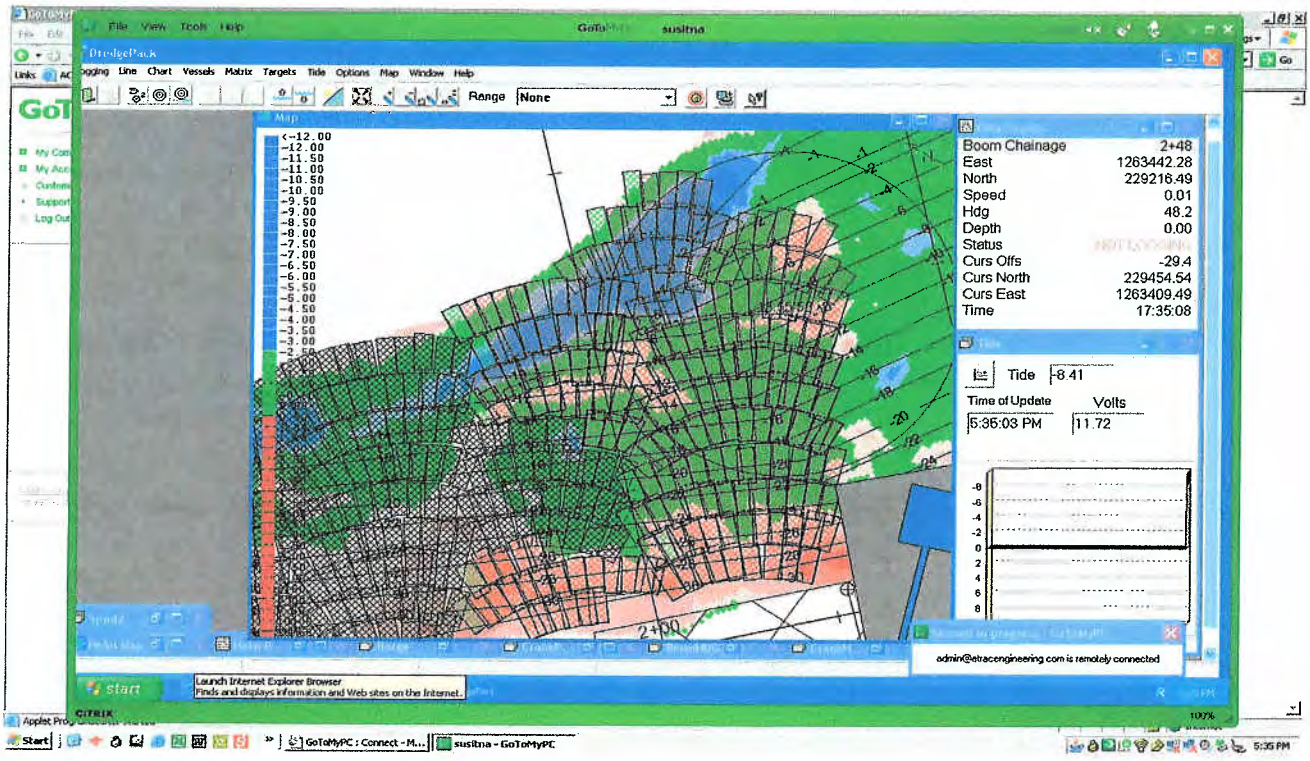
Equipment on Site
Pruitt 9310 6 cu yd bucket
938F loader
KC-1 material barge
Work boat
work skiff
Tug Seminole

Temperature	Weather
40° to 44°	Windy SW

Note

Front spud up, when in dredge prism.

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up SLA rig	1.5		
Place Habitat Mix	6	Habitat mix	2094 cy
Shift	7.5		


susitna
DredgePack
Range None
Boom Chainage 2+48
East 1263442.28
North 229216.49
Speed 0.01
Hdg 48.2
Depth 0.00
Status
Curs Offs -29.4
Curs North 229454.54
Curs East 1263409.49
Time 17:35:08
Tide -8.41
Time of Update 5:36:03 PM
Volts 11.72
admin@etracengineering.com is remotely connected
Launch Internet Explorer Browser
Finds and displays information and Web sites on the Internet.
GoToMyPC : Connect - M...
susitna - GoToMyPC
5:35 PM

C00190C07 Habitat Mix

HURLEN CONSTRUCTION COMPANY

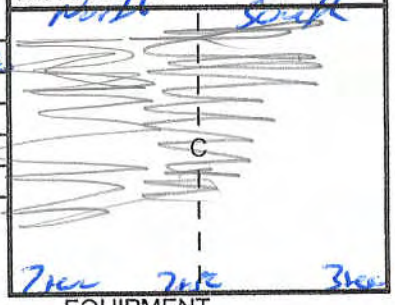
FOREMAN: _____ DATE: 2-11-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 47

WEATHER: Sunny WIND: SW

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
2+00	3+00	2'	100'	50'	-3 to -2
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE:____ HABITAT MIX: / CONTINGENCY:____

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	
HABITAT MIX PLACEMENT	6
CONTINGENCY PLACEMENT	
RIP-RAP PLACEMENT	
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	4
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	
CAPPING MAINTENANCE	
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	6	HRS
	ST		HRS
LOADER	REG	6	HRS
	ST		HRS
TUG	REG	10	HRS
	ST		HRS

LABOR

FOREMAN	10	HRS
CRANE OPERATOR	10	HRS
TUG OPERATOR	10	HRS
LOADER OPERATOR	10	HRS
PILEBUCK	10	HRS

BOW
7'0" PORT STARBOARD 2'0"

KP-1
BARGE NAME

FREEBOARD 1'10"
DRAFT 10'2"

1'8" PORT STARBOARD 1'9"
STERN

2070 mt

BOW
10'0" PORT STARBOARD 10'0"

KP-1
BARGE NAME

FREEBOARD 10'0"
DRAFT 2'0"

10'0" PORT STARBOARD 10'0"
STERN

Daily Contractor Quality Control Report

Contract No: C00190C07

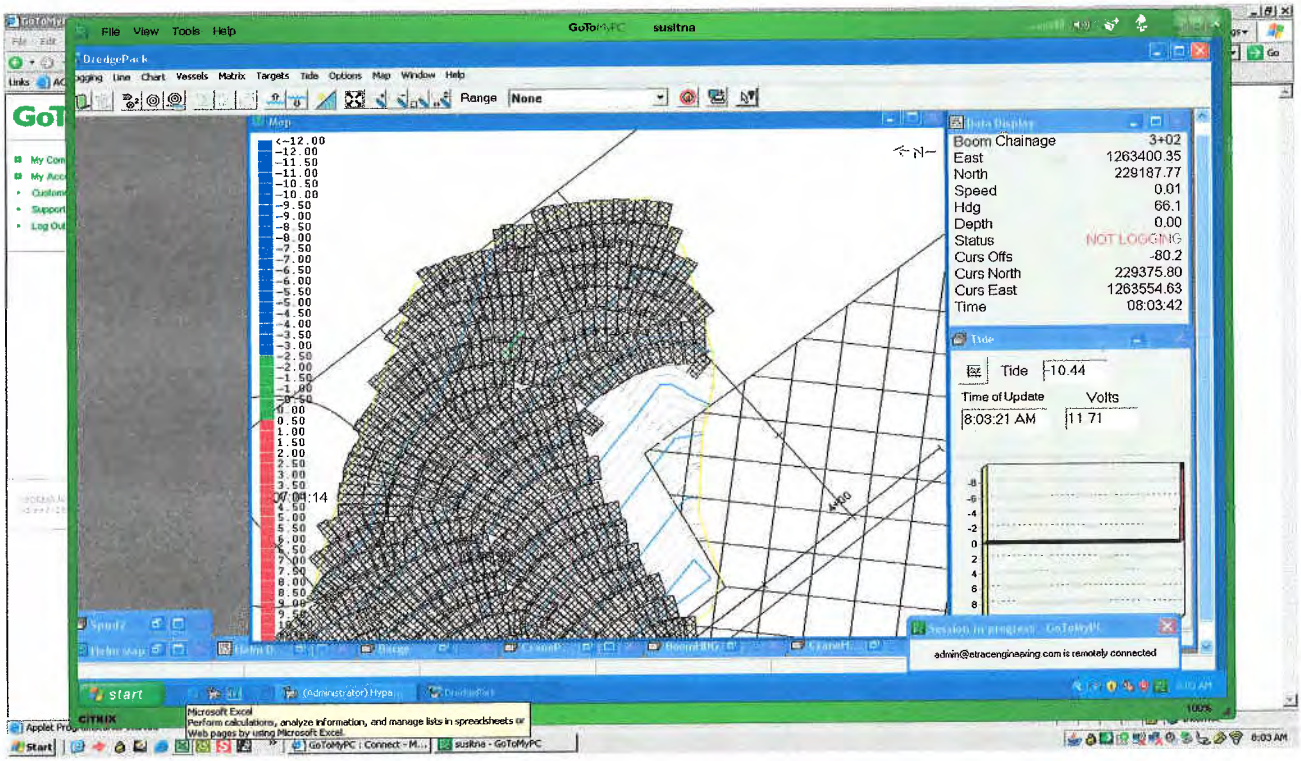
American Civil Constructors
700 S. Riverside Dr
Seattle, WA 98107

Personnel on Site
Greg H
Kc. HL C
Dustin S
Cody H

Equipment on Site
Cat Trk 938G Loader bucket
938F loader
KS-1 material barge
work boat
work skiff
Tug Jennifer H

Temperature	Weather
Sunny 25° to 40	Light SW wind

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up shaft	1		
Place High Lift	6	High Lift mix	2070 lbs
Shift rig	3		


File View Tools Help
susitna
DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Data Display
Boom Chainage 3+02
East 1263400.35
North 229187.77
Speed 0.01
Hdg 66.1
Depth 0.00
Status NOT LOGGING
Curs Offs -80.2
Curs North 229375.80
Curs East 1263554.63
Time 08:03:42
Tide
Tide -10.44
Time of Update 8:03:21 AM
Volts 11.71
admin@etracengineering.com is remotely connected
start
Microsoft Excel
Perform calculations, analyze information, and manage lists in spreadsheets or Web pages by using Microsoft Excel.
GoToMyPC : Connect - M...
susitna - GoToMyPC
8:03 AM

C00190C07 Habitat Mix
C00190C07

HURLEN CONSTRUCTION COMPANY

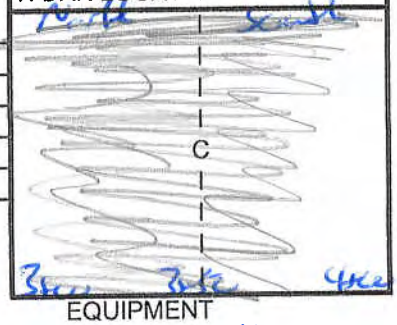
FOREMAN: _____ DATE: 2-13-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 48

WEATHER: Sunny WIND: SW

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
3+00	4+00	2'	100'	12'	
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE:____ HABITAT MIX:__/__ CONTINGENCY:_____

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	
HABITAT MIX PLACEMENT	6
CONTINGENCY PLACEMENT	
RIP-RAP PLACEMENT	
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	
CAPPING MAINTENANCE	
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	8 HRS
	ST	HRS
LOADER	REG	8 HRS
	ST	HRS
TUG	REG	8 HRS
	ST	HRS

LABOR

FOREMAN	10 HRS
CRANE OPERATOR	10 HRS
TUG OPERATOR	10 HRS
LOADER OPERATOR	10 HRS
PILEBUCK	10 HRS

BOW
2'0" PORT STARBOARD 2'0"

KP-1
BARGE NAME

FREEBOARD 1'9"
DRAFT 10'3"

1'6" PORT STARBOARD 1'6"
STERN

BOW
10'0" PORT STARBOARD 10'0"

KP-1
BARGE NAME

FREEBOARD 10'0"
DRAFT 2'0"

12'0" PORT STARBOARD 10'0"
STERN

2004 in

Daily Contractor Quality Control Report

Contract No: C00190C07

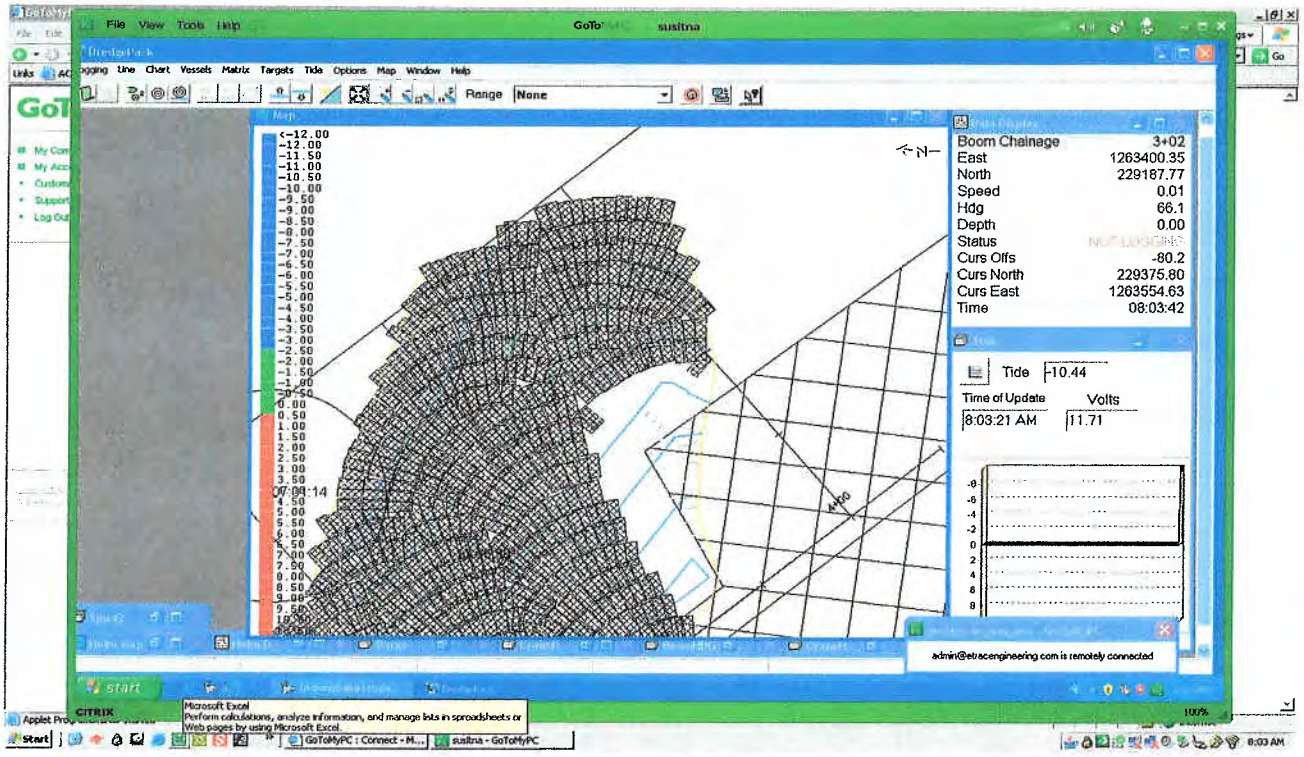
American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg D
K. H C
Dick S
Cody H

Equipment on Site
Pan Tray 930 Comb bucket
926F loader
14' material barge
work boat
work skiff
Tug Sander II

Temperature	Weather
Sunny 35° to 42°	Light SW

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	1		
Place Habitat	6	Habitat Mat	2454 sq ft
Skiff	3		


File View Tools Help
susitna
Range None
Boom Chainage 3+02
East 1263400.35
North 229187.77
Speed 0.01
Hdg 66.1
Depth 0.00
Status
Curs Offs -80.2
Curs North 229375.80
Curs East 1263554.63
Time 08:03:42
Tide -10.44
Time of Update
8:03:21 AM
Volts
11.71
admin@etracengineering.com is remotely connected
start
Microsoft Excel
Perform calculations, analyze information, and manage lists in spreadsheets or Web pages by using Microsoft Excel.
GoToMyPC : Connect - M...
susitna - GoToMyPC
8:03 AM

C00190C07

Habitat Mix

HURLEN CONSTRUCTION COMPANY

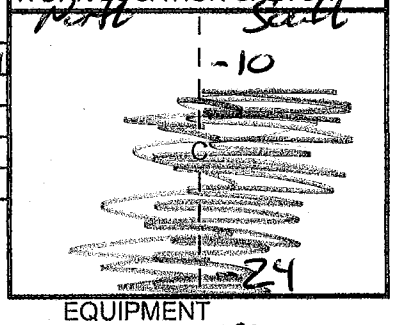
FOREMAN: _____ DATE: 2-14-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 49

WEATHER: Sunny WIND: Light SW

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
3+50	4+00	2'	100'	40'	100-24
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE:____ HABITAT MIX:✓ CONTINGENCY:____

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	
HABITAT MIX PLACEMENT	6
CONTINGENCY PLACEMENT	
RIP-RAP PLACEMENT	
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	2
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	
CAPPING MAINTENANCE	2
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	8 HRS
	ST	HRS
LOADER	REG	8 HRS
	ST	HRS
TUG	REG	8 HRS
	ST	HRS

LABOR

FOREMAN	10 HRS
CRANE OPERATOR	10 HRS
TUG OPERATOR	HRS
LOADER OPERATOR	10 HRS
PILEBUCK	10 HRS

BOW
4'6" PORT STARBOARD 4'6"

KP-1
BARGE NAME

FREEBOARD 4'6"
DRAFT 7'6"

4'6" PORT STARBOARD 4'6"
STERN

1326 TONS

BOW
6'2" PORT STARBOARD 6'2"

KP-1
BARGE NAME

FREEBOARD 2'7"
DRAFT 3'8"

10'0" PORT STARBOARD 10'0"
STERN

253 TONS

Daily Contractor Quality Control Report

Contract No: C00190C07

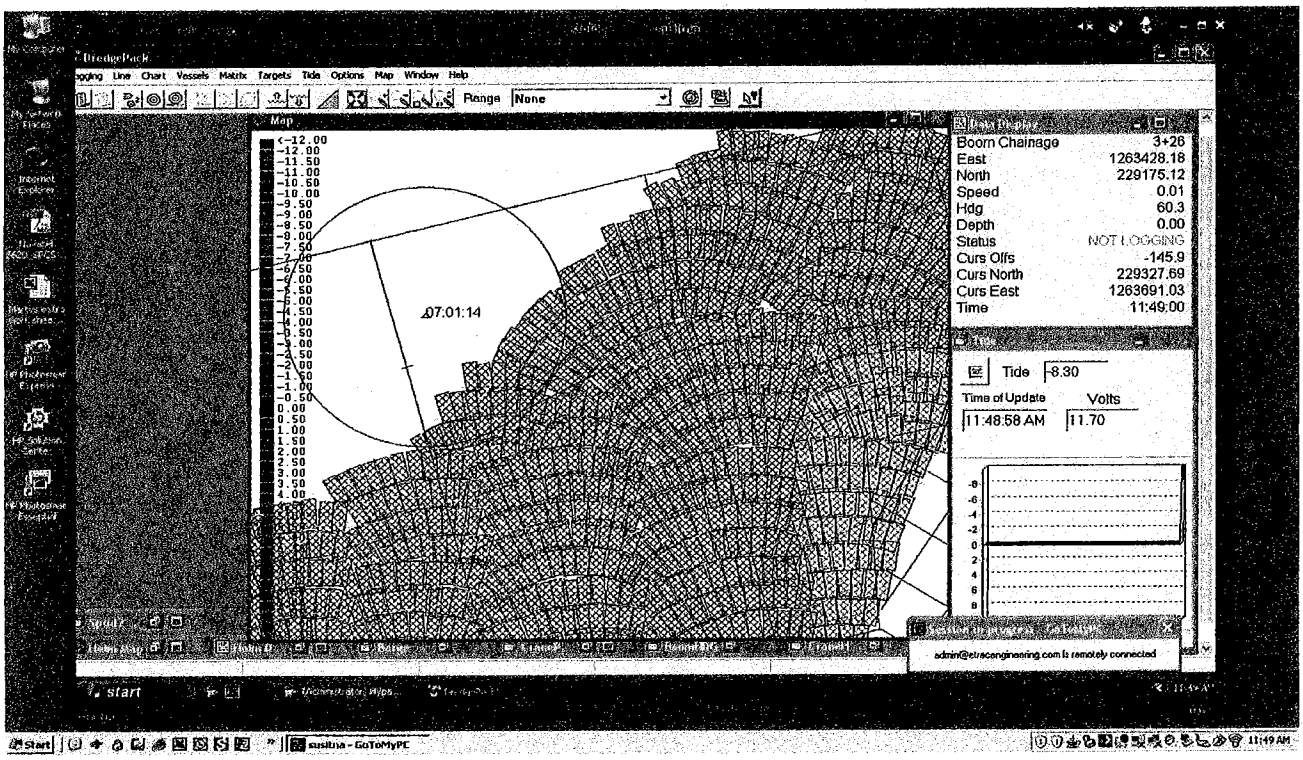
American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Crew A
Mechanic
Keith C
Dustin S
Cody H

Equipment on Site
Bantry 9310 6cuyd box
938F Loader
KP-1 material barge
work boat
work skiff
Tug Pine H

Temperature	Weather
40° to 48°	Sunny light wind

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up / shift rig	2		
Place Habitat Mix	6	Place Habitat mix	1043 Tons


DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
<-12.00
-12.00
-11.50
-11.00
-10.50
-10.00
-9.50
-9.00
-8.50
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-0.50
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
07:01:14
Boom Chainage 3+26
East 1263428.18
North 229175.12
Speed 0.01
Hdg 60.3
Depth 0.00
Status NOT LOGGING
Curs Offs -145.9
Curs North 229327.69
Curs East 1263691.03
Time 11:49:00
Tide -8.30
Time of Update
Volts
11:48:58 AM
11.70
admin@etrsengineering.com is remotely connected
start
Start
susitna - GoToMyPC
11:49 AM

Cool90C07

Rocks / Boulders

HURLEN CONSTRUCTION COMPANY

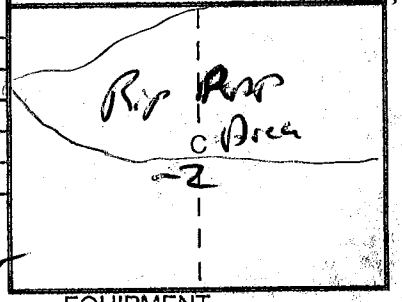
FOREMAN: _____ DATE: 2-19-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 50

WEATHER: Sunny WIND: Light SW

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
1450	2125	2'	75'	20'	-2
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE:____ HABITAT MIX:_____ CONTINGENCY:____ Rip Rap

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	
HABITAT MIX PLACEMENT	
CONTINGENCY PLACEMENT	
RIP-RAP PLACEMENT	3
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	
CAPPING MAINTENANCE	C
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	3 HRS
	ST	HRS
LOADER	REG	3 HRS
	ST	HRS
TUG	REG	10 HRS
	ST	HRS

LABOR

FOREMAN	10 HRS
CRANE OPERATOR	10 HRS
TUG OPERATOR	10 HRS
LOADER OPERATOR	3 HRS
PILEBUCK	10 HRS

BOW
6'8" PORT STARBOARD 6'8"

H-9
BARGE NAME

FREEBOARD 6'8"
DRAFT 5'4"

6'8" PORT STARBOARD 6'8"
STERN

1395 Tons

BOW
8'6" PORT STARBOARD 8'6"

H-9
BARGE NAME

FREEBOARD 8'6"
DRAFT 3'6"

8'6" PORT STARBOARD 8'6"
STERN

990 Tons = 496

Placed 496

Daily Contractor Quality Control Report

Contract No: C00190C07

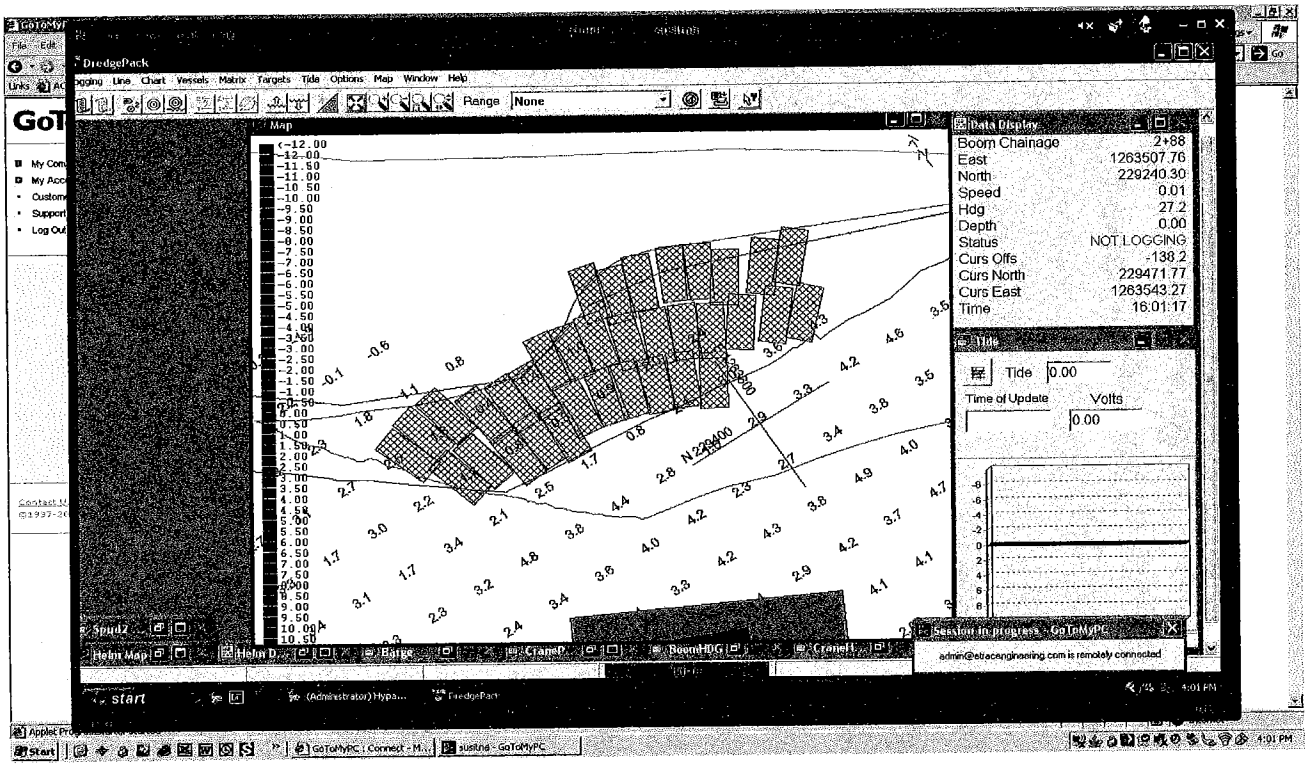
American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg B
Marty L
Dustin S
Cody H

Equipment on Site
Bantam 9310 Compact bar
938 F loader
H-9 material bucket
work boat
excavator
Tug Service H

Temperature	Weather
40° to 48°	Sunny

Description of Work Performed	Time	Type of Material Removed	Quanity
Shot ex shot rock	2		
place rip rap	3	rip rap	486 tons


DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Data Display
Boom Chainage 2+88
East 1263507.76
North 229240.30
Speed 0.01
Hdg 27.2
Depth 0.00
Status NOT LOGGING
Curs Offs -138.2
Curs North 229471.77
Curs East 1263543.27
Time 16:01:17
Tide
Tide 0.00
Time of Update
Volts 0.00
Session in progress - GoToMyPC
admin@etiaceengineering.com is remotely connected
Spud2
Helm Map
Helm D...
Barge
CraneP...
BoomHDG
CraneH...
start
(Administrator) Hypa...
DredgePack
4:01 PM

C00190C07
Rocks / Boulders

HURLEN CONSTRUCTION COMPANY

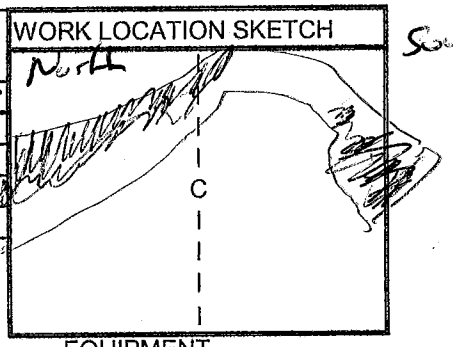
FOREMAN: _____ DATE: 2-20-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 51

WEATHER: Overcast WIND: light SW _____

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
2+25	4+25	2	200'	30'	+5 to -2
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE:____ HABITAT MIX:____ CONTINGENCY: RIP RAP

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	
HABITAT MIX PLACEMENT	
CONTINGENCY PLACEMENT	
RIP-RAP PLACEMENT	4
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	5
CAPPING MAINTENANCE	1
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	8 HRS
	ST	HRS
LOADER	REG	4 HRS
	ST	HRS
TUG	REG	10 HRS
	ST	HRS

LABOR

FOREMAN	10 HRS
CRANE OPERATOR	10 HRS
TUG OPERATOR	10 HRS
LOADER OPERATOR	4 HRS
PILEBUCK	10 HRS

BOW
1'6" PORT STARBOARD 2'6"
11.9 BARGE NAME
FREEBOARD 2'6"
DRAFT 3'6"
8'6" PORT STARBOARD 8'6"
STERN

890 TNS

BOW
2'6" PORT STARBOARD 2'6"
11.9 BARGE NAME
FREEBOARD 2'6"
DRAFT 2'6"
2'6" PORT STARBOARD 2'6"
STERN

620 TNS = 262 tons

Daily Contractor Quality Control Report

Contract No: C00190C07

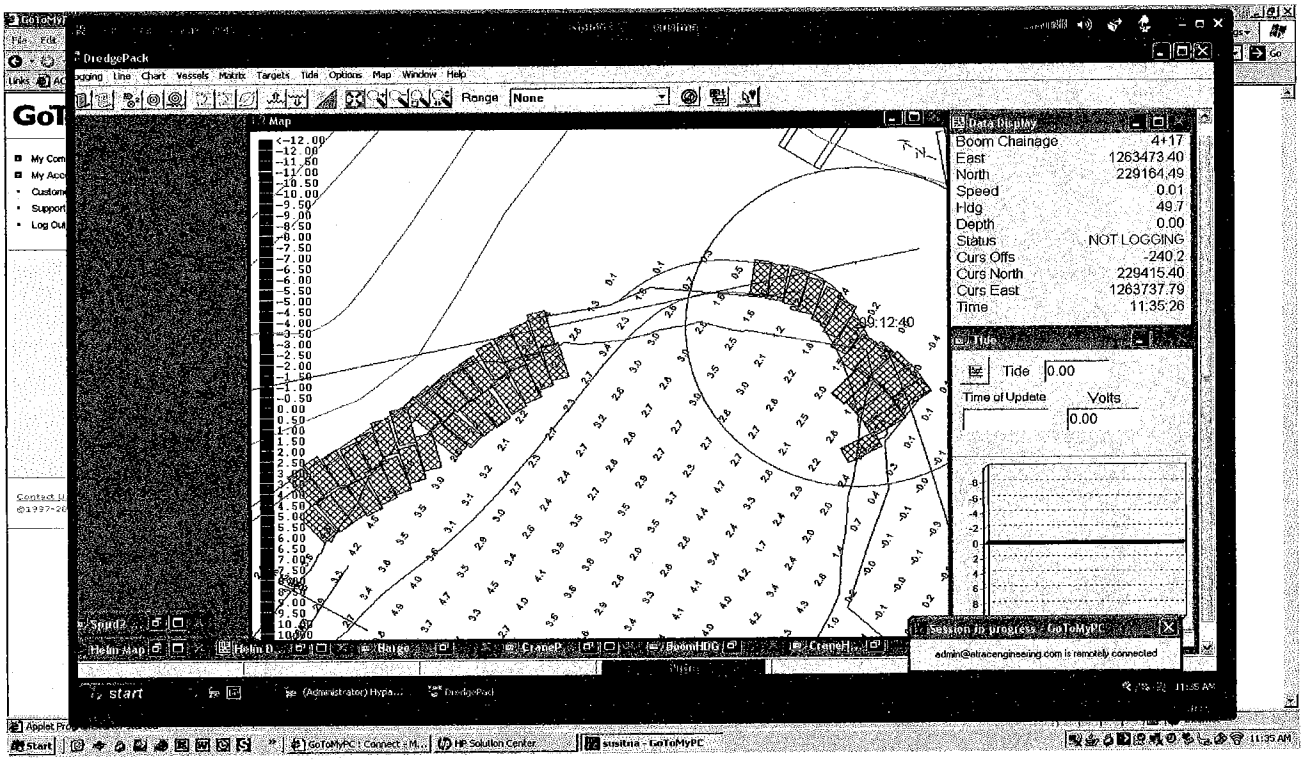
American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Marty L
Dustin S
Cody H

Equipment on Site
Pontoon 9210 Conyd bar
938 F Loader
H-9 material barge
work boat
work skiff
Tug Sam Lee H

Temperature	Weather
40° to 49°	Sunny

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up / Sk. H	1		
Place rip rap	4	r.r rap	262 Tons
Scow chore	5		


DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Data Display
Boom Chainage 4+17
East 1263473.40
North 229164.49
Speed 0.01
Hdg 49.7
Depth 0.00
Status NOT LOGGING
Curs Offs -240.2
Curs North 229415.40
Curs East 1263737.79
Time 11:35:26
Tide
Tide 0.00
Time of Update
Volts
0.00
Session in progress - GoToMyPC
admin@etraceengineering.com is remotely connected
Start
11:35 AM

C00190C07
CONTIGUOUS Layer

HURLEN CONSTRUCTION COMPANY

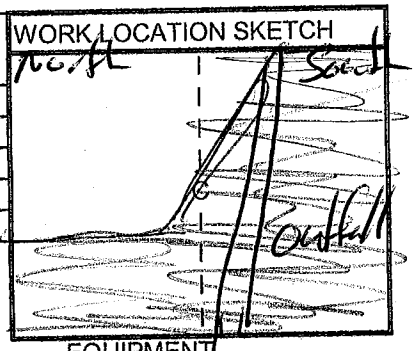
FOREMAN: _____ DATE: 2-21-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 52

WEATHER: Sunny WIND: N

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
Outer	Dredge	Poison			
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE:____ HABITAT MIX:____ CONTINGENCY: ✓

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	
HABITAT MIX PLACEMENT	
CONTINGENCY PLACEMENT	8
RIP-RAP PLACEMENT	
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	2
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	
CAPPING MAINTENANCE	
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	8 HRS
	ST	HRS
LOADER	REG	8 HRS
	ST	HRS
TUG	REG	10 HRS
	ST	HRS

LABOR

FOREMAN	12 HRS
CRANE OPERATOR	12 HRS
TUG OPERATOR	12 HRS
LOADER OPERATOR	HRS
PILEBUCK	12 HRS

BOW
4'2" PORT STARBOARD 4'8"

KP-2
BARGE NAME

FREEBOARD 3'7"
DRAFT 9'5"

2'6" PORT STARBOARD 3'0"
STERN

1392 TNS

BOW
9'0" PORT STARBOARD 9'0"

KP-2
BARGE NAME

FREEBOARD 9'0"
DRAFT 3'0"

9'0" PORT STARBOARD 9'0"
STERN

Daily Contractor Quality Control Report

Contract No: C00190C07

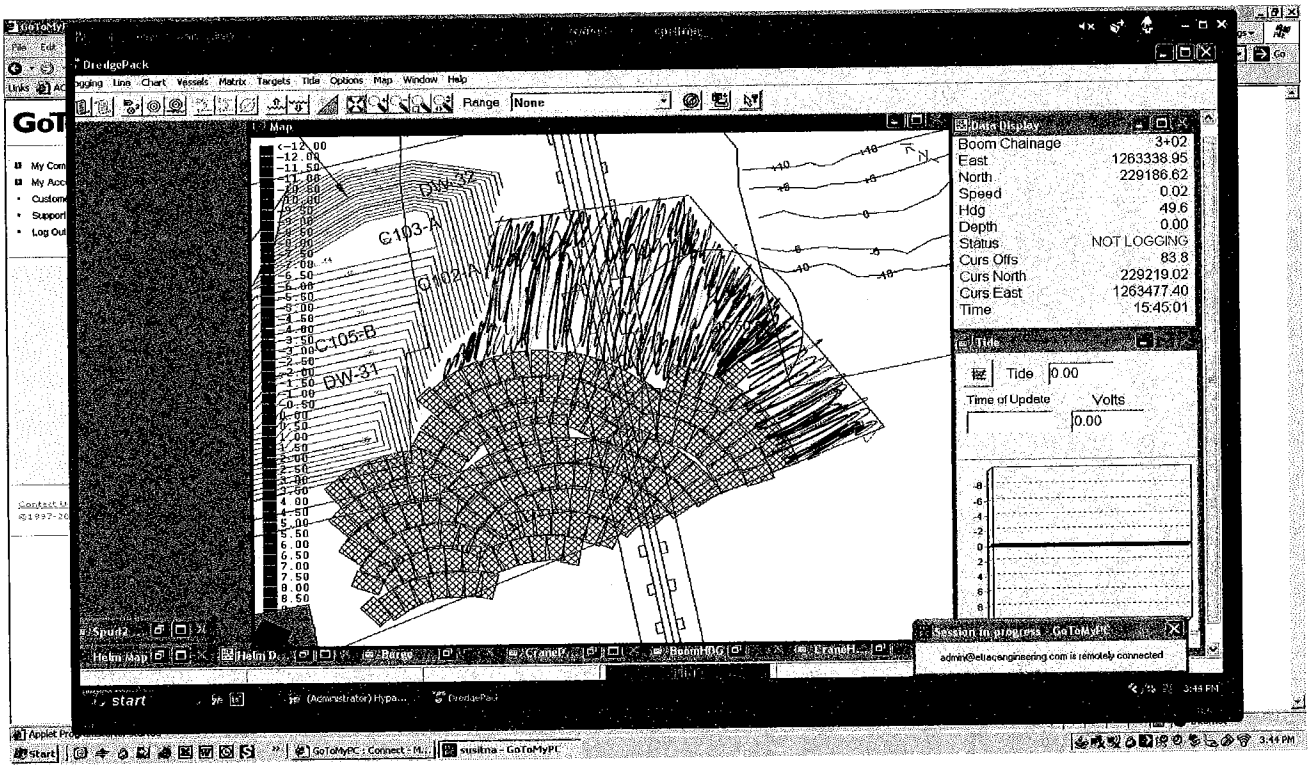
American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Marty L
Dustin S
Cody H

Equipment on Site
Pontiac 9310 Excavator
938F Loader
KP-2 Material barge
Work boat
work skiff
Tug Service H

Temperature	Weather
46° to 50°	Sunny Light wind

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up Shift 1	1		
Place Contingency	8	Sand	1392 tons


DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
Data Display
Boom Chainage 3+02
East 1263338.95
North 229186.62
Speed 0.02
Hdg 49.6
Depth 0.00
Status NOT LOGGING
Curs Offs 83.8
Curs North 229219.02
Curs East 1263477.40
Time 15:45:01
Tide
Tide 0.00
Time of Update
Volts
0.00
DW-32
C103-A
C102-A
C105-B
DW-31
Session in progress - GoToMyPC
admin@eliaengineering.com is remotely connected
start
3:44 PM

BOYER TOWING, INC.

KP-1 & 2
DECK BARGE
LOAD TABLE

Average Draft	Cargo Weight	Average Draft	Cargo Weight	Average Draft	Cargo Weight
2'-3"	7.8	5'-3"	737.3	8'-3"	1,530.3
2'-4"	27.2	5'-4"	758.5	8'-4"	1,553.2
2'-5"	46.7	5'-5"	779.7	8'-5"	1,576.2
2'-6"	66.2	5'-6"	801.0	8'-6"	1,599.2
2'-7"	85.7	5'-7"	822.3	8'-7"	1,622.3
2'-8"	105.3	5'-8"	843.6	8'-8"	1,645.5
2'-9"	125.0	5'-9"	865.1	8'-9"	1,668.6
2'-10"	144.7	5'-10"	886.5	8'-10"	1,691.9
2'-11"	164.4	5'-11"	908.0	8'-11"	1,715.1
3'-0"	184.2	6'-0"	929.6	9'-0"	1,738.5
3'-1"	204.1	6'-1"	951.2	9'-1"	1,761.8
3'-2"	224.0	6'-2"	972.9	9'-2"	1,785.3
3'-3"	243.9	6'-3"	994.6	9'-3"	1,808.7
3'-4"	263.9	6'-4"	1,016.3	9'-4"	1,832.2
3'-5"	283.9	6'-5"	1,038.1	9'-5"	1,855.8
3'-6"	304.0	6'-6"	1,060.0	9'-6"	1,879.4
3'-7"	324.2	6'-7"	1,081.9	9'-7"	1,903.1
3'-8"	344.4	6'-8"	1,103.9	9'-8"	1,926.8
3'-9"	364.6	6'-9"	1,125.9	9'-9"	1,950.6
3'-10"	384.9	6'-10"	1,147.9	9'-10"	1,974.4
3'-11"	405.2	6'-11"	1,170.0	9'-11"	1,998.3
4'-0"	425.6	7'-0"	1,192.2	10'-0"	2,022.2
4'-1"	446.1	7'-1"	1,214.4	10'-1"	2,046.1
4'-2"	466.5	7'-2"	1,236.6	10'-2"	2,070.1
4'-3"	487.1	7'-3"	1,258.9	10'-3"	2,094.1
4'-4"	507.7	7'-4"	1,281.3	10'-4"	2,118.1
4'-5"	528.3	7'-5"	1,303.7	10'-5"	2,142.1
4'-6"	549.0	7'-6"	1,326.1	10'-6"	2,166.1
4'-7"	569.7	7'-7"	1,348.6	10'-7"	2,190.1
4'-8"	590.5	7'-8"	1,371.1	10'-8"	2,214.1
4'-9"	611.3	7'-9"	1,393.7	10'-9"	2,238.1
4'-10"	632.2	7'-10"	1,416.4	10'-10"	2,262.1
4'-11"	653.1	7'-11"	1,439.1	10'-11"	2,286.1
5'-0"	674.1	8'-0"	1,461.8	11'-0"	2,310.1
5'-1"	695.1	8'-1"	1,484.6		
5'-2"	716.2	8'-2"	1,507.4		

Weight given in short tons for operation in sea water.

ELLIOTT BAY DESIGN GROUP, LTD. October, 2002

C00190C07

Moving Rocks

HURLEN CONSTRUCTION COMPANY

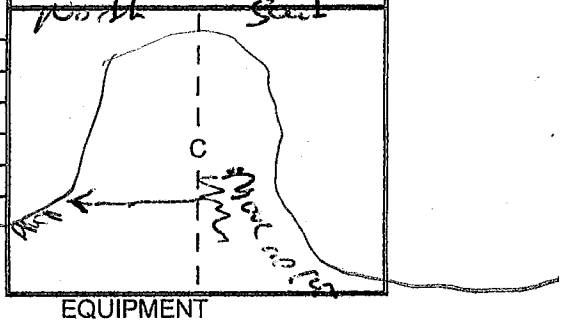
FOREMAN: _____ DATE: 2-22-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 53

WEATHER: Sunny WIND: light NW-L _____

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
Retrieving		F.P	Top		
From	Drawings				
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:

BASE:____ HABITAT MIX:_____ CONTINGENCY:_____

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	
HABITAT MIX PLACEMENT	
CONTINGENCY PLACEMENT	
RIP-RAP PLACEMENT	3
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	
CAPPING MAINTENANCE	7
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	10 HRS
	ST	HRS
LOADER	REG	10 HRS
	ST	HRS
TUG	REG	10 HRS
	ST	HRS

LABOR

FOREMAN	10 HRS
CRANE OPERATOR	10 HRS
TUG OPERATOR	10 HRS
LOADER OPERATOR	10 HRS
PILEBUCK	10 HRS

BOW

5'4" PORT STARBOARD 5'4"

KP-7

BARGE NAME

FREEBOARD 5'4"

DRAFT 6'6"

5'4" PORT STARBOARD 5'4"

STERN

BOW

5'4" PORT STARBOARD 5'4"

KP-7

BARGE NAME

FREEBOARD 5'4"

DRAFT 6'6"

5'4" PORT STARBOARD 5'4"

STERN

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Marty L
Dustin S
Cody H

Equipment on Site
Gravity 930 3 cu yd bucket
work boat
work skiff
Tug Dino II

Temperature	Weather
Sunny 42° to 46°	light N wind

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up shift rig			
Move rig rep South To North outside Dock	3	rip rap	unknown

C00190C07

Contiguous Layer

HURLEN CONSTRUCTION COMPANY

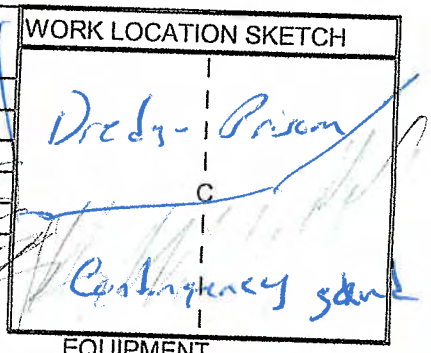
FOREMAN: _____ DATE: 7-25-08

JOB # 1507043 LOCATION: ELLIOT BAY REPORT # 54

WEATHER: Overcast WIND: Light SW

STATION BEGIN	STATION END	FILL #	HEADWAY (FEET)	WIDTH FILL	DEPTH
Outer	Dredge	Prism			
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
BASE:____ HABITAT MIX:____ CONTINGENCY: ✓

DISTRIBUTION OF TIME	TOTAL HOURS
BASE BACKFILL PLACEMENT	
HABITAT MIX PLACEMENT	
CONTINGENCY PLACEMENT	5
RIP-RAP PLACEMENT	
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	3
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	
CAPPING MAINTENANCE	2
BUCKET REPAIR	

EQUIPMENT

SKIP BOX	REG	8 HRS
	ST	HRS
LOADER	REG	8 HRS
	ST	HRS
TUG	REG	8 HRS
	ST	HRS

LABOR

FOREMAN	10 HRS
CRANE OPERATOR	10 HRS
TUG OPERATOR	HRS
LOADER OPERATOR	10 HRS
PILEBUCK	10 HRS

BOW
5'4" PORT STARBOARD 5'4"

KP-2
BARGE NAME

FREEBOARD 5'4"
DRAFT 6'0"

5'4" PORT STARBOARD 5'4"
STERN

1103 TNS

BOW
9'6" PORT STARBOARD 9'0"

KP-2
BARGE NAME

FREEBOARD 9'0"
DRAFT 3'0"

9'0" PORT STARBOARD 9'0"
STERN

Daily Contractor Quality Control Report

Contract No: C00190C07

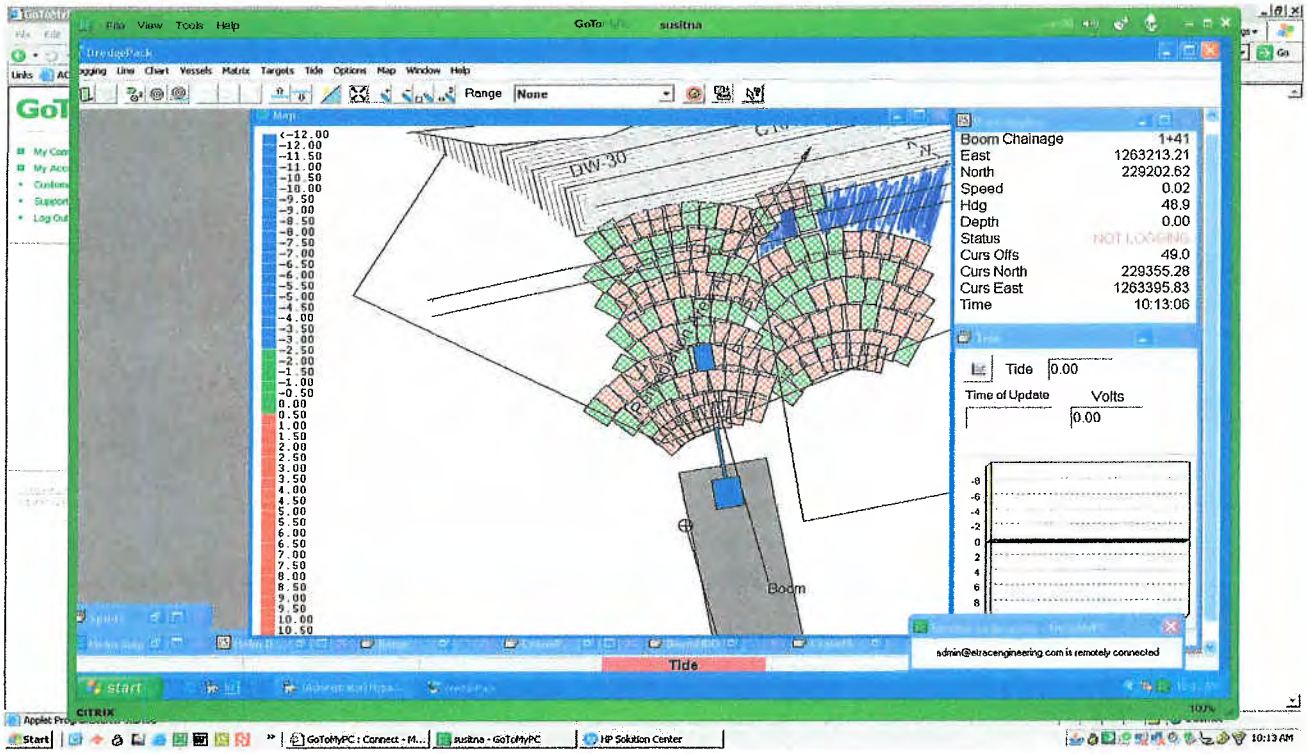
American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

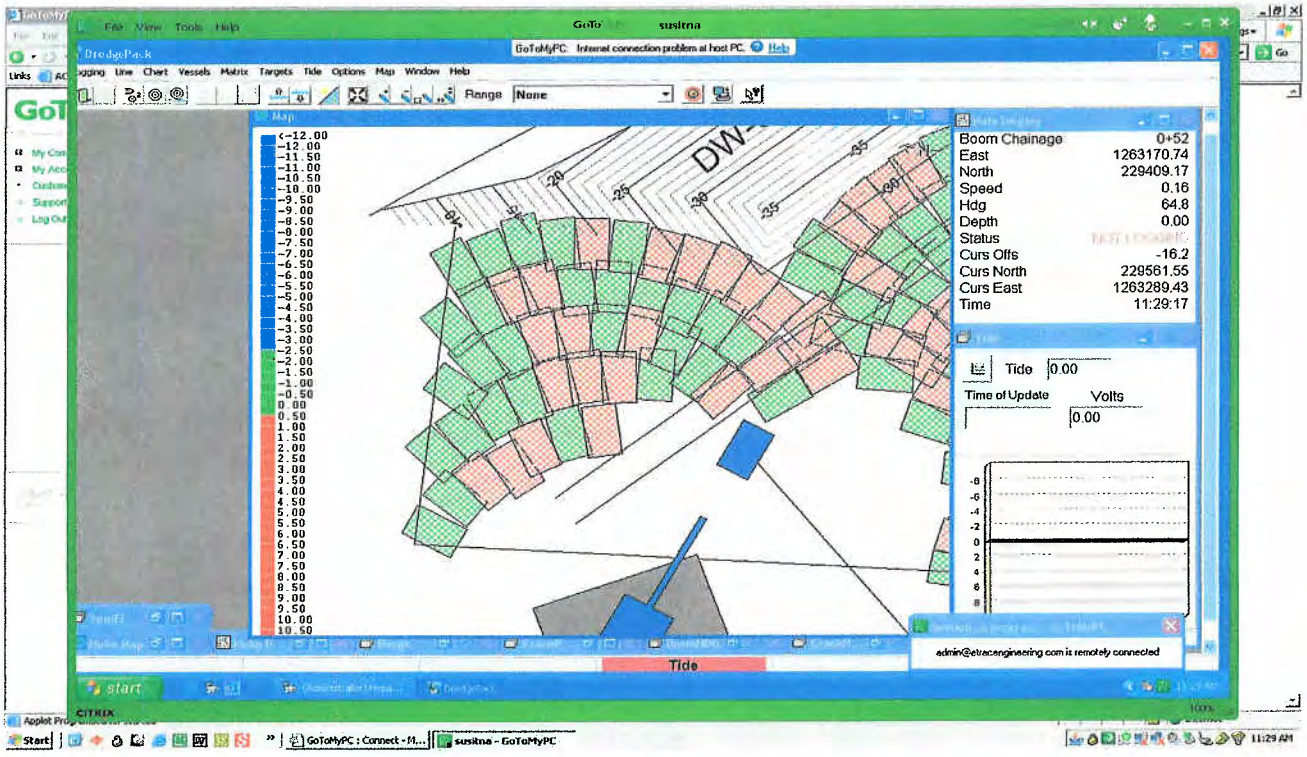
Personnel on Site
Greg A
Marty L
Dustin S
Cody H

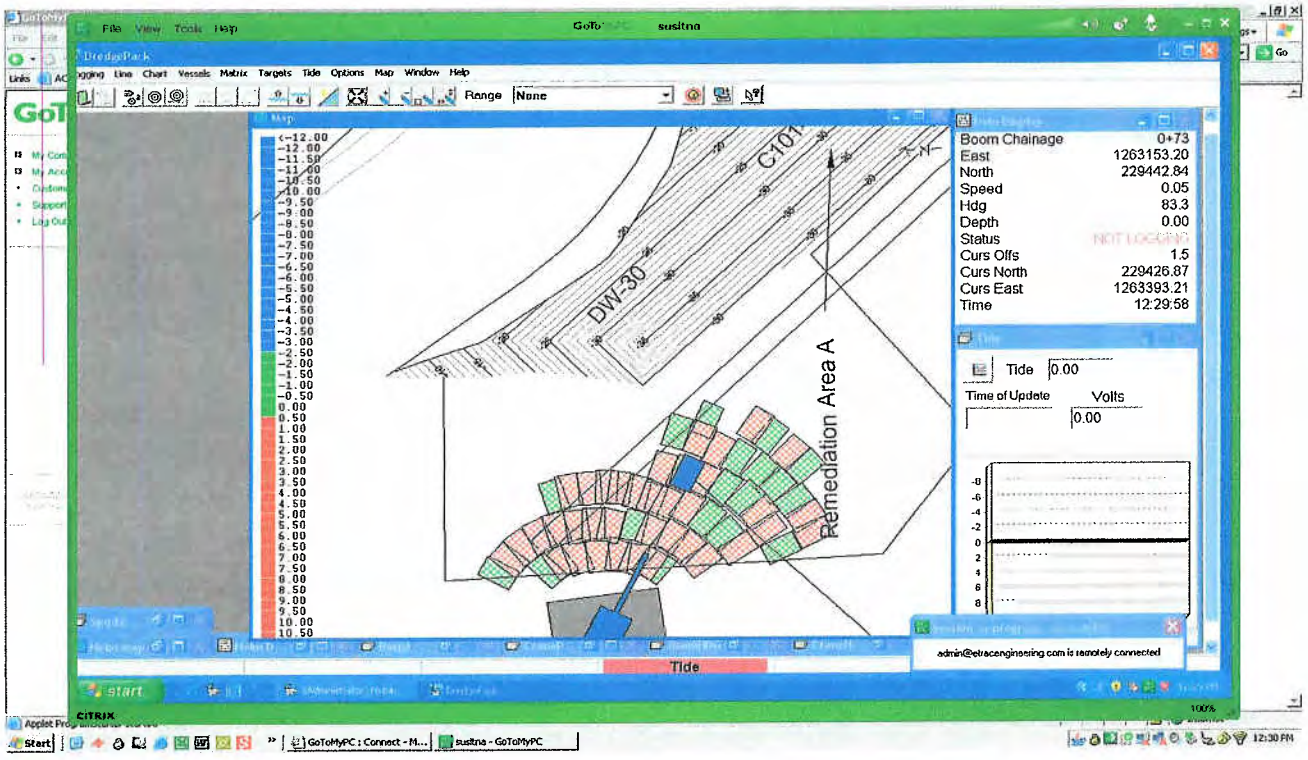
Equipment on Site
Pontoon 9310 6cyd bot
936 F Loader
KC-2 material barge
work boat
work skiff
Tug Service H

Temperature	Weather
42° to 56°	overcast

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	1		
Place contingency Sand	5 hr	Contingency	919 tons
Skiff rig	3		


File View Tools Help
susitna
DredgePack
Logging Line Chart Vessels Matrix Targets Tide Options Map Window Help
Range None
Map
DW-30
Boom
Boom Chainage 1+41
East 1263213.21
North 229202.62
Speed 0.02
Hdg 48.9
Depth 0.00
Status NOT LOGGING
Curs Offs 49.0
Curs North 229355.28
Curs East 1263395.83
Time 10:13:06
Tide 0.00
Time of Update
Volts
0.00
admin@etracengineering.com is remotely connected
Tide
start
CITRIX
Start
GoToMyPC : Connect - M...
susitna - GoToMyPC
HP Solution Center
10:13 AM


GoTo susitna
GoToMyPC Internet connection problem at host PC. Help
DredgePack
Range None
Boom Chainage 0+52
East 1263170.74
North 229409.17
Speed 0.16
Hdg 64.8
Depth 0.00
Status
Curs Offs -16.2
Curs North 229561.55
Curs East 1263289.43
Time 11:29:17
Tide 0.00
Time of Update
Volts 0.00
admin@etracengineering.com is remotely connected
Tide
start
GoToMyPC : Connect - M...
susitna - GoToMyPC
11:29 AM


susitna
DredgePack
Range
None
Boom Chainage 0+73
East 1263153.20
North 229442.84
Speed 0.05
Hdg 83.3
Depth 0.00
Status
Curs Offs 1.5
Curs North 229426.87
Curs East 1263393.21
Time 12:29:58
Tide 0.00
Time of Update
Volts
0.00
DW-30
C101
Remediation Area A
admin@etracengineering.com is remotely connected
Tide
start
CITRIX

Appendix C

King County Inspector Daily Reports

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 01
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2007	November	30	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-9:00am…No activity at the Derrick "Pam-Tay" Approximately: 9:00am The barge (KP-2) came to the site Approximately: 9:00am-9:30am…parking the barge Approximately 9:30am -11:00am placing filter fabric and hay bales at the inside sides of the barge. Approximately: 11:00am-12:00pm…marking the dredging cables one foot increment to be able to tell the depth. 12:00pm…the crew went to lunch 12:30pm…start dredging. At approximately 1:45pm, Ross Pickering with Anchor went to the derrick and took some photos, and observed some of the dredging from the deck. See the attached pics. ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	Marty Locke informed me that they dredged approximately 238CY. The crew worked about 10 hours, from about 7:00am to 5:30pm
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

12/4/07

Project Representative Randy Brunke (Date)

12/4/07

Inspector Iha Khilfeh (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 02
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2007	December	1st	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
X						

Weather

Clear	PC	Overcast	Fog	Snow
		am		pm

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:15am…No activity at the Derrick "Pam-Tay" Approximately: 7:15…activities started at the derrick Approximately: 8:00am…attempting dredging, problem with tide charts. Approximately 9:30am… start dredging and place materials into "KP-2" barge Approximately: 12:00pm-12:30pm…stopped for lunch 12:30pm…proceed dredging ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	Marty Locke informed me that they dredged approximately 300CY. The drew worked about 9 hours, from about 7:00am to 4:30pm. Greg Anderes informed me that he was going to take density for the dredge materials to figure out the materials conversion form CY to Tons.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

12/4/07
12/4/07

Inspector Iha Khilfeh (Date)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 03
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2007	December	3rd	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X				

Weather

Clear	PC	Overcast	Fog	Rain
				X

Temperature

10-32	32-55	55-70	70-85	85+
		X		

Construction Activities:	Approximately: 7:00am-7:30am…No activity at the Derrick "Pam-Tay" Approximately: 7:30…activities started at the derrick Approximately: 9:00am-11:45am…continued dredging and place materials into "KP-2" barge Approximately 11:45-12:00pm… rotate "KP-2" barge Approximately: 12:00pm-12:30pm…stopped for lunch 12:30pm…proceed dredging ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	Marty Locke informed me that they dredged approximately 500CY. The crew worked for about 10.5 hours, from about 7:00am to 6:00pm Greg Anderes informed me that the material conversion from yardage to tons was a factor of 1.5
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Iha Khilfeh 12/4/07
Inspector Iha Khilfeh (Date)

KING COUNTY
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Date				
Year	**Month**	**Day**		**Inspector**
2007	December	03		KLN
Day of the Week				
Sat	**Sun**	**Mon**	**Tue**	**Wed**	**Thu**	**Fri**
		X				
Weather				
Clear	**PC**	**Overcast**	**Fog**	**Rain**
		X		Rain, windy
Temperature				
10-32	**32-55**	**55-70**	**70-85**	**85+**
	am	pm		

Inspector's Daily Construction Report

REPORT NUMBER: 4
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1100hrs.
TIME WORK STOPPED: 1700hrs.

Construction Activities:	ACC/Hurlen continued dredging operations off shore N. of the KC Denny Regulator/Outfall. Marty Locke, ACC Supt., was on board. ACC/Hurlen dredged from the work platform "Pam Tay" into the spoils barge "KP-2". The dredging proceeded between app. sta. 1+00 and 2+00 from the W. (down) slope of the work site, working toward the E. (up) slope., with only minimal breaks until ACC stopped dredging operations for the day (phone call, M. Locke) at 1530hrs. M. Locke phoned in to shore at 1650hrs. to report that ACC was "dogging off" for the evening.		
Miscellaneous:	Took surface "grab sample" (using ACC work skiff) of Denny Outfall discharge at the request W. Div. Offsites Super., K. Zimmer, at app. 1635hrs.		
Safety/Accidents:	The Contractor's Safety and Traffic Plans were in effect at the site.		
Problems Encountered & Resolutions:	M. Locke delivered ACC/Hurlen Daily Reports for 11-30-07 and 12-01-07 to the KC shore office. ACC foreman, Keith W. came and took the Reports back, and took them down to ACC Office. They were not returned to this KC observer prior to the end of work at the site today. (re: also, R. Pickering, Anchor, who was present during the time of this episode).		
Test Conducted:	Denny buoy NTU readings varied between 1.5 (1100hrs.), and 4.4 (1500hrs) during this shift (Note: Aquarium background check buoy read 3.8 NTU); ODO varied between 7.8 (@1200hrs) and 8.39 (@1400hrs). KC Lab boat verification sampling between 1500-1600hrs. at the working grounds.		
Work Rejected:	None.		
Instructions Given to Contractor & Changes Initiated:	None.		
Visitors to Site:	KC: B.Wilbert, K. Loland; Anchor: R. Pickering		
Manpower and Equipment Used:	**Manpower:** PT crew: 5 persons	**Contractor Equipment:** "Pam Tay" (work platform) Barge "KP-2, Ketchikan" Work skiff	

Attachments: six photos

R. Brunke, Project Representative (Date)

K. Nordlund, CM III (12-03-07)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Date

Year	Month	Day	Inspector
2007	December	4th	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
			X			

Weather

Clear	PC	Overcast	Fog	Rain
				X

Temperature

10-32	32-55	55-70	70-85	85+
		X		

Inspector's Daily Construction Report

REPORT NUMBER: 04
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Construction Activities:	Approximately: 7:00am-7:15am…moving the "KP-2" barge of site to be unloaded carrying approximately 1000 CY. Approximately: 7:15am-7:45am…setting up the new barge "H-9"next to the derrick Approximately: 7:45am-11:45pm…placing filter fabric and hay bales on the sides of the new barge" Approximately 11:45-12:00pm… rotate "KP-2" barge Approximately: 12:00pm-12:30pm…stopped for lunch 12:30pm…start dredging. See Keith Nordlund report for the rest of the day ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	Marty Locke informed me that they dredged approximately 269CY for the whole day. Greg Anderes informed me that the material conversion from yardage to tons was a factor of 1.5
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

(Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 12/6/07 (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 05
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2007	December	5th	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:30am...getting ready for dredging Approximately: 7:30am-8:40am...dewatering the barge "H-9" Approximately: 8:00am-10:45pm...dredging Approximately 10:45-operation broke down. See Keith Nordlund report. See Keith Nordlund report for the rest of the day ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total 239CY for the whole day.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 12/6/07 (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

WORK ORDER NUMBER:
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE : Denny Way CSO-Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 6:00
TIME WORK STOPPED: 2:30

Date

Year	Month	Day	Inspector
2007	Dec	5	BCR

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Unloading of barge "KP-2, Ketchikan" continued. Starting time today at 0800. 12 containers have been filled and trucked away with a 4 hours period. 1/3 of the load on the barge remains at 1200. The crew takes a one (1) hour lunch break. There are three container trailer trucks moving the materials to the train loading area. 4 more containers have been filled by 1430. There has been no material spillage from the barge loading process, nor the loaded containers. The offloading of this barge "KP-2, Ketchikan" will be complete by the end of the crews 8 hour work shift. See picture on back for typical 6 mil plastic container liner being used that unloading site.
Miscellaneous:	
Safety/Accidents:	
Problems Encountered & Resolutions:	
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	
Manpower	Total six (6) crew men 1 crane operator, 1 front-end loader operator, 1 forklift operator, 3 deck hands.
Visitors to Site	
Equipment Used	Crane, Front-end Loader, forklift

Randy Brunke, Project Representative (Date)

12/5/07
Bill Rea, Inspector (Date)

KING COUNTY
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Date						
Year	**Month**		**Day**			**Inspector**
2007	December		01			KLN
Day of the Week						
Sat	**Sun**	**Mon**	**Tue**	**Wed**	**Thu**	**Fri**
X						
Weather						
Clear	**PC**	**Overcast**		**Fog**		**Rain**
		X				Snow flurries, rain
Temperature						
10-32	**32-55**	**55-70**		**70-85**		**85+**
am	pm					

Inspector's Daily Construction Report

REPORT NUMBER: 3
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)

PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1100hrs.
TIME WORK STOPPED: 1600hrs.

Construction Activities:	ACC/Hurlen continued dredging operations off shore N. of the KC Denny Regulator/Outfall. Marty Locke, ACC Supt., was on board and his cellphone worked. ACC/Hurlen dredged from the work platform "Pam Tay" into the spoils barge KP-2. The dredging proceeded between app. sta. 0+50 and 1+50 on the W. (down) slope of the work site, working toward the E. (up) slope., with only minimal breaks until ACC stopped dredging operations for the day (phone call, M. Locke) at 1530hrs.		
Miscellaneous:	Breaks: 1200-1300hrs. Lunch, Maint.		
Safety/Accidents:	The Contractor's Safety and Traffic Plans were in effect at the site.		
Problems Encountered & Resolutions:	ACC/Hurlen stopped dredging work at app. 1530hrs., and dogged off for the day at app. 1600hrs. due to blowing snow buildups on the dredge that were creating safety issues for the crew.		
Test Conducted:	Denny buoy NTU readings varied between -0.1 (1100hrs.) and 1.4 (1430hrs) during this shift; ODO varied between 6.91 (@1630hrs) and 7.12 (@1430hrs). Daily buoy chart is being submitted in F. Reports, I. Khilfeh, KC.		
Work Rejected:	None.		
Instructions Given to Contractor & Changes Initiated:	G. Anderes informed this observer that ACC/Hurlen would attempt to deliver their Daily Survey information to KC around Midday of the following work shift day, but no deliveries have been made to KC after two days of dredging. This observer has contacted ACC on three occasions, and ACC has promised to get them to KC as soon as they can.		
Visitors to Site:	G. Anderes, ACC.		
Manpower and Equipment Used:	**Manpower:** PT crew: 5 persons	**Contractor Equipment:** "Pam Tay" (work platform) Barge "KP-2, Ketchikan" Work skiff	

Attachments: three photos

R. Brunke, Project Representative (Date)

12-03-07
K. Nordlund, CM III (12-03-07)

KING COUNTY
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Date				
Year	**Month**	**Day**		**Inspector**
2007	December	04		KLN
Day of the Week				
Sat	**Sun**	**Mon**	**Tue**	**Wed**	**Thu**	**Fri**
			X			
Weather				
Clear	**PC**	**Overcast**	**Fog**	**Rain**
	X			Rain showers, windy
Temperature				
10-32	**32-55**	**55-70**	**70-85**	**85+**
	am	pm		

Inspector's Daily Construction Report

REPORT NUMBER: 5
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)

PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1100hrs. (Afternoon shift)
TIME WORK STOPPED: 1900hrs.

Construction Activities:	ACC/Hurlen continued dredging operations off shore N. of the KC Denny Regulator/Outfall after 1324hrs. ACC/Hurlen dredged from the work platform "Pam Tay" into the spoils barge "H-9". The dredging proceeded between app. sta. 1+75 and 2+50 (re: M. Locke) from the W. (down) slope of the work site, working toward the E. (up) slope., with only minimal breaks until ACC stopped dredging operations for the day (phone call, M. Locke) at 1630hrs. M. Locke phoned in to shore at 1645hrs. to report that ACC was "dogging off" for the evening. Crew left site for ACC/Hurlen Yard at 1700hrs.		
Miscellaneous:	Dredging didn't begin until after 1324hrs. ACC/Hurlen worked at making new Spoils Barge "H-9" acceptable for receiving hazardous materials dredge spoils.		
Safety/Accidents:	The Contractor's Safety and Traffic Plans were in effect at the site.		
Problems Encountered & Resolutions:	Received call from ACC/ Hurlen that wind and swell conditions were creating problems for setting up the instrumentation for tracking this day's dredging activities.		
Test Conducted:	Denny buoy NTU readings varied between 1.6 (1300hrs.), and 2.4 (1400hrs) during this shift (Note: Aquarium background check Buoy read 5.9 NTU 1500hrs.). ODO this shift, varied between 7.8 (@1200hrs) and 8.39 (@1400hrs). KC Lab notified (Jim Devereaux, 1330hrs) for boat verification sampling between 1430-1500hrs. at the working grounds.		
Work Rejected:	None.		
Instructions Given to Contractor & Changes Initiated:	None.		
Visitors to Site:	KC: R. Brunke; Anchor: R. Pickering; KC Lab boat		
Manpower and Equipment Used:	**Manpower:** PT crew: 5 persons	**Contractor Equipment:** "Pam Tay" (work platform) Spoils Barge "H-9" Work skiff Tug "Jennifer H" (left site 1330hrs.)	

Attachments: six photos

R. Brunke, Project Representative (Date)

12-04-07
K. Nordlund, CM III (12-04-07)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

WORK ORDER NUMBER:
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE : Denny Way CSO-Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 6:00
TIME WORK STOPPED: 2:30

Date

Year	Month	Day	Inspector
2007	Dec	4	BCR

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
			X			

Weather

Clear	PC	Overcast	Fog	Rain
	X			X

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	The barge "KP-2, Ketchikan" arrived at the offloading deck at 0835 and was tied off. The offloading crew began with loading the front-end loader onto the barge, this was completed at 0915. The first plastic lined container was placed onto the barge at 0925. The first container was full with six (6) buckets of materials and removed from the barge in 20 minutes. A deck crew of three (3) men install the plastic liners into the containers. Then the forklift moves the container near the crane where the same three (3) man crew hooks up the crane lifting cables to that container. This process takes 10 minutes. Removing the filled container also takes 10 minutes. By 1200, 9 containers have been filled and trucked away with a 3 hours period. 1/5 of the load on the barge has been removed. The crew takes a one (1) hour lunch break. There are three container trailer trucks moving the materials to the train loading area. The trucks can carry two (2) empty containers to the barge unloading yard. But the trailers can only return to the train loading area with one (1) loaded container, (57000 lbs gross, according the forklift operator). At 1400 a total of 13 containers have left the barge area. There has been no material spillage from the barge loading process, nor the loaded containers. The offloading of this barge " KP-2, Ketchikan" will continue tomorrow morning (Wednesday, December 05, 2007)
Miscellaneous:	
Safety/Accidents:	
Problems Encountered & Resolutions:	.With the metal clips that were being used to secure the plastic liner to the container walls, wind was pulling the lining loose. The solutions was adding 10' wooden 1X4 boards with clamps to secure the liner to the container walls. This has added an additional 15 minutes to the loading cycle for each container.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	
Manpower	Total six (6) crew men 1 crane operator, 1 front-end loader operator, 1 forklift operator, 3 deck hands.
Visitors to Site	
Equipment Used	Crane, Front-end Loader, forklift

Randy Brunke, Project Representative (Date)

12/4/07
Bill Rea, Inspector (Date)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 6
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1100HRS.
TIME WORK STOPPED: 1600HRS.

Date

Year	Month	Day	Inspector
2007	December	05	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen continued dredging operations off shore N. of the KC Denny Regulator/Outfall after 1324hrs. ACC/Hurlen dredged from the work platform "Pam Tay" into the spoils barge "H-9" (KC currently does not have any ACC submitted information on this Spoils Barge). The dredging proceeded on their initial 2'± cut, between app. sta. 2+00 and 3+00 (re: M. Locke) from the W. (down) slope of the work site, working toward the E. (up) slope after 1250hrs. (Note: actual sta, and locs. are being Submitted by ACC with their Daily Reports mid-day of the following day, re: I. Khilfeh, KC.) ACC had two major breaks before they stopped dredging operations for the day (See **Problems Encountered** Section below.) Received phone call, M. Locke at 1520hrs. about barge leak. M. Locke phoned in to shore at 1545hrs. to report that the "Jennifer H" was hauling Spoils barge "H-9" to their yard, and ACC was "dogging off" for the evening.
Miscellaneous:	Cell-phoned to B. Rea, KC, to check on the progress offloading Spoils Barge "KP-2" @ DMC Offloading Facility. B. Rea said that the Contractor (Sub. Rabanco, was conducting offloading operations within the Submitted plan. At 1300hrs., ACC delivered Daily Report for 12-04-07 to the site office.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	Problem A: ACC/Hurlen didn't begin dredging work until after 1250hrs. this shift. Contacted G. Anderes, ACC, when this KC observer got no response from cell-phone calls to M. Locke during the first two hours of this Afternoon shift. Greg said that M. Locke had lost his cell-phone overboard this morning. Per Greg, the Dredging was on hold for the first two hours of this shift because two "air cans" had blown on the rig, requiring a repair break. Problem B: Observed ACC hooking up bilge pump to the port, forward bilge access hatch on the Spoils Barge "H-9" at app. 1510hrs. Yelled over to M. Locke from the beach. The "H-9" had an outer hull leak in the area noted above. The "Jennifer H" was on site to haul the barge back to ACC's yard where a larger bilge pump will handle the hull leak until the barge can be made ready to depart to DMC (Rabanco).

Attachments: two photos, Daily Denny buoy Log

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (12-05-07)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT
DIVISION

Inspector's Daily Construction Report (cont.)

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1100HRS.
TIME WORK STOPPED: 1900HRS.

REPORT NUMBER: 6

CONTRACT NUMBER: C00190C07

AGREED ORDER NO. DE5068

Test Conducted:	Denny buoy reported NTU readings varied between 3.2± (1300hrs.), and 4.4± (1515hrs) during this shift (Note: Aquarium background check Buoy read 9.4± NTU 1515hrs. There is still a large runoff coming down the Duwamish R. from the recent "Pineapple Express" caused flooding.). ODO this shift, varied between 8.37± (@1515hrs) and 9.31 (@1100hrs). KC Lab boat on site for Monitoring Plan work during Morning shift (re: I. Khilfeh).
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.
Manpower	"Pam Tay": five persons, Survey boat: two persons; "Jennifer H": two persons
Visitors to Site	None.
Equipment Used	Dredge platform "Pam Tay", Spoils Barge "KP-2, Ketchikan", (2) work skiffs, Survey boat; Tug "Jennifer H" (1400-1545hrs)

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (12-05-07)

Start date: 12/5/2007 End date: 12/5/2007

Submit Back Export as .CSV

Denny Way User Defined

	Min: 1.016 Max: 1.111 Mean: 1.065 St.dev: 0.028	Min: 8.53 Max: 9.92 Mean: 9.12 St.dev: 0.32	Min: 29.760 Max: 44.080 Mean: 35.423 St.dev: 3.253	Min: 0.2 Max: 6.3 Mean: 3.4 St.dev: 1.1	Min: 81.3 Max: 91.8 Mean: 88.2 St.dev: 2.7	Min: 7.68 Max: 9.33 Mean: 8.82 St.dev: 0.43
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
12/5/2007 00:00	1.086	9.42	37.210	2.9	89.1	8.77
12/5/2007 00:15	1.106	9.39	37.140	2.9	89.1	8.78
12/5/2007 00:30	1.101	9.40	37.140	2.9	89.1	8.78
12/5/2007 00:45	1.096	9.42	37.140	2.8	89.4	8.80
12/5/2007 01:00	1.107	9.41	37.120	2.7	89.6	8.82
12/5/2007 01:15	1.104	9.41	37.130	2.7	90.2	8.88
12/5/2007 01:30	1.108	9.40	37.100	2.6	90.4	8.91
12/5/2007 01:45	1.108	9.40	37.150	2.7	90.0	8.87
12/5/2007 02:00	1.106	9.39	37.120	2.7	90.2	8.89
12/5/2007 02:15	1.102	9.25	36.290	3.1	89.3	8.86
12/5/2007 02:30	1.111	9.23	36.150	3.2	89.4	8.88
12/5/2007 02:45	1.097	9.28	36.480	3.0	89.5	8.87
12/5/2007 03:00	1.100	9.19	35.700	3.3	89.5	8.92
12/5/2007 03:15	1.106	9.18	35.590	3.2	89.3	8.90
12/5/2007 03:30	1.101	9.09	34.810	3.5	89.9	9.01
12/5/2007 03:45	1.095	9.03	34.260	3.5	90.1	9.07
12/5/2007 04:00	1.104	9.02	34.250	3.5	90.3	9.09
12/5/2007 04:15	1.095	8.99	33.940	3.8	90.2	9.10
12/5/2007 04:30	1.091	9.00	34.060	3.7	90.3	9.10
12/5/2007 04:45	1.104	8.97	33.850	3.8	90.5	9.14
12/5/2007 05:00	1.088	8.95	33.640	3.8	90.6	9.16
12/5/2007 05:15	1.083	8.96	33.650	3.8	90.4	9.14
12/5/2007 05:30	1.086	8.86	33.120	3.9	91.0	9.24
12/5/2007 05:45	1.084	8.90	33.340	3.7	91.0	9.22
12/5/2007 06:00	1.084	8.88	33.180	3.7	91.0	9.24
12/5/2007 06:15	1.084	8.87	33.070	3.6	91.0	9.24
12/5/2007 06:30	1.083	8.84	32.720	3.8	91.0	9.27
12/5/2007 06:45	1.086	8.84	32.680	3.8	91.0	9.26
12/5/2007 07:00	1.080	8.89	33.330	3.6	90.7	9.19
12/5/2007 07:15	1.083	9.37	37.860	2.7	86.5	8.50
12/5/2007 07:30	1.080	9.43	38.570	2.4	86.0	8.41
12/5/2007 07:45	1.078	9.48	39.110	2.3	85.4	8.32
12/5/2007 08:00	1.080	8.80	33.440	3.2	88.4	8.97
12/5/2007 08:15	1.077	9.60	40.770	1.5	84.6	8.17
12/5/2007 08:30	1.087	9.45	36.660	1.8	84.1	8.29
12/5/2007 08:45	1.078	9.49	39.440	2.0	84.5	8.22
12/5/2007 09:00	1.079	9.92	44.080	0.2	81.3	7.68
12/5/2007 09:15	1.087	8.81	34.290	3.0	89.0	9.01
12/5/2007 09:30	1.091	8.68	32.600	3.9	90.1	9.21
12/5/2007 09:45	1.086	8.65	32.580	4.0	91.2	9.33

12/5/2007 10:00	1.084	8.64	32.080	3.9	90.7	9.30
12/5/2007 10:15	1.083	8.63	31.640	4.0	90.5	9.29
12/5/2007 10:30	1.081	8.73	32.650	3.5	90.7	9.25
12/5/2007 10:45	1.089	8.76	32.800	3.6	90.7	9.24
12/5/2007 11:00	1.078	8.76	32.680	3.7	90.6	9.24
12/5/2007 11:15	1.073	8.78	33.200	3.3	91.5	9.31
12/5/2007 11:30	1.076	8.79	33.320	3.1	91.6	9.31
12/5/2007 11:45	1.074	8.80	33.040	3.5	91.0	9.25
12/5/2007 12:00	1.074	8.80	33.320	3.2	91.8	9.32
12/5/2007 12:15	1.067	8.80	33.200	3.3	91.0	9.25
12/5/2007 12:30	1.067	8.81	33.350	3.2	91.5	9.29
12/5/2007 12:45	1.066	8.78	32.330	3.8	91.1	9.30
12/5/2007 13:00	1.065	8.82	33.100	3.7	90.9	9.24
12/5/2007 13:15	1.064	8.89	33.890	3.5	89.8	9.08
12/5/2007 13:30	1.058	9.12	35.440	4.4	85.3	8.53
12/5/2007 13:45	1.050	9.42	40.970	2.6	87.1	8.43
12/5/2007 14:00	1.054	8.99	34.040	4.0	89.6	9.03
12/5/2007 14:15	1.051	9.08	34.890	3.9	88.3	8.85
12/5/2007 14:30	1.048	9.47	38.970	1.8	84.9	8.28
12/5/2007 14:45	1.050	9.27	36.690	5.0	86.4	8.55
12/5/2007 15:00	1.050	9.31	37.560	4.3	86.1	8.49
12/5/2007 15:15	1.051	9.33	37.680	4.4	85.0	8.37
12/5/2007 15:30	1.051	9.46	39.330	3.5	86.0	8.37
12/5/2007 15:45	1.047	9.39	38.310	3.1	85.7	8.40
12/5/2007 16:00	1.047	9.17	35.600	3.9	87.3	8.70
12/5/2007 16:15	1.046	9.38	38.080	2.9	86.3	8.47
12/5/2007 16:30	1.050	8.87	33.440	4.0	88.4	8.96
12/5/2007 16:45	1.039	9.48	39.620	2.0	87.6	8.52
12/5/2007 17:00	1.042	9.65	41.150	2.0	83.5	8.03
12/5/2007 17:15	1.038	9.76	42.340	1.1	82.6	7.88
12/5/2007 17:30	1.041	9.79	42.740	1.1	82.5	7.86
12/5/2007 17:45	1.040	9.78	42.650	1.0	82.5	7.86
12/5/2007 18:00	1.037	9.81	42.930	1.0	82.2	7.82
12/5/2007 18:15	1.038	9.59	40.650	1.8	83.5	8.06
12/5/2007 18:30	1.042	9.00	33.450	4.9	86.5	8.74
12/5/2007 18:45	1.034	8.99	32.270	5.4	88.1	8.95
12/5/2007 19:00	1.033	9.33	37.890	3.1	85.2	8.38
12/5/2007 19:15	1.033	8.96	32.830	5.0	88.9	9.02
12/5/2007 19:30	1.032	8.81	30.760	5.1	89.0	9.15
12/5/2007 19:45	1.020	9.26	37.530	3.4	86.1	8.49
12/5/2007 20:00	1.034	8.76	30.930	5.6	89.6	9.21
12/5/2007 20:15	1.027	9.07	34.780	4.3	87.9	8.82
12/5/2007 20:30	1.027	8.90	32.420	4.7	86.9	8.84
12/5/2007 20:45	1.035	8.85	30.550	6.3	88.2	9.06
12/5/2007 21:00	1.027	8.84	30.760	6.1	88.8	9.12
12/5/2007 21:15	1.031	8.62	30.450	5.5	89.1	9.21
12/5/2007 21:30	1.031	8.53	29.760	5.1	89.6	9.30
12/5/2007 21:45	1.025	8.83	32.490	4.1	88.6	9.03
12/5/2007 22:00	1.022	9.08	34.940	3.3	86.6	8.68
12/5/2007 22:15	1.023	8.92	33.290	4.1	87.6	8.88
12/5/2007 22:30	1.026	8.94	32.450	5.1	87.9	8.94
12/5/2007 22:45	1.023	9.01	33.260	5.0	87.6	8.86
12/5/2007 23:00	1.024	9.29	37.860	2.8	83.1	8.18
12/5/2007 23:15	1.016	9.77	42.740	1.0	81.7	7.79
12/5/2007 23:30	1.022	8.95	33.490	4.2	86.1	8.71
12/5/2007 23:45	1.020	9.09	34.270	3.8	86.9	8.73

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 7
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1100HRS.
TIME WORK STOPPED: 1900HRS.

Date

Year	Month	Day	Inspector
2007	December	06	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen continued dredging operations off shore near the KC Denny Regulator/Outfall during this shift. Work, this week, has proceeded from the N. end of the site toward the S., and between app. sta. 2+50 and 3+75 (per M. Locke, cell-phone) from the W.(down) slope of the work site, working toward the E. (up) slope. (Note: actual sta., and locs. are being Submitted by ACC with their Daily Reports mid-day of the following day, re: I. Khilfeh, KC.) ACC/Hurlen dredged from the work platform "Pam Tay" into the spoils barge "KP-2". ACC is dredging their initial 2'± cut on this first pass through the working grounds. ACC took only minimal breaks until they stopped dredging operations for the day. M. Locke cell-phoned at 1553hrs. to report that ACC was "dogging off" for the evening at 1620hrs. Crew left site for ACC/Hurlen Yard at 1700hrs.
Miscellaneous:	
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	
Test Conducted:	Denny buoy reported NTU readings varied between 3.3± (1200hrs.), and (1400hrs) during this shift (Note: Aquarium background check Buoy lab grab sample read 3.78± NTU 1030hrs.). ODO this shift, varied between 7.8mg/l (@1200hrs) and 8.39 (@1400hrs). KC Lab boat was on site for Monitoring Plan work app. 1030-1100hrs. (re: I. Khilfeh). J. Devereaux phoned in results of KC Lab manual grab sample results@ 1430hrs. Turbidity at Denny site at 1045hrs. was 1.54±NTU, ODO was 7.5±mg/l.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.
Manpower	"Pam Tay": five persons, Survey boat, two persons
Visitors to Site	None.
Equipment Used	Dredge platform "Pam Tay", Spoils Barge "KP-2, Ketchikan", (2) work skiffs, Survey boat

Attachments: four photos, Daily Log Denny buoy

Randy Brunke, Project Representative (Date)

K. Nordlund 12-06-07
K. Nordlund, CMIII (12-06-07)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

WORK ORDER NUMBER:
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE : Denny Way CSO-Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 6:00
TIME WORK STOPPED: 2:30

Date

Year	Month	Day	Inspector
2007	Dec	6	BCR

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Unloading of barge "H-9" arrived at the unloading site at 0858. The loader was landed onto the barge at 0912. First container was landed at 0947. The three (3) men crew installing the plastic lining to each containers, had five containers lined before the H-9 barge arrived. This give an increase of one additional container per hour (from 3 containers to 4 container per hour.) There has been no material spillage from the barge loading process, nor the loaded containers. The offloading of this barge "H-9" will be complete by the end of the crews 8 hour work shift.
Miscellaneous:	
Safety/Accidents:	
Problems Encountered & Resolutions:	.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	
Manpower	Total six (6) crew men 1 crane operator, 1 front-end loader operator, 1 forklift operator, 3 deck hands.
Visitors to Site	
Equipment Used	Crane, Front-end Loader, 2 forklifts

Randy Brunke, Project Representative (Date)

12/6/07
Bill Rea, Inspector (Date)

Start date: 12/6/2007 End date: 12/6/2007

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Denny Way User Defined

	Min: 0.957 Max: 1.017 Mean: 0.981 St.dev: 0.016	Min: 8.64 Max: 10.07 Mean: 9.74 St.dev: 0.28	Min: 33.440 Max: 45.780 Mean: 42.851 St.dev: 2.484	Min: -0.5 Max: 3.8 Mean: 0.8 St.dev: 0.9	Min: 79.5 Max: 87.0 Mean: 81.5 St.dev: 1.4	Min: 7.42 Max: 8.73 Mean: 7.77 St.dev: 0.26
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
12/6/2007 00:00	1.017	9.13	35.650	2.9	83.0	8.28
12/6/2007 00:15	1.007	9.80	42.310	0.6	81.7	7.79
12/6/2007 00:30	1.012	9.20	35.640	3.2	84.4	8.41
12/6/2007 00:45	1.010	9.75	42.450	1.0	81.2	7.75
12/6/2007 01:00	1.005	9.85	43.450	1.2	81.1	7.68
12/6/2007 01:15	1.008	9.73	42.400	1.1	82.6	7.89
12/6/2007 01:30	1.009	9.70	41.970	1.2	82.0	7.86
12/6/2007 01:45	1.007	9.66	41.690	1.4	82.0	7.86
12/6/2007 02:00	1.005	9.44	40.110	1.2	83.0	8.07
12/6/2007 02:15	1.004	9.14	37.350	2.4	83.1	8.23
12/6/2007 02:30	1.003	8.64	33.440	3.8	85.2	8.68
12/6/2007 02:45	0.999	8.70	36.610	2.8	87.0	8.73
12/6/2007 03:00	1.001	9.43	39.410	1.8	82.5	8.04
12/6/2007 03:15	0.998	9.46	39.740	1.8	83.1	8.08
12/6/2007 03:30	0.998	9.64	41.400	1.6	82.5	7.93
12/6/2007 03:45	0.994	9.63	41.220	1.6	83.1	7.99
12/6/2007 04:00	0.994	9.57	40.850	1.6	82.8	7.99
12/6/2007 04:15	0.993	9.74	42.450	1.2	80.6	7.70
12/6/2007 04:30	0.991	9.80	42.930	1.3	82.1	7.81
12/6/2007 04:45	0.992	9.90	44.060	0.3	80.1	7.57
12/6/2007 05:00	0.989	9.99	45.020	-0.2	79.8	7.48
12/6/2007 05:15	0.985	9.55	41.630	1.1	82.2	7.91
12/6/2007 05:30	0.984	9.50	41.270	1.2	82.1	7.92
12/6/2007 05:45	0.986	9.68	42.520	0.8	81.6	7.80
12/6/2007 06:00	0.982	9.61	42.030	1.0	82.1	7.88
12/6/2007 06:15	0.983	9.64	42.200	0.6	81.2	7.78
12/6/2007 06:30	0.981	9.87	43.770	0.5	81.0	7.66
12/6/2007 06:45	0.979	9.77	43.120	0.4	80.3	7.64
12/6/2007 07:00	0.979	9.84	43.530	0.3	80.5	7.63
12/6/2007 07:15	0.979	9.82	43.380	0.4	80.8	7.67
12/6/2007 07:30	0.977	9.86	43.810	0.5	80.3	7.59
12/6/2007 07:45	0.977	9.93	44.510	0.1	79.6	7.49
12/6/2007 08:00	0.972	9.90	44.010	0.2	81.1	7.66
12/6/2007 08:15	0.973	9.97	44.880	0.1	79.6	7.48
12/6/2007 08:30	0.971	9.97	44.850	0.0	79.7	7.49
12/6/2007 08:45	0.972	9.98	45.070	-0.1	80.0	7.51
12/6/2007 09:00	0.977	9.98	44.880	-0.3	79.8	7.50
12/6/2007 09:15	0.971	9.46	42.270	0.5	82.8	7.96
12/6/2007 09:30	0.976	9.81	44.090	0.0	81.4	7.70
12/6/2007 09:45	0.973	9.73	43.650	0.1	81.5	7.74

12/6/2007 10:00	0.974	9.86	44.260	0.0	80.9	7.64
12/6/2007 10:15	0.979	9.99	45.110	-0.1	80.2	7.52
12/6/2007 10:30	0.978	10.00	45.190	-0.4	79.9	7.49
12/6/2007 10:45	0.972	9.79	43.970	0.2	81.4	7.71
12/6/2007 11:00	0.974	9.78	43.830	0.4	81.8	7.75
12/6/2007 11:15	0.972	9.88	44.510	0.5	80.8	7.62
12/6/2007 11:30	0.970	9.82	43.740	1.0	81.1	7.68
12/6/2007 11:45	0.968	10.02	45.380	-0.4	79.9	7.47
12/6/2007 12:00	0.974	10.04	45.490	-0.4	79.7	7.45
12/6/2007 12:15	0.971	10.06	45.700	-0.5	79.7	7.44
12/6/2007 12:30	0.972	10.07	45.780	-0.5	79.5	7.42
12/6/2007 12:45	0.970	10.04	45.490	-0.1	79.8	7.46
12/6/2007 13:00	0.965	9.79	43.660	0.2	83.0	7.87
12/6/2007 13:15	0.966	9.76	43.080	1.3	82.6	7.86
12/6/2007 13:30	0.964	9.76	43.150	0.9	82.2	7.82
12/6/2007 13:45	0.960	9.82	43.480	1.0	81.8	7.76
12/6/2007 14:00	0.962	9.85	43.690	0.6	81.4	7.71
12/6/2007 14:15	0.961	9.82	43.610	0.8	81.4	7.71
12/6/2007 14:30	0.960	9.86	43.840	0.5	81.2	7.69
12/6/2007 14:45	0.957	9.80	43.460	0.3	81.3	7.71
12/6/2007 15:00	0.960	9.66	42.790	0.7	83.0	7.93
12/6/2007 15:15	0.962	9.79	43.470	1.6	81.9	7.78
12/6/2007 15:30	0.965	9.82	43.710	1.0	81.7	7.74
12/6/2007 15:45	0.967	9.84	43.800	1.3	81.4	7.71
12/6/2007 16:00	0.968	9.88	44.090	0.8	81.0	7.65
12/6/2007 16:15	0.964	9.88	44.230	0.1	81.1	7.66
12/6/2007 16:30	0.965	9.93	44.700	0.1	80.5	7.58
12/6/2007 16:45	0.971	9.96	45.060	-0.1	80.2	7.53

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King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 06
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2007	December	6th	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
				X

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am, the crew at site and no barge next to the derrick. Approximately: 8:00am, the barge arrived (KP-2). It has some concrete and rock debris on both end of the barge. The barge mostly empty. Approximately: 9:00am-12:00pm.... Dredging Approximately 10:30am – 11:00am surveying. See Keith Nordlund report for the rest of the day A total hour of dredging from 7:00am to 12:00pm is 3 hours. ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total 519 CY for the whole day. See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Iha Khilfeh 12/10/07
Inspector Iha Khilfeh (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

WORK ORDER NUMBER:
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE : Denny Way CSO-Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 6:00
TIME WORK STOPPED: 2:30

Date

Year	Month	Day	Inspector
2007	Dec	7	BCR

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Unloading of barge "H-9" has been completed and is waiting to be moved. The three (3) men crew continued with installing the plastic lining to each containers for the next barge. The trucking contractor continued moving the full containers to the rail loading area. Each return trip to the barge unloading area a empty container was brought and unloaded for use for the next barge. The next full barge is scheduled for next Monday morning, December 10th.
Miscellaneous:	
Safety/Accidents:	
Problems Encountered & Resolutions:	.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	
Manpower	Total six (6) crew men 1 crane operator, 1 front-end loader operator, 1 forklift operator, 3 deck hands.
Visitors to Site	
Equipment Used	Crane, Front-end Loader, 2 forklifts

Randy Brunke, Project Representative (Date)

12/7/07
Bill Rea, Inspector (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 07
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2007	December	7th	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:30am…the crew at site getting ready. Approximately: 7:30am-8:15am…rotating the barge (KP-2) using tug boat Approximately: 8:15am-9:20am…. dredging. Approximately 9:20am – 10:35…King County lab "ROV" taking videos of the shore area under water for the area to be dredged. Approximately 10:35am-12:00pm…dredging. 12:00pm…lunch See Keith Nordlund report for the rest of the day A total hour of dredging from 7:00am to 12:00pm is 2.5 hours. ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total 421 CY for the whole day. See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Iha Khilfeh 12/10/07
Inspector Iha Khilfeh (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 08
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2007	December	8th	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
X						

Weather

Clear	PC	Overcast	Fog	Rain
X				

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:30am…the crew at the derrick, and new barge arrived (KP-1), tug boat is Diane. Approximately: 7:30am-8:00am…fixing the filter fabrics and hay bales on the inside sides of the barge. Approximately: 8:30am-12:00pm…. dredging. Approximately 12:00pm – 12:30pm…lunch Approximately 12:30pm-2:30pm…dredging. A total hour of dredging from 7:00am to 2:30pm is 6 hours. ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).Mark, a welder for only today to weld the end fence for the barge.
Miscellaneous:	From ACC daily report, they dredge a total 354 CY for the whole day. See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 12/10/07 (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 09
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2007	December	10th	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X				

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-8:00am…tug boat"Jenniffer H." rotating the barge (KP-1. Approximately: 8:00am-9:45am…dredging Approximately: 9:45am-10:30pm…. Repositioning the barge and the derrick Approximately 10:30pm – 12:00am…continued dredging Approximately 12:00pm-12:30pm…lunch A total hour of dredging this morning from 7:00am to 12:00pm is approximately 3.5 hours. See Keith Nordlund report for the afternoon work ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total 632 CY for the whole day. See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 12/12/2007 (Date)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 9
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1100HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1900HRS.

Date

Year	Month	Day	Inspector
2007	December	10	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X				

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen continued dredging operations off shore near the KC Denny Regulator/Outfall during this shift. Work proceeded from the N. end of the site toward the S. end. Work this day, was between app. sta. 3+00 and 3+75 (per M. Locke, cell-phone), and from the E. (up) slope of the work site, toward the W. (down) slope. (Note: Actual sta., and locs. are being Submitted by ACC with their Daily Reports mid-day of the following day. re: I. Khilfeh, KC) ACC/Hurlen dredged from the work platform "Pam Tay" into the spoils barge "KP-1" until 1610hrs. ACC is dredging an initial 2'± cut on their first pass through the working grounds.
Miscellaneous:	ACC took only minimal breaks this shift. M. Locke signaled this observer from the barge at 1615hrs. that ACC was done dredging for the evening. Total Time Dredging: 7hrs./25 min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	At app. 1315hrs. an ACC/Hurlen person, K. Dronen (sp.?), entered the trailer, asking if someone from KC could test the material that was currently being excavated for barge "KP-1", because the material had a slight oily sheen, and was different than material they had been dredging to date. This observer informed him of the Drilling Logs in the Contract, and the fact that petroleum odors and pollutants were both found in the area they were dredging. Politely suggested he call Greg Anderes from their Office regarding a meeting held with Rabanco and ACC/Hurlen less than two Weeks ago, discussing previous results of coring and testing of the site materials. Phoned R. Brunke regarding the site meeting.
Test Conducted:	Denny buoy reported NTU readings varied between -0.5± (1130hrs.), and 1.4±(1545hrs) during this shift. ODO this shift, varied between 8.05mg/l (@1115hrs) and 8.64 (@1330hrs). KC Lab boat was on site for Monitoring Plan work this Shift. Results of KC Lab manual grab samples for the sampling at the Denny site were: Turbidity 1.83±NTU, and ODO 8.22 mg/l.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.
Manpower	"Pam Tay": five persons, Survey boat, one person
Visitors to Site	KC: R. Brunke, J. Phillips (with two guests from D.O.E.); Anchor: R. Pickering

Attachments: Daily Log Denny buoy, two photos

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (12-10-07)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

WORK ORDER NUMBER:
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE : Denny Way CSO-Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 6:00
TIME WORK STOPPED: 2:30

Date

Year	Month	Day	Inspector
2007	Dec	10	BCR

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X				

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Unloading of barge "KP-2" has been started this morning. The three (3) men crew continued with installing the plastic lining to each containers for the next barge. The trucking contractor continued moving the full containers to the rail loading area. Each return trip to the barge unloading area, an empty container was brought and unloaded. By 10 am 50% of the barge has been unloaded. By 1400 only 30% remained on the barge.
Miscellaneous:	
Safety/Accidents:	
Problems Encountered & Resolutions:	.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	
Manpower	Total six (6) crew men 1 crane operator, 1 front-end loader operator, 1 forklift operator, 3 deck hands.
Visitors to Site	
Equipment Used	Crane, Front-end Loader, 2 forklifts

Randy Brunke, Project Representative (Date)

12/10/07
Bill Rea, Inspector (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT
DIVISION

Inspector's Daily Construction Report

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)

REPORT NUMBER: 9

PRIME CONTRACTOR: ACC/Hurlen Construction Co.

CONTRACT NUMBER: C00190C07

TIME WORK STARTED: 1100HRS. (AFTERNOON SHIFT)

TIME WORK STOPPED: 1900HRS.

Equipment Used	Dredge platform "Pam Tay", Spoils Barge "KP-1, Ketchikan, Ak.", (2) work skiffs, one P/U Truck (on shore)

R. Brunke, Project Representative (Date)

K. Nordlund, CMIII 12-10-07

Start date: 12/10/2007 End date: 12/10/2007

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Denny Way User Defined

	Min: 1.119 Max: 1.153 Mean: 1.139 St.dev: 0.007	Min: 7.93 Max: 9.27 Mean: 8.78 St.dev: 0.36	Min: 39.280 Max: 43.790 Mean: 41.979 St.dev: 1.274	Min: -0.5 Max: 6.0 Mean: 0.1 St.dev: 0.9	Min: 84.0 Max: 91.2 Mean: 86.6 St.dev: 1.7	Min: 8.05 Max: 9.20 Mean: 8.47 St.dev: 0.28
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
12/10/2007 00:00	1.119	7.98	39.280	0.2	89.9	9.06
12/10/2007 00:15	1.122	7.96	39.540	0.1	90.8	9.15
12/10/2007 00:30	1.120	7.96	39.520	0.1	91.0	9.17
12/10/2007 00:45	1.126	7.94	39.460	0.2	91.0	9.18
12/10/2007 01:00	1.127	7.93	39.460	0.2	91.2	9.20
12/10/2007 01:15	1.124	8.09	39.780	0.1	89.7	9.00
12/10/2007 01:30	1.126	8.24	40.330	0.1	89.6	8.94
12/10/2007 01:45	1.126	8.39	40.720	0.1	89.2	8.85
12/10/2007 02:00	1.130	8.40	40.880	0.0	87.5	8.67
12/10/2007 02:15	1.127	8.10	39.470	0.1	88.5	8.89
12/10/2007 02:30	1.132	8.50	40.950	-0.1	87.2	8.62
12/10/2007 02:45	1.132	8.40	40.460	0.0	87.5	8.69
12/10/2007 03:00	1.133	8.47	40.260	0.0	87.3	8.66
12/10/2007 03:15	1.136	8.50	40.770	0.1	87.0	8.61
12/10/2007 03:30	1.136	8.30	39.880	0.0	87.5	8.73
12/10/2007 03:45	1.135	8.50	40.690	-0.1	86.9	8.61
12/10/2007 04:00	1.135	8.68	41.600	-0.3	86.2	8.46
12/10/2007 04:15	1.138	8.38	40.060	-0.1	87.7	8.73
12/10/2007 04:30	1.134	8.61	41.220	-0.1	86.2	8.49
12/10/2007 04:45	1.138	8.77	41.890	-0.2	86.3	8.44
12/10/2007 05:00	1.138	8.79	41.890	-0.2	86.1	8.42
12/10/2007 05:15	1.138	8.80	41.930	-0.2	86.1	8.41
12/10/2007 05:30	1.141	8.83	42.270	-0.2	85.9	8.38
12/10/2007 05:45	1.147	8.91	42.510	-0.3	85.7	8.33
12/10/2007 06:00	1.143	8.88	42.390	-0.3	85.8	8.36
12/10/2007 06:15	1.139	8.89	42.340	-0.2	86.1	8.38
12/10/2007 06:30	1.141	8.77	41.980	-0.3	86.0	8.41
12/10/2007 06:45	1.141	8.88	42.410	-0.3	85.5	8.32
12/10/2007 07:00	1.139	8.91	42.380	-0.3	85.8	8.35
12/10/2007 07:15	1.141	9.00	42.870	-0.4	85.2	8.25
12/10/2007 07:30	1.140	8.89	42.440	-0.3	85.4	8.31
12/10/2007 07:45	1.135	9.27	43.790	-0.4	84.0	8.05
12/10/2007 08:00	1.145	9.05	43.040	-0.4	85.1	8.23
12/10/2007 08:15	1.142	9.01	42.800	-0.3	85.3	8.27
12/10/2007 08:30	1.144	9.07	43.100	-0.4	85.0	8.21
12/10/2007 08:45	1.140	9.06	43.140	-0.4	85.0	8.21
12/10/2007 09:00	1.139	8.96	42.700	-0.4	85.2	8.27
12/10/2007 09:15	1.142	8.87	42.760	-0.5	84.5	8.22
12/10/2007 09:30	1.141	9.01	42.780	-0.3	85.9	8.33
12/10/2007 09:45	1.144	8.85	42.740	-0.3	86.5	8.42

12/10/2007 10:00	1.140	9.02	42.850	-0.3	86.0	8.32
12/10/2007 10:15	1.151	9.04	43.100	-0.5	85.5	8.27
12/10/2007 10:30	1.143	9.19	43.460	-0.4	84.9	8.17
12/10/2007 10:45	1.146	9.19	43.540	-0.4	84.5	8.13
12/10/2007 11:00	1.151	9.18	43.520	-0.4	84.8	8.16
12/10/2007 11:15	1.148	9.27	43.790	-0.4	84.0	low ODO 8.05
12/10/2007 11:30	1.145	9.24	43.750	low NTU -0.5	84.0	8.06
12/10/2007 11:45	1.149	9.17	43.610	-0.4	85.2	8.19
12/10/2007 12:00	1.144	9.23	43.700	-0.4	84.7	8.14
12/10/2007 12:15	1.146	9.22	43.670	-0.5	85.1	8.17
12/10/2007 12:30	1.142	9.08	43.220	0.2	86.2	8.33
12/10/2007 12:45	1.146	8.96	42.500	1.2	86.3	8.38
12/10/2007 13:00	1.143	8.91	42.310	-0.3	86.8	8.45
12/10/2007 13:15	1.153	8.98	42.620	0.7	87.3	8.47
12/10/2007 13:30	1.138	8.76	41.670	0.2	88.2	high ODO 8.64
12/10/2007 13:45	1.142	8.73	41.390	0.1	87.8	8.62
12/10/2007 14:00	1.142	8.80	41.570	0.6	87.3	8.54
12/10/2007 14:15	1.145	8.86	41.830	6.0	87.1	8.51
12/10/2007 14:30	1.140	8.83	41.700	1.2	87.1	8.52
12/10/2007 14:45	1.140	9.01	42.600	0.5	85.7	8.31
12/10/2007 15:00	1.141	9.02	42.660	0.6	86.1	8.35
12/10/2007 15:15	1.140	9.06	42.850	1.1	85.7	8.29
12/10/2007 15:30	1.140	8.97	42.420	1.1	86.3	8.38
12/10/2007 15:45	1.138	9.00	42.530	high NTU 1.4	86.2	8.37
12/10/2007 16:00	1.141	8.75	41.990	0.7	87.3	8.54
12/10/2007 16:15	1.144	8.97	42.390	0.7	86.4	8.39
12/10/2007 16:30	1.142	9.03	42.740	0.8	86.3	8.36
12/10/2007 16:45	1.144	8.67	42.130	0.2	87.0	8.52

Afternoon shift

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King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

WORK ORDER NUMBER:
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE : Denny Way CSO-Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 6:00
TIME WORK STOPPED: 2:30

Date

Year	Month	Day	Inspector
2007	Dec	11	BCR

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
			X			

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Unloading of barge "KP-2" has been completed today. The three (3) men crew continued with installing the plastic lining to each containers for the next barge. The trucking contractor continued moving the full containers to the rail loading area. Each return trip to the barge unloading area, an empty container was brought and unloaded. The empty barge will be move late tonight and KP-1 will be delivered to the unloading site before tomorrow morning for unloading.
Miscellaneous:	
Safety/Accidents:	
Problems Encountered & Resolutions:	.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	
Manpower	Total six (6) crew men 1 crane operator, 1 front-end loader operator, 1 forklift operator, 3 deck hands.
Visitors to Site	
Equipment Used	Crane, Front-end Loader, 2 forklifts

Randy Brunke, Project Representative (Date)

12/11/07
Bill Rea, Inspector (Date)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 10
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1100HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1700HRS.

Date

Year	Month	Day	Inspector
2007	December	11	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
			X			

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen continued dredging operations off shore from the "Pam Tay" near the KC Denny Regulator/Outfall during the first part of this shift until barge "KP-1" was filled (1145hrs). Work this day, was between app. sta. 3+00 and 3+75 (per M. Locke, cell-phone), and from the E. (up) slope of the work site, toward the W. (down) slope. (Note: Actual sta., and locs. are being Submitted by ACC with their Daily Reports mid-day of the following day. re: I. Khilfeh, KC.) Tug "Jennifer H" on site at 1145hrs. to tow spoils barge "KP-1" to DMC (Rabanco); app. ETD 1200hrs. "Jennifer H" brought brought spoils barge "KP-2" back to the site from DMC app. ETA1515hrs. No further dredging occurred this day. Contractor performed routine maintenance aboard the Dredge, and (reinstalled hay bales, filter fabric, etc.) made "KP-2" ready for safely taking new dredge spoils.
Miscellaneous:	M. Locke called this observer from the barge at 1145hrs. to say ACC was done dredging for the day. Total Time Dredging: 3.5 hours.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	None to report.
Test Conducted:	Denny buoy reported NTU readings varied between -0.4± (1100hrs.), and -0.3±(1145hrs) during this shift. ODO this shift, varied between 7.97mg/l (@1200hrs) and 8.26 (@1130hrs). KC Lab boat was on site for Monitoring Plan work after app. ETA 0945hrs. Results of KC Lab manual grab samples for the sampling at the Denny site were: Turbidity 1.06±NTU, and ODO 8.02± mg/l.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.
Manpower	"Pam Tay": five persons, Survey boat, one person
Visitors to Site	KC: B. Wilbert
Equipment Used	Dredge platform "Pam Tay", Spoils Barges "KP-1" and KP-2", (2) work skiffs, one P/U Truck (on shore); Tug "Jennifer H" (hired)

Attachments: Daily Log Denny buoy

Randy Brunke, Project Representative (Date)

12-11-07
K. Nordlund, CMIII (12-11-07)

Start date: 12/11/2007 End date: 12/11/2007

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Denny Way User Defined

	Min: 1.059 Max: 1.132 Mean: 1.091 St.dev: 0.018	Min: 7.96 Max: 9.49 Mean: 8.51 St.dev: 0.43	Min: 37.790 Max: 44.440 Mean: 40.908 St.dev: 1.886	Min: -0.4 Max: 0.7 Mean: 0.0 St.dev: 0.2	Min: 81.7 Max: 90.1 Mean: 86.6 St.dev: 2.1	Min: 7.77 Max: 8.98 Mean: 8.57 St.dev: 0.35
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
12/11/2007 00:00	1.132	8.29	40.230	0.1	87.5	8.72
12/11/2007 00:15	1.132	8.25	40.450	0.3	87.8	8.75
12/11/2007 00:30	1.132	8.41	39.460	0.3	87.1	8.69
12/11/2007 00:45	1.132	8.48	39.240	0.3	86.2	8.59
12/11/2007 01:00	1.131	8.41	39.300	0.3	86.6	8.65
12/11/2007 01:15	1.123	8.45	39.670	0.3	86.7	8.63
12/11/2007 01:30	1.123	8.18	38.680	0.7	87.3	8.79
12/11/2007 01:45	1.122	8.27	38.920	0.4	87.0	8.73
12/11/2007 02:00	1.120	8.34	39.140	0.3	86.8	8.68
12/11/2007 02:15	1.123	8.44	39.440	0.2	86.7	8.64
12/11/2007 02:30	1.121	8.43	39.770	0.2	86.8	8.64
12/11/2007 02:45	1.120	8.43	39.850	0.3	86.8	8.64
12/11/2007 03:00	1 120	8.44	39.970	0.2	86.8	8.63
12/11/2007 03:15	1.117	8.46	40.190	0.2	86.8	8.62
12/11/2007 03:30	1.114	8.65	40.900	0.1	86.5	8.52
12/11/2007 03:45	1.114	8.44	40.370	0.2	86.9	8.63
12/11/2007 04:00	1.111	8.63	40.920	0.0	86.2	8.50
12/11/2007 04.15	1.107	8.55	41.140	0.1	86.9	8.57
12/11/2007 04:30	1.106	8.57	41.540	0.0	86.6	8.53
12/11/2007 04:45	1.103	8.64	42.060	0.0	86.1	8.45
12/11/2007 05:00	1.104	8.54	41.580	-0.1	86.4	8.51
12/11/2007 05:15	1.102	8.80	42.440	-0.2	84.9	8.28
12/11/2007 05:30	1.102	8.90	42.760	-0.2	84.5	8.21
12/11/2007 05:45	1.104	8.90	42.800	0.0	85.1	8.27
12/11/2007 06:00	1.101	9.00	43.030	-0.1	84.6	8.19
12/11/2007 06:15	1.102	9.08	43.280	-0.1	83.8	8.08
12/11/2007 06:30	1.097	9.16	43.430	-0.2	83.8	8.06
12/11/2007 06:45	1.091	9.30	43.890	-0.2	82.5	7.90
12/11/2007 07:00	1.096	9.00	43.040	-0.2	84.4	8.17
12/11/2007 07:15	1.094	9.18	43.470	-0.2	83.7	8.05
12/11/2007 07:30	1.097	9.28	43.780	-0.2	82.8	7.94
12/11/2007 07:45	1.095	9.34	44.050	-0.2	81.9	7.84
12/11/2007 08:00	1.092	9.08	43.250	-0.2	83.1	8.02
12/11/2007 08:15	1.093	9.35	44.070	-0.2	81.8	7.82
12/11/2007 08:30	1.092	9.45	44.330	-0.3	82.0	7.82
12/11/2007 08:45	1.098	9.49	44.440	-0.4	81.7	7.77
12/11/2007 09:00	1.084	9.17	43.570	-0.2	82.6	7.95
12/11/2007 09:15	1.092	9.03	43.160	-0.2	84.9	8.21
12/11/2007 09:30	1.093	9.00	43.210	-0.2	84.5	8.17
12/11/2007 09:45	1.094	8.88	42.850	-0.3	84.5	8.21

dredging by ACC

Acc dredging

12/11/2007 10:00	1.096	8.89	43.020	0.2	84.4	8.19
12/11/2007 10:15	1.091	9.02	43.220	-0.3	84.7	8.19
12/11/2007 10:30	1.090	9.01	43.290	-0.3	84.2	8.14
12/11/2007 10:45	1.086	8.99	43.300	-0.2	84.9	8.21
12/11/2007 11:00	1.089	9.05	43.410	-0.3	84.5	8.16
12/11/2007 11:15	1.087	8.90	43.140	-0.3	85.1	8.26
12/11/2007 11:30	1.084	8.95	43.260	-0.3	85.3	8.26
12/11/2007 11:45	1.081	9.13	43.620	-0.3	84.0	8.08
12/11/2007 12:00	1.083	9.25	43.850	-0.4	83.0	7.97
12/11/2007 12:15	1.083	9.10	43.540	-0.4	84.2	8.11
12/11/2007 12:30	1.081	8.84	43.220	-0.4	86.2	8.37
12/11/2007 12:45	1.072	8.49	42.030	0.1	86.9	8.55
12/11/2007 13:00	1.072	8.15	40.840	0.0	87.6	8.74
12/11/2007 13:15	1.070	7.96	38.750	0.1	88.4	8.94
12/11/2007 13:30	1.077	7.98	38.680	0.2	88.2	8.91
12/11/2007 13:45	1.079	8.02	38.440	0.3	88.1	8.91
12/11/2007 14:00	1.080	8.04	37.940	0.3	88.2	8.93
12/11/2007 14:15	1.080	7.98	37.790	0.4	88.3	8.97
12/11/2007 14:30	1.080	8.02	38.260	0.2	88.7	8.98
12/11/2007 14:45	1.078	8.01	38.110	0.2	88.0	8.91
12/11/2007 15:00	1.076	8.01	38.090	0.2	88.3	8.94
12/11/2007 15:15	1.076	8.05	38.320	0.1	87.9	8.88
12/11/2007 15:30	1.070	7.98	37.870	0.2	88.5	8.98
12/11/2007 15:45	1.070	8.08	38.490	0.1	87.8	8.87
12/11/2007 16:00	1.079	8.17	38.930	0.1	87.5	8.80
12/11/2007 16:15	1.079	8.23	39.430	0.1	87.3	8.75
12/11/2007 16:30	1.076	8.26	39.340	0.1	87.2	8.74
12/11/2007 16:45	1.065	8.27	39.640	0.1	87.4	8.74
12/11/2007 17:00	1.076	8.29	39.680	0.0	87.7	8.76
12/11/2007 17:15	1.059	8.29	39.590	0.1	87.3	8.73
12/11/2007 17:30	1.075	8.26	39.510	0.1	87.3	8.74
12/11/2007 17:45	1.075	8.32	40.020	0.0	87.2	8.69
12/11/2007 18:00	1.083	8.19	39.700	0.1	88.3	8.85
12/11/2007 18:15	1.075	8.12	39.420	0.1	88.5	8.89
12/11/2007 18:30	1.074	8.05	39.330	0.1	88.9	8.95
12/11/2007 18:45	1.071	8.06	39.440	0.1	89.0	8.95
12/11/2007 19:00	1.071	8.05	39.450	0.1	89.1	8.96
12/11/2007 19:15	1.072	8.04	39.430	0.1	89.3	8.98
12/11/2007 19:30	1.069	8.07	39.410	0.2	89.2	8.97
12/11/2007 19:45	1.069	8.14	39.840	0.0	88.7	8.89
12/11/2007 20:00	1.076	8.30	40.100	0.0	87.2	8.69
12/11/2007 20:15	1.075	8.18	40.040	0.1	88.5	8.85
12/11/2007 20:30	1.075	8.17	40.130	0.0	88.6	8.86
12/11/2007 20:45	1.078	8.16	40.120	0.0	88.5	8.85
12/11/2007 21:00	1.081	8.13	40.200	0.0	88.8	8.88
12/11/2007 21:15	1.075	8.18	40.400	0.0	88.6	8.84
12/11/2007 21:30	1.074	8.19	40.450	0.1	88.7	8.85
12/11/2007 21:45	1.084	8.27	40.680	0.0	88.3	8.79
12/11/2007 22:00	1.078	8.24	40.600	0.1	88.2	8.79
12/11/2007 22:15	1.084	8.29	40.730	0.0	87.9	8.74
12/11/2007 22:30	1.095	8.19	40.600	0.2	88.7	8.85
12/11/2007 22:45	1.087	8.21	40.640	0.1	88.8	8.85
12/11/2007 23:00	1.096	8.23	40.560	0.3	89.8	8.95
12/11/2007 23:15	1.086	8.22	40.580	0.1	90.1	8.98
12/11/2007 23:30	1.097	8.20	40.540	0.2	90.0	8.98
12/11/2007 23:45	1.100	8.20	40.530	0.2	90.1	8.98

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

WORK ORDER NUMBER:
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE : Denny Way CSO-Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 6:00
TIME WORK STOPPED: 2:30

Date

Year	Month	Day	Inspector
2007	Dec	12	BCR

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Unloading of barge "KP-1" has been started this morning. The three (3) men crew continued with installing the plastic lining to each containers for the next barge. The trucking contractor continued moving the full containers to the rail loading area. Each return trip to the barge unloading area, an empty container was brought and unloaded. Over 50% of the barge was unloaded by 1200. The number of returning empty container has slowed down this afternoon. The problem is the number of containers returning from the dumpsite by rail. It is said to be due to rail traffic problems during to last weeks flooding in Western Washington.
Miscellaneous:	
Safety/Accidents:	
Problems Encountered & Resolutions:	.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	
Manpower	Total six (6) crew men 1 crane operator, 1 front-end loader operator, 1 forklift operator, 3 deck hands.
Visitors to Site	
Equipment Used	Crane, Front-end Loader, 2 forklifts

Randy Brunke, Project Representative (Date)

Bill Rea, Inspector (Date) 12/12/07

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 11
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1100HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1700HRS.

Date

Year	Month	Day	Inspector
2007	December	12	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen continued dredging operations off shore from the "Pam Tay" near the KC Denny Regulator/Outfall during the first part of this shift into barge "KP-2". Work this day, was between app. sta. 3+50 and 4+00 (per M. Locke, cell-phone), and from the W. (down) slope of the work site, toward the E. (up) slope. (Note: Actual sta., and locs. are being Submitted by ACC with their Daily Reports mid-day of the following work day. re: I. Khilfeh, KC.)
Miscellaneous:	Dredging stopped between 1205-1300hrs. for combination Lunch/Equip. Maintenance. Break in dredging between 1348-1417hrs., and attempt to reposition Dredge and barge. Break in dredging between 1445-1540hrs. to reposition work platform, last part with help from Tug "Jennifer H". M. Locke called this observer from the barge at 1610hrs. to say ACC was done dredging for the day. Total Time Dredging: 4hrs./40min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	Positioning and equipment issues; re: **Construction Activities:** and **Miscellaneous:** Sections above.
Test Conducted:	Denny buoy reported NTU readings varied between -0.4± (1100hrs.), and 0.4±(1400hrs) during this Shift. ODO this Shift, varied between 7.97mg/l (@1100hrs) and 8.89 (@1200hrs). KC Lab boat was on site for Monitoring Plan work after app. ETA 0915hrs. Results of KC Lab manual grab samples for the Denny site this day were: Turbidity 1.4±NTU, and ODO 8.4± mg/l.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.
Manpower	"Pam Tay": five persons,; "Jennifer H"
Visitors to Site	KC: B. Rea
Equipment Used	Dredge platform "Pam Tay", Spoils Barge "KP-2", (3) work skiffs, one P/U Truck (on shore deliveries); Tug "Jennifer H" (1515-1538hrs., too help move ACC rig)

Attachments: Daily Log Denny buoy; three photos

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (12-12-07)

Start date: 12/12/2007 End date: 12/12/2007

Submit Back Export as .CSV

Denny Way User Defined

	Min: 1.106 Max: 1.174 Mean: 1.155 St.dev: 0.021	Min: 7.98 Max: 9.44 Mean: 8.61 St.dev: 0.37	Min: 38.730 Max: 44.380 Mean: 41.464 St.dev: 1.425	Min: -0.5 Max: 1.3 Mean: -0.0 St.dev: 0.3	Min: 80.9 Max: 90.2 Mean: 85.8 St.dev: 2.2	Min: 7.71 Max: 9.00 Mean: 8.45 St.dev: 0.32
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
12/12/2007 00:00	1.107	8.30	40.780	0.7	89.7	8.92
12/12/2007 00:15	1.113	8.24	40.660	0.5	89.1	8.88
12/12/2007 00:30	1 106	8.37	40.940	0.5	88.9	8.82
12/12/2007 00:45	1.111	8.18	40.580	0.2	90.2	9.00
12/12/2007 01:00	1.114	8.28	40.680	0.5	89.9	8.95
12/12/2007 01:15	1 112	8.31	40.830	0.0	89.2	8.87
12/12/2007 01:30	1.110	8.20	40.860	-0.1	89.3	8.90
12/12/2007 01:45	1.112	8.19	40.840	-0.1	89.5	8.92
12/12/2007 02:00	1 111	8.26	40.910	0.0	89.4	8.89
12/12/2007 02:15	1.113	8.23	40.860	-0.1	89.4	8.90
12/12/2007 02:30	1.118	8.27	40.920	-0.1	89.3	8.88
12/12/2007 02:45	1.118	8.06	40.380	0.3	89.5	8.97
12/12/2007 03:00	1 120	8.21	40.230	0.1	89.2	8.91
12/12/2007 03:15	1.124	8.22	39.770	0.1	87.8	8.78
12/12/2007 03:30	1.124	8.23	38.960	0.1	86.8	8.72
12/12/2007 03:45	1.124	8.22	38.730	0.2	86.5	8.70
12/12/2007 04:00	1.129	8.34	39.200	0.2	85.7	8.58
12/12/2007 04:15	1.129	8.26	39.000	0.2	86.2	8.65
12/12/2007 04:30	1.132	8.39	39.590	0.1	85.7	8.55
12/12/2007 04:45	1.137	8.49	40.200	0.1	86.2	8.56
12/12/2007 05:00	1.138	8.17	39.070	0.2	86.4	8.69
12/12/2007 05:15	1.142	8.25	39.410	0.1	85.9	8.60
12/12/2007 05:30	1.144	8.28	39.650	0.1	85.5	8.54
12/12/2007 05:45	1.145	8.18	39.280	0.1	86.1	8.64
12/12/2007 06:00	1.150	8.10	39.280	0.2	86.1	8.66
12/12/2007 06:15	1.150	8.15	39.500	0.3	86.1	8.64
12/12/2007 06:30	1.155	8.72	41.360	-0.1	84.2	8.27
12/12/2007 06:45	1.152	8.68	41.190	-0.1	84.0	8.27
12/12/2007 07:00	1.152	8.01	39.260	0.1	86.3	8.70
12/12/2007 07:15	1.155	7.98	39.110	0.2	86.3	8.71
12/12/2007 07:30	1.155	8.19	39.090	0.0	85.5	8.59
12/12/2007 07:45	1.154	8.56	40.650	0.0	85.1	8.41
12/12/2007 08:00	1.153	8.73	41.390	-0.1	84.1	8.25
12/12/2007 08:15	1 159	8.79	41.700	-0.2	83.7	8.19
12/12/2007 08:30	1.170	8.73	41.400	-0.2	83.8	8.22
12/12/2007 08:45	1.162	8.80	41.650	-0.1	84.3	8.25
12/12/2007 09:00	1.154	8.05	39.680	-0.1	87.3	8.78
12/12/2007 09:15	1.159	8.14	39.770	0.0	85.8	8.60
12/12/2007 09:30	1.165	8.99	42.660	-0.3	84.4	8.18
12/12/2007 09:45	1.166	9.14	43.200	-0.3	83.1	8.01

12-12-07 Afternoon dredging period

12/12/2007 10:00	1.161	9.13	43.320	-0.3	83.4	8.04
12/12/2007 10:15	1.167	8.43	39.910	-0.2	82.7	8.23
12/12/2007 10:30	1.166	9.10	42.990	-0.3	83.4	8.05
12/12/2007 10:45	1.165	9.21	43.580	-0.4	83.1	7.98
12/12/2007 11:00	1.169	9.24	43.580	-0.4	82.4	7.92
12/12/2007 11:15	1.170	9.16	43.190	-0.4	82.4	7.94
12/12/2007 11:30	1.172	8.09	39.920	0.0	88.6	8.89
12/12/2007 11:45	1.168	8.13	40.020	0.0	88.7	8.89
12/12/2007 12:00	1.174	8.16	40.040	0.0	88.8	8.89
12/12/2007 12:15	1.172	8.17	40.150	0.1	89.8	8.98
12/12/2007 12:30	1.171	9.25	43.620	-0.3	82.7	7.94
12/12/2007 12:45	1.170	9.26	43.610	-0.5	81.9	7.86
12/12/2007 13:00	1.169	8.99	42.400	0.0	84.6	8.21
12/12/2007 13:15	1.170	9.21	43.450	-0.1	83.8	8.06
12/12/2007 13:30	1.167	8.49	41.030	0.3	86.4	8.54
12/12/2007 13:45	1.161	8.48	41.260	0.6	87.0	8.59
12/12/2007 14:00	1.166	8.53	41.310	0.4	86.2	8.51
12/12/2007 14:15	1.165	8.72	41.940	-0.2	85.8	8.40
12/12/2007 14:30	1.170	8.79	42.160	-0.2	85.4	8.34
12/12/2007 14:45	1.170	8.62	41.670	1.3	86.8	8.53
12/12/2007 15:00	1.165	8.73	41.850	-0.2	85.3	8.36
12/12/2007 15:15	1.168	8.66	41.860	0.2	85.4	8.37
12/12/2007 15:30	1.166	8.82	42.220	0.6	85.0	8.29
12/12/2007 15:45	1.171	8.64	41.750	-0.1	86.0	8.45
12/12/2007 16:00	1.166	8.79	42.150	0.2	85.0	8.31
12/12/2007 16:15	1.168	8.68	41.860	0.0	86.3	8.46
12/12/2007 16:30	1.165	8.65	41.760	-0.1	86.3	8.47
12/12/2007 16:45	1.165	8.62	41.810	0.0	86.5	8.50
12/12/2007 17:00	1.167	8.69	41.700	-0.2	86.7	8.51
12/12/2007 17:15	1.167	8.70	41.660	-0.2	86.6	8.50
12/12/2007 17:30	1.166	8.69	41.730	-0.2	86.7	8.50
12/12/2007 17:45	1.164	8.68	41.670	-0.2	86.5	8.48
12/12/2007 18:00	1.164	8.65	41.610	-0.2	87.0	8.54
12/12/2007 18:15	1.171	8.63	41.570	-0.2	86.8	8.54
12/12/2007 18:30	1.166	8.90	42.460	-0.2	84.8	8.25
12/12/2007 18:45	1.173	8.82	42.380	-0.2	86.5	8.43
12/12/2007 19:00	1.173	8.91	42.530	-0.2	84.7	8.24
12/12/2007 19:15	1.167	8.99	42.840	-0.2	83.9	8.13
12/12/2007 19:30	1.166	9.27	43.720	-0.2	81.6	7.83
12/12/2007 19:45	1.167	8.88	42.420	-0.3	84.4	8.22
12/12/2007 20:00	1.169	9.00	42.890	-0.2	84.2	8.16
12/12/2007 20:15	1.166	9.05	43.110	-0.1	83.2	8.04
12/12/2007 20:30	1.167	9.38	44.130	0.0	81.3	7.76
12/12/2007 20:45	1.170	9.44	44.360	-0.2	80.9	7.71
12/12/2007 21:00	1.168	9.44	44.380	-0.2	80.9	7.71
12/12/2007 21:15	1.170	8.94	42.970	-0.2	83.8	8.13
12/12/2007 21:30	1.168	8.87	42.830	-0.2	84.8	8.24
12/12/2007 21:45	1.172	9.00	43.140	-0.1	84.3	8.16
12/12/2007 22:00	1.170	8.74	42.530	-0.2	85.8	8.38
12/12/2007 22:15	1.174	8.69	42.410	-0.2	86.1	8.42
12/12/2007 22:30	1.173	8.69	42.330	-0.2	86.0	8.41
12/12/2007 22:45	1.172	8.74	42.490	-0.2	85.4	8.33
12/12/2007 23:00	1.172	8.65	42.270	-0.3	85.8	8.40
12/12/2007 23:15	1.172	8.65	42.260	-0.2	85.8	8.40
12/12/2007 23:30	1.171	8.64	42.320	-0.1	85.9	8.41
12/12/2007 23:45	1.171	8.57	42.170	-0.2	86.1	8.46

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 11
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2007	December	12	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately:7:00am-7:30am: the crew on the derrick getting ready. The new empty barge is (KP-2). The crew fixing the silt fence and the straw bales. Approximately: 7:30am-8:00…Dredging Approximately: 7:45am-8:30am…. surveying Approximately 8:30pm – 10:00am…dredging Approximately 10:50am-12:00pm…dredging A total hour of dredging this morning from 7:00am to 12:00pm is approximately 3.0 hours. See Keith Nordlund report for the afternoon work ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total 627 CY for the whole day. See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 12/13/07 (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

WORK ORDER NUMBER:
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE : Denny Way CSO-Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 6:00
TIME WORK STOPPED: 2:30

Date

Year	Month	Day	Inspector
2007	Dec	13	BCR

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
		X		X

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Unloading of barge "KP-1" has been started this morning. The three (3) men crew continued with installing the plastic lining to each containers for the unloading. The trucking contractor continued moving the full containers to the rail loading area at a slower rate today. Still the problem is the number of containers returning from the dumpsite in Oregon by rail. Again it is said to be due to rail traffic problems during to the December 3rd flooding in Western Washington. Over 70% of the barge was unloaded by 1200. The number of empty containers is now very low and the unloading crew will stop soon. The "KP-1" barge will be sent back to the dredging site not completely unloaded. "KP-2" is now filled and will be sent in for unloading tomorrow morning.
Miscellaneous:	
Safety/Accidents:	
Problems Encountered & Resolutions:	
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	
Manpower	Total six (6) crew men 1 crane operator, 1 front-end loader operator, 1 forklift operator, 3 deck hands.
Visitors to Site	
Equipment Used	Crane, Front-end Loader, 2 forklifts

Randy Brunke, Project Representative (Date)

12/13/07
Bill Rea, Inspector (Date)

OFF LOADING DOCK 12-13-07

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 12
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1100HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1700HRS.

Date

Year	Month	Day	Inspector
2007	December	13	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
		X		X

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen continued dredging operations off shore from the "Pam Tay" near the KC Denny Regulator/Outfall during the first part of this shift into barge "KP-2". Work this day, was between app. sta. 3+50 and 4+00+ (per M. Locke, cell-phone), and from the W. (down) slope of the work site, toward the E. (up) slope. (Note: Actual Sta., and Locs. are being Submitted by ACC with their Daily Reports mid-day of the following work day. re: I. Khilfeh, KC.)
Miscellaneous:	ACC/Hurlen stopped dredging at 1525hrs. for the "KP-2" to depart for DMC. The balance of this shift was spent re-mooring the "KP-1", doing routine maintenance on the dredge, and reinstalling new spoils BMPs for the "KP-1". Total Time Dredging: 6hrs. /45min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	"KP-1" returned from DMC under tow ("Jennifer H") with app. ¼ to 1/3 of it's previous load still aboard. M. Locke, ACC Supt., phoned to say that he told Rabanco he needed the barge back at the Denny CSO site for work in the shallows tomorrow (at the S. end of the site).
Test Conducted:	Denny buoy reported NTU readings varied between 0.0± (1300hrs.), and 2.1±(1400hrs) during this Shift. ODO this Shift, varied between 8.45mg/l (@1200hrs) and 8.68 (@1300hrs). KC Lab boat was on site for Monitoring Plan work after app. ETA 1030hrs. Results of KC Lab manual grab samples for the Denny site this day were: Turbidity 1.39±NTU, and ODO 8.5± mg/l.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.
Manpower	"Pam Tay": five persons; one operator
Visitors to Site	KC Lab boat
Equipment Used	ACC: Dredge platform "Pam Tay", Spoils Barges "KP-2" and "KP-1" (after 1515hrs), (3) work skiffs, one P/U Truck (on shore deliveries); Tug "Jennifer H" (1515-1530hrs.)

Attachments: Daily Log Denny buoy, four photos

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (12-13-07)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 12
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2007	December	13	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:30am: the crew on the derrick getting ready. (KP-2) barge Approximately: 7:30am-10:30…Dredging Approximately: 10:30am-12:00pm….maintenance A total hour of dredging this morning from 7:00am to 12:00pm is approximately 3.0 hours. See Keith Nordlund report for the afternoon work ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total 731 CY for the whole day. See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 12/14/07 (Date)

Start date: 12/13/2007 End date: 12/13/2007

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Denny Way User Defined

	Min: 1.130 Max: 1.176 Mean: 1.161 St.dev: 0.013	Min: 8.27 Max: 9.26 Mean: 8.63 St.dev: 0.21	Min: 38.580 Max: 43.610 Mean: 41.171 St.dev: 1.266	Min: -0.2 Max: 2.2 Mean: 0.2 St.dev: 0.4	Min: 81.7 Max: 88.9 Mean: 85.8 St.dev: 1.5	Min: 7.84 Max: 8.74 Mean: 8.45 St.dev: 0.19
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
12/13/2007 00:00	1.172	8.58	41.960	-0.2	86.2	8.47
12/13/2007 00:15	1.172	8.56	41.870	-0.2	86.3	8.49
12/13/2007 00:30	1.175	8.52	41.310	0.0	86.0	8.48
12/13/2007 00:45	1.174	8.51	41.080	0.0	86.0	8.50
12/13/2007 01:00	1.173	8.48	40.730	0.0	86.0	8.51
12/13/2007 01:15	1.174	8.37	39.330	0.2	85.9	8.58
12/13/2007 01:30	1.172	8.34	38.580	0.3	85.5	8.58
12/13/2007 01:45	1.172	8.38	38.890	0.2	85.8	8.59
12/13/2007 02:00	1.176	8.44	39.140	0.3	85.5	8.53
12/13/2007 02:15	1.170	8.37	38.840	0.3	85.7	8.58
12/13/2007 02:30	1.171	8.44	39.060	0.3	85.2	8.51
12/13/2007 02:45	1.171	8.44	39.120	0.3	85.4	8.53
12/13/2007 03:00	1.173	8.47	39.290	0.3	85.4	8.51
12/13/2007 03:15	1.170	8.49	39.300	0.3	85.2	8.49
12/13/2007 03:30	1.169	8.27	38.680	0.4	86.0	8.64
12/13/2007 03:45	1.169	8.49	39.650	0.3	85.3	8.48
12/13/2007 04:00	1.168	8.56	40.280	0.3	85.2	8.44
12/13/2007 04:15	1.169	8.58	40.350	0.2	85.1	8.42
12/13/2007 04:30	1.168	8.58	40.420	0.2	84.8	8.39
12/13/2007 04:45	1.170	8.51	40.330	0.2	85.1	8.44
12/13/2007 05:00	1.168	8.53	40.530	0.1	85.1	8.43
12/13/2007 05:15	1.169	8.63	40.660	0.1	84.4	8.33
12/13/2007 05:30	1.168	8.66	40.850	0.1	84.2	8.30
12/13/2007 05:45	1.167	8.46	40.190	0.2	85.0	8.44
12/13/2007 06:00	1.162	8.54	40.480	0.1	84.7	8.38
12/13/2007 06:15	1.164	8.30	39.240	0.3	86.0	8.61
12/13/2007 06:30	1.168	8.84	41.700	0.0	83.7	8.18
12/13/2007 06:45	1.168	8.81	41.540	0.0	83.9	8.21
12/13/2007 07:00	1.167	8.77	41.300	0.1	84.1	8.25
12/13/2007 07:15	1.165	8.78	41.280	0.0	83.7	8.21
12/13/2007 07:30	1.165	8.95	42.260	0.0	83.1	8.09
12/13/2007 07:45	1.162	9.14	43.100	-0.1	82.1	7.92
12/13/2007 08:00	1.163	9.26	43.610	-0.2	81.7	7.84
12/13/2007 08:15	1.160	9.16	43.250	-0.2	82.4	7.94
12/13/2007 08:30	1.162	8.85	42.140	-0.1	83.4	8.14
12/13/2007 08:45	1.165	8.77	41.880	0.0	84.0	8.22
12/13/2007 09:00	1.161	8.76	41.830	0.0	84.3	8.25
12/13/2007 09:15	1.167	8.41	40.640	0.1	86.7	8.60
12/13/2007 09:30	1.169	8.37	40.440	0.1	87.0	8.65
12/13/2007 09:45	1.173	8.67	41.570	0.1	86.0	8.45

12/13/2007 10:00	1.172	8.64	41.390	0.0	84.8	8.34
12/13/2007 10:15	1.170	8.44	40.720	0.1	87.0	8.62
12/13/2007 10:30	1.171	8.48	40.990	0.1	87.2	8.63
12/13/2007 10:45	1.172	8.46	40.820	0.1	87.1	8.63
12/13/2007 11:00	1.161	8.51	41.090	0.1	87.1	8.61
12/13/2007 11:15	1.161	8.47	41.040	0.2	87.7	8.67
12/13/2007 11:30	1.152	8.46	40.980	0.1	87.6	8.67
12/13/2007 11:45	1.150	8.73	42.000	0.0	86.1	8.43
12/13/2007 12:00	1.158	8.74	42.040	0.0	86.3	8.45
12/13/2007 12:15	1.153	8.75	42.070	0.0	86.1	8.42
12/13/2007 12:30	1.146	8.61	41.590	0.0	87.2	8.57
12/13/2007 12:45	1.154	8.57	41.490	0.0	88.1	8.67
12/13/2007 13:00	1.154	8.58	41.550	0.0	88.2	8.68
12/13/2007 13:15	1.154	8.59	41.620	0.0	88.1	8.67
12/13/2007 13:30	1.145	8.59	41.700	0.2	88.9	8.74
12/13/2007 13:45	1.153	8.61	41.780	1.2	88.8	8.72
12/13/2007 14:00	1.150	8.70	42.030	2.1	87.8	8.60
12/13/2007 14:15	1.144	8.79	42.300	0.4	86.5	8.44
12/13/2007 14:30	1.146	8.78	42.400	2.2	87.0	8.49
12/13/2007 14:45	1.138	8.81	42.590	0.3	87.2	8.50
12/13/2007 15:00	1.136	8.81	42.570	0.3	87.3	8.51
12/13/2007 15:15	1.134	8.82	42.620	0.1	87.2	8.49
12/13/2007 15:30	1.130	8.87	42.760	0.7	86.9	8.45
12/13/2007 15:45	1.135	8.88	42.790	0.9	86.4	8.40
12/13/2007 16:00	1.133	8.95	43.000	-0.1	86.3	8.37
12/13/2007 16:15	1.137	8.94	42.970	0.0	86.1	8.35
12/13/2007 16:30	1.131	8.89	42.890	0.1	86.9	8.44

After vessel dredging period

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King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

WORK ORDER NUMBER:
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE : Denny Way CSO-Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 6:00
TIME WORK STOPPED: 2:30

Date

Year	Month	Day	Inspector
2007	Dec	14	BCR

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Unloading of barge "KP-2" began this morning. The three (3) men crew continued with installing the plastic lining to each containers for the unloading. The trucking contractor continued moving the full containers to the rail loading area at a slower rate today. Still the problem is the number of containers returning from the dumpsite in Oregon by rail. Over 60% of the barge was unloaded by 1400.
Miscellaneous:	
Safety/Accidents:	
Problems Encountered & Resolutions:	
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	
Manpower	Total six (6) crew men 1 crane operator, 1 front-end loader operator, 1 forklift operator, 3 deck hands.
Visitors to Site	
Equipment Used	Crane, Front-end Loader, 2 forklifts

Randy Brunke, Project Representative (Date)

12/14/07
Bill Rea, Inspector (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 13
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2007	December	14	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:30am: the tug boat "Jennifer H." repositioning the derrick and the barge "KP-1". The barge "KP-1" seems to be came back 1/3rd full Approximately: 7:45am-12:00pm....dredging A total hour of dredging this morning from 7:00am to 12:00pm is approximately 4.0 hours. See Keith Nordlund report for the afternoon work ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total 779 CY for the whole day. See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Iha Khilfeh 12/17/07
Inspector Iha Khilfeh (Date)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 13
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1100HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1700HRS.

Date

Year	Month	Day	Inspector
2007	December	14	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen continued dredging operations off shore from the "Pam Tay" near the KC Denny Regulator/Outfall during the first part of this shift into barge "KP-2". Work this day, was between app. sta. 3+75 and 4+00+ (per M. Locke, cell-phone), and from the W. (down) slope of the work site, toward the E. (up) slope. (Note: Actual Sta., and Locs. are being Submitted by ACC with their Daily Reports mid-day of the following work day. re: I. Khilfeh, KC.)
Miscellaneous:	ACC/Hurlen stopped dredging at 1610hrs. into the "KP-1". The balance of this shift was spent repositioning the "KP-1", doing routine maintenance, and checking sounding information. R. Pickering phoned during this shift to get Contract work update. Total Time Dredging: 6hrs., 20min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	ACC/Hurlen has almost refilled barge "KP-1". Barge "KP-2"is still moored at DMC, and Rabanco is trying to round up enough empty containers in the area to complete the unloading of that barge. B. Rea (KC/CM), at DMC, said that Rabanco informed him that they are having some difficulties getting fresh empty containers turned around in time from the landfill by the Railroad conveyance.
Test Conducted:	Denny buoy reported NTU readings varied between -0.3± (1215hrs.), and 1.6±(1545hrs) during this Shift. ODO this Shift, varied between 7.68mg/l (@1315hrs) and 8.86 (@1515hrs). KC Lab boat was on site for Monitoring Plan work after app. ETA 1218hrs. Results of KC Lab manual grab samples for the Denny site this day were: Turbidity 1.1±NTU, and ODO 8.5± mg/l.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.
Manpower	"Pam Tay": five persons; "Jennifer H", two persons
Visitors to Site	KC: Envior. Lab boat, S. Palapu; "Soundkeeper" Runabout
Equipment Used	ACC: Dredge platform "Pam Tay", Spoils Barges "KP-2" and "KP-1" (after 1515hrs), (3) work skiffs, one P/U Truck (on shore deliveries); Tug "Jennifer H" (1130-1420hrs.)

Attachments: Daily Log Denny buoy, seven photos

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (12-14-07)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 13
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2007	December	14	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:30am: the tug boat "Jennifer H." repositioning the derrick and the barge "KP-1". The barge "KP-1" seems to be came back 1/3rd full Approximately: 7:45am-12:00pm....dredging A total hour of dredging this morning from 7:00am to 12:00pm is approximately 4.0 hours. See Keith Nordlund report for the afternoon work ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total 779 CY for the whole day. See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Iha Khilfeh 12/17/07
Inspector Iha Khilfeh (Date)

Start date: 12/14/2007 End date: 12/14/2007

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Denny Way User Defined

	Min: 0.975 Max: 1.118 Mean: 1.060 St.dev: 0.044	Min: 8.66 Max: 9.47 Mean: 8.92 St.dev: 0.20	Min: 41.110 Max: 44.590 Mean: 42.244 St.dev: 0.883	Min: -0.3 Max: 1.6 Mean: 0.0 St.dev: 0.2	Min: 80.2 Max: 90.4 Mean: 86.2 St.dev: 2.1	Min: 7.62 Max: 8.86 Mean: 8.40 St.dev: 0.26
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
12/14/2007 00:00	1.114	9.01	43.250	-0.1	86.7	8.39
12/14/2007 00:15	1.114	9.03	43.320	0.0	86.7	8.38
12/14/2007 00:30	1.112	9.01	43.330	0.0	86.8	8.39
12/14/2007 00:45	1.110	9.02	43.330	0.0	86.6	8.37
12/14/2007 01:00	1.106	9.01	43.340	0.0	86.9	8.40
12/14/2007 01:15	1.113	9.01	43.340	0.1	86.8	8.39
12/14/2007 01:30	1.110	9.00	43.330	0.1	87.0	8.41
12/14/2007 01:45	1.113	8.98	43.320	0.2	87.3	8.44
12/14/2007 02:00	1.105	8.98	43.310	0.5	87.7	8.48
12/14/2007 02:15	1.106	8.89	42.270	0.0	87.0	8.47
12/14/2007 02:30	1.114	8.90	42.080	0.1	86.6	8.45
12/14/2007 02:45	1.118	8.91	42.190	0.0	86.6	8.43
12/14/2007 03:00	1.112	8.88	42.080	0.1	86.9	8.47
12/14/2007 03:15	1.104	8.86	41.980	0.1	87.0	8.49
12/14/2007 03:30	1.111	8.87	42.010	0.1	87.0	8.49
12/14/2007 03:45	1.102	8.89	42.050	0.1	86.7	8.45
12/14/2007 04:00	1.100	8.90	42.140	0.1	86.6	8.44
12/14/2007 04:15	1.105	8.89	42.110	0.1	86.6	8.44
12/14/2007 04:30	1.095	8.87	42.080	0.1	86.7	8.46
12/14/2007 04:45	1.102	8.85	42.050	0.0	87.0	8.49
12/14/2007 05:00	1.102	8.82	42.000	0.1	87.2	8.51
12/14/2007 05:15	1.096	8.83	41.990	0.0	87.1	8.51
12/14/2007 05:30	1.102	8.80	41.960	0.1	87.2	8.52
12/14/2007 05:45	1.098	8.82	42.030	0.1	87.1	8.51
12/14/2007 06:00	1.093	8.79	41.970	0.0	87.2	8.52
12/14/2007 06:15	1.098	8.79	41.950	0.1	87.3	8.53
12/14/2007 06:30	1.093	8.75	41.720	0.1	87.5	8.57
12/14/2007 06:45	1.096	8.72	41.470	0.0	87.2	8.55
12/14/2007 07:00	1.095	8.69	41.330	0.1	87.4	8.59
12/14/2007 07:15	1.095	8.68	41.110	0.1	87.1	8.57
12/14/2007 07:30	1.091	8.70	41.240	0.1	86.9	8.54
12/14/2007 07:45	1.088	8.99	42.540	0.0	83.8	8.13
12/14/2007 08:00	1.087	8.70	41.340	0.1	86.8	8.52
12/14/2007 08:15	1.096	8.70	41.290	0.1	86.5	8.50
12/14/2007 08:30	1.090	8.70	41.280	0.1	86.4	8.49
12/14/2007 08:45	1.088	8.69	41.280	0.1	86.7	8.52
12/14/2007 09:00	1.089	8.72	41.380	0.1	86.5	8.49
12/14/2007 09:15	1.089	8.67	41.170	0.2	86.7	8.53
12/14/2007 09:30	1.092	8.71	41.350	0.2	86.6	8.51
12/14/2007 09:45	1.088	8.71	41.350	0.1	86.8	8.52

12/14/2007 10:00	1.089	8.67	41.240	0.1	87.0	8.55
12/14/2007 10:15	1.090	8.68	41.270	0.1	87.0	8.55
12/14/2007 10:30	1.082	8.68	41.260	0.2	87.0	8.56
12/14/2007 10:45	1.080	8.67	41.260	0.1	87.4	8.59
12/14/2007 11:00	1.077	8.66	41.200	0.1	87.5	8.61
12/14/2007 11:15	1.077	8.68	41.260	0.1	87.8	8.63
12/14/2007 11:30	1.072	8.91	42.300	-0.1	84.5	8.22
12/14/2007 11:45	1.074	9.24	43.600	-0.2	82.7	7.94
12/14/2007 12:00	1.071	9.27	43.730	-0.2	82.4	7.90
12/14/2007 12:15	1.068	9.25	43.560	-0.3	82.4	7.91
12/14/2007 12:30	1.071	9.25	43.590	-0.2	82.6	7.93
12/14/2007 12:45	1.061	9.25	43.640	-0.2	82.9	7.96
12/14/2007 13:00	1.060	9.37	44.040	-0.2	81.5	7.79
12/14/2007 13:15	1.058	9.47	44.460	-0.2	80.7	7.68
12/14/2007 13:30	1.066	9.17	42.810	0.0	81.7	7.88
12/14/2007 13:45	1.063	8.82	41.540	0.0	90.3	8.84
12/14/2007 14:00	1.055	9.11	42.370	0.0	85.1	8.24
12/14/2007 14:15	1.056	9.00	42.330	0.4	86.4	8.39
12/14/2007 14:30	1.053	8.77	41.450	-0.1	89.7	8.79
12/14/2007 14:45	1.048	8.79	41.540	-0.1	89.3	8.75
12/14/2007 15:00	1.053	8.78	41.540	0.0	89.1	8.73
12/14/2007 15:15	1.046	8.79	41.490	0.0	90.4	8.86
12/14/2007 15:30	1.044	8.77	41.500	0.1	89.8	8.80
12/14/2007 15:45	1.035	8.90	42.020	1.6	88.1	8.59
12/14/2007 16:00	1.035	8.88	42.110	0.3	87.8	8.56
12/14/2007 16:15	1.033	8.89	41.910	0.2	87.6	8.54
12/14/2007 16:30	1.032	8.90	41.430	0.2	86.8	8.48
12/14/2007 16:45	1.025	8.93	41.580	0.1	86.5	8.45
12/14/2007 17:00	1.027	9.00	41.600	0.0	85.3	8.31
12/14/2007 17:15	1.029	9.00	41.680	0.1	85.4	8.32
12/14/2007 17:30	1.028	8.96	41.650	0.0	85.7	8.36
12/14/2007 17:45	1.021	8.94	41.620	0.1	86.1	8.40
12/14/2007 18:00	1.016	8.95	41.650	0.0	86.1	8.40
12/14/2007 18:15	1.019	9.02	42.500	0.0	85.6	8.30
12/14/2007 18:30	1.017	9.32	43.940	-0.1	82.2	7.86
12/14/2007 18:45	1.014	9.43	44.390	-0.3	80.9	7.70
12/14/2007 19:00	1.007	9.47	44.590	-0.2	80.2	7.62
12/14/2007 19:15	1.009	9.44	44.450	-0.3	80.6	7.68
12/14/2007 19:30	1.006	9.28	43.600	-0.2	81.6	7.83
12/14/2007 19:45	1.011	9.15	43.190	0.0	83.5	8.05
12/14/2007 20:00	1.011	9.02	42.650	0.2	84.9	8.24
12/14/2007 20:15	1.002	8.95	42.340	0.0	85.8	8.34
12/14/2007 20:30	0.992	8.96	42.220	-0.1	85.9	8.36
12/14/2007 20:45	1.000	8.89	42.150	0.1	86.4	8.42
12/14/2007 21:00	0.999	8.94	42.220	0.0	86.2	8.39
12/14/2007 21:15	0.988	8.88	42.110	0.0	86.3	8.41
12/14/2007 21:30	0.993	8.86	42.060	0.0	86.8	8.47
12/14/2007 21:45	0.993	8.85	42.060	0.0	86.9	8.48
12/14/2007 22:00	0.990	8.82	42.040	0.0	87.3	8.53
12/14/2007 22:15	0.987	8.80	42.010	0.0	87.4	8.54
12/14/2007 22:30	0.985	8.80	41.990	0.0	87.7	8.57
12/14/2007 22:45	0.988	8.78	41.980	0.0	87.5	8.55
12/14/2007 23:00	0.988	8.77	41.980	-0.1	87.8	8.59
12/14/2007 23:15	0.979	8.78	41.990	-0.1	87.6	8.56
12/14/2007 23:30	0.975	8.78	41.980	-0.1	87.5	8.55
12/14/2007 23:45	0.976	8.82	42.050	-0.1	87.2	8.52

Afternoon dredging period 12-14-07

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 14
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 0700HRS. (SHIFT)
TIME WORK STOPPED: 1300HRS.

Date

Year	Month	Day	Inspector
2007	December	15	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
X						

Weather

Clear	PC	Overcast	Fog	Rain
		X windy		Light showers

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen moved Dredge "Pam Tay", and barge "KP-1" from a location near the KC Denny Regulator/Outfall during the first part of this shift, to the N. end of the working grounds using the Tug "Jennifer H" (0830-0903hrs.). ACC/Hurlen Survey boat was on site by app. ETA 0808hrs. "Pam Tay" crew worked on the crane friction brakes, and performed other necessary maint. for next Week's work schedule.
Miscellaneous:	ACC/Hurlen Survey skiff made a complete bottom survey of the Denny CSO work site this am. Between app. 0940-1021hrs. The Survey lanes were run from S. to N., app. 10' o.c. near app. High Tide elev. 12.5'
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	Windy conditions during the platform move.
Test Conducted:	Attached Denny Buoy Record
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.
Manpower	"Pam Tay": five persons; "Jennifer H", two persons
Visitors to Site	None observed.
Equipment Used	ACC: Dredge platform "Pam Tay", Spoils Barge "KP-1", (3) work skiffs, one P/U Truck (on shore deliveries), ACC Survey boat; Tug "Jennifer H" (1130-1420hrs.)

Attachments: Daily Log Denny buoy

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (12-15-07)

Start date: 12/15/2007 End date: 12/15/2007

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Denny Way User Defined

	Min: 0.974 Max: 1.070 Mean: 1.022 St.dev: 0.026	Min: 8.78 Max: 9.15 Mean: 8.91 St.dev: 0.12	Min: 41.580 Max: 43.390 Mean: 42.353 St.dev: 0.613	Min: -0.1 Max: 0.7 Mean: 0.2 St.dev: 0.2	Min: 84.4 Max: 89.2 Mean: 87.3 St.dev: 0.9	Min: 8.13 Max: 8.71 Mean: 8.50 St.dev: 0.12
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
12/15/2007 00:00	0.978	8.84	42.100	-0.1	86.9	8.48
12/15/2007 00:15	0.974	8.86	42.200	-0.1	86.5	8.44
12/15/2007 00:30	0.977	8.81	41.810	-0.1	86.9	8.50
12/15/2007 00:45	0.985	8.79	41.720	0.2	86.9	8.50
12/15/2007 01:00	0.985	8.78	41.590	-0.1	86.9	8.52
12/15/2007 01:15	0.997	8.79	41.760	0.5	87.0	8.51
12/15/2007 01:30	0.993	8.79	41.690	0.3	87.0	8.52
12/15/2007 01:45	1.004	8.80	41.580	0.1	87.2	8.54
12/15/2007 02:00	0.983	8.81	41.660	0.2	87.2	8.53
12/15/2007 02:15	1.000	8.82	41.720	0.2	87.2	8.53
12/15/2007 02:30	1.005	8.82	41.730	0.1	87.3	8.53
12/15/2007 02:45	1.005	8.78	41.640	0.6	87.9	8.60
12/15/2007 03:00	0.994	8.80	41.720	0.7	87.6	8.57
12/15/2007 03:15	1.004	8.86	41.880	0.1	87.3	8.52
12/15/2007 03:30	1.009	8.88	41.970	0.0	87.1	8.50
12/15/2007 03:45	1.001	8.82	41.900	0.2	88.2	8.62
12/15/2007 04:00	0.998	8.84	41.940	0.4	87.9	8.58
12/15/2007 04:15	1.012	8.88	41.980	0.3	87.3	8.51
12/15/2007 04:30	1.011	8.88	41.990	0.2	87.1	8.50
12/15/2007 04:45	1.001	8.88	42.000	0.1	87.2	8.50
12/15/2007 05:00	1.022	8.88	42.000	0.1	87.3	8.52
12/15/2007 05:15	0.998	8.87	42.000	0.1	87.6	8.55
12/15/2007 05:30	1.024	8.87	42.020	0.3	87.6	8.55
12/15/2007 05:45	0.999	8.86	42.040	0.5	88.4	8.63
12/15/2007 06:00	1.025	8.85	42.030	0.4	88.7	8.66
12/15/2007 06:15	1.012	8.83	42.040	0.4	89.2	8.71
12/15/2007 06:30	1.037	8.84	42.060	0.4	88.7	8.66
12/15/2007 06:45	1.021	8.85	42.100	0.2	88.4	8.62
12/15/2007 07:00	1.018	8.86	42.140	0.2	88.2	8.60
12/15/2007 07:15	1.038	8.84	42.180	0.2	88.4	8.62
12/15/2007 07:30	1.032	8.81	42.180	0.2	89.0	8.69
12/15/2007 07:45	1.041	8.84	42.250	0.1	88.5	8.64
12/15/2007 08:00	1.054	8.86	42.300	0.1	88.2	8.60
12/15/2007 08:15	1.036	8.89	42.460	0.0	88.0	8.56
12/15/2007 08:30	1.040	8.84	42.360	0.1	88.4	8.61
12/15/2007 08:45	1.050	9.02	42.910	0.0	87.3	8.45
12/15/2007 09:00	1.029	9.13	43.310	0.2	85.0	8.20
12/15/2007 09:15	1.028	9.15	43.390	0.2	84.4	8.13
12/15/2007 09:30	1.051	9.03	43.050	0.1	86.4	8.36
12/15/2007 09:45	1.050	9.04	43.100	0.2	86.8	8.39

ACC/Hurley Saturday sh:#1

ACC Hourly Soburday

12/15/2007 10:00	1.030	9.07	43.210	0.2	86.4	8.35
12/15/2007 10:15	1.056	9.09	43.250	0.2	86.1	8.31
12/15/2007 10:30	1.052	9.08	43.240	0.2	86.3	8.33
12/15/2007 10:45	1.047	9.09	43.220	0.2	86.4	8.34
12/15/2007 11:00	1.058	9.08	43.210	0.2	86.6	8.37
12/15/2007 11:15	1.065	9.11	43.290	0.3	86.4	8.33
12/15/2007 11:30	1.070	9.09	43.230	0.2	86.9	8.39
12/15/2007 11:45	1.062	9.09	43.230	0.3	86.9	8.39
12/15/2007 12:00	1.048	9.06	43.190	0.2	87.6	8.47
12/15/2007 12:15	1.056	9.07	43.200	0.2	87.7	8.47
12/15/2007 12:30	1.051	9.08	43.240	0.2	87.5	8.45

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King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

WORK ORDER NUMBER:
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE : Denny Way CSO-Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 6:00
TIME WORK STOPPED: 2:30

Date

Year	Month	Day	Inspector
2007	Dec	17	BCR

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X				

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Unloading of barge "KP-2" continues this morning. The three (3) men crew continued with installing the plastic lining to each containers for the unloading. The trucking contractor continued moving the full containers to the rail loading area at a slow rate today. The unloading of the barge was completed before 1400.
Miscellaneous:	
Safety/Accidents:	
Problems Encountered & Resolutions:	.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	
Manpower	Total six (6) crew men 1 crane operator, 1 front-end loader operator, 1 forklift operator, 3 deck hands.
Visitors to Site	Randy Brunke of King County - DNRP
Equipment Used	Crane, Front-end Loader, 2 forklifts

Randy Brunke, Project Representative (Date)

12/17/07
Bill Rea, Inspector (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 14
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2007	December	17	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X				

Weather

Clear	PC	Overcast	Fog	Rain
	pm	am		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-9:00am: The contractor did surveying to the area. The tug boat "Diane" moved the derrick and the barge so the can survey the site. Approximately: 9:30am-12:00pm….dredging: dressing up the area where they dredge earlier north section of the site. A total hour of dredging this morning from 7:00am to 12:00pm is approximately 2.5 hours. See Keith Nordlund report for the afternoon work ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total 121 CY for the whole day. See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 12/18/07 (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 15
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1100HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2007	December	17	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X				

Weather

Clear	PC	Overcast	Fog	Rain
		X windy		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen filled spoils barge "KP-1" from a location at the N. end of the site between app. sta. 0+00 and 0+50 (per M. Locke, cell-phone) during the first part of this shift. (Note: Actual Sta., and Locs. are being Submitted by ACC with their Daily Reports mid-day of the following work day. re: I. Khilfeh, KC.) "KP-1" departed the working grounds undertow from the Tug "Diane H" (app. ETD 1215hrs.). ACC/Hurlen worked on the "Pam Tay" until the "Diane H" returned to the site (app. ETA 1515hrs.) with barge "KP-2". "Pam Tay" crew worked on the soils retention system on the "KP-2", until 1555hrs., when dredging resumed. Dredging stopped at 1652hrs. for the night.
Miscellaneous:	Total Time Dredging: 3hrs., 45min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	None.
Test Conducted:	See attached Denny Buoy Record.). KC Lab boat was on site for Monitoring Plan work after app. ETA 1240hrs. Results of KC Lab manual grab samples for the Denny site this day were: Turbidity 0.4±NTU, and ODO 8.83± mg/l.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.
Manpower	"Pam Tay": five persons; "Diane H", two persons
Visitors to Site	KC Lab Boat
Equipment Used	ACC: Dredge platform "Pam Tay", Spoils Barges "KP-1" and "KP-2", (3) work skiffs,; Tug "Diane H" (1100-1520hrs.)

Attachments: Daily Log Denny buoy

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (12-17-07)

Start date: 12/17/2007 End date: 12/17/2007

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Denny Way User Defined

	Min: 0.863 Max: 0.963 Mean: 0.916 St.dev: 0.036	Min: 8.43 Max: 9.07 Mean: 8.70 St.dev: 0.19	Min: 39.790 Max: 43.440 Mean: 41.439 St.dev: 1.242	Min: -0.1 Max: 3.7 Mean: 0.4 St.dev: 0.7	Min: 85.3 Max: 91.0 Mean: 88.3 St.dev: 1.4	Min: 8.27 Max: 8.99 Mean: 8.67 St.dev: 0.21
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
12/17/2007 00:00	0.869	8.99	43.440	0.0	85.8	8.29
12/17/2007 00:15	0.868	8.98	43.400	-0.1	85.5	8.27
12/17/2007 00:30	0.865	8.99	43.410	-0.1	85.6	8.27
12/17/2007 00:45	0.867	8.98	43.400	-0.1	85.5	8.27
12/17/2007 01:00	0.864	8.95	43.390	-0.1	85.8	8.30
12/17/2007 01:15	0.864	8.95	43.320	-0.1	85.6	8.28
12/17/2007 01:30	0.863	8.98	43.380	0.0	85.5	8.27
12/17/2007 01:45	0.868	8.92	43.230	0.0	85.7	8.30
12/17/2007 02:00	0.864	8.97	43.370	-0.1	85.6	8.28
12/17/2007 02:15	0.866	8.85	42.890	0.0	86.3	8.39
12/17/2007 02:30	0.871	8.80	42.430	0.0	86.4	8.43
12/17/2007 02:45	0.874	8.75	41.800	0.1	86.4	8.46
12/17/2007 03:00	0.875	8.58	40.250	0.2	87.2	8.63
12/17/2007 03:15	0.872	8.55	40.140	0.2	87.6	8.69
12/17/2007 03:30	0.872	8.50	39.880	0.3	87.9	8.73
12/17/2007 03:45	0.873	8.54	40.200	0.2	87.9	8.71
12/17/2007 04:00	0.871	8.54	40.200	0.3	88.1	8.73
12/17/2007 04:15	0.870	8.50	39.980	0.3	88.3	8.76
12/17/2007 04:30	0.874	8.51	40.080	0.2	88.3	8.76
12/17/2007 04:45	0.879	8.49	40.020	0.3	88.6	8.80
12/17/2007 05:00	0.886	8.50	40.000	0.2	88.6	8.80
12/17/2007 05:15	0.879	8.48	39.790	0.3	88.8	8.83
12/17/2007 05:30	0.880	8.51	40.020	0.3	88.5	8.78
12/17/2007 05:45	0.894	8.51	39.950	0.3	88.4	8.77
12/17/2007 06:00	0.900	8.55	40.310	0.2	88.5	8.77
12/17/2007 06:15	0.888	8.51	40.040	0.3	88.9	8.82
12/17/2007 06:30	0.895	8.57	40.550	0.3	88.6	8.76
12/17/2007 06:45	0.894	8.53	40.300	0.3	88.7	8.79
12/17/2007 07:00	0.905	8.49	39.990	0.2	88.8	8.82
12/17/2007 07:15	0.916	8.52	40.220	0.3	88.9	8.82
12/17/2007 07:30	0.907	8.48	39.980	0.3	89.4	8.88
12/17/2007 07:45	0.916	8.47	39.960	0.2	89.6	8.91
12/17/2007 08:00	0.927	8.46	39.990	0.3	90.4	8.99
12/17/2007 08:15	0.918	8.43	39.850	0.3	90.2	8.98
12/17/2007 08:30	0.916	8.46	40.000	0.3	89.8	8.93
12/17/2007 08:45	0.931	8.50	40.190	0.3	89.9	8.92
12/17/2007 09:00	0.928	8.50	40.280	0.3	89.5	8.87
12/17/2007 09:15	0.935	8.70	41.490	0.1	88.0	8.64
12/17/2007 09:30	0.943	8.64	41.180	0.2	88.9	8.75
12/17/2007 09:45	0.942	8.70	41.580	0.1	88.4	8.67

	12/17/2007 10:00	0.938	8.51	40.760	0.2	90.0	8.90
	12/17/2007 10:15	0.947	8.46	40.410	0.2	90.0	8.93
	12/17/2007 10:30	0.944	8.78	42.020	0.2	87.1	8.51
	12/17/2007 10:45	0.953	8.81	42.090	0.9	87.1	8.51
⌜	12/17/2007 11:00	0.954	8.62	41.150	0.3	89.1	8.78
	12/17/2007 11:15	0.959	8.60	41.020	1.0	88.9	8.77
	12/17/2007 11:30	0.950	8.59	41.050	0.5	89.5	8.83
*	12/17/2007 11:45	0.949	8.61	41.030	0.4	89.6	8.83
	12/17/2007 12:00	0.955	8.62	40.990	1.3	89.5	8.83
⌞	12/17/2007 12:15	0.947	8.58	40.800	1.9	89.9	8.87
	12/17/2007 12:30	0.954	9.00	42.760	1.3	85.3	8.27
	12/17/2007 12:45	0.953	8.55	40.610	0.4	90.4	8.94
	12/17/2007 13:00	0.949	8.58	40.750	0.6	91.0	8.99
	12/17/2007 13:15	0.958	8.92	42.590	0.2	87.7	8.53
	12/17/2007 13:30	0.951	8.89	42.410	0.1	89.1	8.67
	12/17/2007 13:45	0.958	8.86	42.310	0.2	88.7	8.64
	12/17/2007 14:00	0.948	8.68	41.580	0.1	89.9	8.83
	12/17/2007 14:15	0.953	8.71	41.670	0.1	90.0	8.83
	12/17/2007 14:30	0.952	8.86	42.140	0.1	88.3	8.61
	12/17/2007 14:45	0.950	8.86	42.280	0.1	88.0	8.58
	12/17/2007 15:00	0.963	8.99	42.500	0.0	89.1	8.65
	12/17/2007 15:15	0.953	8.87	42.290	0.1	88.5	8.62
	12/17/2007 15:30	0.952	9.07	43.130	0.0	86.9	8.40
	12/17/2007 15:45	0.954	8.98	42.820	0.4	88.0	8.53
⌜	12/17/2007 16:00	0.955	8.87	42.600	0.2	88.4	8.60
	12/17/2007 16:15	0.944	8.85	42.520	0.3	88.8	8.65
*	12/17/2007 16:30	0.946	8.85	42.460	1.6	89.0	8.67
	12/17/2007 16:45	0.952	8.91	42.670	3.2	88.2	8.57
⌞	12/17/2007 17:00	0.943	8.78	42.350	3.7	89.0	8.68
	12/17/2007 17:15	0.949	8.71	42.260	2.5	89.0	8.71
	12/17/2007 17:30	0.947	8.73	42.270	2.5	89.0	8.70

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* Afternoon Shift dredging periods

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 15
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2007	December	18	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
			X			

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:30am: The contractor getting ready to start dredging. Approximately: 7:30am-11:00am....dredging (barge KP-2) Approximately: 11:00am-12:00pm...equipments maintenance A total hour of dredging this morning from 7:00am to 12:00pm is approximately 3.5 hours. See Keith Nordlund report for the afternoon work ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total of 685 CY for the whole day. See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 12/21/07 (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

WORK ORDER NUMBER:
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE : Denny Way CSO-Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 6:00
TIME WORK STOPPED: 2:30

Date

Year	Month	Day	Inspector
2007	Dec	18	BCR

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
			X			

Weather

Clear	PC	Overcast	Fog	Rain
		X		X

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Unloading of barge "KP-1" began this morning. The three (3) men crew continued with installing the plastic lining to each containers for the unloading. The front end loader was down for one hour (10 am to 11am) for maintenance. A new fluid filter was installed. The unloading of the barge was at 50% before 1400.
Miscellaneous:	
Safety/Accidents:	
Problems Encountered & Resolutions:	.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	
Manpower	Total six (6) crew men 1 crane operator, 1 front-end loader operator, 1 forklift operator, 3 deck hands.
Visitors to Site	Randy Brunke of King County - DNRP
Equipment Used	Crane, Front-end Loader, 2 forklifts

Randy Brunke, Project Representative (Date)

Bill Rea, Inspector (Date) 12/18/07

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 16
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1100HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2007	December	18	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
			X			

Weather

Clear	PC	Overcast	Fog	Rain
		X		X

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen filled spoils barge "KP-2" from a location at the N. end of the site between app. sta. 1+00 and 1+50 (per M. Locke, cell-phone) during this shift. (Note: Actual Sta., and Locs. are being Submitted by ACC with their Daily Reports mid-day of the following work day. re: I. Khilfeh, KC.)
Miscellaneous:	"Pam Tay" crew worked on the boom sensor system on the crane between 1100-1240hrs. Dredging stopped at 1630hrs. for the night. Crew worked remarking the dredge bucket cables for tomorrow's work after 1630hrs. Total Time Dredging: 7hrs., 20min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	Received a phone call from Bob Kruger at the KC Lab at 1700hrs. He said the Denny buoy had just registered a 7.7±NTU reading. This observer told him that the Contractor had stopped dredging over 30 min. earlier, and that the reading couldn't possibly be a result of ACC' work, as the material at that end of the site was sandy, and hadn't put more than a "blip" on the sensor all afternoon. The only explanation this observer had was the recent passing of the large grain freighter "Pantazis" on her way into Terminal 86, as well as a Foss assist Tug. Bob phoned only because he is working on an E/M alert system for CM as regards any NTU excedence for the Buoy system that is monitoring the work.
Test Conducted:	See attached Denny Buoy Record. KC Lab boat was not on site this day.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.
Manpower	"Pam Tay": five persons
Visitors to Site	R. Pickering, Anchor
Equipment Used	ACC: Dredge platform "Pam Tay", Spoils Barges "KP-1" and "KP-2", (3) work skiffs, P/U Truck (on shore)

Attachments: Daily Log Denny buoy, three photos

Randy Brunke, Project Representative (Date)

12-18-07
K. Nordlund, CMIII (12-18-07)

Start date: 12/18/2007 End date: 12/18/2007

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Denny Way User Defined

	Min: 0.835 Max: 0.916 Mean: 0.864 St.dev: 0.023	Min: 8.66 Max: 9.38 Mean: 9.07 St.dev: 0.19	Min: 42.140 Max: 44.870 Mean: 43.779 St.dev: 0.721	Min: -0.6 Max: 7.7 Mean: 0.4 St.dev: 1.4	Min: 81.4 Max: 87.9 Mean: 84.2 St.dev: 1 8	Min: 7.75 Max: 8.60 Mean: 8.12 St.dev: 0.24
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
12/18/2007 00:00	0.916	8.84	42.790	-0.1	86.5	8.41
12/18/2007 00:15	0.913	8.79	42.710	-0.1	87.0	8.48
12/18/2007 00:30	0.911	8.74	42.680	0.1	87.1	8.50
12/18/2007 00:45	0.911	8.66	42.670	0.0	87.9	8.60
12/18/2007 01:00	0.906	8.75	42.890	-0.1	87.3	8.51
12/18/2007 01:15	0.904	8.80	42.970	0.1	87.1	8.47
12/18/2007 01:30	0.903	8.91	43.190	-0.1	85.4	8.28
12/18/2007 01:45	0.901	8.91	43.170	-0.1	85.8	8.32
12/18/2007 02:00	0.902	8.93	43.230	0.1	85.6	8.30
12/18/2007 02:15	0.899	8.93	43.270	-0.2	85.6	8.29
12/18/2007 02:30	0.895	8.97	43.330	-0.1	85.3	8.25
12/18/2007 02:45	0.896	8.97	43.390	-0.1	85.1	8.23
12/18/2007 03:00	0.897	8.78	43.080	-0.1	86.8	8.45
12/18/2007 03:15	0.893	8.78	43.130	-0.2	86.6	8.42
12/18/2007 03:30	0.887	8.91	43.450	-0.2	84.9	8.22
12/18/2007 03:45	0.884	9.08	43.770	-0.2	84.2	8.11
12/18/2007 04:00	0.880	9.14	43.910	-0.3	83.9	8.07
12/18/2007 04:15	0.880	8.91	43.510	-0.2	84.8	8.21
12/18/2007 04:30	0.876	9.05	43.750	-0.2	83.9	8.09
12/18/2007 04:45	0.871	9.14	43.960	-0.3	83.3	8.00
12/18/2007 05:00	0.870	9.20	44.090	-0.3	83.2	7.98
12/18/2007 05:15	0.867	9.13	44.000	-0.2	83.3	8.01
12/18/2007 05:30	0.868	9.22	44.240	-0.2	83.1	7.96
12/18/2007 05:45	0.858	9.26	44.370	-0.3	82.7	7.91
12/18/2007 06:00	0.865	9.24	44.340	-0.3	83.0	7.94
12/18/2007 06:15	0.861	9.25	44.350	-0.3	83.0	7.94
12/18/2007 06:30	0.854	9.24	44.400	-0.3	82.7	7.92
12/18/2007 06:45	0.861	9.28	44.500	-0.3	82.6	7.89
12/18/2007 07:00	0.855	9.28	44.500	-0.2	82.7	7.90
12/18/2007 07:15	0.856	9.30	44.570	-0.4	82.3	7.86
12/18/2007 07:30	0.850	9.35	44.660	-0.3	82.2	7.84
12/18/2007 07:45	0.856	9.36	44.710	-0.3	82.2	7.83
12/18/2007 08:00	0.852	9.38	44.830	-0.3	81.8	7.79
12/18/2007 08:15	0.850	9.35	44.700	-0.3	82.2	7.83
12/18/2007 08:30	0.853	9.34	44.690	-0.3	82.3	7.85
12/18/2007 08:45	0.854	9.36	44.790	0.5	82.1	7.82
12/18/2007 09:00	0.846	9.38	44.870	-0.3	81.7	7.78
12/18/2007 09:15	0.853	9.37	44.820	2.8	81.6	7.77
12/18/2007 09:30	0.855	9.28	44.630	2.5	81.8	7.81
12/18/2007 09:45	0.855	9.35	44.770	1.1	81.9	7.80

12/18/2007 10:00	0.853	9.25	44.540	2.7	82.3	7.87
12/18/2007 10:15	0.854	9.16	44.380	1.3	82.9	7.95
12/18/2007 10:30	0.852	9.25	44.540	4.0	81.9	7.83
12/18/2007 10:45	0.851	9.38	44.870	1.2	81.4	7.75
12/18/2007 11:00	0.854	9.20	44.390	3.3	82.4	7.89
12/18/2007 11:15	0.851	9.30	44.640	2.4	81.6	7.79
12/18/2007 11:30	0.848	9.06	43.960	1.2	83.8	8.07
12/18/2007 11:45	0.845	9.06	43.950	0.2	83.6	8.05
12/18/2007 12:00	0.846	9.06	43.930	0.2	83.6	8.05
12/18/2007 12:15	0.844	9.05	43.880	-0.2	83.6	8.05
12/18/2007 12:30	0.838	9.01	43.710	-0.5	84.9	8.19
12/18/2007 12:45	0.840	9.02	43.560	-0.5	84.7	8.18
12/18/2007 13:00	0.837	8.94	43.290	0.7	85.2	8.25
12/18/2007 13:15	0.836	9.04	43.700	0.3	84.3	8.13
12/18/2007 13:30	0.835	9.11	44.000	-0.1	83.2	8.00
12/18/2007 13:45	0.838	9.06	43.790	0.6	83.9	8.09
12/18/2007 14:00	0.839	8.94	43.150	0.9	85.4	8.28
12/18/2007 14:15	0.842	8.95	43.210	-0.5	85.3	8.27
12/18/2007 14:30	0.842	8.96	43.250	-0.5	85.4	8.27
12/18/2007 14:45	0.846	8.98	43.390	-0.4	85.2	8.24
12/18/2007 15:00	0.844	8.97	43.340	-0.4	85.4	8.26
12/18/2007 15:15	0.841	8.95	43.320	-0.3	85.9	8.31
12/18/2007 15:30	0.843	9.03	43.670	-0.5	85.4	8.24
12/18/2007 15:45	0.851	8.96	43.360	0.9	86.0	8.32
12/18/2007 16:00	0.850	9.02	43.640	-0.6	85.5	8.25
12/18/2007 16:15	0.854	8.90	42.820	2.9	87.1	8.46
12/18/2007 16:30	0.843	8.87	42.400	0.2	87.0	8.47
12/18/2007 16:45	0.851	8.87	42.280	7.7	86.9	8.47
12/18/2007 17:00	0.851	8.88	42.140	1.4	86.8	8.46

Afternoon dredging period

highest during work *

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very high NTU reading after (regular) dredging had stopped @1630 hrs.

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 16
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2007	December	19	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
		pm		am, Rain & Wind

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:30am: The contractor getting ready to start dredging. Approximately: 7:30am-10:45am....dredging onto (KP-2) barge Approximately: 8:30 am, a spike of TNU reading of value 6 was reported. The contractor was informed at once. The contractor modified his dredging. The NTU reading went under "5" after the modifications. Approximately: 10:45am-11:00am...the tug boat connected to the barge. Approximately 11:00am, the barge (KP-2) left. A total hour of dredging this morning from 7:00am to 12:00pm is approximately 3.5 hours. The contractor was planning on leaving because of the wind as soon as the barge leaves. See Keith Nordlund report for the afternoon work ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total of 172 CY for the whole day. See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	A turbidity value of 6 was noticed at 8:30am. The contractor was informed at once to modify their dredging. After the modifications, the NTU values went under 5 as required.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 12/21/07 (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

WORK ORDER NUMBER:
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE : Denny Way CSO-Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 6:00
TIME WORK STOPPED: 2:30

Date

Year	Month	Day	Inspector
2007	Dec	19	BCR

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
		X		X

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Unloading of barge "KP-1" continued this morning. The three (3) men crew continued with installing the plastic lining to each containers for the unloading. Empty containers are now being delivered to the site at a better rate to the point that there is a stock pile of them. The unloading of the barge was completed by 1430.
Miscellaneous:	
Safety/Accidents:	
Problems Encountered & Resolutions:	.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	
Manpower	Total six (6) crew men 1 crane operator, 1 front-end loader operator, 1 forklift operator, 3 deck hands.
Visitors to Site	Randy Brunke of King County - DNRP
Equipment Used	Crane, Front-end Loader, 2 forklifts

Randy Brunke, Project Representative (Date)

12/19/07
Bill Rea, Inspector (Date)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 17
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1030HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1045HRS.

Date

Year	Month	Day	Inspector
2007	December	19	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
		X windy		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen did not have an afternoon dredging shift this day. M. Locke cell-phoned this observer at 1145hrs. citing unpredictable windy weather and wave action at the site, as the reason he had cancelled a Tug and empty barge.
Miscellaneous:	n/a
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	None.
Test Conducted:	None.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.
Manpower	"Pam Tay": five persons
Visitors to Site	None.
Equipment Used	ACC: Dredge platform "Pam Tay", (3) work skiffs

Attachments:

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (12-19-07)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 17
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2007	December	20	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:30am: The contractor getting ready to start dredging. The empty barge KP-1 was at site. The tug-boat "Jennifer H setting up the barge KP-1 in place. Approximately: 7:30am-9:30am....dredging into (KP-1) barge. The dredging was at the north end of the site. Approximately: 8:45 am, a spike of TNU = 7.5 was reported. The contractor was informed at once. The contractor modified his dredging. Approximately:9:00am, the NTU = 7.6, the contractor was informed again to slow down Approximately: 9:15am, the NTU=3 Approximately: 9:30am-9:45am, the contractor moved the dredging operations about 50 feet south. Although the contractor stopped dredging at 9:30am, the NTU value remained high till they totally left that area. (9:30am NTU=5.2, 9:45am NTU=5.4, and 10:00am NTU=1.5. Approximately: 9:45am-11:00am....dredging. A total hour of dredging this morning from 7:00am to 11:00pm is approximately 3.25 hours. See Keith Nordlund daily report for the rest of the day after 11:00am. ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total of 641 CY for the whole day. See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	A turbidity value of 7.6 was noticed at 8:45am. The contractor was informed at once to modify their dredging. After the modifications, the NTU values went under 5 as required.

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh (Date) 12/27/07

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 18
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1100HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2007	December	20	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen filled spoils barge "KP-1" from a location at the N. end of the site between app. sta. 0+25 and 1+75 (per M. Locke, cell-phone) during the first part of this shift. (Note: Actual Sta., and Locs. are being Submitted by ACC with their Daily Reports mid-day of the following work day. re: I. Khilfeh, KC.) Tug "Jennifer H" (app. ETA 1245hrs.) to assist with repositioning barge "KP-1". "Pam Tay" dredged into "KP-1" until app. 1510hrs., when a major equip problem occurred on the American crane. No further major dredging runs occurred with the exception of a ten-minute trial run after 1609hrs. The crane was dogged off at 1726hrs. for the night.
Miscellaneous:	ACC/Hurlen Survey boat (G. Anderes on site) was on site after 1635hrs. to survey areas previously dredged this day. Total Dredging time: 4hrs., 25 min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	See **Construction Activities:** Section above.
Test Conducted:	See Daily Denny Buoy Log attached to this Report.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.
Manpower	"Pam Tay": five persons; "Jennifer "H", two persons; ACC Survey boat, one person
Visitors to Site	None, during this shift.
Equipment Used	ACC: Dredge platform "Pam Tay", (3) work skiffs, ACC Survey boat, Tug "Jennifer H"

Attachments: Denny buoy Daily Log; six photos

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (12-20-07)

Start date: 12/20/2007 End date: 12/20/2007

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Denny Way User Defined

	Min: 0.890 Max: 1.117 Mean: 1.004 St.dev: 0.068	Min: 8.60 Max: 9.42 Mean: 8.96 St.dev: 0.21	Min: 41.290 Max: 44.890 Mean: 43.337 St.dev: 0.889	Min: -0.3 Max: 7.6 Mean: 0.7 St.dev: 1.6	Min: 82.0 Max: 89.2 Mean: 85.5 St.dev: 1.4	Min: 7.80 Max: 8.69 Mean: 8.28 St.dev: 0.17
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
12/20/2007 00:00	0.890	9.18	43.810	0.0	85.5	8.21
12/20/2007 00:15	0.893	9.18	43.810	0.0	85.5	8.22
12/20/2007 00:30	0.891	9.17	43.820	-0.1	85.5	8.21
12/20/2007 00:45	0.896	9.17	43.820	-0.1	85.6	8.23
12/20/2007 01:00	0.897	9.19	43.840	0.0	85.5	8.21
12/20/2007 01:15	0.901	9.18	43.830	-0.1	85.6	8.23
12/20/2007 01:30	0.907	9.16	43.820	-0.1	85.9	8.25
12/20/2007 01:45	0.897	9.15	43.820	-0.1	86.0	8.27
12/20/2007 02:00	0.903	9.15	43.810	-0.1	86.0	8.27
12/20/2007 02:15	0.905	9.14	43.810	-0.1	86.0	8.27
12/20/2007 02:30	0.905	9.21	43.930	-0.1	85.3	8.19
12/20/2007 02:45	0.906	9.42	44.890	-0.2	82.0	7.80
12/20/2007 03:00	0.910	9.17	43.890	-0.2	85.6	8.23
12/20/2007 03:15	0.913	9.16	43.880	-0.2	85.7	8.23
12/20/2007 03:30	0.918	9.14	43.870	-0.1	85.7	8.24
12/20/2007 03:45	0.919	9.13	43.860	-0.2	85.9	8.26
12/20/2007 04:00	0.922	9.13	43.870	-0.2	85.8	8.25
12/20/2007 04:15	0.924	9.13	43.870	-0.2	85.8	8.25
12/20/2007 04:30	0.929	9.15	43.870	-0.2	85.4	8.21
12/20/2007 04:45	0.931	9.13	43.870	-0.2	85.7	8.24
12/20/2007 05:00	0.935	9.13	43.850	-0.2	85.8	8.25
12/20/2007 05:15	0.934	9.08	43.830	-0.2	86.1	8.29
12/20/2007 05:30	0.936	9.07	43.830	-0.2	86.3	8.31
12/20/2007 05:45	0.942	9.08	43.860	-0.2	86.2	8.30
12/20/2007 06:00	0.951	9.01	43.810	-0.2	86.6	8.35
12/20/2007 06:15	0.949	9.02	43.820	-0.2	86.4	8.33
12/20/2007 06:30	0.951	9.03	43.820	-0.3	86.0	8.29
12/20/2007 06:45	0.954	9.01	43.830	-0.2	86.5	8.34
12/20/2007 07:00	0.956	9.00	43.840	-0.2	86.3	8.33
12/20/2007 07:15	0.957	9.04	43.880	-0.1	86.3	8.31
12/20/2007 07:30	0.963	9.03	43.900	-0.1	86.4	8.32
12/20/2007 07:45	0.970	9.02	43.900	-0.1	86.4	8.33
12/20/2007 08:00	0.978	8.98	43.870	-0.1	86.6	8.36
12/20/2007 08:15	0.975	8.97	43.840	0.3	86.4	8.34
12/20/2007 08:30	0.980	8.84	43.320	4.3	87.0	8.44
12/20/2007 08:45	0.969	8.81	43.070	7.5	86.8	8.44
12/20/2007 09:00	0.981	8.87	43.230	7.6	86.2	8.37
12/20/2007 09:15	0.984	8.80	42.890	3.0	86.6	8.43
12/20/2007 09:30	0.979	8.79	42.820	5.2	86.7	8.44
12/20/2007 09:45	0.989	8.78	42.750	5.4	86.8	8.46

12/20/2007 10:00	0.992	8.83	42.980	1.5	86.5	8.41
12/20/2007 10:15	0.981	8.85	42.940	0.3	86.7	8.43
12/20/2007 10:30	1.006	8.73	42.620	4.1	87.6	8.55
12/20/2007 10:45	1.007	8.75	42.730	2.9	87.4	8.52
12/20/2007 11:00	0.995	8.78	42.760	3.1	87.6	8.53
12/20/2007 11:15	1.012	8.80	42.710	2.4	87.2	8.49
12/20/2007 11:30	1.012	8.81	42.880	3.2	86.9	8.45
12/20/2007 11:45	1.010	8.79	42.670	0.0	87.2	8.50
12/20/2007 12:00	1.012	8.82	42.780	0.4	87.2	8.49
12/20/2007 12:15	1.010	8.76	42.710	0.9	87.9	8.57
12/20/2007 12:30	1.011	8.80	42.720	0.8	87.4	8.52
12/20/2007 12:45	1.019	8.84	42.930	1.0	87.0	8.46
12/20/2007 13:00	1.012	8.86	43.060	1.0	87.4	8.49
12/20/2007 13:15	1.018	8.77	42.690	2.0	89.2	8.69
12/20/2007 13:30	1.022	9.00	43.760	-0.2	86.0	8.30
12/20/2007 13:45	1.022	9.01	43.760	-0.1	86.1	8.31
12/20/2007 14:00	1.021	8.81	42.950	1.3	88.2	8.58
12/20/2007 14:15	1.020	9.02	43.770	-0.2	85.8	8.27
12/20/2007 14:30	1.024	9.01	43.770	-0.2	86.0	8.30
12/20/2007 14:45	1.031	9.04	43.820	-0.3	85.6	8.25
12/20/2007 15:00	1.031	9.15	44.180	0.8	84.2	8.09
12/20/2007 15:15	1.032	9.12	44.080	-0.2	84.7	8.14
12/20/2007 15:30	1.035	9.24	44.430	1.4	82.9	7.93
12/20/2007 15:45	1.034	9.23	44.420	0.9	83.0	7.95
12/20/2007 16:00	1.037	9.15	44.180	-0.3	84.6	8.12
12/20/2007 16:15	1.042	9.22	44.380	0.8	83.4	7.98
12/20/2007 16:30	1.040	9.19	44.290	0.5	83.6	8.01
12/20/2007 16:45	1.051	8.96	43.930	0.5	85.4	8.24
12/20/2007 17:00	1.056	9.27	44.540	0.9	82.5	7.88
12/20/2007 17:15	1.052	9.29	44.610	0.4	82.8	7.91
12/20/2007 17:30	1.061	9.32	44.680	-0.3	82.1	7.84
12/20/2007 17:45	1.061	9.31	44.680	0.0	82.2	7.84
12/20/2007 18:00	1.063	9.31	44.680	-0.2	82.1	7.84
12/20/2007 18:15	1.066	8.78	43.960	0.8	85.6	8.29
12/20/2007 18:30	1.074	8.93	44.150	0.8	85.0	8.20
12/20/2007 18:45	1.074	8.81	43.940	0.4	85.8	8.31
12/20/2007 19:00	1.072	8.68	43.530	0.2	86.3	8.40
12/20/2007 19:15	1.078	8.62	43.150	-0.1	86.2	8.42
12/20/2007 19:30	1.073	8.70	42.470	0.0	85.2	8.32
12/20/2007 19:45	1.078	8.71	42.310	0.0	85.1	8.32
12/20/2007 20:00	1.086	8.80	42.220	2.5	83.9	8.19
12/20/2007 20:15	1.087	8.77	42.130	1.4	84.1	8.22
12/20/2007 20:30	1.087	8.70	41.950	2.4	84.7	8.30
12/20/2007 20:45	1.092	8.71	42.130	1.1	84.3	8.25
12/20/2007 21:00	1.089	8.78	42.170	-0.1	84.4	8.25
12/20/2007 21:15	1.096	8.74	42.070	0.7	84.3	8.25
12/20/2007 21:30	1.095	8.74	41.940	0.3	84.2	8.24
12/20/2007 21:45	1.102	8.67	41.610	0.2	84.3	8.27
12/20/2007 22:00	1.107	8.63	41.290	0.2	84.4	8.30
12/20/2007 22:15	1.108	8.62	41.290	0.1	84.5	8.32
12/20/2007 22:30	1.108	8.65	41.440	0.2	84.3	8.29
12/20/2007 22:45	1.110	8.65	41.560	0.2	84.4	8.29
12/20/2007 23:00	1.110	8.68	41.850	0.3	84.4	8.28
12/20/2007 23:15	1.107	8.63	41.650	0.1	84.5	8.30
12/20/2007 23:30	1.114	8.68	41.820	0.2	84.5	8.29
12/20/2007 23:45	1.117	8.60	41.680	0.1	84.5	8.31

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 18
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2007	December	21	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-12:00pm: The contractor was working on fixing the crane clutch. No dredging all morning. See Keith Nordlund daily report for the rest of the day after 12:00pm. ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total of 66 CY for the whole day. See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh (Date) 12/27/07

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

WORK ORDER NUMBER:
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE : Denny Way CSO-Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 6:00
TIME WORK STOPPED: 2:30

Date

Year	Month	Day	Inspector
2007	Dec	21	BCR

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Unloading of barge "KP-2" was continued this morning. (see picture on back.) The three (3) men crew continued with installing the plastic lining to each containers for the unloading. The unloading of the barge was completed by 1200.
Miscellaneous:	
Safety/Accidents:	
Problems Encountered & Resolutions:	.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	
Manpower	Total six (6) crew men 1 crane operator, 1 front-end loader operator, 1 forklift operator, 3 deck hands.
Visitors to Site	Randy Brunke of King County - DNRP
Equipment Used	Crane, Front-end Loader, 2 forklifts

Randy Brunke, Project Representative (Date)

12/21/07
Bill Rea, Inspector (Date)

KP-2 UNLOADING AT 0745 ON 12-21-07

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

WORK ORDER NUMBER:
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE : Denny Way CSO-Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 6:00
TIME WORK STOPPED: 2:30

Date

Year	Month	Day	Inspector
2007	Dec	20	BCR

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Unloading of barge "KP-2" was started this morning. This barge was not completely full, (see picture on back.) The three (3) men crew continued with installing the plastic lining to each containers for the unloading. Maintenance of the crane was done this morning (one hour). The unloading of the barge was at 50% by 1430.
Miscellaneous:	
Safety/Accidents:	
Problems Encountered & Resolutions:	
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	
Manpower	Total six (6) crew men 1 crane operator, 1 front-end loader operator, 1 forklift operator, 3 deck hands.
Visitors to Site	Randy Brunke of King County - DNRP
Equipment Used	Crane, Front-end Loader, 2 forklifts

Randy Brunke, Project Representative (Date)

12/20/07
Bill Rea, Inspector (Date)

KP-2 12-20-07 AM

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 19
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1100HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2007	December	21	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen resumed filling spoils barge "KP-1" after 1330hrs. Work location was at the N. end of the site between app. sta. 1+50 and 2+00 (per M. Locke, cell-phone) during this shift. (Note: Actual Sta., and Locs. are being Submitted by ACC with their Daily Reports mid-day of the following work day. re: I. Khilfeh, KC. Dredging work ceased at 1555hrs. The crane was dogged off at 1600hrs. for the night. (M. Locke phone call)
Miscellaneous:	ACC/Hurlen Survey boat (G. Anderes on site) was on site to survey areas previously dredged this day. Total Dredging time: 3hrs., 25 min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	No dredging was performed during the morning shift (information received from I. Khilfeh) due to crane equipment problem that carried over from 1510hrs. yesterday Afternoon Shift.
Test Conducted:	See Daily Denny Buoy Log attached to this Report.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.
Manpower	"Pam Tay": five persons, ACC Survey boat, one person
Visitors to Site	D. Marsano, KC
Equipment Used	ACC: Dredge platform "Pam Tay", (3) work skiffs, ACC Survey boat

Attachments: Denny buoy Daily Log

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (12-21-07)

Start date: 12/21/2007 End date: 12/21/2007

Submit Back Export as .CSV

Denny Way User Defined

	Min: 1.117 Max: 1.173 Mean: 1.150 St.dev: 0.015	Min: 8.02 Max: 8.89 Mean: 8.28 St.dev: 0.21	Min: 41.650 Max: 43.700 Mean: 42.177 St.dev: 0.439	Min: -0.4 Max: 1.1 Mean: -0.1 St.dev: 0.2	Min: 83.3 Max: 89.5 Mean: 86.1 St.dev: 1.4	Min: 8.06 Max: 8.88 Mean: 8.51 St.dev: 0.19
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
12/21/2007 00:00	1.119	8.55	41.650	0.1	84.7	8.33
12/21/2007 00:15	1.117	8.54	41.660	0.1	84.8	8.35
12/21/2007 00:30	1.121	8.66	41.820	0.2	84.4	8.28
12/21/2007 00:45	1.123	8.58	41.750	0.1	84.5	8.31
12/21/2007 01:00	1.125	8.48	41.720	0.1	84.8	8.36
12/21/2007 01:15	1.124	8.47	41.720	0.1	84.7	8.35
12/21/2007 01:30	1.127	8.44	41.690	0.2	84.9	8.38
12/21/2007 01:45	1.130	8.44	41.730	0.1	84.8	8.37
12/21/2007 02:00	1.134	8.43	41.770	0.0	84.6	8.34
12/21/2007 02:15	1.138	8.23	41.720	0.0	85.4	8.47
12/21/2007 02:30	1.137	8.40	41.780	0.1	85.1	8.40
12/21/2007 02:45	1.137	8.45	41.950	-0.1	84.8	8.36
12/21/2007 03:00	1.139	8.40	42.390	-0.2	85.1	8.38
12/21/2007 03:15	1.138	8.34	42.100	-0.1	85.3	8.42
12/21/2007 03:30	1.140	8.33	42.070	-0.1	85.2	8.42
12/21/2007 03:45	1.140	8.26	42.040	-0.1	85.5	8.46
12/21/2007 04:00	1.140	8.24	42.090	-0.1	85.3	8.44
12/21/2007 04:15	1.145	8.20	42.080	-0.1	85.5	8.47
12/21/2007 04:30	1.142	8.18	42.030	-0.2	85.4	8.47
12/21/2007 04:45	1.144	8.13	42.000	-0.2	85.5	8.48
12/21/2007 05:00	1.143	8.13	42.030	-0.1	85.7	8.50
12/21/2007 05:15	1.142	8.11	41.960	-0.1	85.7	8.52
12/21/2007 05:30	1.139	8.41	42.060	-0.2	85.1	8.39
12/21/2007 05:45	1.136	8.18	41.970	-0.2	86.0	8.53
12/21/2007 06:00	1.135	8.36	42.150	-0.2	85.4	8.43
12/21/2007 06:15	1.142	8.29	42.020	-0.2	86.0	8.50
12/21/2007 06:30	1.150	8.28	42.020	-0.2	86.0	8.50
12/21/2007 06:45	1.148	8.25	42.030	-0.2	86.0	8.51
12/21/2007 07:00	1.149	8.38	42.220	-0.1	85.7	8.45
12/21/2007 07:15	1.149	8.57	42.810	-0.3	84.7	8.29
12/21/2007 07:30	1.150	8.56	42.950	-0.3	84.4	8.25
12/21/2007 07:45	1.154	8.69	43.180	-0.3	84.1	8.19
12/21/2007 08:00	1.147	8.79	43.700	-0.4	83.4	8.09
12/21/2007 08:15	1.153	8.77	43.660	-0.4	83.5	8.11
12/21/2007 08:30	1.155	8.89	43.600	-0.4	83.3	8.06
12/21/2007 08:45	1.156	8.49	42.850	-0.4	84.6	8.29
12/21/2007 09:00	1.157	8.31	42.640	-0.3	85.7	8.45
12/21/2007 09:15	1.162	8.13	42.310	-0.1	86.4	8.56
12/21/2007 09:30	1.171	8.12	42.320	-0.2	86.5	8.58
12/21/2007 09:45	1.163	8.10	42.290	-0.2	86.6	8.59

12/21/2007 10:00	1.168	8.11	42.290	-0.2	86.8	8.61
12/21/2007 10:15	1.164	8.10	42.280	-0.2	86.8	8.61
12/21/2007 10:30	1.168	8.09	42.280	-0.2	86.9	8.62
12/21/2007 10:45	1.169	8.11	42.260	-0.2	87.2	8.65
12/21/2007 11:00	1.167	8.09	42.250	-0.2	87.3	8.66
12/21/2007 11:15	1.168	8.04	42.160	-0.1	87.4	8.68
12/21/2007 11:30	1.173	8.02	42.110	-0.2	87.2	8.67
12/21/2007 11:45	1.165	8.03	42.070	-0.1	87.4	8.69
12/21/2007 12:00	1.165	8.05	42.040	-0.1	87.3	8.68
12/21/2007 12:15	1.165	8.07	42.000	-0.1	87.1	8.66
12/21/2007 12:30	1.160	8.09	42.050	-0.1	87.1	8.65
12/21/2007 12:45	1.169	8.12	42.140	-0.1	87.3	8.66
12/21/2007 13:00	1.155	8.10	42.020	-0.2	87.1	8.65
12/21/2007 13:15	1.164	8.09	41.970	-0.1	87.2	8.66
12/21/2007 13:30	1.162	8.17	42.040	-0.2	87.2	8.64
12/21/2007 13:45	1.156	8.15	42.030	-0.2	87.2	8.65
12/21/2007 14:00	1.163	8.15	42.030	-0.1	87.2	8.65
12/21/2007 14:15	1.169	8.07	41.980	-0.2	88.1	8.75
12/21/2007 14:30	1.162	8.06	41.970	0.3	88.5	8.80
12/21/2007 14:45	1.158	8.08	41.990	1.1	88.1	8.75
12/21/2007 15:00	1.155	8.10	42.020	-0.2	88.6	8.80
12/21/2007 15:15	1.158	8.13	42.050	-0.1	89.4	8.88
12/21/2007 15:30	1.156	8.14	42.080	-0.1	89.5	8.88
12/21/2007 15:45	1.157	8.20	42.150	-0.2	88.8	8.79
12/21/2007 16:00	1.154	8.59	42.610	-0.3	86.1	8.43
12/21/2007 16:15	1.152	8.29	42.280	0.1	88.2	8.71

Afternoon dredging

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King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

WORK ORDER NUMBER:
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE : Denny Way CSO-Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 6:00
TIME WORK STOPPED: 2:30

Date

Year	Month	Day	Inspector
2007	Dec	24	BCR

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X				

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Unloaded barge "KP-2" is at the dock and is ready to be sent to the dredging site. (see picture on back.) The unloading crew is not work today due to the Holidays. The crew will return to work on December 27th (Thursday morning).
Miscellaneous:	
Safety/Accidents:	
Problems Encountered & Resolutions:	.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	
Manpower	
Visitors to Site	
Equipment Used	

Randy Brunke, Project Representative (Date)

12/24/07
Bill Rea, Inspector (Date)

KP-2 UNLOADED 12-24-07

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

WORK ORDER NUMBER:
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE : Denny Way CSO-Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 6:00
TIME WORK STOPPED: 2:30

Date

Year	Month	Day	Inspector
2007	Dec	26	BCR

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Unloaded barge "KP-2" is at the dock and is ready to be sent to the dredging site. The unloading crew is not work today due to the Holidays. The crew will return to work on December 27th (Thursday morning).
Miscellaneous:	
Safety/Accidents:	
Problems Encountered & Resolutions:	.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	
Manpower	
Visitors to Site	
Equipment Used	

Randy Brunke, Project Representative (Date)

12/26/07
Bill Rea, Inspector (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

WORK ORDER NUMBER:
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE : Denny Way CSO-Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 6:00
TIME WORK STOPPED: 2:30

Date

Year	Month	Day	Inspector
2007	Dec	27	BCR

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Unloading of barge "KP-2" was sent to the dredging site. "KP-1" was brought to the unloading dock. Unloading was started and completed. The three (3) men crew continued with installing the plastic lining to each containers for the unloading.
Miscellaneous:	
Safety/Accidents:	
Problems Encountered & Resolutions:	.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	
Manpower	Total six (6) crew men 1 crane operator, 1 front-end loader operator, 1 forklift operator, 3 deck hands.
Visitors to Site	
Equipment Used	Crane, Front-end Loader, 2 forklifts

Randy Brunke, Project Representative (Date)

12/27/07
Bill Rea, Inspector (Date)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 20
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1100HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2007	December	27	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
		X		X

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen continued filling spoils barge "KP-2". Work location was between app. sta. 2+50 and 2+00 (per M. Locke, cell-phone), and between app. elves. -20' to -30' during this shift. (Note: Actual Sta., and Locs. are being Submitted by ACC with their Daily Reports mid-day of the following work day. re: I. Khilfeh, KC). Dredging work ceased at 1630hrs. The crane was dogged off at 1640hrs. for the night (M. Locke phone call).
Miscellaneous:	Total Dredging time: 6hrs., 56 min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	None to report.
Test Conducted:	See Daily Denny Buoy Log attached to this Report.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.
Manpower	"Pam Tay": five persons; "Jennifer H", two persons
Visitors to Site	D. Marsano, KC
Equipment Used	ACC: Dredge platform "Pam Tay", (3) work skiffs,, Assist Tug "Jennifer H"

Attachments: Denny buoy Daily Log

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (12-27-07)

Start date: 12/27/2007 End date: 12/27/2007

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Denny Way User Defined

	Min: 0.904 Max: 1.071 Mean: 1.001 St.dev: 0.054	Min: 8.13 Max: 8.81 Mean: 8.36 St.dev: 0.13	Min: 40.290 Max: 43.380 Mean: 41.200 St.dev: 0.772	Min: 1.2 Max: 4.9 Mean: 1.7 St.dev: 0.6	Min: 81.8 Max: 86.1 Mean: 84.4 St.dev: 1.0	Min: 7.94 Max: 8.59 Mean: 8.36 St.dev: 0.13
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
12/27/2007 00:00	1.071	8.17	42.020	1.3	85.9	8.52
12/27/2007 00:15	1.070	8.19	42.020	1.3	85.8	8.50
12/27/2007 00:30	1.067	8.50	41.140	1.5	83.4	8.24
12/27/2007 00:45	1.056	8.51	40.910	1.6	82.9	8.20
12/27/2007 01:00	1.066	8.49	41.030	1.5	83.2	8.22
12/27/2007 01:15	1.062	8.51	40.980	1.8	83.0	8.20
12/27/2007 01:30	1.070	8.52	40.870	1.5	82.8	8.19
12/27/2007 01:45	1.065	8.48	40.800	1.7	83.3	8.25
12/27/2007 02:00	1.056	8.47	40.740	1.6	83.3	8.24
12/27/2007 02:15	1.060	8.49	40.720	1.5	83.0	8.22
12/27/2007 02:30	1.061	8.49	40.760	1.6	83.1	8.23
12/27/2007 02:45	1.067	8.50	40.780	1.5	83.0	8.21
12/27/2007 03:00	1.063	8.45	40.680	1.5	83.4	8.26
12/27/2007 03:15	1.057	8.43	40.660	1.6	83.5	8.28
12/27/2007 03:30	1.057	8.43	40.700	1.5	83.7	8.30
12/27/2007 03:45	1.058	8.41	40.760	1.4	83.8	8.31
12/27/2007 04:00	1.051	8.41	40.770	1.5	83.7	8.30
12/27/2007 04:15	1.054	8.39	40.810	1.5	83.9	8.32
12/27/2007 04:30	1.047	8.37	40.670	1.5	84.0	8.34
12/27/2007 04:45	1.038	8.36	40.570	1.5	84.0	8.34
12/27/2007 05:00	1.030	8.36	40.580	1.5	84.0	8.35
12/27/2007 05:15	1.044	8.34	40.500	1.5	84.1	8.37
12/27/2007 05:30	1.040	8.33	40.510	1.5	84.3	8.39
12/27/2007 05:45	1.031	8.33	40.490	1.5	84.3	8.39
12/27/2007 06:00	1.032	8.32	40.510	1.4	84.5	8.40
12/27/2007 06:15	1.032	8.30	40.480	1.4	84.5	8.42
12/27/2007 06:30	1.027	8.28	40.440	1.5	84.8	8.45
12/27/2007 06:45	1.027	8.27	40.360	1.5	84.8	8.45
12/27/2007 07:00	1.027	8.25	40.360	1.5	84.8	8.46
12/27/2007 07:15	1.021	8.23	40.300	1.5	85.0	8.49
12/27/2007 07:30	1.023	8.21	40.290	1.4	85.1	8.49
12/27/2007 07:45	1.015	8.22	40.320	1.4	85.1	8.49
12/27/2007 08:00	1.010	8.21	40.300	1.5	85.3	8.51
12/27/2007 08:15	1.013	8.26	40.600	1.5	85.1	8.47
12/27/2007 08:30	1.012	8.23	40.540	1.4	85.2	8.49
12/27/2007 08:45	1.011	8.21	40.500	1.4	85.3	8.51
12/27/2007 09:00	1.009	8.22	40.570	1.4	85.3	8.50
12/27/2007 09:15	1.008	8.22	40.580	1.4	85.4	8.51
12/27/2007 09:30	1.001	8.17	40.520	1.5	85.7	8.55
12/27/2007 09:45	1.000	8.13	40.450	1.5	85.9	8.59

12/27/2007 10:00	1.003	8.25	40.780	1.4	85.2	8.48
12/27/2007 10:15	0.999	8.71	42.700	1.2	82.3	8.04
12/27/2007 10:30	0.992	8.68	42.510	1.2	83.2	8.14
12/27/2007 10:45	0.985	8.24	40.870	1.4	83.1	8.27
12/27/2007 11:00	0.991	8.33	41.320	1.4	84.1	8.34
12/27/2007 11:15	0.980	8.35	41.420	1.3	84.8	8.40
12/27/2007 11:30	0.979	8.28	41.230	1.5	85.2	8.45
12/27/2007 11:45	0.966	8.24	41.260	3.5	85.6	8.50
12/27/2007 12:00	0.968	8.21	41.210	3.8	86.1	8.56
12/27/2007 12:15	0.961	8.22	41.260	4.9	85.8	8.53
12/27/2007 12:30	0.956	8.39	41.870	2.8	84.8	8.37
12/27/2007 12:45	0.950	8.63	42.720	2.1	84.0	8.21
12/27/2007 13:00	0.947	8.81	43.380	2.2	81.8	7.94
12/27/2007 13:15	0.944	8.32	41.780	1.9	84.7	8.38
12/27/2007 13:30	0.937	8.41	42.070	2.4	84.8	8.35
12/27/2007 13:45	0.932	8.36	41 860	2.2	85.0	8.40
12/27/2007 14:00	0.930	8.45	42.100	1.7	84.7	8.34
12/27/2007 14:15	0.923	8.43	42.030	1.4	84.5	8.33
12/27/2007 14:30	0.926	8.48	42.240	1.4	84.3	8.29
12/27/2007 14:45	0.923	8.48	42.240	1.4	84.4	8.30
12/27/2007 15:00	0.914	8.35	42.020	2.1	85.2	8.41
12/27/2007 15:15	0.917	8.37	42.070	1.9	85.1	8.40
12/27/2007 15:30	0.910	8.37	42.120	1.8	85.0	8.38
12/27/2007 15:45	0.917	8.33	42.080	1.8	85.4	8.43
12/27/2007 16:00	0.904	8.32	42.110	2.0	85.5	8.44
12/27/2007 16:15	0.906	8.37	42.200	1.7	85.1	8.39
12/27/2007 16:30	0.906	8.37	42.270	2.7	85.0	8.38
12/27/2007 16:45	0.908	8.33	42.270	3.4	85.2	8.41

Afternoon Shift

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King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 21
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1100HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2007	December	28	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
		X windy		Occas. showers

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen continued filling spoils barge "KP-2". Work location was between app. sta. 2+50 and 2+25 (per M. Locke, cell-phone), and between app. elves. -17' to -25' during this shift. (Note: Actual Sta., and Locs. are being Submitted by ACC with their Daily Reports mid-day of the following work day. re: I. Khilfeh, KC). Dredging work ceased at 1310hrs. The crane was dogged off at 1330hrs., for the afternoon (M. Locke phone call). "Diane H" hauled off the Spoils Barge "KP-2" after 1400hrs.
Miscellaneous:	Crew began setting up the (Hitachi EX800H) Excavator Platform and it's computer-monitoring system after 1325hrs. Crew work for the balance of this shift centered on setting up the Excator platform. TheTotal Dredging time: 4hrs., 10 min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	Excavator Platform was brought to the site, but not used, due to both (what ACC considered, re: M. Locke) inclement weather for upslope work, and the need to set up the monitoring instrumentation aboard that platform.
Test Conducted:	See Daily Denny Buoy Log attached to this Report.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.
Manpower	"Pam Tay": five persons; "Diane H", two persons
Visitors to Site	KC: B. Wilbert
Equipment Used	ACC: Dredge platform "Pam Tay", Spoils Barge KP-2, (3) work skiffs,, Assist Tug "Diane H"; Hitachi Excavator Platform (on standby, after 1325hrs,)

Attachments: Denny buoy Daily Log; four photos

Randy Brunke, Project Representative (Date)

12-28-07
K. Nordlund, CMIII (12-28-07)

Start date: 12/28/2007 End date: 12/28/2007

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Denny Way User Defined

	Min: 0.898 Max: 0.968 Mean: 0.932 St.dev: 0.017	Min: 8.26 Max: 8.81 Mean: 8.48 St.dev: 0.15	Min: 39.480 Max: 42.820 Mean: 40.950 St.dev: 1.061	Min: 1.5 Max: 4.9 Mean: 2.0 St.dev: 0.5	Min: 82.4 Max: 87.5 Mean: 84.7 St.dev: 1.5	Min: 8.11 Max: 8.73 Mean: 8.38 St.dev: 0.15
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
12/28/2007 00:00	0.898	8.50	42.140	1.8	82.6	8.13
12/28/2007 00:15	0.904	8.48	42.060	1.7	82.8	8.15
12/28/2007 00:30	0.898	8.53	42.160	1.5	82.6	8.12
12/28/2007 00:45	0.900	8.46	41.480	1.8	82.9	8.18
12/28/2007 01:00	0.898	8.49	41.540	1.8	82.7	8.16
12/28/2007 01:15	0.901	8.47	41.160	1.9	82.7	8.17
12/28/2007 01:30	0.902	8.52	41.340	1.8	82.5	8.13
12/28/2007 01:45	0.917	8.52	41.120	1.7	82.4	8.14
12/28/2007 02:00	0.904	8.50	40.990	1.8	82.6	8.16
12/28/2007 02:15	0.907	8.50	40.940	1.8	82.8	8.19
12/28/2007 02:30	0.916	8.47	40.830	2.0	82.9	8.21
12/28/2007 02:45	0.915	8.46	40.240	1.8	82.9	8.23
12/28/2007 03:00	0.914	8.49	40.460	1.9	82.6	8.19
12/28/2007 03:15	0.910	8.48	40.560	1.9	82.9	8.22
12/28/2007 03:30	0.914	8.45	40.390	2.2	83.1	8.25
12/28/2007 03:45	0.922	8.42	40.360	1.8	83.3	8.28
12/28/2007 04:00	0.928	8.44	40.060	1.9	83.0	8.25
12/28/2007 04:15	0.928	8.42	39.770	2.0	83.2	8.29
12/28/2007 04:30	0.929	8.39	39.690	1.9	83.2	8.30
12/28/2007 04:45	0.929	8.39	39.630	2.0	83.3	8.31
12/28/2007 05:00	0.920	8.41	39.840	1.9	83.4	8.31
12/28/2007 05:15	0.932	8.41	39.800	1.9	83.3	8.30
12/28/2007 05:30	0.926	8.38	39.630	2.1	83.2	8.30
12/28/2007 05:45	0.930	8.39	39.760	2.0	83.4	8.31
12/28/2007 06:00	0.935	8.42	39.980	1.9	83.4	8.30
12/28/2007 06:15	0.939	8.37	39.790	2.0	84.0	8.37
12/28/2007 06:30	0.939	8.32	39.570	2.0	84.3	8.42
12/28/2007 06:45	0.948	8.31	39.570	1.9	84.6	8.45
12/28/2007 07:00	0.935	8.32	39.610	1.9	84.4	8.43
12/28/2007 07:15	0.934	8.28	39.490	1.9	84.8	8.48
12/28/2007 07:30	0.946	8.26	39.480	1.9	85.1	8.52
12/28/2007 07:45	0.941	8.28	39.540	1.9	84.9	8.49
12/28/2007 08:00	0.934	8.29	39.580	1.9	84.9	8.49
12/28/2007 08:15	0.945	8.28	39.690	1.9	85.1	8.51
12/28/2007 08:30	0.940	8.32	39.820	1.9	84.8	8.46
12/28/2007 08:45	0.933	8.31	39.850	2.0	84.9	8.47
12/28/2007 09:00	0.946	8.27	39.870	2.2	85.9	8.58
12/28/2007 09:15	0.952	8.29	40.020	3.4	85.4	8.52
12/28/2007 09:30	0.928	8.28	40.030	2.3	85.6	8.54
12/28/2007 09:45	0.944	8.31	40.150	2.9	85.9	8.56

12/28/2007 10:00	0.966	8.29	40.080	2.6	86.8	8.66
12/28/2007 10:15	0.938	8.28	40.070	2.4	87.5	8.73
12/28/2007 10:30	0.968	8.32	40.220	2.4	86.2	8.59
12/28/2007 10:45	0.940	8.34	40.440	4.9	86.5	8.60
12/28/2007 11:00	0.935	8.65	41.990	2.4	85.1	8.35
12/28/2007 11:15	0.930	8.63	41.850	2.0	84.7	8.31
12/28/2007 11:30	0.923	8.81	42.820	1.5	83.3	8.11
12/28/2007 11:45	0.951	8.77	42.490	1.8	84.5	8.25
12/28/2007 12:00	0.947	8.62	41.860	1.7	85.5	8.39
12/28/2007 12:15	0.939	8.66	41.970	2.1	84.7	8.31
12/28/2007 12:30	0.950	8.71	42.280	1.5	85.0	8.31
12/28/2007 12:45	0.947	8.74	42.510	1.5	84.6	8.26
12/28/2007 13:00	0.950	8.65	42.070	3.0	85.8	8.41
12/28/2007 13:15	0.942	8.61	41.850	1.5	86.0	8.45
12/28/2007 13:30	0.944	8.63	41.930	2.8	86.7	8.50
12/28/2007 13:45	0.937	8.70	42.320	1.7	85.5	8.37
12/28/2007 14:00	0.941	8.68	42.250	1.7	85.9	8.41
12/28/2007 14:15	0.942	8.64	42.070	1.8	86.8	8.51
12/28/2007 14:30	0.939	8.69	42.290	2.3	86.2	8.43
12/28/2007 14:45	0.939	8.65	42.170	2.0	86.1	8.44
12/28/2007 15:00	0.941	8.61	41.930	1.8	86.3	8.48
12/28/2007 15:15	0.926	8.60	41.850	1.7	86.5	8.49
12/28/2007 15:30	0.947	8.60	41.870	1.7	86.4	8.49
12/28/2007 15:45	0.948	8.60	41.890	1.7	86.5	8.49
12/28/2007 16:00	0.946	8.59	41.900	1.6	86.7	8.51
12/28/2007 16:15	0.936	8.57	41.890	1.6	86.9	8.54
12/28/2007 16:30	0.936	8.56	41.900	1.6	87.1	8.56
12/28/2007 16:45	0.951	8.55	41.880	1.6	87.5	8.60
12/28/2007 17:00	0.949	8.68	41.950	1.6	85.7	8.40
12/28/2007 17:15	0.946	8.62	41.920	1.6	86.3	8.47

Work on Excavator Platform

Afternoon dredge

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King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 22
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 0700HRS. (SATURDAY SHIFT)
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2007	December	29	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
X						

Weather

Clear	PC	Overcast	Fog	Rain
		X		p.m.

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen began filling spoils barge "KP-1". Work location was between app. sta. 2+25 and 2+75 (per M. Locke, cell-phone), and between app. elev. -15' to -25' during this shift. (Note: Actual Sta., and Locs. are being Submitted by ACC with their Daily Reports mid-day of the following work day. re: I. Khilfeh, KC). Dredge, and Excavator platforms were rafted together with the Spoils barge for the Weekend. Dredging work ceased at 1600hrs. The crane was dogged off by 1620hrs. for the afternoon (M. Locke phone call). Tug "Diane H" on site for assist duties until 1145hrs.
Miscellaneous:	Split crew, with some hands working on the (Hitachi EX800H) Excavator Platform, and on the computer-monitoring system this shift. ACC Survey boat was on site this morning to progress work performed to date. Contacted (cell-phone) D. Marsano, KC, to confirm today's full work shift by ACC. Per M. Locke, ACC, there will be no more dredging or excavating by ACC (after this day), until January 2, 2008 (next Wednesday). Total Dredging time this day: 7 hrs., 5 min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	M. Locke, ACC, cell-phoned just before 1500hrs. about the dredge bucket grabbing onto "driven pilings" in the area where they were excavating. He was also worried about what appeared to be a light "petroleum, or oil-like sheen" forming at the surface from the material they were dredging into the spoils barge. This observer said that all the drilling logs showed there was a presence of those types of biodegraded pollutants in the ground, and what Anchor thought might be natural oils formed from the breakdown of all the organic materials deposited by the old outfall. It was one of the reasons for this removal contract. When asked if he thought the materials could be contained with a standard floating system, he said "Not really", but just wanted to go "on record" in case there were any complaints.
Test Conducted:	See Daily Denny Buoy Log attached to this Report.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.

Attachments: Denny buoy Daily Log; ACC Daily Survey Report; three photos

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (12-29-07)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT
DIVISION

Inspector's Daily Construction Report

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
REPORT NUMBER: 22
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
CONTRACT NUMBER: C00190C07
TIME WORK STARTED: 0700HRS. (SATURDAY SHIFT)
TIME WORK STOPPED: 1730HRS.

Manpower	"Pam Tay": five persons; "Diane H", two persons
Visitors to Site	ACC: G. Anderes
Equipment Used	ACC: Dredge platform "Pam Tay", Spoils Barge "KP-1", (3) work skiffs, Hitachi Excavator Platform (on standby), ACC Survey boat; Assist Tug "Diane H"

R. Brunke, Project Representative (Date)

K. Nordlund, 12-29-07
K. Nordlund, CMIII,12-29-07

Start date: 12/29/2007 End date: 12/29/2007

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Denny Way User Defined

	Min: 0.907 Max: 0.977 Mean: 0.951 St.dev: 0.020	Min: 7.45 Max: 8.53 Mean: 8.02 St.dev: 0.30	Min: 37.020 Max: 42.490 Mean: 39.588 St.dev: 1.773	Min: 1.4 Max: 4.7 Mean: 1.9 St.dev: 0.6	Min: 82.3 Max: 92.2 Mean: 86.8 St.dev: 2.0	Min: 8.09 Max: 9.09 Mean: 8.73 St.dev: 0.23
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
12/29/2007 00:00	0.942	8.44	42.470	1.5	89.8	8.83
12/29/2007 00:15	0.946	8.43	42.470	1.6	90.3	8.88
12/29/2007 00:30	0.957	8.42	42.480	1.7	90.3	8.88
12/29/2007 00:45	0.955	8.42	42.490	1.6	89.7	8.82
12/29/2007 01:00	0.947	8.41	42.480	1.5	89.9	8.84
12/29/2007 01:15	0.948	8.40	42.490	1.5	90.0	8.86
12/29/2007 01:30	0.953	8.39	42.480	1.4	89.8	8.84
12/29/2007 01:45	0.952	8.31	42.450	2.0	92.2	9.09
12/29/2007 02:00	0.954	8.31	42.460	1.9	91.8	9.05
12/29/2007 02:15	0.962	8.32	42.460	1.7	90.7	8.95
12/29/2007 02:30	0.960	8.15	39.420	1.7	85.9	8.62
12/29/2007 02:45	0.957	8.10	38.880	1.7	85.8	8.64
12/29/2007 03:00	0.964	8.04	38.480	1.8	85.9	8.68
12/29/2007 03:15	0.963	8.01	38.280	1.8	85.9	8.69
12/29/2007 03:30	0.962	7.98	38.180	1.8	86.1	8.72
12/29/2007 03:45	0.963	7.97	38.250	1.8	86.0	8.72
12/29/2007 04:00	0.964	7.96	38.220	1.8	86.1	8.73
12/29/2007 04:15	0.967	7.94	38.180	1.8	86.3	8.75
12/29/2007 04:30	0.962	7.92	38.190	1.8	86.3	8.75
12/29/2007 04:45	0.964	7.93	38.200	1.8	86.2	8.75
12/29/2007 05:00	0.965	8.01	38.520	1.7	86.0	8.69
12/29/2007 05:15	0.967	7.99	38.400	1.7	86.0	8.71
12/29/2007 05:30	0.967	8.00	38.580	1.7	86.1	8.71
12/29/2007 05:45	0.966	7.88	38.320	1.8	86.5	8.78
12/29/2007 06:00	0.970	7.86	38.300	1.8	86.5	8.79
12/29/2007 06:15	0.965	7.85	38.320	1.8	86.6	8.80
12/29/2007 06:30	0.964	7.83	38.310	1.7	86.7	8.81
12/29/2007 06:45	0.965	7.96	38.700	1.7	86.6	8.76
12/29/2007 07:00	0.970	7.89	38.500	1.7	85.9	8.71
12/29/2007 07:15	0.966	7.74	38.000	1.7	87.0	8.88
12/29/2007 07:30	0.963	8.03	39.830	1.6	86.0	8.64
12/29/2007 07:45	0.967	8.27	40.650	1.4	83.8	8.34
12/29/2007 08:00	0.977	7.76	38.310	1.7	86.4	8.79
12/29/2007 08:15	0.976	7.70	38.210	1.7	86.7	8.84
12/29/2007 08:30	0.972	7.65	38.000	1.8	87.1	8.90
12/29/2007 08:45	0.971	7.56	37.700	1.8	87.6	8.98
12/29/2007 09:00	0.972	7.55	37.640	1.9	87.4	8.97
12/29/2007 09:15	0.970	7.53	37.580	2.0	87.6	8.99
12/29/2007 09:30	0.969	7.49	37.210	2.1	87.8	9.04
12/29/2007 09:45	0.962	7.47	37.040	2.1	88.0	9.07

Saturday Shift

Saturday 12-29-07 shift (cont.)

12/29/2007 10:00	0.963	7.47	37.020	2.2	88.0	9.07
12/29/2007 10:15	0.966	7.45	37.090	2.2	88.2	9.09
12/29/2007 10:30	0.964	7.46	37.150	2.2	88.2	9.09
12/29/2007 10:45	0.964	7.47	37.160	2.4	88.1	9.08
12/29/2007 11:00	0.952	7.56	37.580	2.3	87.7	9.00
12/29/2007 11:15	0.951	7.90	38.930	2.3	86.4	8.74
12/29/2007 11:30	0.954	8.01	39.390	2.0	85.2	8.58
12/29/2007 11:45	0.955	7.89	38.780	1.8	87.4	8.85
12/29/2007 12:00	0.949	8.53	41.940	4.5	82.3	8.09
12/29/2007 12:15	0.946	8.50	41.750	4.7	82.7	8.15
12/29/2007 12:30	0.939	8.07	39.860	2.6	85.4	8.57
12/29/2007 12:45	0.937	8.07	39.850	2.2	85.5	8.58
12/29/2007 13:00	0.936	8.01	39.690	2.9	86.6	8.71
12/29/2007 13:15	0.930	8.17	40.190	2.6	85.3	8.53
12/29/2007 13:30	0.920	7.98	39.610	2.5	86.8	8.74
12/29/2007 13:45	0.918	8.10	40.020	2.2	85.6	8.58
12/29/2007 14:00	0.915	8.29	40.860	1.6	84.6	8.40
12/29/2007 14:15	0.914	8.35	41.180	1.4	84.5	8.38
12/29/2007 14:30	0.907	8.40	41.410	1.5	84.4	8.35
12/29/2007 14:45	0.913	8.31	41.000	1.7	84.7	8.41
12/29/2007 15:00	0.922	8.26	40.850	1.6	85.2	8.48
12/29/2007 15:15	0.916	8.30	41.090	1.5	85.3	8.46
12/29/2007 15:30	0.909	8.29	41.020	1.5	85.1	8.45
12/29/2007 15:45	0.914	8.35	41.380	1.4	84.8	8.40
12/29/2007 16:00	0.909	8.16	40.700	2.2	86.1	8.59
12/29/2007 16:15	0.917	8.20	40.810	2.0	86.0	8.57
12/29/2007 16:30	0.914	8.23	40.960	2.3	85.5	8.51

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HURLEN CONSTRUCTION COMPANY

FOREMAN:

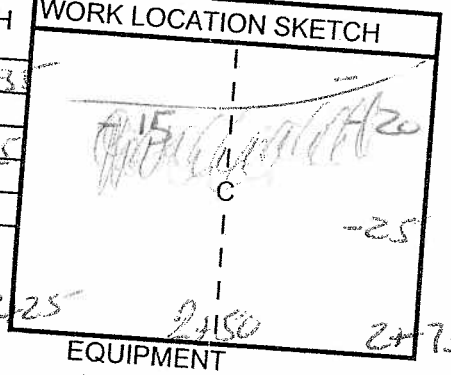
JOB # 1507043 LOCATION: ELLIOT BAY DATE: 12 29-07

WEATHER: Overcast WIND: SW REPORT # 22

DISPOSAL AREA: RABANCO

STATION BEGIN	STATION END	CUT #	HEADWAY (FEET)	WIDTH CUT	DEPTH
1+75	2+25	4'	30'	50'	-30 to -35
2+25	2+50	2'	25'	60'	-15 to -25
		TOTAL:			

WORK LOCATION SKETCH



MATERIAL TYPE:
SAND____ SILT____ ROCK___ MUD / OTHER Sheen 0.1 2+25 Black Clay

DISTRIBUTION OF TIME	TOTAL HOURS
ACTUAL DREDGING	4
MOB./DEMOB	
MOVING (LOCATION/ANCHORS)	1
SHIP TRAFFIC	
NATURAL ELEMENTS/WEATHER	
SCOW CHANGE	.5
DREDGE MAINTENANCE	2
BUCKET REPAIR	

341 barrels

EQUIPMENT

DREDGE	REG	12 HRS
	ST	HRS
LOADER	REG	HRS
	ST	HRS
TUG	REG	2 HRS
	ST	HRS

LABOR

FOREMAN	12 HRS
CRANE OPERATOR	12 HRS
TUG OPERATOR	2 HRS
LOADER OPERATOR	12 HRS
PILEBUCK	12 HRS

BOW
6' 0" PORT STARBOARD 5' 0"

KP-2
BARGE NAME

FREEBOARD	5' 6"
DRAFT	6' 6"

6' 0" PORT STARBOARD 5' 0"
STERN

BOW
3' 4" PORT STARBOARD 2' 5"

KP-2
BARGE NAME

FREEBOARD	2' 5"
DRAFT	9' 7"

2' 5" PORT STARBOARD 1' 8"
STERN

943 tons

652 cu yds

2560 lb to the yd.

KP-2 up [illegible]

Daily Contractor Quality Control Report

Contract No: C00190C07

American Civil Constructors
700 S. Riverside Dr.
Seattle, WA 98107

Personnel on Site
Greg A
Monty L
Keith C
Dustin S
Cody H

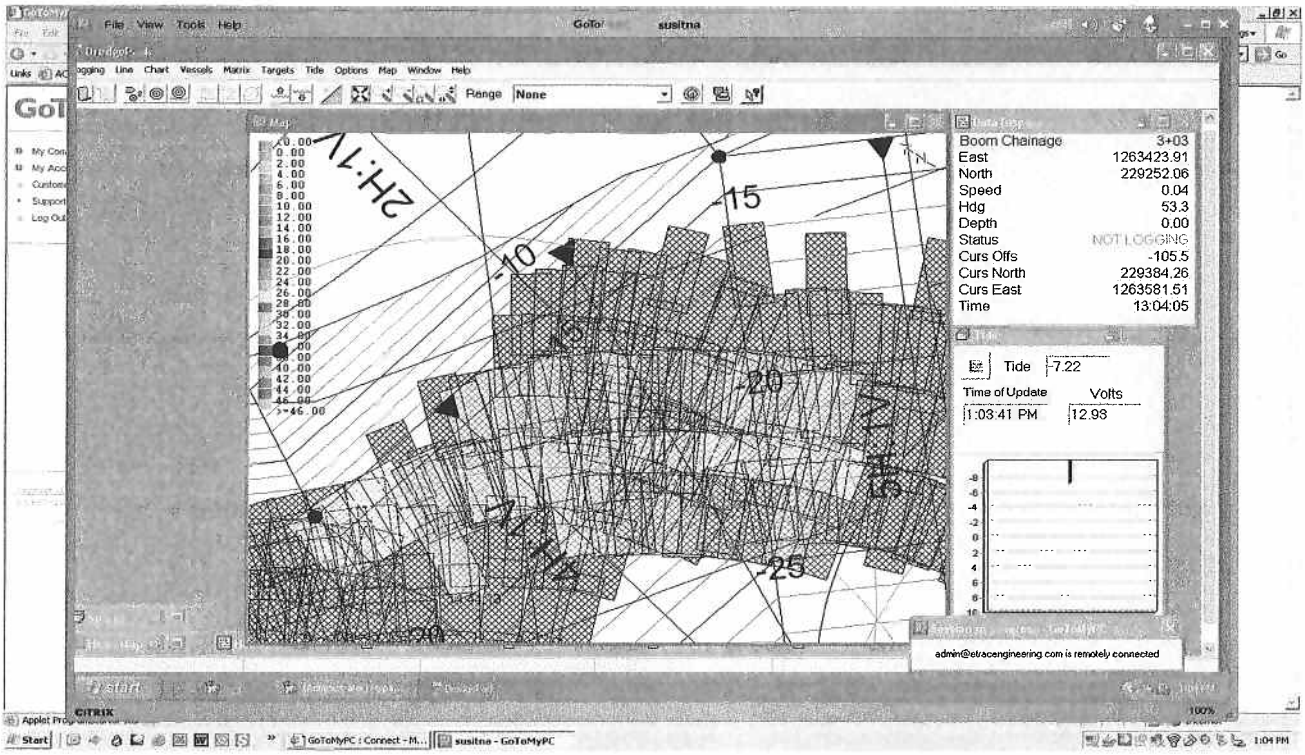
Equipment on Site
Bantry 930
3 cu yd bucket
KP-2 material barge
work boat
work skiff
Tug Dean H
Survey boat

Temperature	Weather
38° to 45°	Windy Sun

Notes

Heavy oil sheen on water
Windy Tied up 34 Berge at
Eastlake, shifted over 1:00 pm,
spudded down at North end.
KP-2 loaded

Description of Work Performed	Time	Type of Material Removed	Quanity
Start up	.5		
Dredge	4	Black Clay	650 cu yd
Shift barge	1		
Turn Material barge	.5		


File View Tools Help
susitna
Range None
Boom Chainage 3+03
East 1263423.91
North 229252.06
Speed 0.04
Hdg 53.3
Depth 0.00
Status NOT LOGGING
Curs Offs -105.5
Curs North 229384.26
Curs East 1263581.51
Time 13:04:05
Tide -7.22
Time of Update 1:03:41 PM
Volts 12.93
admin@etraceengineering.com is remotely connected
-15
-10
-20
-25
-30
GoToMyPC : Connect - M...
susitna - GoToMyPC
1:04 PM

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

WORK ORDER NUMBER:
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE : Denny Way CSO-Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 6:00
TIME WORK STOPPED: 2:30

Date

Year	Month	Day	Inspector
2007	Dec	31	BCR

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X				

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	No unloading was done today. The dock is empty.
Miscellaneous:	
Safety/Accidents:	
Problems Encountered & Resolutions:	.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	
Manpower	.
Visitors to Site	
Equipment Used	

Randy Brunke, Project Representative (Date)

Bill Rea, Inspector (Date) 12/31/07

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 22
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	January	2nd	Iha Khilfeh

Day of the Week						
Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather				
Clear	PC	Overcast	Fog	Rain
				Rain & wind

Temperature				
10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	**NOTE**: The contractor was off for the New Year Holiday from Sunday December 30th, 31, 1, and back to work today Wednesday, January 2nd, 2008. **NOTE**: New barge at site "TC-166"for change order #1, with a second derrick on it the HITACHI EX800H. Approximately: 7:00am-7:30am: The contractor was getting ready to start dredging Approximately:7:30am-8:30am: Dredging Approximately:8:30am-9:00am:Tug Boat " Jennifer H." repositioning the barge Approximately: 8:45am-9:30am:Survaying Approximately: 9:00am-11:00am: Dredging Total actual dredging from 7:00am to 11:00am was approximately 3.0 hours See Keith Nordlund daily report for the rest of today's work. ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total of 790 CY for the whole day. See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed
Work Rejected:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh (Date) 1/4/08

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 23
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2008	January	02	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
		X		X

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen filled spoils barge "KP-1". Work location was between app. sta. 2+75 and 3+50 (per M. Locke, cell-phone), and between app. elev. -15' to -20' during this shift. (Note: Actual Sta., and Locs. are being Submitted by ACC with their Daily Reports mid-day of the following work day. re: I. Khilfeh, KC). Dredge, and Excavator platforms were rafted together with the Spoils barge for the Weekend. Dredging work ceased at app. 1315hrs. The crane was dogged off by 1400hrs. Tug "Jennifer H" on site for assist duties hauling "KP-1" from the site after 1415hrs.
Miscellaneous:	Contractor did not perform any new work on the Rock armor Sea wall this afternoon with the Hitachi EX800H Excavator Platform. Island Co. Tug brought new Spoils barge "TC-166" on site for that work app. 1250hrs. Total Dredging time this day: 4 hrs., 45 min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	None reported by the Contractor.
Test Conducted:	KC Lab boat grab sample tests: Lab; Turb. 994±NTU; ODO 8.38± mg/L. Denny buoy: Turb. 1.6± NTU; ODO 8.67± mg/L. See, also, Daily Denny Buoy Log attached to this Report.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.
Manpower	"Pam Tay" and Hitachi platforms: five persons; Island Co. Assist Tug, two persons; "Jennifer H"; two persons
Visitors to Site	KC Lab boat; Anchor: R. Pickering
Equipment Used	ACC: Dredge platform "Pam Tay", Spoils Barge "KP-1", (3) work skiffs, Hitachi Excavator Platform; Island Co.: Assist Tug, Spoils Barge TC-166; Assist Tug "Jennifer H"

Attachments: Denny buoy Daily Log

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (1-2-08)

Start date: 1/2/2008 End date: 1/2/2008

Submit Back Export as .CSV

Denny Way User Defined

	Min: 0.922 Max: 0.994 Mean: 0.968 St.dev: 0.019	Min: 7.90 Max: 8.75 Mean: 8.34 St.dev: 0.22	Min: 40.040 Max: 43.680 Mean: 41.695 St.dev: 0.977	Min: 1.0 Max: 3.9 Mean: 1.3 St.dev: 0.4	Min: 82.6 Max: 87.8 Mean: 85.2 St.dev: 1.4	Min: 8.02 Max: 8.82 Mean: 8.43 St.dev: 0.20
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
1/2/2008 00:00	0.991	8.48	42.810	1.1	84.0	8.24
1/2/2008 00:15	0.982	8.42	42.640	1.1	84.1	8.26
1/2/2008 00:30	0.989	8.45	42.700	1.1	83.9	8.24
1/2/2008 00:45	0.982	8.45	42.740	1.1	83.8	8.22
1/2/2008 01:00	0.979	8.42	42.640	1.1	83.8	8.24
1/2/2008 01:15	0.982	8.40	42.610	1.1	84.0	8.27
1/2/2008 01:30	0.993	8.38	42.590	1.1	84.2	8.29
1/2/2008 01:45	0.986	8.39	42.610	1.1	84.1	8.27
1/2/2008 02:00	0.988	8.39	42.560	1.1	84.2	8.29
1/2/2008 02:15	0.983	8.36	42.440	1.1	84.1	8.29
1/2/2008 02:30	0.987	8.26	42.110	1.1	84.8	8.39
1/2/2008 02:45	0.990	8.24	42.130	1.1	85.3	8.44
1/2/2008 03:00	0.980	8.20	41.960	1.1	85.5	8.47
1/2/2008 03:15	0.979	8.20	41.950	1.1	85.4	8.47
1/2/2008 03:30	0.982	8.22	42.060	1.1	85.5	8.46
1/2/2008 03:45	0.975	8.26	42.170	1.1	85.0	8.40
1/2/2008 04:00	0.978	8.21	41.960	1.1	85.5	8.47
1/2/2008 04:15	0.970	8.15	41.910	1.1	86.0	8.53
1/2/2008 04:30	0.973	8.17	42.010	1.1	85.5	8.48
1/2/2008 04:45	0.975	8.18	42.030	1.0	85.6	8.49
1/2/2008 05:00	0.972	8.16	42.010	1.1	86.0	8.53
1/2/2008 05:15	0.971	8.12	41.950	1.1	86.2	8.56
1/2/2008 05:30	0.969	8.11	41.900	1.1	86.5	8.59
1/2/2008 05:45	0.969	8.09	41.670	1.1	86.7	8.63
1/2/2008 06:00	0.968	8.08	41.580	1.1	86.9	8.65
1/2/2008 06:15	0.974	8.06	40.710	1.1	86.9	8.69
1/2/2008 06:30	0.978	8.04	40.450	1.1	87.0	8.71
1/2/2008 06:45	0.986	8.01	40.490	1.1	87.2	8.73
1/2/2008 07:00	0.986	7.96	40.500	1.2	87.6	8.79
1/2/2008 07:15	0.988	7.99	40.810	1.1	87.4	8.75
1/2/2008 07:30	0.987	7.94	40.270	1.2	87.8	8.82
1/2/2008 07:45	0.986	8.34	41.970	1.1	85.0	8.40
1/2/2008 08:00	0.985	7.90	40.040	1.2	87.0	8.76
1/2/2008 08:15	0.986	7.96	40.370	2.0	87.1	8.75
1/2/2008 08:30	0.993	7.98	40.490	1.7	87.4	8.76
1/2/2008 08:45	0.988	8.08	40.770	2.4	86.6	8.65
1/2/2008 09:00	0.993	8.34	41.810	3.9	85.1	8.42
1/2/2008 09:15	0.986	8.21	41.380	3.1	85.6	8.50
1/2/2008 09:30	0.986	8.06	40.760	1.4	86.9	8.69
1/2/2008 09:45	0.991	8.02	40.590	1.2	86.9	8.71

1/2/2008 10:00	0.993	8.07	40.820	1.6	86.8	8.67
1/2/2008 10:15	0.994	8.04	40.710	1.7	87.1	8.72
1/2/2008 10:30	0.994	8.05	40.730	1.6	87.3	8.74
1/2/2008 10:45	0.992	8.04	40.650	1.8	87.2	8.73
1/2/2008 11:00	0.990	8.04	40.800	1.6	87.7	8.77
1/2/2008 11:15	0.991	8.06	40.880	1.6	87.4	8.73
1/2/2008 11:30	0.985	8.09	40.890	1.5	87.1	8.70
1/2/2008 11:45	0.979	8.17	41.260	1.2	86.4	8.60
1/2/2008 12:00	0.981	8.38	41.940	1.1	85.3	8.42
1/2/2008 12:15	0.978	8.36	42.000	1.1	85.1	8.40
1/2/2008 12:30	0.980	8.56	42.590	1.3	83.4	8.18
1/2/2008 12:45	0.972	8.60	43.120	1.2	82.9	8.10
1/2/2008 13:00	0.973	8.60	42.980	1.1	83.4	8.15
1/2/2008 13:15	0.969	8.62	42.990	1.1	83.1	8.12
1/2/2008 13:30	0.967	8.51	42.660	1.1	83.5	8.19
1/2/2008 13:45	0.964	8.68	43.360	1.1	83.4	8.12
1/2/2008 14:00	0.963	8.64	43.140	1.1	83.5	8.15
1/2/2008 14:15	0.963	8.68	43.340	1.0	83.5	8.13
1/2/2008 14:30	0.963	8.70	43.370	1.1	83.5	8.13
1/2/2008 14:45	0.968	8.71	43.420	1.0	83.6	8.14
1/2/2008 15:00	0.965	8.75	43.610	1.1	82.9	8.05
1/2/2008 15:15	0.959	8.73	43.680	1.0	82.6	8.02
1/2/2008 15:30	0.964	8.70	43.510	1.0	83.1	8.08
1/2/2008 15:45	0.960	8.61	43.130	1.2	84.0	8.20
1/2/2008 16:00	0.962	8.63	43.250	1.1	83.8	8.17
1/2/2008 16:15	0.959	8.43	42.410	1.4	85.8	8.45
1/2/2008 16:30	0.957	8.42	41.670	1.4	85.9	8.48
1/2/2008 16:45	0.957	8.54	42.150	1.4	84.9	8.34
1/2/2008 17:00	0.960	8.50	41.960	1.4	83.3	8.20
1/2/2008 17:15	0.957	8.52	41.960	1.5	84.9	8.36
1/2/2008 17:30	0.960	8.46	41.980	1.6	85.4	8.41
1/2/2008 17:45	0.957	8.41	41.870	1.5	86.1	8.50
1/2/2008 18:00	0.953	8.40	42.020	2.3	87.8	8.66
1/2/2008 18:15	0.956	8.37	42.160	2.4	86.7	8.55
1/2/2008 18:30	0.954	8.39	42.110	1.6	86.0	8.48
1/2/2008 18:45	0.953	8.30	41.390	1.5	86.4	8.57
1/2/2008 19:00	0.954	8.39	41.380	1.2	86.2	8.53
1/2/2008 19:15	0.955	8.33	41.390	1.5	86.1	8.53
1/2/2008 19:30	0.952	8.46	40.650	1.3	84.6	8.38
1/2/2008 19:45	0.950	8.41	40.350	1.5	84.4	8.39
1/2/2008 20:00	0.950	8.44	40.280	1.4	84.2	8.36
1/2/2008 20:15	0.945	8.46	40.290	1.4	83.8	8.32
1/2/2008 20:30	0.943	8.49	40.470	1.3	83.6	8.29
1/2/2008 20:45	0.939	8.46	40.760	1.4	84.0	8.32
1/2/2008 21:00	0.936	8.45	40.470	1.6	84.2	8.35
1/2/2008 21:15	0.936	8.48	40.590	1.4	83.9	8.32
1/2/2008 21:30	0.937	8.45	40.970	1.3	84.6	8.38
1/2/2008 21:45	0.934	8.46	41.080	1.4	84.0	8.31
1/2/2008 22:00	0.935	8.43	40.890	1.4	84.7	8.40
1/2/2008 22:15	0.934	8.46	41.020	1.3	84.4	8.35
1/2/2008 22:30	0.933	8.46	40.770	1.3	84.3	8.35
1/2/2008 22:45	0.933	8.45	40.770	1.3	84.3	8.36
1/2/2008 23:00	0.933	8.46	40.760	1.3	84.1	8.33
1/2/2008 23:15	0.930	8.47	40.740	1.3	84.1	8.33
1/2/2008 23:30	0.928	8.49	40.740	1.3	83.9	8.30
1/2/2008 23:45	0.922	8.51	40.720	1.3	83.7	8.28

Afternoon Shift

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 23
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	January	3rd	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
				X

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-8:30am: Jennifer H. Tug Boat repositioning the barges. Approximately:8:30am-9:30am: Placing straws and silt fence on barge TC-166 Approximately: 9:00am-10:30pm: Tug Boat "Jennifer H." repositioning the excavator derrick. Approximately: 10:30am-11:00am: Placing barge TC-166 next to the excavator derrick. Approximately: 11:00am-11:15am, start removing concrete debris using the excavator into barge TC-166 Approximately: 11:15am, the excavator broke down. Total actual dredging from 7:00am to 12:00pm was approximately 15 minutes. See Keith Nordlund daily report for the rest of today's work. ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dave Gallear-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total of 96 Tons for the whole day " change order#1" See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed this morning.
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 1/4/08 (Date)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 24
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2008	January	03	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
		X breezy		X

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen did not begin rock and concrete debris removal along the Myrtle Edwards Sea Wall until after 1530hrs. Work location was between app. sta. 2+75 and 3+50 (per M. Locke, cell-phone), and between app. elev. 0±' to -5' during excavation. (Note: Actual Sta., and Locs. are being Submitted by ACC with their Daily Reports mid-day of the following work day. re: I. Khilfeh, KC). Barge KP-2 was returned to the site from DMC (Rabanco) during this shift.
Miscellaneous:	Contractor new work on the Rock armor Sea wall this afternoon with the Hitachi EX800H Excavator Platform ended after two continuous 15 min. Turbidity spikes in excess of 5 NTUs over background. Excavator stopped at app. 1605hrs. It took app. 45min. for the turbid water to settle back down. Permit was not exceeded. Total Excavator time this day: 35 min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	Most of this shift was spent correcting a mechanical problem on ACC's Excavator.
Test Conducted:	KC Lab boat grab sample tests: Lab; Turb. .994±NTU; ODO 8.38± mg/L. Denny buoy: Turb. 1.6± NTU; ODO 8.67± mg/L. See, also, Daily Denny Buoy Log attached to this Report.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.
Manpower	"Pam Tay" and Hitachi platforms: (5) five persons "Jennifer H"; (2) two persons
Visitors to Site	
Equipment Used	ACC: Dredge platform "Pam Tay", (3) work skiffs, Hitachi EX800H Excavator Platform; Spoils Barge "TC-166", Spoils Barge "KP-2"; Assist Tug "Jennifer H"

Attachments: 2 pages, Denny buoy Daily Log; eight photos

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIH (1-3-08)

Start date: 1/3/2008 End date: 1/3/2008

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Denny Way User Defined

	Min: 0.770 Max: 0.923 Mean: 0.845 St.dev: 0.050	Min: 8.16 Max: 8.95 Mean: 8.40 St.dev: 0.18	Min: 40.470 Max: 43.830 Mean: 41.418 St.dev: 0.710	Min: 1.1 Max: 7.7 Mean: 1.6 St.dev: 1.2	Min: 78.6 Max: 86.7 Mean: 84.3 St.dev: 1.8	Min: 7.60 Max: 8.63 Mean: 8.34 St.dev: 0.23
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
1/3/2008 00:00	0.920	8.51	40.720	1.3	83.2	8.24
1/3/2008 00:15	0.918	8.48	40.600	1.3	83.6	8.28
1/3/2008 00:30	0.921	8.50	40.800	1.3	83.6	8.27
1/3/2008 00:45	0.923	8.49	40.880	1.3	83.8	8.29
1/3/2008 01:00	0.917	8.51	40.920	1.3	83.8	8.28
1/3/2008 01:15	0.915	8.51	40.970	1.3	83.8	8.28
1/3/2008 01:30	0.917	8.50	40.920	1.3	82.5	8.16
1/3/2008 01:45	0.915	8.57	41.290	1.3	82.7	8.16
1/3/2008 02:00	0.916	8.70	42.310	1.2	81.0	7.93
1/3/2008 02:15	0.914	8.73	42.780	1.3	80.5	7.85
1/3/2008 02:30	0.911	8.60	41.520	1.3	80.9	7.96
1/3/2008 02:45	0.913	8.74	42.820	1.2	81.5	7.94
1/3/2008 03:00	0.908	8.80	43.140	1.2	79.5	7.73
1/3/2008 03:15	0.905	8.64	42.020	1.2	81.2	7.97
1/3/2008 03:30	0.902	8.76	42.780	1.2	79.2	7.72
1/3/2008 03:45	0.900	8.95	43.830	1.1	78.6	7.60
1/3/2008 04:00	0.896	8.43	41.010	1.2	81.0	8.02
1/3/2008 04:15	0.890	8.25	40.630	1.3	85.2	8.48
1/3/2008 04:30	0.892	8.33	40.830	1.3	85.0	8.44
1/3/2008 04:45	0.889	8.33	40.850	1.2	84.8	8.42
1/3/2008 05:00	0.883	8.40	41.120	1.3	83.9	8.31
1/3/2008 05:15	0.881	8.38	41.090	1.2	84.3	8.36
1/3/2008 05:30	0.877	8.35	40.980	1.2	84.8	8.41
1/3/2008 05:45	0.876	8.29	40.800	1.2	84.9	8.45
1/3/2008 06:00	0.872	8.28	40.700	1.3	85.3	8.49
1/3/2008 06:15	0.868	8.23	40.620	1.2	85.8	8.55
1/3/2008 06:30	0.869	8.20	40.470	1.2	85.8	8.56
1/3/2008 06:45	0.865	8.28	40.670	1.3	85.7	8.53
1/3/2008 07:00	0.861	8.24	41.290	1.3	85.6	8.50
1/3/2008 07:15	0.862	8.24	41.350	1.2	85.6	8.50
1/3/2008 07:30	0.849	8.22	41.230	1.3	85.6	8.51
1/3/2008 07:45	0.852	8.29	41.270	1.2	85.1	8.45
1/3/2008 08:00	0.844	8.47	42.290	1.1	84.6	8.32
1/3/2008 08:15	0.846	8.39	41.840	1.3	84.9	8.38
1/3/2008 08:30	0.838	8.39	41.700	1.2	85.2	8.41
1/3/2008 08:45	0.839	8.31	41.390	1.2	84.9	8.42
1/3/2008 09:00	0.843	8.28	41.230	1.2	85.3	8.47
1/3/2008 09:15	0.829	8.27	41.230	1.3	85.4	8.48
1/3/2008 09:30	0.830	8.29	41.250	1.2	85.3	8.47
1/3/2008 09:45	0.829	8.29	41.250	1.1	85.1	8.45

	1/3/2008 10:00	0.829	8.22	41.060	1.2	84.8	8.44
	1/3/2008 10:15	0.824	8.26	41.170	1.2	85.7	8.51
	1/3/2008 10:30	0.818	8.18	41.000	1.2	86.3	8.59
	1/3/2008 10:45	0.817	8.20	41.010	1.2	86.1	8.57
	1/3/2008 11:00	0.812	8.21	41.070	1.3	86.1	8.57
	1/3/2008 11:15	0.807	8.20	41.040	1.2	86.3	8.58
	1/3/2008 11:30	0.803	8.18	41.000	1.2	86.3	8.60
	1/3/2008 11:45	0.804	8.19	41.010	1.2	86.2	8.58
	1/3/2008 12:00	0.795	8.17	40.950	1.2	86.6	8.63
	1/3/2008 12:15	0.786	8.16	40.980	1.2	86.7	8.63
	1/3/2008 12:30	0.781	8.18	40.780	1.2	86.6	8.63
	1/3/2008 12:45	0.780	8.19	40.830	1.3	86.6	8.63
	1/3/2008 13:00	0.770	8.21	40.880	1.2	86.4	8.60
	1/3/2008 13:15	0.775	8.26	40.910	1.3	85.9	8.54
	1/3/2008 13:30	0.773	8.32	40.970	1.3	85.2	8.46
	1/3/2008 13:45	0.776	8.27	40.840	1.2	85.5	8.50
Afternoon work shift	1/3/2008 14:00	0.772	8.39	41.360	1.3	84.8	8.39
	1/3/2008 14:15	0.774	8.46	41.400	1.2	84.5	8.35
	1/3/2008 14:30	0.777	8.54	41.770	1.2	83.9	8.25
	1/3/2008 14:45	0.782	8.55	41.900	1.2	83.6	8.22
	1/3/2008 15:00	0.790	8.58	42.040	1.2	83.5	8.20
	1/3/2008 15:15	0.786	8.60	42.170	1.2	83.0	8.14
	1/3/2008 15:30	0.805	8.53	41.920	2.0	83.6	8.23
	1/3/2008 15:45	0.805	8.44	41.830	* 6.3	highest 85.0	8.38
	1/3/2008 16:00	0.802	8.55	42.490	** 7.7	1 hr. 84.1	8.25
	1/3/2008 16:15	0.806	8.39	41.750	4.9	measured 84.7	8.37
	1/3/2008 16:30	0.793	8.57	42.510	5.3	4.75 over 84.2	8.25
	1/3/2008 16:45	0.805	8.56	42.460	3.0	background 84.3	8.27
	1/3/2008 17:00	0.822	8.54	42.300	2.6	84.4	8.29
	1/3/2008 17:15	0.817	8.61	42.460	1.4	84.5	8.28

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* ACC notified of 1st Turbidity spike

** " " " 2nd " " ; excavator stops

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Date			
Year	Month	Day	Inspector
2008	January	4th	Iha Khilfeh

Day of the Week						
Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather				
Clear	PC	Overcast	Fog	Rain
				X

Temperature				
10-32	32-55	55-70	70-85	85+
	X			

Inspector's Daily Construction Report

REPORT NUMBER: 24
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Construction Activities:	Approximately: 7:00am-7:30am: Jennifer H. Tug Boat at site placing the empty barge "KP-2" in position. Approximately: 7:30am-11:30am: dredging. Approximately: 11:30am-11:45am: Tug Boat "Jennifer H." rotating the barge"KP-2" Approximately: 11:45am-12:00pm: continued dredging Approximately: 12:00pm-12:30pm:lunch Total actual dredging from 7:00am to 12:00pm was approximately 4.5 hours See Keith Nordlund daily report for the rest of today's work. ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total of 1033CY for the whole day. See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed this morning.
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 12/7/08 (Date)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 25
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)

PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2008	January	04	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
		X breezy		Light showers, pm

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen continued dredging work off the "Pam Tay" into Spoils barge "KP-2" until 1615hrs. ACC worked locations between app. sta. 2+75 and 3+25 (per M. Locke, cell-phone), and between app. elev. -25±' to -35±' during this shift. (Note: Actual Sta., and Locs. are being Submitted by ACC with their Daily Reports mid-day of the following work day. re: I. Khilfeh, KC).
Miscellaneous:	Contractor worked on the Hitachi EX800H Excavator during this shift. All ACC platforms and spoils barges were rafted together for the evening. Visited the "TC-166" barge with R. Brunke, KC Proj. Rep. during this shift. Total Dredging time this day: 8hrs., and 15 min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	None reported by the Contractor.
Test Conducted:	KC Lab boat grab sample tests: Lab; Turb. .994±NTU; ODO 8.38± mg/L. Denny buoy: Turb. 1.6± NTU; ODO 8.67± mg/L. See, also, Daily Denny Buoy Log attached to this Report.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.
Manpower	"Pam Tay" and Hitachi platforms: (5) five persons "Jennifer H"; (2) two persons
Visitors to Site	
Equipment Used	ACC: Dredge platform "Pam Tay", (3) work skiffs, Hitachi EX800H Excavator Platform (on standby); Spoils Barge "TC-166" (on standby), Spoils Barge "KP-2"; Assist Tug "Jennifer H"

Attachments: 2 pages, Denny buoy Daily Log

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (1-4-08)

Start date: 1/4/2008 End date: 1/4/2008

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Denny Way User Defined

	Min: 0.588 Max: 0.806 Mean: 0.667 St.dev: 0.070	Min: 8.63 Max: 9.04 Mean: 8.76 St.dev: 0.09	Min: 43.500 Max: 45.130 Mean: 43.923 St.dev: 0.265	Min: 1.0 Max: 5.9 Mean: 1.6 St.dev: 1.0	Min: 78.8 Max: 84.7 Mean: 82.9 St.dev: 1.1	Min: 7.55 Max: 8.21 Mean: 8.04 St.dev: 0.12
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
1/4/2008 00:00	0.806	8.73	43.500	1.1	82.8	8.05
1/4/2008 00:15	0.796	8.81	43.760	1.2	82.4	7.99
1/4/2008 00:30	0.797	8.82	43.850	1.2	82.1	7.95
1/4/2008 00:45	0.799	8.79	43.770	1.2	82.4	7.98
1/4/2008 01:00	0.795	8.82	43.860	1.3	82.0	7.95
1/4/2008 01:15	0.793	8.94	44.320	1.2	80.2	7.73
1/4/2008 01:30	0.789	9.01	44.830	1.2	79.2	7.60
1/4/2008 01:45	0.784	9.04	45.130	1.3	78.8	7.55
1/4/2008 02:00	0.778	8.78	44.020	1.1	81.7	7.91
1/4/2008 02:15	0.776	8.76	43.780	1.1	82.3	7.99
1/4/2008 02:30	0.769	8.73	43.680	1.1	82.8	8.05
1/4/2008 02:45	0.764	8.73	43.680	1.1	83.0	8.06
1/4/2008 03:00	0.758	8.69	43.650	1.1	83.2	8.09
1/4/2008 03:15	0.749	8.68	43.640	1.1	83.4	8.11
1/4/2008 03:30	0.747	8.66	43.640	1.1	83.4	8.12
1/4/2008 03:45	0.738	8.65	43.640	1.1	83.6	8.13
1/4/2008 04:00	0.731	8.66	43.650	1.1	83.5	8.13
1/4/2008 04:15	0.725	8.66	43.660	1.1	83.6	8.13
1/4/2008 04:30	0.718	8.67	43.680	1.1	83.4	8.11
1/4/2008 04:45	0.710	8.68	43.700	1.1	83.3	8.10
1/4/2008 05:00	0.704	8.77	43.930	1.1	82.3	7.98
1/4/2008 05:15	0.701	8.80	43.960	1.1	82.0	7.94
1/4/2008 05:30	0.690	8.63	43.700	1.0	83.4	8.12
1/4/2008 05:45	0.684	8.69	43.790	1.1	83.1	8.07
1/4/2008 06:00	0.666	8.64	43.720	1.0	83.5	8.13
1/4/2008 06:15	0.658	8.66	43.700	1.1	83.4	8.12
1/4/2008 06:30	0.653	8.67	43.740	1.1	83.1	8.08
1/4/2008 06:45	0.647	8.71	43.880	1.1	82.7	8.03
1/4/2008 07:00	0.637	8.71	43.870	1.1	82.6	8.02
1/4/2008 07:15	0.633	8.75	44.020	1.1	82.3	7.98
1/4/2008 07:30	0.620	8.77	44.100	1.1	81.9	7.94
1/4/2008 07:45	0.621	8.78	44.160	1.1	82.0	7.94
1/4/2008 08:00	0.624	8.81	44.270	1.0	81.8	7.91
1/4/2008 08:15	0.618	8.83	44.350	1.1	81.4	7.86
1/4/2008 08:30	0.626	8.81	44.260	1.1	81.5	7.88
1/4/2008 08:45	0.623	8.81	44.240	1.1	81.6	7.89
1/4/2008 09:00	0.619	8.67	43.880	1.0	83.0	8.07
1/4/2008 09:15	0.630	8.74	44.030	1.0	82.6	8.01
1/4/2008 09:30	0.624	8.70	43.930	1.1	82.8	8.04
1/4/2008 09:45	0.621	8.64	43.750	1.1	83.6	8.13

1/4/2008 10:00	0.618	8.66	43.810	1.1	83.2	8.09
1/4/2008 10:15	0.611	8.67	43.830	1.0	83.5	8.11
1/4/2008 10:30	0.611	8.68	43.850	1.1	83.4	8.10
1/4/2008 10:45	0.606	8.79	44.210	1.1	81.8	7.92
1/4/2008 11:00	0.622	8.79	44.110	1.1	82.0	7.93
1/4/2008 11:15	0.619	8.70	43.940	1.1	83.4	8.10
1/4/2008 11:30	0.623	8.72	43.980	1.1	83.5	8.10
1/4/2008 11:45	0.620	8.71	43.960	1.1	83.7	8.13
1/4/2008 12:00	0.632	8.70	43.920	1.1	84.0	8.16
1/4/2008 12:15	0.628	8.70	43.940	1.1	83.9	8.14
1/4/2008 12:30	0.628	8.71	43.930	1.1	84.1	8.16
1/4/2008 12:45	0.634	8.72	43.950	1.2	84.1	8.16
1/4/2008 13:00	0.620	8.77	43.840	1.4	84.7	8.21
1/4/2008 13:15	0.610	8.81	43.680	2.5	84.1	8.16
1/4/2008 13:30	0.618	8.82	43.730	2.4	83.8	8.12
1/4/2008 13:45	0.596	8.82	43.770	4.5	83.5	8.09
1/4/2008 14:00	0.615	8.82	43.820	3.2	83.7	8.11
1/4/2008 14:15	0.613	8.84	43.820	4.3	83.9	8.12
1/4/2008 14:30	0.613	8.84	43.790	2.9	84.6	8.20
1/4/2008 14:45	0.607	8.85	44.030	2.5	83.1	8.04
1/4/2008 15:00	0.619	8.85	44.040	2.5	83.4	8.07
1/4/2008 15:15	0.616	8.85	43.990	2.3	84.4	8.16
1/4/2008 15:30	0.606	8.85	44.060	2.4	83.4	8.07
1/4/2008 15:45	0.594	8.86	44.040	2.7	83.4	8.07
1/4/2008 16:00	0.598	8.87	44.040	2.9	83.6	8.08
1/4/2008 16:15	0.589	8.84	43.890	2.8	84.3	8.16
1/4/2008 16:30	0.588	8.85	43.920	5.9	83.9	8.12
1/4/2008 16:45	0.598	8.88	44.150	2.8	82.9	8.00

Afternoon work

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* dredging ceased

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 25
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 1:00PM

Date

Year	Month	Day	Inspector
2008	January	5th	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
X						

Weather

Clear	PC	Overcast	Fog	Rain
				Rain & Windy

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-8:15am: Jennifer H. Tug Boat at site placing the barge TC-166 in position with the excavator derrick. Approximately: 8:15am-11:00am: dredging/removing concrete debris. Approximately: 11:00am-12:00am: Tug Boat "Jennifer H." repositioning the derrick and the excavator barge. Approximately: 12:00pm: The contractor superintendent called the rest of the day off because it was too windy. All left approximately 1:00pm. Approximately 12:00pm: The tug boat "Jennifer H." took the full barge "KP-2" to the unloading facility. Total actual dredging from 7:00am to 12:00pm was approximately 2.45 hours See Keith Nordlund daily report for the rest of today's work. ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total of 132 Tons for the whole day "change order #1" See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed this morning.
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 1/08/08 (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 26
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	January	7th	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X				

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-8:30am: Jennifer H. Tug Boat at site placing the barge TC-166 in position with the excavator derrick. Approximately: 8:30am-9:30am: dredging/removing concrete debris. Approximately: 9:30am-10:00am: No activities Approximately: 10:00am-11:00am removing/dredging concrete debris Approximately 11:00am: The tug boat "Jennifer H." start rotating the Excavator Derrick and TC-166 barge. Total actual dredging/removing concrete debris from 7:00am to 11:00am was approximately 2.0 hours See Keith Nordlund daily report for the rest of today's work. ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total of 859 Tons for the whole day "change order #1" See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed this morning.
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 1/09/08 (Date)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 26
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2008	January	07	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
		X		Light showers,

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen resumed excavating work into Spoils barge "TC-166" until 1445hrs. ACC worked locations between app. sta. 3+50 and 4+00 (per M. Locke, cell-phone), on upslope areas during this shift. (Note: Actual Sta., and Locs. are being Submitted by ACC with their Daily Reports mid-day of the following work day. re: I. Khilfeh, KC).
Miscellaneous:	"Jennifer H" returned from DMC (ETA 1605hrs.) with Spoils Barge "KP-1". There is a 936 Caterpiller Loader on board that barge. "Jennifer H" assisted with the re-rafting of the Excavator Platform, and barge "TC-166". Total Excavating time this day: 4hrs., and 15 min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	Note 1: After 1200hrs., R. Brunke phoned G. Anderes, ACC, regarding the excavating work he was witnessing at the site. He had already phoned M. Locke, ACC, regarding the same issues. Per the C.O. agreement, the excavator was only supposed to be used for the limited function of removing, or breaking up, in situ rock armor and concrete debris. It appeared that the Contractor was using the excavator to not only remove rock and concrete, but also to scape the edge of the slope, and remove additional spoils that were supposed to, by agreement, be removed by dredging into a spoils barge that was set up with all the BMPS for dredging. The TC-166 barge the Contractor is currently using, is not set up with anything but hay bales. Note 2: This observer contacted M. Locke, ACC, and R. Brunke, KC, after 1435hrs., to express concerns about the continued high amount of dredge spoils that were coming up in the excavator bucket, and the amount of material that was being spilled back into the water during the handling period prior to the excavator reaching the hull of the barge. R. Brunke reiterated that this was never the way that the execution of this C.O work was envisioned or discussed in meetings between KC and ACC. ACC voluntarily shut down the excavator after 1444hrs.
Test Conducted:	See, also, Daily Denny Buoy Log attached to this Report.
Work Rejected:	None.

Attachments: 2 pages, Denny buoy Daily Log, five (5) photos

Randy Brunke, Project Representative (Date)

1/7/08
K. Nordlund, CMIII (1-7-08)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT
DIVISION

Inspector's Daily Construction Report

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)

REPORT NUMBER: 26

PRIME CONTRACTOR: ACC/Hurlen Construction Co.

CONTRACT NUMBER: C00190C07

TIME WORK STARTED: 1000HRS. (AFTERNOON SHIFT)

TIME WORK STOPPED: 1730HRS.

Instructions Given to Contractor & Changes Initiated:	The Proj. Rep. directed ACC to provide the proper BMPs for spoils barge "TC-166", when it became evident that that barge was being used to stock far more dredge spoils than anticipated by KC, and when muddy water was seen pouring out the base of the timber stop-log walls of the barge back into Elliot Bay (re: M. Locke, ACC).
Manpower	"Pam Tay" and Hitachi platforms: (5) five persons "Jennifer H"; (2) two persons
Visitors to Site	KC: R. Brunke, B. Wilbert, D. Williams
Equipment Used	ACC: Dredge platform "Pam Tay" (on standby), (3) work skiffs, Hitachi EX800H Excavator Platform; Spoils Barge "TC-166", Spoils Barge "KP-2"; Assist Tug "Jennifer H"

R. Brunke, Project Representative (Date)

K. Nordlund, CMIII, 1-7-08

Start date: 1/7/2008 End date: 1/7/2008

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Denny Way User Defined

	Min: 0.894 Max: 1.003 Mean: 0.959 St.dev: 0.035	Min: 7.45 Max: 8.11 Mean: 7.74 St.dev: 0.21	Min: 40.680 Max: 42.460 Mean: 41.098 St.dev: 0.375	Min: 1.2 Max: 5.5 Mean: 1.5 St.dev: 0.7	Min: 84.3 Max: 92.3 Mean: 87.8 St.dev: 2.4	Min: 8.42 Max: 9.33 Mean: 8.83 St.dev: 0.27
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
1/7/2008 00:00	0.894	8.06	40.830	1.5	84.5	8.45
1/7/2008 00:15	0.896	8.08	40.860	1.4	84.3	8.42
1/7/2008 00:30	0.896	8.06	41.170	1.4	84.9	8.47
1/7/2008 00:45	0.895	8.09	41.020	1.4	84.8	8.46
1/7/2008 01:00	0.900	8.10	41.360	1.3	84.6	8.43
1/7/2008 01:15	0.900	8.07	41.500	1.2	85.2	8.49
1/7/2008 01:30	0.904	8.08	41.080	1.4	84.7	8.45
1/7/2008 01:45	0.907	8.11	41.230	1.3	84.9	8.46
1/7/2008 02:00	0.909	8.09	41.500	1.2	85.4	8.50
1/7/2008 02:15	0.912	7.99	41.870	1.2	85.5	8.52
1/7/2008 02:30	0.915	8.06	41.990	1.2	84.8	8.43
1/7/2008 02:45	0.915	8.07	41.260	1.3	85.0	8.47
1/7/2008 03:00	0.921	8.07	41.160	1.2	84.7	8.45
1/7/2008 03:15	0.920	7.89	40.770	1.4	85.1	8.55
1/7/2008 03:30	0.923	7.93	40.870	1.3	85.0	8.52
1/7/2008 03:45	0.925	7.90	40.930	1.4	85.4	8.56
1/7/2008 04:00	0.930	7.91	40.920	1.4	85.1	8.53
1/7/2008 04:15	0.928	7.80	40.750	1.3	85.4	8.59
1/7/2008 04:30	0.934	7.82	40.770	1.3	85.5	8.60
1/7/2008 04:45	0.946	7.82	40.930	1.3	86.1	8.65
1/7/2008 05:00	0.944	7.85	41.030	1.3	86.2	8.65
1/7/2008 05:15	0.946	7.77	41.060	1.2	86.5	8.69
1/7/2008 05:30	0.949	7.71	41.030	1.2	86.7	8.73
1/7/2008 05:45	0.951	7.78	40.960	1.3	86.7	8.71
1/7/2008 06:00	0.955	7.78	40.920	1.3	86.6	8.71
1/7/2008 06:15	0.953	7.68	40.680	1.4	86.9	8.77
1/7/2008 06:30	0.946	7.72	40.720	1.3	86.7	8.74
1/7/2008 06:45	0.947	7.69	40.740	1.3	86.7	8.75
1/7/2008 07:00	0.955	7.69	40.730	1.3	86.7	8.74
1/7/2008 07:15	0.955	7.69	40.790	1.3	87.0	8.77
1/7/2008 07:30	0.961	7.71	40.790	1.3	86.8	8.75
1/7/2008 07:45	0.957	7.71	40.810	1.4	86.7	8.74
1/7/2008 08:00	0.962	7.67	40.840	1.3	87.0	8.77
1/7/2008 08:15	0.965	7.58	40.740	1.7	87.8	8.88
1/7/2008 08:30	0.972	7.56	40.860	2.1	88.5	8.95
1/7/2008 08:45	0.959	7.54	40.820	1.2	87.8	8.88
1/7/2008 09:00	0.977	7.57	40.920	1.3	87.8	8.87
1/7/2008 09:15	0.977	7.58	40.970	1.3	87.7	8.86
1/7/2008 09:30	0.959	7.55	40.900	1.2	88.0	8.89
1/7/2008 09:45	0.982	7.51	40.900	1.2	88.2	8.93

1/7/2008 10:00	0.991	7.51	41.050	1.[illegible]	88.3	8.93
1/7/2008 10:15	0.973	7.48	41.030	1.[illegible]	88.4	8.95
1/7/2008 10:30	0.998	7.45	40.980	1.2	88.7	8.98
1/7/2008 10:45	0.989	7.46	40.940	1.2	88.7	8.98
1/7/2008 11:00	0.985	7.46	40.920	1.2	88.9	9.00
1/7/2008 11:15	0.991	7.45	40.930	1.3	89.3	9.05
1/7/2008 11:30	0.997	7.46	40.970	1.4	89.7	9.09
1/7/2008 11:45	1.001	7.46	40.950	1.3	89.3	9.05
1/7/2008 12:00	0.994	7.48	40.970	1.3	89.6	9.07
1/7/2008 12:15	0.993	7.48	40.940	1.3	89.6	9.07
1/7/2008 12:30	0.993	8.07	42.460	2.8	86.9	8.62
1/7/2008 12:45	0.990	7.57	41.070	1.5	89.8	9.07
1/7/2008 13:00	0.990	7.55	40.990	1.3	91.1	9.21
1/7/2008 13:15	0.998	7.54	40.960	1.3	92.1	9.31
1/7/2008 13:30	1.001	7.56	40.990	1.4	92.3	9.33
1/7/2008 13:45	0.989	7.58	41.030	1.6	92.3	9.32
1/7/2008 14:00	0.997	7.59	41.030	1.4	91.7	9.26
1/7/2008 14:15	0.987	7.60	41.050	1.5	91.2	9.20
1/7/2008 14:30	0.999	7.62	41.070	1.8	90.8	9.16
1/7/2008 14:45	0.994	7.62	41.070	1.7	90.8	9.16
1/7/2008 15:00	1.003	7.58	41.040	1.7	91.0	9.19
1/7/2008 15:15	0.977	7.68	41.380	4.9	91.0	9.16
1/7/2008 15:30	0.995	7.67	41.540	* 5.5	91.8	9.23
1/7/2008 15:45	0.997	7.71	41.680	2.5	90.8	9.12
1/7/2008 16:00	0.981	7.69	41.680	1.6	90.6	9.10
1/7/2008 16:15	0.997	7.70	41.720	1.5	90.4	9.07
1/7/2008 16:30	0.997	7.78	41.910	1.6	90.0	9.01
1/7/2008 16:45	0.996	7.91	42.330	2.2	89.7	8.93

Afternoon shift

outgoing tide *

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* highest recorded Turbidity spike this afternoon, 45 min after ACC stopped excavating. Permit was not exceeded.

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 27
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	January	8th	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
			X			

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	**NOTE**: Yesterday afternoon, the contractor dredged concrete debris with soil. Apparently, the barge TC-166 was not set properly with silt fence around it to prevent materials from escaping the barge sides. For the time being, for BMP, they place silt fence around the barge TC-166 so they can continue dredging for the day. Apparently, the barge TC-166 left yesterday late afternoon, and this morning, they brought the barge KP-1. KP-1 is well equipped with silt fence and straw bales. They also have a loader CAT 938F on the barge to spread the materials inside the barge so the barge does not tilt. Approximately: 7:00am-8:30am: Jennifer H. Tug Boat at site placing the barge KP-1 in position with the excavator derrick, so they can dredge concrete debris and spoils. Approximately: 8:30am-9:45am: dredging/removing concrete debris and soil spoils. (approximately 50/50) Approximately: 9:45am-10:00am: No activities Approximately: 10:00am-11:00am removing/dredging concrete debris with soil spoils. Total actual dredging/removing concrete debris from 7:00am to 11:00am was approximately 2.25 hours See Keith Nordlund daily report for the rest of today's work. ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total of 549 Tons for the whole day "change order #1" See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 1/10/08 (Date)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 27
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2008	January	08	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
			X			

Weather

Clear	PC	Overcast	Fog	Rain
		X		showers

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen continued excavating work into Spoils barge "KP-1" until 1545hrs. ACC worked upslope locations in the S.E. area of the site, near the SeaWall (per M. Locke, cell-phone), during this shift. (Note: Actual Sta., and Locs. are being Submitted by ACC with their Daily Reports mid-day of the following work day. re: I. Khilfeh, KC). The above noted work is part of C.O. no. 1 to this Contract.
Miscellaneous:	Spoils Barge "TC-166" was removed from the site before 1200hrs. by the "Jennifer H". The 936 Cat Loader on board the "KP-1" is being used to balance and distribute the excavated spoils. Total Excavating time this day: 4hrs., and 15 min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	Note 1: Phoned M. Locke, ACC, twice regarding the excavating work at the site (just prior to ACC' 1200hrs. Lunch Break, and at 1415hrs.). The Contractor was getting a lot of local Turbulence with the Excavator because of additional spoils that were supposed to, by C.O. agreement, be removed by dredging. The change to barge "KP-1" has resolved the BMP issues (of leakage) from spoils barges, but there is still a lot of spoils materials that are being spilled back into the water during the handling period prior to the Excavator reaching the hull of the barge. High Turbidity levels are currently being localized by ACC (BMPs), by limiting the use of the Excavator, to work during high tides, and occasional stops, in an attempt to hold turbid water in check, and in front of the Platform. Note 2: Received phone calls from both R. Brunke and B. Kruger, KC, about excessive turbidity alarms received by the Denny Way Buoy. Both were informed that the Contractor had already stopped excavating work for the afternoon voluntarily, after two marginal spikes at 5.5 and 4.7 (at 1545hrs.)
Test Conducted:	See, also, Daily Denny Buoy Log attached to this Report. Highest recorded Turb. Spike was 5.5 NTUs during excavating work by ACC; the Contractor did not exceed Permit during work.
Work Rejected:	None.

Attachments: 2 pages, Denny buoy Daily Log, ~~nine (9)~~ ten 10 photos

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (1-8-08)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT
DIVISION

Inspector's Daily Construction Report

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)

REPORT NUMBER: 27

PRIME CONTRACTOR: ACC/Hurlen Construction Co.

CONTRACT NUMBER: C00190C07

TIME WORK STARTED: 1000HRS. (AFTERNOON SHIFT)

TIME WORK STOPPED: 1730HRS.

Instructions Given to Contractor & Changes Initiated:	None during this Shift.
Manpower	"Pam Tay" (on standby) and Hitachi platforms: (5) five persons; "Jennifer H"; (2) two persons
Visitors to Site	KC: R. Brunke, B. Wilbert, D. Williams
Equipment Used	ACC: Dredge platform "Pam Tay" (on standby), (3) work skiffs, Hitachi EX800H Excavator Platform, Cat 938F Loader; Spoils barges "TC-166", "KP-1"; Assist Tug "Jennifer H"

R. Brunke, Project Representative (Date)

K. Nordlund, CMIII, 1-8-08

KLN

Start date: 1/8/2008 End date: 1/8/2008

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Denny Way User Defined

	Min: 0.856 Max: 0.932 Mean: 0.878 St.dev: 0.019	Min: 7.84 Max: 8.76 Mean: 8.18 St.dev: 0.26	Min: 42.380 Max: 45.040 Mean: 43.308 St.dev: 0.777	Min: 1.0 Max: 12.1 Mean: 1.9 St.dev: 1.7	Min: 82.1 Max: 87.1 Mean: 85.4 St.dev: 1.3	Min: 7.92 Max: 8.68 Mean: 8.42 St.dev: 0.20
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
1/8/2008 00:00	0.923	8.11	42.400	1.4	85.5	8.47
1/8/2008 00:15	0.925	8.08	42.380	1.2	85.7	8.50
1/8/2008 00:30	0.932	8.08	42.460	1.4	85.7	8.50
1/8/2008 00:45	0.924	8.07	42.530	1.4	86.1	8.54
1/8/2008 01:00	0.913	8.07	42.540	1.4	86.0	8.52
1/8/2008 01:15	0.915	8.05	42.540	1.6	86.2	8.55
1/8/2008 01:30	0.909	8.07	42.590	1.5	86.0	8.53
1/8/2008 01:45	0.907	8.04	42.540	1.3	86.1	8.55
1/8/2008 02:00	0.908	8.02	42.520	1.4	86.1	8.54
1/8/2008 02:15	0.900	8.02	42.530	1.5	86.2	8.56
1/8/2008 02:30	0.897	8.00	42.530	1.5	86.2	8.56
1/8/2008 02:45	0.893	8.12	42.710	2.4	85.5	8.46
1/8/2008 03:00	0.891	8.11	42.710	1.9	85.5	8.46
1/8/2008 03:15	0.890	8.12	42.740	1.3	85.4	8.45
1/8/2008 03:30	0.888	8.10	42.760	1.3	85.6	8.47
1/8/2008 03:45	0.887	8.08	42.790	1.3	85.8	8.49
1/8/2008 04:00	0.886	8.08	42.820	1.2	85.5	8.46
1/8/2008 04:15	0.884	7.93	42.540	1.5	86.1	8.56
1/8/2008 04:30	0.884	7.95	42.610	1.5	86.0	8.55
1/8/2008 04:45	0.885	7.94	42.620	1.4	86.3	8.58
1/8/2008 05:00	0.888	7.94	42.640	1.3	86.7	8.62
1/8/2008 05:15	0.882	7.90	42.630	1.3	86.7	8.63
1/8/2008 05:30	0.881	7.92	42.660	1.3	86.8	8.63
1/8/2008 05:45	0.875	7.89	42.650	1.3	87.0	8.65
1/8/2008 06:00	0.867	7.90	42.640	1.3	87.0	8.66
1/8/2008 06:15	0.872	7.91	42.670	1.2	86.9	8.64
1/8/2008 06:30	0.866	7.84	42.640	1.4	87.1	8.68
1/8/2008 06:45	0.867	7.92	42.760	1.2	86.7	8.61
1/8/2008 07:00	0.863	7.86	42.700	1.3	86.8	8.64
1/8/2008 07:15	0.865	8.01	42.940	1.2	86.1	8.53
1/8/2008 07:30	0.864	8.09	43.100	1.2	85.9	8.49
1/8/2008 07:45	0.863	8.06	43.080	1.2	86.3	8.53
1/8/2008 08:00	0.869	7.98	42.950	1.2	86.3	8.56
1/8/2008 08:15	0.863	8.10	43.210	1.1	85.5	8.45
1/8/2008 08:30	0.856	8.16	43.300	1.1	85.0	8.38
1/8/2008 08:45	0.868	7.86	42.830	1.3	87.0	8.66
1/8/2008 09:00	0.870	8.25	43.410	1.1	85.7	8.43
1/8/2008 09:15	0.872	8.02	43.230	1.8	85.1	8.42
1/8/2008 09:30	0.875	7.95	43.140	1.5	85.9	8.52
1/8/2008 09:45	0.870	7.93	42.960	1.1	85.6	8.50

Excavating period this afternoon

1/8/2008 10:00	0.870	8.01	43.190	1.[illegible]	85.7	8.49
1/8/2008 10:15	0.869	8.57	44.320	1.[illegible]	83.1	8.08
1/8/2008 10:30	0.872	8.24	43.620	1.4	86.2	8.47
1/8/2008 10:45	0.869	8.41	43.970	1.2	83.2	8.13
1/8/2008 11:00	0.868	8.42	44.000	1.2	83.9	8.20
1/8/2008 11:15	0.869	8.70	44.710	1.1	82.2	7.95
1/8/2008 11:30	0.869	8.69	44.820	1.1	82.3	7.96
1/8/2008 11:45	0.865	8.27	43.710	1.2	83.9	8.24
1/8/2008 12:00	0.866	8.35	43.840	1.3	86.1	8.43
1/8/2008 12:15	0.867	8.70	44.690	1.2	83.0	8.03
1/8/2008 12:30	0.865	8.45	44.130	1.3	84.2	8.22
1/8/2008 12:45	0.863	8.61	44.540	1.2	84.4	8.18
1/8/2008 13:00	0.859	8.10	43.400	1.4	87.0	8.58
1/8/2008 13:15	0.863	8.13	43.440	1.7	86.5	8.53
1/8/2008 13:30	0.865	8.16	43.530	2.9	86.6	8.53
1/8/2008 13:45	0.859	8.27	43.730	2.6	86.0	8.45
1/8/2008 14:00	0.860	8.28	43.730	2.7	85.2	8.36
1/8/2008 14:15	0.860	8.53	44.350	1.5	84.0	8.17
1/8/2008 14:30	0.860	8.51	44.270	1.7	84.2	8.20
1/8/2008 14:45	0.862	8.62	44.600	1.2	83.5	8.10
1/8/2008 15:00	0.861	8.36	43.930	3.0	84.8	8.30
1/8/2008 15:15	0.861	8.52	44.410	5.5	84.4	8.21
1/8/2008 15:30	0.866	8.36	43.980	4.7	85.7	8.39
1/8/2008 15:45	0.867	8.57	44.540	* 7.2	84.0	8.15
1/8/2008 16:00	0.873	8.62	44.630	4.3	83.2	8.07
1/8/2008 16:15	0.870	8.59	44.540	** 12.1	83.9	8.14
1/8/2008 16:30	0.869	8.76	45.040	4.6	82.1	7.92

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* phone call from R. Brunke on this E/M alert. Contractor had already voluntarily shut down excavation work.

** phone call B. Kruger, KC Lab., informed that ACC had stopped excavator for the day, six minutes before the 1545 hr. buoy alert.

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 28
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	January	9th	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-8:30am: Jennifer H. Tug Boat at site placing the barge KP-1 in position with Pam-Tay Derrick, so they can dredge spoils. Approximately: 7:30am-8:30am: Dredging Approximately: 8:30am-10:00am: No activities Approximately: 10:00am-10:30am: The contractor moved the Excavator Derrick to the north end of the site. Approximately: 10:00am-11:00am: Dredging. Total actual dredging 7:00am to 11:00am was approximately 2.0 hours See Keith Nordlund daily report for the rest of today's work. ACC had a crew of 6(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total of 519CY for the whole. See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed this morning.
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 1/11/08 (Date)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 28
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2008	January	09	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen resumed dredging work into Spoils barge "KP-1" until 1510hrs. ACC worked in the S. end of the site (per M. Locke, cell-phone), during this shift. (Note: Actual Sta., and Locs. are being Submitted by ACC with their Daily Reports mid-day of the following work day. re: I. Khilfeh, KC). ACC spent the balance of this shift doing crane maintenance, with the exception of two moves: the "Jennifer H" moved the Excavator Platform to the N., and off the site after 1540hrs. The "Jennifer H" left the site with the "KP-1" just before 1600hrs.
Miscellaneous:	The Denny buoy recorded a marginally high Turbidity spike of 4.6 NTU at 1130hrs., just after the "Jennifer H" helped relocate the dredge platform and spoils barges to a new work loc. Further South. G. Anderes on site after 1510hrs. to re-survey the site, and progress the work. Total Excavating time this day: 5hrs., and 10 min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	None were reported by ACC, other than the Crane maintenance issue listed above.
Test Conducted:	KC Lab (boat) grab sample (0930hrs.): Turb. 1.06±NTU; ODO 8.4±mg/L. Denny buoy: Turb. 1.3±NTU; ODO 8.59± mg/L. See, also, Daily Denny Buoy Log attached to this Report.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None during this Shift.
Manpower	"Pam Tay" dredge platform, Hitachi platform (on standby): (5) five persons; "Jennifer H"; (2) two persons
Visitors to Site	F. Scott, B. Sandman, C. Joseph, G. Anderes, ACC; KC Lab boat
Equipment Used	ACC: Dredge platform "Pam Tay", (3) work skiffs, Hitachi EX800H Excavator Platform (on standby), Cat 938F Loader; Spoils barge "KP-1"; Assist Tug "Jennifer H"

Attachments: 2 pages, Denny buoy Daily Log

Randy Brunke, Project Representative (Date)

1-9-08
K. Nordlund, CMIII (1-9-08)

Start date: 1/9/2008 End date: 1/9/2008

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Denny Way User Defined

	Min: 0.939 Max: 1.073 Mean: 1.027 St.dev: 0.034	Min: 8.19 Max: 8.45 Mean: 8.29 St.dev: 0.08	Min: 43.030 Max: 43.590 Mean: 43.235 St.dev: 0.140	Min: 1.2 Max: 15.1 Mean: 2.4 St.dev: 1.8	Min: 84.9 Max: 89.8 Mean: 87.1 St.dev: 1.3	Min: 8.32 Max: 8.85 Mean: 8.56 St.dev: 0.14
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
1/9/2008 00:00	0.951	8.41	43.450	15.1	86.5	8.47
1/9/2008 00:15	0.944	8.37	43.420	2.0	86.4	8.47
1/9/2008 00:30	0.939	8.44	43.450	1.2	85.2	8.34
1/9/2008 00:45	0.951	8.40	43.400	2.1	85.9	8.42
1/9/2008 01:00	0.965	8.44	43.340	2.0	85.1	8.33
1/9/2008 01:15	0.962	8.44	43.290	1.7	84.9	8.32
1/9/2008 01:30	0.952	8.45	43.260	1.5	85.0	8.32
1/9/2008 01:45	0.983	8.44	43.260	2.0	85.0	8.32
1/9/2008 02:00	0.987	8.43	43.250	1.8	85.1	8.34
1/9/2008 02:15	0.976	8.42	43.240	2.2	85.3	8.36
1/9/2008 02:30	0.996	8.40	43.230	3.3	85.8	8.41
1/9/2008 02:45	0.995	8.40	43.240	2.7	85.8	8.42
1/9/2008 03:00	1.006	8.38	43.230	1.8	85.7	8.41
1/9/2008 03:15	1.006	8.37	43.220	2.0	85.8	8.42
1/9/2008 03:30	1.008	8.37	43.220	2.2	86.0	8.45
1/9/2008 03:45	1.015	8.37	43.210	2.1	86.0	8.44
1/9/2008 04:00	1.002	8.35	43.180	1.4	85.6	8.41
1/9/2008 04:15	1.011	8.35	43.170	1.5	85.7	8.42
1/9/2008 04:30	1.015	8.34	43.170	1.5	85.7	8.42
1/9/2008 04:45	1.015	8.35	43.180	1.6	85.9	8.44
1/9/2008 05:00	1.027	8.33	43.190	1.6	86.1	8.46
1/9/2008 05:15	1.032	8.33	43.190	1.7	86.1	8.46
1/9/2008 05:30	1.031	8.33	43.200	1.6	86.1	8.46
1/9/2008 05:45	1.027	8.32	43.200	1.7	86.3	8.48
1/9/2008 06:00	1.026	8.31	43.200	1.6	86.4	8.49
1/9/2008 06:15	1.034	8.29	43.200	1.6	86.5	8.51
1/9/2008 06:30	1.031	8.29	43.200	1.6	86.6	8.51
1/9/2008 06:45	1.045	8.28	43.210	1.6	86.8	8.53
1/9/2008 07:00	1.045	8.29	43.230	1.6	86.7	8.53
1/9/2008 07:15	1.044	8.27	43.240	1.6	86.8	8.54
1/9/2008 07:30	1.038	8.26	43.240	1.7	87.0	8.56
1/9/2008 07:45	1.048	8.25	43.210	1.6	87.2	8.58
1/9/2008 08:00	1.051	8.25	43.180	1.4	87.0	8.57
1/9/2008 08:15	1.051	8.25	43.200	1.5	87.0	8.56
1/9/2008 08:30	1.051	8.22	43.090	1.2	86.9	8.57
1/9/2008 08:45	1.051	8.23	43.070	1.3	87.1	8.58
1/9/2008 09:00	1.062	8.22	43.060	2.3	87.2	8.60
1/9/2008 09:15	1.041	8.20	43.040	4.0	87.5	8.63
1/9/2008 09:30	1.057	8.21	43.060	1.3	87.1	8.59
1/9/2008 09:45	1.068	8.21	43.050	1.4	87.2	8.59

1/9/2008 10:00	1.056	8.21	43.040	1.[illegible]	87.4	8.62
1/9/2008 10:15	1.071	8.20	43.040	1.[illegible]	87.5	8.63
1/9/2008 10:30	1.063	8.19	43.030	1.3	87.6	8.64
1/9/2008 10:45	1.069	8.21	43.050	1.6	87.5	8.63
1/9/2008 11:00	1.056	8.21	43.060	2.8	88.1	8.68
1/9/2008 11:15	1.073	8.21	43.110	2.2	87.8	8.65
1/9/2008 11:30	1.067	8.20	43.100	3.4	88.2	8.69
1/9/2008 11:45	1.058	8.20	43.140	4.6	89.8	8.85
1/9/2008 12:00	1.055	8.21	43.160	2.7	88.2	8.69
1/9/2008 12:15	1.056	8.22	43.200	2.2	88.2	8.69
1/9/2008 12:30	1.067	8.22	43.200	3.0	88.3	8.70
1/9/2008 12:45	1.031	8.22	43.170	3.6	88.6	8.73
1/9/2008 13:00	1.060	8.22	43.170	3.2	88.9	8.76
1/9/2008 13:15	1.047	8.22	43.180	3.4	89.3	8.80
1/9/2008 13:30	1.046	8.22	43.210	4.3	89.2	8.79
1/9/2008 13:45	1.044	8.22	43.260	2.3	88.7	8.74
1/9/2008 14:00	1.035	8.21	43.250	2.9	88.8	8.75
1/9/2008 14:15	1.038	8.31	43.580	2.9	88.7	8.70
1/9/2008 14:30	1.035	8.26	43.470	2.3	89.5	8.80
1/9/2008 14:45	1.038	8.27	43.540	1.6	88.1	8.66
1/9/2008 15:00	1.040	8.26	43.520	3.3	88.5	8.70
1/9/2008 15:15	1.038	8.24	43.490	2.3	88.4	8.69
1/9/2008 15:30	1.033	8.24	43.440	5.2	88.5	8.71
1/9/2008 15:45	1.037	8.22	43.470	2.2	88.5	8.71
1/9/2008 16:00	1.034	8.26	43.590	2.7	87.7	8.62
1/9/2008 16:15	1.023	8.19	43.340	1.7	88.7	8.74

Afternoon duration period

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King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 29
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2008	January	10	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
		X Breezy		Showers

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen continued dredging work into Spoils barge "KP-2" until 1610hrs. ACC early shift work was on down slope areas at the S. end of the site (S. of sta. 3+00). After 1430hrs., ACC worked on upslope high points S. of sta. 2+00. (Note: Actual Sta., and Locs. are being Submitted by ACC with their Daily Reports mid-day of the following work day. re: I. Khilfeh, KC). The work in all of the above noted areas were a follow-up, based on the results of the last two ACC site surveys (per M. Locke, cell-phone).
Miscellaneous:	"Jennifer H" brought Spoils Barge "KP-2" to the site shortly before this shift, and took the "KP-1" back to DMC. Total Dredging time this day: 4hrs., and 50 min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	None were reported by ACC.
Test Conducted:	See Daily Denny Buoy Log attached to this Report. Note: phoned M. Locke, ACC, when first marginally high Turbidity spike was received from the Denny buoy at 1545hrs. (5.9± NTU); ACC continued dredging until a second spike five NTUs over the Aquarium buoy came in at 1600hrs. (6.2± NTU) sampling. ACC voluntarily stopped dredging at 1608hrs.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None during this Shift.
Manpower	"Pam Tay" dredge platform, Hitachi platform (on standby): (5) five persons; "Jennifer H"; (2) two persons
Visitors to Site	KC: B. Wilbert; TetraTech: J. Lykken, K. Dour; J&S: E. Britney
Equipment Used	ACC: Dredge platform "Pam Tay", (3) work skiffs, Hitachi EX800H Excavator Platform (on standby), Cat 938F Loader; Spoils barge "KP-1" and KP-2"; Assist Tug "Jennifer H"

Attachments: 2 pages, Denny buoy Daily Log

Randy Brunke, Project Representative (Date)

1-10-08
K. Nordlund, CMIII (1-10-08)

Start date: 1/10/2008 End date: 1/10/2008

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Denny Way User Defined

	Min: 0.896 Max: 0.951 Mean: 0.918 St.dev: 0.015	Min: 7.88 Max: 8.63 Mean: 8.18 St.dev: 0.22	Min: 39.480 Max: 44.500 Mean: 42.188 St.dev: 1.179	Min: 1.3 Max: 6.2 Mean: 1.8 St.dev: 0.9	Min: 84.6 Max: 88.9 Mean: 87.3 St.dev: 0.9	Min: 8.21 Max: 8.86 Mean: 8.64 St.dev: 0.12
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
1/10/2008 00:00	0.907	8.14	42.410	1.5	86.6	8.57
1/10/2008 00:15	0.904	8.05	41.550	1.4	86.6	8.63
1/10/2008 00:30	0.900	8.06	41.710	1.4	86.7	8.63
1/10/2008 00:45	0.901	8.08	41.660	1.3	86.7	8.63
1/10/2008 01:00	0.898	8.08	41.700	1.4	86.4	8.60
1/10/2008 01:15	0.896	8.09	41.800	1.5	86.4	8.59
1/10/2008 01:30	0.904	8.10	41.840	1.4	86.4	8.59
1/10/2008 01:45	0.900	8.10	41.880	1.4	86.2	8.56
1/10/2008 02:00	0.902	8.06	41.750	1.8	86.4	8.60
1/10/2008 02:15	0.904	8.00	41.540	1.7	86.7	8.65
1/10/2008 02:30	0.904	8.02	41.480	1.5	86.5	8.63
1/10/2008 02:45	0.906	7.94	40.190	1.6	86.0	8.65
1/10/2008 03:00	0.905	7.88	39.480	1.5	85.9	8.68
1/10/2008 03:15	0.904	7.90	39.650	1.5	85.8	8.65
1/10/2008 03:30	0.910	7.89	39.870	1.5	86.0	8.67
1/10/2008 03:45	0.905	7.93	40.060	1.5	86.1	8.66
1/10/2008 04:00	0.904	8.01	40.700	1.5	86.2	8.63
1/10/2008 04:15	0.905	8.04	41.210	1.4	86.1	8.59
1/10/2008 04:30	0.903	7.95	40.630	1.5	86.4	8.67
1/10/2008 04:45	0.904	7.91	40.530	1.5	86.9	8.73
1/10/2008 05:00	0.906	7.96	40.970	1.4	86.9	8.70
1/10/2008 05:15	0.913	7.97	41.260	1.4	87.2	8.72
1/10/2008 05:30	0.907	8.00	41.590	1.3	87.4	8.72
1/10/2008 05:45	0.904	7.97	41.400	1.3	87.6	8.76
1/10/2008 06:00	0.898	8.01	41.630	1.3	87.2	8.69
1/10/2008 06:15	0.906	8.04	41.760	1.3	87.1	8.67
1/10/2008 06:30	0.912	8.06	41.770	1.3	87.0	8.66
1/10/2008 06:45	0.917	8.10	41.940	1.3	86.9	8.63
1/10/2008 07:00	0.914	8.08	41.860	1.3	87.1	8.66
1/10/2008 07:15	0.914	8.00	41.540	1.3	88.1	8.79
1/10/2008 07:30	0.916	7.98	41.550	1.3	88.4	8.82
1/10/2008 07:45	0.904	7.98	41.540	1.3	88.3	8.82
1/10/2008 08:00	0.917	7.97	41.520	1.5	88.8	8.86
1/10/2008 08:15	0.920	8.07	41.900	1.4	87.8	8.73
1/10/2008 08:30	0.915	8.00	41.590	1.3	88.8	8.86
1/10/2008 08:45	0.918	8.01	41.670	1.3	88.6	8.83
1/10/2008 09:00	0.918	8.07	41.860	1.3	88.2	8.77
1/10/2008 09:15	0.925	8.09	41.920	1.3	88.3	8.78
1/10/2008 09:30	0.928	8.10	41.970	1.3	88.1	8.75
1/10/2008 09:45	0.933	8.07	41.820	1.3	88.7	8.82

1/10/2008 10:00	0.938	8.07	41.830	1.[illegible]	88.9	8.84
1/10/2008 10:15	0.922	8.12	42.030	1.[illegible]	88.7	8.81
1/10/2008 10:30	0.939	8.19	42.380	1.4	88.0	8.70
1/10/2008 10:45	0.930	8.30	42.930	1.5	87.1	8.57
1/10/2008 11:00	0.944	8.38	43.320	1.7	86.9	8.53
1/10/2008 11:15	0.940	8.36	43.130	1.8	87.4	8.59
1/10/2008 11:30	0.942	8.38	43.240	1.9	87.2	8.56
1/10/2008 11:45	0.922	8.37	43.130	2.1	87.5	8.59
1/10/2008 12:00	0.919	8.36	43.090	1.9	87.8	8.63
1/10/2008 12:15	0.924	8.38	43.160	2.6	87.7	8.61
1/10/2008 12:30	0.927	8.40	43.260	2.0	87.4	8.57
1/10/2008 12:45	0.930	8.45	43.500	2.2	86.5	8.46
1/10/2008 13:00	0.929	8.46	43.490	1.7	86.8	8.49
1/10/2008 13:15	0.914	8.41	43.290	2.0	88.2	8.65
1/10/2008 13:30	0.924	8.40	43.250	1.9	88.7	8.70
1/10/2008 13:45	0.928	8.39	43.180	1.7	88.9	8.72
1/10/2008 14:00	0.913	8.42	43.310	1.7	88.4	8.66
1/10/2008 14:15	0.933	8.46	43.510	1.5	87.8	8.59
1/10/2008 14:30	0.940	8.50	43.790	1.5	86.6	8.46
1/10/2008 14:45	0.930	8.63	44.500	1.3	84.6	8.21
1/10/2008 15:00	0.922	8.54	43.840	1.4	86.7	8.46
1/10/2008 15:15	0.939	8.54	43.860	2.0	87.3	8.51
1/10/2008 15:30	0.940	8.53	43.840	2.9	87.6	8.54
1/10/2008 15:45	0.941	8.51	43.700	*5.9	88.0	8.59
1/10/2008 16:00	0.937	8.52	43.740	**6.2	88.0	8.59
1/10/2008 16:15	0.938	8.53	43.810	4.5	87.5	8.54
1/10/2008 16:30	0.951	8.56	43.980	3.0	86.7	8.45
1/10/2008 16:45	0.947	8.60	44.000	2.6	86.9	8.45

Afternoon Shift Work

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*1st marginal spike, call to ACC

**2nd spike (over Permit), call to ACC; ACC stopped dredging for the day.

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 29
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	January	10th	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
		pm		am

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-8:30am: Jennifer H. Tug Boat at site repositioning the barge KP-1 in position with Pam-Tay Derrick, so they can dredge spoils. Approximately: 8:30am-9:30am: Dredging Approximately: 9:30am-10:00am: No activities Approximately: 10:00am-10:30am: Dredging Approximately: 10:30am-11:00am: rotating the barge. Approximately 10:00am, Jennifer H. Tug Boat Brought in KP-2 barge. Total actual dredging 7:00am to 11:00am was approximately 1.5 hours See Keith Nordlund daily report for the rest of today's work. ACC had a crew of 5(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total of 446CY of spoils for the whole day, and a total of 282 tons of concrete and rock debris with spoils. See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	No turbidity variances were noticed this morning.
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh (Date) 1/15/08

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 30
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	January	11	Iha Khilfeh

Day of the Week						
Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather				
Clear	PC	Overcast	Fog	Rain
		windy		

Temperature				
10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:30am: Jennifer H. Tug Boat at site repositioning the barge KP-2 in position with Pam-Tay Derrick, so they can dredge spoils. Approximately: 7:30am-10:00am: Dredging Approximately: 10:00am-10:15am: The tug boat rotating the barge Approximately: 10:15am-10:45am: Dredging Approximately: 10:45am-11:00am: rotating the barge. Approximately 11:00am- 12:00pm: Dredging Total actual dredging this morning from 7:00am to 12:00pm was approximately 4 hours See Keith Nordlund daily report for the rest of today's work. ACC had a crew of 5(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they dredge a total of 621CY of spoils for the whole day. See the contractor daily report for locations and depth of the dredging.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	Turbidity variances were noticed this morning at about 9:00am and 10:30am. The contractor was contacted at once to modify their practice and they did. Afterwards, the turbidity went down.
Work Rejected:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh (Date) 1/15/08

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 30
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2008	January	11	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
	X Windy			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen continued a series of spot area dredging work into Spoils barge "KP-2" until 1625hrs. This afternoon, ACC worked on high points S. of sta. 2+00. (Note: Actual Sta., and Locs. are being Submitted by ACC with their Daily Reports mid-day of the following work day. re: I. Khilfeh, KC). The work in all of the above noted areas are in response to the last ACC Denny CSO site survey (M. Locke, cell-phone). "Pam Tay" was dogged off by 1700hrs.
Miscellaneous:	Total Dredging time this day: 6hrs., and 30 min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	Note: At 1238hrs., received phone call from M. Brunke about an E/M Turbidity alert at 6.6± NTU from downtown, regarding the Denny buoy. That was followed by the 1245hrs. reading, showing a Turbidity of 11.6± NTU. Responded to R. Brunke that this observer had no idea what the source was, other than the wind driven wave action, and the outgoing tide. ACC had their dredging bucket on the deck, and after their Lunch break, were working on their crane since 1200hrs. It was now 1303hrs. Notified the KC Lab and ACC (M. Locke) about the consecutive spikes, but was at a loss to suggest to ACC how they could do anything different, since ACC wasn't dredging. Contractor resumed dredging after 1315hrs., and Turbidity went back down to background levels shortly after the tide started coming back in for the afternoon.
Test Conducted:	See Daily Denny Buoy Log attached to this Report.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None during this Shift.
Manpower	"Pam Tay" dredge platform, Hitachi platform (on standby): (5) five persons; "Jennifer H"; (2) two persons
Visitors to Site	KC: R. Brunke; R. Pickering, Anchor
Equipment Used	ACC: Dredge platform "Pam Tay", (3) work skiffs, Hitachi EX800H Excavator Platform (on standby), Cat 938F Loader; Spoils barge "KP-2"; Assist Tug "Jennifer H"

Attachments: 2 pages, Denny buoy Daily Log; photos

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (1-11-08)

Start date: 1/11/2008 End date: 1/11/2008

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Denny Way User Defined

	Min: 0.946 Max: 1.064 Mean: 1.011 St.dev: 0.036	Min: 8.40 Max: 8.63 Mean: 8.50 St.dev: 0.07	Min: 42.830 Max: 43.950 Mean: 43.177 St.dev: 0.361	Min: 1.3 Max: 11.6 Mean: 2.4 St.dev: 1.8	Min: 86.3 Max: 92.1 Mean: 88.6 St.dev: 1.3	Min: 8.44 Max: 8.99 Mean: 8.67 St.dev: 0.12
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
1/11/2008 00:00	0.948	8.53	43.330	1.3	86.3	8.44
1/11/2008 00:15	0.956	8.53	43.320	1.4	86.4	8.44
1/11/2008 00:30	0.961	8.53	43.320	1.5	86.5	8.46
1/11/2008 00:45	0.964	8.51	43.180	1.3	86.6	8.48
1/11/2008 01:00	0.946	8.50	43.000	1.3	86.4	8.47
1/11/2008 01:15	0.965	8.49	42.980	1.5	86.5	8.47
1/11/2008 01:30	0.958	8.49	42.940	1.4	86.6	8.49
1/11/2008 01:45	0.956	8.48	42.950	1.3	87.0	8.53
1/11/2008 02:00	0.977	8.48	42.980	1.3	87.0	8.53
1/11/2008 02:15	0.963	8.48	42.960	2.0	87.2	8.55
1/11/2008 02:30	0.975	8.48	43.010	1.4	87.3	8.55
1/11/2008 02:45	0.967	8.48	42.960	1.4	87.4	8.57
1/11/2008 03:00	0.981	8.47	42.920	1.8	87.8	8.61
1/11/2008 03:15	0.963	8.46	42.890	1.4	87.7	8.61
1/11/2008 03:30	0.970	8.46	42.880	1.4	87.7	8.60
1/11/2008 03:45	0.982	8.47	42.880	1.4	87.6	8.60
1/11/2008 04:00	0.990	8.46	42.850	1.3	87.8	8.61
1/11/2008 04:15	0.987	8.46	42.840	1.4	87.7	8.61
1/11/2008 04:30	0.986	8.47	42.860	1.4	87.8	8.61
1/11/2008 04:45	0.993	8.46	42.830	1.4	87.8	8.61
1/11/2008 05:00	1.002	8.47	42.880	1.4	87.6	8.60
1/11/2008 05:15	0.986	8.46	42.870	1.4	87.9	8.62
1/11/2008 05:30	0.991	8.47	42.900	1.4	87.9	8.62
1/11/2008 05:45	0.969	8.46	42.860	1.3	88.0	8.64
1/11/2008 06:00	0.989	8.46	42.870	1.3	88.0	8.64
1/11/2008 06:15	0.985	8.46	42.870	1.4	88.0	8.63
1/11/2008 06:30	0.974	8.46	42.870	1.4	87.9	8.62
1/11/2008 06:45	0.983	8.45	42.850	1.4	88.2	8.65
1/11/2008 07:00	0.986	8.44	42.850	1.4	88.5	8.69
1/11/2008 07:15	0.994	8.43	42.850	1.3	88.7	8.71
1/11/2008 07:30	0.992	8.44	42.900	1.4	88.5	8.68
1/11/2008 07:45	1.001	8.43	42.910	1.3	88.6	8.70
1/11/2008 08:00	1.007	8.43	42.940	1.3	88.9	8.72
1/11/2008 08:15	1.002	8.42	42.950	1.4	88.9	8.72
1/11/2008 08:30	1.017	8.41	42.920	1.6	89.1	8.75
1/11/2008 08:45	1.013	8.40	42.900	4.5	89.7	8.81
1/11/2008 09:00	1.009	8.42	42.940	5.5	89.6	8.80
1/11/2008 09:15	1.024	8.42	42.940	4.7	89.3	8.76
1/11/2008 09:30	1.030	8.42	42.950	4.3	89.4	8.77
1/11/2008 09:45	1.037	8.42	42.960	4.0	89.5	8.79

1/11/2008 10:00	1.039	8.43	42.990	3	89.6	8.79
1/11/2008 10:15	1.038	8.44	43.010	3.1	89.5	8.78
1/11/2008 10:30	1.026	8.44	43.030	5.0	90.0	8.83
1/11/2008 10:45	1.019	8.44	42.990	4.1	91.1	8.93
1/11/2008 11:00	1.037	8.46	43.100	3.0	91.3	8.95
1/11/2008 11:15	1.025	8.51	43.160	1.8	90.4	8.85
1/11/2008 11:30	1.054	8.52	43.200	1.7	89.8	8.79
1/11/2008 11:45	1.039	8.54	43.280	2.7	89.5	8.75
1/11/2008 12:00	1.058	8.54	43.310	3.5	89.5	8.74
1/11/2008 12:15	1.040	8.55	43.360	1.6	89.2	8.71
1/11/2008 12:30	1.039	8.56	43.300	* 6.6	89.9	8.78
1/11/2008 12:45	1.044	8.57	43.360	11.6	90.2	8.81
1/11/2008 13:00	1.044	8.59	43.370	6.2	92.1	8.99
1/11/2008 13:15	1.058	8.60	43.540	5.6	90.9	8.86
1/11/2008 13:30	1.054	8.62	43.730	2.3	91.1	8.87
1/11/2008 13:45	1.053	8.61	43.840	1.4	89.1	8.67
1/11/2008 14:00	1.053	8.61	43.810	1.6	89.2	8.69
1/11/2008 14:15	1.055	8.62	43.880	1.5	88.9	8.65
1/11/2008 14:30	1.062	8.62	43.950	2.5	89.0	8.66
1/11/2008 14:45	1.051	8.62	43.930	1.5	88.6	8.62
1/11/2008 15:00	1.059	8.61	43.880	2.3	89.1	8.67
1/11/2008 15:15	1.060	8.62	43.910	1.6	88.6	8.62
1/11/2008 15:30	1.053	8.61	43.810	2.3	89.4	8.70
1/11/2008 15:45	1.064	8.62	43.780	1.5	88.7	8.63
1/11/2008 16:00	1.043	8.63	43.680	1.5	88.6	8.62
1/11/2008 16:15	1.061	8.62	43.680	3.7	88.8	8.64
1/11/2008 16:30	1.063	8.62	43.650	4.9	88.7	8.64
1/11/2008 16:45	1.050	8.60	43.670	1.5	88.6	8.63

Submit Back Export as .CSV

not dredging by ACC

ACC Afternoon work

* High Turbidity readings @ Denny buoy recorded while ACC was not dredging

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 30
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 0700HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1500HRS.

Date

Year	Month	Day	Inspector
2008	January	12	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
X						

Weather

Clear	PC	Overcast	Fog	Rain
		X		X

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen continued a "stop and go" removal of high areas within the dredge prism. Dredge "Pam Tay" filled Spoils barge "KP-2" until 1300hrs. ACC worked on both upslope and down slope high points, ranging all over the site. (Note: Actual Sta., and Locs. are being Submitted by ACC with their Daily Reports mid-day of the following workday). The work in all of the above noted areas are in response to the last ACC Denny CSO site survey. From that, ACC issued a topographical Plot Plan (1\9\08, attached to this report) as a crew guide.
Miscellaneous:	At app. 1310hrs., received cell phone call from M. Locke, ACC, saying that dredging was done for the day, and that the balance of the shift was going to be used for re-staging the equipment off the dredge prism in preparation for a Multi-Beam Sonar Survey (of the site) on next Monday, 1-14-08. Total Dredging time this day: 4±hrs.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	No problems were observed by this KC observer, nor reported by ACC.
Test Conducted:	See Daily Denny Buoy Log attached to this Report.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None during this Shift.
Manpower	"Pam Tay" dredge platform, Hitachi platform (on standby): (5) five persons; "Jennifer H"; (2) two persons
Visitors to Site	None during this shift.
Equipment Used	ACC: Dredge platform "Pam Tay", (3) work skiffs, Hitachi EX800H Excavator Platform (on standby), Cat 938F Loader (on standby); Spoils barge "KP-2"; Assist Tug "Jennifer H"

Attachments: 2 pages, Denny buoy Daily Log, 1 page, ACC Plot Plan

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIH (1-12-08)

Start date: 1/12/2008 End date: 1/12/2008

Submit Back Export as .CSV

Denny Way User Defined

	Min: 0.989 Max: 1.050 Mean: 1.014 St.dev: 0.017	Min: 7.84 Max: 8.58 Mean: 8.12 St.dev: 0.21	Min: 37.280 Max: 44.020 Mean: 39.731 St.dev: 1.723	Min: 1.2 Max: 3.3 Mean: 2.1 St.dev: 0.4	Min: 83.8 Max: 88.8 Mean: 87.6 St.dev: 0.9	Min: 8.15 Max: 9.03 Mean: 8.79 St.dev: 0.18
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
1/12/2008 00:00	1.034	8.34	42.660	1.5	87.9	8.66
1/12/2008 00:15	1.035	8.29	42.320	1.6	87.8	8.66
1/12/2008 00:30	1.032	8.19	41.380	2.2	87.9	8.74
1/12/2008 00:45	1.032	8.06	39.900	2.0	88.3	8.86
1/12/2008 01:00	1.029	8.05	39.400	1.9	88.0	8.86
1/12/2008 01:15	1.026	8.04	37.950	2.0	87.6	8.87
1/12/2008 01:30	1.026	8.03	38.160	2.0	87.6	8.87
1/12/2008 01:45	1.025	8.00	38.100	2.1	87.7	8.89
1/12/2008 02:00	1.025	7.98	38.150	2.0	87.9	8.91
1/12/2008 02:15	1.024	8.01	38.650	2.1	87.9	8.89
1/12/2008 02:30	1.023	7.97	38.610	2.1	88.0	8.90
1/12/2008 02:45	1.024	7.95	38.420	2.1	88.1	8.92
1/12/2008 03:00	1.017	8.05	39.100	1.9	88.0	8.87
1/12/2008 03:15	1.012	8.03	39.080	2.0	87.9	8.86
1/12/2008 03:30	1.011	8.05	39.270	1.9	88.0	8.85
1/12/2008 03:45	1.010	7.91	38.380	2.4	88.2	8.94
1/12/2008 04:00	1.006	8.01	38.950	2.0	87.9	8.87
1/12/2008 04:15	1.001	7.98	38.650	2.1	88.0	8.90
1/12/2008 04:30	1.002	7.96	38.520	2.0	88.0	8.91
1/12/2008 04:45	1.002	7.96	38.580	1.9	88.1	8.91
1/12/2008 05:00	0.996	7.95	38.560	2.0	87.9	8.90
1/12/2008 05:15	0.992	8.09	39.070	1.5	87.7	8.83
1/12/2008 05:30	0.999	7.91	38.370	2.0	88.4	8.97
1/12/2008 05:45	1.004	7.87	37.990	1.9	88.7	9.02
1/12/2008 06:00	1.003	7.84	37.470	2.1	88.4	9.02
1/12/2008 06:15	1.005	7.84	37.280	2.1	88.5	9.03
1/12/2008 06:30	0.999	8.14	38.250	1.4	85.6	8.64
1/12/2008 06:45	0.993	7.89	38.010	2.0	87.0	8.84
1/12/2008 07:00	0.997	8.21	40.670	1.3	86.0	8.57
1/12/2008 07:15	0.989	8.58	44.020	1.2	83.8	8.15
1/12/2008 07:30	0.989	7.93	38.230	2.1	87.4	8.87
1/12/2008 07:45	0.993	7.92	38.010	2.1	87.8	8.92
1/12/2008 08:00	0.995	7.95	38.340	2.2	88.2	8.94
1/12/2008 08:15	0.995	7.94	38.280	2.3	88.3	8.95
1/12/2008 08:30	0.989	7.91	37.870	2.0	88.6	9.01
1/12/2008 08:45	1.000	7.91	37.950	2.1	88.4	8.99
1/12/2008 09:00	1.002	8.07	39.360	2.1	88.2	8.88
1/12/2008 09:15	0.997	7.97	38.520	2.0	88.4	8.94
1/12/2008 09:30	1.003	8.19	40.550	2.5	85.9	8.57
1/12/2008 09:45	1.008	8.10	39.650	1.9	87.6	8.80

Sat. shift

1/12/2008 10:00	1.005	8.14	40.040	1	87.5	8.75
1/12/2008 10:15	1.006	8.13	39.880	1	87.4	8.76
1/12/2008 10:30	1.010	8.22	40.740	1.9	87.1	8.68
1/12/2008 10:45	1.014	8.23	40.790	2.3	86.9	8.66
1/12/2008 11:00	1.029	8.38	42.250	2.4	85.8	8.46
1/12/2008 11:15	1.044	8.36	41.860	2.8	85.9	8.49
1/12/2008 11:30	1.026	8.41	42.250	3.3	86.1	8.48
1/12/2008 11:45	1.020	8.44	42.540	3.1	86.8	8.53
1/12/2008 12:00	1.027	8.36	41.210	2.9	88.3	8.75
1/12/2008 12:15	1.030	8.36	41.070	2.4	88.7	8.80
1/12/2008 12:30	1.035	8.40	41.210	2.6	88.8	8.79
1/12/2008 12:45	1.044	8.43	41.700	2.1	87.8	8.66
1/12/2008 13:00	1.036	8.43	41.540	2.6	88.2	8.71
1/12/2008 13:15	1.031	8.46	41.880	2.4	87.4	8.61
1/12/2008 13:30	1.047	8.52	42.500	1.8	86.7	8.51
1/12/2008 13:45	1.050	8.51	42.780	2.1	86.5	8.48

Sat. shift

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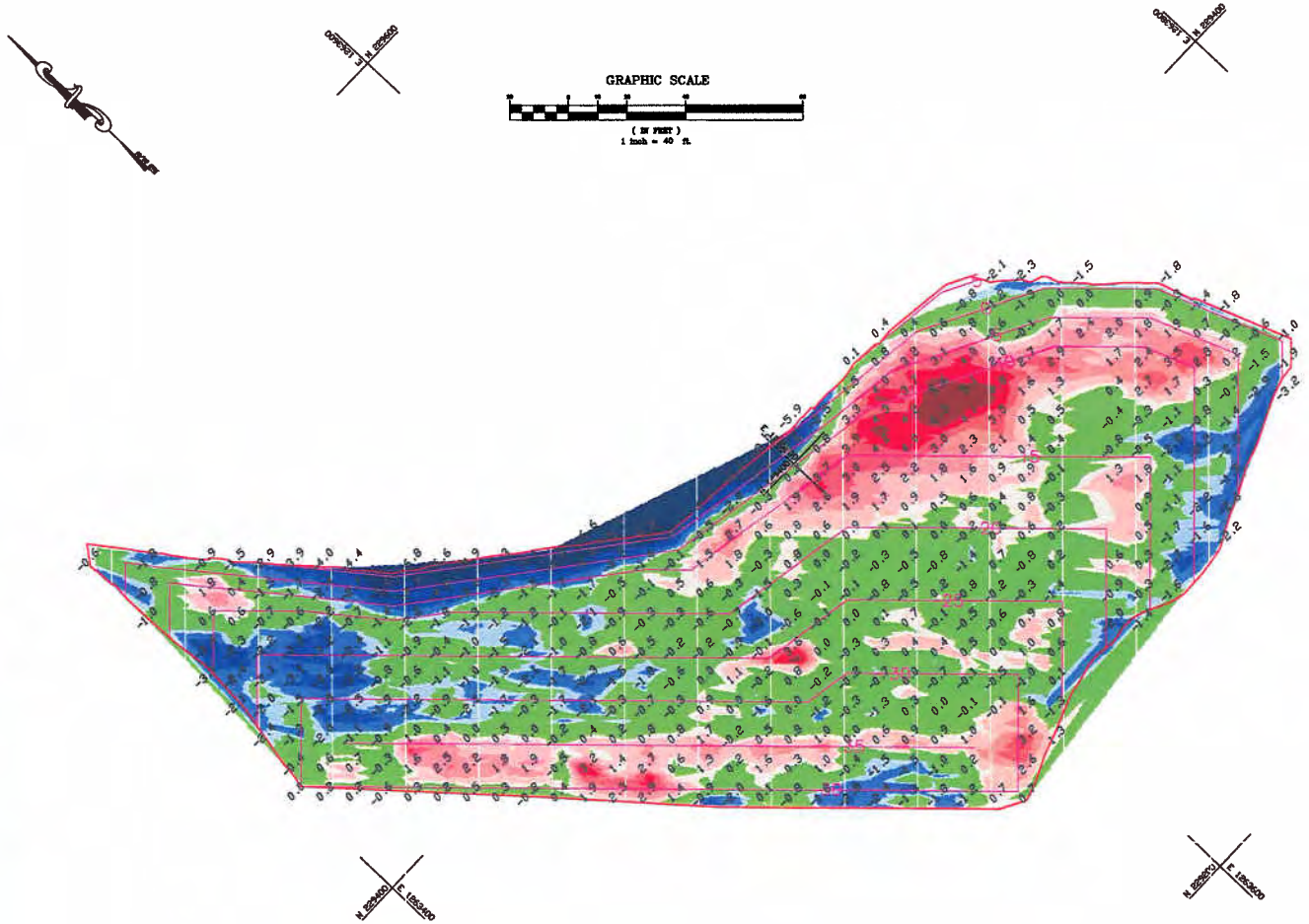
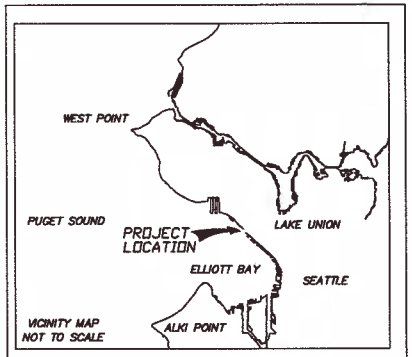
Permit was not exceeded by the Contractor this shift.



ELLIOTT BAY



NOTES:

DENNY WAY CSO

Nearshore Interim Sediment Cleanup

KING COUNTY, WASHINGTON
DEPARTMENT OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

January 9, 2008

CONDITIONAL SURVEY

American Civil Constructors
Hurlen Construction

700 South Riverside Drive
P.O. Box 80945
Seattle, WA 98108
Phone: (206) 763-1230
Fax: (206) 763-1854
www.acconstructors.com

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 31
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 0930HRS. (AFTERNOON SHIFT)
TIME WORK STOPPED: 1630HRS.

Date

Year	Month	Day	Inspector
2008	January	14	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X				

Weather

Clear	PC	Overcast	Fog	Rain
		X		X

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen did not dredge today. The crew spent the shift working on the "Pam Tay" crane. Barge "KP-2" is tied up alongside the "Pam Tay" while ACC awaits the results of yesterday's (based on information received by phone from R. Pickering, Anchor) MB Survey of the site. Barge "KP-1" is still at DMC getting unloaded.
Miscellaneous:	At app. 1030hrs., cell phoned G. Anderes, ACC, and requested permission to visit their South Park site for the purposes of examining the Hopper barge proposed for Backfilling the Denny CSO site. At app. 1100hrs., went on board the Hopper Barge with G. Anderes and I. Khilfeh. G. Andereds explained that the barge had just left drydock, and was in good condition. The Barge was clean.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. The Contractor reported no accidents or incidents this day.
Problems Encountered & Resolutions:	No problems were observed by this KC observer, nor reported by ACC.
Test Conducted:	Visual only.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None during this Shift.
Manpower	"Pam Tay" dredge platform, Hitachi platform (on standby): (5) five persons; "Jennifer H"; (2) two persons
Visitors to Site	None during this shift.
Equipment Used	ACC: Dredge platform "Pam Tay" (on standby), (3) work skiffs, Hitachi EX800H Excavator Platform (on standby), Cat 938F Loader (on standby); Spoils barge "KP-2" (on standby

Attachments: none

Randy Brunke, Project Representative (Date)

1/14/08
K. Nordlund, CMIII (1-14-08)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 31
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	January	14	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X				

Weather

Clear	PC	Overcast	Fog	Rain
		windy		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Jennifer H. tug boat at site. In the morning, the contractor moved the excavator derrick from the north end of the site more into the water. In the afternoon, the contractor took KP-2 Barge to the off loading facilities. In mid morning, Keith and I went to ACC yard to inspect St. Helen Barge. The barge appeared to be clean. The contractor is planning on using this barge to transport the fill soil. Apparently, Anchor subcontractor did the surveying yesterday "Sunday", for the dredged site.
Miscellaneous:	
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 1/15/08 (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 32
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	January	15	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
			X			

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	In the morning, the contractor brought into the site barge TC-166 Anchor, a crew of three, using a small powered boat, took soil samples from the area where it was dredged.
Miscellaneous:	
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 1/15/08 (Date)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 32
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 0630HRS.
TIME WORK STOPPED: 1500HRS.

Date

Year	Month	Day	Inspector
2008	January	15	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
			X			

Weather

Clear	PC	Overcast	Fog	Rain
X				

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	With the permission of ACC/Hurlen (G. Anderes), visited their proposed backfill aggregate supplier Pioneer Aggregates, a member of the Glacier S&G Group of companies, located in DuPont, Wa. Met with N. Marks (after 1035hrs.) to discuss briefly, the Submitted (ACC no. 008, 008A) Base Fill, Habitat and Contingency mixes proposed for the Denny CSO Project. Toured the site with an employee (Jeff), who showed this KC observer all the stockpiled blends intended for the Denny CSO Project, and the on-site production equipment used to make the blends.
Miscellaneous:	The one area not observed during this visit was the barge loading facility for the aggregates. Pioneer Aggregates is not adjacent to the Puget Sound.
Safety/Accidents:	No accidents or incidents occured
Problems Encountered & Resolutions:	Talked to N. Marks briefly about the Habitat Mix, and that it did not meet the Contract specs. for course rock retained on the 1.5" sieve (out app. 4%). Mr. Marks said that their #7123 mix is a standard blend and has been used by others, and that requiring a blend change like this wasn't really acceptable to Pioneer.
Test Conducted:	Visual only.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None.
Manpower	n/a
Visitors to Site	n/a
Equipment Used	n/a

Attachments: none

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (1-15-08)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 33
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 0630HRS.
TIME WORK STOPPED: 1500HRS.

Date

Year	Month	Day	Inspector
2008	January	16	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	At the request of ACC/Hurlen (M. Locke), observed the final cleanup work performed on Spoils Barge "KP-1" at DMC, prior to the Contractor sending the barge to Dupont, Wa. For the first load of Base Fill (sand blend, scheduled loading time 0130hrs., 1-17-08). The barge left DMC at app. ETD 1600hrs. M. Locke supervised the cleanup for ACC (photos taken).
Miscellaneous:	N/a
Safety/Accidents:	ACC worked at DMC this day. They reported no accidents or incidents.
Problems Encountered & Resolutions:	ACC (Locke) had originally reported to KC that it was their intent to retrieve "KP-1" from DMC, bring it out to the site, and wash it down at the site before sending that barge down to Dupont, Wa. This procedure was unacceptable to KC (re: R. Brunke). I. Khilfeh and this observer met ACC (Locke) at DMC, and went over the points of an acceptable cleanup per the Contract. ACC had not written their barge cleaning procedure in their Backfill Submittal for review.
Test Conducted:	Visual only.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None.
Manpower	DMC: Crane operator, loader operator, two laborers; ACC: one Supt., two laborers
Visitors to Site	KC: I. Khilfeh, J. Stern
Equipment Used	Manitowoc 4100 crane, Cat 938G Loader, one (1) lined Container box

Attachments: (9) nine photos

Randy Brunke, Project Representative (Date)

1-16-08
K. Nordlund, CMIII (1-16-08)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 33
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	January	16	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
	X	X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	The barge S. Helen at site empty with the Diane tug boat. The contractor was trying to see how they would place the materials if they will use the St. Helen barge. At the end, they decided not to use St. Helen barge because it will not close properly. At noon, Keith and I met with Marty with ACC to inspect the cleaning of KP-1 barge at the unloading facilities. The barge was not ready for inspections. Keith will go back again this afternoon to do the inspections once they are ready to do so. See Keith report for the rest of the day.
Miscellaneous:	
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 1/18/08 (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 34
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 5:00PM

Date

Year	Month	Day	Inspector
2008	January	17	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-8:30am: Jennifer H. Tug Boat at site placing the barge KP-1 in position with Pam-Tay Derrick, so they can unload the imported base back-fill soil. They unloaded the soil using the Skip-Box with the crane, and CAT 938F front loader to fill the skip box. Approximately: 8:30am-9:45am: Placing base back-fill soil Approximately: 9:45am-10:00am: No activities Approximately: 10:00am-12:00pm: backfill Approximately: 12:00pm-12:30pm: lunch break Approximately 12:30pm-4:00pm: backfill Approximately 5:00pm, the crew left Total actual backfill from 7:00am to 5:00pm was approximately 7 hours See Keith Nordlund daily report for other details. ACC had a crew of 5(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they placed a total of 2016 tons of sand for the whole day. See the contractor daily report for locations and depth of the backfill.
Safety/Accidents:	None
Problems Encountered & Resolutions:	Turbidity variances were noticed all day. The contractor was informed at once when the variances occurred. The contractor was responsive by slowing down or changing the way they were placing the materials to avoid the turbidity rise.
Test Conducted:	See the attached NTU reading from Denny site instruments.
Work Rejected:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 1/21/08 (Date)

Start date: 1/17/2008 End date: 1/17/2008

Submit Back Export as .CSV

Denny Way User Defined

	Min: 1.174 Max: 1.200 Mean: 1.186 St.dev: 0.007	Min: 7.07 Max: 8.52 Mean: 7.96 St.dev: 0.39	Min: 34.760 Max: 44.140 Mean: 40.993 St.dev: 2.334	Min: 1.0 Max: 13.0 Mean: 2.8 St.dev: 2.7	Min: 82.0 Max: 90.1 Mean: 84.8 St.dev: 1.8	Min: 7.9 Max: 9. Mean: 8 St.dev:
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downt Denny 000169 ODO C [mg/L]**
1/17/2008 00:00	1.200	8.41	43.740	1.1	82.5	
1/17/2008 00:15	1.199	7.90	41.330	1.2	85.3	
1/17/2008 00:30	1.200	8.04	42.020	1.2	85.1	
1/17/2008 00:45	1.197	7.58	39.500	1.5	85.4	
1/17/2008 01:00	1.196	7.66	40.130	1.4	86.2	
1/17/2008 01:15	1.195	7.15	37.120	1.5	87.4	
1/17/2008 01:30	1.191	7.53	39.540	1.4	86.8	
1/17/2008 01:45	1.196	7.07	36.720	1.7	87.9	
1/17/2008 02:00	1.196	7.30	38.320	1.6	85.7	
1/17/2008 02:15	1.199	7.84	41.060	1.3	83.9	
1/17/2008 02:30	1.198	7.88	41.460	1.2	84.7	
1/17/2008 02:45	1.198	7.85	41.350	1.3	84.9	
1/17/2008 03:00	1.198	7.89	41.130	1.3	85.2	
1/17/2008 03:15	1.199	7.92	41.380	1.2	84.7	
1/17/2008 03:30	1.198	8.23	42.740	1.2	83.8	
1/17/2008 03:45	1.198	8.39	43.630	1.1	82.8	
1/17/2008 04:00	1.199	8.41	43.790	1.1	82.6	
1/17/2008 04:15	1.200	8.47	43.980	1.1	82.6	
1/17/2008 04:30	1.196	8.34	43.380	1.1	83.1	
1/17/2008 04:45	1.193	8.20	42.450	1.1	83.9	
1/17/2008 05:00	1.193	7.38	39.210	1.4	84.9	
1/17/2008 05:15	1.193	7.58	40.800	1.1	85.4	
1/17/2008 05:30	1.189	8.06	42.100	1.1	84.2	
1/17/2008 05:45	1.189	8.32	43.300	1.1	83.0	
1/17/2008 06:00	1.192	8.39	43.580	1.1	83.0	
1/17/2008 06:15	1.193	8.44	43.880	1.0	82.5	
1/17/2008 06:30	1.194	8.45	43.950	1.0	82.3	
1/17/2008 06:45	1.192	7.76	40.840	1.3	85.0	
1/17/2008 07:00	1.188	7.44	38.710	1.5	86.1	
1/17/2008 07:15	1.185	7.32	38.260	1.5	87.4	
1/17/2008 07:30	1.188	7.26	37.990	1.5	86.2	
1/17/2008 07:45	1.186	7.80	40.520	1.3	85.4	
1/17/2008 08:00	1.185	7.44	39.200	1.4	84.9	
1/17/2008 08:15	1.183	7.29	38.100	1.4	86.7	
1/17/2008 08:30	1.183	8.34	43.300	1.0	83.2	
1/17/2008 08:45	1.184	8.39	43.630	1.1	82.9	

1/17/2008 09:00	1.187	8.29	43.210	1.1	83.0	
1/17/2008 09:15	1.189	8.49	44.030	1.0	82.5	
1/17/2008 09:30	1.189	8.49	44.050	1.0	82.5	
1/17/2008 09:45	1.188	8.47	44.000	1.0	82.5	
1/17/2008 10:00	1.189	8.46	43.920	1.0	82.7	
1/17/2008 10:15	1.188	7.48	38.060	1.6	84.9	
1/17/2008 10:30	1.186	7.28	36.860	1.9	86.7	
1/17/2008 10:45	1.189	7.34	36.430	2.7	87.7	
1/17/2008 11:00	1.186	7.98	41.110	2.2	84.0	
1/17/2008 11:15	1.184	7.82	40.230	4.8	86.0	
1/17/2008 11:30	1.180	8.04	41.760	1.7	83.9	
1/17/2008 11:45	1.182	7.79	39.830	4.5	85.2	
1/17/2008 12:00	1.182	8.03	41.350	4.5	84.2	
1/17/2008 12:15	1.181	8.05	41.490	11.7	85.6	
1/17/2008 12:30	1.179	8.27	42.680	13.0	83.5	
1/17/2008 12:45	1.180	7.43	37.360	2.6	87.4	
1/17/2008 13:00	1.182	7.64	38.560	4.6	87.0	
1/17/2008 13:15	1.178	7.98	40.750	8.2	85.8	
1/17/2008 13:30	1.177	7.76	39.420	6.6	85.9	
1/17/2008 13:45	1.177	8.28	42.540	5.8	83.0	
1/17/2008 14:00	1.176	8.29	42.890	9.5	83.0	
1/17/2008 14:15	1.175	8.27	42.660	6.2	82.7	
1/17/2008 14:30	1.177	8.52	44.140	1.6	82.0	
1/17/2008 14:45	1.180	8.49	43.970	1.5	82.1	
1/17/2008 15:00	1.178	7.75	39.050	9.8	88.3	
1/17/2008 15:15	1.179	7.77	39.470	9.5	87.5	
1/17/2008 15:30	1.177	8.34	43.070	3.9	83.2	
1/17/2008 15:45	1.177	7.49	37.720	4.3	86.4	
1/17/2008 16:00	1.179	7.27	35.960	4.6	90.1	
1/17/2008 16:15	1.177	7.46	37.880	3.9	87.6	
1/17/2008 16:30	1.176	8.08	41.020	5.4	83.5	
1/17/2008 16:45	1.174	7.82	39.870	7.5	86.3	
1/17/2008 17:00	1.178	8.18	41.970	12.5	84.5	
1/17/2008 17:15	1.178	8.19	42.080	4.9	85.2	
1/17/2008 17:30	1.183	7.26	34.760	5.2	89.1	
1/17/2008 17:45	1.182	7.44	35.530	1.8	88.5	
1/17/2008 18:00	1.181	7.46	36.060	1.7	88.1	
1/17/2008 18:15	1.180	7.67	38.150	3.0	87.2	
1/17/2008 18:30	1.176	8.20	42.190	4.8	84.0	
1/17/2008 18:45	1.178	8.33	43.070	4.1	83.5	
1/17/2008 19:00	1.181	8.39	43.450	2.5	83.1	
1/17/2008 19:15	1.181	8.01	40.420	1.3	85.7	
1/17/2008 19:30	1.180	8.09	41.190	2.0	85.1	
1/17/2008 19:45	1.180	7.96	40.040	1.4	86.0	
1/17/2008 20:00	1.184	7.90	39.590	1.4	86.1	
1/17/2008 20:15	1.181	7.83	39.180	1.8	86.5	
1/17/2008 20:30	1.182	8.00	40.520	1.7	85.5	
1/17/2008 20:45	1.184	8.00	40.550	1.6	85.5	
1/17/2008 21:00	1.185	8.22	42.230	1.6	84.0	
1/17/2008 21:15	1.183	8.29	42.760	1.3	83.7	
1/17/2008 21:30	1.187	8.28	42.630	1.4	83.8	
1/17/2008 21:45	1.185	8.20	42.060	1.8	84.2	

1/17/2008 22:00	1.183	8.20	42.070	1.6	84.1	
1/17/2008 22:15	1.181	8.32	42.980	1.6	83.1	
1/17/2008 22:30	1.186	8.25	42.470	1.4	83.8	
1/17/2008 22:45	1.187	8.21	42.130	1.5	83.6	
1/17/2008 23:00	1.187	8.33	43.020	1.3	83.5	
1/17/2008 23:15	1.182	8.07	41.380	1.9	84.2	
1/17/2008 23:30	1.186	8.32	43.010	1.3	83.4	
1/17/2008 23:45	1.187	8.23	42.330	1.3	84.0	

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King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 34
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS.
TIME WORK STOPPED: 1530HRS.

Date

Year	Month	Day	Inspector
2008	January	17	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
		X		Light showers

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC/Hurlen continued capping with the "Pam Tay" out of Barge "KP-1" with the first load of Base Fill (sand blend) for this project. ACC made spot deposits, both upslope and down slope, in the area S. of sta. 2+00. The Contractor changed their backfill BMPs several times during the course of the afternoon (see Section **Problems Encountered & Resolutions:** below for further details). This KC observer was relieved, at 1530hrs., by I. Khilfeh, KC.
Miscellaneous:	N/a
Safety/Accidents:	ACC worked at DMC this day. They reported no accidents or incidents.
Problems Encountered & Resolutions:	Turbidity spikes and upward trending began shortly after the tide turned at 1053hrs. (Outgoing tide until 1827hrs., -0.5±'), and continued until this observer was relieved this afternoon by I. Khilfeh. Contractor had two (2) one hour periods in excess of Permit prior to 1530hrs. ACC was notified just after the first two marginally high spikes were recorded just prior to ACC breaking for Lunch (1215hrs). ACC changed their placement BMPs after the Denny buoy recorded the first Turbidity hour in excess of 5 NTU over background, and once more after the second excess was recorded, just prior to this observer being relieved by I. Khilfeh. Kept the Proj. Rep. (Brunke), ACC (Locke), and the KC Lab (Kruger) informed by phone of the trending, until relieved.
Test Conducted:	A.) Two grab samples were taken at the request of the Proj. Rep. by the KC Lab this afternoon in order to confirm Denny buoy readings (re: B. Kruger, KC Lab). Lab had just installed a new Top Sonde yesterday (re: Kruger E/M, 1-16-08) and taken a grab sample. B.) R. Pickering, and one other from KC Consultant, Anchor, also took grab samples of bottom in-place sediments N. and S. of the dredge site. Results of KC Lab checks as follows: Grab sample - Turb. 5.63± NTU; Denny buoy – 4.3± NTU.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None.
Manpower	"Pam Tay": five (5) crew persons
Visitors to Site	R. Pickering and one other, Anchor
Equipment Used	"Pam Tay", w/crane/skip box, Cat 938F Loader, Barge "KP-1"

Attachments: two pages, Denny buoy Daily Log

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (1-17-08)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 35
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 4:30PM

Date

Year	Month	Day	Inspector
2008	January	18	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 6:00am-12:00pm: The contractor at the off loading facility cleaning barge KP-2, so the can use it for import. Approximately 11:30am: I got a call from the contractor to go to the off loading facility to inspect KP-2 cleaning. Approximately: 12:00pm-12:30pm: Inspection of the cleaning of barge KP-2. Cleaning was acceptable. Approximately: 1:00pm: barge KP-1 arrived the site full with imported materials (Base Fill). The tug boats Jennifer and Diane brought it into the site. Approximately: 1:00pm-1:15pm: Tug Boat Jennifer set the barge in place next to the derrick so they can start unloading the base backfill. Approximately: 1:15pm-3:45pm: placing the imported base backfill. **NOTE** Approximately 3:35pm- got a reading of high turbidity NTU=21.1. The contractor was informed at once. The contractor decided to stop working for the day. See the attached NTU print out from the Denny Instrument reading. They stop placing materials at about 3:45pm. Approximately 5:00pm, the crew left Total actual backfill from 7:00am to 5:00pm was approximately 2.5 hours Keith Nordlund daily did not work today. ACC had a crew of 5(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they placed a total of 925 tons of sand for the whole day. See the contractor daily report for locations and depth of the backfill.

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 1/22/08 (Date)

Start date: 1/18/2008 End date: 1/18/2008

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Denny Way User Defined

	Min: 1.182 Max: 1.230 Mean: 1.200 St.dev: 0.012	Min: 7.29 Max: 8.50 Mean: 8.10 St.dev: 0.29	Min: 38.200 Max: 44.530 Mean: 42.266 St.dev: 1.649	Min: 1.0 Max: 31.6 Mean: 2.5 St.dev: 3.9	Min: 82.0 Max: 89.7 Mean: 84.7 St.dev: 1.9	Min: 7.9 Max: 9. Mean: 8 St.dev:
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downt Denny 000169 ODO C [mg/L]**
1/18/2008 00:00	1.189	8.26	42.490	1.3	83.8	
1/18/2008 00:15	1.190	8.32	43.000	1.3	83.3	
1/18/2008 00:30	1.182	8.38	43.430	1.3	83.0	
1/18/2008 00:45	1.189	8.25	42.540	1.2	83.8	
1/18/2008 01:00	1.188	8.25	42.460	1.2	83.8	
1/18/2008 01:15	1.184	8.32	42.990	1.5	83.2	
1/18/2008 01:30	1.184	8.31	43.000	1.3	83.4	
1/18/2008 01:45	1.188	8.36	43.490	1.5	82.7	
1/18/2008 02:00	1.188	8.42	43.840	1.5	82.4	
1/18/2008 02:15	1.187	8.21	43.060	1.4	83.4	
1/18/2008 02:30	1.189	8.29	43.030	1.4	83.4	
1/18/2008 02:45	1.189	8.33	43.170	1.4	83.3	
1/18/2008 03:00	1.191	8.24	42.740	1.3	83.8	
1/18/2008 03:15	1.190	8.26	42.790	1.2	83.8	
1/18/2008 03:30	1.190	8.01	42.430	1.4	84.6	
1/18/2008 03:45	1.190	8.20	42.490	1.3	84.1	
1/18/2008 04:00	1.189	8.21	42.700	1.3	83.8	
1/18/2008 04:15	1.189	8.20	42.670	1.2	83.9	
1/18/2008 04:30	1.186	8.36	43.670	1.4	82.4	
1/18/2008 04:45	1.193	8.46	44.200	1.1	82.6	
1/18/2008 05:00	1.188	8.48	44.370	1.1	82.5	
1/18/2008 05:15	1.191	8.49	44.480	1.0	82.5	
1/18/2008 05:30	1.192	8.50	44.530	1.1	82.0	
1/18/2008 05:45	1.193	8.06	42.570	1.3	84.1	
1/18/2008 06:00	1.189	8.13	42.990	1.3	84.1	
1/18/2008 06:15	1.189	8.18	43.050	1.4	83.2	
1/18/2008 06:30	1.193	8.20	43.430	1.3	83.1	
1/18/2008 06:45	1.187	8.19	43.180	1.2	83.6	
1/18/2008 07:00	1.192	8.29	43.420	1.2	83.1	
1/18/2008 07:15	1.192	8.35	43.640	1.2	83.1	
1/18/2008 07:30	1.189	8.34	43.700	1.2	83.0	
1/18/2008 07:45	1.195	8.39	44.080	1.2	82.3	
1/18/2008 08:00	1.191	8.44	44.280	1.2	82.3	
1/18/2008 08:15	1.191	8.44	44.310	1.1	82.3	
1/18/2008 08:30	1.189	8.42	44.310	1.2	82.4	
1/18/2008 08:45	1.192	8.32	43.980	1.3	82.9	

1/18/2008 09:00	1.193	8.39	44.140	1.2	82.5	
1/18/2008 09:15	1.197	8.42	44.210	1.2	82.5	
1/18/2008 09:30	1.196	8.37	44.160	1.2	82.7	
1/18/2008 09:45	1.199	8.41	44.330	1.2	82.6	
1/18/2008 10:00	1.198	8.23	43.620	1.2	83.4	
1/18/2008 10:15	1.194	8.20	43.410	1.2	83.6	
1/18/2008 10:30	1.194	8.12	43.070	1.2	84.0	
1/18/2008 10:45	1.196	8.05	42.740	1.2	84.8	
1/18/2008 11:00	1.192	7.95	41.730	1.2	84.9	
1/18/2008 11:15	1.191	7.95	41.620	1.2	85.2	
1/18/2008 11:30	1.230	7.85	40.610	1.2	85.3	
1/18/2008 11:45	1.227	7.76	39.860	1.3	85.8	
1/18/2008 12:00	1.226	7.91	41.110	1.2	85.4	
1/18/2008 12:15	1.226	7.76	39.970	1.3	85.8	
1/18/2008 12:30	1.224	7.92	41.220	1.3	86.2	
1/18/2008 12:45	1.224	7.83	40.270	1.2	86.5	
1/18/2008 13:00	1.221	7.93	41.270	1.2	85.7	
1/18/2008 13:15	1.222	8.10	42.580	1.1	85.0	
1/18/2008 13:30	1.221	8.06	42.130	1.1	85.3	
1/18/2008 13:45	1.217	8.04	41.450	1.2	84.7	
1/18/2008 14:00	1.216	8.17	42.850	1.1	84.6	
1/18/2008 14:15	1.215	8.21	43.170	1.1	84.4	
1/18/2008 14:30	1.217	8.09	42.220	1.1	84.7	
1/18/2008 14:45	1.215	8.26	43.340	1.1	84.0	
1/18/2008 15:00	1.217	8.30	43.520	1.1	83.6	
1/18/2008 15:15	1.219	8.29	43.430	1.6	83.6	
1/18/2008 15:30	1.210	8.28	43.390	21.2	83.9	— Contractor was informed
1/18/2008 15:45	1.211	8.31	43.520	5.0	83.5	— Contractor Stop the work
1/18/2008 16:00	1.210	8.27	43.250	8.5	83.8	
1/18/2008 16:15	1.208	8.26	43.170	31.6	83.9	
1/18/2008 16:30	1.205	7.63	38.850	4.9	89.3	
1/18/2008 16:45	1.205	7.71	39.560	6.8	88.0	
1/18/2008 17:00	1.205	7.66	39.300	2.2	87.9	
1/18/2008 17:15	1.201	7.76	39.940	5.2	88.3	
1/18/2008 17:30	1.205	7.38	38.550	1.4	89.7	
1/18/2008 17:45	1.207	7.62	39.600	5.3	87.5	
1/18/2008 18:00	1.205	7.94	41.350	6.6	87.4	
1/18/2008 18:15	1.201	7.86	40.860	6.9	88.1	
1/18/2008 18:30	1.199	8.00	41.670	6.8	86.3	
1/18/2008 18:45	1.199	8.33	43.710	2.3	83.4	
1/18/2008 19:00	1.197	7.70	39.770	4.0	88.2	
1/18/2008 19:15	1.200	7.69	39.520	1.3	88.0	
1/18/2008 19:30	1.205	7.85	40.510	3.7	87.5	
1/18/2008 19:45	1.204	8.05	41.880	1.9	85.6	
1/18/2008 20:00	1.202	8.11	42.300	2.5	85.0	
1/18/2008 20:15	1.200	8.30	43.620	3.9	83.4	
1/18/2008 20:30	1.199	8.35	44.010	2.8	82.9	
1/18/2008 20:45	1.198	8.28	43.280	4.7	82.9	
1/18/2008 21:00	1.200	8.01	41.870	4.6	85.5	
1/18/2008 21:15	1.200	8.15	42.710	4.9	84.2	
1/18/2008 21:30	1.200	7.90	41.290	1.6	86.3	
1/18/2008 21:45	1.201	7.76	40.540	2.4	86.9	

1/18/2008 22:00	1.204	7.74	40.100	1.4	87.0	
1/18/2008 22:15	1.202	7.48	39.390	1.5	87.9	
1/18/2008 22:30	1.201	7.56	39.600	1.6	87.8	
1/18/2008 22:45	1.201	7.69	40.090	1.6	87.2	
1/18/2008 23:00	1.198	7.71	40.200	1.9	87.1	
1/18/2008 23:15	1.196	7.29	38.340	2.2	88.3	
1/18/2008 23:30	1.192	7.81	41.100	2.1	86.6	
1/18/2008 23:45	1.191	7.40	38.200	1.8	87.8	

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King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 36
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	January	21	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X				

Weather

Clear	PC	Overcast	Fog	Rain
X				

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:30am: The tug boat Jennifer H. got the barge KP-1 and the derrick in position. Approximately 7:30am-9:00am: The contractor placed imported backfill base materials Approximately: 9:00am-9:15am: No activities Approximately: 9:15am: The contractor continued placing imported base fill materials. Total actual backfill from 7:00am to 11:00am was approximately 3.5 hours See Keith Nordlund daily report for the rest of the day work. ACC had a crew of 5(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they placed a total of 1125 tons of sand for the whole day. See the contractor daily report for locations and depth of the backfill.
Safety/Accidents:	None
Problems Encountered & Resolutions:	No turbidity variances were noticed all day.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh (Date) 1/23/08

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 37
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	January	22	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
			X			

Weather

Clear	PC	Overcast	Fog	Rain
X				

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:30am: The tug boat Jennifer H. got the barge KP-2 and the derrick in position. Approximately 7:30am-8:55am: The contractor placed imported backfill base materials Approximately: 8:50am. The contractor was contacted to stop the work or change the way they were placing the materials, because the NTU went up to 27.7. Approximately: 8:55am-9:05am: The contractors stop the work and moved the barge and the derrick to a different location. Approximately: 9:05am-11:10am: The contractor continued placing imported base fill materials. Approximately: 11:10am-11:20am: The contractor moved the derrick and the barge to a different place. Approximately: 11:20am- 12:00pm: the contractor continued placing imported base fill. Total actual backfill from 7:00am to 12:00pm was approximately 4 hours See Keith Nordlund daily report for the rest of the day work. ACC had a crew of 5(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they placed a total of 2082 tons of sand for the whole day. See the contractor daily report for locations and depth of the backfill.
Safety/Accidents:	None
Problems Encountered & Resolutions:	Turbidity variances were noticed at about 8:45am to be NTU=27.7. The contractor stopped the work and moved to a different location to place the imported base backfill.

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 1/24/08 (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 38
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	January	23	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
X				

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:30am: The tug boats Jennifer H. and Kirsten H. got the barge KP-1 and the derrick in position. Approximately 7:30am : the loader on the barge broke down Approximately: 9:20am. A machinery service truck "Wingfeet"came to the shoreline through the park to fix the loader. The contractor carried the loader by using the crane to the shoreline so the can do the quick fix to the loader. Approximately: 11:30am I talked with the superintendent "Marty" that it is taking them too long to be at the shoreline to do the quick fix, and they ought to take the loader to the shop to fix it. I informed him that they do not have any permission to do any type of work at the shoreline. Total actual backfill from 7:00am to 12:00pm was none. See Keith Nordlund daily report for the rest of the day work. ACC had a crew of 5(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they placed a total of 2070tons of sand for the whole day. See the contractor daily report for locations and depth of the backfill.
Safety/Accidents:	None
Problems Encountered & Resolutions:	No turbidity variances were noticed this morning.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 1/24/08 (Date)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 37
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS.
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2008	January	23	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
X				

Temperature

10-32	32-55	55-70	70-85	85+
am	pm			

Construction Activities:	ACC/Hurlen continued Base Fill (sand blend) capping with the "Pam Tay" out of Barge "KP-1" this shift after repairing their 938F Loader on the beach, and on Park property (a violation of Specs.) after 1442hrs. ACC continued making skip deposits, primarily down slope, in areas S. of sta. 2+00. Capping work ended for the day at hrs. The "Diane H" returned to the site at app. 1445hrs. with a full load of base fill material on the "KP-2". ACC completed emptying Barge "KP-1" at app. 1945hrs.
Miscellaneous:	ACC/Hurlen cont. capping work using spuds, and offshore cable anchors. Assist Tug "Kirsten H" was alongside of the "Pam Tay" at the start of the shift, and was later replaced by the "Jennifer H". Total hours capping this day: 5
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. No accidents or incidents were reported by the Contractor this Afternoon Shift.
Problems Encountered & Resolutions:	ACC/Hurlen repaired their 938F Loader on the beach, and on Park property (a violation of Specs.). ACC maintained they only moved the Loader to the beach when they couldn't fix it themselves, on the Barge, and had to call in a repair specialist whose equipment trucks require land staging (re: M. Locke, ACC). A second mechanical problem occurred aboard the "Pam Tay" with the crane shieves and the GPS after 1730hrs. It was not fixed until 1820hrs., at which time capping resumed.
Test Conducted:	See attached Denny Buoy Daily Record. At 1850hrs. phoned M. Locke, ACC, with first recorded high Turbidity spike of the afternoon, 7.2±NTU recorded at the Denny buoy. The tide was outgoing toward an eventual -1.8'
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None.
Manpower	ACC: "Pam Tay", five (5) crew persons; Assist Tugs: "Kirsten H", two (2) persons, "Jennifer H", two (2) persons, "Diane H", two persons
Visitors to Site	R. Brunke, KC Proj. Rep.
Equipment Used	"Pam Tay" w/American 9310 Crane & skip box, Cat 938F Loader, three (3) work skiffs, , one P/U Truck, rental Barges "KP-1" and "KP-2"; Assist Tugs "Kirsten H", "Jennifer H" and "Diane H"

Attachments: two (2) pages, Denny buoy Daily Log, three (3) photos

Randy Brunke, Project Representative (Date)

K. Nordlund, 1-23-08
K. Nordlund, CMIII (1-23-08)

Start date: 1/23/2008 End date: 1/23/2008

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Denny Way User Defined

	Min: 0.996 Max: 1.158 Mean: 1.094 St.dev: 0.056	Min: 6.62 Max: 8.27 Mean: 7.73 St.dev: 0.41	Min: 39.810 Max: 44.930 Mean: 43.228 St.dev: 1.443	Min: 1.0 Max: 7.2 Mean: 1.6 St.dev: 1.0	Min: 82.3 Max: 87.0 Mean: 85.1 St.dev: 1.1	Min: 8.04 Max: 9.00 Mean: 8.48 St.dev: 0.22
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
1/23/2008 00:00	1.155	7.74	43.270	1.2	85.5	8.51
1/23/2008 00:15	1.158	7.76	43.400	1.2	85.4	8.49
1/23/2008 00:30	1.158	7.64	42.660	1.3	85.5	8.55
1/23/2008 00:45	1.157	7.01	40.890	3.2	86.3	8.83
1/23/2008 01:00	1.155	7.20	40.300	1.4	85.9	8.78
1/23/2008 01:15	1.151	7.14	41.380	3.5	85.9	8.75
1/23/2008 01:30	1.153	7.22	41.280	2.8	85.9	8.74
1/23/2008 01:45	1.150	7.36	41.870	2.7	85.5	8.65
1/23/2008 02:00	1.151	7.18	41.150	1.7	85.9	8.75
1/23/2008 02:15	1.154	7.51	42.050	1.5	85.5	8.61
1/23/2008 02:30	1.153	6.93	40.470	2.1	87.0	8.94
1/23/2008 02:45	1.156	6.62	39.810	2.0	86.2	8.96
1/23/2008 03:00	1.150	7.58	42.660	1.7	85.4	8.56
1/23/2008 03:15	1.152	7.65	42.980	1.6	84.9	8.49
1/23/2008 03:30	1.152	7.71	43.130	1.4	84.4	8.42
1/23/2008 03:45	1.151	7.24	40.070	1.5	85.2	8.71
1/23/2008 04:00	1.152	7.43	40.770	1.4	85.3	8.66
1/23/2008 04:15	1.151	7.43	40.820	1.5	84.9	8.62
1/23/2008 04:30	1.149	7.60	41.430	1.4	84.7	8.53
1/23/2008 04:45	1.148	7.65	41.770	1.4	84.7	8.51
1/23/2008 05:00	1.151	7.70	42.430	1.3	84.8	8.48
1/23/2008 05:15	1.146	7.70	42.580	1.3	84.8	8.47
1/23/2008 05:30	1.148	7.69	42.880	1.4	84.8	8.47
1/23/2008 05:45	1.145	7.70	42.910	1.5	84.8	8.46
1/23/2008 06:00	1.144	7.70	42.670	1.3	84.9	8.49
1/23/2008 06:15	1.144	7.65	42.430	1.4	84.8	8.49
1/23/2008 06:30	1.143	7.79	43.690	1.3	84.6	8.40
1/23/2008 06:45	1.137	7.90	44.090	1.2	84.2	8.32
1/23/2008 07:00	1.133	7.68	43.120	1.3	84.2	8.41
1/23/2008 07:15	1.136	6.96	41.800	1.4	85.4	8.72
1/23/2008 07:30	1.139	7.42	42.950	1.3	85.1	8.55
1/23/2008 07:45	1.134	8.08	44.470	1.1	83.6	8.22
1/23/2008 08:00	1.136	8.11	44.560	1.3	83.5	8.19
1/23/2008 08:15	1.135	7.80	43.780	1.3	83.9	8.32
1/23/2008 08:30	1.134	7.75	43.540	1.3	84.0	8.36
1/23/2008 08:45	1.140	7.66	43.360	1.3	84.4	8.42
1/23/2008 09:00	1.139	7.64	43.430	1.3	84.0	8.38
1/23/2008 09:15	1.137	7.76	43.640	1.2	84.2	8.37
1/23/2008 09:30	1.134	7.97	44.180	1.2	83.8	8.27
1/23/2008 09:45	1.133	8.01	44.290	1.3	83.6	8.23

1/23/2008 10:00	1.138	8.11	44.540	1.2	83.4	8.19
1/23/2008 10:15	1.132	8.20	44.740	1.1	83.0	8.13
1/23/2008 10:30	1.129	8.22	44.770	1.3	82.9	8.10
1/23/2008 10:45	1.125	8.26	44.870	1.3	82.4	8.04
1/23/2008 11:00	1.121	8.26	44.910	1.2	82.4	8.05
1/23/2008 11:15	1.121	8.27	44.910	1.1	82.3	8.04
1/23/2008 11:30	1.117	8.26	44.920	1.2	82.7	8.07
1/23/2008 11:45	1.113	8.27	44.930	1.0	82.6	8.06
1/23/2008 12:00	1.102	8.10	44.520	1.1	84.6	8.31
1/23/2008 12:15	1.106	7.98	44.210	1.1	85.0	8.38
1/23/2008 12:30	1.104	7.91	43.990	1.1	85.5	8.45
1/23/2008 12:45	1.096	7.94	44.080	1.2	85.9	8.49
1/23/2008 13:00	1.095	7.98	44.140	1.1	85.5	8.43
1/23/2008 13:15	1.092	8.05	44.260	1.1	84.6	8.32
1/23/2008 13:30	1.087	8.06	44.280	1.2	84.7	8.33
1/23/2008 13:45	1.085	8.07	44.250	1.1	84.9	8.35
1/23/2008 14:00	1.084	8.10	44.360	1.2	84.5	8.30
1/23/2008 14:15	1.081	7.97	44.110	1.0	86.7	8.56
1/23/2008 14:30	1.078	8.11	44.340	1.2	85.1	8.36
1/23/2008 14:45	1.077	8.15	44.510	1.2	84.1	8.24
1/23/2008 15:00	1.074	8.13	44.390	1.1	84.9	8.34
1/23/2008 15:15	1.074	8.12	44.400	1.2	85.0	8.34
1/23/2008 15:30	1.066	8.17	44.570	1.2	84.1	8.24
1/23/2008 15:45	1.066	8.02	44.270	1.1	86.1	8.47
1/23/2008 16:00	1.061	8.06	44.360	1.0	85.4	8.39
1/23/2008 16:15	1.065	7.91	44.150	1.1	86.1	8.50
1/23/2008 16:30	1.063	8.09	44.410	1.2	85.2	8.37
1/23/2008 16:45	1.063	7.89	44.210	1.0	86.6	8.56
1/23/2008 17:00	1.054	7.92	44.160	1.1	86.4	8.53
1/23/2008 17:15	1.050	8.00	44.250	1.1	85.6	8.43
1/23/2008 17:30	1.047	7.98	44.260	1.1	85.5	8.42
1/23/2008 17:45	1.043	7.94	44.280	1.1	85.9	8.47
1/23/2008 18:00	1.045	7.97	44.300	1.0	86.1	8.48
1/23/2008 18:15	1.040	7.91	44.170	2.2	86.7	8.56
1/23/2008 18:30	1.040	7.90	44.000	2.9	86.6	8.56
1/23/2008 18:45	1.032	7.96	44.120	7.2	86.5	8.53
1/23/2008 19:00	1.030	7.90	44.010	3.9	86.2	8.52
1/23/2008 19:15	1.028	8.03	44.180	5.4	85.3	8.40
1/23/2008 19:30	1.024	8.02	44.250	5.6	85.2	8.39
1/23/2008 19:45	1.021	8.00	44.170	5.0	85.2	8.40
1/23/2008 20:00	1.016	7.85	43.860	2.0	85.6	8.48
1/23/2008 20:15	1.017	7.79	43.780	1.6	85.8	8.52
1/23/2008 20:30	1.016	7.97	44.050	2.1	85.1	8.40
1/23/2008 20:45	1.012	7.88	43.940	2.1	85.4	8.45
1/23/2008 21:00	1.010	7.76	43.710	1.3	85.4	8.48
1/23/2008 21:15	1.008	7.73	43.590	1.3	85.7	8.52
1/23/2008 21:30	1.005	7.75	43.680	2.0	85.8	8.52
1/23/2008 21:45	1.002	7.74	43.730	2.6	85.8	8.53
1/23/2008 22:00	1.000	7.31	42.610	1.3	86.5	8.73
1/23/2008 22:15	0.998	6.86	40.850	1.3	86.3	8.87
1/23/2008 22:30	0.997	6.76	40.770	1.3	86.9	8.96
1/23/2008 22:45	1.001	6.86	40.180	1.3	86.7	8.95
1/23/2008 23:00	0.997	6.67	40.240	1.6	86.9	9.00
1/23/2008 23:15	0.997	6.91	40.270	1.3	86.5	8.91
1/23/2008 23:30	0.996	6.93	40.360	1.5	86.5	8.90
1/23/2008 23:45	0.998	6.98	40.780	1.4	86.6	8.88

Afternoon Shift sampling period

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Date

Year	Month	Day	Inspector
2008	January	24	Iha Khilfeh

Day of the Week						
Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather				
Clear	PC	Overcast	Fog	Rain
	X			

Temperature				
10-32	32-55	55-70	70-85	85+
	X			

Inspector's Daily Construction Report

REPORT NUMBER: 39
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Construction Activities:	Approximately: 7:00am-7:15am: The tug boat Jennifer H. got the barge KP-2 and the derrick in position. Approximately 7:15am-10:00am: The contractor placed imported backfill base materials Approximately: 10:00am-10:15am: The contractors stop the work and moved the barge and the derrick to a different location. Approximately: 10:15am-11:45am: The contractor continued placing imported base fill materials. Approximately: 11:35am, NTU=12.1, the contractor was contacted and informed that the NTU went up. The contractor moved the barge to a different location then went to lunch. Attached a copy of the NTU reading for the morning period. Total actual backfill from 7:00am to 12:00pm was approximately 4 hours See Keith Nordlund daily report for the rest of the day work. ACC had a crew of 5(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they placed a total of 1958 tons of sand for the whole day. See the contractor daily report for locations and depth of the backfill.
Safety/Accidents:	None
Problems Encountered & Resolutions:	Turbidity variances were noticed at about 11:30am to be NTU=12.1. The contractor stopped the work and moved to a different location to place the imported base backfill. Attached is a copy of the NTU reading for the morning period.
Test Conducted:	
Work Rejected:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 1/25/08 (Date)

Start date: 1/24/2008 End date: 1/24/2008

Submit Back Export as .CSV

Denny Way User Defined

	Min: 0.941 Max: 1.023 Mean: 0.967 St.dev: 0.023	Min: 6.31 Max: 8.21 Mean: 7.30 St.dev: 0.61	Min: 39.720 Max: 44.810 Mean: 42.273 St.dev: 1.641	Min: 1.2 Max: 19.9 Mean: 2.6 St.dev: 3.7	Min: 83.2 Max: 89.1 Mean: 86.5 St.dev: 1.3	Min: 8.1 Max: 9. Mean: 8 St.dev:
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downto Denny 000169 ODO C [mg/L]**
1/24/2008 00:00	0.994	7.16	41.510	1.5	86.2	
1/24/2008 00:15	0.987	6.94	40.650	1.5	86.6	
1/24/2008 00:30	0.987	6.97	40.740	1.5	86.6	
1/24/2008 00:45	0.989	6.67	40.060	1.5	86.9	
1/24/2008 01:00	0.988	6.67	40.070	1.4	87.1	
1/24/2008 01:15	0.983	6.65	40.150	1.4	87.1	
1/24/2008 01:30	0.982	6.63	40.120	1.4	87.1	
1/24/2008 01:45	0.978	6.56	40.150	1.7	87.3	
1/24/2008 02:00	0.979	6.49	40.170	2.3	87.3	
1/24/2008 02:15	0.972	6.47	40.190	2.4	87.3	
1/24/2008 02:30	0.971	6.49	40.210	2.3	87.3	
1/24/2008 02:45	0.971	6.48	40.230	2.0	87.4	
1/24/2008 03:00	0.968	6.54	40.240	1.6	87.2	
1/24/2008 03:15	0.963	6.51	40.250	1.5	87.3	
1/24/2008 03:30	0.965	6.52	40.270	1.5	87.3	
1/24/2008 03:45	0.962	6.40	40.150	1.4	87.3	
1/24/2008 04:00	0.959	6.45	40.130	1.4	87.3	
1/24/2008 04:15	0.958	6.42	40.130	1.4	87.4	
1/24/2008 04:30	0.954	6.40	40.140	1.4	87.3	
1/24/2008 04:45	0.951	6.51	40.260	1.4	87.4	
1/24/2008 05:00	0.951	6.58	40.350	1.4	87.2	
1/24/2008 05:15	0.947	6.39	39.900	1.4	87.2	
1/24/2008 05:30	0.949	6.33	39.940	1.4	87.1	
1/24/2008 05:45	0.946	6.34	39.910	1.4	87.2	
1/24/2008 06:00	0.949	6.34	39.890	1.4	87.2	
1/24/2008 06:15	0.943	6.35	39.810	1.4	87.1	
1/24/2008 06:30	0.942	6.41	39.720	1.5	87.0	
1/24/2008 06:45	0.943	6.33	39.720	1.5	86.9	
1/24/2008 07:00	0.942	6.31	39.770	1.5	87.0	
1/24/2008 07:15	0.942	6.41	40.120	1.4	86.8	
1/24/2008 07:30	0.942	7.23	42.140	1.2	86.0	
1/24/2008 07:45	0.941	7.46	42.680	1.2	85.3	
1/24/2008 08:00	0.947	7.71	43.410	1.2	84.7	
1/24/2008 08:15	0.946	7.84	43.840	1.3	84.5	
1/24/2008 08:30	0.946	7.96	44.110	1.2	84.2	
1/24/2008 08:45	0.950	7.80	42.420	1.2	84.2	

1/24/2008 09:00	0.947	8.05	44.390	1.2	83.8	
1/24/2008 09:15	0.952	8.12	44.550	1.2	83.7	
1/24/2008 09:30	0.949	8.13	44.590	1.2	83.6	
1/24/2008 09:45	0.953	7.80	43.520	1.2	86.4	
1/24/2008 10:00	0.953	7.79	43.820	1.4	85.8	
1/24/2008 10:15	0.953	8.15	44.660	1.3	83.5	
1/24/2008 10:30	0.956	8.14	44.660	1.8	83.7	
1/24/2008 10:45	0.957	8.20	44.810	1.3	83.2	
1/24/2008 11:00	0.960	8.15	44.690	1.8	83.5	
1/24/2008 11:15	0.955	8.18	44.750	2.6	83.3	
1/24/2008 11:30	0.955	8.18	44.780	12.1	83.7	
1/24/2008 11:45	0.954	8.16	44.730	14.1	84.0	
1/24/2008 12:00	0.950	8.15	44.710	19.7	84.7	
1/24/2008 12:15	0.949	8.18	44.760	19.9	84.3	
1/24/2008 12:30	0.946	8.21	44.800	19.3	84.3	
1/24/2008 12:45	0.945	7.84	43.830	1.2	85.3	
1/24/2008 13:00	0.948	7.36	42.260	1.2	87.0	
1/24/2008 13:15	0.945	7.35	42.430	1.5	87.2	
1/24/2008 13:30	0.942	7.52	42.920	1.6	86.9	
1/24/2008 13:45	0.946	7.45	42.690	1.7	87.3	
1/24/2008 14:00	0.941	7.30	41.710	2.1	87.5	
1/24/2008 14:15	0.946	7.31	41.930	1.8	87.6	
1/24/2008 14:30	0.945	7.55	42.790	2.1	87.8	
1/24/2008 14:45	0.945	7.67	43.150	5.6	87.0	
1/24/2008 15:00	0.950	7.45	42.300	3.5	88.3	
1/24/2008 15:15	0.948	7.81	43.520	7.7	86.1	
1/24/2008 15:30	0.949	7.91	43.920	7.6	85.8	
1/24/2008 15:45	0.951	7.78	43.400	4.5	87.3	
1/24/2008 16:00	0.955	8.05	44.330	5.9	85.3	
1/24/2008 16:15	0.955	7.39	42.260	2.3	89.1	
1/24/2008 16:30	0.956	7.38	42.200	1.8	88.0	
1/24/2008 16:45	0.953	7.62	42.750	1.6	87.3	
1/24/2008 17:00	0.959	7.61	42.720	1.7	87.3	
1/24/2008 17:15	0.966	7.46	42.440	1.7	87.7	
1/24/2008 17:30	0.970	7.58	42.630	1.8	87.6	
1/24/2008 17:45	0.973	7.60	42.760	1.6	87.5	
1/24/2008 18:00	0.976	7.56	42.750	1.4	87.8	
1/24/2008 18:15	0.980	7.43	42.560	1.7	87.9	
1/24/2008 18:30	0.980	7.65	43.090	1.4	87.2	
1/24/2008 18:45	0.986	7.56	42.880	1.6	87.7	
1/24/2008 19:00	0.985	7.65	43.070	1.5	86.6	
1/24/2008 19:15	0.988	8.03	44.260	1.7	84.7	
1/24/2008 19:30	0.990	7.74	43.510	1.6	86.1	
1/24/2008 19:45	0.985	7.70	43.560	1.5	86.4	
1/24/2008 20:00	0.993	7.54	43.230	1.6	85.8	
1/24/2008 20:15	0.990	7.46	43.010	1.7	86.9	
1/24/2008 20:30	0.995	7.80	43.760	1.8	85.9	
1/24/2008 20:45	0.997	7.54	43.180	1.9	86.6	
1/24/2008 21:00	1.000	7.47	43.080	1.6	86.8	
1/24/2008 21:15	0.999	7.33	42.740	1.6	86.9	
1/24/2008 21:30	1.006	7.27	42.510	1.4	87.2	
1/24/2008 21:45	1.005	7.33	42.560	1.5	87.1	

1/24/2008 22:00	1.006	7.34	42.520	1.5	87.3	
1/24/2008 22:15	1.009	7.20	42.490	1.4	87.3	
1/24/2008 22:30	1.011	7.28	42.510	1.5	87.2	
1/24/2008 22:45	1.018	7.11	42.370	1.6	87.4	
1/24/2008 23:00	1.020	7.20	42.470	1.6	87.3	
1/24/2008 23:15	1.019	7.41	42.800	1.7	87.0	
1/24/2008 23:30	1.022	6.89	41.330	1.3	87.0	
1/24/2008 23:45	1.023	6.81	41.230	1.5	86.6	

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King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 38
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS.
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2008	January	24	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
X				

Temperature

10-32	32-55	55-70	70-85	85+
am	pm			

Construction Activities:	ACC/Hurlen continued Base Fill (sand blend) capping using the "Pam Tay", out of Barge "KP-2". Capping work ended for the day at 1445hrs. The "KP-2" was empty by that time. The "Diane H" returned to the site at app. 1235hrs. with a full load of base fill material on the "KP-1", and assisted with the swapping of empty (KP-2) for full barge (KP-1). ACC completed this shift doing shipboard maintenance activities.
Miscellaneous:	ACC/Hurlen cont. capping work using spuds, and offshore cable anchors. . Assist Tug "Diane H" was on site most of this afternoon. Total hours capping this day: 6hrs., 15 min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. No accidents or incidents were reported by the Contractor this Afternoon Shift.
Problems Encountered & Resolutions:	No problems were observed by KC, nor reported this day by the Contractor.
Test Conducted:	See attached Denny Buoy Daily Record. At 1452hrs. phoned M. Locke, ACC, with first recorded high Turbidity spike of the afternoon, 5.2±NTU recorded at the Denny buoy. Within the next hour the Denny buoy had recorded an average in excess of Permit. ACC had, however, stopped capping work for the day, an our earlier (BMP).
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None.
Manpower	ACC: "Pam Tay", five (5) crew persons; Assist Tugs: "Diane H", two (2) persons, Jennifer H", two (2) persons
Visitors to Site	R. Brunke, KC Proj. Rep.
Equipment Used	"Pam Tay" w/American 9310 Crane & skip box, Cat 938F Loader, three (3) work skiffs, , one P/U Truck, rental Barges "KP-1" and "KP-2"; Assist Tugs "Jennifer H" and "Diane H"

Attachments: two (2) pages, Denny buoy Daily Log

Randy Brunke, Project Representative (Date)

K. Nordlund, CMHI (1-24-08)

Start date: 1/24/2008 End date: 1/24/2008

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Denny Way User Defined

	Min: 0.941 Max: 0.994 Mean: 0.956 St.dev: 0.014	Min: 6.31 Max: 8.21 Mean: 7.23 St.dev: 0.70	Min: 39.720 Max: 44.810 Mean: 42.051 St.dev: 1.886	Min: 1.2 Max: 19.9 Mean: 3.1 St.dev: 4.3	Min: 83.2 Max: 89.1 Mean: 86.2 St.dev: 1.5	Min: 8.14 Max: 9.12 Mean: 8.75 St.dev: 0.35
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
1/24/2008 00:00	0.994	7.16	41.510	1.5	86.2	8.77
1/24/2008 00:15	0.987	6.94	40.650	1.5	86.6	8.89
1/24/2008 00:30	0.987	6.97	40.740	1.5	86.6	8.88
1/24/2008 00:45	0.989	6.67	40.060	1.5	86.9	9.00
1/24/2008 01:00	0.988	6.67	40.070	1.4	87.1	9.03
1/24/2008 01:15	0.983	6.65	40.150	1.4	87.1	9.03
1/24/2008 01:30	0.982	6.63	40.120	1.4	87.1	9.04
1/24/2008 01:45	0.978	6.56	40.150	1.7	87.3	9.07
1/24/2008 02:00	0.979	6.49	40.170	2.3	87.3	9.09
1/24/2008 02:15	0.972	6.47	40.190	2.4	87.3	9.09
1/24/2008 02:30	0.971	6.49	40.210	2.3	87.3	9.08
1/24/2008 02:45	0.971	6.48	40.230	2.0	87.4	9.10
1/24/2008 03:00	0.968	6.54	40.240	1.6	87.2	9.06
1/24/2008 03:15	0.963	6.51	40.250	1.5	87.3	9.08
1/24/2008 03:30	0.965	6.52	40.270	1.5	87.3	9.07
1/24/2008 03:45	0.962	6.40	40.150	1.4	87.3	9.10
1/24/2008 04:00	0.959	6.45	40.130	1.4	87.3	9.10
1/24/2008 04:15	0.958	6.42	40.130	1.4	87.4	9.11
1/24/2008 04:30	0.954	6.40	40.140	1.4	87.3	9.11
1/24/2008 04:45	0.951	6.51	40.260	1.4	87.4	9.09
1/24/2008 05:00	0.951	6.58	40.350	1.4	87.2	9.05
1/24/2008 05:15	0.947	6.39	39.900	1.4	87.2	9.10
1/24/2008 05:30	0.949	6.33	39.940	1.4	87.1	9.11
1/24/2008 05:45	0.946	6.34	39.910	1.4	87.2	9.12
1/24/2008 06:00	0.949	6.34	39.890	1.4	87.2	9.12
1/24/2008 06:15	0.943	6.35	39.810	1.4	87.1	9.11
1/24/2008 06:30	0.942	6.41	39.720	1.5	87.0	9.09
1/24/2008 06:45	0.943	6.33	39.720	1.5	86.9	9.09
1/24/2008 07:00	0.942	6.31	39.770	1.5	87.0	9.10
1/24/2008 07:15	0.942	6.41	40.120	1.4	86.8	9.06
1/24/2008 07:30	0.942	7.23	42.140	1.2	86.0	8.71
1/24/2008 07:45	0.941	7.46	42.680	1.2	85.3	8.58
1/24/2008 08:00	0.947	7.71	43.410	1.2	84.7	8.44
1/24/2008 08:15	0.946	7.84	43.840	1.3	84.5	8.37
1/24/2008 08:30	0.946	7.96	44.110	1.2	84.2	8.31
1/24/2008 08:45	0.950	7.80	42.420	1.2	84.2	8.40
1/24/2008 09:00	0.947	8.05	44.390	1.2	83.8	8.24
1/24/2008 09:15	0.952	8.12	44.550	1.2	83.7	8.21
1/24/2008 09:30	0.949	8.13	44.590	1.2	83.6	8.20
1/24/2008 09:45	0.953	7.80	43.520	1.2	86.4	8.58

ACC Afternoon sampling Period

1/24/2008 10:00	0.953	7.79	43.820	1.4	85.8	8.52
1/24/2008 10:15	0.953	8.15	44.660	1.3	83.5	8.18
1/24/2008 10:30	0.956	8.14	44.660	1.8	83.7	8.21
1/24/2008 10:45	0.957	8.20	44.810	1.3	83.2	8.14
1/24/2008 11:00	0.960	8.15	44.690	1.8	83.5	8.18
1/24/2008 11:15	0.955	8.18	44.750	2.6	83.3	8.16
1/24/2008 11:30	0.955	8.18	44.780	* 12.1	83.7	8.19
1/24/2008 11:45	0.954	8.16	44.730	14.1	84.0	8.23
1/24/2008 12:00	0.950	8.15	44.710	19.7	84.7	8.30
1/24/2008 12:15	0.949	8.18	44.760	19.9	84.3	8.25
1/24/2008 12:30	0.946	8.21	44.800	19.3	84.3	8.24
1/24/2008 12:45	0.945	7.84	43.830	1.2	85.3	8.45
1/24/2008 13:00	0.948	7.36	42.260	1.2	87.0	8.78
1/24/2008 13:15	0.945	7.35	42.430	1.5	87.2	8.80
1/24/2008 13:30	0.942	7.52	42.920	1.6	86.9	8.71
1/24/2008 13:45	0.946	7.45	42.690	1.7	87.3	8.78
1/24/2008 14:00	0.941	7.30	41.710	2.1	87.5	8.87
1/24/2008 14:15	0.946	7.31	41.930	1.8	87.6	8.87
1/24/2008 14:30	0.945	7.55	42.790	2.1	87.8	8.80
1/24/2008 14:45	0.945	7.67	43.150	** 5.6	87.0	8.68
1/24/2008 15:00	0.950	7.45	42.300	3.5	88.3	8.90
1/24/2008 15:15	0.948	7.81	43.520	7.7	86.1	8.55
1/24/2008 15:30	0.949	7.91	43.920	7.6	85.8	8.48
1/24/2008 15:45	0.951	7.78	43.400	4.5	87.3	8.68
1/24/2008 16:00	0.955	8.05	44.330	5.9	85.3	8.39
1/24/2008 16:15	0.955	7.39	42.260	2.3	89.1	8.99
1/24/2008 16:30	0.956	7.38	42.200	1.8	88.0	8.88

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* 1st excess hour. Reported to ACC by I. Khilfeh (~~incoming~~ outgoing tide)

** 2nd excess hour, 5 NTU above background. Relayed to ACC by this observer. (~~incoming~~ outgoing tide period).

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 39
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS.
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2008	January	25	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
X				

Temperature

10-32	32-55	55-70	70-85	85+
am	pm			

Construction Activities:	ACC/Hurlen continued Base Fill (sand blend) capping using the "Pam Tay", out of Barge "KP-1". Capping work ended for the day at 1335hrs. The "KP-1" was empty by that time. The "Diane H" returned to the site at app. 1230hrs. with a full load of base fill material on the "KP-2". The "Jennifer H" assisted with the swapping of empty (KP-1) for full barge (KP-2) by 1445hrs. ACC completed this shift doing shipboard maintenance activities.
Miscellaneous:	ACC/Hurlen cont. capping work using spuds, and offshore cable anchors. . Assist Tugs "Diane H" and "Jennifer H" were on site this afternoon. Total hours capping this day: 5hrs., 30 min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. No accidents or incidents were reported by the Contractor this Afternoon Shift.
Problems Encountered & Resolutions:	No problems were observed by KC, nor reported this day by the Contractor.
Test Conducted:	See attached Denny Buoy Daily Record. At 1206hrs. phoned M. Locke, ACC, with first recorded high Turbidity spike of the afternoon, 6.6±NTU recorded at the Denny buoy. By 1351hrs., (and a couple additional phone calls to ACC) the Denny buoy had recorded a one hour average in excess of Permit. ACC had, however, stopped capping work for the day, ten minutes earlier (BMP).
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None.
Manpower	ACC: "Pam Tay", five (5) crew persons; Assist Tugs: "Diane H", two (2) persons; "Jennifer H", two (2) persons
Visitors to Site	R. Brunke, KC Proj. Rep.
Equipment Used	"Pam Tay" w/American 9310 Crane & skip box, Cat 938F Loader, three (3) work skiffs, , one P/U Truck, rental Barges "KP-1" and "KP-2"; Assist Tugs "Jennifer H" and "Diane H"

Attachments: two (2) pages, Denny buoy Daily Log

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (1-25-08)

Start date: 1/25/2008 End date: 1/25/2008

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Denny Way User Defined

	Min: 1.024 Max: 1.093 Mean: 1.064 St.dev: 0.018	Min: 6.35 Max: 7.90 Mean: 7.07 St.dev: 0.37	Min: 41.270 Max: 44.240 Mean: 42.225 St.dev: 0.791	Min: 1.2 Max: 9.8 Mean: 2.7 St.dev: 2.2	Min: 84.3 Max: 88.5 Mean: 86.4 St.dev: 0.9	Min: 8.34 Max: 9.05 Mean: 8.78 St.dev: 0.16
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C SpCond [mS/cm]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO% [%]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
1/25/2008 00:00	1.024	6.93	41.370	1.4	86.7	8.88
1/25/2008 00:15	1.026	7.06	41.280	1.4	86.5	8.83
1/25/2008 00:30	1.028	7.01	41.290	1.5	86.5	8.84
1/25/2008 00:45	1.025	6.98	41.270	1.4	86.5	8.85
1/25/2008 01:00	1.024	7.02	41.310	1.5	86.4	8.83
1/25/2008 01:15	1.032	7.06	41.340	1.5	86.4	8.82
1/25/2008 01:30	1.031	7.14	41.450	1.4	86.3	8.79
1/25/2008 01:45	1.037	7.17	41.570	1.4	86.2	8.77
1/25/2008 02:00	1.043	7.19	41.610	1.4	86.2	8.76
1/25/2008 02:15	1.044	7.24	41.690	1.5	86.2	8.75
1/25/2008 02:30	1.045	7.22	41.780	1.4	86.4	8.77
1/25/2008 02:45	1.049	7.19	41.600	1.4	86.2	8.76
1/25/2008 03:00	1.050	7.22	41.690	1.5	86.2	8.76
1/25/2008 03:15	1.051	7.20	41.800	1.5	86.4	8.77
1/25/2008 03:30	1.050	7.77	43.800	1.5	84.8	8.42
1/25/2008 03:45	1.050	7.90	44.170	1.4	84.4	8.34
1/25/2008 04:00	1.054	7.76	43.780	1.6	84.4	8.38
1/25/2008 04:15	1.057	7.11	41.710	1.4	86.3	8.78
1/25/2008 04:30	1.059	7.12	41.790	1.4	86.5	8.79
1/25/2008 04:45	1.059	7.15	41.850	1.3	86.3	8.77
1/25/2008 05:00	1.059	7.12	41.700	1.3	86.5	8.80
1/25/2008 05:15	1.060	6.73	41.650	1.3	86.5	8.89
1/25/2008 05:30	1.060	6.97	41.760	1.3	86.2	8.80
1/25/2008 05:45	1.063	7.03	41.870	1.3	86.4	8.80
1/25/2008 06:00	1.065	7.02	41.870	1.4	86.4	8.81
1/25/2008 06:15	1.065	7.12	41.890	1.3	86.5	8.80
1/25/2008 06:30	1.070	6.91	41.850	1.3	86.3	8.82
1/25/2008 06:45	1.069	7.14	42.230	1.3	86.2	8.74
1/25/2008 07:00	1.065	7.09	42.020	1.4	86.4	8.79
1/25/2008 07:15	1.070	6.77	41.810	1.3	86.5	8.87
1/25/2008 07:30	1.074	6.67	41.800	1.3	84.8	8.72
1/25/2008 07:45	1.075	6.98	42.610	1.4	84.8	8.63
1/25/2008 08:00	1.072	6.64	41.800	1.3	86.2	8.87
1/25/2008 08:15	1.075	6.46	41.720	1.3	86.4	8.94
1/25/2008 08:30	1.073	6.35	41.660	1.3	86.6	8.98
1/25/2008 08:45	1.081	6.48	41.750	1.3	86.3	8.92
1/25/2008 09:00	1.081	6.55	41.800	1.3	86.3	8.91
1/25/2008 09:15	1.082	7.09	42.760	1.3	85.2	8.63
1/25/2008 09:30	1.083	6.45	41.810	1.3	86.7	8.97
1/25/2008 09:45	1.084	6.60	41.800	1.3	84.3	8.69

1/25/2008 10:00	1.088	6.84	42.370	1.3	85.9	8.78
1/25/2008 10:15	1.083	7.79	44.020	1.2	84.4	8.37
1/25/2008 10:30	1.087	7.44	43.390	1.3	85.8	8.60
1/25/2008 10:45	1.093	6.65	42.070	* 8.1	86.4	8.88
1/25/2008 11:00	1.084	6.63	42.050	6.2	86.9	8.93
1/25/2008 11:15	1.084	6.95	42.620	6.0	87.0	8.85
1/25/2008 11:30	1.084	7.32	43.220	4.3	87.3	8.78
1/25/2008 11:45	1.084	6.73	42.160	7.1	86.2	8.83
1/25/2008 12:00	1.083	6.69	41.960	** 6.6	87.1	8.95
1/25/2008 12:15	1.078	7.89	44.240	1.7	85.2	8.42
1/25/2008 12:30	1.076	7.73	43.740	2.0	87.5	8.70
1/25/2008 12:45	1.076	7.46	43.280	4.7	88.5	8.87
1/25/2008 13:00	1.076	6.81	42.020	** 8.5	88.0	9.01
1/25/2008 13:15	1.074	6.74	41.940	2.8	87.7	8.99
1/25/2008 13:30	1.074	6.93	42.170	6.5	87.8	8.96
1/25/2008 13:45	1.071	7.46	43.210	9.8	✓ residual 85.6	ACC had 8.58 stopped
1/25/2008 14:00	1.073	7.05	42.400	5.8	capping 87.5	8.89
1/25/2008 14:15	1.066	6.83	41.930	3.7	88.2	9.03
1/25/2008 14:30	1.067	6.83	41.860	3.1	88.3	9.05
1/25/2008 14:45	1.072	6.98	42.200	4.3	87.7	8.93
1/25/2008 15:00	1.071	7.17	42.560	5.5	87.2	8.83
1/25/2008 15:15	1.068	7.41	43.010	5.3	86.5	8.69
1/25/2008 15:30	1.070	7.43	42.950	4.3	86.4	8.68
1/25/2008 15:45	1.068	7.76	43.810	3.4	85.1	8.45
1/25/2008 16:00	1.068	7.54	43.150	4.0	86.7	8.68

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1st Afternoon capping period

* Called in to ACC by I. Khitchen

** 1st call to ACC from K. Nordlund

*** one hour in excess 5 NTUs above background .8 @ Aquarium

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 40
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	January	25	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:30am: The tug boat Jennifer H. got the barge KP-1 and the derrick in position. Approximately 7:30am-12:00pm: The contractor placed imported backfill base materials Approximately: 10:45am, NTU=8.1, the contractor was contacted and informed that the NTU went up. The contractor slowed down and continued placing materials slowly until lunch. Total actual backfill from 7:00am to 12:00pm was approximately 4.5 hours See Keith Nordlund daily report for the rest of the day work. ACC had a crew of 5(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they placed a total of 2022 tons of sand for the whole day. See the contractor daily report for locations and depth of the backfill.
Safety/Accidents:	None
Problems Encountered & Resolutions:	Turbidity variances were noticed at about 10:45am to be NTU=8.1. The contractor slowed down, but continued placing fill. Attached is a copy of the NTU reading for the morning period.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 1/30/08 (Date)

Start date: 1/25/2008 End date: 1/25/2008

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Denny Way User Defined

	Min: 1.024 Max: 1.093 Mean: 1.062 St.dev: 0.016	Min: 6.35 Max: 8.01 Mean: 7.24 St.dev: 0.43	Min: 1.2 Max: 9.8 Mean: 2.6 St.dev: 1.8	Min: 8.26 Max: 9.05 Mean: 8.70 St.dev: 0.23
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
1/25/2008 00:00	1.024	6.93	1.4	8.88
1/25/2008 00:15	1.026	7.06	1.4	8.83
1/25/2008 00:30	1.028	7.01	1.5	8.84
1/25/2008 00:45	1.025	6.98	1.4	8.85
1/25/2008 01:00	1.024	7.02	1.5	8.83
1/25/2008 01:15	1.032	7.06	1.5	8.82
1/25/2008 01:30	1.031	7.14	1.4	8.79
1/25/2008 01:45	1.037	7.17	1.4	8.77
1/25/2008 02:00	1.043	7.19	1.4	8.76
1/25/2008 02:15	1.044	7.24	1.5	8.75
1/25/2008 02:30	1.045	7.22	1.4	8.77
1/25/2008 02:45	1.049	7.19	1.4	8.76
1/25/2008 03:00	1.050	7.22	1.5	8.76
1/25/2008 03:15	1.051	7.20	1.5	8.77
1/25/2008 03:30	1.050	7.77	1.5	8.42
1/25/2008 03:45	1.050	7.90	1.4	8.34
1/25/2008 04:00	1.054	7.76	1.6	8.38
1/25/2008 04:15	1.057	7.11	1.4	8.78
1/25/2008 04:30	1.059	7.12	1.4	8.79
1/25/2008 04:45	1.059	7.15	1.3	8.77
1/25/2008 05:00	1.059	7.12	1.3	8.80
1/25/2008 05:15	1.060	6.73	1.3	8.89
1/25/2008 05:30	1.060	6.97	1.3	8.80
1/25/2008 05:45	1.063	7.03	1.3	8.80
1/25/2008 06:00	1.065	7.02	1.4	8.81
1/25/2008 06:15	1.065	7.12	1.3	8.80
1/25/2008 06:30	1.070	6.91	1.3	8.82
1/25/2008 06:45	1.069	7.14	1.3	8.74
1/25/2008 07:00	1.065	7.09	1.4	8.79
1/25/2008 07:15	1.070	6.77	1.3	8.87
1/25/2008 07:30	1.074	6.67	1.3	8.72
1/25/2008 07:45	1.075	6.98	1.4	8.63
1/25/2008 08:00	1.072	6.64	1.3	8.87
1/25/2008 08:15	1.075	6.46	1.3	8.94
1/25/2008 08:30	1.073	6.35	1.3	8.98
1/25/2008 08:45	1.081	6.48	1.3	8.92

1/25/2008 09:00	1.081	6.55	1.3	8.91
1/25/2008 09:15	1.082	7.09	1.3	8.63
1/25/2008 09:30	1.083	6.45	1.3	8.97
1/25/2008 09:45	1.084	6.60	1.3	8.69
1/25/2008 10:00	1.088	6.84	1.3	8.78
1/25/2008 10:15	1.083	7.79	1.2	8.37
1/25/2008 10:30	1.087	7.44	1.3	8.60
1/25/2008 10:45	1.093	6.65	8.1	8.88
1/25/2008 11:00	1.084	6.63	6.2	8.93
1/25/2008 11:15	1.084	6.95	6.0	8.85
1/25/2008 11:30	1.084	7.32	4.3	8.78
1/25/2008 11:45	1.084	6.73	7.1	8.83
1/25/2008 12:00	1.083	6.69	6.6	8.95
1/25/2008 12:15	1.078	7.89	1.7	8.42
1/25/2008 12:30	1.076	7.73	2.0	8.70
1/25/2008 12:45	1.076	7.46	4.7	8.87
1/25/2008 13:00	1.076	6.81	8.5	9.01
1/25/2008 13:15	1.074	6.74	2.8	8.99
1/25/2008 13:30	1.074	6.93	6.5	8.96
1/25/2008 13:45	1.071	7.46	9.8	8.58
1/25/2008 14:00	1.073	7.05	5.8	8.89
1/25/2008 14:15	1.066	6.83	3.7	9.03
1/25/2008 14:30	1.067	6.83	3.1	9.05
1/25/2008 14:45	1.072	6.98	4.3	8.93
1/25/2008 15:00	1.071	7.17	5.5	8.83
1/25/2008 15:15	1.068	7.41	5.3	8.69
1/25/2008 15:30	1.070	7.43	4.3	8.68
1/25/2008 15:45	1.068	7.76	3.4	8.45
1/25/2008 16:00	1.068	7.54	4.0	8.68
1/25/2008 16:15	1.068	7.38	3.8	8.70
1/25/2008 16:30	1.068	7.98	3.2	8.31
1/25/2008 16:45	1.068	7.25	2.9	8.96
1/25/2008 17:00	1.065	7.19	2.6	8.93
1/25/2008 17:15	1.066	6.98	2.3	9.02
1/25/2008 17:30	1.070	7.09	2.2	8.90
1/25/2008 17:45	1.065	7.16	2.6	8.86
1/25/2008 18:00	1.065	7.11	2.9	8.88
1/25/2008 18:15	1.066	7.40	3.7	8.75
1/25/2008 18:30	1.063	7.40	3.7	8.73
1/25/2008 18:45	1.063	7.50	2.6	8.61
1/25/2008 19:00	1.060	7.20	3.1	8.85
1/25/2008 19:15	1.059	7.21	3.1	8.80
1/25/2008 19:30	1.058	7.28	3.5	8.74
1/25/2008 19:45	1.046	7.86	2.9	8.37
1/25/2008 20:00	1.058	7.93	2.5	8.31
1/25/2008 20:15	1.060	7.95	2.4	8.30
1/25/2008 20:30	1.059	7.97	1.6	8.26
1/25/2008 20:45	1.055	7.98	1.7	8.26
1/25/2008 21:00	1.055	8.01	1.2	8.26
1/25/2008 21:15	1.055	7.96	2.6	8.27
1/25/2008 21:30	1.052	7.63	2.5	8.31
1/25/2008 21:45	1.055	7.83	1.8	8.34

1/25/2008 22:00	1.052	7.73	2.0	8.39
1/25/2008 22:15	1.055	7.71	1.9	8.40
1/25/2008 22:30	1.048	7.81	1.6	8.37
1/25/2008 22:45	1.053	7.84	1.6	8.35
1/25/2008 23:00	1.053	7.69	2.0	8.40
1/25/2008 23:15	1.047	7.72	1.9	8.40
1/25/2008 23:30	1.047	7.76	1.9	8.36
1/25/2008 23:45	1.045	7.61	1.7	8.46

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King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 40
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS.
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2008	January	28	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X				

Weather

Clear	PC	Overcast	Fog	Rain/ Snow
		X		X

Temperature

10-32	32-55	55-70	70-85	85+
am	pm			

Construction Activities:	ACC/Hurlen continued Base Fill (sand blend) capping using the "Pam Tay", out of Barge "KP-2". Capping work ended for the day when the "KP-2" was emptied at 1635hrs. The "Diane H" did not get back with a full load of base fill material on the "KP-1" until app. 1550hrs. ACC swapped out the barges, and chose to complete this shift doing shipboard maintenance activities, rather than start unloading the "KP-1". Capping was completed this day by 1548hrs.
Miscellaneous:	ACC/Hurlen cont. capping work using spuds, and offshore cable anchors. Tug "Jennifer H" assisted with Platform repositioning during this shift. Total hours capping this day: 6±hrs.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. No accidents or incidents were reported by the Contractor this Afternoon Shift.
Problems Encountered & Resolutions:	No problems were observed by KC, nor reported this day by the Contractor.
Test Conducted:	See attached Denny Buoy Daily Record. At 1321hrs. phoned M. Locke, ACC, with high Turbidity spike 6.2±NTU recorded at the Denny buoy. By 1355hrs., (and a couple additional phone calls to ACC) the Denny buoy had recorded a one hour average 5±NTU in excess of Permit. ACC stopped capping for fifteen (15) minutes to reposition the Platform further N. (closer to the Denny CSO buoy), and then resumed capping at a somewhat slower pace. By 1415hrs. the buoy recorded a 15.9±NTU reading, and this KC observer phoned ACC again. By 1500hrs. a second straight hour in excess of (9.2±NTU) 5NTU over background had occurred. ACC began a 24minute stop capping period, until a lower turbidity was recorded @ 2.7±NTU at the Denny buoy. The second stop allowed turbidity to drop substantially, along with the change to an incoming tide after 1532hrs.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None.
Manpower	ACC: "Pam Tay", five (5) crew persons; Assist Tugs: "Diane H", two (2) persons; "Jennifer H", two (2) persons
Visitors to Site	R. Brunke, KC Proj. Rep. (covered Morning Shift for I. Khilfeh)

Attachments: two (2) pages, Denny buoy Daily Log

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (1-28-08)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT
DIVISION

Inspector's Daily Construction Report

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)

REPORT NUMBER: 40

PRIME CONTRACTOR: ACC/Hurlen Construction Co.

CONTRACT NUMBER: C00190C07

TIME WORK STARTED: 1000HRS. (AFTERNOON SHIFT)

TIME WORK STOPPED: 1730HRS.

Equipment Used	"Pam Tay" w/American 9310 Crane & skip box, Cat 938F Loader, three (3) work skiffs, , one P/U Truck, rental Barges "KP-1" and "KP-2"; Assist Tugs "Jennifer H" and "Diane H"

R. Brunke, Project Representative (Date)

K. Nordlund, CMIII,1-28-08

Start date: 1/28/2008 End date: 1/28/2008

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Denny Way Comparison Special

	Min: 1.0 Max: 15.9 Mean: 3.0 St.dev: 3.0	Min: 0.6 Max: 1006.3 Mean: 68.0 St.dev: 226.4	Min: Max: Mean: St.dev:	Min: 8.13 Max: 9.36 Mean: 8.93 St.dev: 0.38	Min: 8.12 Max: 9.25 Mean: 8.84 St.dev: 0.30	Min: Max: Mean: St.dev:
Date/Time	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Seattle Aquarium (new) 00016891 Turbidity+ [NTU]**	**Downtown Seattle Aquarium (old) 00016812 Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**	**Downtown Seattle Aquarium (new) 00016891 ODO Conc [mg/L]**	**Downtown Seattle Aquarium (old) 00016812 ODO Conc [mg/L]**
1/28/2008 00:00	1.2	382.8		8.97	9.08	
1/28/2008 00:15	1.1	1.1		8.97	9.24	
1/28/2008 00:30	1.2	1.1		8.96	9.23	
1/28/2008 00:45	1.2	1.0		8.97	9.23	
1/28/2008 01:00	1.2	1.1		8.98	9.13	
1/28/2008 01:15	1.3	0.9		9.05	9.23	
1/28/2008 01:30	1.3	1.1		9.09	9.20	
1/28/2008 01:45	1.3	1.1		9.10	9.17	
1/28/2008 02:00	1.3	1.1		9.10	9.18	
1/28/2008 02:15	1.3	1.1		9.10	9.22	
1/28/2008 02:30	1.4	1.1		9.10	9.20	
1/28/2008 02:45	1.4	1.0		9.11	9.17	
1/28/2008 03:00	1.3	1.1		9.10	9.25	
1/28/2008 03:15	1.3	1.0		9.00	9.15	
1/28/2008 03:30	1.2	1.0		8.99	9.21	
1/28/2008 03:45	1.3	1.0		8.98	9.13	
1/28/2008 04:00	1.2	1.0		8.98	9.11	
1/28/2008 04:15	1.2	1.0		9.00	9.07	
1/28/2008 04:30	1.2	0.8		8.99	8.95	
1/28/2008 04:45	1.2	0.9		9.01	9.05	
1/28/2008 05:00	1.2	999.0		8.92	9.08	
1/28/2008 05:15	1.2	0.7		8.89	9.14	
1/28/2008 05:30	1.2	747.7		8.80	8.87	
1/28/2008 05:45	1.0	0.8		8.19	8.89	
1/28/2008 06:00	1.1	0.8		8.17	9.11	
1/28/2008 06:15	1.0	0.7		8.24	8.28	
1/28/2008 06:30	1.0	0.7		8.15	8.33	
1/28/2008 06:45	1.1	0.7		8.15	8.14	
1/28/2008 07:00	1.1	1006.3		8.14	8.16	
1/28/2008 07:15	1.1	0.6		8.15	8.12	
1/28/2008 07:30	1.1	0.7		8.15	8.61	
1/28/2008 07:45	1.1	0.7		8.14	8.19	
1/28/2008 08:00	1.1	0.7		8.13	8.13	
1/28/2008 08:15	1.1	0.7		8.18	8.49	
1/28/2008 08:30	1.2	0.7		8.15	8.24	
1/28/2008 08:45	1.0	0.7		8.16	8.13	
1/28/2008 09:00	1.7	0.7		8.15	8.41	
1/28/2008 09:15	1.7	0.7		8.15	8.58	
1/28/2008 09:30	9.4	0.7		8.20	8.21	
1/28/2008 09:45	4.3	0.7		8.44	8.23	

observer - Brunke

ACC Afternoon Shift sampling period

1/28/2008 10:00	R, 11.0	0.8		8.44	8.31	
1/28/2008 10:15	12.8	0.7		8.54	8.54	
1/28/2008 10:30	9.4	0.8		8.83	8.70	
1/28/2008 10:45	1.3	0.8		8.73	8.70	
1/28/2008 11:00	1.1	0.8		8.76	8.58	
1/28/2008 11:15	3.1	1.0		8.92	8.96	
1/28/2008 11:30	2.5	0.9		8.99	8.74	
1/28/2008 11:45	2.0	0.9		8.95	8.64	
1/28/2008 12:00	4.1	0.9		9.02	8.74	
1/28/2008 12:15	3.9	609.1		9.08	8.76	
1/28/2008 12:30	1.8	1.0		9.17	8.88	
1/28/2008 12:45	3.8	0.9		9.22	8.90	
1/28/2008 13:00	* 4.3	0.9		9.16	8.86	
1/28/2008 13:15	6.2	0.9		9.20	8.82	
1/28/2008 13:30	4.7	0.9		9.29	8.79	
1/28/2008 13:45	8.7	0.9		9.27	8.85	
1/28/2008 14:00	** 5.9	0.9		9.22	8.83	
1/28/2008 14:15	15.9	0.8		9.21	8.82	
1/28/2008 14:30	5.6	0.9		9.20	8.75	
1/28/2008 14:45	13.0	0.9		9.13	8.74	
1/28/2008 15:00	2.7	~~997.5~~	?	9.09	8.73	
1/28/2008 15:15	4.1	0.8		9.32	8.98	
1/28/2008 15:30	2.2	0.8		9.30	8.91	
1/28/2008 15:45	2.7	0.8		9.33	8.84	
1/28/2008 16:00	5.6	0.8		9.36	8.98	
1/28/2008 16:15	2.2	0.8		9.07	8.91	
1/28/2008 16:30	11.5	0.9		9.26	8.75	
1/28/2008 16:45	3.3	0.8		9.08	8.95	
1/28/2008 17:00	7.6	0.9		9.20	8.88	
1/28/2008 17:15	2.7	263.3	?	9.17	8.91	
1/28/2008 17:30	4.5	0.8		9.22	8.83	
1/28/2008 17:45	5.0	0.9		9.21	8.93	
1/28/2008 18:00	3.4	0.8		9.18	8.87	
1/28/2008 18:15	3.8	0.8		9.21	8.88	
1/28/2008 18:30	4.3	0.8		9.26	8.99	
1/28/2008 18:45	2.6	0.8		9.21	8.98	
1/28/2008 19:00	2.2	0.8		9.22	8.98	
1/28/2008 19:15	2.6	0.8		9.33	8.96	
1/28/2008 19:30	2.6	0.8		9.30	8.98	
1/28/2008 19:45	2.1	0.8		9.15	9.03	
1/28/2008 20:00	2.3	0.8		9.22	8.88	
1/28/2008 20:15	2.0	0.8		9.22	9.00	
1/28/2008 20:30	2.1	490.3	?	9.20	8.85	
1/28/2008 20:45	2.0	0.8		9.30	8.89	
1/28/2008 21:00	1.8	0.8		9.23	8.95	
1/28/2008 21:15	1.5	0.8		9.07	8.94	
1/28/2008 21:30	1.6	0.8		9.18	8.98	
1/28/2008 21:45	1.6	960.0	?	9.12	8.97	
1/28/2008 22:00	1.5	0.8		9.07	8.93	
1/28/2008 22:15	1.4	0.8		9.05	8.89	
1/28/2008 22:30	1.5	0.8		9.01	8.94	
1/28/2008 22:45	1.4	0.7		9.10	9.02	
1/28/2008 23:00	1.4	0.8		9.09	8.97	
1/28/2008 23:15	1.4	0.8		9.10	8.64	
1/28/2008 23:30	1.4	0.8		9.12	8.78	
1/28/2008 23:45	1.4	0.9		9.10	8.92	

* 1st recorded 5 NTU above background, Denny Buoy

** 2nd, and consecutively recorded 5+ NTU above background, Denny buoy

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 41
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS.
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2008	January	29	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X	X			

Weather

Clear	PC	Overcast	Fog	Rain/ Snow
	X Windy			

Temperature

10-32	32-55	55-70	70-85	85+
am	pm			

Construction Activities:	ACC/Hurlen continued Base Fill (sand blend) capping using the "Pam Tay", out of Barge "KP-1", primarily N. of sta. 2+00 (Note: most of the capping work to date has been in the site area S. of sta. 2+00). Capping work ended for the day when the "KP-1" was emptied at 1410hrs. ACC chose to complete this shift doing shipboard maintenance activities. ACC (M. Locke) does not anticipate a new barge with base fill material until Thursday (1-31-08).
Miscellaneous:	ACC/Hurlen cont. capping work using spuds, and offshore cable anchors. Tug "Jennifer H" assisted with Platform repositioning during this shift. Total hours capping this day: 5hrs., and 15±min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. No accidents or incidents were reported by the Contractor this Afternoon Shift.
Problems Encountered & Resolutions:	A.) The predominant problem was high turbidity spikes throughout the capping process this shift, and even during the morning shift. The Puget Sound had windy conditions, and rough waters throughout both shifts this day,; Tide was outgoing after 0911hrs. B.) Notified by M. Locke, ACC, that snow and ice had frozen equipment in DuPont, Wa., and consequently their Supplier was unable to get barge "KP-2" loaded in time to return for tomorrow's capping work. **No new capping was anticipated for tomorrow at this site.**
Test Conducted:	See attached Denny Buoy Daily Record. At 1106hrs., phoned M. Locke, ACC, (after relieving I. Khilfeh) with high Turbidity spike 9.1±NTU recorded at the Denny buoy. By 1121hrs., the Denny buoy had recorded a one hour average 11.4±NTU, an excess of 5±NTU over background. ACC had stopped capping for (25) minutes prior to the residual recorded high Turbidity readings. By 1415hrs. the Denny buoy had recorded additionally marginally high hours, but ACC did not exceed 5±NTU over background. ACC was contacted by phone throughout the capping period with the Turbidity trendings. At 1351hrs. the Denny buoy reported that a spike of 14.4±NTU had occurred, but ACC completed capping within the next fifteen minutes.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None.

Attachments: two (2) pages, Denny buoy Daily Log, three (3) photos

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (1-29-08)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT
DIVISION

Inspector's Daily Construction Report

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)

REPORT NUMBER: 41

PRIME CONTRACTOR: ACC/Hurlen Construction Co.

CONTRACT NUMBER: C00190C07

TIME WORK STARTED: 1000HRS. (AFTERNOON SHIFT)

TIME WORK STOPPED: 1730HRS.

Manpower	ACC: "Pam Tay", five (5) crew persons; Assist Tug: "Jennifer H", two (2) persons
Visitors to Site	R. Pickering, Anchor
Equipment Used	"Pam Tay" w/American 9310 Crane & skip box, Cat 938F Loader, three (3) work skiffs, , one P/U Truck, rental Barge "KP-1"; Assist Tug "Jennifer H"

R. Brunke, Project Representative (Date)

K. Nordlund, CMIII,1-29-08

Start date: 1/29/2008 End date: 1/29/2008

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Denny Way Comparison Special

	Min: 1.2 Max: 22.8 Mean: 4.5 St.dev: 5.3	Min: 0.6 Max: 979.8 Mean: 16.3 St.dev: 123.4	Min: Max: Mean: St.dev:	Min: 8.81 Max: 9.50 Mean: 9.13 St.dev: 0.13	Min: 8.41 Max: 9.15 Mean: 8.89 St.dev: 0.15	Min: Max: Mean: St.dev:
Date/Time	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Seattle Aquarium (new) 00016891 Turbidity+ [NTU]**	**Downtown Seattle Aquarium (old) 00016812 Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**	**Downtown Seattle Aquarium (new) 00016891 ODO Conc [mg/L]**	**Downtown Seattle Aquarium (old) 00016812 ODO Conc [mg/L]**
1/29/2008 00:00	1.4	0.9		9.10	8.94	
1/29/2008 00:15	1.4	0.8		9.12	8.92	
1/29/2008 00:30	1.3	0.8		9.13	8.91	
1/29/2008 00:45	1.4	0.8		9.12	8.91	
1/29/2008 01:00	1.3	0.9		8.87	8.91	
1/29/2008 01:15	1.3	0.8		8.86	8.89	
1/29/2008 01:30	1.2	979.8		8.81	8.92	
1/29/2008 01:45	1.4	0.6		8.81	8.93	
1/29/2008 02:00	1.4	0.7		9.09	8.91	
1/29/2008 02:15	1.4	0.8		8.99	8.92	
1/29/2008 02:30	1.3	0.8		8.99	8.92	
1/29/2008 02:45	1.3	0.7		9.02	8.88	
1/29/2008 03:00	1.3	0.7		9.03	8.95	
1/29/2008 03:15	1.3	0.8		9.03	9.02	
1/29/2008 03:30	1.3	0.7		9.02	8.92	
1/29/2008 03:45	1.3	0.7		8.99	8.87	
1/29/2008 04:00	1.3	0.7		9.01	8.95	
1/29/2008 04:15	1.3	0.7		9.03	8.95	
1/29/2008 04:30	1.3	0.6		9.06	8.90	
1/29/2008 04:45	1.3	0.7		9.06	8.85	
1/29/2008 05:00	1.3	0.6		9.08	8.91	
1/29/2008 05:15	1.3	0.7		9.07	8.91	
1/29/2008 05:30	1.2	0.7		9.08	9.02	
1/29/2008 05:45	1.3	0.7		9.09	9.14	
1/29/2008 06:00	1.3	0.8		9.09	9.13	
1/29/2008 06:15	1.3	0.7		9.11	8.41	
1/29/2008 06:30	1.3	0.7		9.12	9.10	
1/29/2008 06:45	1.3	0.8		9.13	9.08	
1/29/2008 07:00	1.3	0.7		9.12	9.05	
1/29/2008 07:15	1.2	0.7		9.14	9.11	
1/29/2008 07:30	1.3	0.8		9.14	9.15	
1/29/2008 07:45	1.4	0.9		9.15	9.06	
1/29/2008 08:00	1.3	0.7		9.16	9.03	
1/29/2008 08:15	1.4	0.7		9.15	9.09	
1/29/2008 08:30	3.7	0.7		9.15	8.85	
1/29/2008 08:45	4.8	0.7		9.17	9.11	
1/29/2008 09:00	3.6	0.8		9.15	8.90	
1/29/2008 09:15	2.4	0.8		9.15	8.80	
1/29/2008 09:30	2.7	0.8		9.15	9.05	
1/29/2008 09:45	5.2	0.8		9.17	9.01	

1/29/2008 10:00	8.0	0.7		9.18	8.98	
1/29/2008 10:15	* 12.8	0.7		9.22	8.67	
1/29/2008 10:30	10.0	0.7		9.20	8.92	
1/29/2008 10:45	21.8	0.7		9.25	8.73	
1/29/2008 11:00	9.1	0.7		9.26	8.76	
1/29/2008 11:15	7.5	0.6		9.22	8.77	
1/29/2008 11:30	1.5	0.7		9.21	8.80	
1/29/2008 11:45	6.2	0.7		9.25	8.64	
1/29/2008 12:00	6.1	0.7		9.25	8.84	
1/29/2008 12:15	8.1	0.7		9.13	8.88	
1/29/2008 12:30	5.6	0.7		9.24	8.70	
1/29/2008 12:45	1.2	0.7		9.06	8.76	
1/29/2008 13:00	2.3	0.7		9.05	8.93	
1/29/2008 13:15	** 8.6	0.7		9.14	8.90	
1/29/2008 13:30	4.6	0.8		9.19	8.64	
1/29/2008 13:45	14.4	0.7		9.25	8.64	
1/29/2008 14:00	13.2	0.7		9.24	8.77	
1/29/2008 14:15	16.1	0.8		9.22	8.73	
1/29/2008 14:30	22.8	0.7		9.30	8.74	
1/29/2008 14:45	18.1	0.7		9.46	8.79	
1/29/2008 15:00	12.6	0.8		9.50	8.68	
1/29/2008 15:15	4.3	0.9		9.36	8.63	
1/29/2008 15:30	1.9	0.8		9.30	8.64	
1/29/2008 15:45	3.4			9.38		

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ACC Capping Period Afternoon

Residuals

* over 5 NTU above background

** " " " " "

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 41
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	January	29	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
			X			

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	**NOTE:** I did not work yesterday because of the snow. However, the contractor worked (see contractor daily report #41 for January 28, 2007). For yesterday's activities, see Keith Nordlund daily report. Approximately: 7:00am-7:30am: The tug boat Jennifer H. got the barge KP-1 and the derrick in position. Approximately 7:30am-10:00am: The contractor placed imported backfill base materials Approximately: 10:00am, NTU=8, the contractor was contacted and informed that the NTU went up. The contractor stopped placing materials. Marty said that he can see the cloudy water slowly moving towards the NTU instrument. Marty (the superintendent) said that he will continue after lunch, and he has lots of maintenance to do till lunch time. Keith came at about 11:00am. I left about noon. Total actual backfill from 7:00am to 12:00pm was approximately 2.5 hours See Keith Nordlund daily report for the rest of the day work. ACC had a crew of 5(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they placed a total of 2094 tons of sand for the whole day. See the contractor daily report for locations and depth of the backfill. Also, for yesterday, from the contractor daily report, they placed a total of 2006 tons for the whole day. See yesterday contractor daily report for locations and depth of placement.
Safety/Accidents:	None
Problems Encountered & Resolutions:	Turbidity variances were noticed at about 10:00am to be NTU=8. The contractor was informed at once and they stopped the work. Till lunch time, they did maintenance work at the derrick.
Test Conducted:	
Work Rejected:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 2/1/08 (Date)

Start date: 1/29/2008 End date: 1/29/2008

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Denny Way User Defined

	Min: 0.887 Max: 1.012 Mean: 0.943 St.dev: 0.030	Min: 6.98 Max: 7.46 Mean: 7.19 St.dev: 0.15	Min: 1.2 Max: 22.8 Mean: 4.4 St.dev: 4.4	Min: 8.81 Max: 9.63 Mean: 9.24 St.dev: 0.20
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
1/29/2008 00:00	0.983	7.02	1.4	9.10
1/29/2008 00:15	0.982	6.99	1.4	9.12
1/29/2008 00:30	0.991	6.98	1.3	9.13
1/29/2008 00:45	0.976	6.98	1.4	9.12
1/29/2008 01:00	0.983	7.31	1.3	8.87
1/29/2008 01:15	0.971	7.31	1.3	8.86
1/29/2008 01:30	0.975	7.40	1.2	8.81
1/29/2008 01:45	0.972	7.35	1.4	8.81
1/29/2008 02:00	0.971	7.04	1.4	9.09
1/29/2008 02:15	0.965	7.17	1.4	8.99
1/29/2008 02:30	0.957	7.15	1.3	8.99
1/29/2008 02:45	0.952	7.12	1.3	9.02
1/29/2008 03:00	0.945	7.09	1.3	9.03
1/29/2008 03:15	0.939	7.11	1.3	9.03
1/29/2008 03:30	0.938	7.11	1.3	9.02
1/29/2008 03:45	0.927	7.11	1.3	8.99
1/29/2008 04:00	0.921	7.11	1.3	9.01
1/29/2008 04:15	0.917	7.09	1.3	9.03
1/29/2008 04:30	0.915	7.05	1.3	9.06
1/29/2008 04:45	0.917	7.03	1.3	9.06
1/29/2008 05:00	0.914	7.04	1.3	9.08
1/29/2008 05:15	0.906	7.04	1.3	9.07
1/29/2008 05:30	0.900	7.04	1.2	9.08
1/29/2008 05:45	0.898	7.02	1.3	9.09
1/29/2008 06:00	0.894	7.03	1.3	9.09
1/29/2008 06:15	0.891	7.00	1.3	9.11
1/29/2008 06:30	0.887	6.98	1.3	9.12
1/29/2008 06:45	0.890	6.99	1.3	9.13
1/29/2008 07:00	0.908	7.00	1.3	9.12
1/29/2008 07:15	0.911	6.99	1.2	9.14
1/29/2008 07:30	0.892	6.98	1.3	9.14
1/29/2008 07:45	0.899	6.98	1.4	9.15
1/29/2008 08:00	0.898	6.98	1.3	9.16
1/29/2008 08:15	0.917	7.00	1.4	9.15
1/29/2008 08:30	0.915	7.02	3.7	9.15
1/29/2008 08:45	0.912	7.01	4.8	9.17

1/29/2008 09:00	0.925	7.02	3.6	9.15
1/29/2008 09:15	0.918	7.02	2.4	9.15
1/29/2008 09:30	0.915	7.03	2.7	9.15
1/29/2008 09:45	0.924	7.03	5.2	9.17
1/29/2008 10:00	0.925	7.05	8.0	9.18
1/29/2008 10:15	0.915	7.07	12.8	9.22
1/29/2008 10:30	0.929	7.10	10.0	9.20
1/29/2008 10:45	0.891	7.10	21.8	9.25
1/29/2008 11:00	0.918	7.06	9.1	9.26
1/29/2008 11:15	0.920	7.09	7.5	9.22
1/29/2008 11:30	0.936	7.11	1.5	9.21
1/29/2008 11:45	0.936	7.13	6.2	9.25
1/29/2008 12:00	0.938	7.17	6.1	9.25
1/29/2008 12:15	0.928	7.29	8.1	9.13
1/29/2008 12:30	0.931	7.29	5.6	9.24
1/29/2008 12:45	0.921	7.34	1.2	9.06
1/29/2008 13:00	0.945	7.40	2.3	9.05
1/29/2008 13:15	0.938	7.40	8.6	9.14
1/29/2008 13:30	0.936	7.36	4.6	9.19
1/29/2008 13:45	0.934	7.40	14.4	9.25
1/29/2008 14:00	0.939	7.44	13.2	9.24
1/29/2008 14:15	0.939	7.45	16.1	9.22
1/29/2008 14:30	0.917	7.45	22.8	9.30
1/29/2008 14:45	0.938	7.46	18.1	9.46
1/29/2008 15:00	0.944	7.42	12.6	9.50
1/29/2008 15:15	0.941	7.39	4.3	9.36
1/29/2008 15:30	0.933	7.39	1.9	9.30
1/29/2008 15:45	0.940	7.39	3.4	9.38
1/29/2008 16:00	0.953	7.38	4.1	9.42
1/29/2008 16:15	0.949	7.39	4.2	9.40
1/29/2008 16:30	0.938	7.36	3.3	9.41
1/29/2008 16:45	0.944	7.39	2.8	9.33
1/29/2008 17:00	0.948	7.44	2.1	9.17
1/29/2008 17:15	0.968	7.44	2.1	9.18
1/29/2008 17:30	0.952	7.36	4.3	9.42
1/29/2008 17:45	0.950	7.33	4.8	9.49
1/29/2008 18:00	0.951	7.29	5.7	9.61
1/29/2008 18:15	0.969	7.27	5.8	9.61
1/29/2008 18:30	0.953	7.27	6.0	9.58
1/29/2008 18:45	0.960	7.27	6.1	9.58
1/29/2008 19:00	0.951	7.26	6.6	9.61
1/29/2008 19:15	0.969	7.24	6.3	9.63
1/29/2008 19:30	0.963	7.23	6.2	9.51
1/29/2008 19:45	0.957	7.21	5.3	9.63
1/29/2008 20:00	0.952	7.19	4.3	9.54
1/29/2008 20:15	0.973	7.16	3.6	9.52
1/29/2008 20:30	0.973	7.17	4.2	9.54
1/29/2008 20:45	0.972	7.22	4.3	9.47
1/29/2008 21:00	0.974	7.15	4.2	9.57
1/29/2008 21:15	0.971	7.17	3.9	9.54
1/29/2008 21:30	0.994	7.19	4.4	9.53
1/29/2008 21:45	0.979	7.18	3.6	9.48

1/29/2008 22:00	0.980	7.19	3.7	9.46
1/29/2008 22:15	0.989	7.19	3.6	9.45
1/29/2008 22:30	0.985	7.19	3.6	9.45
1/29/2008 22:45	0.977	7.30	3.1	9.30
1/29/2008 23:00	0.987	7.24	3.3	9.34
1/29/2008 23:15	0.998	7.24	3.0	9.37
1/29/2008 23:30	1.003	7.43	1.2	9.06
1/29/2008 23:45	1.012	7.42	1.2	9.06

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King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 42
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	January	30	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
		and windy		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:30am: No one at site. Approximately 7:30am-3:30pm: The contractor worked on clean up and maintenance to the crane and the derrick. They weren't able to get materials from the suppliers. So, today, there was no backfill placement. Approximately 9:30am-10:30am, the contractor did surveying to check the backfill work. ACC had a crew of 5(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager). **NOTE:** The contractor did not provide a daily report because they did not perform any work.
Miscellaneous:	.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 2/1/08 (Date)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 42
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS.
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2008	January	30	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain/ Snow
		X Windy		showers

Temperature

10-32	32-55	55-70	70-85	85+
am	pm			

Construction Activities:	ACC worked this shift on shipboard maintenance activities. ACC (M. Locke) informed I. Khilfeh at app. 1100hrs. that a new barge with base fill material was definitely not going to get back to the site in time for this Afternoon's work schedule. Capping will resume Thursday, January 31, 2008.
Miscellaneous:	n/a
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. No accidents or incidents were reported by the Contractor this Afternoon Shift.
Problems Encountered & Resolutions:	No new base fill material to backfill.
Test Conducted:	None.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None.
Manpower	ACC: "Pam Tay", five (5) crew persons
Visitors to Site	None.
Equipment Used	"Pam Tay" w/American 9310 Crane & skip box, Cat 938F Loader, three (3) work skiffs, , one P/U Truck (All above noted equip. was on standby.)

Attachments: none

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (1-30-08)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 43
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS.
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2008	January	31	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain/ Snow
		X windy		

Temperature

10-32	32-55	55-70	70-85	85+
am	pm			

Construction Activities:	ACC/Hurlen resumed Base Fill (sand blend) capping with the "Pam Tay", out of Barge "KP-1", primarily N. of sta. 2+00, after a one-day break from base backfilling without a materials barge on site (see F. Reports 1-29/30-08 for further details). The "KP-1" was emptied by 1420hrs. The "Diane H" returned to the site, and a new full barge, "KP-2", was tied up to the "Pam Tay" by 1445hrs. Capping work ended for the day at app. 1500hrs. ACC chose to complete this shift doing shipboard maintenance activities.
Miscellaneous:	ACC/Hurlen cont. capping work using spuds, and offshore cable anchors. Tug "Jennifer H" assisted with Platform repositioning during this shift. Total hours capping this day: 5hrs., and 15±min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. No accidents or incidents were reported by the Contractor this Afternoon Shift.
Problems Encountered & Resolutions:	The predominant problem was high turbidity spikes throughout the capping process this shift. The Puget Sound had windy conditions, and rough waters through the shift this day; Tide was outgoing after 1029hrs.
Test Conducted:	See attached Denny Buoy Daily Record. At 1136hrs., phoned M. Locke, ACC, with the day's first high Turbidity spike 6.3±NTU recorded at the Denny buoy. **M. Locke was not on board.** K. Tronsen (sp.?) was notified, and at app. 1150hrs., ACC shut down capping for thirty min. By 1215hrs., the Denny buoy had recorded a one hour average an excess of 5.3±NTU over background on residuals after ACC had stopped capping. ACC resumed capping after the residual recorded high Turbidity readings were trending down. By 1420hrs. the barge had been emptied, and no further high Turbidity spikes had occurred. ACC (M. Locke, K. Tronsen) was contacted by phone throughout the capping period with the Turbidity trendings.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None.
Manpower	ACC: "Pam Tay", five (5) crew persons; Assist Tug: "Jennifer H", two (2) persons
Visitors to Site	B. Wilbert (with several persons), T. Edwards, KC

Attachments: two (2) pages, Denny buoy Daily Log

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (1-31-08)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT
DIVISION

Inspector's Daily Construction Report

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)

REPORT NUMBER: 43

PRIME CONTRACTOR: ACC/Hurlen Construction Co.

CONTRACT NUMBER: C00190C07

TIME WORK STARTED: 1000HRS. (AFTERNOON SHIFT)

TIME WORK STOPPED: 1730HRS.

Equipment Used	"Pam Tay" w/American 9310 Crane & skip box, Cat 938F Loader, three (3) work skiffs, , one P/U Truck, rental Barge "KP-1"; Assist Tug "Jennifer H"

R. Brunke, Project Representative (Date)

1-31-08

K. Nordlund, CMIII,1-31-08

Start date: 1/31/2008 End date: 1/31/2008

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Denny Way Comparison Special

	Min: 1.1 Max: 6.4 Mean: 1.8 St.dev: 1.3	Min: 0.7 Max: 1.2 Mean: 0.9 St.dev: 0.1	Min: Max: Mean: St.dev:	Min: 8.77 Max: 9.28 Mean: 8.93 St.dev: 0.09	Min: 8.54 Max: 8.84 Mean: 8.71 St.dev: 0.08	Min: Max: Mean: St.dev:
Date/Time	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Seattle Aquarium (new) 00016891 Turbidity+ [NTU]**	**Downtown Seattle Aquarium (old) 00016812 Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**	**Downtown Seattle Aquarium (new) 00016891 ODO Conc [mg/L]**	**Downtown Seattle Aquarium (old) 00016812 ODO Conc [mg/L]**
1/31/2008 00:00	1.2	0.7		8.94	8.70	
1/31/2008 00:15	1.1	0.7		8.98	8.71	
1/31/2008 00:30	1.1	0.8		8.97	8.61	
1/31/2008 00:45	1.1	0.8		8.99	8.58	
1/31/2008 01:00	1.1	0.8		8.91	8.57	
1/31/2008 01:15	1.1	0.8		8.93	8.59	
1/31/2008 01:30	1.1	0.8		8.97	8.66	
1/31/2008 01:45	1.1	0.7		8.99	8.72	
1/31/2008 02:00	1.2	0.9		9.02	8.59	
1/31/2008 02:15	1.1	0.9		9.03	8.56	
1/31/2008 02:30	1.2	0.9		9.11	8.61	
1/31/2008 02:45	1.1	1.0		9.10	8.59	
1/31/2008 03:00	1.2	1.0		9.01	8.57	
1/31/2008 03:15	1.1	1.1		9.04	8.54	
1/31/2008 03:30	1.1	1.1		9.02	8.54	
1/31/2008 03:45	1.1	1.1		8.99	8.54	
1/31/2008 04:00	1.1	1.2		9.01	8.56	
1/31/2008 04:15	1.1	1.1		8.97	8.58	
1/31/2008 04:30	1.1	1.1		8.94	8.61	
1/31/2008 04:45	1.1	1.0		8.90	8.62	
1/31/2008 05:00	1.1	1.0		8.91	8.63	
1/31/2008 05:15	1.1	1.0		8.92	8.63	
1/31/2008 05:30	1.1	1.0		8.98	8.64	
1/31/2008 05:45	1.1	1.1		8.95	8.67	
1/31/2008 06:00	1.1	1.0		8.96	8.67	
1/31/2008 06:15	1.1	1.0		8.84	8.67	
1/31/2008 06:30	1.1	1.0		8.83	8.68	
1/31/2008 06:45	1.1	1.0		8.81	8.68	
1/31/2008 07:00	1.1	1.0		8.77	8.68	
1/31/2008 07:15	1.1	1.0		8.80	8.69	
1/31/2008 07:30	1.1	0.9		8.77	8.71	
1/31/2008 07:45	1.1	0.9		8.81	8.69	
1/31/2008 08:00	1.2	0.9		8.77	8.68	
1/31/2008 08:15	1.2	0.9		8.77	8.71	
1/31/2008 08:30	1.1	0.9		8.77	8.72	
1/31/2008 08:45	1.2	0.9		8.79	8.73	
1/31/2008 09:00	1.3	0.9		8.82	8.73	
1/31/2008 09:15	2.6	0.9		8.86	8.71	
1/31/2008 09:30	2.4	0.8		8.91	8.76	
1/31/2008 09:45	2.2			8.93		

ACC Afternoon Shift carrying period.

1/31/2008 10:00	1.9	0.9		8.89	8.73	
1/31/2008 10:15	1.6	0.8		8.87	8.78	
1/31/2008 10:30	4.1			8.88		
1/31/2008 10:45	2.8	0.9		8.87	8.75	
1/31/2008 11:00	1.9	0.8		8.89	8.74	
1/31/2008 11:15	4.4	0.8		8.93	8.76	
1/31/2008 11:30	* 6.3	0.8		8.91	8.76	
1/31/2008 11:45	6.4	0.8		8.91	8.63	
1/31/2008 12:00	6.4	0.8		8.90	8.65	
1/31/2008 12:15	5.4	0.8		8.88	8.77	
1/31/2008 12:30	4.6	1.0		8.85	8.73	
1/31/2008 12:45	3.8	0.9		8.88	8.74	
1/31/2008 13:00	3.0	0.9		8.89	8.75	
1/31/2008 13:15	4.7			8.90		
1/31/2008 13:30	2.1	1.0		8.89	8.69	
1/31/2008 13:45	2.7	1.0		8.93	8.72	
1/31/2008 14:00	1.9	0.9		8.94	8.75	
1/31/2008 14:15	1.9	0.9		8.97	8.74	
1/31/2008 14:30	5.3	0.9		9.03	8.72	
1/31/2008 14:45	1.9	0.9		9.05	8.70	
1/31/2008 15:00	1.4	0.9		9.12	8.74	
1/31/2008 15:15	1.8	0.9		8.95	8.70	
1/31/2008 15:30	1.6	0.9		9.03	8.68	
1/31/2008 15:45	1.2	0.9		9.08	8.68	
1/31/2008 16:00	2.1	0.9		9.28	8.70	
1/31/2008 16:15	1.5	0.9		9.11	8.72	
1/31/2008 16:30	1.5	0.9		8.98	8.73	
1/31/2008 16:45	1.2	0.9		8.94	8.72	
1/31/2008 17:00	1.2	0.9		8.91	8.76	
1/31/2008 17:15	1.3	0.9		8.94	8.75	
1/31/2008 17:30	1.6	0.9		8.95	8.76	
1/31/2008 17:45	1.5	0.9		8.94	8.76	
1/31/2008 18:00	1.3	0.9		8.96	8.77	
1/31/2008 18:15	1.3	0.9		8.96	8.79	
1/31/2008 18:30	1.2	0.9		9.02	8.80	
1/31/2008 18:45	1.3	1.2		9.11	8.80	
1/31/2008 19:00	1.2	0.9		9.05	8.82	
1/31/2008 19:15	1.2	0.9		8.95	8.81	
1/31/2008 19:30	1.2	0.9		8.92	8.84	
1/31/2008 19:45	1.3	0.9		8.92	8.81	
1/31/2008 20:00	1.5	0.9		8.89	8.82	
1/31/2008 20:15	1.2	0.9		8.89	8.82	
1/31/2008 20:30	1.3	0.9		8.89	8.81	
1/31/2008 20:45	1.2	0.9		8.90	8.77	
1/31/2008 21:00	1.2	0.9		8.89	8.81	
1/31/2008 21:15	1.2	0.9		8.90	8.81	
1/31/2008 21:30	1.1	0.9		8.89	8.80	
1/31/2008 21:45	1.2	0.8		8.89	8.82	
1/31/2008 22:00	1.2	0.9		8.92	8.83	
1/31/2008 22:15	1.2	0.8		8.92	8.82	
1/31/2008 22:30	1.2	0.8		8.92	8.81	
1/31/2008 22:45	1.2	0.8		8.93	8.76	
1/31/2008 23:00	1.2	0.9		8.92	8.72	
1/31/2008 23:15	1.2	0.8		8.94	8.73	
1/31/2008 23:30	1.2	0.8		8.93	8.78	
1/31/2008 23:45	1.2	0.8		8.96	8.72	

* Exceedence recorded. ACC was @ Lunch from 1200-1230 hrs.

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 43
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	January	31	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:15am: The tug boat Jennifer H. got the barge KP-1 and the derrick in position. Approximately 7:15am-8:00am: The contractor placed imported backfill base materials Approximately: 8:00am-8:45am: No activities Approximately: 8:45am-12:00pm: placing imported backfill base materials. Approximately: 11:00am – 12:00pm: Turbidity reading was rising. The contractor was contacted at once. They slowed down the backfill placement. Total actual backfill from 7:00am to 12:00pm was approximately 4 hours See Keith Nordlund daily report for the rest of the day work. ACC had a crew of 5(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they placed a total of 2118 tons of sand for the whole day. See the contractor daily report for locations and depth of the backfill.
Safety/Accidents:	None
Problems Encountered & Resolutions:	Turbidity variances were noticed from about 11:00am to about 12:00pm. The contractor slowed down, but continued placing fill. Attached is a copy of the NTU reading for the morning period.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 2/5/08 (Date)

Start date: 1/31/2008 End date: 1/31/2008

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Denny Way User Defined

	Min: 0.902 Max: 0.964 Mean: 0.935 St.dev: 0.012	Min: 7.42 Max: 7.60 Mean: 7.54 St.dev: 0.05	Min: 1.1 Max: 6.4 Mean: 1.8 St.dev: 1.3	Min: 8.77 Max: 9.28 Mean: 8.93 St.dev: 0.09
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
1/31/2008 00:00	0.950	7.48	1.2	8.94
1/31/2008 00:15	0.944	7.46	1.1	8.98
1/31/2008 00:30	0.937	7.47	1.1	8.97
1/31/2008 00:45	0.941	7.46	1.1	8.99
1/31/2008 01:00	0.946	7.51	1.1	8.91
1/31/2008 01:15	0.946	7.50	1.1	8.93
1/31/2008 01:30	0.942	7.48	1.1	8.97
1/31/2008 01:45	0.950	7.47	1.1	8.99
1/31/2008 02:00	0.926	7.45	1.2	9.02
1/31/2008 02:15	0.946	7.44	1.1	9.03
1/31/2008 02:30	0.927	7.44	1.2	9.11
1/31/2008 02:45	0.947	7.42	1.1	9.10
1/31/2008 03:00	0.928	7.47	1.2	9.01
1/31/2008 03:15	0.934	7.46	1.1	9.04
1/31/2008 03:30	0.942	7.47	1.1	9.02
1/31/2008 03:45	0.936	7.47	1.1	8.99
1/31/2008 04:00	0.926	7.46	1.1	9.01
1/31/2008 04:15	0.929	7.48	1.1	8.97
1/31/2008 04:30	0.924	7.48	1.1	8.94
1/31/2008 04:45	0.928	7.51	1.1	8.90
1/31/2008 05:00	0.919	7.51	1.1	8.91
1/31/2008 05:15	0.936	7.49	1.1	8.92
1/31/2008 05:30	0.914	7.45	1.1	8.98
1/31/2008 05:45	0.925	7.48	1.1	8.95
1/31/2008 06:00	0.919	7.45	1.1	8.96
1/31/2008 06:15	0.910	7.55	1.1	8.84
1/31/2008 06:30	0.921	7.55	1.1	8.83
1/31/2008 06:45	0.924	7.55	1.1	8.81
1/31/2008 07:00	0.914	7.57	1.1	8.77
1/31/2008 07:15	0.915	7.55	1.1	8.80
1/31/2008 07:30	0.902	7.57	1.1	8.77
1/31/2008 07:45	0.925	7.53	1.1	8.81
1/31/2008 08:00	0.923	7.57	1.2	8.77
1/31/2008 08:15	0.925	7.57	1.2	8.77
1/31/2008 08:30	0.929	7.58	1.1	8.77
1/31/2008 08:45	0.935	7.56	1.2	8.79

1/31/2008 09:00	0.932	7.54	1.3	8.82
1/31/2008 09:15	0.920	7.53	2.6	8.86
1/31/2008 09:30	0.932	7.48	2.4	8.91
1/31/2008 09:45	0.939	7.47	2.2	8.93
1/31/2008 10:00	0.933	7.49	1.9	8.89
1/31/2008 10:15	0.936	7.50	1.6	8.87
1/31/2008 10:30	0.938	7.53	4.1	8.88
1/31/2008 10:45	0.928	7.54	2.8	8.87
1/31/2008 11:00	0.938	7.53	1.9	8.89
1/31/2008 11:15	0.950	7.52	4.4	8.93
1/31/2008 11:30	0.936	7.54	6.3	8.91
1/31/2008 11:45	0.938	7.54	6.4	8.91
1/31/2008 12:00	0.938	7.55	6.4	8.90
1/31/2008 12:15	0.934	7.56	5.4	8.88
1/31/2008 12:30	0.937	7.57	4.6	8.85
1/31/2008 12:45	0.936	7.58	3.8	8.88
1/31/2008 13:00	0.934	7.57	3.0	8.89
1/31/2008 13:15	0.917	7.58	4.7	8.90
1/31/2008 13:30	0.927	7.59	2.1	8.89
1/31/2008 13:45	0.920	7.58	2.7	8.93
1/31/2008 14:00	0.918	7.58	1.9	8.94
1/31/2008 14:15	0.940	7.57	1.9	8.97
1/31/2008 14:30	0.950	7.57	5.3	9.03
1/31/2008 14:45	0.946	7.56	1.9	9.05
1/31/2008 15:00	0.944	7.57	1.4	9.12
1/31/2008 15:15	0.939	7.59	1.8	8.95
1/31/2008 15:30	0.946	7.58	1.6	9.03
1/31/2008 15:45	0.936	7.56	1.2	9.08
1/31/2008 16:00	0.917	7.56	2.1	9.28
1/31/2008 16:15	0.942	7.58	1.5	9.11
1/31/2008 16:30	0.938	7.58	1.5	8.98
1/31/2008 16:45	0.932	7.58	1.2	8.94
1/31/2008 17:00	0.932	7.60	1.2	8.91
1/31/2008 17:15	0.932	7.59	1.3	8.94
1/31/2008 17:30	0.931	7.59	1.6	8.95
1/31/2008 17:45	0.938	7.60	1.5	8.94
1/31/2008 18:00	0.936	7.58	1.3	8.96
1/31/2008 18:15	0.938	7.56	1.3	8.96
1/31/2008 18:30	0.930	7.53	1.2	9.02
1/31/2008 18:45	0.932	7.51	1.3	9.11
1/31/2008 19:00	0.934	7.53	1.2	9.05
1/31/2008 19:15	0.941	7.59	1.2	8.95
1/31/2008 19:30	0.921	7.60	1.2	8.92
1/31/2008 19:45	0.938	7.59	1.3	8.92
1/31/2008 20:00	0.938	7.60	1.5	8.89
1/31/2008 20:15	0.943	7.60	1.2	8.89
1/31/2008 20:30	0.940	7.59	1.3	8.89
1/31/2008 20:45	0.936	7.58	1.2	8.90
1/31/2008 21:00	0.934	7.58	1.2	8.89
1/31/2008 21:15	0.941	7.57	1.2	8.90
1/31/2008 21:30	0.953	7.57	1.1	8.89
1/31/2008 21:45	0.950	7.58	1.2	8.89

1/31/2008 22:00	0.946	7.56	1.2	8.92
1/31/2008 22:15	0.957	7.56	1.2	8.92
1/31/2008 22:30	0.953	7.56	1.2	8.92
1/31/2008 22:45	0.964	7.55	1.2	8.93
1/31/2008 23:00	0.960	7.55	1.2	8.92
1/31/2008 23:15	0.957	7.54	1.2	8.94
1/31/2008 23:30	0.962	7.55	1.2	8.93
1/31/2008 23:45	0.955	7.53	1.2	8.96

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King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 44
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS.
TIME WORK STOPPED: 1730HRS.

Date

Year	Month	Day	Inspector
2008	February	01	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain/ Snow
		X		

Temperature

10-32	32-55	55-70	70-85	85+
am	pm			

Construction Activities:	ACC was conducting a Site Base fill Survey at the beginning of the shift. The Survey boat left the site at app. 1056hrs. "Pam Tay" crew worked this morning on shipboard maintenance activities, until Survey information was processed. At app. 1300hrs., M. Locke, ACC Supt., returned to the site with new Survey updates. Base fill work resumed (to fill low spots indicated by this morning's ACC Survey) after app. 1325hrs. ACC used a spot fill and move pattern. Base fill work was finished at 1535hrs. (Phone call from M. Locke, ACC).
Miscellaneous:	At the Contractor's request, contacted R. Pickering at Anchor Engineering to inform them that ACC felt they were ready for a Multi-beam sonar survey of the base fill work they just finished.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. No accidents or incidents were reported by the Contractor this Afternoon Shift.
Problems Encountered & Resolutions:	Note: phoned ACC, at app. 1323hrs.) to caution them about the use of their forward (landward) spud. M. Locke informed this KC observer that he was aware of the location of the spud, that it was outside the capping area, and had remarked to one of the crew that he had anticipated the phone call from KC almost as soon as the spud was dropped (in a humorous way).
Test Conducted:	See attached Denny/Aquarium Buoy Special Daily Record
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None.
Manpower	ACC: "Pam Tay", five (5) crew persons; "Jennifer H", two (2) persons
Visitors to Site	None.
Equipment Used	"Pam Tay" w/American 9310 Crane & skip box, Cat 938F Loader, three (3) work skiffs, one P/U Truck; Assist Tug "Jennifer H"

Attachments: Denny/Aquarium Special Daily Report

Randy Brunke, Project Representative (Date)

K. Nordlund 2-01-08
K. Nordlund, CMIII (2-01-08)

Start date: 2/1/2008 End date: 2/1/2008

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Denny Way Comparison Special

	Min: 1.1 Max: 5.0 Mean: 1.4 St.dev: 0.5	Min: 0.8 Max: 1.2 Mean: 1.0 St.dev: 0.1	Min: Max: Mean: St.dev:	Min: 8.87 Max: 9.39 Mean: 9.07 St.dev: 0.13	Min: 8.68 Max: 9.05 Mean: 8.82 St.dev: 0.10	Min: Max: Mean: St.dev:
Date/Time	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Seattle Aquarium (new) 00016891 Turbidity+ [NTU]**	**Downtown Seattle Aquarium (old) 00016812 Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**	**Downtown Seattle Aquarium (new) 00016891 ODO Conc [mg/L]**	**Downtown Seattle Aquarium (old) 00016812 ODO Conc [mg/L]**
2/1/2008 00:00	1.2	0.8		8.95	8.80	
2/1/2008 00:15	1.2	1.0		8.95	8.73	
2/1/2008 00:30	1.2	1.0		8.96	8.71	
2/1/2008 00:45	1.2	1.0		8.97	8.70	
2/1/2008 01:00	1.2	1.0		8.96	8.70	
2/1/2008 01:15	1.2	1.0		8.96	8.71	
2/1/2008 01:30	1.2	1.0		8.97	8.74	
2/1/2008 01:45	1.2	1.0		8.97	8.74	
2/1/2008 02:00	1.2	1.1		8.98	8.72	
2/1/2008 02:15	1.2	1.1		8.98	8.74	
2/1/2008 02:30	1.2	1.0		8.98	8.73	
2/1/2008 02:45	1.2	1.0		8.99	8.74	
2/1/2008 03:00	1.2	1.1		8.99	8.74	
2/1/2008 03:15	1.2	1.0		9.00	8.80	
2/1/2008 03:30	1.2	1.0		9.06	8.74	
2/1/2008 03:45	1.2	1.0		9.02	8.73	
2/1/2008 04:00	1.2	1.0		9.07	8.76	
2/1/2008 04:15	1.2	1.0		9.05	8.74	
2/1/2008 04:30	1.2	1.1		9.05	8.68	
2/1/2008 04:45	1.2	1.1		9.06	8.68	
2/1/2008 05:00	1.3	1.1		9.34	8.68	
2/1/2008 05:15	1.3	1.2		9.36	8.72	
2/1/2008 05:30	1.3	1.1		9.31	8.72	
2/1/2008 05:45	1.3	1.1		9.23	8.72	
2/1/2008 06:00	1.2	1.0		9.18	8.72	
2/1/2008 06:15	1.2	1.0		9.18	8.72	
2/1/2008 06:30	1.2	1.0		9.24	8.73	
2/1/2008 06:45	1.3	1.1		9.32	8.78	
2/1/2008 07:00	1.3	1.0		9.33	8.81	
2/1/2008 07:15	1.2	1.0		9.33	8.85	
2/1/2008 07:30	1.3	1.0		9.39	8.79	
2/1/2008 07:45	1.2	0.9		9.35	8.79	
2/1/2008 08:00	1.7	1.0		9.16	8.83	
2/1/2008 08:15	2.0	1.0		9.12	8.81	
2/1/2008 08:30	1.5	1.0		9.12	8.84	
2/1/2008 08:45	1.4	0.9		9.13	8.83	
2/1/2008 09:00	2.0	1.0		9.06	8.83	
2/1/2008 09:15	1.3	1.0		9.03	8.82	
2/1/2008 09:30	1.4	0.9		9.01	8.85	
2/1/2008 09:45	1.2	1.0		9.00	8.85	

2/1/2008 10:00	1.2	0.9		9.18	8.86	
2/1/2008 10:15	1.1	1.0		9.09	8.85	
2/1/2008 10:30	1.1	1.1		9.08	8.93	
2/1/2008 10:45	1.3	1.0		9.03	8.87	
2/1/2008 11:00	1.2	1.0		9.02	8.86	
2/1/2008 11:15	1.2	1.0		9.08	8.87	
2/1/2008 11:30	1.1	0.9		9.10	8.88	
2/1/2008 11:45	1.1	0.9		9.12	8.85	
2/1/2008 12:00	1.1	0.9		9.11	8.84	
2/1/2008 12:15	1.1	0.9		9.13	8.89	
2/1/2008 12:30	1.1	0.9		9.15	8.86	
2/1/2008 12:45	1.1	0.9		9.16	8.86	
2/1/2008 13:00	1.1	0.9		8.99	8.91	
2/1/2008 13:15	1.1	0.9		8.96	8.99	
2/1/2008 13:30	1.1	0.9		8.95	8.94	
2/1/2008 13:45	1.5	0.9		8.98	8.93	
2/1/2008 14:00	1.9	0.9		9.10	8.93	
2/1/2008 14:15	* 5.0	0.9		8.94	8.89	
2/1/2008 14:30	1.6	1.0		8.97	8.98	
2/1/2008 14:45	2.1	1.0		8.98	8.97	
2/1/2008 15:00	1.3	1.0		9.01	9.05	
2/1/2008 15:15	1.7	1.0		8.96	8.98	
2/1/2008 15:30	1.9	1.0		8.89	8.97	
2/1/2008 15:45	1.5	1.0		8.87	8.96	
2/1/2008 16:00	1.1	1.0		8.97	8.96	
2/1/2008 16:15	1.1	1.0		9.02	9.01	
2/1/2008 16:30	1.2			9.01		

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[ACC Attention Cassie]

* call to M. Locke regarding the spike

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 44
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	February	1st	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:15am: The tug boat Jennifer H. got the barge KP-2 and the derrick in position. Approximately 7:15am-8:15am: The contractor placed imported backfill base materials Approximately: 8:15am-12:00pm: maintenance Approximately: 9:15am-11:00am: surveying Total actual backfill from 7:00am to 12:00pm was approximately 1 hour. See Keith Nordlund daily report for the rest of the day work. ACC had a crew of 5(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they placed a total of 681 tons of sand for the whole day. See the contractor daily report for locations and depth of the backfill.
Safety/Accidents:	None
Problems Encountered & Resolutions:	No turbidity variances were noticed today.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 2/5/08 (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 45
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	February	4th	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X				

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	King County consultant is doing the surveying today to verify the base backfill. The contractor is doing maintenance on the derrick and the crane. No dredging or backfill activities. ACC had a crew of 5(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager). **NOTE:** The contractor did not provide a daily report because they did not perform any work.
Miscellaneous:	.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Iha Khilfeh 2/5/08
Inspector Iha Khilfeh (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 46
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	February	5th	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
			X			

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-8:00am: The tug boat Jennifer H. got the barge KP-1 and the derrick in position. KP-1 is full of Habitat Mix. Approximately 8:00am-12:00pm: The contractor placed imported backfill Habitat Mix materials Total actual backfill from 7:00am to 12:00pm was approximately 4 hour. See Keith Nordlund daily report for the rest of the day work. ACC had a crew of 5(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they placed a total of 2238 tons of Habitat Mix for the whole day. See the contractor daily report for locations and depth of the backfill.
Safety/Accidents:	None
Problems Encountered & Resolutions:	No turbidity variances were noticed this morning.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 2/7/08 (Date)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 45
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS.
TIME WORK STOPPED: 1730HRS.

Date			
Year	Month	Day	Inspector
2008	February	05	KLN

Day of the Week						
Sat	Sun	Mon	Tue	Wed	Thu	Fri
			X			

Weather				
Clear	PC	Overcast	Fog	Rain/ Snow
		X windy		X

Temperature				
10-32	32-55	55-70	70-85	85+
am	pm			

Construction Activities:	ACC received word yesterday afternoon that their base fill capping work was within acceptable limits (re: R. Pickering, Anchor) ACC began Habitat mix placement from the "Pam Tay" out of barge "KP-1" this morning. Barge "KP-1" was emptied by 1445hrs. The crane was dogged off by1515hrs. (Phone call from M. Locke, ACC).
Miscellaneous:	Informed by M. Locke, ACC, that the assist Tug "Diane H" was not due to come pick up the "KP-1" until late this night. ACC crew does not anticipate starting work until 0900hrs. tomorrow. Total capping time: 6hr., 15± min.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. No accidents or incidents were reported by the Contractor this Afternoon Shift.
Problems Encountered & Resolutions:	Note: I. Khilfeh phoned ACC to caution them about the use of their forward (landward) spud this morning. M. Locke informed him that he was aware of the location of the spud, and that it was outside the capping area.
Test Conducted:	See attached Denny/Aquarium Buoy Special Daily Record. Contractor exceeded background Turbidity by over 5NTUs just before they knocked off for Lunch (ACC' choice of BMP). M. Locke had been contacted by cell-phone when the first spike of 8.5±NTU was recorded by the Denny buoy @ 1115hrs.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None.
Manpower	ACC: "Pam Tay", five (5) crew persons; "Jennifer H", two (2) persons
Visitors to Site	Allen Alston (with three others)
Equipment Used	"Pam Tay" w/American 9310 Crane & skip box, Cat 938F Loader, three (3) work skiffs, one P/U Truck; Assist Tug "Jennifer H"

Attachments: Denny/Aquarium Special Daily Report

Randy Brunke, Project Representative (Date)

2-05-08
K. Nordlund, CMIII (2-05-08)

Start date: 2/5/2008 End date: 2/5/2008

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Denny Way Comparison Special

	Min: 1.2 Max: 8.5 Mean: 2.2 St.dev: 1.7	Min: 0.7 Max: 1.0 Mean: 0.9 St.dev: 0.1	Min: Max: Mean: St.dev:	Min: 8.90 Max: 9.21 Mean: 9.05 St.dev: 0.09	Min: 8.57 Max: 9.06 Mean: 8.82 St.dev: 0.15	Min: Max: Mean: St.dev:
Date/Time	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Seattle Aquarium (new) 00016891 Turbidity+ [NTU]**	**Downtown Seattle Aquarium (old) 00016812 Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**	**Downtown Seattle Aquarium (new) 00016891 ODO Conc [mg/L]**	**Downtown Seattle Aquarium (old) 00016812 ODO Conc [mg/L]**
2/5/2008 00:00	1.2	1.0		9.04	8.80	
2/5/2008 00:15	1.2	1.0		8.98	8.87	
2/5/2008 00:30	1.3	0.9		9.01	8.91	
2/5/2008 00:45	1.3	0.9		8.95	8.94	
2/5/2008 01:00	1.3	0.9		8.92	8.96	
2/5/2008 01:15	1.3	0.9		8.90	8.97	
2/5/2008 01:30	1.3	0.9		8.94	8.96	
2/5/2008 01:45	1.3	0.9		8.93	8.95	
2/5/2008 02:00	1.3	0.9		8.93	8.96	
2/5/2008 02:15	1.3	0.9		8.92	8.92	
2/5/2008 02:30	1.3	1.0		8.93	8.92	
2/5/2008 02:45	1.3	0.9		8.94	8.92	
2/5/2008 03:00	1.3	0.9		8.94	8.94	
2/5/2008 03:15	1.3	0.9		8.95	8.94	
2/5/2008 03:30	1.3	0.9		8.97	8.93	
2/5/2008 03:45	1.3	0.9		8.98	8.97	
2/5/2008 04:00	1.3	1.0		8.94	9.01	
2/5/2008 04:15	1.3	1.0		8.93	9.00	
2/5/2008 04:30	1.3	1.0		8.95	9.01	
2/5/2008 04:45	1.3	1.0		8.97	9.01	
2/5/2008 05:00	1.3	0.9		8.99	9.02	
2/5/2008 05:15	1.3	0.9		9.00	9.04	
2/5/2008 05:30	1.3	0.9		9.00	9.05	
2/5/2008 05:45	1.3	0.9		8.99	9.04	
2/5/2008 06:00	1.3	0.9		9.01	9.06	
2/5/2008 06:15	1.3	0.8		9.02	8.95	
2/5/2008 06:30	1.3	0.9		9.06	8.77	
2/5/2008 06:45	1.3	0.8		9.01	8.92	
2/5/2008 07:00	1.3	0.8		9.02	8.72	
2/5/2008 07:15	1.2	0.8		9.00	8.85	
2/5/2008 07:30	1.3	0.8		9.02	8.80	
2/5/2008 07:45	1.3	0.8		9.04	8.57	
2/5/2008 08:00	1.2	0.8		9.04	8.62	
2/5/2008 08:15	1.2	0.8		9.03	8.59	
2/5/2008 08:30	1.3	0.8		9.04	8.70	
2/5/2008 08:45	1.3	0.8		9.05	8.61	
2/5/2008 09:00	1.3	0.8		9.06	8.61	
2/5/2008 09:15	1.3	0.8		9.08	8.73	
2/5/2008 09:30	1.3	0.8		9.10	8.75	
2/5/2008 09:45	1.3	0.8		9.13	8.78	

2/5/2008 10:00	2.9	0.8		9.08	8.67	
2/5/2008 10:15	4.1	0.8		9.08	8.71	
2/5/2008 10:30	3.8	0.9		9.15	8.79	
2/5/2008 10:45	2.2	0.8		9.13	8.60	
2/5/2008 11:00	* 2.7	0.8	background	9.13	8.71	
2/5/2008 11:15	8.5	0.8		9.20	8.72	
2/5/2008 11:30	8.5	0.8		9.20	8.69	
2/5/2008 11:45	6.1	0.7		9.18	8.69	
2/5/2008 12:00	3.5	0.9		9.10	8.61	
2/5/2008 12:15	2.7	0.7		9.12	8.65	
2/5/2008 12:30	2.5	0.8		9.13	8.71	
2/5/2008 12:45	4.8			9.18		
2/5/2008 13:00	4.1	0.8		9.18	8.67	
2/5/2008 13:15	5.4	0.8		9.21	8.67	
2/5/2008 13:30	4.7	0.8		9.21	8.67	
2/5/2008 13:45	4.2	0.8		9.17	8.78	
2/5/2008 14:00	3.6	0.8		9.11	8.78	
2/5/2008 14:15	1.8	0.8		9.19	8.83	
2/5/2008 14:30	2.0			9.16		
2/5/2008 14:45	2.0			9.16		
2/5/2008 15:00	1.9	0.8		9.14	8.81	
2/5/2008 15:15	2.1			9.15		

Acc Afternoon carrying period

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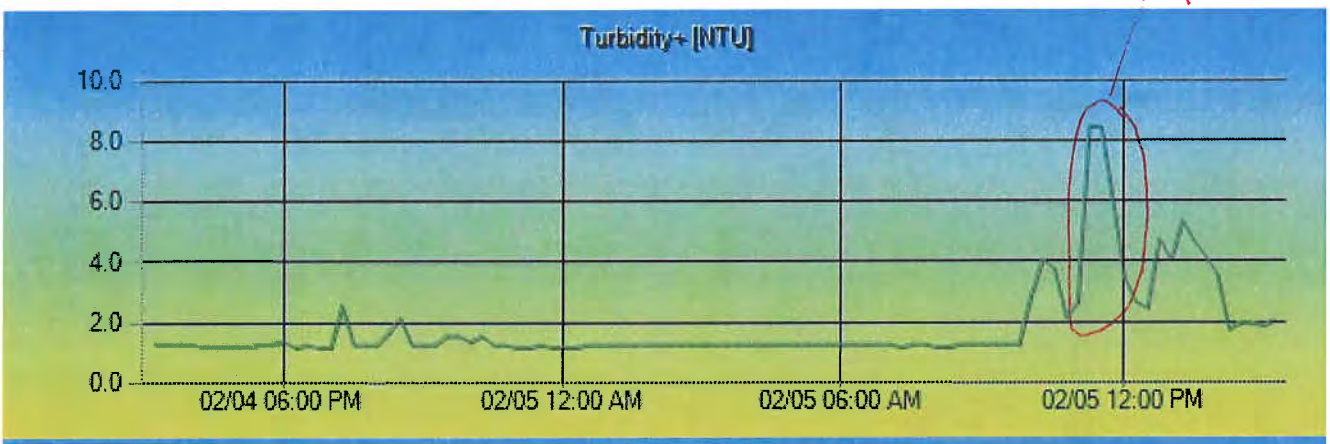
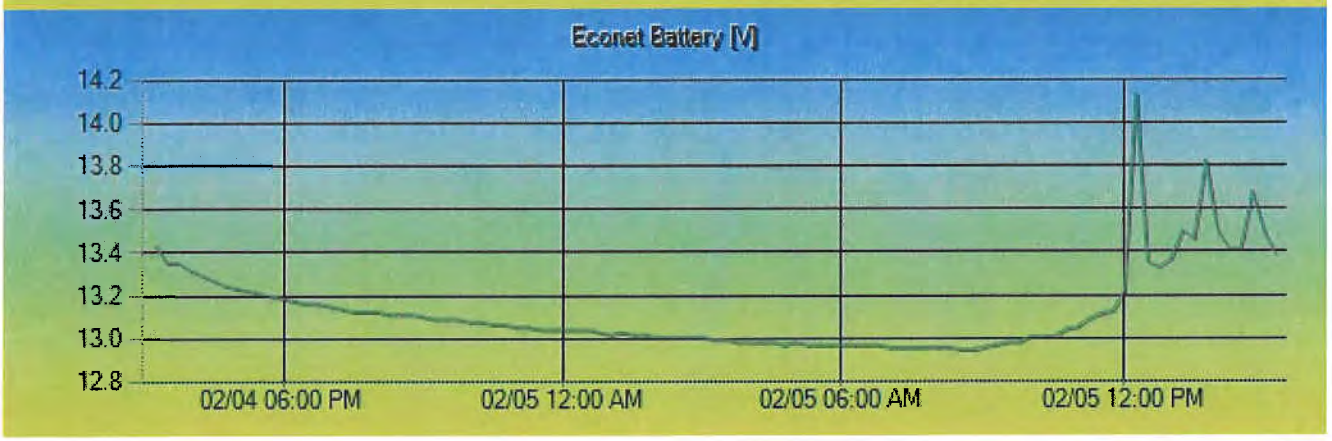
* ACC exceeds 5NTU over background

You are here: King County Marine / Puget Sound Network / Downtown / Denny Way Buoy

Name: Denny Way Buoy
Description:

exceedance period





King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 46
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 0900HRS.
TIME WORK STOPPED: 1230 HRS. (RELIEVED BY I. KHILFEH)

Date

Year	Month	Day	Inspector
2008	February	06	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain/ Snow
		X		showers

Temperature

10-32	32-55	55-70	70-85	85+
am	pm			

Construction Activities:	Barge "KP-1" was refilled in DuPont, Wa., overnight, and returned to the worksite by 1200hrs. ACC resumed Habitat Mix capping at 1208hrs. ACC spent the first three hours of this work day on shipboard maintenance.
Miscellaneous:	Informed by M. Locke, ACC, on 2-05-08, that the assist Tug "Diane H" was not expected back"KP-1" until late this morning. ACC crew started work this day at 0930hrs.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. No accidents or incidents were reported by the Contractor this Afternoon Shift.
Problems Encountered & Resolutions:	None.
Test Conducted:	See attached Denny/Aquarium Buoy Special Daily Record.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None.
Manpower	ACC: "Pam Tay", five (5) crew persons; "Diane H", three (3) persons
Visitors to Site	R. Brunke, Proj. Rep.
Equipment Used	"Pam Tay" w/American 9310 Crane & skip box, Cat 938F Loader (on barge), three (3) work skiffs, one P/U Truck; Assist Tug "Diane H"

Attachments: Denny/Aquarium Special Daily Report

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (2-06-08)

Start date: 2/6/2008 End date: 2/6/2008

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Denny Way Comparison Special

	Min: 1.2 Max: 11.6 Mean: 2.1 St.dev: 1.6	Min: 0.8 Max: 1.5 Mean: 1.1 St.dev: 0.2	Min: Max: Mean: St.dev:	Min: 8.82 Max: 9.44 Mean: 9.10 St.dev: 0.15	Min: 8.75 Max: 9.21 Mean: 8.99 St.dev: 0.09	Min: Max: Mean: St.dev:
Date/Time	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Seattle Aquarium (new) 00016891 Turbidity+ [NTU]**	**Downtown Seattle Aquarium (old) 00016812 Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**	**Downtown Seattle Aquarium (new) 00016891 ODO Conc [mg/L]**	**Downtown Seattle Aquarium (old) 00016812 ODO Conc [mg/L]**
2/6/2008 00:00	1.4	1.3		8.82	8.83	
2/6/2008 00:15	1.3	1.3		8.82	8.82	
2/6/2008 00:30	1.4	1.5		8.86	8.85	
2/6/2008 00:45	1.2	1.4		8.83	8.83	
2/6/2008 01:00	1.3	1.3		8.84	8.84	
2/6/2008 01:15	1.3	1.4		8.86	8.86	
2/6/2008 01:30	1.3			8.87		
2/6/2008 01:45	1.3			8.90		
2/6/2008 02:00	1.2			8.89		
2/6/2008 02:15	1.3	1.2		8.89	8.88	
2/6/2008 02:30	1.2	1.3		8.89	8.88	
2/6/2008 02:45	1.2	1.2		8.91	8.98	
2/6/2008 03:00	1.3	1.1		8.91	8.90	
2/6/2008 03:15	1.4	1.1		8.98	8.95	
2/6/2008 03:30	1.4	1.2		8.95	9.02	
2/6/2008 03:45	1.3	1.2		8.92	8.99	
2/6/2008 04:00	1.2	1.3		8.94	9.01	
2/6/2008 04:15	1.3	1.4		8.93	9.06	
2/6/2008 04:30	1.3	1.4		8.95	9.06	
2/6/2008 04:45	1.3	1.4		8.96	9.08	
2/6/2008 05:00	1.3	1.4		8.96	9.09	
2/6/2008 05:15	1.3	1.4		8.98	9.11	
2/6/2008 05:30	1.3	1.4		8.98	9.11	
2/6/2008 05:45	1.3	1.4		9.00	9.12	
2/6/2008 06:00	1.3	1.5		9.02	9.14	
2/6/2008 06:15	1.3	1.4		9.02	9.17	
2/6/2008 06:30	1.2	1.2		8.98	9.08	
2/6/2008 06:45	1.2	1.2		8.99	9.04	
2/6/2008 07:00	1.3	1.0		8.99	8.94	
2/6/2008 07:15	1.2	1.2		9.02	9.21	
2/6/2008 07:30	1.2	1.3		9.04	9.09	
2/6/2008 07:45	1.3	1.1		9.04	8.91	
2/6/2008 08:00	1.3	1.0		9.06	8.90	
2/6/2008 08:15	1.3	1.0		9.10	8.97	
2/6/2008 08:30	1.3	0.9		9.10	8.85	
2/6/2008 08:45	1.3	0.9		9.10	8.75	
2/6/2008 09:00	1.3	1.0		9.12	8.91	
2/6/2008 09:15	1.4	1.1		9.11	9.02	
2/6/2008 09:30	1.4	0.9		9.13	8.76	
2/6/2008 09:45	1.3	1.2		9.14	8.96	

2/6/2008 10:00	1.3	1.0		9.17	9.00	
2/6/2008 10:15	1.4	1.0		9.18	8.92	
2/6/2008 10:30	1.3	1.0		9.19	9.04	
2/6/2008 10:45	1.3	1.0		9.09	9.04	
2/6/2008 11:00	1.4	1.0		9.21	9.04	
2/6/2008 11:15	1.3	0.9		9.20	9.04	
2/6/2008 11:30	1.3	1.0		9.17	9.07	
2/6/2008 11:45	1.3	1.0		9.18	9.01	
2/6/2008 12:00	1.3	0.9		9.20	8.89	
2/6/2008 12:15	1.2	0.9		9.31	8.94	
2/6/2008 12:30	1.3	1.0		9.20	8.92	
2/6/2008 12:45	1.3			9.15		
2/6/2008 13:00	1.4	0.9		9.16	8.98	
2/6/2008 13:15	1.6	0.9		8.92	9.04	
2/6/2008 13:30	11.6	1.0		9.28	8.99	
2/6/2008 13:45	5.6	1.0		9.20	8.97	
2/6/2008 14:00	3.2	0.9		9.19	9.01	
2/6/2008 14:15	1.5	1.0		9.17	9.00	
2/6/2008 14:30	2.5	0.9		9.28	9.01	
2/6/2008 14:45	2.8	0.9		9.28	9.03	
2/6/2008 15:00	3.1	0.9		9.38	9.02	
2/6/2008 15:15	3.6	0.9		9.34	9.00	
2/6/2008 15:30	2.7	1 0		9.29	9.03	
2/6/2008 15:45	2.5	0.9		9.29	9.04	
2/6/2008 16:00	3.8	0.9		9.43	9.02	
2/6/2008 16:15	3.0	0.9		9.44	9.03	
2/6/2008 16:30	6.2	0.9		9.37	8.99	
2/6/2008 16:45	3.6	0.9		9.19	9.05	
2/6/2008 17:00	3.5	0.9		9.13	9.11	
2/6/2008 17:15	9.5	0.9		9.25	9.08	
2/6/2008 17:30	3.9	0.9		9.09	8.99	
2/6/2008 17:45	3.4	0.9		9.11	9.08	
2/6/2008 18:00	3.6	0.9		9.24	9.06	
2/6/2008 18:15	3.6	0.9		9.20	8.97	
2/6/2008 18:30	2.8	0.8		9.18	8.90	
2/6/2008 18:45	1.6	0.8		9.18	9.06	
2/6/2008 19:00	1.5	0.8		9.19	9.10	
2/6/2008 19:15	1.5	0.8		9.16	9.02	
2/6/2008 19:30	1.5	0.8		9.18	8.98	
2/6/2008 19:45	1.5	0.9		9.22	9.03	
2/6/2008 20:00	1.5	0.9		9.26	9.01	
2/6/2008 20:15	3.1	0.9		9.25	9.01	
2/6/2008 20:30	1.7	0.9		9.16	9.01	
2/6/2008 20:45	1.4	0.9		9.09	9.02	
2/6/2008 21:00	1.6	0.9		9.15	9.01	
2/6/2008 21:15	2.0	0.9		9.16	9.02	
2/6/2008 21:30	2.7	1.0		9.08	9.01	
2/6/2008 21:45	1.7	1.0		9.10	8.96	
2/6/2008 22:00	3.1	1.0		9.17	9.01	
2/6/2008 22:15	3.1	1.1		9.19	9.00	
2/6/2008 22:30	6.0	1.1		9.26	8.99	
2/6/2008 22:45	1.3	1.1		9.11	8.95	
2/6/2008 23:00	1.4	1.1		9.09	8.93	
2/6/2008 23:15	1.2	1.1		9.00	8.94	
2/6/2008 23:30	1.9	1.0		9.10	8.95	
2/6/2008 23:45	1.5	1.0		9.05	8.99	

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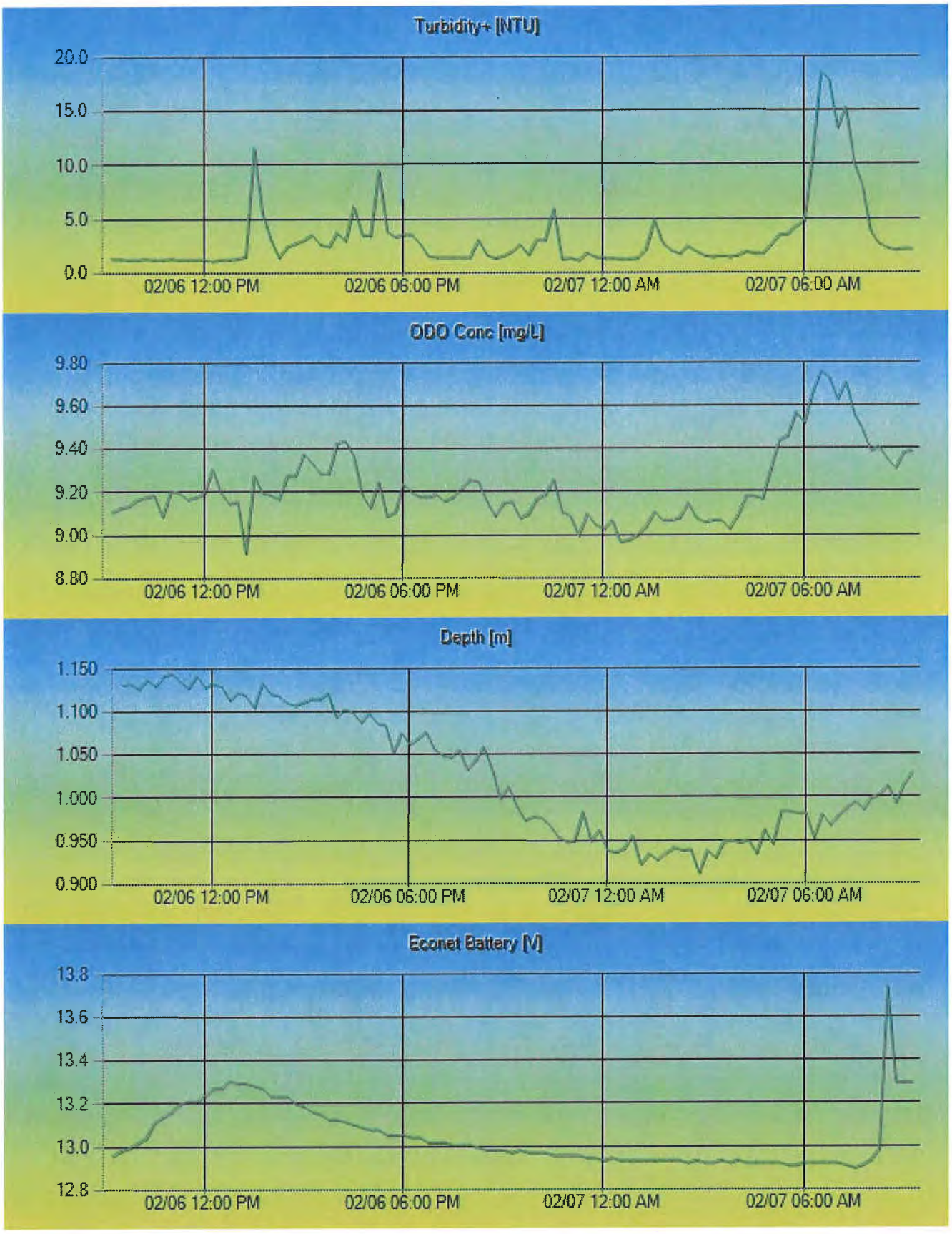
You are here: King County Marine / Puget Sound Network / Downtown / Denny Way Buoy

Name: Denny Way Buoy
Description:



King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 47
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	February	6	Iha Khilfeh

Day of the Week						
Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather				
Clear	PC	Overcast	Fog	Rain
		am		pm

Temperature				
10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	**NOTE: Today,** Keith worked this morning, I worked the afternoon. See Keith Nordlund daily report for the morning work. Approximately 12:00pm: Apparently, KP-1 barge just got to the site loaded with Habitat Mix with Diane Tug Boat. Approximately: 12:15pm-1:35pm: Placing Habitat mix Approximately: 1:15pm: KC lab came and took water sample for turbidity test. Approximately: 1:35pm: Turbidity went high NTU+11.6. The contractor was contacted at once. The contractor stops working because of the high turbidity. They decided to change locations. Approximately: 1:35pm-1:45pm: The contractor moved the derrick and the barge slightly to a different location. Approximately 1:45pm-5:15pm: The contractor placed imported habitat mix. Approximately 5:15pm- 5:45pm: The tug boat moved the derrick and the barge out of the site and placed the spuds. The tug boat aggravated the turbidity of the water. See the attached NTU reading for the day. Approximately 6:00pm: The crew left Total actual backfill from 12:00pm to 6:00pm was approximately 4.75 hours. ACC had a crew of 5(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report, they placed a total of 2094 tons of habitat mix for the whole day. See the contractor daily report for locations and depth of the backfill.
Safety/Accidents:	None

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 2/8/07 (Date)

Start date: 2/6/2008 End date: 2/6/2008

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Denny Way User Defined

	Min: 0.949 Max: 1.145 Mean: 1.087 St.dev: 0.053	Min: 7.08 Max: 7.48 Mean: 7.28 St.dev: 0.10	Min: 1.2 Max: 11.6 Mean: 2.1 St.dev: 1.6	Min: 8.82 Max: 9.44 Mean: 9.10 St.dev: 0.15
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
2/6/2008 00:00	1.082	7.46	1.4	8.82
2/6/2008 00:15	1.078	7.48	1.3	8.82
2/6/2008 00:30	1.081	7.45	1.4	8.86
2/6/2008 00:45	1.078	7.46	1.2	8.83
2/6/2008 01:00	1.076	7.45	1.3	8.84
2/6/2008 01:15	1.080	7.43	1.3	8.86
2/6/2008 01:30	1.107	7.44	1.3	8.87
2/6/2008 01:45	1.103	7.40	1.3	8.90
2/6/2008 02:00	1.101	7.40	1.2	8.89
2/6/2008 02:15	1.104	7.42	1.3	8.89
2/6/2008 02:30	1.100	7.42	1.2	8.89
2/6/2008 02:45	1.088	7.39	1.2	8.91
2/6/2008 03:00	1.103	7.39	1.3	8.91
2/6/2008 03:15	1.110	7.33	1.4	8.98
2/6/2008 03:30	1.108	7.35	1.4	8.95
2/6/2008 03:45	1.109	7.38	1.3	8.92
2/6/2008 04:00	1.097	7.37	1.2	8.94
2/6/2008 04:15	1.116	7.36	1.3	8.93
2/6/2008 04:30	1.107	7.33	1.3	8.95
2/6/2008 04:45	1.108	7.33	1.3	8.96
2/6/2008 05:00	1.118	7.33	1.3	8.96
2/6/2008 05:15	1.111	7.30	1.3	8.98
2/6/2008 05:30	1.116	7.30	1.3	8.98
2/6/2008 05:45	1.117	7.28	1.3	9.00
2/6/2008 06:00	1.123	7.26	1.3	9.02
2/6/2008 06:15	1.122	7.27	1.3	9.02
2/6/2008 06:30	1.123	7.32	1.2	8.98
2/6/2008 06:45	1.134	7.30	1.2	8.99
2/6/2008 07:00	1.135	7.31	1.3	8.99
2/6/2008 07:15	1.132	7.28	1.2	9.02
2/6/2008 07:30	1.128	7.25	1.2	9.04
2/6/2008 07:45	1.128	7.25	1.3	9.04
2/6/2008 08:00	1.141	7.21	1.3	9.06
2/6/2008 08:15	1.134	7.16	1.3	9.10
2/6/2008 08:30	1.141	7.16	1.3	9.10
2/6/2008 08:45	1.129	7.15	1.3	9.10

2/6/2008 09:00	1.138	7.15	1.3	9.12
2/6/2008 09:15	1.132	7.15	1.4	9.11
2/6/2008 09:30	1.133	7.13	1.4	9.13
2/6/2008 09:45	1.127	7.10	1.3	9.14
2/6/2008 10:00	1.138	7.08	1.3	9.17
2/6/2008 10:15	1.130	7.08	1.4	9.18
2/6/2008 10:30	1.142	7.09	1.3	9.19
2/6/2008 10:45	1.145	7.22	1.3	9.09
2/6/2008 11:00	1.136	7.12	1.4	9.21
2/6/2008 11:15	1.128	7.13	1.3	9.20
2/6/2008 11:30	1.142	7.16	1.3	9.17
2/6/2008 11:45	1.129	7.16	1.3	9.18
2/6/2008 12:00	1.133	7.15	1.3	9.20
2/6/2008 12:15	1.130	7.12	1.2	9.31
2/6/2008 12:30	1.114	7.19	1.3	9.20
2/6/2008 12:45	1.123	7.22	1.3	9.15
2/6/2008 13:00	1.119	7.23	1.4	9.16
2/6/2008 13:15	1.105	7.48	1.6	8.92
2/6/2008 13:30	1.134	7.25	11.6	9.28
2/6/2008 13:45	1.121	7.23	5.6	9.20
2/6/2008 14:00	1.119	7.21	3.2	9.19
2/6/2008 14:15	1.111	7.25	1.5	9.17
2/6/2008 14:30	1.108	7.19	2.5	9.28
2/6/2008 14:45	1.111	7.18	2.8	9.28
2/6/2008 15:00	1.115	7.17	3.1	9.38
2/6/2008 15:15	1.115	7.19	3.6	9.34
2/6/2008 15:30	1.122	7.20	2.7	9.29
2/6/2008 15:45	1.094	7.21	2.5	9.29
2/6/2008 16:00	1.103	7.16	3.8	9.43
2/6/2008 16:15	1.100	7.15	3.0	9.44
2/6/2008 16:30	1.088	7.19	6.2	9.37
2/6/2008 16:45	1.099	7.27	3.6	9.19
2/6/2008 17:00	1.087	7.32	3.5	9.13
2/6/2008 17:15	1.085	7.23	9.5	9.25
2/6/2008 17:30	1.053	7.37	3.9	9.09
2/6/2008 17:45	1.076	7.35	3.4	9.11
2/6/2008 18:00	1.063	7.25	3.6	9.24
2/6/2008 18:15	1.069	7.27	3.6	9.20
2/6/2008 18:30	1.077	7.29	2.8	9.18
2/6/2008 18:45	1.057	7.27	1.6	9.18
2/6/2008 19:00	1.050	7.26	1.5	9.19
2/6/2008 19:15	1.047	7.29	1.5	9.16
2/6/2008 19:30	1.056	7.27	1.5	9.18
2/6/2008 19:45	1.033	7.23	1.5	9.22
2/6/2008 20:00	1.044	7.22	1.5	9.26
2/6/2008 20:15	1.059	7.25	3.1	9.25
2/6/2008 20:30	1.033	7.28	1.7	9.16
2/6/2008 20:45	0.999	7.38	1.4	9.09
2/6/2008 21:00	1.013	7.31	1.6	9.15
2/6/2008 21:15	0.991	7.30	2.0	9.16
2/6/2008 21:30	0.974	7.37	2.7	9.08
2/6/2008 21:45	0.978	7.36	1.7	9.10

2/6/2008 22:00	0.977	7.31	3.1	9.17
2/6/2008 22:15	0.968	7.31	3.1	9.19
2/6/2008 22:30	0.955	7.28	6.0	9.26
2/6/2008 22:45	0.949	7.34	1.3	9.11
2/6/2008 23:00	0.950	7.37	1.4	9.09
2/6/2008 23:15	0.983	7.44	1.2	9.00
2/6/2008 23:30	0.950	7.36	1.9	9.10
2/6/2008 23:45	0.962	7.40	1.5	9.05

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King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 47
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 0830HRS.
TIME WORK STOPPED: 1630 HRS.

Date

Year	Month	Day	Inspector
2008	February	07	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain/ Snow
	X			

Temperature

10-32	32-55	55-70	70-85	85+
am	pm			

Construction Activities:	ACC notified KC (Brunke) that they would not be receiving the "cleanup" barge of Habitat Mix for capping this day. ACC spent this workday on shipboard maintenance.
Miscellaneous:	n/a
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. No accidents or incidents were reported by the Contractor this Afternoon Shift.
Problems Encountered & Resolutions:	Phoned M. Locke, ACC Supt., regarding the high Turbidity readings recorded at the Denny CSO buoy this morning, after 0630hrs., for a period in excess of one hour. M. Locke informed this KC observer that crew didn't even come onboard the "Pam Tay" until 0830hrs. this morning, and that he had no idea what could have caused the extended period of high Turbidity readings at the buoy.
Test Conducted:	See attached Denny/Aquarium Special Daily Buoy Record
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None.
Manpower	ACC: "Pam Tay", five (5) crew persons
Visitors to Site	R. Brunke, Proj. Rep.
Equipment Used	"Pam Tay" w/American 9310 Crane & skip box, three (3) work skiffs, one P/U Truck

Attachments: Denny/Aquarium Special Daily Buoy Record

Randy Brunke, Project Representative (Date)

2-07-08
K. Nordlund, CMIII (2-07-08)

Start date: 2/7/2008 End date: 2/7/2008

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Denny Way Comparison Special

	Min: 1.3 Max: 18.6 Mean: 4.2 St.dev: 4.6	Min: 1.0 Max: 1.2 Mean: 1.1 St.dev: 0.1	Min: Max: Mean: St.dev:	Min: 8.97 Max: 9.76 Mean: 9.28 St.dev: 0.23	Min: 8.92 Max: 9.17 Mean: 9.02 St.dev: 0.07	Min: Max: Mean: St.dev:
Date/Time	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Seattle Aquarium (new) 00016891 Turbidity+ [NTU]**	**Downtown Seattle Aquarium (old) 00016812 Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**	**Downtown Seattle Aquarium (new) 00016891 ODO Conc [mg/L]**	**Downtown Seattle Aquarium (old) 00016812 ODO Conc [mg/L]**
2/7/2008 00:00	1.4	1.1		9.03	9.00	
2/7/2008 00:15	1.4	1.2		9.07	9.00	
2/7/2008 00:30	1.3	1.0		8.97	8.98	
2/7/2008 00:45	1.3			8.98		
2/7/2008 01:00	1.4	1.0		9.00	9.03	
2/7/2008 01:15	2.2	1.1		9.04	8.92	
2/7/2008 01:30	4.9	1.1		9.11	9.02	
2/7/2008 01:45	2.8	1.2		9.07	8.94	
2/7/2008 02:00	2.1	1.2		9.07	9.01	
2/7/2008 02:15	1.8	1.2		9.08	8.97	
2/7/2008 02:30	2.5	1.2		9.15	8.97	
2/7/2008 02:45	2.0			9.08		
2/7/2008 03:00	1.6			9.06		
2/7/2008 03:15	1.5			9.07		
2/7/2008 03:30	1.6			9.07		
2/7/2008 03:45	1.5	1.2		9.03	8.97	
2/7/2008 04:00	1.6	1.1		9.09	8.93	
2/7/2008 04:15	2.0	1.2		9.18	8.92	
2/7/2008 04:30	1.8	1.1		9.18	8.97	
2/7/2008 04:45	1.8			9.17		
2/7/2008 05:00	2.6			9.31		
2/7/2008 05:15	3.5	1.1		9.44	8.99	
2/7/2008 05:30	3.6			9.46		
2/7/2008 05:45	4.3	1.2		9.57	9.06	
2/7/2008 06:00	4.8			9.52		
2/7/2008 06:15	* 10.6	1.2		9.66	9.13	
2/7/2008 06:30	18.6			9.76		
2/7/2008 06:45	17.9	1.2		9.73	9.17	
2/7/2008 07:00	13.4	1.1		9.63	9.06	
2/7/2008 07:15	15.3	1.1		9.71	9.06	
2/7/2008 07:30	10.2	1.1		9.56	9.12	
2/7/2008 07:45	8.0			9.49		
2/7/2008 08:00	3.8	1.2		9.39	9.10	
2/7/2008 08:15	2.7			9.41		
2/7/2008 08:30	2.3			9.35		
2/7/2008 08:45	2.1	1.2		9.31	9.09	
2/7/2008 09:00	2.2			9.38		
2/7/2008 09:15	2.2	1.1		9.39	9.06	
2/7/2008 09:30	2.1	1.1		9.35	9.03	
2/7/2008 09:45	2.0			9.35		

* High Turbidity readings recorded @ Denny CSO buoy during period where ACC was not on site.

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 48
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	February	7	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Because of the wind, the contractor couldn't get Habitat Mix Materials from the supplier. The contractor is doing maintenance on the derrick and the crane. No dredging or backfill activities. ACC had a crew of 5(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager). **NOTE:** The contractor did not provide a daily report because they did not perform any work.
Miscellaneous:	.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Iha Khilfeh 2/8/08
Inspector Iha Khilfeh (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 49
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 10:15AM

Date

Year	Month	Day	Inspector
2008	February	8	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Because of the wind, the contractor couldn't place Habitat Mix Materials. The crew left at approximately 10:15am. KP-1 barge at site filled with Habitat Mix. The tug boat Jennifer H. left at the same time the crew left. ACC had a crew of 5(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, and Cody Hemingford-oiler). **NOTE:** The contractor did not provide a daily report because they did not perform any work.
Miscellaneous:	.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

(Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 2/8/08 (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 50
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00 AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	February	11	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X				

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately 7:00am- The crew at site fixing the spud wire. The barge KP-1 full with Habitat mix soil next to the derrick. No soil placement this morning due to the maintenance. Jennifer H. tug boat at site holding in place the barge and the derrick. Approximately 10:30am, Keith took over for the rest of the day. ACC had a crew of 5(Keith Cronin-forman, Marty Lock-superintendent, Dustin Slim-operator, and Cody Hemingford-oiler).
Miscellaneous:	From ACC daily report #47, they placed a total of 2070 tons of habitat mix for the whole day. See the contractor daily report for locations and depth of the backfill.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh (Date) 2/14/08

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 51
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: PM
TIME WORK STOPPED: PM

Date

Year	Month	Day	Inspector
2008	February	12	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
			X			

Weather

Clear	PC	Overcast	Fog	Rain
		X		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Because of the wind, the contractor couldn't get Habitat Mix Materials form the supplier to place it this morning. However, they got the materials to the site this afternoon after 3:00pm. The contractor called me to let me know that they are going to start tomorrow at 5:00am to work with the tide. ACC had a crew of 5(Keith Cronin-forman, Dustin Slim-operator, and Cody Hemingford-oiler). **NOTE:** The contractor did not provide a daily report because they did not perform any work.
Miscellaneous:	.
Safety/Accidents:	None
Problems Encountered & Resolutions:	
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 2/14/08 (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 52
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 5:00 AM
TIME WORK STOPPED: 1:00PM

Date

Year	Month	Day	Inspector
2008	February	13	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
	pm	am		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately 5:00am-5:45am: The crew getting ready to place Habitat Mix. Jennifer H. tug boat with KP-1 barge at site loaded with Habitat Mix. Approximately: 5:45am-12:00pm: Placing Habitat mix. Approximately: 6:30am: Turbidity went high NTU=7.1. The contractor was contacted at once. The contractor slowed down the placement because of the high turbidity, and that didn't work. They decided to change locations. Approximately: 8:15am-8:45am: KC lab came and took water sample for turbidity test. ACC had a crew of 5(Keith Cronin-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report #48, they placed a total of 2094 tons of habitat mix for the whole day. See the contractor daily report for locations and depth of the backfill.
Safety/Accidents:	None
Problems Encountered & Resolutions:	Approximately: 6:30am: Turbidity went high NTU=7.1. The contractor was contacted at once. The contractor slowed down the placement because of the high turbidity, and that didn't work. They decided to change locations.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh (Date) 2/14/08

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 50
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 0500HRS.
TIME WORK STOPPED: 1330 HRS.

Date

Year	Month	Day	Inspector
2008	February	13	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain/ Snow
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC resumed Habitat Mix capping this day, after not having any capping materials at the site for Shift work yesterday. ACC began capping at app. 0545hrs. (re: F. Report I. Khilfeh), and continued, with only a few short breaks to reposition the "Pam Tay". ACC filled until 1126hrs., when the barge "KP-1" was emptied. The ACC crane was "dogged off" by 1145hrs. Most of the work this day was S. of sta. 2+00 in the Contract drawings.
Miscellaneous:	n/a
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. No accidents or incidents were reported by the Contractor this Afternoon Shift.
Problems Encountered & Resolutions:	Contractor had two periods near 5±NTU over background after 0930hrs. (when this KC observer took over from I. Khilfeh), but never went over Permit during the balance of the shift. KC had direct contact with ACC, and potential problems were avoided with Contractor cooperation.
Test Conducted:	See attached Denny/Aquarium Special Daily Buoy Record
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None.
Manpower	ACC: "Pam Tay", five (5) crew persons; Assist Tug "Jennifer H", two (2) persons
Visitors to Site	R. Brunke, B. Wilbert, KC
Equipment Used	"Pam Tay" w/American 9310 Crane & skip box, three (3) work skiffs, one P/U Truck; ACC Survey boat; Assist Tug "Jennifer H"

Attachments: Denny/Aquarium Special Daily Buoy Record

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIT (2-13-08)

Start date: 2/13/2008 End date: 2/13/2008

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Denny Way Comparison Special

	Min: -0.7 Max: 9.6 Mean: 3.5 St.dev: 2.4	Min: 1.1 Max: 3.5 Mean: 1.7 St.dev: 0.6	Min: Max: Mean: St.dev:	Min: 8.54 Max: 9.77 Mean: 9.16 St.dev: 0.38	Min: 8.57 Max: 9.86 Mean: 8.96 St.dev: 0.36	Min: Max: Mean: St.dev:
Date/Time	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Seattle Aquarium (new) 00016891 Turbidity+ [NTU]**	**Downtown Seattle Aquarium (old) 00016812 Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**	**Downtown Seattle Aquarium (new) 00016891 ODO Conc [mg/L]**	**Downtown Seattle Aquarium (old) 00016812 ODO Conc [mg/L]**
2/13/2008 00:00	2.0	2.0		9.05	9.64	
2/13/2008 00:15	1.9	2.5		8.92	9.83	
2/13/2008 00:30	1.7	3.5		8.89	9.86	
2/13/2008 00:45	1.7	3.2		8.94	9.82	
2/13/2008 01:00	1.9	1.6		9.04	9.24	
2/13/2008 01:15	2.4	2.7		9.27	9.38	
2/13/2008 01:30	2.6	2.4		9.48	9.25	
2/13/2008 01:45	2.7	2.6		9.60	9.25	
2/13/2008 02:00	2.0	2.6		9.19	9.22	
2/13/2008 02:15	2.4	2.6		9.24	9.20	
2/13/2008 02:30	2.9	2.6		9.72	9.25	
2/13/2008 02:45	3.0	2.6		9.69	9.19	
2/13/2008 03:00	3.0	2.6		9.74	9.18	
2/13/2008 03:15	3.0	1.9		9.73	8.93	
2/13/2008 03:30	3.0	1.5		9.74	8.74	
2/13/2008 03:45	3.1	1.5		9.74	8.70	
2/13/2008 04:00	3.1	1.5		9.75	8.73	
2/13/2008 04:15	3.1	1.5		9.77	8.91	
2/13/2008 04:30	3.1	1.4		9.76	8.77	
2/13/2008 04:45	1.9	1.3		9.26	8.66	
2/13/2008 05:00	1.5	1.3		8.72	8.75	
2/13/2008 05:15	1.5	1.2		8.71	8.65	
2/13/2008 05:30	1.5	1.2		8.68	8.67	
2/13/2008 05:45	1.5	1.1		8.71	8.60	
2/13/2008 06:00	1.6	1.2		8.74	8.65	
2/13/2008 06:15	3.9	1.2		8.83	8.72	
2/13/2008 06:30	* 7.1	1.1		9.11	8.65	
2/13/2008 06:45	8.4	1.2		9.21	8.67	
2/13/2008 07:00	6.8	1.2		9.46	8.64	
2/13/2008 07:15	6.6	1.2		9.49	8.58	
2/13/2008 07:30	* 7.3	1.2		9.45	8.69	
2/13/2008 07:45	9.6	1.1		9.53	8.58	
2/13/2008 08:00	5.5	1.1		9.44	8.57	
2/13/2008 08:15	4.5	1.3		8.85	8.89	
2/13/2008 08:30	8.1	1.2		9.25	8.70	
2/13/2008 08:45	4.9	1.1		8.94	8.60	
2/13/2008 09:00	4.7	1.2		9.06	8.74	
2/13/2008 09:15	4.9	1.1		8.76	8.68	
2/13/2008 09:30	0.5	1.1		8.64	8.76	

ACC capping T. Kuiper

* highest recorded Turbidity periods early morning

2/13/2008 09:45	4.4	1.2		9.08	8.76	
2/13/2008 10:00	** 6.5	1.2		9.24	8.76	
2/13/2008 10:15	8.7	1.2		9.31	8.79	
2/13/2008 10:30	4.2	1.2		9.14	8.77	
2/13/2008 10:45	5.1	2.2		8.85	9.60	
2/13/2008 11:00	2.5	1.6		9.02	9.18	
2/13/2008 11:15	2.1	1.5		8.84	9.02	
2/13/2008 11:30	0.8	1.7		8.84	9.27	
2/13/2008 11:45	-0.7	1.5		8.54	9.12	
2/13/2008 12:00	-0.5	1.7		8.59	9.33	
2/13/2008 12:15	1.7			8.59		

* ACC capping period

* observed by K. Nordlund

** highest Turbidity period recorded

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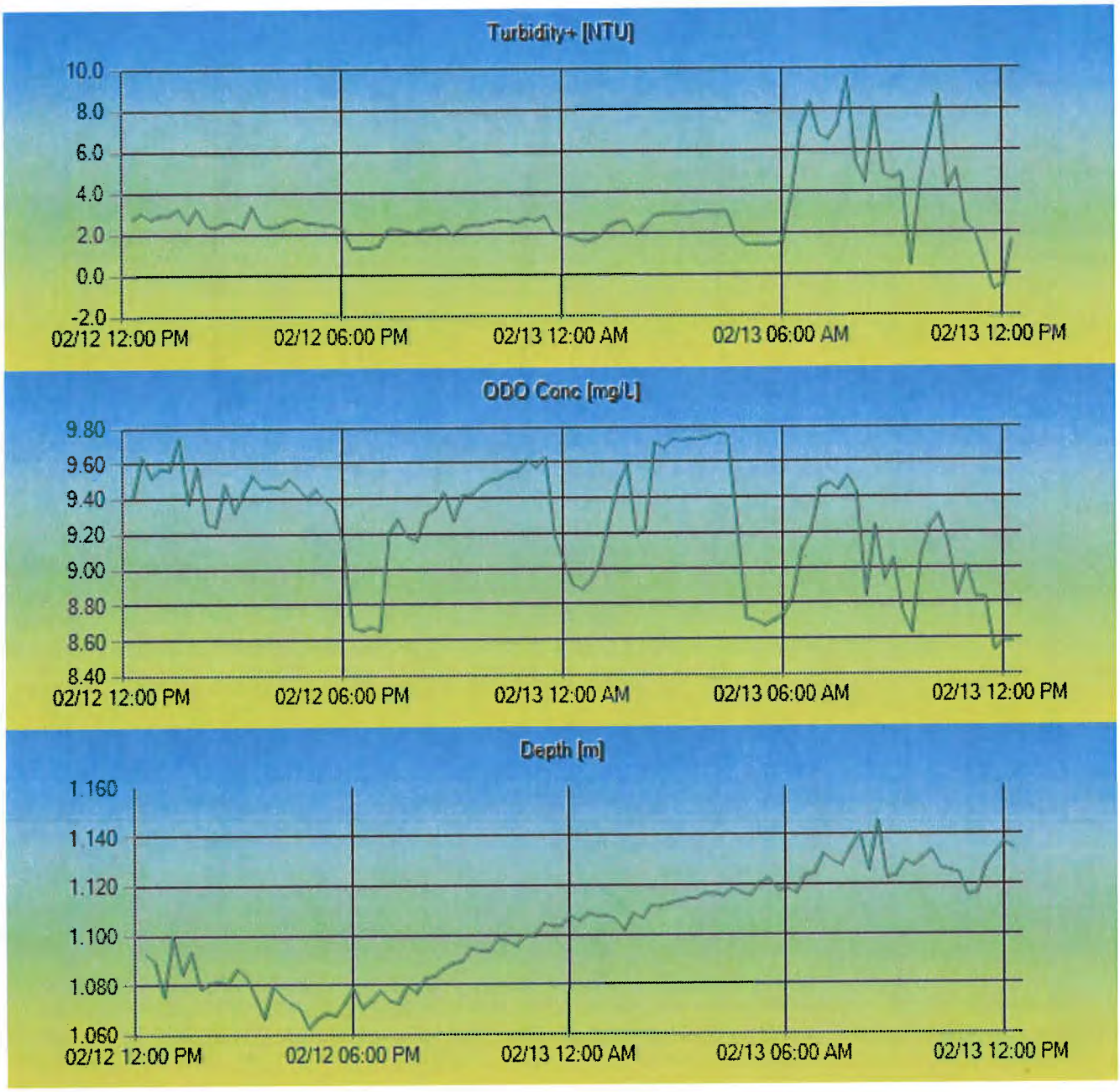
You are here: King County Marine / Puget Sound Network / Downtown / Denny Way Buoy

Name: Denny Way Buoy
Description:



Start date: 2/13/2008 End date: 2/13/2008

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Denny Way User Defined

	Min: 1.102 Max: 1.174 Mean: 1.136 St.dev: 0.020	Min: 6.64 Max: 7.67 Mean: 7.30 St.dev: 0.30	Min: -0.7 Max: 9.6 Mean: 2.1 St.dev: 2.3	Min: 8.54 Max: 9.92 Mean: 9.16 St.dev: 0.35
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
2/13/2008 00:00	1.108	7.57	2.0	9.05
2/13/2008 00:15	1.106	7.60	1.9	8.92
2/13/2008 00:30	1.109	7.61	1.7	8.89
2/13/2008 00:45	1.108	7.54	1.7	8.94
2/13/2008 01:00	1.108	7.51	1.9	9.04
2/13/2008 01:15	1.107	7.26	2.4	9.27
2/13/2008 01:30	1.102	7.14	2.6	9.48
2/13/2008 01:45	1.109	7.02	2.7	9.60
2/13/2008 02:00	1.107	7.44	2.0	9.19
2/13/2008 02:15	1.112	7.24	2.4	9.24
2/13/2008 02:30	1.112	6.82	2.9	9.72
2/13/2008 02:45	1.113	6.87	3.0	9.69
2/13/2008 03:00	1.114	6.85	3.0	9.74
2/13/2008 03:15	1.115	6.83	3.0	9.73
2/13/2008 03:30	1.115	6.80	3.0	9.74
2/13/2008 03:45	1.117	6.80	3.1	9.74
2/13/2008 04:00	1.117	6.77	3.1	9.75
2/13/2008 04:15	1.116	6.72	3.1	9.77
2/13/2008 04:30	1.119	6.71	3.1	9.76
2/13/2008 04:45	1.117	7.17	1.9	9.26
2/13/2008 05:00	1.116	7.63	1.5	8.72
2/13/2008 05:15	1.121	7.61	1.5	8.71
2/13/2008 05:30	1.123	7.64	1.5	8.68
2/13/2008 05:45	1.118	7.62	1.5	8.71
2/13/2008 06:00	1.119	7.50	1.6	8.74
2/13/2008 06:15	1.117	7.46	3.9	8.83
2/13/2008 06:30	1.124	7.15	7.1	9.11
2/13/2008 06:45	1.125	6.91	8.4	9.21
2/13/2008 07:00	1.133	6.66	6.8	9.46
2/13/2008 07:15	1.130	6.68	6.6	9.49
2/13/2008 07:30	1.128	6.70	7.3	9.45
2/13/2008 07:45	1.135	6.64	9.6	9.53
2/13/2008 08:00	1.141	6.83	5.5	9.44
2/13/2008 08:15	1.126	7.42	4.5	8.85
2/13/2008 08:30	1.146	6.92	8.1	9.25
2/13/2008 08:45	1.123	7.10	4.9	8.94

2/13/2008 09:00	1.124	7.06	4.7	9.06
2/13/2008 09:15	1.130	7.34	4.9	8.76
2/13/2008 09:30	1.128	7.46	0.5	8.64
2/13/2008 09:45	1.131	7.04	4.4	9.08
2/13/2008 10:00	1.134	6.92	6.5	9.24
2/13/2008 10:15	1.127	6.91	8.7	9.31
2/13/2008 10:30	1.126	7.02	4.2	9.14
2/13/2008 10:45	1.125	7.33	5.1	8.85
2/13/2008 11:00	1.116	7.21	2.5	9.02
2/13/2008 11:15	1.117	7.40	2.1	8.84
2/13/2008 11:30	1.128	7.36	0.8	8.84
2/13/2008 11:45	1.133	7.67	-0.7	8.54
2/13/2008 12:00	1.137	7.64	-0.5	8.59
2/13/2008 12:15	1.135	7.62	1.7	8.59
2/13/2008 12:30	1.141	7.64	1.6	8.60
2/13/2008 12:45	1.137	7.63	1.5	8.61
2/13/2008 13:00	1.136	7.32	3.0	9.70
2/13/2008 13:15	1.133	7.54	4.4	9.09
2/13/2008 13:30	1.131	7.57	1.7	8.79
2/13/2008 13:45	1.130	7.49	1.3	9.48
2/13/2008 14:00	1.136	7.17	1.1	9.90
2/13/2008 14:15	1.137	7.20	1.3	9.92
2/13/2008 14:30	1.134	7.38	1.2	9.56
2/13/2008 14:45	1.135	7.55	0.5	8.97
2/13/2008 15:00	1.127	7.52	1.0	9.22
2/13/2008 15:15	1.129	7.53	0.1	9.06
2/13/2008 15:30	1.138	7.55	0.0	8.96
2/13/2008 15:45	1.138	7.53	1.1	9.08
2/13/2008 16:00	1.134	7.56	1.3	9.27
2/13/2008 16:15	1.141	7.59	0.0	8.90
2/13/2008 16:30	1.148	7.49	0.6	9.08
2/13/2008 16:45	1.145	7.45	1.5	9.34
2/13/2008 17:00	1.150	7.60	0.0	8.86
2/13/2008 17:15	1.154	7.19	0.9	9.68
2/13/2008 17:30	1.154	7.16	0.9	9.71
2/13/2008 17:45	1.156	7.25	0.6	9.47
2/13/2008 18:00	1.156	7.51	0.5	9.14
2/13/2008 18:15	1.157	7.49	0.2	9.08
2/13/2008 18:30	1.154	7.48	0.5	9.24
2/13/2008 18:45	1.159	7.39	0.4	9.32
2/13/2008 19:00	1.160	7.51	0.3	9.16
2/13/2008 19:15	1.158	7.50	0.3	9.17
2/13/2008 19:30	1.162	7.55	0.2	9.11
2/13/2008 19:45	1.160	7.58	0.1	8.99
2/13/2008 20:00	1.160	7.60	-0.1	8.88
2/13/2008 20:15	1.165	7.62	-0.2	8.87
2/13/2008 20:30	1.163	7.62	-0.3	8.83
2/13/2008 20:45	1.161	7.63	-0.2	8.76
2/13/2008 21:00	1.158	7.65	-0.4	8.72
2/13/2008 21:15	1.166	7.44	0.1	8.97
2/13/2008 21:30	1.163	7.18	0.2	9.24
2/13/2008 21:45	1.166	7.14	0.3	9.31

2/13/2008 22:00	1.172	7.08	0.3	9.30
2/13/2008 22:15	1.170	7.26	0.0	9.05
2/13/2008 22:30	1.174	7.43	-0.2	9.06
2/13/2008 22:45	1.172	7.40	-0.3	8.91
2/13/2008 23:00	1.168	7.40	-0.1	9.05
2/13/2008 23:15	1.171	7.51	-0.1	8.96
2/13/2008 23:30	1.173	7.30	0.0	9.13
2/13/2008 23:45	1.174	7.00	0.2	9.34

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King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 53 53
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	February	14	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
	pm	am		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-8:00am: maintenance and waiting for the Habitat Mix barge to show up. Approximately: 8:00am: The barge with Habitat Mix showed up with Jennifer H. tug boat Approximately: 8:00am-8:45am: setting up to start placing Habitat Mix. Approximately: 8:45am-12:00pm: placing Habitat Mix. See Keith daily report for the rest of the day work. ACC had a crew of 5(Keith Cronin-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	From ACC daily report #49, they placed a total of 1326 tons of habitat mix for the whole day. Left on the barge approximately 283 tons of Habitat Mix. See the contractor daily report for locations and depth of the backfill.
Safety/Accidents:	None
Problems Encountered & Resolutions:	No turbidity issues this morning.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh (Date) 2/19/08

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 54
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	February	15	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
	pm	am		

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-8:00am: Jennifer tug boat placing the two barges KP-1 and KP-2 next to each other. Approximately: 8:00am-9:00am: remove what ever left of the habitat mix from barge KP-1 and placed it into KP-2. KP-2 pretty much full of contingency fill materials. Approximately: 9:00am: KP-2 left with Jennifer Tug Boat. Approximately: 9:00am-12:00pm: the contractor washed/rinse barge KP-1 Aproximately: 9:45am-11:00am: Anchor consultant surveys the site. See Keith daily report for the rest of the day work. **NOTE:** The contractor did not provide a daily report because they did not perform any work. ACC had a crew of 5(Keith Cronin-forman, Dustin Slim-operator, Cody Hemingford-oiler and Greg Anderes, project manager).
Miscellaneous:	
Safety/Accidents:	None
Problems Encountered & Resolutions:	No turbidity issues this morning.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh (Date) 2/19/08

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 55
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00AM
TIME WORK STOPPED: 1:00PM

Date

Year	Month	Day	Inspector
2008	February	18	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X				

Weather

Clear	PC	Overcast	Fog	Rain
X				

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-12:00pm: the superintendent and the oiler did maintenance work. **NOTE**: Earlier, the contractor called me to inform me that the barge full of Sea-Wall rocks will be at site at about 10:00am. It turned out that the barge was still at the supplier yard being filled with sea wall rocks. The contractor was planning on filling the barge with 500 tons of Sea Wall Rocks. KC asked the contractor to bring 800 tons of Sea Wall Rock. The contractor decided to leave after lunch. **NOTE:** The contractor did not provide a daily report because they did not perform any work. ACC had a crew of 2(Marty/superintendent, and Cody Hemingford-oiler).
Miscellaneous:	
Safety/Accidents:	None
Problems Encountered & Resolutions:	No turbidity issues this morning.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 2/19/08 (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 56
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	February	19	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
			X			

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-8:00am: The rock barge (H-9) with tug boat Jennifer H. positioning to start placing rocks. Approximately: 8:15am: KC met with the consultant and the contractor to discuss the rock placement. Approximately: 11:00am: contractor start placing rocks. See Keith daily report for the rest of the day work. ACC had a crew of 3(Marty/superintendent, and Cody Hemingford-oiler and Dustin/operator).
Miscellaneous:	The contractor placed 496 tons of rocks. See the contractor daily report for the rocks locations.
Safety/Accidents:	None
Problems Encountered & Resolutions:	No turbidity issues this morning.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 2/21/08 (Date)

Start date: 2/19/2008 End date: 2/19/2008

Submit Back Export as .CSV

Denny Way Comparison Special

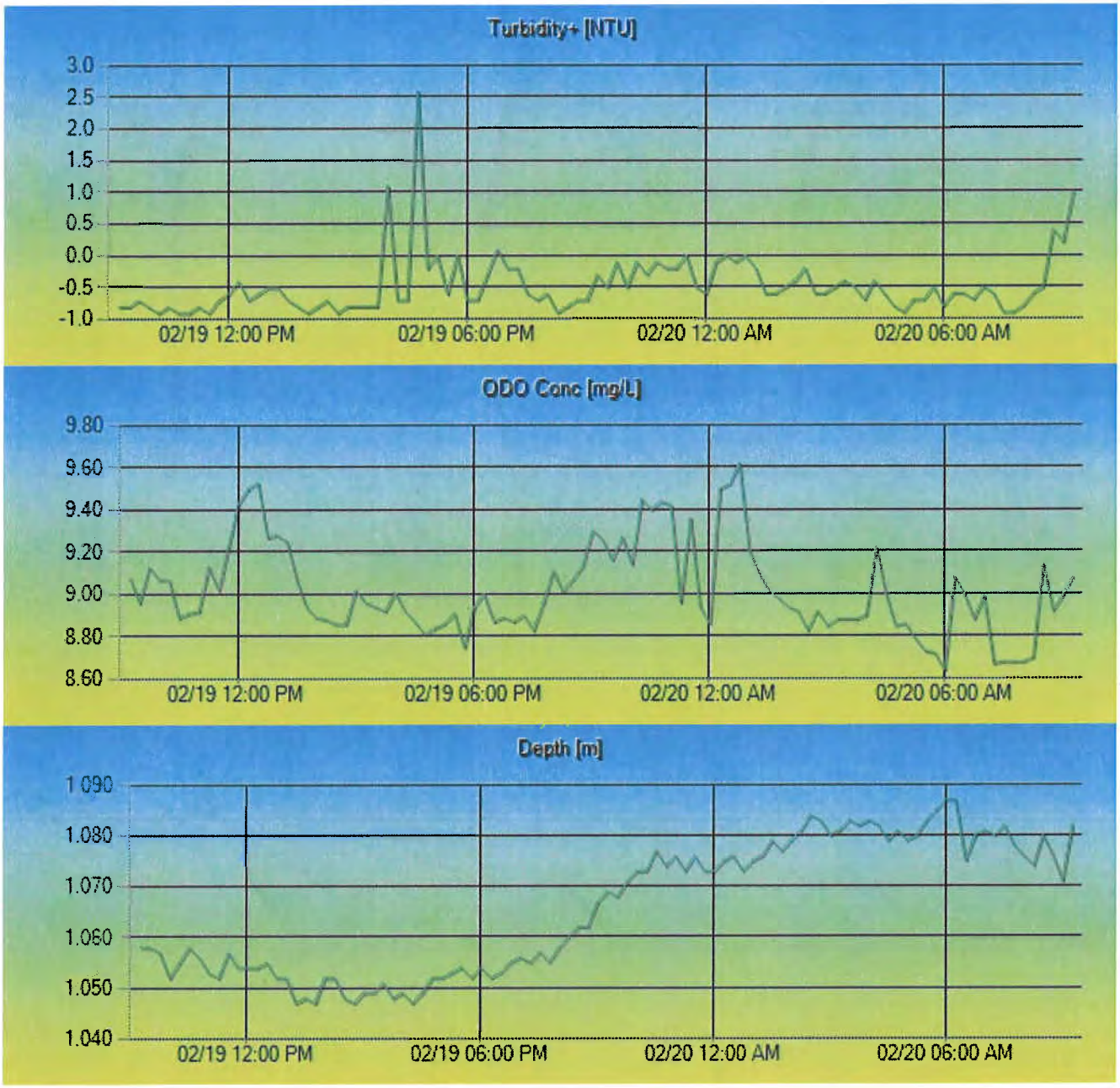
	Min: -0.9 Max: 2.6 Mean: -0.6 St.dev: 0.4	Min: 0.7 Max: 1.5 Mean: 1.0 St.dev: 0.2	Min: Max: Mean: St.dev:	Min: 8.62 Max: 9.60 Mean: 9.04 St.dev: 0.24	Min: 8.71 Max: 9.81 Mean: 9.10 St.dev: 0.29	Min: Max: Mean: St.dev:
Date/Time	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Seattle Aquarium (new) 00016891 Turbidity+ [NTU]**	**Downtown Seattle Aquarium (old) 00016812 Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**	**Downtown Seattle Aquarium (new) 00016891 ODO Conc [mg/L]**	**Downtown Seattle Aquarium (old) 00016812 ODO Conc [mg/L]**
2/19/2008 00:00	-0.5	1.1		9.33	9.08	
2/19/2008 00:15	-0.5	0.9		9.20	9.04	
2/19/2008 00:30	-0.4	1.0		9.10	9.17	
2/19/2008 00:45	-0.7	1.0		9.04	8.95	
2/19/2008 01:00	-0.5	0.8		8.93	8.81	
2/19/2008 01:15	-0.7	0.9		8.93	9.02	
2/19/2008 01:30	-0.5	0.9		8.89	9.02	
2/19/2008 01:45	-0.8	0.8		8.90	8.83	
2/19/2008 02:00	-0.7	0.9		8.92	9.11	
2/19/2008 02:15	-0.7	0.8		8.98	8.75	
2/19/2008 02:30	-0.7	0.8		9.29	8.77	
2/19/2008 02:45	-0.6	0.8		9.17	8.75	
2/19/2008 03:00	-0.7	0.8		8.92	8.75	
2/19/2008 03:15	-0.7	0.8		8.83	8.75	
2/19/2008 03:30	-0.8	0.8		8.79	8.75	
2/19/2008 03:45	-0.7	0.8		8.90	8.75	
2/19/2008 04:00	-0.9	0.8		9.04	8.75	
2/19/2008 04:15	-0.8	0.8		8.69	8.74	
2/19/2008 04:30	-0.8	0.8		8.65	8.71	
2/19/2008 04:45	-0.9	0.8		8.64	8.74	
2/19/2008 05:00	-0.8	0.9		8.66	8.83	
2/19/2008 05:15	-0.8	0.8		8.72	8.75	
2/19/2008 05:30	-0.8	0.8		8.63	8.71	
2/19/2008 05:45	-0.9	0.8		8.62	8.79	
2/19/2008 06:00	-0.9	0.8		8.62	8.80	
2/19/2008 06:15	-0.6	0.8		8.93	8.76	
2/19/2008 06:30	-0.5	0.8		9.54	8.92	
2/19/2008 06:45	-0.5	0.9		9.59	8.77	
2/19/2008 07:00	-0.5	0.8		9.34	8.75	
2/19/2008 07:15	-0.8	0.9		8.79	8.97	
2/19/2008 07:30	-0.8	0.9		9.22	9.22	
2/19/2008 07:45	-0.7	0.8		9.18	8.85	
2/19/2008 08:00	-0.7	0.9		9.44	9.29	
2/19/2008 08:15	-0.5	1.1		9.60	9.29	
2/19/2008 08:30	-0.7	0.9		9.25	9.08	
2/19/2008 08:45	-0.7	0.9		9.22	9.06	
2/19/2008 09:00	-0.8	1.0		9.13	9.48	
2/19/2008 09:15	-0.8	1.1		9.08	9.31	
2/19/2008 09:30	-0.8	1.1		8.96	9.39	

2/19/2008 09:45	-0.7	1.1		9.13	9.33	
2/19/2008 10:00	-0.8	1.0		9.07	9.35	
2/19/2008 10:15	-0.9	1.0		9.07	9.41	
2/19/2008 10:30	-0.8	0.9		8.89	9.24	
2/19/2008 10:45	-0.9	1.1		8.91	9.46	
2/19/2008 11:00	-0.9	0.9		8.92	9.00	
2/19/2008 11:15	-0.8	1.0		9.13	9.18	
2/19/2008 11:30	-0.9	0.9		9.02	9.19	
2/19/2008 11:45	-0.7	0.9		9.23	9.13	
2/19/2008 12:00	-0.6	1.0		9.43	9.25	
2/19/2008 12:15	-0.4	0.9		9.50	9.23	
2/19/2008 12:30	-0.7	0.9		9.53	9.20	
2/19/2008 12:45	-0.6	0.9		9.27	9.41	
2/19/2008 13:00	-0.5	1.0		9.28	9.39	
2/19/2008 13:15	-0.5	1.0		9.25	9.35	
2/19/2008 13:30	-0.7	0.9		9.07	9.01	
2/19/2008 13:45	-0.8	0.8		8.94	8.92	
2/19/2008 14:00	-0.9	0.9		8.89	9.00	
2/19/2008 14:15	-0.8	0.9		8.88	9.00	
2/19/2008 14:30	-0.7	0.8		8.86	8.93	
2/19/2008 14:45	-0.9	0.8		8.86	8.93	
2/19/2008 15:00	-0.8	0.8		9.02	8.96	
2/19/2008 15:15	-0.8	0.8		8.96	8.86	
2/19/2008 15:30	-0.8	0.8		8.94	8.84	
2/19/2008 15:45	-0.8	0.8		8.92	8.85	
2/19/2008 16:00	1.1	0.9		9.01	8.90	
2/19/2008 16:15	-0.7	0.8		8.92	8.90	
2/19/2008 16:30	-0.7	0.8		8.87	8.87	
2/19/2008 16:45	2.6	0.8		8.81	8.89	
2/19/2008 17:00	-0.2	0.7		8.84	8.95	
2/19/2008 17:15	0.0	0.7		8.86	8.87	
2/19/2008 17:30	-0.6	0.8		8.91	8.89	
2/19/2008 17:45	0.0	0.8		8.75	9.06	
2/19/2008 18:00	-0.7	0.7		8.94	8.99	
2/19/2008 18:15	-0.7	1.0		9.00	9.22	
2/19/2008 18:30	-0.3	1.1		8.87	9.37	
2/19/2008 18:45	0.1	1.3		8.89	9.49	
2/19/2008 19:00	-0.2	1.5		8.87	9.73	
2/19/2008 19:15	-0.2	1.4		8.90	9.45	
2/19/2008 19:30	-0.6	1.4		8.83	9.66	
2/19/2008 19:45	-0.7	1.2		8.96	9.39	
2/19/2008 20:00	-0.6	1.5		9.11	9.73	
2/19/2008 20:15	-0.9	1.3		9.01	9.49	
2/19/2008 20:30	-0.8	1.5		9.07	9.81	
2/19/2008 20:45	-0.7	1.5		9.13	9.80	
2/19/2008 21:00	-0.7	1.5		9.30	9.56	
2/19/2008 21:15	-0.3	1.5		9.26	9.63	
2/19/2008 21:30	-0.5	1.2		9.16	9.37	
2/19/2008 21:45	-0.1	1.3		9.27	9.58	
2/19/2008 22:00	-0.5	1.3		9.14	9.43	
2/19/2008 22:15	-0.1	1.1		9.45	9.31	
2/19/2008 22:30	-0.3	1.0		9.40	9.08	
2/19/2008 22:45	-0.1	1.0		9.44	9.04	
2/19/2008 23:00	-0.2	1.1		9.42	9.22	
2/19/2008 23:15	-0.2	0.9		8.96	8.95	
2/19/2008 23:30	0.0	0.8		9.36	8.93	

ACC rock placement period

You are here: King County Marine / Puget Sound Network / Downtown / Denny Way Buoy

Name: Denny Way Buoy
Description:



King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Date

Year	Month	Day	Inspector
2008	February	20	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X		

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Inspector's Daily Construction Report

REPORT NUMBER: 57
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00AM
TIME WORK STOPPED: 2:30PM

Construction Activities:	Approximately: 7:00am-7:40am: The rock barge (H-9) with tug boat Jennifer H. positioning to start placing rocks. Approximately: 7:40-11:00am: the contractor finished unloading and placing all the rocks from H-9 barge. See Keith daily report for the rest of the day work. ACC had a crew of 3(Marty/superintendent, and Cody Hemingford-oiler and Dustin/operator).
Miscellaneous:	The contractor placed 262 tons of rocks. See the contractor daily report for the rocks locations.
Safety/Accidents:	None
Problems Encountered & Resolutions:	No turbidity issues this morning.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 2/22/08 (Date)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 58
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	February	21	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
					X	

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-8:30am: Jennifer H. tug boat positioning KP-2 barge to start placing contiguous materials. Approximately: 8:30am-12:00pm: the contractor placed contiguous soil. See Keith daily report for the rest of the day work. ACC had a crew of 3(Marty/superintendent, and Cody Hemingford-oiler and Dustin/operator).
Miscellaneous:	The contractor placed 1392 tons of contiguous soil. See the contractor daily report for the locations.
Safety/Accidents:	None
Problems Encountered & Resolutions:	No turbidity issues this morning.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 2/26/08 (Date)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 54
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS.
TIME WORK STOPPED: 1630 HRS.

Date

Year	Month	Day	Inspector
2008	February	21	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
				X	X	

Weather

Clear	PC	Overcast	Fog	Rain/ Snow
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC began Contingency Mix placement within boundaries outlined by KC and Consultant, Anchor. ACC placed Contingency sand blend until app. 1607hrs. from partially full barge "KP-2" (app. 1300± tons when it arrived on site) The ACC crane was "dogged off" by 1615hrs. All of the work observed this shift was either S. of the existing Denny Regulator Outfalls, to W. of sta. 3+00 in the Contract drawings.
Miscellaneous:	Test patterns for materials placement were set before this KC observer started shift work this day.
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. No accidents or incidents were reported by the Contractor this Afternoon Shift.
Problems Encountered & Resolutions:	None were observed by KC, nor reported by ACC this shift.
Test Conducted:	See attached Denny/Aquarium Special Daily Buoy Record
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	KC has requested the movement of some previously placed boulders, from an upslope area just W. of the Denny Regulator, to an upslope gap near sta. 3+00 in the Myrtle Edwards Park Sea wall (re: R Pickering, R. Brunke, M. Locke).
Manpower	ACC: "Pam Tay", five (5) crew persons; Assist Tug "Jennifer H", two (2) persons
Visitors to Site	R. Brunke, T. Edwards, B. Wilbert, KC; R. Pickering, Anchor
Equipment Used	"Pam Tay" w/American 9310 Crane & skip box, three (3) work skiffs; Assist Tug "Jennifer H"

Attachments: Denny/Aquarium Special Daily Buoy Record

Randy Brunke, Project Representative (Date)

K. Nordlund, CMIII (2-21-08)

Start date: 2/21/2008 End date: 2/21/2008

Submit Back Export as .CSV

Denny Way Comparison Special

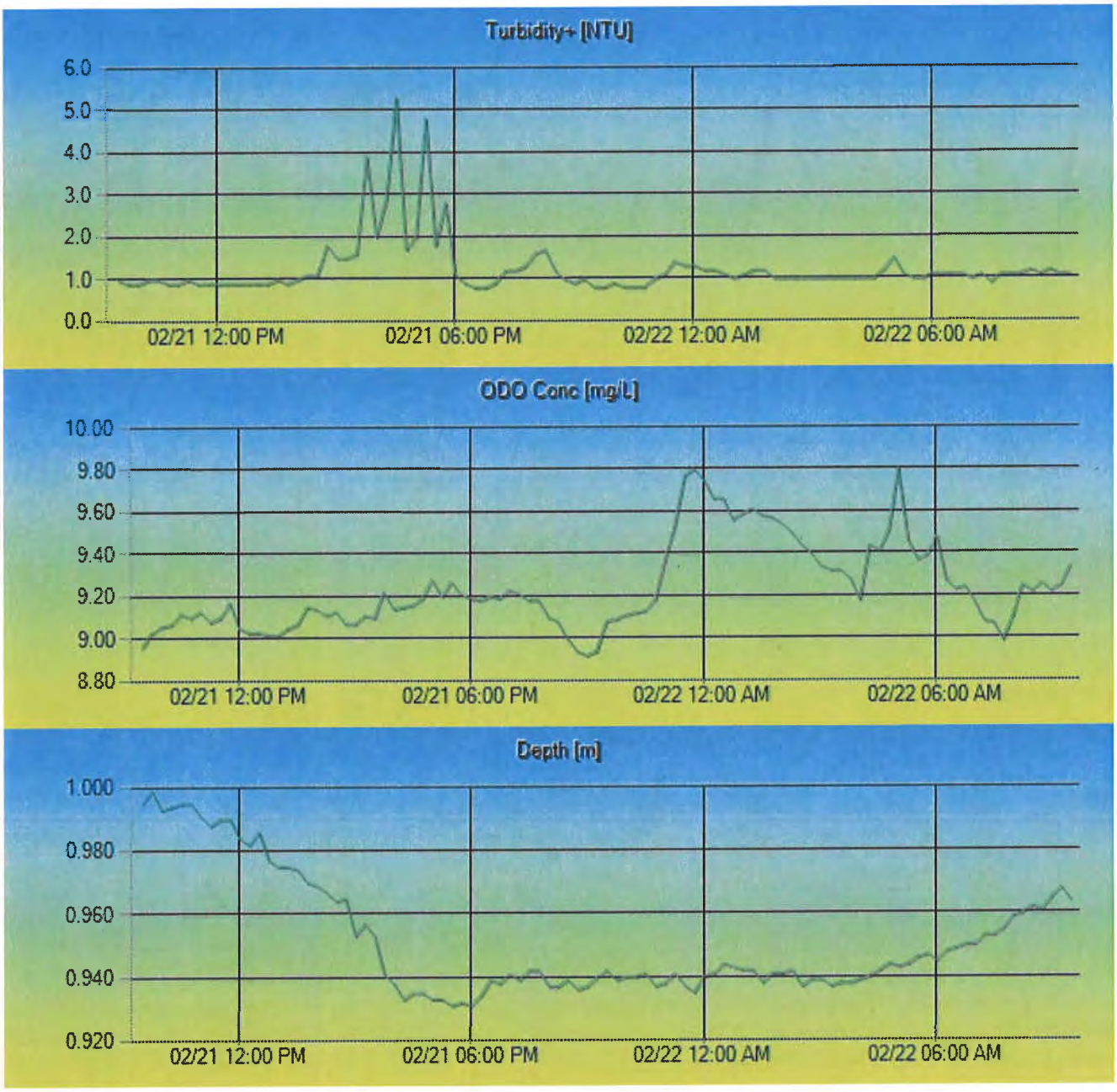
	Min: 0.8 Max: 5.3 Mean: 1.2 St.dev: 0.7	Min: 0.7 Max: 1.5 Mean: 0.9 St.dev: 0.2	Min: Max: Mean: St.dev:	Min: 8.92 Max: 10.17 Mean: 9.24 St.dev: 0.24	Min: 8.84 Max: 9.68 Mean: 9.19 St.dev: 0.21	Min: Max: Mean: St.dev:
Date/Time	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Seattle Aquarium (new) 00016891 Turbidity+ [NTU]**	**Downtown Seattle Aquarium (old) 00016812 Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**	**Downtown Seattle Aquarium (new) 00016891 ODO Conc [mg/L]**	**Downtown Seattle Aquarium (old) 00016812 ODO Conc [mg/L]**
2/21/2008 00:00	1.3	1.1		9.72	9.46	
2/21/2008 00:15	1.3	1.2		9.66	9.48	
2/21/2008 00:30	1.3	1.3		9.63	9.57	
2/21/2008 00:45	1.5	1.4		10.17	9.50	
2/21/2008 01:00	1.4	1.5		9.68	9.56	
2/21/2008 01:15	1.2	1.4		9.62	9.43	
2/21/2008 01:30	1.2	1.2		9.63	9.33	
2/21/2008 01:45	1.2	1.3		9.52	9.35	
2/21/2008 02:00	1.2	1.2		9.49	9.29	
2/21/2008 02:15	1.0	1.2		9.46	9.24	
2/21/2008 02:30	1.0	1.1		9.31	9.29	
2/21/2008 02:45	1.2	1.2		9.55	9.23	
2/21/2008 03:00	1.1	1.2		9.53	9.22	
2/21/2008 03:15	1.1	1.2		9.50	9.19	
2/21/2008 03:30	1.0	1.0		9.37	9.12	
2/21/2008 03:45	1.1	1.2		9.40	9.32	
2/21/2008 04:00	1.1	1.2		9.41	9.36	
2/21/2008 04:15	1.1	0.8		9.39	9.21	
2/21/2008 04:30	0.9	0.8		9.37	9.07	
2/21/2008 04:45	1.1	0.8		9.38	9.20	
2/21/2008 05:00	1.4	0.9		9.91	8.88	
2/21/2008 05:15	1.3	0.8		9.69	8.88	
2/21/2008 05:30	1.0	0.8		9.37	8.86	
2/21/2008 05:45	1.0	0.9		9.29	8.85	
2/21/2008 06:00	0.9	0.9		9.18	9.22	
2/21/2008 06:15	0.9	0.8		9.16	8.86	
2/21/2008 06:30	0.9	0.8		9.12	8.88	
2/21/2008 06:45	0.9	0.8		9.08	8.89	
2/21/2008 07:00	0.8	1.1		9.04	9.30	
2/21/2008 07:15	0.8	1.0		9.04	9.24	
2/21/2008 07:30	0.8	1.0		9.03	9.16	
2/21/2008 07:45	0.8	0.9		9.07	9.06	
2/21/2008 08:00	0.9	0.9		9.07	9.18	
2/21/2008 08:15	0.9	0.9		9.12	9.16	
2/21/2008 08:30	0.9	0.8		9.20	8.94	
2/21/2008 08:45	0.9	0.8		9.16	8.90	
2/21/2008 09:00	0.9	0.8		9.13	8.90	
2/21/2008 09:15	1.0	0.9		9.02	9.05	
2/21/2008 09:30	1.0	0.8		8.96	8.87	

ACC cassino observed K. Nordlund

2/21/2008 09:45	0.9	0.8		9.03	8.84	
2/21/2008 10:00	0.9	0.8		9.06	9.00	
2/21/2008 10:15	1.0	0.8		9.07	9.00	
2/21/2008 10:30	1.0	0.8		9.12	8.94	
2/21/2008 10:45	0.9	0.8		9.10	8.95	
2/21/2008 11:00	0.9	0.8		9.13	8.96	
2/21/2008 11:15	1.0	0.9		9.08	9.19	
2/21/2008 11:30	0.9	0.8		9.10	9.09	
2/21/2008 11:45	0.9	0.9		9.17	9.22	
2/21/2008 12:00	0.9	0.9		9.05	9.14	
2/21/2008 12:15	0.9	0.8		9.03	9.20	
2/21/2008 12:30	0.9	0.9		9.03	9.15	
2/21/2008 12:45	0.9	0.9		9.02	9.12	
2/21/2008 13:00	0.9	0.8		9.02	9.17	
2/21/2008 13:15	0.9	0.9		9.05	9.27	
2/21/2008 13:30	1.0	1.0		9.07	9.35	
2/21/2008 13:45	0.9	0.9		9.15	9.20	
2/21/2008 14:00	1.0	1.0		9.14	9.33	
2/21/2008 14:15	1.1	1.0		9.11	9.32	
2/21/2008 14:30	1.1	1.0		9.13	9.30	
2/21/2008 14:45	1.8	0.9		9.07	9.33	
2/21/2008 15:00	1.5	0.8		9.07	9.42	
2/21/2008 15:15	1.5	0.9		9.11	9.32	
2/21/2008 15:30	1.6	0.9		9.10	9.32	
2/21/2008 15:45	3.9	0.8		9.22	9.37	
2/21/2008 16:00	2.0	0.9		9.14	9.36	
2/21/2008 16:15	2.9	0.9		9.15	9.22	
2/21/2008 16:30	5.3	0.8		9.16	9.22	
2/21/2008 16:45	1.7	0.8		9.19	9.24	
2/21/2008 17:00	2.0	0.9		9.28	9.21	
2/21/2008 17:15	4.8	0.8		9.20	9.20	
2/21/2008 17:30	1.8	0.8		9.27	9.17	
2/21/2008 17:45	2.8	0.9		9.21	9.16	
2/21/2008 18:00	1.1	0.8		9.19	9.15	
2/21/2008 18:15	0.9	0.8		9.18	9.08	
2/21/2008 18:30	0.8	0.7		9.20	9.01	
2/21/2008 18:45	0.8	0.8		9.19	9.10	
2/21/2008 19:00	0.9	0.8		9.23	8.98	
2/21/2008 19:15	1.2	0.8		9.21	8.92	
2/21/2008 19:30	1.2	0.8		9.18	8.96	
2/21/2008 19:45	1.3	0.8		9.18	9.02	
2/21/2008 20:00	1.6	0.8		9.10	8.84	
2/21/2008 20:15	1.7	0.9		9.08	9.28	
2/21/2008 20:30	1.2	1.1		9.00	9.49	
2/21/2008 20:45	1.0	1.3		8.94	9.68	
2/21/2008 21:00	0.9	1.3		8.92	9.60	
2/21/2008 21:15	1.0	1.2		8.94	9.55	
2/21/2008 21:30	0.8	0.8		9.08	8.98	
2/21/2008 21:45	0.8	0.8		9.09	8.94	
2/21/2008 22:00	0.9	1.0		9.11	9.47	
2/21/2008 22:15	0.8	0.8		9.12	8.96	
2/21/2008 22:30	0.8	0.9		9.13	9.19	
2/21/2008 22:45	0.8	0.9		9.18	9.10	
2/21/2008 23:00	1.0	1.0		9.37	9.37	
2/21/2008 23:15	1.1	1.1		9.53	9.50	
2/21/2008 23:30	1.4	1.2		9.77	9.60	

You are here: King County Marine / Puget Sound Network / Downtown / Denny Way Buoy

Name: Denny Way Buoy
Description:



King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 55
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS.
TIME WORK STOPPED: 1230 HRS.

Date

Year	Month	Day	Inspector
2008	February	22	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain/ Snow
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC cancelled placement of Contingency Mix this day, after working to repair their GPS unit. The ACC crane was "dogged off" by 1230hrs.
Miscellaneous:	n/a
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. No accidents or incidents were reported by the Contractor this Afternoon Shift.
Problems Encountered & Resolutions:	Phoned M. Locke, ACC Supt., from the site Office Trailer at 1215hrs. regarding what appeared to be shut-down activities aboard the "Pam Tay". M. Locke said that ACC was not going to attempt placing Contingency Mix from barge "KP-1" this day because of the time lost attempting to repair their GPS unit on the Crane. Per M. Locke, the Crane GPS unit was damaged earlier in the day while ACC was relocating boulders for the Sea Wall (re: F. Report, 2-21-08). Immediately phoned I. Khilfeh to inform him that Contingency Mix placement would not resume until next Monday morning. I. Khilfeh said that M. Locke had already phoned him about the cancellation.
Test Conducted:	None.
Work Rejected:	None.
Instructions Given to Contractor & Changes Initiated:	None.
Manpower	ACC: "Pam Tay", five (5) crew persons; Assist Tug "Diane H", two (2) persons
Visitors to Site	R. Brunke, T. Edwards, B. Wilbert, KC; R. Pickering, Anchor
Equipment Used	"Pam Tay" w/American 9310 Crane & skip box, three (3) work skiffs; Materials barge "KP-1"; Assist Tug "Diane H"

Attachments: none

Randy Brunke, Project Representative (Date)

2-22-08
K. Nordlund, CMH (2-22-08)

King County

DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 59
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	February	22	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
						X

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:45am: Jennifer H. tug boat positioning the derrick to start re-positioning some of the rocks as requested yesterday by Anchor's. Approximately: 7:45am-9:15am: the contractor re-positioned some of the rocks. Approximately: 8:15am, KP-2 barge came full with contiguous materials. Approximately 9:30am, the crane broke down. See Keith daily report for the rest of the day work. ACC had a crew of 3(Marty/superintendent, and Cody Hemingford-oiler and Dustin/operator).
Miscellaneous:	
Safety/Accidents:	None
Problems Encountered & Resolutions:	No turbidity issues this morning.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 2/26/08 (Date)

King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Inspector's Daily Construction Report

REPORT NUMBER: 60
KING COUNTY CONTRACT NO.: C00190C07
CONTRACT TITLE: Denny Way CSO-Nearshore Interim Sediment Cleanup
PRIME CONTRACTOR: ACC Hurlen Construction
TIME WORK STARTED: 7:00AM
TIME WORK STOPPED: 2:30PM

Date

Year	Month	Day	Inspector
2008	February	25	Iha Khilfeh

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X				

Weather

Clear	PC	Overcast	Fog	Rain
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	Approximately: 7:00am-7:15am: Jennifer H. tug boat positioning the derrick and KP-2 barge to place the rest of the contiguous materials that came yesterday. Approximately: 7:15am-12:00pm: the contractor placed contiguous materials. Approximately: 8:00am: Turbidity went high NTU=7.5. The contractor was contacted at once. The contractor slowed down the placement because of the high turbidity. See Keith daily report for the rest of the day work. ACC had a crew of 3(Marty/superintendent, and Cody Hemingford-oiler and Dustin/operator).
Miscellaneous:	The contractor placed 1103 tons of contiguous soil. See the contractor daily report for the locations.
Safety/Accidents:	
Problems Encountered & Resolutions:	Approximately: 8:00am: Turbidity went high NTU=7.5. The contractor was contacted at once. The contractor slowed down the placement because of the high turbidity.
Test Conducted:	
Work Rejected:	
Instructions Given to Contractor & Changes Initiated:	

Project Representative Randy Brunke (Date)

Inspector Iha Khilfeh 2/26/08 (Date)

2/25/2008 09:00	1.153	7.38	1.8	9.91
2/25/2008 09:15	1.151	7.54	1.6	9.62
2/25/2008 09:30	1.159	7.71	1.0	9.37
2/25/2008 09:45	1.162	7.69	4.5	9.20
2/25/2008 10:00	1.166	7.72	3.3	9.14
2/25/2008 10:15	1.168	7.76	1.9	9.11
2/25/2008 10:30	1.167	7.71	4.9	9.22
2/25/2008 10:45	1.164	7.70	4.1	9.39
2/25/2008 11:00	1.163	7.67	4.6	9.62
2/25/2008 11:15	1.171	7.70	5.0	9.74
2/25/2008 11:30	1.171	7.70	5.7	9.69
2/25/2008 11:45	1.171	7.71	3.1	9.60
2/25/2008 12:00	1.165	7.73	4.0	9.69
2/25/2008 12:15	1.175	7.76	5.5	9.62
2/25/2008 12:30	1.178	7.93	5.0	9.83
2/25/2008 12:45	1.178	7.84	3.9	9.70
2/25/2008 13:00	1.179	7.84	5.0	9.69
2/25/2008 13:15	1.180	7.85	1.6	9.55
2/25/2008 13:30	1.175	7.82	2.1	9.57
2/25/2008 13:45	1.175	7.90	1.6	9.58
2/25/2008 14:00	1.176	7.94	1.4	9.55
2/25/2008 14:15	1.177	8.09	3.5	9.70
2/25/2008 14:30	1.179	8.03	2.6	9.60
2/25/2008 14:45	1.178	8.19	3.0	9.73
2/25/2008 15:00	1.176	8.02	2.9	9.62
2/25/2008 15:15	1.178	7.97	2.1	9.56
2/25/2008 15:30	1.180	8.01	1.4	9.55
2/25/2008 15:45	1.178	8.04	1.9	9.49
2/25/2008 16:00	1.183	7.97	2.8	9.53
2/25/2008 16:15	1.183	8.12	1.9	9.57
2/25/2008 16:30	1.185	8.14	1.8	9.63
2/25/2008 16:45	1.183	8.33	2.3	9.88
2/25/2008 17:00	1.185	8.20	2.1	9.76
2/25/2008 17:15	1.185	8.09	1.2	9.47
2/25/2008 17:30	1.185	8.04	1.5	9.38
2/25/2008 17:45	1.186	8.10	1.1	9.33
2/25/2008 18:00	1.185	7.91	2.3	9.25
2/25/2008 18:15	1.186	7.94	2.3	9.16
2/25/2008 18:30	1.189	7.76	1.4	9.01
2/25/2008 18:45	1.192	8.04	1.5	9.54
2/25/2008 19:00	1.191	8.07	1.6	9.51
2/25/2008 19:15	1.194	8.04	1.6	9.41
2/25/2008 19:30	1.198	8.05	1.3	9.57
2/25/2008 19:45	1.195	8.06	1.3	9.57
2/25/2008 20:00	1.190	8.05	1.3	9.55
2/25/2008 20:15	1.199	8.03	1.2	9.58
2/25/2008 20:30	1.194	8.02	1.1	9.58
2/25/2008 20:45	1.197	8.04	1.2	9.55
2/25/2008 21:00	1.198	7.96	1.1	9.61
2/25/2008 21:15	1.196	7.80	1.1	9.63
2/25/2008 21:30	1.196	7.82	1.1	9.62
2/25/2008 21:45	1.196	7.75	1.1	9.61

Start date: 2/25/2008 End date: 2/25/2008

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Denny Way User Defined

	Min: 1.039 Max: 1.199 Mean: 1.149 St.dev: 0.049	Min: 7.31 Max: 8.33 Mean: 7.81 St.dev: 0.20	Min: 0.8 Max: 7.5 Mean: 1.8 St.dev: 1.4	Min: 8.89 Max: 10.03 Mean: 9.44 St.dev: 0.27
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
2/25/2008 00:00	1.039	7.68	0.9	9.61
2/25/2008 00:15	1.040	7.69	0.9	9.50
2/25/2008 00:30	1.047	7.71	0.9	9.39
2/25/2008 00:45	1.049	7.71	0.9	9.47
2/25/2008 01:00	1.049	7.72	0.8	9.25
2/25/2008 01:15	1.053	7.83	0.8	9.18
2/25/2008 01:30	1.058	7.80	0.8	9.12
2/25/2008 01:45	1.061	7.81	0.8	9.12
2/25/2008 02:00	1.060	7.80	0.8	9.13
2/25/2008 02:15	1.068	7.80	0.8	9.08
2/25/2008 02:30	1.071	7.80	0.8	9.10
2/25/2008 02:45	1.074	7.78	0.8	9.08
2/25/2008 03:00	1.076	7.76	0.8	9.16
2/25/2008 03:15	1.079	7.75	1.0	9.20
2/25/2008 03:30	1.083	7.69	0.9	9.42
2/25/2008 03:45	1.084	7.79	0.8	9.08
2/25/2008 04:00	1.085	7.76	0.8	9.06
2/25/2008 04:15	1.090	7.68	0.9	9.29
2/25/2008 04:30	1.094	7.40	1.3	9.99
2/25/2008 04:45	1.098	7.53	1.2	9.81
2/25/2008 05:00	1.105	7.55	1.2	9.76
2/25/2008 05:15	1.106	7.66	1.1	9.63
2/25/2008 05:30	1.110	7.79	0.9	9.22
2/25/2008 05:45	1.113	7.76	0.8	9.20
2/25/2008 06:00	1.117	7.77	0.8	9.13
2/25/2008 06:15	1.118	7.78	0.8	9.08
2/25/2008 06:30	1.118	7.78	0.8	9.06
2/25/2008 06:45	1.130	7.58	1.0	9.30
2/25/2008 07:00	1.125	7.73	0.8	9.03
2/25/2008 07:15	1.130	7.44	1.1	9.67
2/25/2008 07:30	1.132	7.52	1.0	9.57
2/25/2008 07:45	1.133	7.57	1.8	9.44
2/25/2008 08:00	1.137	7.63	7.5	9.34
2/25/2008 08:15	1.138	7.68	1.6	9.33
2/25/2008 08:30	1.146	7.32	1.2	9.98
2/25/2008 08:45	1.151	7.31	2.2	10.03

2/25/2008 22:00	1.195	7.73	1.0	9.59
2/25/2008 22:15	1.197	7.78	1.1	9.59
2/25/2008 22:30	1.195	7.83	1.2	9.09
2/25/2008 22:45	1.195	7.81	1.0	9.03
2/25/2008 23:00	1.197	7.78	1.1	8.98
2/25/2008 23:15	1.192	7.76	0.9	8.94
2/25/2008 23:30	1.194	7.75	1.3	8.92
2/25/2008 23:45	1.190	7.73	0.9	8.89

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King County
DEPT. OF NATURAL RESOURCES
WASTEWATER TREATMENT DIVISION

Agreed Order no. DE5068

Inspector's Daily Construction Report

REPORT NUMBER: 56
KING COUNTY CONTRACT NO.: C00190C07

CONTRACT TITLE: Denny Way CSO – Nearshore Interim Sediment Cleanup (2007-2008)
PRIME CONTRACTOR: ACC/Hurlen Construction Co.
TIME WORK STARTED: 1000HRS.
TIME WORK STOPPED: 1430 HRS.

Date

Year	Month	Day	Inspector
2008	February	25	KLN

Day of the Week

Sat	Sun	Mon	Tue	Wed	Thu	Fri
		X				

Weather

Clear	PC	Overcast	Fog	Rain/ Snow
	X			

Temperature

10-32	32-55	55-70	70-85	85+
	X			

Construction Activities:	ACC confirmed by cell-phone (M. Locke, Supt.) that they had substantially completed placement of Contingency Mix this day by app. 1226hrs. The ACC crane was "dogged off" by 1250hrs. B. Wilbert and D. Williams, KC, were on site to observe the balance of Contingency placement.
Miscellaneous:	Contractor began cleaning up the materials barge "KP-1" with their 936 Loader, shovels and brooms. ACC intends to do the wash down cleanup of that barge, and site demob. Tomorrow (per M. Locke, ACC).
Safety/Accidents:	The site is under ACC/Hurlen's Site Safety Plan. No accidents or incidents were reported by the Contractor this Afternoon Shift.
Problems Encountered & Resolutions:	Received cell-phone call from R. Pickering, Anchor, late afternoon regarding the Contingency placement. He is recommending that KC hold site demobilization (for ACC) until the Contractor Daily Reports have all been Submitted and reviewed by KC/Anchor to confirm Substantial Completion of the Contingency Mix placement (refer, also R. Brunke, KC).
Test Conducted:	See attached Denny CSO buoy Daily Record. Note: Received E/M from B. Kruger, KCEL this morning regarding a problem with the ten-meter (depth) Sonde on the Aquarium (background) buoy. Work at the site was monitored on the Denny buoy, with regular updates from the three-meter, or top Sonde. The buoy problem at the Aquarium did not adversely impact the work on site during this observer's shift.
Work Rejected:	None, by this observer.
Instructions Given to Contractor & Changes Initiated:	None, by this observer.
Manpower	ACC: "Pam Tay", five (5) crew persons; Assist Tug "Diane H", two (2) persons
Visitors to Site	B. Wilbert, D. Williams, KC
Equipment Used	"Pam Tay" w/American 9310 Crane & skip box, three (3) work skiffs, Cat 936 Loader; Materials barge "KP-1"; Assist Tug "Diane H"

Attachments: Denny CSO buoy Daily Record, 10 photos

Randy Brunke, Project Representative (Date)

2-25-08
K. Nordlund, CMIII (2-25-08)

Start date: 2/25/2008 End date: 2/25/2008

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Denny Way User Defined

	Min: 1.039 Max: 1.199 Mean: 1 149 St.dev: 0.049	Min: 7.31 Max: 8.33 Mean: 7.81 St.dev: 0.20	Min: 0.8 Max: 7.5 Mean: 1.8 St.dev: 1.4	Min: 8.89 Max: 10.03 Mean: 9.44 St.dev: 0.27
Date/Time	**Downtown Denny Way Buoy 0001691C Depth [m]**	**Downtown Denny Way Buoy 0001691C Temp [C]**	**Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]**	**Downtown Denny Way Buoy 0001691C ODO Conc [mg/L]**
2/25/2008 00:00	1.039	7.68	0.9	9.61
2/25/2008 00:15	1.040	7.69	0.9	9.50
2/25/2008 00:30	1.047	7.71	0.9	9.39
2/25/2008 00:45	1.049	7.71	0.9	9.47
2/25/2008 01:00	1.049	7.72	0.8	9.25
2/25/2008 01:15	1.053	7.83	0.8	9.18
2/25/2008 01:30	1.058	7.80	0.8	9.12
2/25/2008 01:45	1.061	7.81	0.8	9.12
2/25/2008 02:00	1.060	7.80	0.8	9.13
2/25/2008 02:15	1.068	7.80	0.8	9.08
2/25/2008 02:30	1.071	7.80	0.8	9.10
2/25/2008 02:45	1.074	7.78	0.8	9.08
2/25/2008 03:00	1.076	7.76	0.8	9.16
2/25/2008 03:15	1.079	7.75	1.0	9.20
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2/25/2008 04:45	1.098	7.53	1.2	9.81
2/25/2008 05:00	1.105	7.55	1.2	9.76
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2/25/2008 05:45	1.113	7.76	0.8	9.20
2/25/2008 06:00	1.117	7.77	0.8	9.13
2/25/2008 06:15	1.118	7.78	0.8	9.08
2/25/2008 06:30	1.118	7.78	0.8	9.06
2/25/2008 06:45	1.130	7.58	1.0	9.30
2/25/2008 07:00	1.125	7.73	0.8	9.03
2/25/2008 07:15	1.130	7.44	1.1	9.67
2/25/2008 07:30	1.132	7.52	1.0	9.57
2/25/2008 07:45	1.133	7.57	1.8	9.44
2/25/2008 08:00	1.137	7.63	7.5	9.34
2/25/2008 08:15	1.138	7.68	1.6	9.33
2/25/2008 08:30	1 146	7.32	1.2	9.98
2/25/2008 08:45	1.151	7.31	2.2	10.03
2/25/2008 09:00	1.153	7.38	1.8	9.91
2/25/2008 09:15	1 151	7.54	1.6	9.62
2/25/2008 09:30	1.159	7.71	1.0	9.37

ACC capping - Kilauea Mill

2/25/2008 09:45	1.162	7.69	4.5	9.20
2/25/2008 10:00	1.166	7.72	3.3	9.14
2/25/2008 10:15	1.168	7.76	1.9	9.11
2/25/2008 10:30	1.167	7.71	4.9	9.22
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2/25/2008 11:45	1.171	7.71	3.1	9.60
2/25/2008 12:00	1.165	7.73	4.0	9.69
2/25/2008 12:15	1.175	7.76	5.5	9.62
2/25/2008 12:30	1.178	7.93	5.0	9.83
2/25/2008 12:45	1.178	7.84	3.9	9.70
2/25/2008 13:00	1.179	7.84	5.0	9.69
2/25/2008 13:15	1.180	7.85	1.6	9.55
2/25/2008 13:30	1.175	7.82	2.1	9.57
2/25/2008 13:45	1.175	7.90	1.6	9.58
2/25/2008 14:00	1.176	7.94	1.4	9.55
2/25/2008 14:15	1.177	8.09	3.5	9.70
2/25/2008 14:30	1.179	8.03	2.6	9.60
2/25/2008 14:45	1.178	8.19	3.0	9.73
2/25/2008 15:00	1.176	8.02	2.9	9.62
2/25/2008 15:15	1.178	7.97	2.1	9.56
2/25/2008 15:30	1.180	8.01	1.4	9.55
2/25/2008 15:45	1.178	8.04	1.9	9.49
2/25/2008 16:00	1.183	7.97	2.8	9.53
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2/25/2008 16:45	1.183	8.33	2.3	9.88
2/25/2008 17:00	1.185	8.20	2.1	9.76
2/25/2008 17:15	1.185	8.09	1.2	9.47
2/25/2008 17:30	1.185	8.04	1.5	9.38
2/25/2008 17:45	1.186	8.10	1.1	9.33
2/25/2008 18:00	1.185	7.91	2.3	9.25
2/25/2008 18:15	1.186	7.94	2.3	9.16
2/25/2008 18:30	1.189	7.76	1.4	9.01
2/25/2008 18:45	1.192	8.04	1.5	9.54
2/25/2008 19:00	1.191	8.07	1.6	9.51
2/25/2008 19:15	1.194	8.04	1.6	9.41
2/25/2008 19:30	1.198	8.05	1.3	9.57
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2/25/2008 20:45	1.197	8.04	1.2	9.55
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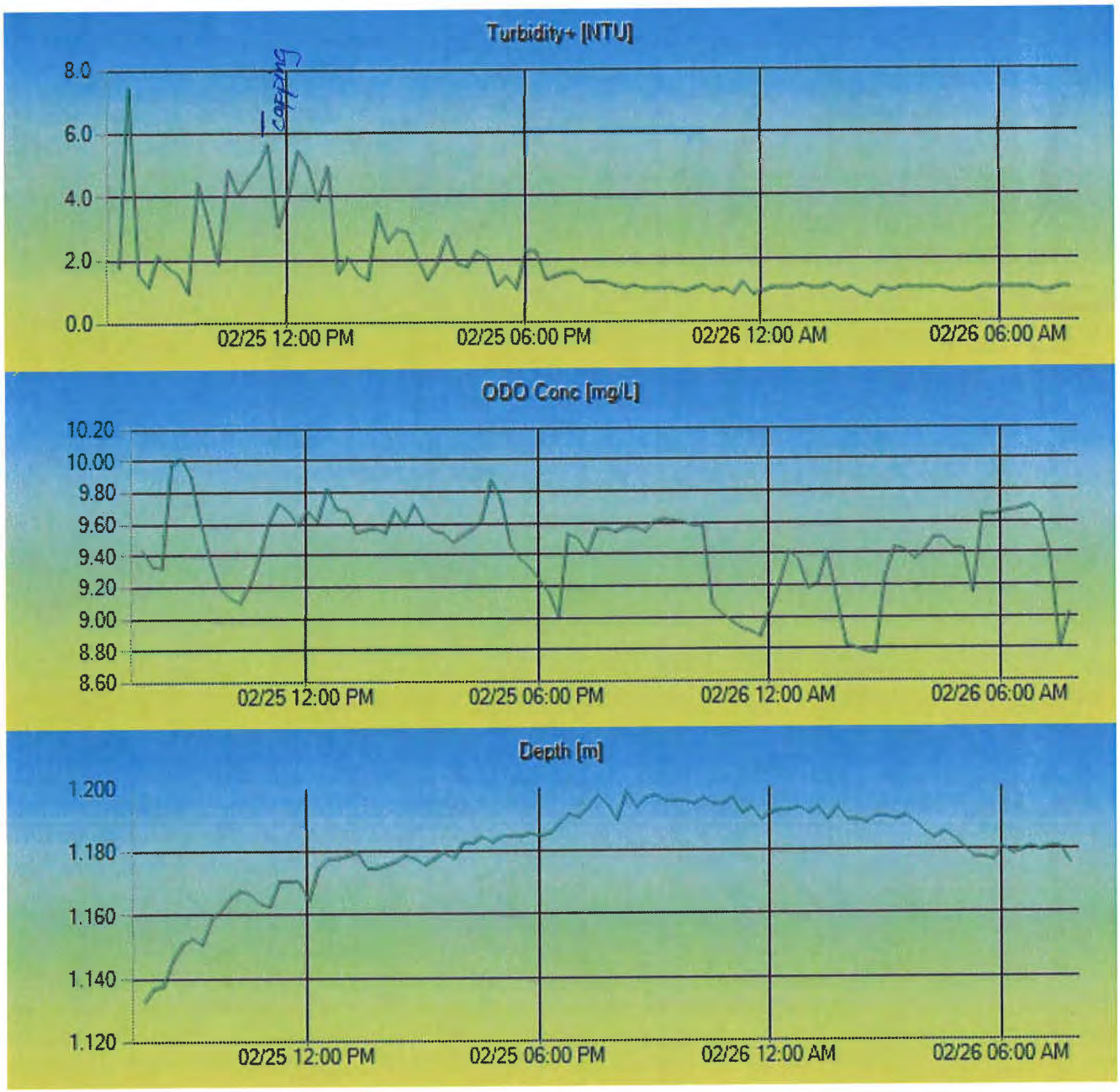
2/25/2008 22:45	1.195	7.81	1.0	9.03
2/25/2008 23:00	1.197	7.78	1.1	8.98
2/25/2008 23:15	1.192	7.76	0.9	8.94
2/25/2008 23:30	1.194	7.75	1.3	8.92

You are here: King County Marine / Puget Sound Network / Downtown / Denny Way Buoy

Name: Denny Way Buoy
Description:



Appendix D

Hourly Averaged Water Quality Monitoring Data

Hourly Averaged Water Quality Monitoring Data
Denny Way CSO Nearshore Interim Sediment Cleanup Project

(Table D-1: Week 1)

Date	Time	Manual Turbidity (NTU)	Manual DO (mg/L)	Buoy Turbidity (NTU)	Buoy DO (mg/L)	Background Turbidity (NTU)	Notes
11/30/2007	9:45 AM	0.51	6.80	0.00	6.93	0.00	
12/1/2007	9:45 AM	0.67	7.60	0.00	7.62	0.00	First full day of dredging
12/3/2007	3:15 PM	6.58	7.97	4.40	8.20	3.80	Elliott West discharging
12/4/2007	2:45 PM	4.67	8.20	2.20	8.53	5.30	Elliott West discharging
12/5/2007	9:45 AM	7.63	9.00	4.00	9.33	7.10	
12/6/2007	10:45 AM	1.54	7.50	0.20	7.71	2.30	
12/7/2007	10:45 AM	1.78	7.90	0.20	8.07	3.00	

Turbidity exceedance at site buoy.

Hourly Averaged Water Quality Monitoring Data
Denny Way CSO Nearshore Interim Sediment Cleanup Project

(Table D-2: Week 2)

Date	Time	Manual Turbidity (NTU)	Manual DO (mg/L)	Buoy Turbidity (NTU)	Buoy DO (mg/L)	Background Turbidity (NTU)
12/8/2007	10:30 AM	2.73	8.10	0.00	8.07	2.30
12/10/2007	12:45 PM	1.83	8.22	0.00	8.52	0.80
12/11/2007	9:45 AM	1.06	8.02	0.00	8.21	1.00
12/12/2007	9:15 AM	1.40	8.40	0.00	8.60	1.00
12/13/2007	10:30 AM	1.39	8.50	0.00	8.63	1.00
12/14/2007	12:30 PM	1.10	8.50	0.00	7.93	1.00

Turbidity exceedance at site buoy.

Hourly Averaged Water Quality Monitoring Data
Denny Way CSO Nearshore Interim Sediment Cleanup Project

(Table D-3a: Week 3a)

Date	Time	Manual Turbidity (NTU)	Manual DO (mg/L)	Buoy Turbidity (NTU)	Buoy DO (mg/L)	Background Turbidity (NTU)	Notes
12/15/2007							
12/17/2007	11:45 AM	1.39	8.30	0.40	8.83	0.90	Last day of manual readings

Turbidity exceedance at site buoy.

Hourly Averaged Water Quality Monitoring Data
Denny Way CSO Nearshore Interim Sediment Cleanup Project

(Table D-3b: Week 3b)

Time	18-Dec-07	19-Dec-07	20-Dec-07	21-Dec-07
7:00				
Site Turbidity (NTU)	0.00	0.00	0.00	0.00
Background Turbidity (NTU)	0.75	0.88	0.83	0.93
DO (mg/L)	7.86	8.64	8.32	8.30
8:00				
Site Turbidity (NTU)	0.00	2.40	3.00	0.00
Background Turbidity (NTU)	0.65	0.83	1.15	0.88
DO (mg/L)	7.82	8.39	8.40	8.14
9:00				
Site Turbidity (NTU)	1.53	1.56	5.30	0.00
Background Turbidity (NTU)	0.60	0.90	1.00	0.68
DO (mg/L)	7.79	8.40	8.43	8.55
10:00				
Site Turbidity (NTU)	2.30	1.83	2.20	0.00
Background Turbidity (NTU)	0.60	0.85	0.98	0.98
DO (mg/L)	7.85	8.48	8.48	8.62
11:00				
Site Turbidity (NTU)	1.78	1.23	2.18	0.00
Background Turbidity (NTU)	0.52	0.80	1.10	0.90
DO (mg/L)	7.95	8.48	8.49	8.68
12:00				
Site Turbidity (NTU)	0.00	0.10	0.78	0.00
Background Turbidity (NTU)	0.50	0.68	0.9	0.80
DO (mg/L)	8.12	8.53	8.51	8.66
13:00				
Site Turbidity (NTU)	0.38	0.18	0.68	0.00
Background Turbidity (NTU)	0.57	0.70	0.88	0.95
DO (mg/L)	8.12	8.56	8.45	8.65
14:00				
Site Turbidity (NTU)	0.00	0.00	0.73	0.28
Background Turbidity (NTU)	0.85	0.68	0.68	0.98
DO (mg/L)	8.27	8.36	8.03	8.74
15:00				
Site Turbidity (NTU)	0.00	0.00	0.38	0.00
Background Turbidity (NTU)	0.85	0.65	0.63	0.78
DO (mg/L)	8.28	8.35	8.09	8.84
16:00				
Site Turbidity (NTU)	2.55	0.00	0.25	0.00
Background Turbidity (NTU)	0.85	0.65	0.70	1.13
DO (mg/L)	8.41	8.32	7.87	8.55
17:00				
Site Turbidity (NTU)	0.90	0.00	0.45	0.38
Background Turbidity (NTU)	0.85	0.70	0.73	0.85
DO (mg/L)	8.44	8.32	8.16	8.75

Turbidity exceedance at site buoy.

Hourly Averaged Water Quality Monitoring Data
Denny Way CSO Nearshore Interim Sediment Cleanup Project

(Table D-4: Week 4)

		Holiday				
Time	**22-Dec-07**	**24-Dec-07**	**25-Dec-07**	**26-Dec-07**	**27-Dec-07**	**28-Dec-07**
7:00						
Site Turbidity (NTU)	0.00				1.45	1.90
Background Turbidity (NTU)	0.65				1.43	1.98
DO (mg/L)	7.93				8.48	8.48
8:00						
Site Turbidity (NTU)	0.00				1.45	1.93
Background Turbidity (NTU)	0.73				1.43	1.95
DO (mg/L)	8.25				8.50	8.48
9:00						
Site Turbidity (NTU)	0.00				1.45	2.70
Background Turbidity (NTU)	0.73				1.30	1.93
DO (mg/L)	8.52				8.54	8.55
10:00						
Site Turbidity (NTU)	0.00				1.30	3.08
Background Turbidity (NTU)	0.70				1.20	1.90
DO (mg/L)	8.52				8.23	8.65
11:00						
Site Turbidity (NTU)	0.00				1.93	1.93
Background Turbidity (NTU)	0.70				1.20	1.83
DO (mg/L)	8.49				8.42	8.26
12:00						
Site Turbidity (NTU)	0.00				3.40	1.70
Background Turbidity (NTU)	0.68				1.18	1.83
DO (mg/L)	8.38				8.42	8.32
13:00						
Site Turbidity (NTU)	2.08				2.18	2.25
Background Turbidity (NTU)	0.70				1.23	1.80
DO (mg/L)	8.40				8.27	8.43
14:00						
Site Turbidity (NTU)	0.63				1.48	1.95
Background Turbidity (NTU)	0.70				1.28	1.73
DO (mg/L)	8.29				8.32	8.45
15:00						
Site Turbidity (NTU)	0.03				1.90	1.73
Background Turbidity (NTU)	0.78				1.25	1.65
DO (mg/L)	8.31				8.41	8.49
16:00						
Site Turbidity (NTU)	0.00				2.45	1.60
Background Turbidity (NTU)	ND				1.18	1.60
DO (mg/L)	8.34				8.41	8.55
17:00						
Site Turbidity (NTU)	0.00				3.63	1.60
Background Turbidity (NTU)	0.55				1.13	1.63
DO (mg/L)	8.39				8.40	8.43
18:00						
Site Turbidity (NTU)	0.00				3.63	1.60
Background Turbidity (NTU)	0.55				1.13	1.63
DO (mg/L)	8.39				8.40	8.43
Weekly Manual Sample - 09:45						
Site Turbidity (NTU)	--				1.5	--
Background Turbidity (NTU)	--				1.17	--
DO (mg/L)	--				8.59	--

Hourly Averaged Water Quality Monitoring Data
Denny Way CSO Nearshore Interim Sediment Cleanup Project

(Table D-4: Week 4)

Turbidity exceedance at site buoy.

Hourly Averaged Water Quality Monitoring Data
Denny Way CSO Nearshore Interim Sediment Cleanup Project

(Table D-5: Week 5)

Time		Holiday				
	29-Dec-07	31-Dec-08	1-Jan-08	2-Jan-08	3-Jan-08	4-Jan-08
7:00						
Site Turbidity (NTU)	1.60			1.15	1.25	1.10
Background Turbidity (NTU)	1.30			1.08	1.18	1.05
DO (mg/L)	8.64			8.69	8.49	7.97
8:00						
Site Turbidity (NTU)	1.75			1.83	1.20	1.08
Background Turbidity (NTU)	1.50			1.08	1.20	1.05
DO (mg/L)	8.88			8.73	8.38	7.89
9:00						
Site Turbidity (NTU)	2.03			2.40	1.20	1.05
Background Turbidity (NTU)	1.25			1.10	1.05	1.18
DO (mg/L)	9.02			8.58	8.47	8.06
10:00						
Site Turbidity (NTU)	2.25			1.68	1.20	1.08
Background Turbidity (NTU)	1.33			1.10	1.13	1.20
DO (mg/L)	9.08			8.72	8.53	8.06
11:00						
Site Turbidity (NTU)	2.10			1.48	1.23	1.10
Background Turbidity (NTU)	1.38			1.05	1.13	1.20
DO (mg/L)	8.79			8.70	8.58	8.07
12:00						
Site Turbidity (NTU)	3.50			1.18	1.23	1.13
Background Turbidity (NTU)	1.60			1.00	1.10	1.25
DO (mg/L)	8.35			8.28	8.63	8.16
13:00						
Site Turbidity (NTU)	2.55			1.10	1.25	2.70
Background Turbidity (NTU)	1.38			1.05	1.15	1.28
DO (mg/L)	8.64			8.15	8.53	8.15
14:00						
Site Turbidity (NTU)	1.55			1.05	1.23	3.23
Background Turbidity (NTU)	1.55			1.05	1.23	1.18
DO (mg/L)	8.39			8.14	8.30	8.12
15:00						
Site Turbidity (NTU)	1.50			1.08	2.68	2.48
Background Turbidity (NTU)	1.55			1.10	1.25	1.15
DO (mg/L)	8.45			8.09	8.24	8.09
16:00						
Site Turbidity (NTU)	2.13			1.33	5.23	3.60
Background Turbidity (NTU)	1.50			1.05	1.18	1.15
DO (mg/L)	8.55			8.36	8.29	8.09
17:00						
Site Turbidity (NTU)	2.15			1.50	1.60	2.00
Background Turbidity (NTU)	1.45			1.10	1.20	1.13
DO (mg/L)	8.43			8.37	8.30	8.02
Weekly Manual Sample - 10:00						
Site Turbidity (NTU)	--			0.994	--	--
Background Turbidity (NTU)	--			1.1	--	--
DO (mg/L)	--			8.38	--	--

Turbidity exceedance at site buoy.

Hourly Averaged Water Quality Monitoring Data
Denny Way CSO Nearshore Interim Sediment Cleanup Project

(Table D-6: Week 6)

Time	5-Jan-08	7-Jan-08	8-Jan-08	9-Jan-08	10-Jan-08	11-Jan-08
7:00						
Site Turbidity (NTU)	1.15	1.33	1.23	1.63	1.30	1.35
Background Turbidity (NTU)	1.15	1.18	0.98	1.25	1.23	1.45
DO (mg/L)	8.18	8.75	8.55	8.55	8.77	8.70
8:00						
Site Turbidity (NTU)	1.175	1.58	1.18	1.35	1.38	2.20
Background Turbidity (NTU)	1.13	1.13	1.00	1.30	1.25	1.38
DO (mg/L)	8.18	8.87	8.51	8.57	8.82	8.75
9:00						
Site Turbidity (NTU)	1.53	1.25	1.38	2.25	1.30	4.63
Background Turbidity (NTU)	1.10	1.20	0.98	1.30	1.10	1.38
DO (mg/L)	8.23	8.89	8.29	8.60	8.78	8.78
10:00						
Site Turbidity (NTU)	2.63	1.20	1.33	1.38	1.38	3.85
Background Turbidity (NTU)	1.15	1.18	0.98	1.33	1.15	1.30
DO (mg/L)	8.26	8.96	8.29	8.63	8.73	8.83
11:00						
Site Turbidity (NTU)	2.90	1.30	1.15	3.25	1.88	2.30
Background Turbidity (NTU)	1.10	1.18	0.98	1.30	1.20	1.20
DO (mg/L)	8.30	9.05	8.09	8.72	8.57	8.84
12:00						
Site Turbidity (NTU)	1.80	1.73	1.25	2.88	2.18	5.83
Background Turbidity (NTU)	1.15	1.18	0.98	1.30	1.20	1.23
DO (mg/L)	8.35	8.96	8.22	8.70	8.57	8.85
13:00						
Site Turbidity (NTU)	1.20	1.40	2.15	3.30	1.83	3.88
Background Turbidity (NTU)	1.10	1.13	1.00	1.23	1.18	1.23
DO (mg/L)	8.38	9.29	8.52	8.77	8.64	8.85
14:00						
Site Turbidity (NTU)	1.20	1.60	1.78	2.43	1.50	1.78
Background Turbidity (NTU)	1.10	1.13	0.95	1.20	1.15	1.20
DO (mg/L)	8.41	9.20	8.21	8.73	8.48	8.66
15:00						
Site Turbidity (NTU)	1.15	3.65	5.10	3.25	3.05	1.93
Background Turbidity (NTU)	1.10	1.15	0.95	1.23	1.13	1.25
DO (mg/L)	8.41	9.18	8.21	8.70	8.53	8.66
16:00						
Site Turbidity (NTU)	1.15	1.73	6.70	2.05	4.08	2.90
Background Turbidity (NTU)	1.10	1.13	1.00	1.15	1.20	1.33
DO (mg/L)	8.44	9.03	8.07	8.72	8.51	8.63
Weekly Manual Sample - 09:30						
Site Turbidity (NTU)	--	--	--	1.06	--	--
Background Turbidity (NTU)	--	--	--	1.30	--	--
DO (mg/L)	--	--	--	8.48	--	--

Turbidity exceedance at site buoy.

Hourly Averaged Water Quality Monitoring Data
Denny Way CSO Nearshore Interim Sediment Cleanup Project

(Table D-7: Week 7)

Time	Dredge End 12-Jan	14-Jan	15-Jan	16-Jan	Backfill Start 17-Jan	18-Jan
7:00						
Site Turbidity (NTU)	1.675	1.53	1.6	1.65	1.45	1.20
Background Turbidity (NTU)	1.15	1.18	1.18	1.08	0.70	0.80
DO (mg/L)	8.63	8.83	8.96	9.43	8.83	8.12
8:00						
Site Turbidity (NTU)	2.15	1.53	1.575	1.55	1.23	1.20
Background Turbidity (NTU)	1.13	1.20	1.28	1.80	0.80	0.83
DO (mg/L)	8.97	8.87	9.00	9.18	8.48	8.05
9:00						
Site Turbidity (NTU)	2.13	1.60	1.80	1.53	1.03	1.20
Background Turbidity (NTU)	1.30	ND	1.68	1.25	1.00	0.88
DO (mg/L)	8.80	8.91	9.18	9.12	8.08	8.06
10:00						
Site Turbidity (NTU)	1.95	1.58	1.80	1.23	1.80	1.20
Background Turbidity (NTU)	1.20	1.23	1.63	1.33	0.90	1.03
DO (mg/L)	8.71	8.94	9.18	8.36	8.72	8.28
11:00						
Site Turbidity (NTU)	2.90	1.63	1.83	1.20	3.30	1.23
Background Turbidity (NTU)	1.50	1.23	1.50	1.20	0.83	0.83
DO (mg/L)	8.49	9.02	9.30	8.22	8.51	8.55
12:00						
Site Turbidity (NTU)	2.50	1.55	1.88	1.18	7.95	1.25
Background Turbidity (NTU)	1.40	1.28	1.48	1.30	0.80	0.88
DO (mg/L)	8.75	9.08	9.32	8.19	8.55	8.64
13:00						
Site Turbidity (NTU)	2.23	1.83	1.68	1.25	6.30	1.15
Background Turbidity (NTU)	1.28	1.33	1.48	1.13	1.03	0.78
DO (mg/L)	8.58	9.29	8.91	8.51	8.59	8.48
14:00						
Site Turbidity (NTU)	2.25	1.78	9.13	1.13	4.70	1.10
Background Turbidity (NTU)	1.30	1.25		0.88	0.98	0.70
DO (mg/L)	8.57	9.33	8.44	8.15	8.09	8.34
15:00						
Site Turbidity (NTU)	1.83	1.40	2.05	1.08	6.88	7.23
Background Turbidity (NTU)	1.40	1.23		1.10	1.10	0.80
DO (mg/L)	8.68	8.98	8.28	8.07	8.72	8.22
16:00						
Site Turbidity (NTU)	1.48	1.10	1.80	1.30	5.35	12.95
Background Turbidity (NTU)	1.40	1.20		0.90	1.03	0.93
DO (mg/L)	8.68	8.36	8.25	8.51	8.86	8.63
17:00						
Site Turbidity (NTU)	1.40	1.05	1.68	1.60	6.10	12.95
Background Turbidity (NTU)	1.38	1.18		1.03	0.93	0.95
DO (mg/L)	8.69	8.07	8.28	8.81	8.84	8.99
Weekly Manual Sample - 15:15						
Site Turbidity (NTU)	--	--	--	--	5.63	--
Background Turbidity (NTU)	--	--	--	--	1.1	--
DO (mg/L)	--	--	--	--	9.16	--

Turbidity exceedance at site buoy.

Hourly Averaged Water Quality Monitoring Data
Denny Way CSO Nearshore Interim Sediment Cleanup Project

(Table D-8: Week 8)

Time	19-Jan-08	21-Jan-08	22-Jan-08	23-Jan-08	24-Jan-08	25-Jan-08
7:00						
Site Turbidity (NTU)	1.225	1.13	1.13	1.28	1.23	1.35
Background Turbidity (NTU)	0.75	0.75	0.88	0.70	ND	0.93
DO (mg/L)	8.69	8.32	8.39	8.48	8.38	8.75
8:00						
Site Turbidity (NTU)	1.225	1.20	8.98	1.30	1.20	1.30
Background Turbidity (NTU)	0.83	0.73	0.80	0.73	ND	0.83
DO (mg/L)	8.73	8.35	8.29	8.32	8.31	8.93
9:00						
Site Turbidity (NTU)	1.23	1.13	10.48	1.25	1.45	1.30
Background Turbidity (NTU)	0.83	0.78	0.80	0.73	0.70	0.75
DO (mg/L)	8.77	8.43	8.59	8.31	8.26	8.80
10:00						
Site Turbidity (NTU)	1.20	1.13	1.38	1.23	1.45	2.98
Background Turbidity (NTU)	1.00	0.75	0.78	0.73	0.70	0.75
DO (mg/L)	8.78	8.47	8.89	8.12	8.26	8.66
11:00						
Site Turbidity (NTU)	1.20	1.08	1.53	1.13	7.65	5.90
Background Turbidity (NTU)	0.95	0.75	0.73	0.75	0.70	0.78
DO (mg/L)	8.78	8.57	8.76	8.06	8.19	8.85
12:00						
Site Turbidity (NTU)	1.18	1.10	1.80	1.13	15.03	3.75
Background Turbidity (NTU)	0.93	0.73	0.75	0.73	0.75	0.75
DO (mg/L)	8.77	8.54	8.47	8.41	8.31	8.74
13:00						
Site Turbidity (NTU)	1.18	1.08	1.33	1.13	1.50	6.90
Background Turbidity (NTU)	0.90	0.63	0.75	0.83	0.70	0.88
DO (mg/L)	8.81	8.41	8.60	8.36	8.77	8..885
14:00						
Site Turbidity (NTU)	1.20	1.08	1.15	1.15	2.90	4.23
Background Turbidity (NTU)	0.85	0.68	0.73	0.73	0.78	0.68
DO (mg/L)	8.86	8.29	8.59	8.37	8.81	8.98
15:00						
Site Turbidity (NTU)	1.20	1.08	1.60	1.15	5.83	4.63
Background Turbidity (NTU)	0.93	0.78	0.70	0.70	0.78	0.73
DO (mg/L)	8.99	8.34	8.35	8.35	8.65	8.66
16:00						
Site Turbidity (NTU)	1.18	1.03	3.05	1.08	2.90	3.48
Background Turbidity (NTU)	0.98	0.78	0.73	0.70	ND	ND
DO (mg/L)	9.04	8.34	8.24	8.46	8.75	8.66
17:00						
Site Turbidity (NTU)	1.20	1.30	5.43	1.10	1.70	2.43
Background Turbidity (NTU)	1.03	0.75	ND	0.80	0.65	0.65
DO (mg/L)	9.18	8.25	8.29	8.46	8.78	8.93
18:00						
Site Turbidity (NTU)	1.28	1.58	2.53	3.33	1.53	3.23
Background Turbidity (NTU)	0.93	0.78	0.70	0.73	0.65	0.68
DO (mg/L)	9.06	8.36	8.32	8.53	8.79	8.75

Hourly Averaged Water Quality Monitoring Data
Denny Way CSO Nearshore Interim Sediment Cleanup Project

(Table D-8: Week 8)

Time	19-Jan-08	21-Jan-08	22-Jan-08	23-Jan-08	24-Jan-08	25-Jan-08
19:00						
Site Turbidity (NTU)	1.48	1.83	2.43	4.98	1.58	3.15
Background Turbidity (NTU)	0.98	0.78	0.68	0.65	0.73	0.65
DO (mg/L)	9.09	8.36	8.27	8.43	8.54	8.69
20:00						
Site Turbidity (NTU)	2.20	1.75	2.23	1.95	1.75	2.05
Background Turbidity (NTU)	0.93	0.85	0.68	0.70	0.70	ND
DO (mg/L)	9.16	8.27	8.24	8.46	8.63	8.28
Weekly Manual Sample - 11:00						
Site Turbidity (NTU)	--	--	--	0.85	--	--
Background Turbidity (NTU)	--	--	--	0.80	--	--
DO (mg/L)	--	--	--	8.00	--	--

Turbidity exceedance at site buoy.

Hourly Averaged Water Quality Monitoring Data
Denny Way CSO Nearshore Interim Sediment Cleanup Project

(Table D-9: Week 9)

Time	26-Jan-08	28-Jan-08	29-Jan-08	30-Jan-08	31-Jan-08	1-Feb-08
7:00						
Site Turbidity (NTU)	1.5	1.10	1.30	1.15	1.10	1.25
Background Turbidity (NTU)	ND	ND	0.78	0.83	0.95	0.98
DO (mg/L)	8.88	8.15	9.14	8.84	8.79	9.35
8:00						
Site Turbidity (NTU)	1.4	1.10	2.80	1.10	1.18	1.65
Background Turbidity (NTU)	0.70	0.70	0.70	ND	0.90	0.98
DO (mg/L)	8.91	8.16	9.16	8.86	8.78	9.13
9:00						
Site Turbidity (NTU)	1.38	4.28	3.48	1.10	2.13	1.48
Background Turbidity (NTU)	0.68	0.70	0.80	0.78	0.87	0.98
DO (mg/L)	8.81	8.24	9.16	8.92	8.88	9.03
10:00						
Site Turbidity (NTU)	1.28	8.63	13.15	1.13	2.60	1.18
Background Turbidity (NTU)	ND	0.78	0.70	0.83	0.87	1.00
DO (mg/L)	8.64	8.64	9.21	8.97	8.88	9.10
11:00						
Site Turbidity (NTU)	1.20	2.18	6.08	1.10	4.75	1.15
Background Turbidity (NTU)	0.78	0.90	0.07	0.83	0.80	0.95
DO (mg/L)	8.53	8.91	9.24	9.02	8.91	9.08
12:00						
Site Turbidity (NTU)	1.20	3.40	5.25	1.10	5.05	1.10
Background Turbidity (NTU)	0.78	ND	0.70	0.80	0.88	0.90
DO (mg/L)	8.81	9.12	9.17	9.05	8.88	9.14
13:00						
Site Turbidity (NTU)	1.28	5.98	7.48	1.13	3.13	1.20
Background Turbidity (NTU)	0.75	0.90	0.73	0.83	0.97	0.90
DO (mg/L)	9.05	9.23	9.16	9.01	8.90	8.97
14:00						
Site Turbidity (NTU)	1.25	10.10	17.55	1.10	2.75	2.65
Background Turbidity (NTU)	0.83	0.88	0.73	ND	0.90	0.95
DO (mg/L)	9.10	9.19	9.31	9.11	9.05	9.00
15:00						
Site Turbidity (NTU)	1.35	2.93	5.55	1.10	1.50	1.60
Background Turbidity (NTU)	0.93	ND	0.83	0.80	0.90	1.00
DO (mg/L)	9.02	9.26	9.39	9.13	9.08	8.93
16:00						
Site Turbidity (NTU)	1.18	5.65	3.60	1.15	1.58	1.15
Background Turbidity (NTU)	0.78	0.83	0.80	0.78	0.90	1.00
DO (mg/L)	8.90	9.19	9.39	9.13	9.08	9.00
17:00						
Site Turbidity (NTU)	1.18	4.95	3.33	1.15	1.40	1.20
Background Turbidity (NTU)	0.78	ND	0.80	0.80	0.90	1.00
DO (mg/L)	8.74	9.20	9.32	9.10	8.94	9.02
18:00						
Site Turbidity (NTU)	1.18	3.53	5.90	1.20	1.28	1.35
Background Turbidity (NTU)	0.75	0.80	0.85	0.83	0.98	1.00
DO (mg/L)	8.70	9.22	9.60	9.08	9.01	9.10

Hourly Averaged Water Quality Monitoring Data
Denny Way CSO Nearshore Interim Sediment Cleanup Project

(Table D-9: Week 9)

Time	26-Jan-08	28-Jan-08	29-Jan-08	30-Jan-08	31-Jan-08	1-Feb-08
19:00						
Site Turbidity (NTU)	1.20	2.38	6.10	1.30	1.23	1.58
Background Turbidity (NTU)	0.68	0.80	0.78	0.80	0.90	1.08
DO (mg/L)	8.77	9.25	9.60	9.06	8.96	9.14
20:00						
Site Turbidity (NTU)	1.18	2.10	4.10	1.15	1.30	1.30
Background Turbidity (NTU)	0.70	ND	0.73	0.78	0.90	1.13
DO (mg/L)	8.82	9.24	9.52	8.95	8.89	9.11
21:00						
Site Turbidity (NTU)	1.18	1.63	4.03	1.15	1.18	1.23
Background Turbidity (NTU)	0.75	ND	0.70	0.80	0.88	1.13
DO (mg/L)	8.79	9.15	9.53	8.81	8.89	9.11
22:00						
Site Turbidity (NTU)	1.18	1.45	3.50	1.13	1.20	1.30
Background Turbidity (NTU)	0.75	0.78	0.73	0.75	0.83	1.13
DO (mg/L)	8.76	9.06	9.42	8.89	8.92	9.02
Weekly Manual Sample - 10:30						
Site Turbidity (NTU)	--	--	--	0.68	--	--
Background Turbidity (NTU)	--	--	--	0.90	--	--
DO (mg/L)	--	--	--	8.84	--	--

Turbidity exceedance at site buoy.

Hourly Averaged Water Quality Monitoring Data
Denny Way CSO Nearshore Interim Sediment Cleanup Project

(Table D-10: Week 10)

Time	4-Feb-08	5-Feb-08	6-Feb-08	7-Feb-08	8-Feb-08
6:00					
Site Turbidity (NTU)	1.38	1.30	1.30	12.98	1.45
Background Turbidity (NTU)	0.80	0.85	1.33	1.20	1.20
DO (mg/L)	9.04	9.03	9.00	9.67	9.23
7:00					
Site Turbidity (NTU)	1.38	1.28	1.25	11.73	1.53
Background Turbidity (NTU)	0.80	0.80	1.15	1.10	1.18
DO (mg/L)	9.04	9.02	9.02	9.60	9.29
8:00					
Site Turbidity (NTU)	1.38	1.25	1.30	2.73	1.43
Background Turbidity (NTU)	0.88	0.80	0.95	1.20	1.15
DO (mg/L)	9.01	9.04	9.09	9.37	9.25
9:00					
Site Turbidity (NTU)	1.38	1.30	1.35	2.13	2.93
Background Turbidity (NTU)	0.88	0.80	1.05	1.10	1.13
DO (mg/L)	9.04	9.09	9.13	9.37	9.41
10:00					
Site Turbidity (NTU)	1.33	3.25	1.33	3.60	3.05
Background Turbidity (NTU)	0.80	0.83	1.00	0.97	1.13
DO (mg/L)	8.90	9.11	9.16	9.55	9.48
11:00					
Site Turbidity (NTU)	1.30	6.45	1.33	4.75	2.35
Background Turbidity (NTU)	0.83	0.78	0.98	1.05	1.08
DO (mg/L)	9.07	9.18	9.19	9.68	9.45
12:00					
Site Turbidity (NTU)	1.30	3.38	1.28	3.40	1.83
Background Turbidity (NTU)	0.78	0.80	0.93	1.10	1.10
DO (mg/L)	9.03	9.13	9.22	9.55	9.55
13:00					
Site Turbidity (NTU)	1.30	4.60	5.05	4.63	1.33
Background Turbidity (NTU)	0.83	0.80	0.95	1.18	1.08
DO (mg/L)	9.16	9.19	9.14	9.73	9.23
14:00					
Site Turbidity (NTU)	1.30	2.35	2.50	4.28	1.30
Background Turbidity (NTU)	0.88	0.80	0.93	1.20	1.05
DO (mg/L)	9.17	9.16	9.23	9.73	9.24
15:00					
Site Turbidity (NTU)	1.30	2.08	2.98	3.68	1.23
Background Turbidity (NTU)	0.83	0.83	0.93	ND	1.08
DO (mg/L)	9.13	9.16	9.33	9.67	9.19
16:00					
Site Turbidity (NTU)	1.23	3.80	4.15	3.83	1.20
Background Turbidity (NTU)	0.80	0.85	0.90	1.05	1.00
DO (mg/L)	8.95	9.29	9.36	9.81	9.02
17:00					
Site Turbidity (NTU)	1.25	4.65	5.08	2.85	1.20
Background Turbidity (NTU)	0.93	0.83	0.90	1.18	0.98
DO (mg/L)	9.33	9.46	9.15	9.67	9.06

Hourly Averaged Water Quality Monitoring Data
Denny Way CSO Nearshore Interim Sediment Cleanup Project

(Table D-10: Week 10)

Time	4-Feb-08	5-Feb-08	6-Feb-08	7-Feb-08	8-Feb-08
18:00					
Site Turbidity (NTU)	1.28	4.53	2.90	1.43	1.20
Background Turbidity (NTU)	0.85	0.87	0.85	1.13	0.98
DO (mg/L)	9.37	9.68	9.20	9.26	9.07
19:00					
Site Turbidity (NTU)	1.60	3.03	1.50	1.30	1.20
Background Turbidity (NTU)	0.88	0.80	0.83	1.13	0.98
DO (mg/L)	9.33	9.38	9.19	9.14	9.08
20:00					
Site Turbidity (NTU)	1.63	2.75	1.93	1.38	1.23
Background Turbidity (NTU)	0.93	0.95	0.90	1.15	0.90
DO (mg/L)	9.23	9.42	9.19	9.19	9.08
21:00					
Site Turbidity (NTU)	1.45	3.28	2.00	1.33	1.25
Background Turbidity (NTU)	0.90	0.95	0.95	1.45	0.85
DO (mg/L)	9.08	9.51	9.12	9.25	9.04
22:00					
Site Turbidity (NTU)	1.40	3.13	3.38	1.53	1.20
Background Turbidity (NTU)	0.95	0.93	1.08	1.35	0.93
DO (mg/L)	9.11	9.52	9.18	9.30	9.07
Weekly Manual Sample					
Site Turbidity (NTU)	--	--	--	--	--
Background Turbidity (NTU)	--	--	--	--	--
DO (mg/L)	--	--	--	--	--

Turbidity exceedance at site buoy.

Hourly Averaged Water Quality Monitoring Data
Denny Way CSO Nearshore Interim Sediment Cleanup Project

(Table D-11: Week 11)

Time	11-Feb-08	12-Feb-08	13-Feb-08	14-Feb-08	15-Feb-08
6:00					
Site Turbidity (NTU)	2.03	1.63	5.25	-0.75	-0.63
Background Turbidity (NTU)	1.35	1.30	1.18	1.08	1.13
DO (mg/L)	8.92	8.75	8.97	8.59	8.88
7:00					
Site Turbidity (NTU)	2.20	1.58	7.58	0.55	-0.73
Background Turbidity (NTU)	1.38	1.38	1.18	1.43	0.90
DO (mg/L)	8.96	8.67	9.48	9.61	8.68
8:00					
Site Turbidity (NTU)	4.05	2.23	5.75	0.05	-0.75
Background Turbidity (NTU)	1.48	1.33	1.18	1.25	0.98
DO (mg/L)	9.43	9.03	9.12	9.42	8.66
9:00					
Site Turbidity (NTU)	4.15	4.53	3.63	-0.23	-0.60
Background Turbidity (NTU)	3.63	1.75	1.15	1.18	0.98
DO (mg/L)	9.61	10.09	8.89	8.93	8.81
10:00					
Site Turbidity (NTU)	4.10	3.73	6.13	0.45	-0.63
Background Turbidity (NTU)	3.40	2.68	1.45	1.10	0.95
DO (mg/L)	9.85	9.76	9.14	9.22	8.76
11:00					
Site Turbidity (NTU)	3.40	3.13	1.18	0.90	-0.45
Background Turbidity (NTU)	2.70	2.45	1.58	1.45	1.05
DO (mg/L)	9.50	9.54	8.81	9.21	8.97
12:00					
Site Turbidity (NTU)	4.05	2.90	1.08	1.50	-0.60
Background Turbidity (NTU)	2.75	3.10	2.00	1.25	1.13
DO (mg/L)	9.69	9.52	8.60	8.93	8.79
13:00					
Site Turbidity (NTU)	5.88	2.98	2.60	0.50	-0.50
Background Turbidity (NTU)	2.68	2.88	1.88	1.30	1.30
DO (mg/L)	9.35	9.57	9.27	8.88	9.05
14:00					
Site Turbidity (NTU)	3.88	2.70	1.03	1.13	-0.23
Background Turbidity (NTU)	2.93	2.60	2.90	1.48	1.18
DO (mg/L)	9.48	9.40	9.59	9.23	9.33
15:00					
Site Turbidity (NTU)	3.58	2.73	0.55	0.28	-0.03
Background Turbidity (NTU)	2.58	2.50	2.43	1.53	1.48
DO (mg/L)	9.46	9.45	9.08	9.30	9.55
16:00					
Site Turbidity (NTU)	3.08	2.60	0.85	0.88	-0.33
Background Turbidity (NTU)	2.80	2.48	2.33	2.13	1.33
DO (mg/L)	9.36	9.49	9.15	9.73	9.25
18:00					
Site Turbidity (NTU)	3.15	2.55	0.60	0.53	-0.13
Background Turbidity (NTU)	2.65	2.50	1.88	1.78	1.48
DO (mg/L)	9.45	9.41	9.43	9.60	9.30

Hourly Averaged Water Quality Monitoring Data
Denny Way CSO Nearshore Interim Sediment Cleanup Project

(Table D-11: Week 11)

Time	11-Feb-08	12-Feb-08	13-Feb-08	14-Feb-08	15-Feb-08
18:00					
Site Turbidity (NTU)	3.18	1.63	0.40	0.20	-0.13
Background Turbidity (NTU)	2.23	1.98	1.45	1.50	1.53
DO (mg/L)	9.61	8.80	9.20	9.22	9.22
19:00					
Site Turbidity (NTU)	3.03	2.08	0.23	-0.33	0.03
Background Turbidity (NTU)	1.78	1.83	1.40	1.48	1.48
DO (mg/L)	9.45	9.09	9.11	8.83	9.21
20:00					
Site Turbidity (NTU)	3.08	2.30	-0.20	-0.30	0.13
Background Turbidity (NTU)	1.63	1.78	1.18	1.45	1.48
DO (mg/L)	9.51	9.32	8.84	8.74	9.38
21:00					
Site Turbidity (NTU)	3.10	2.35	0.05	-0.18	-0.35
Background Turbidity (NTU)	1.70	1.85	1.38	1.18	1.50
DO (mg/L)	9.54	9.40	9.06	8.90	9.19
22:00					
Site Turbidity (NTU)	3.43	2.65	-0.05	-0.08	-0.23
Background Turbidity (NTU)	2.25	1.35	1.30	1.25	1.58
DO (mg/L)	9.70	9.54	9.08	9.11	9.33
Weekly Manual Sample -					
Site Turbidity (NTU)	--	--	--	--	--
Background Turbidity (NTU)	--	--	--	--	--
DO (mg/L)	--	--	--	--	--

Turbidity exceedance at site buoy.

Hourly Averaged Water Quality Monitoring Data
Denny Way CSO Nearshore Interim Sediment Cleanup Project

(Table D-12: Week 12)

Time	18-Feb-08	19-Feb-08	20-Feb-08	21-Feb-08	22-Feb-08	25-Feb-08
7:00						
Site Turbidity (NTU)	-0.90	-0.70	-0.73	0.80	1.03	1.18
Background Turbidity (NTU)	0.78	0.85	0.78	1.00	0.98	0.88
DO (mg/L)	8.65	9.13	8.76	9.05	9.08	9.43
9:00						
Site Turbidity (NTU)	-0.98	-0.65	-0.38	0.90	1.13	3.13
Background Turbidity (NTU)	0.78	0.95	0.73	0.85	0.93	0.88
DO (mg/L)	8.60	9.38	8.86	9.14	9.21	9.67
10:00						
Site Turbidity (NTU)	-1.05	-0.78	0.03	0.95	1.15	2.23
Background Turbidity (NTU)	1.10	1.08	0.80	0.83	0.90	0.95
DO (mg/L)	8.58	9.08	9.22	9.04	9.30	9.53
11:00						
Site Turbidity (NTU)	-0.95	-0.85	-0.13	0.95	1.10	3.55
Background Turbidity (NTU)	0.98	1.00	0.90	0.80	0.93	0.98
DO (mg/L)	8.76	8.99	8.87	9.09	9.32	9.22
12:00						
Site Turbidity (NTU)	-0.98	-0.83	0.73	0.93	1.13	4.60
Background Turbidity (NTU)	0.83	0.93	0.98	0.85	0.88	0.93
DO (mg/L)	8.88	9.08	9.00	9.12	9.21	9.66
13:00						
Site Turbidity (NTU)	-0.80	-0.58	1.53	0.90	1.23	4.60
Background Turbidity (NTU)	0.93	0.93	0.90	0.88	0.88	0.93
DO (mg/L)	8.99	9.43	9.22	9.03	9.79	9.71
14:00						
Site Turbidity (NTU)	-0.88	-0.63	1.43	0.93	1.18	2.58
Background Turbidity (NTU)	0.93	0.93	0.95	0.90	0.90	0.88
DO (mg/L)	8.98	9.14	9.31	9.07	9.79	9.60
15:00						
Site Turbidity (NTU)	-0.93	-0.83	1.15	1.25	1.08	2.63
Background Turbidity (NTU)	0.93	0.85	0.93	0.98	0.93	0.98
DO (mg/L)	8.86	8.87	9.43	9.11	9.58	9.65
16:00						
Site Turbidity (NTU)	-1.00	-0.80	1.03	2.13	1.25	ND
Background Turbidity (NTU)	0.90	0.80	0.90	0.85	0.95	ND
DO (mg/L)	8.80	8.96	9.41	9.13	9.74	ND
17:00						
Site Turbidity (NTU)	-0.93	0.58	1.03	2.98	1.00	ND
Background Turbidity (NTU)	0.85	0.83	0.83	0.85	0.90	ND
DO (mg/L)	8.79	8.90	9.30	9.16	9.28	ND
Weekly Manual Sample -						
Site Turbidity (NTU)	--	--	--	--	--	--
Background Turbidity (NTU)	--	--	--	--	--	--
DO (mg/L)	--	--	--	--	--	--

Turbidity exceedance at site buoy.

Appendix E

Complete Daily Water Quality Reports from Water Quality Monitoring Stations

Data available on request.

Appendix F

Water Quality Monitoring Sampling and Analysis Plan

DENNY WAY CSO NEARSHORE INTERIM SEDIMENT CLEANUP PROJECT DREDGING AND BACKFILLING OPERATIONS CONSTRUCTION WATER QUALITY MONITORING PLAN

Prepared by the
King County Department of Natural Resources and Parks
Water and Land Resources Division

November 2007

NAME OF PROJECT: Denny Way CSO Nearshore Interim Sediment Cleanup Project, Dredging and Backfilling Operations Sediment Monitoring Sampling and Analysis Plan

SAP PREPARED BY: King County Department of Natural Resources and Parks
Water and Land Resources Division
Marine Sediment and Assessment Group

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Table of Contents

1.0 Introduction **1**
2.0 Project Description **2**
3.0 Water Quality Monitoring **3**
3.1 Water Quality Monitoring at the Construction Site 5
3.1.1 High-Frequency In Situ Data Collection *5*
3.1.2 Manual Sample Collection *6*
3.2 Reference Station at the Seattle Aquarium 6
3.3 Quality Control 7
3.4 Data Reporting 7
4.0 References **8**

1.0 Introduction

This water quality monitoring plan presents project information and sampling and analytical methodologies that will be employed to perform water quality monitoring during construction activities associated with the Denny Way CSO Nearshore Interim Sediment Cleanup project. This work is being performed as part of an interim action to remediate contaminated sediments present in two nearshore areas in the immediate vicinity of the former Denny Way combined sewer overflow (CSO) outfall. The monitoring plan includes a description of the project, sampling and analytical methodologies, and quality control procedures.

2.0 Project Description

The Denny Way CSO was constructed in the 1960s when the Municipality of Metropolitan Seattle (Metro; now King County) built the present system of interceptors and treatment plants that collect, transport, and treat wastewater in the greater Seattle area. The CSO site is located along the northeastern shoreline of Elliott Bay and is adjacent to Myrtle Edwards Park at the foot of Denny Way in Seattle, Washington (Figure 1). The Denny Way CSO regulator station is located at 3165 Alaskan Way. Until 2004, the discharge point of the Denny Way CSO was at the shoreline. This outfall was exposed during normal low tide and frequently discharged directly across exposed intertidal sediment.

In 1986, Metro began a trial program to identify and reduce toxicant inputs to the sewer system discharging through the Denny Way CSO. In 1990, King County and the U.S. Army Corps of Engineers (Corps) sponsored the Denny Way CSO capping project to test the feasibility of capping contaminated sediments in Elliott Bay with clean dredged material from the Duwamish Waterway. A 3-foot layer of clean sand, dredged from the upper Duwamish Waterway during routine maintenance, was placed over a 3-acre area in water depths ranging from approximately -25 feet to -60 feet mean lower low water (MLLW).

King County has monitored the effectiveness of the cap at containing contaminated sediment for the past 17 years. Results show that the cap is stable, is not eroding, and has successfully isolated the underlying contaminated sediments (King County 2005). However, chemical concentrations on the cap surface layer (offshore of the Denny Way CSO) increased after cap construction, suggesting possible recontamination from the continued CSO discharges from Denny Way, or potential redistribution of remaining contaminated sediments from the intertidal area and the inshore edge of the cap.

In 1997, King County characterized the nature and extent of surface and subsurface sediment contamination in the outfall area, as well as areas inshore and offshore of the existing sediment cap (SEA 1997). Follow-up sediment sampling conducted by King County in 2005 demonstrated that chemical concentrations in the offshore areas declined over time due to a combination of natural processes, including biodegradation of chemicals, accumulation and mixing of clean sediment, and reduction of contaminant sources (King County 2005). Thus, monitored natural recovery is a prospective cleanup remedy for the offshore areas. These areas will continue to be evaluated by the Washington State Department of Ecology (Ecology) and King County to determine if a more active cleanup remedy is required.

In 1997, sediments sampled within inshore areas of the site contained concentrations of cadmium, copper, lead, mercury, silver, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), bis(2-ethylhexyl)phthalate, and butyl benzyl phthalate that exceeded sediment quality standard (SQS) chemical criteria. Contaminant concentrations above SQS chemical criteria were present to a depth of approximately 10 feet below the existing mudline. Unlike offshore areas of the site, natural recovery rates in the inshore sediment areas appeared to be progressing relatively slowly. In order to accelerate cleanup of the site and minimize the risk of future recontamination to other site areas, including the offshore cap, an interim sediment cleanup action plan for the site was developed by King County and Ecology in 2007, including dredging as practicable to remove impacted sediments, and backfilling to restore the grade to close to pre-project conditions.

The Denny Way CSO interim action will remediate contaminated sediment present in the two nearshore areas in the immediate vicinity of the former Denny Way CSO outfall. A combination of dredging, backfilling, and armoring will be employed to remediate the nearshore areas.

Approximately 20,000 cubic yards (cy) of contaminated sediments will be dredged from approximately +10 feet MLLW to approximately -35 feet MLLW within the 1.2-acre interim action area. The material within the dredge footprint will be mechanically dredged using a clamshell bucket deployed from a derrick barge. Dredging will remove up to 10 feet of sediment (including a 1-foot overdredge allowance) to ensure the contaminated material is removed to the extent possible.

A sloping dredge cut approximately 10 feet thick will be needed to reach the vertical limit of the dredge prism to remove the maximum practicable volume. Deeper dredging would require removal of large areas of the existing upland shoreline, which is not considered practicable without adverse impact on the Myrtle Edwards Park shoreline. The southern boundary of the project is constrained by the presence of the existing outfall structures (and armoring) and the dredge prism will be offset to avoid impacting these features. Therefore, some material may necessarily be left behind at depth after dredging because deeper dredge cuts would destabilize shoreline banks.

Dredged material will initially be placed on a barge stationed adjacent to the derrick. The sediments placed on the barge will be passively dewatered; the dewatering area on the barge will be contained in a filtration system, such as straw bales and geotextile material. Conservation measures will be in place to ensure water quality standards are met and that no material falls back into the water during transport.

The dredged material will be transported to the upland staging and rehandling area at the Duwamish Marine Center located on the east side of the Duwamish River at the base of the First Avenue South Bridge. The material will be fully contained within the barges during transportation to the upland facility.

At the upland staging area, the sediments will be transferred from the barge deck to a lined container positioned on the barge. To prevent dredged material from falling back into the water,

a solid barrier "spill plate" will be placed between the upland facility and the material barge during all offloading activities. The containers of dredged material positioned on the barge will be loaded by crane directly onto trucks and/or rail cars for shipment to an approved (Resource Conservation and Recovery Act [RCRA] Subtitle D) upland disposal site.

Prior to commencement of construction activities, sediment grab samples will be collected by King County adjacent and beyond the dredge boundary (Figure 2) to document baseline pre-dredge sediment quality conditions near the project area. Immediately following the completion of dredging operations as approved by the King County Project Representative, piston-core samples will be collected by King County from within the dredged areas to document post-dredge sediment quality conditions in the project area. Sediment backfill operations will commence immediately after collection of the post-dredge co-located surface and subsurface samples, given the protective design of the backfill layer. Working with Ecology, King County will also perform post-backfill sediment quality sampling adjacent to the interim action area. Contingency cover placement will be determined based on post-backfilling monitoring results, and areas that do not meet SQS chemical criteria will be covered with a minimum 6-inch layer of clean sand. The selected areas to be covered will be determined by Ecology in consultation with King County.

The dredged area will be backfilled and armored with an average thickness of more than 10 feet of material. Approximately 16,000 cy of well-graded clean sand will be armored with approximately 4,000 cy of sandy-gravel habitat mix.

In-water construction is expected to take approximately 3 to 4 months to complete. The work sequence is currently anticipated as follows:

- Mobilization/dredging: November 15 to December 31, 2007
- Backfilling: January 8 to February 8, 2008
- Post-construction monitoring: February 13 to February 15, 2008

3.0 Water Quality Monitoring

King County will perform water quality monitoring during the capping operations to verify that turbidity and DO are maintained within applicable water quality standards listed in WAC 173-201A. Section 401 of the Clean Water Act (CWA) requires that in-water operations shall not violate applicable effluent or water quality standards. This determination allows for the designation of mixing zones within which standards may be exceeded, but beyond which applicable standards must be met. Applicable water quality standards are listed in WAC 173-201A. These standards are consistent with the following related requirements:

- Section 304 of the CWA (33 U.S.C. §1314), which requires EPA to publish Water Quality Criteria for the protection of human health and aquatic life; and
- Sections 301, 302, and 303 of the CWA (33 U.S.C. §1311, 1312, and 1313), and 40 CFR Part 131, which require states to develop Water Quality Standards. Washington Water Quality Standards are promulgated under the Washington Water Pollution Control Act (Chapter 90.48 Revised Code of Washington [RCW]; Chapter 173-201A WAC).

Consistent with other regional dredging and backfill projects, the applicable water quality parameters for this interim action are turbidity and dissolved oxygen (DO). Washington State surface water quality standards for parameters such as turbidity and DO have been established to protect sensitive habitat, other characteristic uses of the water body, and to provide for ecosystem and human health protection (Chapter 173-201A-030). The applicable dissolved oxygen standard for Elliott Bay from WAC 173-201A-210(1)(d)(i) is:

> *Excellent quality . . . 6.0 mg/L*
>
> *. . . When a water body's D.O. is lower than the criteria in Table 210 (1)(d) (or with 0.2 mg/L of the criteria (and that condition is due to natural conditions, then human actions considered cumulatively may not cause the D.O. of that water body to decrease more than 0.2 mg/L.*

The applicable turbidity standard for Elliott Bay (excellent quality) from WAC 173-201A-210(1)(3) is:

> "*Turbidity shall not exceed 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.*"

During the months of November through February when construction is anticipated, background turbidity in the vicinity of the Site is typically less than 50 NTU. Thus, the turbidity standard for this action will normally be defined as a 5 NTU turbidity increase. As set forth in Chapter 173-201A-210:

> "*The turbidity criteria established under WAC 173-201A-210 (1)(e) shall be modified, without specific written authorization from the department, to allow a temporary area of mixing during and immediately after necessary in-water construction activities that result in the disturbance of in-place sediments. This temporary area of mixing is subject to the constraints of WAC 173-201A-400 (4) and (6) and can occur only after the activity has received all other necessary local and state permits and approvals, and after the implementation of appropriate best management practices to avoid or minimize disturbance of in-place sediments and exceedances of the turbidity criteria.*""

During construction, turbidity and DO standards must be met at a point 300 feet from the location of dredging or backfill material release into Elliott Bay. Other similar dredging and backfill projects performed in the Puget Sound area have successfully achieved this turbidity standard. King County will perform water quality monitoring during the dredging and backfilling operations to verify that turbidity and DO are maintained within applicable water quality standards listed in WAC 173-201A. A water quality sampling plan will be developed as part of remedial design.

Previous studies have shown that the net current flow in the vicinity of the Site is in a northwesterly direction, following the Seattle waterfront shoreline (Ebbesmeyer et.al., 1998). Surface water in this part of Elliott Bay is influenced by discharges from the Duwamish River, which follow the prevailing currents along the waterfront shoreline.

3.1 Water Quality Monitoring at the Construction Site

Water quality monitoring will be done by one of two methods. The preferred method is high-frequency *in situ* monitoring through the use of a deployed monitoring buoy. The alternative method is manual collection of water samples once daily in the afternoon during active dredging. Both methods are described below. Whichever method is used, water samples will be collected from two depths, one depth at one meter below the surface and the other approximately one meter above the bottom, the depth of which will be tide-dependent.

3.1.1 High-Frequency In Situ Data Collection

King County will monitor water quality proximal to the construction site through the use of a monitoring buoy deployed approximately 300 feet northwest of the Site, down-current of construction activities, in approximately 35 feet of water (referenced to MLLW). The monitoring buoy will include a real-time data acquisition system (DAS) consisting of a multi-parameter data sonde and telemetry system that will allow for data collection, storage, and review via the internet. Data collection will occur every 15 minutes with hourly data transferal via the DAS to an Econet web interface. Figure 1 shows the location of the water quality monitoring buoy in relation to the Site and construction area.

The instrument that will be used for water quality monitoring on this project is the YSI 6600EDS multi-parameter sonde. A YSI 6600EDS (Extended Deployment System) sonde consists of a cylindrical pressure-resistant body with a cable connection on one end and temperature, conductivity, pressure (depth), dissolved oxygen, and turbidity probes on the opposite end. An anti-fouling wiping system will be used to prolong the calibration life and a "Rapid Pulse™" dissolved oxygen sensor removes the need for a stirring mechanism. The sonde will be deployed at a depth of one meter below the surface, and the depth will remain constant with tidal fluctuations.

Specifications for the YSI 6163 Turbidity Probe are:

- Range of 0 to 1,000 nephelopmetric turbidity units (NTU).
- Resolution of 0.1 NTU.
- Accuracy of $\pm$2% or 0.3 NTU.

These specifications are sufficient to detect turbidity changes of 5 NTU over background, as specified in WAC 173-201A.

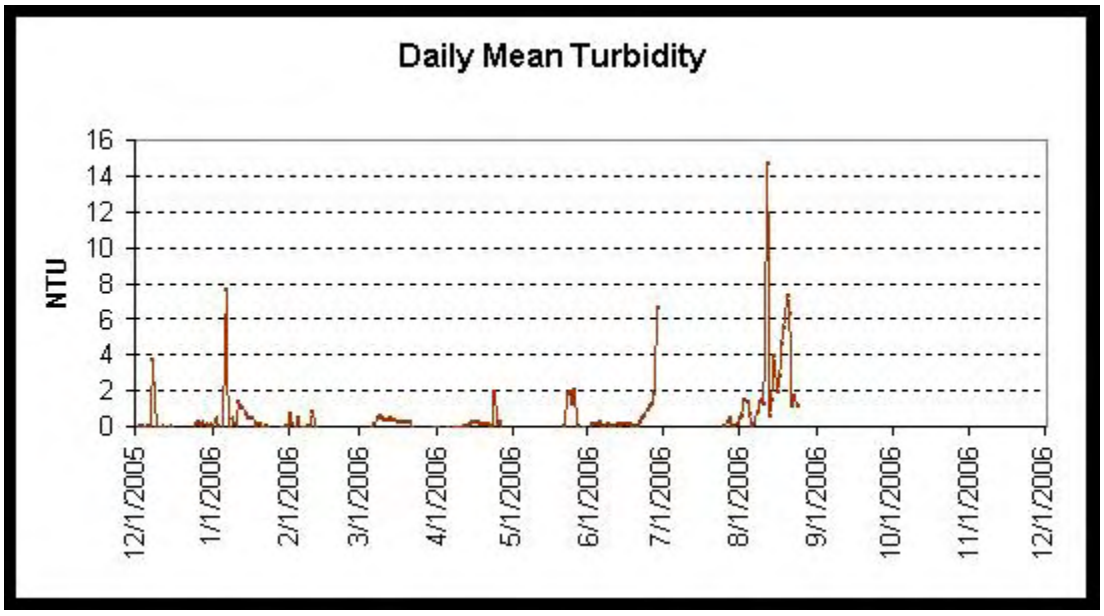
Specifications for the YSI6150 ROX Optical Oxygen Sensor are:

- Range of 0 to 500% air-saturation (0 to 50 mg/L DO).
- Resolution of 0.1% air-saturation (0.01 mg/L DO).
- Accuracy of $\pm$1% air-saturation from 0 to 200% (0 to 20 mg/L DO).

These specifications are sufficient to detect changes of 0.2 mg/L dissolved oxygen, as specified in WAC 173-201A, should dissolved oxygen concentrations drop below 6.0 mg/L.

The 6600 EDS sonde will be cabled to a YSI 6200 Remote DAS. This is a datalogger and telemetry unit that manages sensor sampling, data buffering, and cellular telemetry to a base station. The 6200 DAS consists of a power control module, a Campbell Scientific datalogger, three 12-volt batteries, a cellular telemetry unit, a single solar panel and a marine data cable.

The YSI Econet is a turn-key web-based data storage system that is fully customizable and readily accessible using any web interface. The data are transmitted to a secure server and posted directly to a customizable web site. The data can be continuously released to the public. The data can be downloaded a number of ways including automatic or customizable graphs, HTML or CSV formats.



The near-real time remote data acquisition system will allow project personnel to monitor water quality constantly during construction activities, and detect almost immediately if construction activities should have an impact on turbidity or dissolved oxygen concentrations.

3.1.2 Manual Sample Collection

In the event that the *in situ* system is not operational at any time during the project, water samples will be collected manually from a location approximately 300 feet northwest of the Site, down-current of construction activities, in approximately 35 feet of water (referenced to MLLW). Samples will be collected once daily from a depth of one meter below the surface in and one meter above the bottom during the daylight ebb tide. Samples will be collected by staff of the King County Environmental Laboratory using Niskin- or Van Dorn-style sampling bottles deployed from a boat. These samples will be submitted for laboratory analysis of dissolved oxygen and turbidity.

3.2 Reference Station at the Seattle Aquarium

Background water quality information for Elliott Bay will be continuously collected with a second water quality monitoring station that King County will be installed at the Seattle Aquarium in October 2007. This station consists of two sondes: one placed one meter below the surface and another at 10 meters below the surface. Figure 2 shows the relative location of the Denny Way and Seattle Aquarium monitoring stations. Use of the Seattle Aquarium station data will allow project staff to compare real-time data between the site and background Elliott Bay conditions.

3.3 Quality Control

During the week prior to the start of construction, throughout the first week of construction, and at any time when the *in situ* monitoring system is not operational, King County will collect daily water samples for laboratory analysis of both turbidity and dissolved oxygen. Manual water sample collection and analysis will serve as a calibration check for the *in situ* monitoring systems and as an alternative data-collection method in the event that the *in situ* system is not functioning.

A two-day transect will be performed during the week prior to the start of construction. This five-station transect, shown in Figure 3, will be performed to provide the following information:

- that the Seattle Aquarium permanent water quality monitoring station installation will be an effective background reference site for the water quality monitoring station at the Denny Way construction site; and
- calibration comparisons between data generated by the YSI sonde and laboratory analysis of dissolved oxygen and turbidity.

Water samples will be collected from a depth of one meter below the surface at each of the five stations shown in Figure 3 for laboratory analysis of dissolved oxygen and turbidity. Synoptic i*n situ* data for these two parameters will be collected with a YSI data sonde equivalent to the sonde deployed in the buoy at the Denny Way construction site. These samples will be collected for two days prior to the start of construction activities.

It is anticipated that the *in situ* monitoring sensors will perform according to manufacturer's specifications. As such, the field QC samples will be reduced to weekly collection, as a calibration check, following the first week of construction for the remainder of the monitoring period or until instrument performance indicates the need for increased frequency of field QC checks.

Turbidity laboratory analysis will be performed according to Standard Method SM2130-B (APHA, 1998), which is a nephelometric determination. Laboratory quality control for this method includes the analysis of laboratory duplicates and laboratory control samples.

Dissolved oxygen laboratory analysis will be performed according to Standard Method SM4500-O-C (APHA, 1998), which is a Winkler titration. Laboratory quality control for this method includes the analysis of triplicate samples.

3.4 Data Reporting

In situ water quality data will be available in near-real time through the project website, located at http://www.ysieconet.com/public/WebUI/Default.aspx?hidCustomerID=165. Weekly water quality data reports will be prepared and submitted to Ecology. The weekly water quality reports will include a summary of the continuous *in situ* data, along with results of quality control sample analysis for turbidity and dissolved oxygen and how the quality control results impact the *in situ* data.

These water quality reports will also record any excursions beyond the water quality criteria mandated for the Denny Way project. Chapter 173-201A WQC, however, does not provide clear guidance on what constitutes an exceedence of the water quality standard for turbidity. King County, in lieu of specific regulatory guidance has used the following assumptions to propose

the following guidance for project staff on determining when an exceedence of the turbidity water quality standard has occurred.

Table 240(3) in the WAC (*Toxics Substances Criteria*) provides two pairs, or *levels*, of exceedences:

"An instantaneous concentration not to be exceeded at any time." ACUTE
"A 24-hour average not to be exceeded." CHRONIC

These first two are the more-stringent of the two pairs of acute/chronic criteria and appear to be reserved only for chlorinated pesticide compounds. The second pair of criteria apply to the rest of the toxic substances including metals, PCBs, other organics and conventionals such as ammonia and cyanide.

"A 1-hour average concentration not to be exceeded more than once every three years on the average." ACUTE
"A 4-day average concentration not to be exceeded more than once every three years on the average." CHRONIC

King County felt a conservative approach would be to adopt the second acute criterion as the trigger point to constitute an exceedence and thus have the project staff closely observe the dredging activities at that time, as well as any other factors that might be occurring (e.g. heavy rainfall, CSO discharge).

Therefore, an exceedence would be recorded if the average turbidity at the Denny Way buoy, measured over a one-hour time period, was more than 5 NTU higher than the average turbidity, measured over the same one-hour period, at the Seattle Aquarium monitoring station.

King County field engineers will use the EcoNet system to help them manage dredging, by helping to determine when dredging activities might be impacting water quality, especially turbidity. Consistent monitoring of the EcoNet website will be performed to determine if turbidity readings are approaching a 5-NTU threshold. As an additional monitoring tool, the website has been configured to send an automatic "alert," in the form of an email to project staff when the 5-NTU threshold has been exceeded. An exceedence of the turbidity water quality standard would be recorded if the average turbidity at the Denny Way buoy, measured over a one-hour time period, was more than 5 NTU higher than the average turbidity, measured over the same one-hour period, at the Seattle Aquarium monitoring station. King County project staff will follow the procedure outlined below to monitor turbidity at the Denny Way site.

• • •

At least once an hour, check the turbidity reading at the Denny Way construction site by accessing the real-time EcoNet web page, located at:

http://www.ysieconet.com/public/WebUI/Default.aspx?hidCustomerID=165

From the home page, click on the upper-most green dot, which will connect with the real-time data from the Denny Way construction site monitoring buoy. If it appears that the turbidity is elevated above 5 NTU on the graph, proceed with the following steps (an "alert" e-mail will also be sent when this situation occurs):

1. Click the “Reports” tab.
2. In the “User Defined Time Period” box, click the “Denny Way User Defined” option.
3. Click both of the calendar buttons to input the current date into both the “start date” and “end date” windows.
4. Click the “Submit” button.
5. From the “Downtown Denny Way Buoy 0001691C Turbidity+ [NTU]” column, take the four most-recent readings and calculate the average of these four numbers. This will represent the hourly-averaged turbidity at the Denny Way construction site.
6. Repeat these 5 steps using the “Aquarium User Defined” option in Step 2. Use the readings from the “Downtown Seattle Aquarium 000167E8 Top Turbidity+ [NTU]” column when repeating Step 5.
7. Subtract the hourly-averaged turbidity at the Aquarium from the hourly-averaged turbidity at Denny Way. If this number is **greater than 5**, an exceedence of the turbidity water quality standard has occurred.

4.0 References

APHA 1998. *Standard Methods for the Examination of Water and Wastewater, 20th Edition.* American Public Health Association. Washington, D.C.

Ebbesmeyer, Curtis C., Carol A. Coomes, Jeffrey M. Cox, Timothy J. Crone, Keith A. Kurrus, Eric C. Noah, and Randy Shuman. *Current Structure in Elliott Bay, Washington: 1977-1996.* Puget Sound Research 1998 – Conference Proceedings. Seattle, Washington.

King County, 2005. *The Denny Way Sediment Cap 2000 Data Final Monitoring Report.* King County Department of Natural Resources and Parks. Seattle, Washington.

SEA 1997. *Summary of Existing Information, Denny Way/Lake Union CSO Control Project.* Prepared for King County and Striplin Environmental Associates (Black and Veatch). Seattle, Washington.

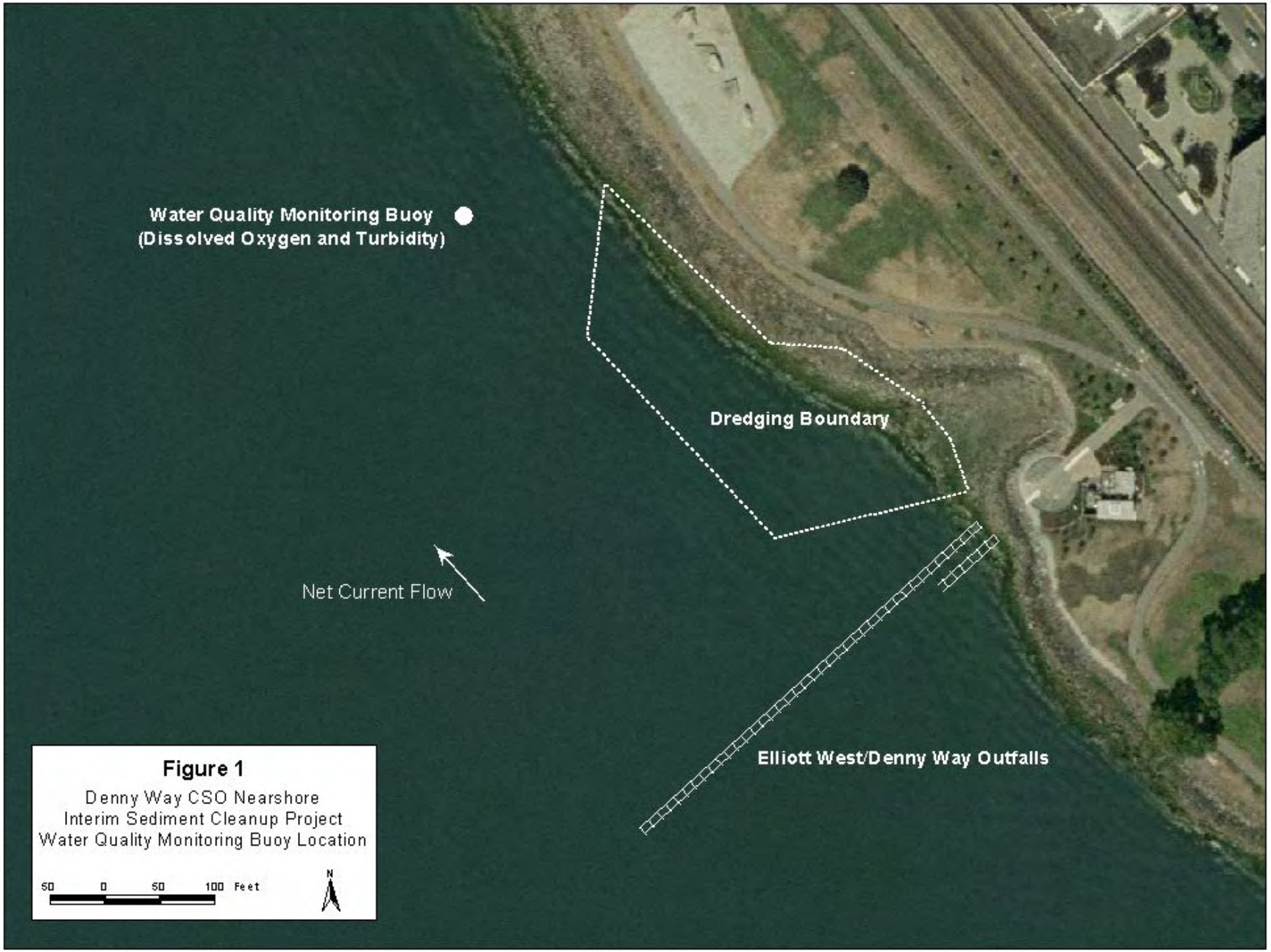
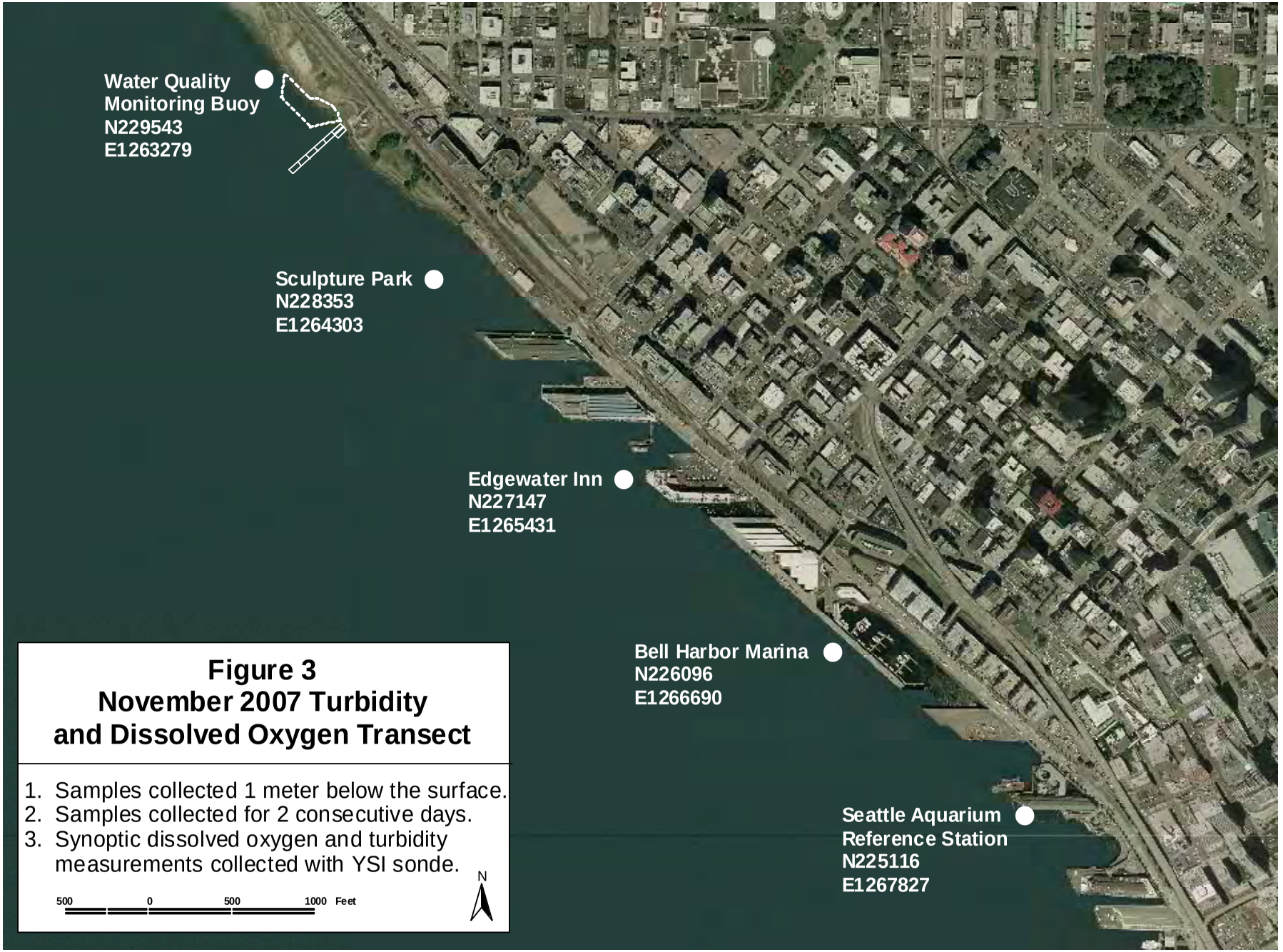

Water Quality Monitoring Buoy
(Dissolved Oxygen and Turbidity)
Dredging Boundary
Net Current Flow
Elliott West/Denny Way Outfalls
Figure 1
Denny Way CSO Nearshore
Interim Sediment Cleanup Project
Water Quality Monitoring Buoy Location
50 0 50 100 Feet
N

Figure 2

Denny Way CSO Nearshore
Interim Sediment Cleanup Project
Water Quality Monitoring Buoy and
Seattle Aquarium Reference Station


Water Quality
Monitoring Buoy
N229543
E1263279
Sculpture Park
N228353
E1264303
Edgewater Inn
N227147
E1265431
Bell Harbor Marina
N226096
E1266690
Seattle Aquarium
Reference Station
N225116
E1267827
Figure 3
November 2007 Turbidity
and Dissolved Oxygen Transect
1. Samples collected 1 meter below the surface.
2. Samples collected for 2 consecutive days.
3. Synoptic dissolved oxygen and turbidity measurements collected with YSI sonde.
500 0 500 1000 Feet
N

Appendix G

Dredging and Backfilling Operations Sediment Monitoring Sampling and Analysis Plan

DENNY WAY CSO NEARSHORE INTERIM SEDIMENT CLEANUP PROJECT DREDGING AND BACKFILLING OPERATIONS SEDIMENT MONITORING SAMPLING AND ANALYSIS PLAN

Prepared by the
King County Department of Natural Resources and Parks
Water and Land Resources Division

October 2007

NAME OF PROJECT: Denny Way CSO Nearshore Interim Sediment Cleanup Project, Dredging and Backfilling Operations Sediment Monitoring Sampling and Analysis Plan

SAP PREPARED BY: Anchor Environmental, L.L.C.
King County Department of Natural Resources and Parks
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John Phillips, Program Planner King County Department of Natural Resources and Parks Wastewater Treatment Division	Date
Fritz Grothkopp, Laboratory Project Manager King County Department of Natural Resources and Parks King County Environmental Laboratory	Date
Colin Elliott, QA Officer King County Department of Natural Resources and Parks King County Environmental Laboratory	Date

TABLE OF CONTENTS

SECTION:

1.0 INTRODUCTION 1
2.0 PROJECT DESCRIPTION 1
2.1 PROJECT OBJECTIVES 6
3.0 STUDY OBJECTIVES 6
3.1 SURFICIAL SEDIMENT QUALITY ADJACENT TO DREDGING BOUNDARY 6
3.2 NEAR-SURFACE SEDIMENT QUALITY WITHIN POST-DREDGE FOOTPRINT 7
4.0 PROJECT TEAM AND RESPONSIBILITIES 7
5.0 SCHEDULE 8
6.0 SAMPLE DESIGN 8
6.1 DATA QUALITY INDICATORS 8
6.1.1 PRECISION, ACCURACY, AND BIAS OF FIELD AND LABORATORY MEASUREMENTS 8
6.1.2 REPRESENTATIVENESS 8
6.1.3 COMPLETENESS 9
6.1.4 COMPARABILITY 9
7.0 SAMPLE COLLECTION PROCEDURES 9
7.1 SUMMARY 9
7.2 STATION POSITIONING 9
7.3 SAMPLER DEPLOYMENT AND RETRIEVAL 10
7.3.1 SURFACE SEDIMENT SAMPLING 10
7.3.2 SUBSURFACE SEDIMENT SAMPLING 11
7.4 SAMPLE ACCEPTABILITY CRITERIA 11
7.4.1 SURFACE SEDIMENT SAMPLES 11
7.4.2 SUBSURFACE SEDIMENT SAMPLES 11
7.5 SAMPLE PROCESSING – SEDIMENT CHEMISTRY ANALYSIS 12
7.5.1 SURFACE SAMPLES 12
7.5.2 SUBSURFACE SAMPLES 12
7.6 SAMPLING EQUIPMENT DECONTAMINATION 13
7.7 SAMPLE STORAGE AND DELIVERY 13
7.8 CHAIN OF CUSTODY 13
7.9 SAMPLE DISPOSAL 16
8.0 SAMPLE DOCUMENTATION 16
9.0 FIELD MEASUREMENTS AND OBSERVATIONS 19
9.1 SURFACE SEDIMENT SAMPLES 19
9.2 SUBSURFACE SEDIMENT SAMPLES 19
10.0 ANALYTICAL PARAMETERS AND METHODS 20
10.1 CONVENTIONALS ANALYTICAL METHODS AND DETECTION LIMITS 20
10.2 METALS ANALYTICAL METHODS AND DETECTION LIMITS 21
10.3 ORGANICS ANALYTICAL METHODS AND DETECTION LIMITS 21
11.0 LABORATORY QUALITY ASSURANCE/QUALITY CONTROL 24
11.1 CHEMISTRY DATA QA/QC 24
11.2 DATA REPORTING AND RECORD KEEPING 27
11.3 QA/QC REPORTING 27

11.4 SEDQUAL FILES 27
11.5 RECORD KEEPING 27
12.0 PROJECT HEALTH AND SAFETY 28
12.1 GENERAL VESSEL SAFETY 28
12.2 SAMPLING 29
12.3 CHEMICAL HAZARDS 29
13.0 REFERENCES 30

1.0 Introduction

This sampling and analysis plan presents project information and sampling and analytical methodologies that will be employed to perform sediment quality monitoring prior to the commencement of construction activities, as well as monitoring immediately following the completion of dredging and backfilling activities associated with the Denny Way combined sewer overflow (CSO) Nearshore Interim Sediment Cleanup Project. This work is being performed as part of an interim action to remediate contaminated sediments present in the nearshore area located in the immediate vicinity of the former Denny Way CSO outfall. This plan includes a description of the project, sampling and analytical methodologies, and quality control procedures.

2.0 Project Description

The Denny Way CSO was constructed in the 1960s when the Municipality of Metropolitan Seattle (Metro; now King County) built the present system of interceptors and treatment plants that collect, transport, and treat wastewater in the greater Seattle area. The CSO site is located along the northeastern shoreline of Elliott Bay and is adjacent to Myrtle Edwards Park at the foot of Denny Way in Seattle, Washington (Figure 1). The Denny Way CSO regulator station is located at 3165 Alaskan Way. Until 2004, the discharge point of the Denny Way CSO was at the shoreline. This outfall was exposed during normal low tide and frequently discharged directly across exposed intertidal sediment.

In 1986, Metro began a trial program to identify and reduce toxicant inputs to the sewer system discharging through the Denny Way CSO. In 1990, King County and the U.S. Army Corps of Engineers (Corps) sponsored the Denny Way CSO capping project to test the feasibility of capping contaminated sediments in Elliott Bay with clean dredged material from the Duwamish Waterway. A 3-foot layer of clean sand, dredged from the upper Duwamish Waterway during routine maintenance, was placed over a 3-acre area in water depths ranging from approximately -25 feet to -60 feet mean lower low water (MLLW).

King County has monitored the effectiveness of the cap at containing contaminated sediment for the past 17 years. Results show that the cap is stable, is not eroding, and has successfully isolated the underlying contaminated sediments (King County 2005). However, chemical concentrations on the cap surface layer (offshore of the Denny Way CSO) increased after cap construction, suggesting possible recontamination from the continued CSO discharges from Denny Way, or potential redistribution of remaining contaminated sediments from the intertidal area and the inshore edge of the cap.

In 1997, King County characterized the nature and extent of surface and subsurface sediment contamination in the outfall area, as well as areas inshore and offshore of the existing sediment cap (SEA 1997). Follow-up sediment sampling conducted by King County in 2005 demonstrated that chemical concentrations in the offshore areas declined over time due to a combination of natural processes, including biodegradation of

chemicals, accumulation and mixing of clean sediment, and reduction of contaminant sources (King County 2005). Thus, monitored natural recovery is a prospective cleanup remedy for the offshore areas. These areas will continue to be evaluated by the Washington State Department of Ecology (Ecology) and King County to determine if a more active cleanup remedy is required.

In 1997, sediments sampled within inshore areas of the site contained concentrations of cadmium, copper, lead, mercury, silver, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), bis(2-ethylhexyl)phthalate, and butyl benzyl phthalate that exceeded sediment quality standard (SQS) chemical criteria. Contaminant concentrations above SQS chemical criteria were present to a depth of approximately 10 feet below the existing mudline. Unlike offshore areas of the site, natural recovery rates in the inshore sediment areas appeared to be progressing relatively slowly. In order to accelerate cleanup of the site and minimize the risk of future recontamination to other site areas, including the offshore cap, an interim sediment cleanup action plan for the site was developed by King County and Ecology in 2007, including dredging as practicable to remove impacted sediments, and backfilling to restore the grade to close to pre-project conditions.

The Denny Way CSO interim action will remediate contaminated sediment present in the two nearshore areas in the immediate vicinity of the former Denny Way CSO outfall. A combination of dredging, backfilling, and armoring will be employed to remediate the nearshore areas.

Approximately 20,000 cubic yards (cy) of contaminated sediments will be dredged from approximately +10 feet MLLW to approximately -35 feet MLLW within the 1.2-acre interim action area. The material within the dredge footprint will be mechanically dredged using a clamshell bucket deployed from a derrick barge. Dredging will remove up to 10 feet of sediment (including a 1-foot overdredge allowance) to ensure the contaminated material is removed to the extent possible.

A sloping dredge cut approximately 10 feet thick will be needed to reach the vertical limit of the dredge prism to remove the maximum practicable volume. Deeper dredging would require removal of large areas of the existing upland shoreline, which is not considered practicable without adverse impact on the Myrtle Edwards Park shoreline. The southern boundary of the project is constrained by the presence of the existing outfall structures (and armoring) and the dredge prism will be offset to avoid impacting these features. Therefore, some material may necessarily be left behind at depth after dredging because deeper dredge cuts would destabilize shoreline banks.

Dredged material will initially be placed on a barge stationed adjacent to the derrick. The sediments placed on the barge will be passively dewatered; the dewatering area on the barge will be contained in a filtration system, such as straw bales and geotextile material. Conservation measures will be in place to ensure water quality standards are met and that no material falls back into the water during transport.

The dredged material will be transported to the upland staging and rehandling area at the Duwamish Marine Center located on the east side of the Duwamish River at the base of the First Avenue South Bridge. The material will be fully contained within the barges during transportation to the upland facility.

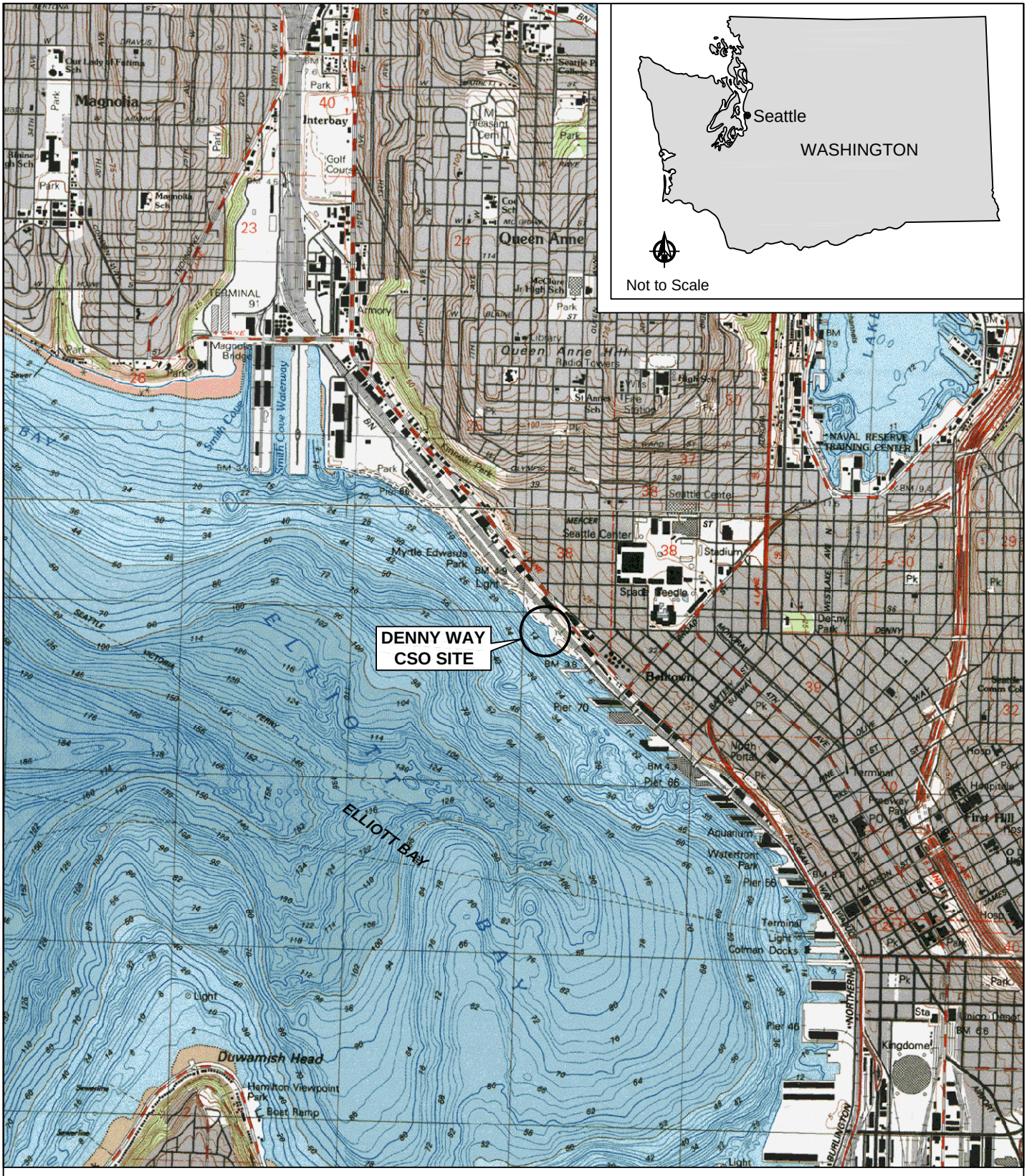
At the upland staging area, the sediments will be transferred from the barge deck to a lined container positioned on the barge. To prevent dredged material from falling back into the water, a solid barrier "spill plate" will be placed between the upland facility and the material barge during all offloading activities. The containers of dredged material positioned on the barge will be loaded by crane directly onto trucks and/or rail cars for shipment to an approved (Resource Conservation and Recovery Act [RCRA] Subtitle D) upland disposal site.

Prior to commencement of construction activities, sediment grab samples will be collected adjacent to and beyond the dredge boundary (Figure 2) to document baseline pre-dredge sediment quality conditions near the project area. Immediately following the completion of dredging operations as approved by the King County Project Representative, sediment grab samples will be collected from within the dredged areas to document post-dredge sediment quality conditions in the project area. Sediment backfill operations will commence immediately after collection of the post-dredge surface samples, given the protective design of the backfill layer. At the same time, sand cover may also be placed over areas immediately adjacent to the dredge prism. Working with Ecology, King County will also perform post-backfill sediment quality sampling adjacent to the interim action area.

The dredged area will be backfilled and armored with an average thickness of more than 10 feet of material. Approximately 16,000 cy of well-graded clean sand will be armored with approximately 4,000 cy of sandy-gravel habitat mix.

In-water construction is expected to take approximately 3 to 4 months to complete. The work sequence is currently anticipated as follows:

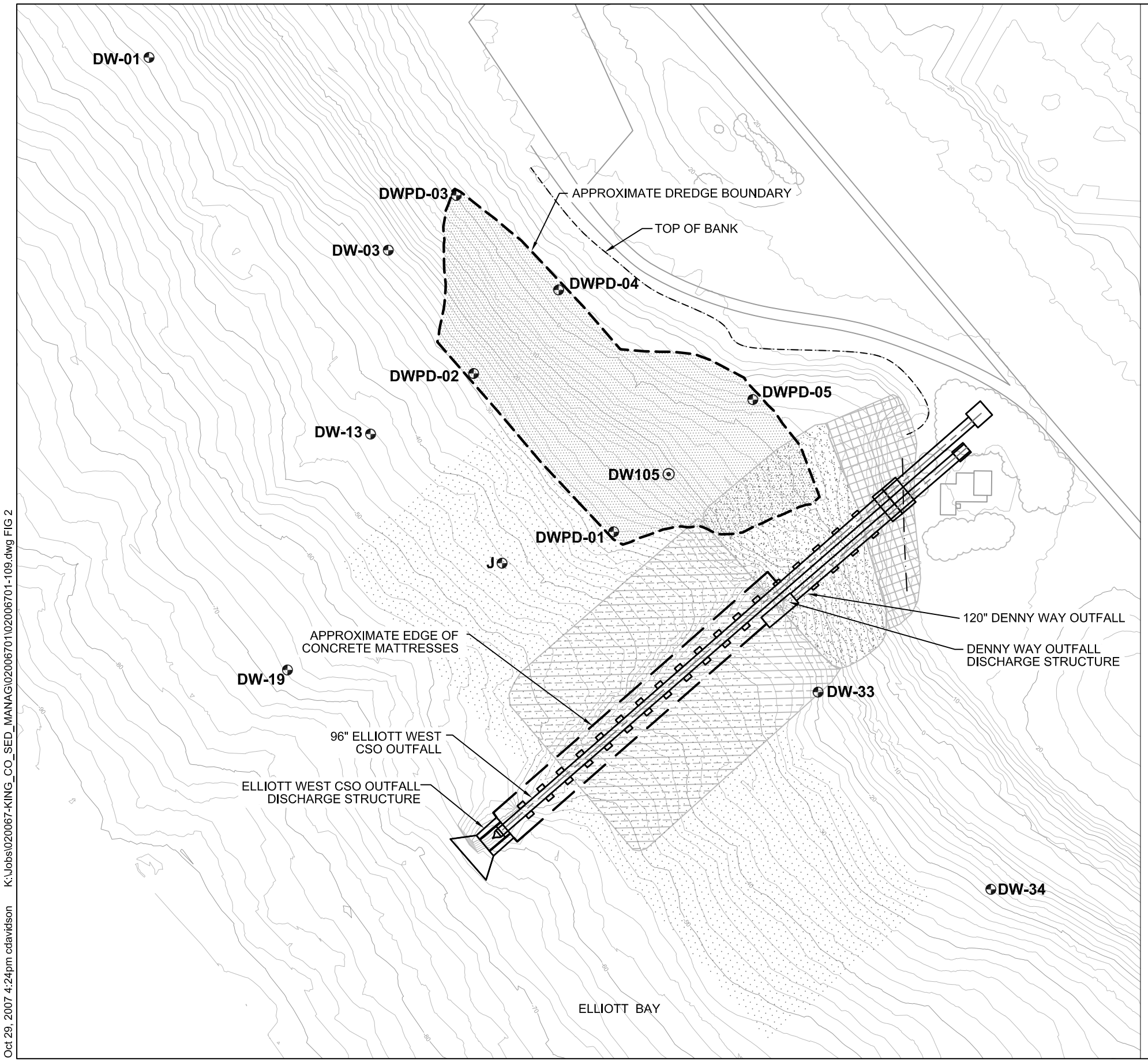
- Mobilization/dredging: November 15 to December 31, 2007
- Backfilling: January 8 to February 8, 2008
- Post-construction monitoring: February 13 to February 15, 2008



Oct 08, 2007 1:24pm cdavidson K: Jobs 020067-KING_CO_SED_MANAG 02006701 02006701-107.dwg FIG 1

ANCHOR ENVIRONMENTAL, L.L.C.

Figure 1
Vicinity Map
Denny Way CSO Nearshore Interim Sediment Cleanup Project



LEGEND

DW105 OPTIONAL SEDIMENT CORE LOCATION (BASED ON FIELD OBSERVATION)

STATION ID	NORTHING	EASTING
DW105	229326.80	1263612.08

DW-03 PROPOSED SURFACE SEDIMENT GRAB LOCATION

STATION ID	NORTHING	EASTING
DW-01	229703.00	1263143.00
DW-03	229529.00	1263359.00
DW-13	229363.00	1263343.00
DW-19	229150.00	1263268.00
DW-33	229130.00	1263747.00
DW-34	228952.00	1263903.00
J	229246.42	1263461.71
DWPD-01	229274.78	1263562.44
DWPD-02	229417.64	1263436.05
DWPD-03	229578.47	1263420.36
DWPD-04	229493.12	1263512.78
DWPD-05	229394.12	1263688.06

PROPOSED FEATURES

- APPROXIMATE DREDGE BOUNDARY
- BASE BACKFILL AND HABITAT MIX

EXISTING SITE FEATURES

- EXISTING OUTFALL RIPRAP
- EXISTING SAND VENEER
- EXISTING BOULDERS AND COBBLES
- EXISTING SEDIMENT CAP
- -10 EXISTING BATHYMETRIC CONTOURS AND ELEVATION IN FEET (2-FOOT INTERVAL)

0 100
SCALE IN FEET

NOTES:
1. FIGURE PREPARED FROM DRAWING PROVIDED BY BLACK & VEATCH CORPORATION ENTITLED "HABITAT RESTORATION PLAN", DATED NOVEMBER 1999.
2. BATHYMETRY PREPARED FROM SURVEY PROVIDED BY BWE DATED SEPTEMBER 10, 2005.
3. HORIZONTAL DATUM: SP NAD 83/91 WA N
4. VERTICAL DATUM: MLLW

Oct 29, 2007 4:24pm cdavidson K:\Jobs\020067-KING_CO_SED_MANAG\020067\102006701\102006701-109.dwg FIG 2

ANCHOR ENVIRONMENTAL, L.L.C.

Figure 2
Sediment Core and Grab Sample Locations
Denny Way CSO Nearshore Interim Sediment Cleanup Project

2.1 Project Objectives

The goal of the monitoring plan is to assess the sediment quality before and after the dredging and backfilling activities at the site to document the effectiveness of the dredging action and the potential spread of dredge residuals outside the dredge boundary. Sediment quality will be characterized at and immediately below the newly dredged surface within the dredge boundary to document the in-situ sediment quality prior to placement of backfill materials. Sampling objectives can be summarized as follows:

OBJECTIVE 1: Establish pre-dredge baseline sediment quality conditions at sampling locations positioned adjacent to and beyond the dredge boundary for comparison to post-backfill sampling and analysis data.

OBJECTIVE 2: Characterize post-dredge surface sediment quality conditions after dredging activities are completed and before backfilling operations are initiated.

OBJECTIVE 3: Characterize post-backfill surface sediment quality conditions after project completion at sampling locations adjacent to and beyond the dredge boundary to compare to the pre-dredge baseline sediment quality results.

Sediment sampling activities and locations are summarized in Table 1 and Figure 2, respectively.

Table 1. Sediment Monitoring Activities

Activity	Frequency
Pre-dredge baseline surface sediment chemistry beyond site boundary	7 stations once
Post-dredge surface sediment chemistry within dredge boundary	5 stations once
Post-backfill surface sediment chemistry beyond dredge boundary	7 stations once

3.0 Study Objectives

3.1 Surficial Sediment Quality Adjacent to Dredging Boundary

The sampling strategy developed to address Objectives 1 and 3 is to collect sediment samples at stations surrounding the perimeter of the dredge boundary. The selected sampling locations are arranged such that it can be determined whether chemical levels beyond the site boundary increased due to sediment cleanup actions.

To document baseline conditions before cleanup, a total of eight samples (one individual sample from seven stations plus a replicate from one station) will be collected for chemical analysis for total solids, total organic carbon (TOC), grain size, metals, semi-volatile organic compounds (SVOCs), and total PCBs. To document conditions after cleanup, another eight samples (one individual sample from seven stations plus a

replicate from one station) will be collected for chemical analysis for total solids, TOC, grain size, metals, SVOCs, and total PCBs. All data will be evaluated by comparing the before and after values at each station to identify differences that indicate sediments moved off site.

Stations DW-03, DW-13, DW-33, and J are located approximately 50 to 150 feet beyond the dredge boundary, and stations DW-01, DW-19, and DW-34 are located 300 to 400 feet beyond the dredge boundary. The surface grab sampling locations are shown in Figure 2.

3.2 Near-Surface Sediment Quality within Post-Dredge Footprint

To achieve Objective 2, sediment grabs will be collected within the dredge boundary (Figure 2) at locations where the backfill material thickness is anticipated to be less than 3 feet. The five proposed grab locations (DWPD-01, DWPD-02, DWPD-03, DWPD-04, and DWPD-05) are located around the perimeter of the dredge boundary. Additional grab or optional core samples may be collected based on field observations.

To document post-dredge conditions, a total of two samples (two of the five grab samples will be analyzed) will be submitted to the laboratory for chemical analysis for total solids, TOC, grain size, metals, SVOCs, and total PCBs.

4.0 Project Team and Responsibilities

Project team members and their responsibilities are summarized in Table 2. All team members are staff of the King County Department of Natural Resources and Parks, either within the Water and Land Resources Division or Wastewater Treatment Division.

Table 2. Project Team Members and Responsibilities

Name/Telephone	Title	Affiliation	Responsibility
Bill Wilbert (206) 296-7806	Project Manager	Wastewater Treatment Division	Manager for Denny Way CSO Nearshore Interim Sediment Cleanup Project
John Blaine (206) 684-2384	Field Coordinator	Environmental Laboratory	Coordination of field activities for sediment chemistry and toxicity testing sampling and field oversight of contract and consulting personnel
Scott Mickelson (206) 296-8247	Senior Water Quality Planner	Marine and Sediment Assessment Group	Program Manager Sediment cleanup advisor
Colin Elliott (206) 684-2343	Quality Assurance Officer	Environmental Laboratory	Overall analytical and Field Quality Assurance/Quality Control (QA/QC)
Fritz Grothkopp (206) 684-2327	Laboratory Project Manager	Environmental Laboratory	Coordination of sampling and analytical activities, laboratory QA/QC, and data reporting

5.0 Schedule

Sampling of the sediment outside the perimeter of the cleanup areas will be performed prior to dredging operations, and are currently targeted for the first two weeks in November 2007. Immediately following King County's approval of dredging operations, sediment samples will be collected at the locations located within the dredge boundary. The post-backfill perimeter sediment collection event will be completed within 3 months after King County's approval of the backfilling operations.

6.0 Sample Design

6.1 Data Quality Indicators

The following data quality indicators have been established to meet the needs of this project.

6.1.1 Precision, Accuracy, and Bias of Field and Laboratory Measurements

Precision is the agreement of a set of results among themselves and is a measure of the ability to reproduce a result. Accuracy is an estimate of the difference between the true value and the determined mean value. The accuracy of a result is affected by both systematic and random errors. Bias is a measure of the difference, due to a systematic factor, between an analytical result and the true value of an analyte. Precision, accuracy, and bias for analytical chemistry may be measured by one or more of the following quality control (QC) procedures:

- Analysis of various laboratory QC samples such as method blanks, matrix spikes, certified reference materials, and laboratory duplicates (laboratory QC results will be evaluated against the control limits presented in Section 10).
- Collection and analysis of replicate field samples for laboratory and field measurement (replicate results should exhibit a relative percent difference less than 50 percent in order for the evaluation of the spatial and temporal chemical concentrations to be meaningful)

6.1.2 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at the sampling point, or an environmental condition. Samples are to be collected to minimize potential contamination and other types of degradation in the chemical and physical composition of the water. Laboratory representativeness is achieved by proper preservation and storage of samples along with appropriate subsampling and preparation for analysis. Data that is not representative as defined above should not be used.

6.1.3 Completeness

Completeness is defined as the total number of samples analyzed for which acceptable and representative analytical data are generated, compared to the total number of samples to be analyzed. The goal for completeness is 100 percent. The samples from each event should produce greater than 90 percent acceptable chemical data under the QC conditions in Section 11.

6.1.4 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. This goal is achieved through using standard techniques to collect and analyze representative samples, along with standardized data validation and reporting procedures. Changes or updates to analytical methods and sampling techniques midway into the project must be validated and shown to be equivalent to existing methods before being implemented.

7.0 Sample Collection Procedures

Standard bottom sampling methods (e.g., surface grab sampling) will be used to sample stations with soft sediments. After backfilling operations are completed, most of the site surface within the dredge boundary will be covered with habitat mix (sandy gravel), which may require use of different sampling equipment and procedures to obtain a sufficient amount of fine sediment to submit for chemical analysis.

7.1 Summary

All sediment sampling will be performed according to Puget Sound Estuary Program (PSEP) guidance (PSEP 1997a, 1997b, 1997c, 1998). Marine sediment samples from stations with soft sediment will be collected using a single van Veen grab or using multiple casts of two 0.1 square meter modified, stainless steel van Veen grab samplers deployed in tandem via hydrowire and hydraulic winch from the sampling vessel. Chemistry samples will be collected from the top 10 cm of sediment from each successful deployment (see Section 7.4). Only fine materials would be used for chemical analysis and requires that larger gravel and rock be removed from the sample using a clean, stainless steel sampling spoon. Sediment samples will be stored on ice in coolers while in the field, and then transported to the laboratory at the end of each sampling day.

7.2 Station Positioning

Station positioning will employ a Trimble® Differential Global Positioning System (DGPS). Prior to the sampling event, the prescribed station coordinates will be entered into the shipboard DGPS laptop computer. During the sampling event, the shipboard navigational system will utilize the differential data transmissions from regional Coast Guard base stations to automatically correct its GPS satellite data. The GPS antenna is

boom-mounted above the sampler descent line to achieve a more accurate coordinate fix above the sampling point.

Upon contact of the grab sampler with the bottom, the coordinate data representing the actual sediment grab impact point will be electronically recorded in real time. Positioning information will include local time and date that a position is recorded, comments, and coordinate data in both latitude/longitude and NAD 83 State Plane formats.

Previous DGPS usage indicates that an average precision of ± 2 meters can usually be expected. Sample collection is expected to take place within a 3-meter radius of each station's prescribed position and samples will not be collected if the grab deployment is outside of this limit. If conditions such as a steep slope or rocky substrate preclude sample collection at a particular station, the station may be relocated after consultation with the study coordinator and if relocation will not compromise the project goals. Any station relocation will be well documented.

7.3 Sampler Deployment and Retrieval

7.3.1 Surface Sediment Sampling

Depending on field conditions and sampling crews, either one or two 0.1 square meter modified (deployed in tandem), stainless steel van Veen grab samplers will be deployed at each sampling station that has soft sediments. When sampling soft sediments, the van Veen grab samplers will be lowered at a controlled speed of approximately four feet per second until they are near the bottom, at which time the speed will be decreased to approximately 1 foot per second to minimize potential bow wake activity and subsequent bottom disturbance.

After the grabs have tripped upon reaching the bottom, they will be raised slowly to allow gentle and complete closure of the sampler jaws to avoid sample disturbance and loss. Once clear of the bottom, the ascent speed will be increased to approximately 4 feet per second. Care will be taken to ensure that minimal sample disturbance occurs when swinging the grabs on board. Collection of undisturbed sediment requires that the grab samplers:

- Create a minimal bow wake when descending
- Form a leak-proof seal upon closure of the jaws
- Carefully retrieve the sample to prevent excessive sample disturbance
- Allow easy access to the sediment within the grab

A minimum of two successful deployments of the tandem grab samplers will be required at each station for the collection of one sediment chemistry sample.

7.3.2 Subsurface Sediment Sampling

Optional subsurface sediment samples will be collected using a piston coring device fitted with 2.9-inch inner diameter polycarbonate tubing. Extra polycarbonate tubes will be available during sample operations for uninterrupted sampling in the event of a potential core tube breakage or contamination. Core tubes suspected to have been accidentally contaminated will not be used. Samples will be collected in the following manner:

- The core tube will be decontaminated
- Water depth will be measured using the staff or sounded with the piston cable
- The core tube will be attached to the piston head
- The coring device will be gradually lowered into the water
- The piston cable will be tied-off in order to secure the piston in the core tube at approximately 20 cm above the sediment-water interface
- The core will be driven into the sediment until refusal
- The filled core tube will be retrieved slowly and steadily to avoid agitating the sample. If possible, material adjacent to the core may be excavated and the core capped prior to retrieval
- As the corer is lifted out of the water, a plug will be immediately inserted into the bottom of the core tube to prevent sediment from slipping out

7.4 Sample Acceptability Criteria

7.4.1 Surface Sediment Samples

When the grab samplers have been secured on board, the hinged top flaps will be opened and the samples examined for acceptability. Acceptability criteria will include:

- The grabs are not overfilled to the point where there is evidence of sample loss around the access doors
- Overlying water is present, indicating minimal leakage
- Overlying water is not excessively turbid, indicating minimal sample disturbance
- A minimum acceptable sample penetration depth of at least 11 cm has been achieved

Samples for chemical analysis in soft sediments will be collected from the top 10 cm of sediment, so a minimum penetration depth of 11 cm will be required for these grabs. Care will be taken to extract sediment from the most undisturbed center portion of each grab without collecting sediment that has touched the sides of the grab. If repeated grabs show less than 11 cm retrieval, then it will be acceptable to collect a sample of less than 10 cm but this will be noted on field sheets and flagged on final data tables. This provision is allowed to ensure samples are obtained from all sampling stations.

7.4.2 Subsurface Sediment Samples

The core will be evaluated against the following acceptability criteria:

- At least 5 cm of overlying water is present
- The overlying water is not excessively turbid
- The sediment surface is relatively undisturbed
- At least 80 percent core recovery versus penetration is observed
- The core recovery is a minimum of 3 feet

If the core meets the above acceptability criteria, the core will be processed immediately. A maximum of three cores will be collected at each of the four core locations to achieve the acceptability criteria above. If by the third core attempt it has been determined that the acceptability criteria have not been achieved, the core that best meets the acceptability criteria will be used and processed.

7.5 Sample Processing - Sediment Chemistry Analysis

7.5.1 Surface Samples

Overlying water within the grab will be carefully siphoned off of the sediment surface for all acceptable samples of soft sediment. The top 10 cm of sediment will be collected with a stainless steel spoon and placed in a stainless steel bowl for homogenization.

After thorough homogenization, the sediment will be transferred to the other laboratory containers. Headspace will be left in all lab containers to allow for further mixing within the laboratory and for expansion in those containers that are stored frozen. All samples will be stored in insulated, ice-filled coolers while in the field.

Sample containers, storage conditions, and holding times are summarized in Table 3.

7.5.2 Subsurface Samples

The characteristics of the core will be documented (as described below) as the sediment is being extruded:

- Each core will be sectioned at 30 cm intervals
- All of the sediment from each core section will be thoroughly homogenized and transferred into an appropriate pre-labeled sample container (certified, pre-cleaned) and placed immediately on ice for transport to the appropriate laboratory

Table 3. Sample Containers, Storage Conditions, and Analytical Hold Times

Analyte	Container	Preferred Storage Conditions	Hold Time	Acceptable Storage Conditions	Hold Time
BNAs	16 oz. glass	freeze at -18°C	1 year to extract 40 days to analyze	refrigerate at 4°C	14 days to extract 40 days to analyze
PCBs (collect w/ BNAs)	16 oz. glass	freeze at -18°C	1 year to extract 40 days to analyze	refrigerate at 4°C	14 days to extract 40 days to analyze
Mercury	250 ml HDPE	freeze at -18°C	28 days to analyze	N/A	N/A
Other Sediment Management Standards (SMS) Metals	250 ml HDPE	freeze at -18°C	2 years to analyze	refrigerate at 4°C	6 months to analyze
Particle size distribution	1 gal. plastic zip-type bag	refrigerate at 4° C	6 months to analyze	N/A	N/A
TOC	4 oz. glass	freeze at -18°C	6 months to analyze	refrigerate at 4°C	14 days to analyze
Total solids (collect w/ TOC)	4 oz. glass	freeze at -18°C	6 months to analyze	refrigerate at 4°C	14 days to analyze

7.6 Sampling Equipment Decontamination

The grab samplers will be decontaminated between sampling stations by scrubbing with a brush and using phosphate-free soap, followed by a thorough ambient seawater rinsing. A separate stainless steel bowl and spoon will be dedicated to each sampling station, precluding the need for decontamination of this equipment.

7.7 Sample Storage and Delivery

All sample containers will be stored in an insulated cooler containing ice immediately after collection to maintain the samples at a temperature of approximately 4^{o} Celsius until delivery to the laboratory. Chemistry sample containers from each station will be grouped and placed in plastic bags to facilitate sample receipt and login. At the end of each sampling day, all chemistry samples will be transported back to the King County Environmental Laboratory.

7.8 Chain of Custody

Chain of custody (COC) will commence at the time that each sample is collected. While in the field, all samples will be under direct possession and control of King County field staff. For COC purposes, the research vessel will be considered a "controlled area." Each day, all sample information will be recorded on a COC form (Figure 3). This form will be completed in the field and will accompany all samples during transport and delivery to the laboratory each day.

Figure 3. King County Environmental Laboratory Chain of Custody Form

LABORATORY WORK ORDER
Chain of Custody

King County Department of Natural Resources
Water and Land Resources Division
Environmental Laboratory
322 West Ewing Street
Seattle, Washington 98119-1507

Project Name: Duwamish/Diagonal Sediment Remediation
Project Number: 423056, subproject 120, phase 4
Laboratory Project Manager: Fritz Grothkopp/John Blaine
Telephone Number: 684 2327/2323

				Analyses																
Note: Use only one Login No. per sheet. **Sample Number**	**Client Locator**	**Collect Date**	**Collect Time**	TOC/TOTS	PSD *	Metals + HG-CVAA	BNALL/PESTLL/PCBLL	VOA-GC/MS											**Number of Containers**	**Comments**
L -																				
L -																				
L -																				
L -																				
L -																				
L -																				
L -																				
L -																				
L -																				
L -																				
L -																				
Additional Comments:																		**Total Number of Containers**		**Sampled By:**

* Sub-contracted lab parameters.

Relinquished By:		**Received By:**	
Signature	**Date**	**Signature**	**Date**
Printed Name	**Time**	**Printed Name**	**Time**
Organization King County Environmental Laboratory		**Organization** King County Environmental Laboratory	

Upon arrival at the King County Environmental Laboratory, the sample delivery person will relinquish all samples to the sample login person. The date and time of sample delivery will be recorded and both parties will then sign off in the appropriate sections on the COC form at this time. Once completed, the original will be archived in the project file.

Samples delivered after regular business hours will be stored in a locked COC refrigerator until the next day. Samples delivered to a subcontracted laboratory will be accompanied by a properly completed King County Environmental Laboratory COC form and custody seals will be placed on the cooler if samples are delivered by an outside courier. Subcontracted laboratories will be expected to provide a copy of the completed COC form as part of their analytical data package.

7.9 Sample Disposal

All sediment chemistry sample material will be disposed according to established King County Environmental Laboratory procedures after analysis has been completed.

8.0 Sample Documentation

Sampling information and sample metadata will be documented using the methods noted below.

- Field sheets generated by King County's Laboratory Information Management System (LIMS) that will include information such as:
  1. Sample ID number
  2. Station name
  3. Station bottom depth
  4. Sediment depth (i.e., sampler penetration depth) for each successful deployment
  5. Sediment sampling range (depth from surface collected for analysis)
  6. Physical sediment characteristics
  7. Date and time of sample collection
  8. Condition and height of tide
  9. Name of recorder
- LIMS-generated container labels will identify each container with a unique sample number, station and site names, collect date, analyses required, and preservation method.
- The research vessel's logbook will contain records of all shipboard activities, destinations, arrival and departure times, general weather and positioning information, and the names of shipboard personnel.
- The research vessel's cruise plan will list the prescribed stations to be sampled, along with their respective coordinates and other associated locating information.
- Electronic DGPS coordinate data will be electronically logged for each grab sample using both latitude/longitude and NAD 83 State Plane formats.
- COC documentation will consist of the lab's standard COC form, which is used to track release and receipt of each sample from collection to arrival at the lab.

A sample of a typical field sheet used by the King County Environmental Laboratory is included as Figure 4.

Figure 4. King County Environmental Laboratory Field Sheet

Login Number: T_DUDI_PRMSED Page: 1

DUDI SEDIMENT REMEDIATION PROJECT

Project Number: 423056-120 Personnel: _____

Sample Number	T_DUDI_PRMSED-1	T_DUDI_PRMSED-2	T_DUDI_PRMSED-3
Locator	DUD201	DUD202	DUD203
Short Loc. Desc.			
Locator Desc.			
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Time			
End Time			
Sample Depth			
Collect Date			
Comments			
Dept., Matrix, Prod			
	0 SALTWTRSED BNALLFULL	0 SALTWTRSED BNALLFULL	0 SALTWTRSED BNALLFULL
	0 SALTWTRSED CLIENT LOC	0 SALTWTRSED CLIENT LOC	0 SALTWTRSED CLIENT LOC
	0 SALTWTRSED PCBLL	0 SALTWTRSED PCBLL	0 SALTWTRSED PCBLL
	0 SALTWTRSED PESTLL	0 SALTWTRSED PESTLL	0 SALTWTRSED PESTLL
	0 SALTWTRSED PSD	0 SALTWTRSED PSD	0 SALTWTRSED PSD
	0 SALTWTRSED SAMP DEPTH	0 SALTWTRSED SAMP DEPTH	0 SALTWTRSED SAMP DEPTH
	0 SALTWTRSED SAMP DESCRIP	0 SALTWTRSED SAMP DESCRIP	0 SALTWTRSED SAMP DESCRIP
	0 SALTWTRSED SAMP METH	0 SALTWTRSED SAMP METH	0 SALTWTRSED SAMP METH
	0 SALTWTRSED SAMP TEMP	0 SALTWTRSED SAMP TEMP	0 SALTWTRSED SAMP TEMP
	0 SALTWTRSED SAMPCOORDX1	0 SALTWTRSED SAMPCOORDX1	0 SALTWTRSED SAMPCOORDX1
	0 SALTWTRSED SAMPCOORDX10	0 SALTWTRSED SAMPCOORDX10	0 SALTWTRSED SAMPCOORDX10
	0 SALTWTRSED SAMPCOORDX2	0 SALTWTRSED SAMPCOORDX2	0 SALTWTRSED SAMPCOORDX2
	0 SALTWTRSED SAMPCOORDX3	0 SALTWTRSED SAMPCOORDX3	0 SALTWTRSED SAMPCOORDX3
	0 SALTWTRSED SAMPCOORDX4	0 SALTWTRSED SAMPCOORDX4	0 SALTWTRSED SAMPCOORDX4
	0 SALTWTRSED SAMPCOORDX5	0 SALTWTRSED SAMPCOORDX5	0 SALTWTRSED SAMPCOORDX5
	0 SALTWTRSED SAMPCOORDX6	0 SALTWTRSED SAMPCOORDX6	0 SALTWTRSED SAMPCOORDX6
	0 SALTWTRSED SAMPCOORDX7	0 SALTWTRSED SAMPCOORDX7	0 SALTWTRSED SAMPCOORDX7
	0 SALTWTRSED SAMPCOORDX8	0 SALTWTRSED SAMPCOORDX8	0 SALTWTRSED SAMPCOORDX8
	0 SALTWTRSED SAMPCOORDX9	0 SALTWTRSED SAMPCOORDX9	0 SALTWTRSED SAMPCOORDX9
	0 SALTWTRSED SAMPCOORDY1	0 SALTWTRSED SAMPCOORDY1	0 SALTWTRSED SAMPCOORDY1
	0 SALTWTRSED SAMPCOORDY10	0 SALTWTRSED SAMPCOORDY10	0 SALTWTRSED SAMPCOORDY10
	0 SALTWTRSED SAMPCOORDY2	0 SALTWTRSED SAMPCOORDY2	0 SALTWTRSED SAMPCOORDY2
	0 SALTWTRSED SAMPCOORDY3	0 SALTWTRSED SAMPCOORDY3	0 SALTWTRSED SAMPCOORDY3
	0 SALTWTRSED SAMPCOORDY4	0 SALTWTRSED SAMPCOORDY4	0 SALTWTRSED SAMPCOORDY4

continue ...

CHAIN OF CUSTODY

RELINQUISHED BY Signature	Date	RECEIVED BY Signature	Date
Printed Name	Time	Printed Name	Time
Sample Number(s) (All)		Sample Number(s) (All)	

9.0 Field Measurements and Observations

9.1 Surface Sediment Samples

The following field measurements and observations will be recorded for each sediment grab sample:

- Sample (bottom) depth – measured as keel depth by vessel's fathometer
- Sediment depth (grab or piston core penetration depth) – measured by ruler inside the grab
- Sediment sampling range (0 to 10 cm for each chemistry sample)
- Sediment type (a mnemonic code indicating color, gross grain size, odor, and debris)
- Tide condition and height
- Collection date, time, and sampling personnel

9.2 Subsurface Sediment Samples

The following field measurements and observations will be recorded for each sediment core sample:

- Elevation of each core station sampled
- Location of each boring station
- Date and time of collection of each sediment core sample
- Names of field supervisor and person(s) collecting and logging in the sample
- Observations made during sample collection, including weather conditions, complications, and other details associated with the sampling effort
- The sample station number
- Length and depth intervals of each core section and recovery for each sediment sample
- Qualitative notation of apparent resistance of sediment column to coring
- Any deviation from the approved sampling plan

In addition, a sediment description of each core sample will be recorded on the core log for the following parameters as appropriate and present:

- Sample recovery (depth in feet of penetration and sample compaction)
- Physical soil description in accordance with the Unified Soil Classification System (includes soil type, density and consistency of soil, and color)
- Odor (e.g., hydrogen sulfide, petroleum)
- Vegetation
- Debris
- Biological activity (e.g., detritus, shells, tubes, bioturbation, or live or dead organisms)
- Presence and depth (feet) of the redox potential discontinuity layer
- Presence of oil sheen
- Any other distinguishing characteristics or features

10.0 Analytical Parameters and Methods

Analytical parameters for chemical analysis are presented in the following sections. Parameters have been selected based on guidance for conducting baseline sediment characterizations (Ecology 2003) and will allow comparison with published sediment quality criteria (Ecology 1995; ACOE 2000). All analyses will follow PSEP guidance (PSEP 1986, 1997b, 1997c).

The terms method detection limit (MDL) and reporting detection limit (RDL) are discussed in the following sections. The MDL is defined as *the minimum concentration of a chemical constituent that can be detected,* while the RDL is defined as *the minimum concentration of a chemical constituent that can be reliably quantified.* The MDL and RDL are based on routine method concentration factors, assuming 50 percent total solids by weight. Also, the RDL could be considered equivalent to a Practical Quantitation Limit (PQL).

10.1 Conventionals Analytical Methods and Detection Limits

All sediment conventional analyses will be performed by the King County Environmental Laboratory. Conventional sediment parameters will include PSD, TOC, and total solids. The analytical methods and detection limits for conventional parameters are summarized in Table 4.

Table 4
Conventionals Methods and Detection Limits

Parameter	Method	MDL	RDL	Units[1]
PSD (gravel/sand)	ASTM D422	0.1	1.0	percent dry wt.
PSD (silt/clay)	ASTM D422	0.5	1.0	percent dry wt.
TOC	EPA 9060, PSEP 1996	1,000	2,000	mg/Kg dry wt.[2]
Total Solids	SM 2540-G	0.005	0.01	percent wet wt.

[1]Dry-weight MDLs for ammonia, TOC, and total sulfide are based on an assumed 50% solids content.
[2]Stored on King County's LIMS data base in units of mg/Kg but will be reported to SEDQUAL in units of %.

Total solids will be analyzed for all samples to allow normalization of all other sediment chemistry data to dry weight. Total solids analysis will be performed according to the latest edition of Standard Method (SM)2540-G (APHA 1998), which is a gravimetric determination. Results for total solids are presented in units of percent on a wet-weight basis.

TOC analysis will be performed on all samples to allow normalization of some organic parameters to organic carbon. TOC analysis will be performed according to EPA Method 9060/SW-846 (EPA 1995), which is high-temperature combustion with infrared spectroscopy. Results for TOC analysis are presented in units of mg/Kg on a dry weight basis.

PSD analysis will be performed according to ASTM Method D422 (ASTM 2002), which is a combination of sieve and hydrometer analyses. Results for PSD analysis are presented in units of percent on a dry-weight basis, both for phi sizes and for the four broad classifications of clay, silt, sand, and gravel. Results for the clay and silt fractions are also summed to provide a result for "percent fines."

10.2 Metals Analytical Methods and Detection Limits

All metals analysis will be performed by the King County Environmental Laboratory. The analytical methods and detection limits for the target metals are summarized in Table 5. These MDLs and RDLs are presented on a wet-weight basis and are based on an initial sample weight of 1±0.05 grams (g) and a final volume of 50 milliliters (ml) for ICP metals and 100 ml for mercury. Mercury will be analyzed by cold vapor atomic absorption spectroscopy (CVAA) and other metals will be analyzed by inductively coupled plasma optical emission spectroscopy (ICP-OES) with a strong acid digestion.

Table 5
Metals Target Analytes, Methods, and Detection Limits (mg/Kg wet weight)

Analyte	Method	MDL	RDL
Antimony	EPA 3050A/6010B	0.75	3.75
Arsenic	EPA 3050A/6010B	1.3	6.25
Cadmium	EPA 3050A/6010B	0.10	0.50
Chromium	EPA 3050A/6010B	0.15	0.75
Copper	EPA 3050A/6010B	0.20	1.0
Lead	EPA 3050A/6010B	1.0	5.00
Mercury	EPA 7471A	0.0050	0.0500
Nickel	EPA 3050A/6010B	0.25	1.25
Silver	EPA 3050A/6010B	0.20	1.0
Zinc	EPA 3050A/6010B	0.25	1.25

MDLs for these 10 trace metals, normalized to dry weight over a range of percent solids concentrations, are shown in Appendix A. This information is provided to demonstrate whether dry-weight normalized MDLs for antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc will meet Ecology's recommended Practical Quantitation Limits (PQLs) from the Sampling and Analysis Plan Appendix (SAPA) (Ecology 2003). The information in Appendix A shows that dry-weight normalized MDLs for these 10 metals all meet the SAPA-recommended PQLs at the range of percent solids from 25 to 75%.

10.3 Organics Analytical Methods and Detection Limits

All organics analyses will be performed by the King County Environmental Laboratory. Trace organic parameters will include base/neutral/acid semivolatile organic compounds (BNAs), chlorinated pesticides, and PCBs. The analytical methods and detection limits for the target BNA, and PCB compounds are summarized in Tables 6, and 7, respectively on a wet-weight basis. Wet-weight MDLs are normalized to dry weight over a range of percent solids contents in Appendix A for comparison with practical quantitation limits (PQLs) recommended in Ecology's SAPA (Ecology 2003). Results for certain non-

ionizing organic compounds are generally normalized to organic carbon for comparison to SMS chemical criteria. The King County Environmental Laboratory has attempted to optimize its procedures to produce the lowest cost-effective MDLs that are routinely achievable in a standard sediment sample. These MDLs should meet the required SMS chemical criteria for each parameter in most cases. The ability of the laboratory to attain detection limits which meet organic-carbon normalized chemical criteria, however, will depend upon the TOC content of each sample.

Organic-carbon normalized detection limits are shown in Table 8. These values are based on the wet-weight detection limits shown in Tables 6 and 7 and converted using a conservatively-low percent solids content of 35% and the minimum TOC content that would be applicable for organic-carbon normalization (0.5% by dry weight).

The detection limits for the target BNA compounds are summarized in Table 6. These MDLs and RDLs are presented on a wet-weight basis and are based on a 30-g extraction with gel permeable chromatography (GPC) cleanup and concentration to a final volume of 0.5 ml for analysis. Note that the detection limits can vary if limited sample is available for extraction (less than 30 g) or if dilution is required due to elevated analyte concentration(s). BNA analysis will be performed according to EPA methods 3550B/8270A (SW-846), which employ solvent extraction with sonication, and analysis by gas chromatography/mass spectroscopy (GC/MS).

Table 6
BNA Target Analytes and Detection Limits (µg/Kg wet weight)

Analyte	MDL	RDL	Analyte	MDL	RDL
1,2,4-Trichlorobenzene	0.13	0.27	Chrysene	2.7	5.3
1,2-Dichlorobenzene	0.27	0.53	Coprostanol	53	110
1,4-Dichlorobenzene	0.27	0.53	Dibenzo(a,h)anthracene	2.7	5.3
2,4-Dimethylphenol	1.3	2.7	Dibenzofuran	2.7	5.3
2-Methylnaphthalene	2.7	5.3	Diethyl Phthalate	5.3	11
2-Methylphenol	2.7	5.3	Dimethyl Phthalate	5.3	11
4-Methylphenol	5.3	11	Di-N-Butyl Phthalate	5.3	11
Acenaphthene	2.7	5.3	Di-N-Octyl Phthalate	5.3	11
Acenaphthylene	2.7	5.3	Fluoranthene	2.7	5.3
Anthracene	2.7	5.3	Fluorene	2.7	5.3
Benzo(a)anthracene	2.7	5.3	Hexachlorobenzene	0.13	0.27
Benzo(a)pyrene	2.7	5.3	Hexachlorobutadiene	0.67	1.3
Benzo(b)fluoranthene	2.7	5.3	Indeno(1,2,3-cd)pyrene	2.7	5.3
Benzo(g,h,i)perylene	2.7	5.3	Naphthalene	2.7	5.3
Benzo(k)fluoranthene	2.7	5.3	N-Nitrosodiphenylamine	5.3	11
Benzoic Acid	13	26	Pentachlorophenol	13	27
Benzyl Alcohol	2.7	5.3	Phenanthrene	2.7	5.3
Benzyl Butyl Phthalate	1.3	2.7	Phenol	5.3	11
Bis(2-Ethylhexyl) Phthalate	5.3	11	Pyrene	2.7	5.3

MDLs for BNA compounds, normalized to dry weight over a range of percent solids concentrations, are shown in Appendix A. This information is provided to demonstrate whether dry-weight normalized MDLs for BNAs will meet Ecology's recommended PQLs. The information in Appendix A shows that all dry-weight normalized MDLs for BNA compounds meet the SAPA-recommended PQLs at the range of percent solids from 25 to 75%.

The detection limits for the target PCB Aroclors® are summarized in Table 7. These MDLs and RDLs are presented on a wet-weight basis and are based on a 30-g extraction with gel permeation cleanup and concentration to a final volume of 0.5 ml for analysis. Note that the detection limits can vary if limited sample is available for extraction (less than 30 g) or if dilution is required due to elevated analyte concentration(s). PCB analysis will be performed according to EPA methods 3550B/8081A/8082 (SW-846), which employ solvent extraction with sonication, and analysis by gas chromatography with electron capture detector (GC/ECD) and dual column confirmation.

Table 7

PCB Target Analytes and Detection Limits (µg/Kg wet weight)

Analyte	**MDL**	**RDL**	**Analyte**	**MDL**	**RDL**
Aroclor 1016	1.3	2.6	Aroclor 1248	1.3	2.6
Aroclor 1221	3.3	6.6	Aroclor 1254	1.3	2.6
Aroclor 1232	3.3	6.6	Aroclor 1260	1.3	2.6
Aroclor 1242	1.3	2.6			

MDLs for PCBs, normalized to dry weight over a range of percent solids concentrations, are shown in Appendix A. This information is provided to demonstrate whether dry-weight normalized MDLs for PCBs will meet Ecology's recommended PQLs. The information in Appendix A shows that dry-weight normalized MDLs for PCB Aroclors meet the SAPA-recommended PQLs at the range of percent solids from 25 to 75% with two exceptions. The dry-weight normalized MDLs for Aroclors 1221 and 1232 at 25% and 50% solids exceed the SAPA-recommended PQL of 6 µg/Kg DW. This should not prove problematic, however, since the highest dry-weight normalized MDL of 13 µg/Kg DW is still a factor of 10 lower than the LAET of 130 µg/Kg DW.

Table 8 presents the organic-carbon normalized detection limits for the non-ionizable organic compounds regulated under the SMS, based on a percent solids concentration of 35% and a TOC content of 0.5%.

Table 8
Non-Ionizable Organic Compound Detection Limits (mg/Kg OC)

Analyte	MDL	RDL	Analyte	MDL	RDL
2-Methylnaphthalene	1.5	3.0	Pyrene	1.5	3.0
Acenaphthene	1.5	3.0	1,2,4-Trichlorobenzene	0.074	0.15
Acenaphthylene	1.5	3.0	1,2-Dichlorobenzene	0.15	0.30
Anthracene	1.5	3.0	1,4-Dichlorobenzene	0.15	0.30
Benzo(a)anthracene	1.5	3.0	Hexachlorobenzene	0.074	0.15
Benzo(a)pyrene	1.5	3.0	Benzyl Butyl Phthalate	0.76	1.5
Benzo(b)fluoranthene	1.5	3.0	Diethyl Phthalate	3.0	6.1
Benzo(g,h,i)perylene	1.5	3.0	Dimethyl Phthalate	3.0	6.1
Benzo(k)fluoranthene	1.5	3.0	Di-N-Butyl Phthalate	3.0	6.1
Chrysene	1.5	3.0	Bis(2-Ethylhexyl) Phthalate	3.0	6.1
Dibenzo(a,h)anthracene	1.5	3.0	Di-N-Octyl Phthalate	3.0	6.1
Fluoranthene	1.5	3.0	Dibenzofuran	1.5	3.0
Fluorene	1.5	3.0	Hexachlorobutadiene	0.38	0.76
Indeno(1,2,3-cd)pyrene	1.5	3.0	N-Nitrosodiphenylamine	3.0	6.1
Naphthalene	1.5	3.0	PCBs (1016, 1242, 1248, 1254, 1260)	0.74	1.5
Phenanthrene	1.5	3.0	PCBs (1221, 1232)	1.9	3.8

All of the organic carbon normalized MDLs shown in Table 9 and 10 are below their respective SQS chemical criteria from Table I of Chapter 173-204 WAC (Ecology 1995).

11.0 Laboratory Quality Assurance/Quality Control

11.1 Chemistry Data QA/QC

The quality control (QC) samples that will be analyzed in association with sediment chemistry samples are summarized in Table 9. The frequency of method blanks, duplicates, triplicates, and matrix spikes is one per QC batch (20 samples maximum). The frequency of SRM (standard reference material) or LCS (laboratory control sample) analysis is one per project (40 samples maximum). LCS analysis is used in lieu of SRM analysis for selected analytes when an SRM may not be readily available. Surrogates are analyzed with every organic sample.

Table 9
Marine Sediment Chemistry Quality Control Samples

Analyte	Method Blank	Duplicate	Triplicate	Matrix Spike (MS)	MS Duplicate	SRM/LCS	Surrogates
PSD	No	No	Yes	No	No	No	No
TOC	Yes	No	Yes	Yes	No	Yes	No
Total Solids	Yes	No	Yes	No	No	No	No
Mercury	Yes	Yes	No	Yes	Yes	Yes	No
Other Metals	Yes	Yes	No	Yes	No	Yes	No
BNAs	Yes	Yes	No	Yes	Yes	Yes	Yes
PCBs	Yes	Yes	No	Yes	Yes	Yes	Yes

Quality assurance (QA1) marine sediment chemistry acceptance criteria (Ecology 1989) are shown in Table 10. Some trace metal and organic analyses have empirically-derived laboratory limits for various QC samples. Specific laboratory-derived acceptance limits for trace metal and organic analyses are included as Appendix B. QC results that exceed the acceptance limits will be evaluated to determine appropriate corrective actions. Samples will typically be reanalyzed if the unacceptable QC results indicate a systematic problem with the overall analysis. Unacceptable QC results caused by a particular sample or matrix will not require reanalysis unless an allowed method modification would improve the results.

Table 10
QA1 Acceptance Criteria for Marine Sediment Chemistry Samples

Analyte	Method Blank	Duplicate	Triplicate	Matrix Spike	SRM/LCS	Surrogates
PSD	N/A	N/A	RSD $\leq$ 20%	N/A	N/A	N/A
TOC	< MDL	N/A	RSD $\leq$ 20%	75 - 125%	80 - 120%	N/A
Total Solids	< MDL	N/A	RSD $\leq$ 20%	N/A	N/A	N/A
Metals (incl.	< MDL	RPD $\leq$ 20%	N/A	75 - 125%	Appendix B	N/A
BNAs	< MDL	RPD $\leq$ 35%	N/A	Appendix B	Appendix B	Appendix B
PCBs	<MDL	RPD $\leq$ 35%	N/A	Appendix B	Appendix B	Appendix B

< MDL - Method Blank result should be less than the *method detection limit*.
RPD – Relative Percent Difference
RSD – Relative Standard Deviation
QC results for matrix spike, SRM/LCS, and surrogates are in *percent recovery of analyte*.

Analytical results that do not meet QA1 acceptance criteria will be qualified and flagged according to QA1 data validation guidance (Ecology 1989). Data qualifier flags and their interpretations are presented in Table 11.

Table 11
Data Qualifier Flags and QA1 Acceptance Criteria

Condition to Qualify	Flag	Organics QC Limits	Metals QC Limits	Conventionals QC Limits
Very low matrix spike recovery	X	< 10 %	< 10 %	< 10 %
Low matrix spike recovery	G	Appendix B	< 75%	< 65 - 75%
High matrix spike recovery	L	Appendix B	>125%	> 125 - 135%
Low SRM/LCS recovery	G	Appendix B	Appendix B	< 80%
High SRM/LCS recovery	L	Appendix B	Appendix B	>120%
High duplicate RPD	E	>35 %	>20%	N/A
High triplicate RSD	E	N/A	N/A	> 20%
Less than the reporting detection limit	<RDL	RDL	RDL	RDL
Less than the method detection limit	<MDL	MDL	MDL	MDL
Contamination in method blank	B	> MDL	> MDL	> MDL
Very biased data, low surrogate recoveries	X	<10%	N/A	N/A
Biased data, low surrogate recoveries	G	Appendix B	N/A	N/A
Biased data, high surrogate recoveries	L	Appendix B	N/A	N/A
Rejected, unusable for all purposes	R	--	--	--
A sample handling criterion has been exceeded	H	--	--	--

1. For BNA analysis, flags are applied to a sample based on whether a particular surrogate is in the acid or base-neutral fraction and on the number of failing surrogates per sample. For all other methods, flagging of all parameters for a particular sample is based on the recovery and acceptance limit of each surrogate.
2. Sample handling criteria include an exceedance of hold time and incorrect preservation, container, or storage conditions.

11.2 Data Reporting and Record Keeping

For the pre-dredge, post-dredge, and post-backfill surface sediment samples (Objectives 1, 2, and 3 see Section 2.1), the King County Environmental Laboratory will provide a 60-day turnaround time for all chemistry analytical data, starting upon receipt of the last sample collected. All data received from subcontract laboratories will be reported to the King County Environmental Laboratory in a format that includes QC summaries. These summaries will then be reviewed and qualified as appropriate.

11.3 QC/QC Reporting

All chemistry data will be reported in a QA1 report (Ecology 1989). The final report package will contain the following information and deliverables:

- A QA1 narrative discussing data quality in relation to Washington State Sediment Quality data qualification criteria (SEDQUAL)
- A summary of all associated QC data summaries (LIMS QC reports and worklists)
- A comprehensive report containing all analytical and field data (including data qualifier flags)

11.4 SEDQUAL Files

The chemistry analysis data will be reported in SEDQUAL (current version) format for eventual delivery to Ecology.

11.5 Record Keeping

All field and sampling records, custody documents, raw lab data, and summaries and narratives will be archived according to King County Environmental Laboratory policy. Appendix C includes LIMS "product names" and "list types" under which analytical data will be stored.

12.0 Project Health and Safety

The following general health and safety guidelines have been provided in lieu of a site-specific Health and Safety Plan. These guidelines will be read and understood by all members of the sampling crew.

- All crew of a research or safety vessel will have received annual vessel safety training, which will include proper chain of communication, equipment operation, and safe boating practices
- Samplers will wear chemical-resistant gloves whenever coming into contact with sediment
- No eating or drinking by sampling personnel will be allowed during sampling operations
- All sampling operations will be conducted during daylight hours
- All accidents, 'near misses,' and symptoms of possible exposure will be reported to a sampler's supervisor within 24 hours of occurrence
- All crew members will be aware of the potential hazards associated with any chemicals used during the sampling effort

Several hazards are inherent to marine sediment sampling. General vessel safety, physical hazards unique to sediment grab and core sampling, and chemical hazards are discussed in sections 12.1 through 12.3.

12.1 General Vessel Safety

To help prevent accidents and ensure adequate preparation for emergencies that may possibly arise, the following safety equipment will be required on the research vessel:

- One personal floatation device for each crew member as well as at least one throwable floatation device
- An accessible, clearly labeled, fully stocked first-aid/CPR kit
- An accessible and clearly labeled eye wash
- One (preferably two) VHF marine radio(s) with weather channel
- A cellular telephone

- A horn
- Navigation lights
- An emergency life raft with oars or paddles
- An anchor and suitable line
- Signal flares
- A reach pole or shepherd's hook

Personal protective equipment will be selected and used that will protect workers involved in sediment sampling from the hazards and potential hazards likely to be encountered. Minimum required personal protective equipment for marine sediment sampling shall include the following:

- Hard hat
- Steel-toe rubber boots
- Chemical-resistant gloves (i.e. Nitrile)
- Safety glasses (safety glasses will be available for use if sediment characteristics indicate the possible presence of hazardous chemicals [i.e., sheen or petroleum/solvent odor])

Recommended additional personal protective equipment will include rain gear and hearing protection when on board the research vessel.

12.2 Sampling

Sampler deployment and sediment retrieval present physical hazards due in part to the heavy weight of the grab sampler, its suspension above the vessel deck, and the risk of accidental or premature closure. Prior to each sampling event, all cabling, shackles, pins, housings, and swivels will be inspected to ensure the integrity of all points along the sampling assembly.

The sampler will always be set while it is resting on a stable surface. Once set, a safety pin will be set in place on the triggering mechanism and remain in place until the sampler is swung outboard of the vessel rail. Special care will be exercised when removing the safety pin to ensure personal safety in the event of a gear or winch failure. Fingers will not be placed through the ring of the pin when it is removed and hands will be kept completely clear of the sampler interior after the pin has been removed. If a sampler is retrieved that has not been tripped, it will be lowered to a stable surface before any worker contact.

During grab retrieval, one crew member will watch for the appearance of the grab sampler and alert the winch operator when the sampler is first visible below the water surface. Attempting to bring a swinging grab sampler on board poses a serious risk of being hit or knocked overboard. The winch operator will minimize swinging before the grab sampler is brought on board for the crew to secure. Hard hats and gloves will always be worn when handling the grab sampler.

The winch drum, blocks, capstan, and any area between the grab sampler and railings, the deck, and heavy equipment all represent significant pinching and crushing hazards. Only experienced crew members will operate the winch or capstan during a sampling event. Other crewmembers will exercise care to avoid these potentially hazardous areas.

12.3 Chemical Hazards

Contact with marine sediment at some sampling stations may present a health hazard from chemical constituents of the sediment. Potential routes of exposure to chemical hazards include inhalation, skin and eye absorption, ingestion, and injection. Crew members will exercise caution to avoid coming into contact with sediment at all stations during sampling operations. Protective equipment will include chemical-resistant gloves, safety glasses or goggles, and protective clothing (i.e., rain gear). Crew members will exercise good personal hygiene after sampling and prior to eating or drinking.

13.0 References

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APPENDIX A

Metals and Trace Organics Dry-Weight Normalized Method Detection Limits (MDLs) Compared to Recommended Practical Quantitation Limits (PQLs)

Tables A-1 through A-3

Table A-1
Dry-Weight Normalized MDLs for Trace Metals Compared to SAPA PQLs (all values in mg/Kg)

Trace Metal	WW MDL	DW MDL 25%	DW MDL 50%	DW MDL 75%	DW SAPA PQL
Antimony	0.75	3.0	1.5	1.0	50
Arsenic	1.25	5.0	2.5	1.7	19
Cadmium	0.10	0.40	0.20	0.13	1.7
Chromium	0.15	0.60	0.30	0.20	87
Copper	0.20	0.80	0.40	0.27	130
Lead	1.0	4.0	2.0	1.3	150
Mercury	0.005	0.020	0.010	0.0067	0.14
Nickel	0.25	1.0	4.0	1.7	47
Silver	0.20	0.80	0.40	0.27	2
Zinc	0.25	1.0	0.50	0.33	137

WW MDL – Nominal wet-weight method detection limit from Table 5.
DW MDL – Dry-weight normalized method detection limit based on percent solids content of 25, 50, and 75%.
DW SAPA PQL – Recommended practical quantitation limit from Sampling and Analysis Plan Appendix (Ecology 2003).

All dry-weight normalized MDLs for Trace Metals meet the SAPA-recommended PQLs at the range of percent solids from 25 to 75%.

Table A-2
Dry-Weight Normalized MDLs for BNAs
Compared to SAPA PQLs (all values in µg/Kg)

BNA	WW MDL	DW MDL 25%	DW MDL 50%	DW MDL 75%	DW SAPA PQL
1,2,4-Trichlorobenzene	0.13	0.52	0.26	0.17	31
1,2-Dichlorobenzene	0.27	1.1	0.54	0.36	35
1,4-Dichlorobenzene	0.27	1.1	0.54	0.36	37
2,4-Dimethylphenol	1.3	5.2	2.6	1.7	11
2-Methylnaphthalene	2.7	11	5.4	3.6	223
2-Methylphenol	2.7	11	5.4	3.6	1,067
4-Methylphenol	5.3	21	11	7.1	223
Acenaphthene	2.7	11	5.4	3.6	167
Acenaphthylene	2.7	11	5.4	3.6	433
Anthracene	2.7	11	5.4	3.6	320
Benzo(a)anthracene	2.7	11	5.4	3.6	433
Benzo(a)pyrene	2.7	11	5.4	3.6	533
Benzo(b)fluoranthene	2.7	11	5.4	3.6	1,067
Benzo(g,h,i)perylene	2.7	11	5.4	3.6	223
Benzo(k)fluoranthene	2.7	11	5.4	3.6	1,067
Benzoic Acid	13	52	26	17	217
Benzyl Alcohol	2.7	11	5.4	3.6	1,067
Benzyl Butyl Phthalate	1.3	5.2	2.6	1.7	11
Bis(2-Ethylhexyl) Phthalate	5.3	21	11	7.1	433
Chrysene	2.7	11	5.4	3.6	467
Coprostanol	53	210	110	71	--
Dibenzo(a,h)anthracene	2.7	11	5.4	3.6	77
Dibenzofuran	2.7	11	5.4	3.6	180
Diethyl Phthalate	5.3	21	11	7.1	67
Dimethyl Phthalate	5.3	21	11	7.1	24
Di-N-Butyl Phthalate	5.3	21	11	7.1	467
Di-N-Octyl Phthalate	5.3	21	11	7.1	2,067
Fluoranthene	2.7	11	5.4	3.6	567
Fluorene	2.7	11	5.4	3.6	180
Hexachlorobenzene	0.13	0.52	0.26	0.17	22
Hexachlorobutadiene	0.67	2.6	1.3	0.85	11
Indeno(1,2,3-cd)pyrene	2.7	11	5.4	3.6	200
Naphthalene	2.7	11	5.4	3.6	700
N-Nitrosodiphenylamine	5.3	21	11	7.1	28
Pentachlorophenol	13	52	26	17	120
Phenanthrene	2.7	11	5.4	3.6	500
Phenol	5.3	21	11	7.1	140
Pyrene	2.7	11	5.4	3.6	867

WW MDL – Nominal wet weight method detection limit from Table 6.
DW MDL – Dry-weight normalized method detection limit based on percent solids content of 25, 50, and 75%.
DW SAPA PQL – Recommended practical quantitation limit from Sampling and Analysis Plan Appendix (Ecology 2003).

All dry-weight normalized MDLs for BNA compounds meet the SAPA-recommended PQLs at the range of percent solids from 25 to 75%.

Table A-3
Dry-Weight Normalized MDLs for PCBs
Compared to SAPA PQLs (all values in µg/Kg)

PCB	WW MDL	DW MDL 25%	DW MDL 50%	DW MDL 75%	DW SAPA PQL
Aroclor 1016	1.3	5.2	2.6	1.7	6
Aroclor 1221	3.3	13	6.6	4.4	6
Aroclor 1232	3.3	13	6.6	4.4	6
Aroclor 1242	1.3	5.2	2.6	1.6	6
Aroclor 1248	1.3	5.2	2.6	1.7	6
Aroclor 1254	1.3	5.2	2.6	1.7	6
Aroclor 1260	1.3	5.2	2.6	1.7	6

WW MDL – Nominal wet weight method detection limit from Table 7.
DW MDL – Dry-weight normalized method detection limit based on percent solids content of 25, 50, and 75%.
DW SAPA PQL – Recommended practical quantitation limit from Sampling and Analysis Plan Appendix (Ecology 2003).

Dry-weight normalized MDLs for PCB Aroclors meet the SAPA-recommended PQLs at the range of percent solids from 25 to 75% with two exceptions. The dry-weight normalized MDLs for Aroclors 1221 and 1232 at 25% and 50% solids exceed the SAPA-recommended PQL of 6 µg/Kg DW.

APPENDIX B

Metals and Trace Organics Performance-Based QC Limits

Tables B-1 through B-7

Table B-1a
Laboratory QC Limits for Sediment Metals – SRM Recoveries (PACS-2)

Parameter	Lower Limit (%)	Upper Limit (%)
Chromium	30	70
Copper	78	118
Lead	74	114
Mercury	80	120
Nickel	51	91
Zinc	73	113

Table B-1b
Laboratory QC Limits for Sediment Metals – LCS Recoveries (ERA Soil)

Parameter	Lower Limit (%)	Upper Limit (%)
Antimony	80	120
Arsenic	80	120
Cadmium	80	120
Chromium	80	120
Copper	80	120
Lead	80	120
Nickel	80	120
Silver	80	120
Zinc	80	120

No QA1 flagging occurs as a result of LCS recoveries being outside of control limits.

Table B-2
Laboratory QC Limits for Sediment BNAs, Matrix Spike Recoveries

Parameter	Lower Limit (%)	Upper Limit (%)	Parameter	Lower Limit (%)	Upper Limit (%)
1,2,4-Trichlorobenzene	10	115	Chrysene	14	184
1,2-Dichlorobenzene	10	105	Coprostanol	10	183
1,3-Dichlorobenzene	10	103	Di-N-Butyl Phthalate	10	194
1,4-Dichlorobenzene	10	104	Di-N-Octyl Phthalate	52	151
2,4-Dimethylphenol	10	150	Dibenzo(a,h)anthracene	10	166
2-Methylnaphthalene	22	112	Dibenzofuran	21	134
2-Methylphenol	10	142	Diethyl Phthalate	31	150
4-Methylphenol	10	163	Dimethyl Phthalate	13	162
Acenaphthene	25	130	Fluoranthene	12	188
Acenaphthylene	27	132	Fluorene	22	147
Anthracene	10	181	Hexachlorobenzene	18	151
Benzo(a)anthracene	32	168	Hexachlorobutadiene	10	97
Benzo(a)pyrene	10	200	Hexachloroethane	10	89
Benzo(b)fluoranthene	10	199	Indeno(1,2,3-Cd)Pyrene	10	177
Benzo(g,h,i)perylene	10	173	N-Nitrosodiphenylamine	10	169
Benzo(k)fluoranthene	10	192	Naphthalene	12	97
Benzoic Acid	10	158	Pentachlorophenol	17	170
Benzyl Alcohol	10	138	Phenanthrene	10	200
Benzyl Butyl Phthalate	41	145	Phenol	10	127
Bis(2-Ethylhexyl)Phthalate	10	189	Pyrene	20	174

Table B-3
Laboratory QC Limits for Sediment BNAs, Blank Spike Recoveries

Parameter	Lower Limit (%)	Upper Limit (%)	Parameter	Lower Limit (%)	Upper Limit (%)
1,2,4-Trichlorobenzene	13	110	Chrysene	69	111
1,2-Dichlorobenzene	10	116	Coprostanol	10	159
1,3-Dichlorobenzene	18	95	Di-N-Butyl Phthalate	17	180
1,4-Dichlorobenzene	21	99	Di-N-Octyl Phthalate	10	200
2,4-Dimethylphenol	10	81	Dibenzo(a,h)anthracene	53	129
2-Methylnaphthalene	22	99	Dibenzofuran	37	97
2-Methylphenol	16	91	Diethyl Phthalate	51	118
4-Methylphenol	10	125	Dimethyl Phthalate	38	114
Acenaphthene	29	102	Fluoranthene	55	132
Acenaphthylene	31	101	Fluorene	39	106
Anthracene	45	114	Hexachlorobenzene	40	111
Benzo(a)anthracene	69	117	Hexachlorobutadiene	10	97
Benzo(a)pyrene	15	137	Hexachloroethane	17	92
Benzo(b)fluoranthene	50	121	Indeno(1,2,3-Cd)Pyrene	51	132
Benzo(g,h,i)perylene	46	126	N-Nitrosodiphenylamine	11	148
Benzo(k)fluoranthene	58	128	Naphthalene	17	94
Benzoic Acid	10	170	Pentachlorophenol	38	124
Benzyl Alcohol	10	119	Phenanthrene	57	104
Benzyl Butyl Phthalate	15	183	Phenol	10	107
Bis(2-Ethylhexyl)Phthalate	10	182	Pyrene	48	132

Table B-4
Laboratory QC Limits for Sediment BNAs, Surrogate Recoveries

Parameter	Lower Limit (%)	Upper Limit (%)
2,4,6-Tribromophenol	29	112
2-Fluorophenol	10	112
d5-Phenol	10	106
d5-Nitrobenzene	28	94
d4-2-Chlorophenol	11	105
d4-1,2-Dichlorobenzene	24	91
2-Fluorobiphenyl	31	101
d14-Terphenyl	51	130

Table B-5
Laboratory QC Limits for Sediment BNAs, SRM Recoveries

Parameter	Lower Limit (%)	Upper Limit (%)
Anthracene	28	98
Benzo(a)anthracene	66	124
Benzo(a)pyrene	60	116
Benzo(b)fluoranthene	52	190
Benzo(g,h,i)perylene	15	121
Benzo(k)fluoranthene	60	146
Chrysene	77	136
Dibenzo(a,h)anthracene	10	200
Fluoranthene	45	126
Indeno(1,2,3-Cd)Pyrene	33	121
Naphthalene	10	29
Phenanthrene	51	106
Pyrene	36	135

Table B-6
Laboratory QC Limits for Sediment Pesticides and PCBs
Blank Spike Recoveries

Parameter	Lower Limit (%)	Upper Limit (%)
4,4'-DDD	78	121
4,4'-DDE	75	111
4,4'-DDT	57	145
Aldrin	28	113
Alpha-BHC	20	99
Aroclor 1016	39	121
Aroclor 1260	53	140
Beta-BHC	66	102
Delta-BHC	63	108
Dieldrin	58	139
Endosulfan I	62	104
Endosulfan II	72	109
Endosulfan Sulfate	61	104
Endrin	60	160
Endrin Aldehyde	0	77
Gamma-BHC (Lindane)	27	130
Heptachlor	20	137
Heptachlor Epoxide	59	107
Methoxychlor	72	131

Table B-7
Laboratory QC Limits for Sediment Pesticides and PCBs
SRM and Surrogate Recoveries

Parameter	Lower Limit (%)	Upper Limit (%)
4,4'-DDT	10	200
Alpha-Chlordane	48	144
Aroclor 1254	57	139
Decachlorobiphenyl	15	155
2,4,5,6-Tetrachloro-m-xylene	30	134

APPENDIX C

Laboratory Information Management System (LIMS) Products and List Types

Table C-1

Table C-1
King County Environmental Laboratory
Laboratory Information Management System (LIMS)
Products and List Types

Parameter	LIMS Product	LIMS List Type
PSD	PSD	CVPSD
TOC	TOC	CVTOC
Total Solids	TOTS	CVTOTS
Mercury by CVAA	HG-CVAA	MTHG-MIDS, 6-MIDS
Other Metals by ICP	AL-ICP, SB-ICP, AS-ICP, CD-ICP, CR-ICP, CU-ICP, FE-ICP, PB-ICP, NI-ICP, AG-ICP, SN-ICP, ZN-ICP	MTICP-SED, 6-SED
BNAs (low-level)	BNASMS	ORSMS
PCBs (low-level)	PCBLL	ORPCBLL

CVAA – Cold vapor atomic absorption spectroscopy.
ICP – Inductively coupled plasma optic emission spectroscopy.

Appendix H

Denny Way CSO and Elliott West CSO Treatment Facility, Post Operation Sediment Monitoring, Year 3, Denny Way CSO Areas A and B Nearshore Sediment Remediation Project Post-Construction Sediment Monitoring, Areas C, D, and E Monitoring Sampling and Analysis Plan

Denny Way/Lake Union CSO Control Project

Long-Term Sediment Monitoring Program
Areas A and B Nearshore Sediment Remediation Project
Areas C, D, and E Monitored Natural Recovery

Denny Way CSO and Elliott West CSO Treatment Facility, Post-Operation Sediment Monitoring, Year 3

Denny Way CSO Areas A and B Nearshore Sediment Remediation Project, Post-Construction Sediment Monitoring

Areas C, D, and E Monitored Natural Recovery

Sampling and Analysis Plan

Prepared for the

King County Department of Natural Resources and Parks
Wastewater Treatment Division

by the

King County Department of Natural Resources and Parks
Marine and Sediment Assessment Group

March 2008

King County

Denny Way/Lake Union CSO Control Project

Long-Term Sediment Monitoring Program
Areas A and B Nearshore Sediment Remediation Project
Areas C, D, and E Monitored Natural Recovery

Denny Way CSO and Elliott West CSO Treatment Facility, Post-Operation Sediment Monitoring, Year 3

Denny Way CSO Areas A and B Nearshore Sediment Remediation Project, Post-Construction Sediment Monitoring

Areas C, D, and E Monitored Natural Recovery

Sampling and Analysis Plan

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TABLE OF CONTENTS

1 Introduction **1**
2 Project Directives **2**
3 Site Description and Project History **3**
3.1 The Denny Way/Lake Union CSO Control Project 3
3.2 Sediment Remediation at the Denny Way Site 5
3.3 Amended Sediment Monitoring Scope of Work 6
4 Sampling Design **7**
4.1 Data Quality Objectives 7
4.1.1 Precision, Accuracy, and Bias *7*
4.1.2 Representativeness *8*
4.1.3 Completeness *8*
4.1.4 Comparability *8*
4.1.5 Sensitivity *8*
4.2 Sampling Strategy 8
4.3 Location of Sampling Stations 9
4.4 Sample Acquisition and Analytical Parameters 10
4.5 Data Analysis 11
5 Project Organization and Schedule **12**
6 Sampling Procedures **13**
6.1 Station Positioning 13
6.2 Sampler Deployment and Retrieval 13
6.3 Sample Acceptability Criteria 14
6.4 Sample Processing – Sediment Chemistry 14
6.5 Sample Processing – Benthic Taxonomy 15
6.6 Sampling Equipment Decontamination 15
6.7 Sample Storage and Delivery 15
6.8 Chain of Custody 16
7 Sample Documentation **17**
8 Field Measurements and Observations **18**
9 Sediment Chemistry Analytical Methods **19**
9.1 Conventionals – Analytical Methods and Detection Limits 19
9.2 Trace Metals – Analytical Methods and Detection Limits 20
9.3 Trace Organics – Analytical Methods and Detection Limits 20
9.3.1 BNA Target Analytes and Detection Limits *21*
9.3.2 Chlorinated Pesticide and PCB Target Analytes and Detection Limits *22*
9.3.3 VOC Target Analytes and Detection Limits *22*
9.3.4 Organic-Carbon Normalized Detection Limits *23*
10 Benthic Taxonomy Analytical Methods **24**
11 Laboratory Quality Assurance/Quality Control **25**
11.1 Sediment Chemistry QA/QC 25
11.2 Benthic Taxonomy QA/QC 26

TABLE OF CONTENTS (CONT.)

12 Data Reporting and Record Keeping **27**
12.1 Sediment Chemistry Data 27
12.2 Benthic Taxonomy Data 27
12.3 Final Report and SEDQUAL Files 27
12.4 Record Keeping 27
13 Project Health and Safety **28**
13.1 General Vessel Safety 28
13.2 Grab Sampling 29
13.3 Chemical Hazards 29
14 References **30**

List of Tables

Table 3-1 Summary of SQS and CSL Exceedences – 2001 Monitoring Event, p. 4
Table 3-2 Summary of SQS and CSL Exceedences – 2003 Monitoring Event, p. 4
Table 3-3 Summary of SQS and CSL Exceedences – 2006 Monitoring Event, p. 4
Table 4-1 Sediment Sampling Stations – Coordinates and Analytes, p. 10
Table 6-1 Sediment Chemistry – Sample Containers, Storage Conditions, and Hold Times, p. 15
Table 9-1 Conventional Methods and Detection Limits, p. 19
Table 9-2 Trace Metals Target Analytes, Methods, and Detection Limits, p. 20
Table 9-3 BNA Target Analytes and Detection Limits, p. 21
Table 9-4 Chlorinated Pesticide Target Analytes and Detection Limits, p. 22
Table 9-5 PCB Target Analytes and Detection Limits, p. 22
Table 9-6 VOC Target Analytes and Detection Limits, p. 23
Table 9-7 Non-Ionizable Organic Compound Detection Limits, p. 23
Table 11-1 Marine Sediment Chemistry Quality Control Samples, p. 25
Table 11-2 QA1 Acceptance Criteria for Marine Sediment Chemistry Samples, p. 25
Table 11-3 Data Qualifier Flags and QA1 Acceptance Criteria, p. 26

List of Figures

Figure 1 – Denny Way Sediment Monitoring Site Summary of Sampling Stations
Figure 2 – 2008 Elliott West TF/Denny Way CSO Sediment Monitoring Event Sampling Stations
Figure 3 – King County Environmental Laboratory Chain of Custody Form
Figure 4 – King County Environmental Laboratory Standard Field Sheet

List of Appendices

Appendix A – Trace Metal and Trace Organic Dry-Weight Normalized Method Detection Limits Compared to Recommended Practical Quantitation Limits (Tables A-1 through A-5)
Appendix B – Trace Metal and Trace Organic QC Limits (Tables B-1 through B-10)
Appendix C – Laboratory Information Management System (LIMS) Products and List Types (Table C-1)

1 INTRODUCTION

This sampling and analysis plan (SAP) presents project information and sampling and analytical methodologies that will be employed to perform the third year of post-operation sediment monitoring for the Denny Way/Lake Union combined sewer overflow (CSO) control project. This work is being performed as part of a long-term sediment monitoring program to meet requirements of the Biological Opinion WSB-00-039 (NMFS 2000) issued for the project by the National Marine Fisheries Service (NMFS) under the Endangered Species Act (16 U.S.C. 1531 et seq.).

This SAP has also has been prepared to encompass additional sediment monitoring work that will be performed in the vicinity of the Denny Way/Lake Union CSO Control Project sediment monitoring site. The additional sediment monitoring work will include post-construction monitoring of the Denny Way CSO Nearshore Interim Sediment Cleanup Project (Ecology 2007). All of these data will also be used to monitor natural recovery of sediments in the area currently exceeding the Sediment Management Standards chemical criteria.

The SAP includes a description of the project, sampling and analytical methodologies, quality assurance/quality control procedures, and reporting requirements. All figures referenced in this SAP are located at the end of the narrative. The SAP has been prepared in accordance with Washington State Department of Ecology (Ecology) and Army Corps of Engineers (ACOE) SAP preparation guidance documents (Ecology 2003 and ACOE 2000) as well as Chapter 173-204 WAC, the Washington State Sediment Management Standards (Ecology 1995).

2 PROJECT DIRECTIVES

The Denny Way/Lake Union CSO Control Project was a joint effort of King County's Wastewater Treatment Division and Seattle Public Utilities to control City and County CSO discharges into Lake Union, as well as from the Denny Way CSO into Elliott Bay. The project included construction of two outfalls into Elliott Bay. A 490-foot outfall at a depth of -63 feet referenced to mean lower low water (MLLW) discharges treated CSO effluent from the new Elliott West CSO Treatment Facility (TF) during moderately heavy storm events. A 100-foot extension of the former Denny Way CSO outfall to a depth of -20 feet MLLW discharges untreated CSO to Elliott Bay during the once-per-year on average event when flows exceed the TF and system capacity (King County, City of Seattle, and EPA 1998).

Pursuant to the Biological Opinion referenced in Section 1 of this SAP, King County developed a plan to monitor the marine environment surrounding the new outfalls. The primary goal of the sediment monitoring plan is to produce scientific data of known quality that can be used to determine whether implementation of the Denny Way/Lake Union CSO Control Project and operation of the Elliott West CSO TF/Denny Way CSO causes an impact to the biological communities in the marine environment surrounding the outfalls. If operation of the CSO facilities causes increased contamination of marine sediments to levels that exceed published sediment quality criteria, the monitoring program will identify such contamination and help King County and associated agencies develop a response plan.

The long-term monitoring program was scheduled to monitor sediment quality over 20 years following construction and operation of the new Elliott West/Denny CSO treatment facility and associated marine outfalls. Subsequently, King County conducted an interim cleanup (Ecology 2007) in the area between the offshore area capped in 1990 and the old outfall location on the shoreline. As part of that Cleanup Action Plan, monitoring was required to address several objectives. The project directives have been amended to encompass the following additional tasks to address the post-construction components of that monitoring plan:

- a one-time monitoring event of sediment quality at seven stations around the perimeter of the area dredged and backfilled during a nearshore interim sediment cleanup project (Areas A and B);
- annual monitoring of one station within the backfilled area to evaluate the potential for recontamination; and
- continued annual monitoring of areas with sediments exceeding the SMS at the Denny Way site (Areas C, D, and E) for evaluation of natural recovery.

The stations to be monitored are shown in Figure 1. The 16 existing stations, which are sampled to monitor sediment quality for compliance with the CSO control project BO are shown on the figure in red (Stations DWMP-01 through DWMP-16). Station DWMP-10 is located within the area remediated during the nearshore interim cleanup project for Areas A and B. Six of the 16 stations are located in natural recovery monitoring Areas C, D, and E. The seven post-construction monitoring stations that will be sampled one time in April 2008, following completion of remediation construction activities, are shown on the figure in yellow. The seven stations sampled once in April 2008 will be submitted for sediment chemical analysis only. Eight of the 16 existing stations will be sampled for sediment chemistry only and eight will be sampled for both sediment chemistry and benthic community assemblages.

3 SITE DESCRIPTION AND PROJECT HISTORY

The Elliott West CSO TF and Denny Way CSO outfalls and the associated sediment monitoring site are located on the northeast side of Elliott Bay, adjacent to Myrtle Edwards Park in Seattle, Washington (Figure 1). The old Denny Way CSO outfall was located in the intertidal zone and discharged directly onto the beach during storm events that occurred during low tides. The shoreline in the monitoring area is heavily armored with rip-rap with the exception of a small cove with some natural beach characteristics. Bathymetry in the area is moderately sloping.

The old Denny Way CSO was the largest in King County's system and large volumes of combined storm water runoff and untreated sewage were discharged at this location. Prior to this location becoming a CSO in 1968, it was a raw sewage outfall. In 1986, The Municipality of Metropolitan Seattle or Metro (later incorporated into King County) began a trial program to identify and reduce toxicant inputs to the sewer system discharging through the Denny Way CSO. The Denny Way Sediment Cap project was instigated in 1990 as a demonstration project to remediate nearby contaminated sediments. The cap is a 3-foot thick layer of clean sediment placed over three acres of contaminated sediment offshore of the outfall beginning at the depth determined to not be subject to wave erosion.

Sediment data from the Denny Way Cap monitoring program showed that surface sediments in the center of the cap were gradually becoming recontaminated with elevated concentrations of phthalate compounds, the highest concentrations detected at the monitoring station closest to the old Denny Way CSO outfall (Striplin Environmental Associates (SEA) 1997). Elevated chemical concentrations in sediments surrounding the cap have also been detected (SEA 1998). Chemicals of concern include polychlorinated biphenyls (PCBs), phthalate compounds, and mercury.

Five areas of concern requiring remediation were identified in the vicinity of the old Denny Way CSO outfall (SEA 1999). Two of these areas are located inshore of the sediment cap and three are located offshore of the cap. Dredging and disposal of contaminated sediment following outfall construction was identified as the preferred remedial alternative for the inshore areas of concern. Monitored natural recovery was identified as the preferred alternative for the offshore areas. Sediment monitoring related to site remediation will be addressed in a future project document.

3.1 The Denny Way/Lake Union CSO Control Project

Construction of the new outfalls was completed in March 2002. The shorter, shallow Denny Way CSO outfall is designed to discharge untreated CSO during large storm events, on average of once-per-year in a year of normal rainfall. The longer, deeper Elliott West CSO TF outfall is designed to discharge treated CSO effluent during periods of moderate rainfall when normal system capacity is exceeded. The deeper outfall is covered by a concrete “blanket” to prevent damage from excessive wave action or navigational mishaps. Habitat enhancement following construction included the placement of “habitat mix” (sand, gravel, cobble) in the disturbed areas surrounding the construction zone, along with armoring cobbles and boulders and large woody debris. Destruction of the old Denny Way CSO outfall in August 2002 moved the discharge of untreated CSO effluent offshore to the new Denny Way CSO outfall. Discharge of untreated CSO effluent at the new, shallower outfall continued during periods of rainfall that exceed normal system capacity until the Elliott West CSO TF came online in June 2005. Now online,

the new facility falls under King County's National Pollutant Discharge Elimination System (NPDES) permit for its West Point Treatment Plant and associated CSO treatment plants.

King County has monitored sediment quality at the project site prior and subsequent to construction of the new outfalls. Monitoring events occurred in: 2001, prior to outfall construction; in 2003, after completion of all construction activities; and in 2006 and 2007, after one and two years of operation. These monitoring events showed consistent exceedances of Washington State Sediment Management Standards (SMS) for mercury, benzyl butyl phthalate, bis(2-ethylhexyl) phthalate, and total PCBs. Tables 3-1 through 3-3 summarize the SMS exceedences of both the Sediment Quality Standards (SQS) and Cleanup Screening Levels (CSL) from Chapter 173-204 WAC (Ecology 1995). The tables provide the numeric SMS chemical criteria, the number of stations that exceeded the SQS and/or CSL criteria, and the concentration ranges detected at those stations. Concentrations of some individual polynuclear aromatic hydrocarbon (PAH) compounds have also exceeded SQS chemical criteria at three stations, although not consistently between the three monitoring events. *Total* HPAH (high molecular weight PAH) concentrations at two stations exceeded the SQS criterion in 2006.

Table 3-1
Summary of SQS and CSL Exceedences – 2001 Monitoring Event

Chemical	SQS	Number of Exceedances	Concentration Range	CSL	Number of Exceedances	Concentration Range
Mercury[1]	0.41	5	0.411 – 0.571	0.59	4	0.615 – 0.741
Benzyl Butyl Phthalate[2]	4.9	9	4.93 – 34.8	64	0	--
Bis (2-ethylhexyl) Phthalate[2]	47	4	54.0 – 71.9	78	3	83.6 – 304
Total PCBs[2]	12	10	13.0 – 35.1	65	0	--

[1]SQS, CSL, and Concentration Range in milligrams per kilogram normalized to dry weight (mg/Kg DW).
[2]SQS, CSL, and Concentration Range in milligrams per kilogram normalized to organic carbon (mg/Kg OC).

Table 3-2
Summary of SQS and CSL Exceedences – 2003 Monitoring Event

Chemical	SQS	Number of Exceedances	Concentration Range	CSL	Number of Exceedances	Concentration Range
Mercury[1]	0.41	4	0.419 – 0.563	0.59	4	0.610 – 0.751
Benzyl Butyl Phthalate[2]	4.9	2	14.2 – 31.9*	64	0	--
Bis (2-ethylhexyl) Phthalate[2]	47	3	48.4 – 59.5	78	1	155
Total PCBs[2]	12	10	14.1 – 29.3	65	0	--

[1]SQS, CSL, and Concentration Range in milligrams per kilogram normalized to dry weight (mg/Kg DW).
[2]SQS, CSL, and Concentration Range in milligrams per kilogram normalized to organic carbon (mg/Kg OC).
*Results impacted by laboratory contamination.

Table 3-3
Summary of SQS and CSL Exceedences – 2006 Monitoring Event

Chemical	SQS	Number of Exceedances	Concentration Range	CSL	Number of Exceedances	Concentration Range
Mercury[1]	0.41	5	0.411 – 0.568	0.59	3	0.602 – 0.922
Benzyl Butyl Phthalate[2]	4.9	11	5.07 – 58.4	64	0	--
Bis (2-ethylhexyl) Phthalate[2]	47	6	47.1 – 70.3*	78	2	98.4 – 166
Total HPAHs[2]	960	2	993 – 1,050	5,300	0	--
Total PCBs[2]	12	10	12.9 – 29.8	65	0	--

[1]SQS, CSL, and Concentration Range in milligrams per kilogram normalized to dry weight (mg/Kg DW).
[2]SQS, CSL, and Concentration Range in milligrams per kilogram normalized to organic carbon (mg/Kg OC).
*Results impacted by laboratory contamination.

Analysis of the benthic taxonomy data indicates a generally healthy benthic community over most of the site. The data also indicate, however, that the benthic community assemblage in the area around the former Denny Way CSO outfall has most likely been impacted by historic discharges and, possibly, other sources. Some other locations in the shallow, nearshore environment also show possible environmental stress based on the presence of dominant, pollution-tolerant species. Benthic data from the 2006 and 2007 monitoring events indicate that some opportunistic, pollution-tolerant polychaetes have colonized the area near the new Elliott West CSO TF outfall.

Data from these four monitoring events indicate no major changes in sediment quality at the site as a result of outfall construction activities or operation. The 2008 monitoring event, described in this SAP, will evaluate sediment quality approximately three years after the Elliott West CSO TF became operational.

3.2 Sediment Remediation at the Denny Way Site

In 1997, King County characterized the nature and extent of surface and subsurface sediment contamination in the area of the old Denny Way outfall, as well as areas inshore and offshore of the existing Denny Way sediment cap (SEA 1997). Follow-up sediment sampling conducted by King County in 2005 demonstrated that chemical concentrations in the offshore areas declined over time due to a combination of natural processes, including biodegradation of chemicals, accumulation and mixing of clean sediment, and reduction of contaminant sources (King County 2005). Thus, monitored natural recovery is a prospective cleanup remedy for the offshore areas (Areas C, D, and E). These areas will continue to be evaluated by the Ecology and the County to determine if a more active cleanup remedy is required. Areas C, D, and E are shown in Figure 1.

Unlike offshore areas of the site, natural recovery rates in the inshore sediment areas appeared to be progressing relatively slowly. In order to accelerate cleanup of the site and minimize the risk of future recontamination to other site areas due to resuspension of inshore sediments, including the offshore cap, an interim sediment cleanup action plan for the site was developed by King County and Ecology in 2007, including dredging to the extent practicable to remove sediments exceeding the SMS, and backfilling to restore the grade to close to pre-project conditions. The Denny Way CSO interim action remediated contaminated sediment present in the two nearshore areas in the immediate vicinity of the former Denny Way CSO outfall (Areas A and B). A combination of dredging, backfilling, and armoring was employed to remediate the nearshore areas. The dredging boundary for the Areas A and B cleanup is shown in Figure 1.

Approximately 13,700 cubic yards (cy) of contaminated sediments were dredged from approximately +10 feet MLLW to approximately -35 feet MLLW within the 1.2-acre interim action area. The material within the dredge footprint was mechanically dredged using a clamshell bucket deployed from a derrick barge. The dredged area was backfilled and armored with an average thickness of more than 10 feet of material. Approximately 14,500 cy of well-graded clean sand was armored with approximately 4,000 cy of sandy-gravel habitat mix as well as large cobbles and boulders. An additional 1,500 cy of well-graded clean sand was placed in an approximately 6-in thin layer around the perimeter of the dredge prism to address any residuals that may have resulted from the dredging. Prior to commencement of construction activities, sediment grab samples were collected adjacent to and beyond the dredge boundary to document baseline pre-dredge sediment quality conditions near the project area.

3.3 Amended Sediment Monitoring Scope of Work

The original Denny Way sediment monitoring scope of work was designed as part of a long-term sediment monitoring program to meet requirements of the CSO control project BO. The long-term monitoring program was scheduled to monitor sediment quality over a 20-year period, following construction and operation of the new Elliott West CSO TF and Denny Way CSO. The amended sediment monitoring scope of work will encompass the tasks listed below.

- A one-time monitoring event of sediment quality at seven stations around the perimeter of Areas A and B will evaluate whether dispersal of contaminated sediments during remedial activities has occurred. This monitoring event will occur in April 2008, following completion of all remedial construction activities. Surface sediment samples will be collected from Stations DW-01, DW-03, DW-13, DW-19, DW033, DW-34, and LTBC20(J), which are shown in yellow in Figure 1. Baseline sediment data was collected from these seven stations in November 2007.
- Annual monitoring of one station within Areas A and B will evaluate the potential for recontamination. Surface sediment samples will be collected from Station DWMP-10 annually in April, from 2008 through 2012.
- Continued annual monitoring of additional impacted sediments at the Denny Way site (Areas C, D, and E) will evaluate natural recovery at the site. Surface sediment samples will be collected annually in April, from 2008 through 2012 from Stations DWMP-14 and DWMP-15 (Area C), Station DWMP-08 (Area D), and Stations DWMP-01, DWMP-02, and DWMP-03 (Area E).

Figure 1 summarizes all of the stations that will be sampled under the amended scope of work for the Denny Way sediment monitoring program. The 16 existing stations, which are sampled to monitor sediment quality for compliance with the project BO, are shown on the figure in red (Stations DWMP-01 through DWMP-16). As stated above, seven of these stations will also monitor the effectiveness of the nearshore interim sediment remediation (DWMP-10) and natural recovery (DWMP-01, DWMP-02, DWMP-03, DWMP-08, DWMP-14, and DWMP-15). The seven monitoring stations that will be sampled one time in April 2008, following completion of remediation construction activities are shown on the figure in yellow.

The seven stations sampled once in April 2008 (DW-01, DW-03, DW-13, DW-19, DW-33, DW-34, and LTBC20(J) will be submitted for sediment chemical analysis only. The 16 existing stations (DWMP-01 through DWMP-16) will be sampled for analysis of sediment chemistry and benthic community assemblages will be analyzed on eight of those 16 sediment chemistry samples.

4 SAMPLING DESIGN

The goal of the third year, post-operation sediment monitoring event is to continue evaluating sediment quality in the vicinity of the new Elliott West CSO TF outfall and the new, deeper Denny Way CSO outfall. Another goal is to monitor the areas around the perimeter of the nearshore sediment remediation area (Areas A and B) to see whether construction activities may have dispersed contaminated sediment outside the dredge prism or otherwise negatively impacted the area. The final goal is to continue monitoring sediment quality and natural recovery in Areas C, D, and E.

4.1 Data Quality Objectives

The data quality objectives (DQOs) of the third year, post-operation sediment monitoring event are to collect data of sufficient quantity and quality to be able to meet the following monitoring objectives:

- evaluate the areal extent and spatial variations of sediment chemical concentrations in the vicinity of the former Denny Way CSO and the new Elliott West CSO TF and Denny Way CSO outfalls;
- evaluate sediment chemical concentrations in the study area relative to the current marine sediment quality standards of Chapter 173-204 WAC (Ecology 1995);
- evaluate the benthic community assemblages at eight of the 16 stations from which sediment chemistry data have been collected; and
- evaluate spatial differences in benthic community assemblages over the site as well as comparing the benthic community assemblages at the study site to regional Puget Sound benthic community data.
- evaluate sediment chemical concentrations at seven stations proximal and distal to the perimeter of remedial areas A and B, which were sampled prior to commencement of remedial construction activities; and
- evaluate sediment chemical concentrations over time with the three natural recovery areas, Areas C, D, and E.

The *quantity* of sediment chemistry data to be collected is based on specifications in the project Biological Opinion (NMFS 2000). One sediment chemistry sample will be collected from each of 16 stations and will consist of sediment composited from three separate deployments of a grab sampler. Concurrent benthic taxonomy samples will be collected in triplicate from eight of the stations. Benthic taxonomy data has previously been collected from all 16 of the sediment chemistry stations. A review of all benthic taxonomy data collected to date has indicated that the benthos falls into two major communities, based on depth and grain size. These two groups can be successfully monitored through the collection of samples from just eight stations, rather than 16 as previously done.

Validation of project data will assess whether the data collected are of sufficient *quality* to meet the study goals. The data quality issues of precision, accuracy, bias, representativeness, completeness, comparability, and sensitivity are described in the following sections.

4.1.1 Precision, Accuracy, and Bias

Precision is the agreement of a set of results among themselves and is a measure of the ability to reproduce a result. Accuracy is an estimate of the difference between the true value and the

determined mean value. The accuracy of a result is affected by both systematic and random errors. Bias is a measure of the difference, due to a systematic factor, between an analytical result and the true value of an analyte. Precision, accuracy, and bias for sediment chemistry and benthic taxonomy may be measured by one or more of the following quality control (QC) procedures:

- analysis of various laboratory QC samples such as method blanks, matrix spikes, certified reference materials, and laboratory duplicates or triplicates for sediment chemistry;
- collection of sediment chemistry samples composited from three separate grab deployments;
- analysis of triplicate benthic community samples from each station; and
- confirmation of species identification by secondary taxonomists during benthic community analysis.

4.1.2 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at the sampling point, or an environmental condition. Sediment chemistry and benthic taxonomy samples will be collected from stations with pre-selected coordinates to represent specific site locations. Sediment chemistry samples will be homogenized to minimize variations in the chemical and physical composition of the sediments. Benthic taxonomy samples will be collected in triplicate at each station. Concurrent sediment chemistry samples will be collected along with each of the three benthic taxonomy samples and then composited into a single sample. Following the guidelines described for sampler decontamination, sample acceptability criteria, and sample processing (Section 6) will also help ensure that samples are representative.

4.1.3 Completeness

Completeness is defined as the total number of samples for which acceptable analytical data are generated, compared to the total number of samples submitted for analysis. Adhering to standardized sampling and testing protocols will aid in providing a complete set of data for this study. The goal for completeness is 100%. If 100% completeness is not achieved, the study team will evaluate whether the DQOs can still be achieved or if additional samples may need to be collected and analyzed.

4.1.4 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. This goal is achieved through using standard techniques to collect and analyze representative samples, along with standardized data validation and reporting procedures. By following the guidance of this SAP, the goal of comparability will be achieved.

4.1.5 Sensitivity

Sensitivity is a measure of the capability of analytical methods to meet study goals. The analytical method detection limits presented in Section 9 are sensitive enough to allow comparison of sediment chemistry data to current Ecology and PSDDA sediment quality criteria, both normalized to dry weight and to organic carbon, as appropriate.

4.2 Sampling Strategy

Sediment chemistry samples will be collected from each of the 16 stations at the monitoring site that have been sampled since 2001, as well as from the seven perimeter stations that were

previously sampled in November 2007, prior to commencement of remedial construction activities. Dual van Veen grab samplers will be deployed in tandem at each station. For the 16 stations sampled as part of the long-term sediment monitoring program, sediment chemistry samples were previously collected from the top 2 centimeters (cm) of sediment retrieved in each of three separate deployments of the grab samplers, and then composited into a single sample. Samples at 10 of those stations will now be comprised of sediments collected from the top 10 cm. Collection of the top 10 cm will allow an assessment of sediment quality over the entire biologically active zone and allow King County to meet requirements of the post-construction sediment monitoring requirement at cleanup Areas A and B, as well as monitored natural recovery Areas C, D, and E.

Samples at the six stations proximal to the Elliott West CSO TF outfall will continue with the 0- to 2-cm sampling regime to meet NPDES monitoring protocols. One station proximal to the outfall, DWMP-08 will have samples collected both from the 0- to 2-cm and 0- to 10-cm depth strata to meet NPDES protocols and monitoring requirements for monitored natural recovery Area D. Table 4-1 summarizes the sampling depth strata for the 16 long-term sediment monitoring stations. Sediment chemistry samples will be collected from the top 2 or 10 cm of sediment in one of the dual grab samplers during each deployment, while the benthic taxonomy replicate will be collected from the entire contents of the other tandem grab sampler at the eight stations from which benthic taxonomy data will be collected. For each of the seven perimeter stations, sediment will be collected from the top 10 cm of sediment, with the same number of grab deployments and compositing regime.

All field work will be conducted on board the King County research vessel *Liberty*, staffed by King County personnel and project consultants.

4.3 Location of Sampling Stations

Figure 2 shows the locations of the 16 stations from which samples will be collected for analysis of sediment chemistry. Benthic taxonomy samples will be collected from eight of those stations. The 16 stations are arranged around the new CSO outfalls in a grid pattern consisting of transect lines running perpendicular to the shoreline. The two outer transect lines consist of four stations each, with the two inner transect lines consisting of three stations each. The final two stations are located near the terminus of the new 490-foot outfall for the Elliott West CSO Storage and Treatment Facility. Fourteen of the 16 sampling locations are positioned at stations from which previous sediment samples were collected as part of the Denny Way Sediment Characterization (SEA 1998). Samples were collected from all 16 stations in 2001, 2003, 2006, and 2007.

The seven perimeter stations that will be sampled once in 2008 for sediment chemistry as part of the nearshore sediment remediation monitoring are also shown on figure 2. Table 4-1 summarizes the stations, their coordinates, depth strata, and the analyses that will be performed at each station.

Table 4-1
Sediment Sampling Stations – Coordinates, Depth Strata and Analyses

Station	Northing	Easting	Depth Stratum (cm)	Ammonia Nitrogen	Particle Size Distribution	Total Organic Carbon	Total Solids	Total Sulfide	Volatile Solids	Total Metals[1]	BNAs[2]	Chlorinated Pesticides	PCB Aroclors[3]	Volatile Organics[4]	Benthic Taxonomy (3 reps)
DWMP-01	228813	1264047	10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DWMP-02	228770	1263919	10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
DWMP-03	228638	1263846	10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DWMP-04	228546	1263631	10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
DWMP-05	229041	1263836	10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DWMP-06	228839	1263542	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
DWMP-07	228660	1263350	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
DWMP-08	228907	1263341	2/10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DWMP-09	228806	1263215	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DWMP-10	229326	1263565	10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DWMP-11	229156	1263272	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
DWMP-12	228963	1263055	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
DWMP-13	229640	1263317	10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
DWMP-14	229553	1263228	10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DWMP-15	229444	1263053	10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DWMP-16	229353	1262966	10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
DW-01	229703	1263143	10		✓	✓	✓			✓	✓		✓		
DW-03	229529	1263359	10		✓	✓	✓			✓	✓		✓		
DW-13	229363	1263343	10		✓	✓	✓			✓	✓		✓		
DW-19	229150	1263268	10		✓	✓	✓			✓	✓		✓		
DW-33	229130	1263747	10		✓	✓	✓			✓	✓		✓		
DW-34	228952	1263903	10		✓	✓	✓			✓	✓		✓		
LTBC20	229241	1263454	10		✓	✓	✓			✓	✓		✓		

4.4 Sample Acquisition and Analytical Parameters

Chemistry samples will be collected from either the top 2 cm or top 10 cm of sediment recovered from three deployments of a van Veen grab sampler. Samples will be composited, homogenized, and split into laboratory containers in the field. Parameters of interest will include trace metals and organic compounds, as well as conventional sediment chemistry and physical properties. Analytical parameters have been chosen based on Ecology and ACOE recommendations for conducting baseline sediment quality studies (Ecology 1995; ACOE 2000). Analytical parameters for sediment chemistry will include:

- conventionals - percent solids, percent volatile solids, particle size distribution (PSD), total organic carbon (TOC), ammonia, and total sulfide;

- metals - arsenic, antimony, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc; and
- organics - volatile organic compounds (VOCs), base/neutral/acid extractable semivolatile organic compounds (BNAs), chlorinated pesticides, and PCBs (the complete list of organic parameters is shown in Section 9.3).

Note that the parameters above are those for which the 16 samples collected as part of the long-term monitoring program will be analyzed. The seven samples collected in association with the nearshore sediment remediation monitoring will be analyzed for a subset of those parameters (see Table 4-1). Benthic taxonomy samples will be collected concurrently with chemistry samples from the eight of the 16 study area stations. Each of these sediment samples will consist of the entire contents of a single van Veen grab sampler. As a test for environmental variability, three separate replicate grabs will be collected at each station for benthic taxonomy analysis. Two van Veen grab samplers will be deployed in tandem at each station, which will allow for concurrent collection of the chemistry and benthic taxonomy samples.

4.5 Data Analysis

Sediment chemistry data will be evaluated by comparison to sediment chemical criteria from the SMS Tables I and III (Ecology 1995) as well as Table 5-1 in the PSDDA users manual (ACOE 2000). Data from this sampling event will be compared to results from previous studies including the Denny Way Sediment Characterization (SEA 1998) and the Denny Way Pre- and Post-Construction Sediment Characterization Studies (King County 2001, 2005), as well as the 2006 and 2007 years one and two, post-operation monitoring events.

Sediment data for some organic compounds are generally normalized to organic carbon content for comparison to SMS criteria. Normalization to organic carbon can produce biased results, however, when the organic carbon content of the sample is very low (Ecology 1992). When the organic carbon content of a sample is near 0.1 or 0.2% (1,000 to 2,000 milligrams/kilogram (mg/Kg) dry weight), even background concentrations of certain organic compounds can exceed sediment quality criteria. If the organic carbon content at any particular station is below 0.5% dry weight, then dry weight-normalized results for non-ionizable organic compounds will be compared to Lowest Apparent Effects Threshold (LAET) or Second Lowest Apparent Effects Threshold (2LAET) criteria (EPA 1988), rather than SMS criteria.

Benthic taxonomy results from the eight sampling stations will be compared to Puget Sound regional benthic data from areas of similar physical characteristics such as depth, grain size distribution, organic carbon content, and ambient water quality. These data will also be used to calculate diversity indices, species abundance (total abundance as well as abundance in each major taxa group), and biomass.

5 PROJECT ORGANIZATION AND SCHEDULE

The tasks involved in conducting the third year, post-operation sediment monitoring event at the Denny Way/Lake Union CSO Control Project site, along with the post-construction monitoring for the Denny Way CSO Nearshore Interim Sediment Cleanup Project, and the King County and contracted personnel who will assume responsibility for those tasks are listed below.

- **Scott Mickelson** King County Marine and Sediment Assessment Group – (206) 296-8247 scott.mickelson@kingcounty.gov Project management, study design, preparation of SAP, data validation and analysis, and preparation of final study report.
- **John Blaine** King County Environmental Laboratory – (206) 684-2384 john.blaine@kingcounty.gov Coordination of field activities for sediment chemistry and benthic taxonomy sampling and field oversight of contract personnel.
- **Fritz Grothkopp** King County Environmental Laboratory – (206) 684-2327 fritz.grothkopp@kingcounty.gov Coordination of all King County Environmental Laboratory activities, data validation, and data reporting.
- **Allan Fukuyama** University of Washington – (425) 745-3349 allanf@u.washington.edu Coordination of sampling and analytical activities for benthic taxonomy analysis.
- **John Phillips** King County Wastewater Treatment Division – (206) 263-6543 john.phillips@kingcounty.gov Review of SAP and final study report; coordination of nearshore interim sediment cleanup project.
- **Jeff Stern** King County Wastewater Treatment Division – (206) 263-6447 jeff.stern@kingcounty.gov Review of SAP and final study report; coordination of King County's long-term sediment management plan.

Field work for the 2008 monitoring event is anticipated to require up to one week of field time and will occur in April 2008. Sediment chemistry results will be available by August 2008. Validated chemistry data packages and electronic data files will be ready for release by September 2008. Benthic taxonomy results will be available by November 2008. The final report for this monitoring event will be ready for release in January 2009.

6 SAMPLING PROCEDURES

All sampling will be performed according to guidelines recommended by the Puget Sound Estuary Program's (PSEP) Puget Sound Protocols (PSEP 1987,1997a, 1998). Sediment samples will be collected using dual, tandem 0.1 m^2 modified, stainless steel van Veen grab samplers deployed via hydrowire and hydraulic winch from the King County research vessel *Liberty*.

Chemistry samples will be collected from the top 2 or 10 cm of sediment. Sediment will be collected from the contents of three deployments of the dual grab samplers. Sediment chemistry samples will be stored on ice in coolers while in the field, then transported to the King County Environmental Laboratory at the end of each sampling day.

Benthic organisms will be extracted from the entire contents of each of three replicate grabs. Qualified King County Environmental Laboratory and subcontracted personnel will be responsible for the sample collection, sieving, and preservation.

Established chain of custody (COC) procedures will be followed for this sampling event.

6.1 Station Positioning

Station positioning will employ a Trimble® Differential Global Positioning System (DGPS). Prior to the monitoring event, the prescribed station coordinates will be entered into the shipboard DGPS laptop computer. During sampling, the shipboard navigational system will utilize the differential data transmissions from regional Coast Guard base stations to automatically correct its GPS satellite data. The GPS antenna is boom-mounted above the sampler descent line to achieve a more accurate coordinate fix above the sampling point.

Upon contact of the grab sampler with the bottom, the coordinate data representing the actual sediment grab impact point will be electronically recorded in real time. Positioning information will include local time and date that a position is recorded, comments, and coordinate data in both latitude/longitude and NAD 83 State Plane formats.

Previous DGPS usage indicates that an average precision of ± 2 meters can usually be expected. Sample collection is expected to take place within a 6-meter radius of each station's prescribed position and samples will not be collected if the grab deployment is outside of this limit. If conditions such as a steep slope or rocky substrate preclude sample collection at a particular station, the station may be relocated after consultation with the study coordinator and if relocation will not compromise the project goals. Any station relocation will be documented and reported.

6.2 Sampler Deployment and Retrieval

Two 0.1 m^2, modified, stainless-steel van Veen grab samplers will be deployed in tandem at each sampling station. The grab samplers will be lowered at a controlled speed of approximately 4 feet per second until it is near the bottom, at which time the speed will be decreased to approximately 1 foot per second to minimize potential bow-wake activity and subsequent bottom disturbance.

After the grabs have tripped upon reaching the bottom, they will be raised slowly to allow gentle and complete closure of the sampler jaws, thus avoiding sample disturbance and loss. Once clear of the bottom, the ascent speed will be increased to approximately 4 feet per second. Care will

be taken to ensure that minimal sample disturbance occurs when swinging the grabs on board. Collection of undisturbed sediment requires that the grab samplers:

- create a minimal bow wake when descending;
- form a leak-proof seal upon closure of the jaws;
- are carefully retrieved to prevent excessive sample disturbance; and
- allow easy access to the sediment within the grab.

6.3 Sample Acceptability Criteria

When the grab samplers have been secured on board, the hinged top flaps will be opened and the samples examined for acceptability. Acceptability criteria will include that:

- the grabs are not overfilled to the point where there is evidence of sample loss around the access doors;
- overlying water is present, indicating minimal leakage;
- overlying water is not excessively turbid, indicating minimal sample disturbance; and
- a minimum acceptable sample penetration depth of at least 4 cm has been achieved.

Samples collected from the top 2 cm of sediment will require a minimum grab penetration depth of 4 cm. Samples collected from the top 10 cm of sediment will require a minimum grab penetration depth of 11 cm. Care will be taken to extract sediment from the most undisturbed center portion of each grab without collecting sediment that has touched the sides or bottom of the grab. Penetration depth will be determined by measuring the depth of sediment within each grab by sliding a ruler vertically along the inside of the grab's side wall after each successful cast. Penetration depth can also be calculated by measuring the space between the sediment's surface within the grab and the top of the grab, then subtracting this vertical distance from 17 cm, the total inside height of the grab at the center point. Overlying water within the grab will be carefully siphoned off of the sediment surface for all acceptable samples.

6.4 Sample Processing – Sediment Chemistry

Prior to any subsampling, sediment aliquots will be collected for analysis of volatile organic compounds and total sulfide. The volatile organic compound and total sulfide sample aliquots will always be collected from the top 2 cm of sediment in the first grab using a stainless steel spoon and then placed directly in the appropriate sample containers without homogenization. The remaining top 2 cm of undisturbed sediment will be collected from the first grab, as well as the subsequent two grabs, with a stainless steel "cookie cutter" and spatula. The sediment will then be placed in a stainless-steel bowl for homogenization, after which sediment aliquots will be transferred to appropriate laboratory containers. Prior to homogenization, collected sediment will be stored covered with aluminum foil in coolers since multiple grab deployments are required.

Head space will be left in all lab containers, with the exception of total sulfide and volatile organic compounds, to allow further mixing at the laboratory and for expansion should the containers be stored frozen. All sample containers will be stored in insulated, ice-filled coolers while in the field. Total sulfide samples also require the use of a preservative. After the 4-ounce total sulfide lab container has been filled completely, 5 milliliters (ml) of 2N zinc acetate will be added to the top of the sediment prior to sealing the container. All sample containers, storage conditions, and hold times are summarized in Table 6-1.

Table 6-1
Sediment Chemistry – Sample Containers, Storage Conditions, and Hold Times

Analyte	Container	Preferred Storage Conditions	Hold Time	Acceptable Storage Conditions	Hold Time
Ammonia	4-oz. PP[2,3]	refrigerate at 4°C	7 days to analyze	freeze at -18°C	6 months to analyze
PSD	16-oz. PP[1,3]	refrigerate at 4°C	6 months to analyze	N/A	N/A
TOC	4-oz. PP[3]	freeze at -18°C	6 months to analyze	refrigerate at 4°C	14 days to analyze
Percent Solids (collect w/ TOC)	4-oz.PP[3]	freeze at -18°C	6 months to analyze	refrigerate at 4°C	14 days to analyze
Total Sulfide	4-oz. PP[3] no headspace	refrigerate at 4°C w/ 2N Zn acetate	7 days to analyze	N/A	N/A
Volatile Solids (collect w/ TOC)	4-oz. PP[3]	freeze at -18°C	6 months to analyze	refrigerate at 4°C	14 days to analyze
Mercury	250-ml PP[2]	freeze at -18°C	28 days to analyze	N/A	N/A
Other Metals	250-ml PP	freeze at -18°C	2 years to analyze	refrigerate at 4°C	6 months to analyze
BNAs	16-oz. glass	freeze at -18°C	1 year to extract 40 days to analyze	refrigerate at 4°C	14 days to extract 40 days to analyze
Chl. Pest./PCBs (collect w/ BNAs)	16-oz. glass	freeze at -18°C	1 year to extract 40 days to analyze	refrigerate at 4°C	14 days to extract 40 days to analyze
VOCs	4-oz. glass no headspace	refrigerate at 4°C	14 days to analyze	N/A	N/A

[1]One additional 16-oz. PP container should be collected every 10 samples to be used for quality control purposes.
[2]PP – polypropylene.
[3]PP container is preferred but glass container is also acceptable.

6.5 Sample Processing – Benthic Taxonomy

Sediment from acceptable grabs will be flushed with ambient seawater through a 1.0-millimeter sieve to remove all fine material. The remaining sediment will then be transferred into 1-liter plastic containers using a minimum amount of seawater.

A 10% solution of buffered formalin will be added to the sample to preserve all tissues prior to sealing the container. Samples will be labeled both on the inside and outside of the container, then recorded on chain of custody forms, and placed in coolers for at least 24 hours, but not exceeding 96 hours, prior to rescreening by contract laboratory personnel.

Benthic samples will be rescreened at the contract laboratory from the 10% buffered formalin solution to 70% ethanol as recommended by PSEP protocols (PSEP 1987).

6.6 Sampling Equipment Decontamination

The grab samplers will be decontaminated between sampling stations by scrubbing with a brush and ambient sea water, followed by a thorough *in situ* rinsing. A separate stainless-steel bowl, cookie cutter, spatula, and spoon will be dedicated to each sampling station, precluding the need for decontamination of this equipment in the field.

6.7 Sample Storage and Delivery

All sample containers will be stored in an insulated cooler containing ice immediately after collection to maintain the samples at a temperature of approximately 4^{o} Celsius until delivery to the laboratory. Sample containers from each station will be grouped and placed in plastic bags to

facilitate sample receipt and login. At the end of each sampling day, all samples will be transported back to the King County Environmental Laboratory and the benthic taxonomy laboratory.

6.8 Chain of Custody

Chain of custody (COC) will commence at the time that each sample is collected. While in the field, all samples will be under direct possession and control of King County field staff or the benthic taxonomy contractor. For chain of custody purposes, the research vessel will be considered a "controlled area." Each day, all sample information will be recorded on a COC form. This form will be completed in the field and will accompany all samples during transport and delivery to the laboratory each day. Upon arrival at the King County Environmental Laboratory, the sample delivery person will relinquish all samples to the sample login person. The date and time of sample delivery will be recorded and both parties will then sign off in the appropriate sections on the COC form at this time. Once completed, original COC forms will be archived in the project file. Samples delivered after regular business hours will be stored in a secure chain of custody refrigerator until the next day. An example of the King County Environmental Laboratory's COC form is included as Figure 3.

7 SAMPLE DOCUMENTATION

Sampling information and sample metadata will be documented using the methods noted below.

- Field sheets generated by King County's Laboratory Information Management System (LIMS) that will include information such as:
    1. sample identification number
    2. station name
    3. station bottom depth
    4. sediment depth (i.e., sampler penetration depth) for each successful grab deployment
    5. physical sediment characteristics
    6. date and time of sample collection
    7. condition and height of tide
    8. name of recorder
- LIMS-generated container labels will identify each container with a unique sample number, station and site names, collect date, analyses required, and preservation method.
- The *Liberty's* logbook will contain records of all shipboard activities, destinations, arrival and departure times, general weather and positioning information, the names of shipboard personnel.
- The *Liberty's* cruise plan will list the prescribed stations to be sampled, along with their respective coordinates and other associated locating information.
- Electronic DGPS coordinate data will be electronically logged for each acceptable grab deployment, using both latitude/longitude and NAD 83 State Plane formats.
- COC documentation will consist of the King County Environmental Laboratory's standard COC form, which is used to track release and receipt of each sample from collection to arrival at the lab.

A sample of a typical field sheet used by the King County Environmental Laboratory is included as Figure 4.

8 FIELD MEASUREMENTS AND OBSERVATIONS

The following field measurements and observations will be recorded on the appropriate field sheet/log for each sample:

- sample (bottom) depth - measured as keel depth by vessel's fathometer;
- sediment depth (grab penetration depth) - measured by ruler inside the grab;
- sediment sampling range (0 to 2 cm for Stations DWMP-01 through DWMP-16 and 0 to 10 cm for Stations DW-01, DW-03, DW-13, DW-19, DW-33, DW-34, and LTBC20);
- sediment type (a mnemonic code indicating color, gross grain size, odor, and debris);
- tide condition and height; and
- collect date, collect time, and sampling personnel.

9 SEDIMENT CHEMISTRY ANALYTICAL METHODS

Analytical methods for sediment chemistry samples are presented in the following subsections. Sediment chemistry analytical parameters were selected based on guidance for conducting sediment characterizations (ACOE 2000; Ecology 2003) and will allow comparison of analytical results with published sediment quality guidelines/criteria (ACOE 2000; Ecology 1995). All analyses will be performed at the King County Environmental Laboratory and will follow guidelines recommended in the most recent editions of the Puget Sound Protocols (PSEP 1986, 1997b,1997c at this time).

The terms MDL and RDL, used in the following sediment chemistry analysis subsections, refer to *method detection limit* and *reporting detection limit*, respectively. The MDL is defined as *the minimum concentration of a chemical constituent that can be detected*, while the RDL is defined as *the minimum concentration of a chemical constituent that can be reliably quantified.*

9.1 Conventionals – Analytical Methods and Detection Limits

Conventional sediment parameters will include ammonia, particle size distribution (PSD), total organic carbon (TOC), total and volatile solids, and total sulfide. The analytical methods and detection limits for conventional parameters are summarized in Table 9-1.

Table 9-1
Conventional Methods and Detection Limits

Parameter	Method	MDL	RDL	Units[1]
Ammonia	SM 4500-NH3-G	0.2	0.4	mg/Kg dry wt.
PSD (gravel and sand)	ASTM D422	0.1	1.0	percent dry wt.
PSD (silt and clay)	ASTM D422	0.5	1.0	percent dry wt.
Total Organic Carbon	EPA 9060, PSEP 1996	1,000	2,000	mg/Kg dry wt.[2]
Total Solids	SM 2540-G	0.005	0.01	percent wet wt.
Total Sulfide	EPA 9030B/SM 4500-S2-D	1.0	4.0	mg/Kg dry wt.
Volatile Solids	SM 2540-G	0.005	0.01	percent wet wt.[3]

[1]Dry-weight MDLs for ammonia, TOC, and sulfide are based on an assumed 50% solids content.
[2]Stored on King County's LIMS data base in units of mg/Kg but will be reported to SEDQUAL in units of %.
[3]Stored on King County's LIMS data base in units of percent but will be reported to SEQUAL in units of mg/Kg.

Total solids will be analyzed on all samples to allow normalization of all other sediment chemistry data except PSD to dry weight. Volatile solids will be analyzed to provide an estimate of the organic content of the sediment. Total and volatile solids analyses will be performed according to the latest edition of Standard Method (SM)2540-G (APHA 1998), which is a gravimetric determination. Results for solids analyses are presented in units of percent on a wet weight basis.

TOC analysis will be performed on all samples to allow normalization of some organic parameters to organic carbon. TOC analysis will be performed according to EPA Method 9060/SW-846 (EPA 1995), high-temperature combustion with infrared spectroscopy. Results for TOC analysis are presented in units of mg/Kg on a dry weight basis.

PSD analysis will be performed according to ASTM Method D422 (ASTM 2002), which is a combination of sieve and hydrometer analyses. Results for PSD analysis are presented in units of percent on a dry weight basis, both for phi sizes and for the four broad classifications of clay,

silt, sand, and gravel. Results for the clay and silt fractions are also summed to provide a result for "percent fines."

Ammonia and total sulfide, which are indicators of potential sediment toxicity, will be analyzed by SM 4500-NH3-G and SM 4500-S2-D (EPA 9030B), respectively. Ammonia analysis will involve a potassium chloride extraction followed by spectrometric analysis of the extract. Total sulfide will be analyzed by distillation following acidification and colorimetric analysis of the distillate.

9.2 Trace Metals – Analytical Methods and Detection Limits

The analytical methods and detection limits for the target trace metals are summarized in Table 9-2. These MDLs and RDLs are presented on a wet-weight basis and are based on an initial sample weight of 1±0.05 grams (g) and a final volume of 50 ml for ICP metals and 100 ml for mercury. Mercury will be analyzed by cold vapor atomic absorption spectroscopy (CVAA) and other metals will be analyzed by inductively coupled plasma optical emission spectroscopy (ICP-OES) with a strong acid digestion.

Table 9-2
Trace Metals Target Analytes, Methods, and Detection Limits (mg/Kg wet weight)

Analyte	Method	MDL	RDL
Antimony	EPA 3050B/6010B	1.5	7.5
Arsenic	EPA 3050B/6010B	1.25	6.25
Cadmium	EPA 3050B/6010B	0.10	0.50
Chromium	EPA 3050B/6010B	0.125	.625
Copper	EPA 3050B/6010B	0.20	1.0
Lead	EPA 3050B/6010B	.75	3.75
Mercury	EPA 7471A	0.005	0.05
Nickel	EPA 3050B/6010B	.25	1.25
Silver	EPA 3050B/6010B	0.20	1.0
Zinc	EPA 3050B/6010B	0.25	1.25

Trace metal MDLs, normalized to dry weight over a range of percent solids concentrations, are shown in Appendix A. This information is provided to demonstrate whether dry-weight normalized trace metal MDLs will meet Ecology's recommended Practical Quantitation Limits (PQLs) from the Sampling and Analysis Plan Appendix (SAPA) (Ecology 2003). The information in Appendix A shows that all dry-weight normalized MDLs for trace metals meet the SAPA-recommended PQLs at the range of percent solids from 25 to 75%.

9.3 Trace Organics – Analytical Methods and Detection Limits

Trace organic parameters will include base/neutral/acid extractable semivolatile compounds (BNAs), chlorinated pesticides, PCBs, and volatile organic compounds (VOCs). The analytical methods and detection limits for the target trace organic compounds are summarized in Tables 9-3 through 9-6 on a wet-weight basis.

Results for certain non-ionizing organic compounds are generally normalized to organic carbon for comparison to SMS chemical criteria. The King County Environmental Laboratory has attempted to optimize its procedures to produce the lowest cost-effective MDLs that are routinely achievable in a standard sediment sample. These MDLs should meet the required SMS chemical criteria for each parameter in most cases. The ability of the laboratory to attain

detection limits which meet organic-carbon normalized chemical criteria, however, will depend upon the TOC content of each sample.

Organic-carbon normalized detection limits are shown in Table 9-7. These values are based on the wet weight detection limits shown in Tables 9-3 and 9-5 and converted using a conservatively-low percent solids concentration of 35% and the minimum TOC content that would be applicable for organic-carbon normalization (0.5% by dry weight).

9.3.1 BNA Target Analytes and Detection Limits

The detection limits for the target BNA compounds are summarized in Table 9-3. These MDLs and RDLs are presented on a wet-weight basis and are based on a 40 g extraction with gel permeation cleanup and concentration to a final volume of 0.5 ml for analysis. Note that the detection limits can vary if limited sample is available for extraction (less than 30 g) or if dilution is required due to elevated analyte concentration(s). BNA analysis will be performed according to EPA methods 3550B/8270C (SW 846), which employ solvent extraction with sonication and analysis by gas chromatography/mass spectroscopy (GC/MS).

Table 9-3

BNA Target Analytes and Detection Limits (µg/Kg wet weight)

Analyte	MDL	RDL	Analyte	MDL	RDL
1,2,4-Trichlorobenzene	0.27	0.53	Chrysene	2.7	5.3
1,2-Dichlorobenzene	0.27	0.53	Coprostanol	53	106
1,3-Dichlorobenzene	0.27	0.53	Dibenzo(a,h)anthracene	2.7	5.3
1,4-Dichlorobenzene	0.27	0.53	Dibenzofuran	2.7	5.3
2,4-Dimethylphenol	2.7	5.3	Diethyl Phthalate	5.3	10.6
2-Methylnaphthalene	2.7	5.3	Dimethyl Phthalate	5.3	10.6
2-Methylphenol	5.3	10.6	Di-N-Butyl Phthalate	5.3	10.6
4-Methylphenol	5.3	10.6	Di-N-Octyl Phthalate	5.3	10.6
Acenaphthene	2.7	5.3	Fluoranthene	2.7	5.3
Acenaphthylene	2.7	5.3	Fluorene	2.7	5.3
Anthracene	2.7	5.3	Hexachlorobenzene	0.53	1.1
Benzo(a)anthracene	2.7	5.3	Hexachlorobutadiene	1.3	2.6
Benzo(a)pyrene	2.7	5.3	Hexachloroethane	2.7	5.3
Benzo(b)fluoranthene	2.7	5.3	Indeno(1,2,3-cd)pyrene	2.7	5.3
Benzo(g,h,i)perylene	2.7	5.3	Naphthalene	2.7	5.3
Benzo(k)fluoranthene	2.7	5.3	N-Nitrosodiphenylamine	5.3	10.6
Benzoic Acid	13	26	Pentachlorophenol	13.3	26.7
Benzyl Alcohol	5.3	10.6	Phenanthrene	2.7	5.3
Benzyl Butyl Phthalate	5.3	10.6	Phenol	5.3	10.6
Bis(2-Ethylhexyl) Phthalate	5.3	10.6	Pyrene	5.3	10.6
Caffeine	4.0	8.0	Total 4-Nonylphenol	5.0	10.0
Carbazole	2.0	4.0			

MDLs for BNA compounds, normalized to dry weight over a range of percent solids concentrations, are shown in Appendix A. This information is provided to demonstrate whether dry-weight normalized MDLs for BNAs will meet Ecology's recommended PQLs. The information in Appendix A shows that all dry-weight normalized MDLs for BNA compounds meet the SAPA-recommended PQLs at the range of percent solids from 25 to 75%.

9.3.2 Chlorinated Pesticide and PCB Target Analytes and Detection Limits

The detection limits for the target chlorinated pesticides and PCB Aroclors® are summarized in Tables 9-4 and 9-5. These MDLs and RDLs are presented on a wet-weight basis and are based on a 20 g extraction with gel permeation cleanup and concentration to a final volume of 0.5 ml for PCB analysis and 2.5 ml for pesticides. Note that the detection limits can vary if limited sample is available for extraction (less than 30 g) or if dilution is required due to elevated analyte concentration(s). Chlorinated pesticide/PCB analysis will be performed according to EPA methods 3550B/8081A/8082 (SW 846), which employ solvent extraction with sonication and analysis by gas chromatography with electron capture detector (GC/ECD) and dual column confirmation.

Table 9-4
Chlorinated Pesticide Target Analytes and Detection Limits (µg/Kg wet weight)

Analyte	MDL	RDL	Analyte	MDL	RDL
4,4'-DDD	1.0	2.0	Endosulfan II	1.0	2.0
4,4'-DDE	1.0	2.0	Endosulfan Sulfate	1.0	2.0
4,4'-DDT	1.0	2.0	Endrin	1.0	2.0
Aldrin	1.0	2.0	Endrin Aldehyde	2.0	4.0
Alpha-BHC	0.5	1.0	Gamma-BHC (Lindane)	0.5	1.0
Alpha-Chlordane	0.5	1.0	Gamma-Chlordane	0.5	1.0
Beta-BHC	0.5	1.0	Heptachlor	0.5	1.0
Delta-BHC	0.5	1.0	Heptachlor Epoxide	0.5	1.0
Dieldrin	1.0	2.0	Methoxychlor	5.0	10
Endosulfan I	1.0	2.0	Toxaphene	10	20

Table 9-5
PCB Target Analytes and Detection Limits (µg/Kg wet weight)

Analyte	MDL	RDL	Analyte	MDL	RDL
Aroclor 1016	1.3	2.6	Aroclor 1248	1.3	2.6
Aroclor 1221	3.3	6.6	Aroclor 1254	1.3	2.6
Aroclor 1232	3.3	6.6	Aroclor 1260	1.3	2.6
Aroclor 1242	1.3	2.6			

MDLs for chlorinated pesticides and PCBs, normalized to dry weight over a range of percent solids concentrations, are shown in Appendix A. This information is provided to demonstrate whether dry-weight normalized MDLs for chlorinated pesticides and PCBs will meet Ecology's recommended PQLs. The information in Appendix A shows that dry-weight normalized MDLs for chlorinated pesticides and PCB Aroclors meet the SAPA-recommended PQLs at the range of percent solids from 25 to 75% with two exceptions. The dry-weight normalized MDLs for Aroclors 1221 and 1232 at 25% and 50% solids exceed the SAPA-recommended PQL of 6 µg/Kg DW. This should not prove problematic, however, since the highest dry-weight normalized MDL of 13 µg/Kg DW is still a factor of 10 lower than the LAET of 130 µg/Kg DW.

9.3.3 VOC Target Analytes and Detection Limits

The detection limits for VOC target analytes are summarized in Table 9-6. These MDLs and RDLs are presented on a wet-weight basis and are based on a 5 g purge onto the VOA trap and desorbed onto the GC/MS. Note that the detection limits can vary if limited sample is available for purging (less than 5 g) or if dilution is required due to elevated analyte concentration(s).

VOC analysis will be performed according to EPA method 8260, which employs a methanol extraction diluted in reagent water and introduced via purge and trap to analysis by GC/MS.

Table 9-6
VOC Target Analytes and
Detection Limits (µg/Kg wet weight)

Analyte	MDL	RDL
Ethylbenzene	1.0	2.0
Tetrachloroethene (PCE)	1.0	2.0
Trichloroethene (TCE)	1.0	2.0
Total Xylenes	1.0	2.0

MDLs for VOCs, normalized to dry weight over a range of percent solids concentrations, are shown in Appendix A. This information is provided to demonstrate whether dry-weight normalized MDLs for VOCs will meet Ecology's recommended PQLs. The information in Appendix A shows that dry-weight normalized MDLs for VOCs meet the SAPA-recommended PQLs at the range of percent solids from 25 to 75% with four exceptions. The dry-weight normalized MDLs for ethylbenzene, PCE, TCE, and total xylenes at 25% solids exceed the SAPA-recommended PQL of 3.2 µg/Kg DW. This should not prove problematic, however, since the lowest percent solids detected in samples collected previously at Denny Way has been 35%, which provides a dry-weight normalized MDL of 2.9 µg/Kg.

9.3.4 Organic-Carbon Normalized Detection Limits

Table 9-7 shows the organic-carbon normalized detection limits for the non-ionizable organic compounds regulated under the SMS, based on a percent solids concentration of 35% and a TOC content of 0.5%.

Table 9-7
Non-Ionizable Organic Compound Detection Limits (mg/Kg OC)

Analyte	MDL	RDL	Analyte	MDL	RDL
2-Methylnaphthalene	1.5	3.0	Pyrene	3.0	6.1
Acenaphthene	1.5	3.0	1,2,4-Trichlorobenzene	0.15	0.30
Acenaphthylene	1.5	3.0	1,2-Dichlorobenzene	0.15	0.30
Anthracene	1.5	3.0	1,4-Dichlorobenzene	0.15	0.30
Benzo(a)anthracene	1.5	3.0	Hexachlorobenzene	0.30	0.63
Benzo(a)pyrene	1.5	3.0	Benzyl Butyl Phthalate	3.0	6.1
Benzo(b)fluoranthene	1.5	3.0	Diethyl Phthalate	3.0	6.1
Benzo(g,h,i)perylene	1.5	3.0	Dimethyl Phthalate	3.0	6.1
Benzo(k)fluoranthene	1.5	3.0	Di-N-Butyl Phthalate	3.0	6.1
Chrysene	1.5	3.0	Bis(2-Ethylhexyl) Phthalate	3.0	6.1
Dibenzo(a,h)anthracene	1.5	3.0	Di-N-Octyl Phthalate	3.0	6.1
Fluoranthene	1.5	3.0	Dibenzofuran	1.5	3.0
Fluorene	1.5	3.0	Hexachlorobutadiene	0.74	1.5
Indeno(1,2,3-cd)pyrene	1.5	3.0	N-Nitrosodiphenylamine	3.0	6.1
Naphthalene	1.5	3.0	PCBs (1016, 1242, 1248, 1254, 1260)	0.74	1.5
Phenanthrene	1.5	3.0	PCBs (1221, 1232)	1.9	3.8

All of the organic carbon normalized MDLs shown in Table 9-7 are below their respective SQS chemical criteria from Table I of Chapter 173-204 WAC (Ecology 1995).

10 BENTHIC TAXONOMY ANALYTICAL METHODS

Contract laboratory staff will be expected to use standard and accepted techniques to sort all organisms from sediments (PSEP 1987). Small fractions of sample material will be placed in a petri dish under a 10X dissecting microscope. The petri dish will be scanned systematically and all animals and associated fragments will be removed using forceps. This sorting process will be conducted at least twice to ensure the removal of all animals. These organisms will then be separated out and placed in 70% ethanol according to one of the following major taxonomic groups: Annelida, Crustacea, Mollusca, and miscellaneous taxa (Echinodermata, Nemertea, Sipuncula, etc.).

All organisms will be counted and identified to the lowest practical taxonomic level, which will usually be species. If animal fragments are present, only anterior portions will be counted. Identifications will be performed by regional taxonomic experts using stereo dissecting and high-power compound microscopes. Biomass measurements will also be performed in accordance with standard PSEP procedures.

11 LABORATORY QUALITY ASSURANCE/QUALITY CONTROL

This section presents laboratory quality assurance/quality control (QA/QC) measures that will be employed to ensure data are of sufficient quality to meet the project DQOs.

11.1 Sediment Chemistry QA/QC

The quality control (QC) samples that will be analyzed in association with sediment chemistry samples are summarized in Table 11-1. The frequency of method blanks, duplicates, triplicates, and matrix spikes is one per QC batch (20 samples maximum). The frequency of SRM (standard reference material) or LCS (laboratory control sample) analysis is one per project (40 samples maximum). LCS analysis is used in lieu of SRM analysis for selected analytes when an SRM may not be readily available. Surrogates are analyzed with every organic sample.

Table 11-1
Marine Sediment Chemistry Quality Control Samples

Analyte	Method Blank	Duplicate	Triplicate	Matrix Spike (MS)	MS Duplicate	SRM/LCS	Surrogates
Ammonia	Yes	No	Yes	Yes	No	No	No
PSD	No	No	Yes	No	No	No	No
TOC	Yes	No	Yes	Yes	No	Yes	No
Total Solids	Yes	No	Yes	No	No	No	No
Total Sulfide	Yes	No	Yes	Yes	No	No	No
Volatile Solids	Yes	No	Yes	No	No	No	No
Mercury	Yes	Yes	No	Yes	Yes	Yes	No
Other Metals	Yes	Yes	No	Yes	No	Yes	No
BNAs	Yes	Yes	No	Yes	Yes	Yes	Yes
Chl. Pesticides	Yes	Yes	No	Yes	Yes	Yes	Yes
PCBs	Yes	Yes	No	Yes	Yes	Yes	Yes
Vol. Organics	Yes	Yes	No	Yes	Yes	No	Yes

Quality assurance (QA1) marine sediment chemistry acceptance criteria (Ecology 1989) are shown in Table 11-2.

Table 11-2
QA1 Acceptance Criteria for Marine Sediment Chemistry Samples

Analyte	Method Blank	Duplicate	Triplicate	Matrix Spike	SRM/LCS	Surrogates
Ammonia	< MDL	N/A	RSD ≤ 20%	75 - 125%	N/A	N/A
PSD	N/A	N/A	RSD ≤ 20%	N/A	N/A	N/A
TOC	< MDL	N/A	RSD ≤ 20%	75 - 125%	80 - 120%	N/A
Total Solids	< MDL	N/A	RSD ≤ 20%	N/A	N/A	N/A
Total Sulfide	< MDL	N/A	RSD ≤ 20%	65 - 135%	N/A	N/A
Volatile Solids	< MDL	N/A	RSD ≤ 20%	N/A	N/A	N/A
Metals	< MDL	RPD ≤ 20%	N/A	75 - 125%	Appendix B	N/A
BNAs	< MDL	RPD ≤ 35%	N/A	Appendix B	Appendix B	Appendix B
Chl. Pesticides	< MDL	RPD ≤ 35%	N/A	Appendix B	Appendix B	Appendix B
PCBs	< MDL	RPD ≤ 35%	N/A	Appendix B	Appendix B	Appendix B
Vol. Organics	<MDL	RPD ≤ 35%	N/A	Appendix B	N/A	Appendix B

< MDL - Method Blank result should be less than the *method detection limit*.
RPD – Relative Percent Difference, RSD – Relative Standard Deviation
QC results for matrix spike, SRM/LCS, and surrogates are in *percent recovery of analyte.*

Some trace metal and organic analyses have empirically-derived laboratory limits for various QC samples. Specific laboratory-derived acceptance limits for trace metal and organic analyses are included as Appendix B. QC results that exceed the acceptance limits will be evaluated to determine appropriate corrective actions. Samples will typically be reanalyzed if the unacceptable QC results indicate a systematic problem with the overall analysis. Unacceptable QC results caused by a particular sample or matrix will not require reanalysis unless an allowed method modification would improve the results.

Analytical results that do not meet QA1 acceptance criteria will be qualified and flagged according to QA1 data validation guidance (Ecology 1989). Data qualifier flags and their interpretations are presented in Table 11-3.

Table 11-3
Data Qualifier Flags and QA1 Acceptance Criteria

Condition to Qualify	Flag	Organics QC Limits	Metals QC Limits	Conventionals QC Limits
Very low matrix spike recovery	X	<10 %	< 10 %	<10 %
Low matrix spike recovery	G	Appendix B	< 75%	<65 - 75%
High matrix spike recovery	L	Appendix B	>125%	>125 - 135%
Low SRM/LCS recovery	G	Appendix B	Appendix B	<80%
High SRM/LCS recovery	L	Appendix B	Appendix B	>120%
High duplicate RPD	E	>35 %	>20%	N/A
High triplicate RSD	E	N/A	N/A	>20%
Less than the reporting detection limit	<RDL	RDL	RDL	RDL
Less than the method detection limit	<MDL	MDL	MDL	MDL
Contamination in method blank	B	>MDL	> MDL	>MDL
Very biased data, low surrogate recoveries	X	<10%	N/A	N/A
Biased data, low surrogate recoveries	G	Appendix B	N/A	N/A
Biased data, high surrogate recoveries	L	Appendix B	N/A	N/A
Rejected, unusable for all purposes	R			
A sample handling criterion has been exceeded	H			

The individual surrogate recovery is used for all organic analyses with the following exception – for BNA analysis, one surrogate recovery per fraction is allowed to be outside acceptance limits without causing the associated sample data to be flagged. Sample handling criteria include an exceedance of hold time and incorrect preservation, container, or storage conditions.

11.2 Benthic Taxonomy QA/QC

The contractor for benthic taxonomic analysis will follow recommended PSEP guidelines for QA/QC (PSEP 1987). Benthic taxonomy QC will involve:

- independent verification by a qualified regional expert of 5% of the samples from each major taxonomic group; and
- the resorting of 20% of each processed sample by a different taxonomist to check for sorting efficiency and accuracy. The similarity index between the original and resorted sample results must be within the acceptance limits of the contract laboratory.

12 DATA REPORTING AND RECORD KEEPING

All project data will be reported to the following agencies as specified in the Biological Opinion:

- King County Department of Natural Resources, Wastewater Treatment Division
- National Marine Fisheries Service
- United States Fish and Wildlife Service
- United States Environmental Protection Agency
- Washington State Department of Natural Resources
- Washington State Department of Ecology

12.1 Sediment Chemistry Data

All sediment chemistry data will be reported in QA1 format (Ecology 1989). The final QA1 report will contain the following information and deliverables:

- a QA1 narrative discussing data quality in relation to study objectives and data criteria;
- all associated QC data (LIMS QC reports and worklists);
- copies of field sheets and COC forms; and
- a comprehensive report containing all analytical and field data (including data qualifier flags).

12.2 Benthic Taxonomy Data

The mean abundance and richness of each major taxon at the benthic taxonomy stations (at three replicates per station) will be reported. Various diversity indices will also be calculated for each station. Data will be compared to regional Puget Sound benthic data. A narrative explaining the results, including any anomalies and statistical evaluations, will be included.

12.3 Final Report and SEDQUAL Files

A final monitoring report will be prepared that will include a presentation and interpretation of the sediment chemistry and benthic taxonomy results. The report will compare sediment chemistry results to published sediment quality chemical criteria (ACOE 2000; Ecology 1995) as well as regional Puget Sound values in order to provide an evaluation of year one, post-construction sediment quality around the new CSO outfalls. Benthic taxonomy data will be compared to regional Puget Sound benthic data. The report narrative will include summary tables of sediment chemistry and benthic taxonomy results. Complete data packages and the QA1 review will be included as report appendices. The chemistry data will be also reported in SEDQUAL format (latest version) for delivery to Ecology.

12.4 Record Keeping

All field and sampling records, custody documents, raw lab data, and summaries and narratives will be archived according to King County Environmental Laboratory policy, for a minimum of 10 years from the date samples were collected. Interpretative reports and memoranda, along with all chemistry data, benthic taxonomy data, and their respective data analysis project narratives and reports will be stored in project files for a minimum of 10 years from the date samples were collected. Appendix C includes LIMS “product names” and “list types” under which analytical data will be stored.

13 PROJECT HEALTH AND SAFETY

The following general health and safety guidelines have been provided in lieu of a site-specific Health and Safety Plan. These guidelines will be read and understood by all members of the sampling crew.

- All crew of the research vessel will have received annual vessel safety training, which will include proper chain of communication, equipment operation, and safe boating practices.
- Samplers will wear chemical-resistant gloves when coming into contact with sediment.
- No eating or drinking by sampling personnel will be allowed during sampling operations.
- All sampling operations will be conducted during daylight hours.
- All accidents, "near misses," and symptoms of possible exposure will be reported to a crew member's supervisor within 24 hours of occurrence.
- All crew members will be aware of the potential hazards associated with any chemicals used during the sampling effort.

Several hazards are inherent to marine sediment sampling. General vessel safety, physical hazards unique to sediment grab sampling, and chemical hazards are discussed in sections 13.1 through 13.3.

13.1 General Vessel Safety

To help prevent accidents and ensure adequate preparation for emergencies that may possibly arise, the following safety equipment will be required on the *Liberty*:

- one personal floatation device for each crew member as well as at least one throwable floatation device;
- an accessible, clearly labeled, fully stocked first-aid/CPR kit;
- an accessible and clearly-labeled eye wash;
- one (preferably two) VHF marine radio(s) with weather channel;
- a cellular telephone;
- a horn;
- navigation lights;
- an emergency life raft with oars or paddles;
- an anchor and suitable line;
- signal flares; and
- a reach pole or shepherd's hook.

Personal protective equipment will be selected and used that will protect workers involved in sediment sampling from the hazards and potential hazards likely to be encountered. Minimum required personal protective equipment for marine sediment sampling shall include the following:

- hard hat;
- steel-toed rubber boots;
- chemical-resistant gloves (i.e. Nitrile); and
- safety glasses (safety glasses will be available for use if sediment characteristics indicate the possible presence of hazardous chemicals; i.e., sheen or petroleum/solvent odor).

Recommended additional personal protective equipment will include rain gear and hearing protection when on board the *Liberty*.

13.2 Grab Sampling

Sampler deployment and retrieval present physical hazards due in part to the heavy weight of the grab sampler, its suspension above the vessel deck, and the risk of accidental or premature closure. Prior to each sampling event, all cabling, shackles, pins, housings, and swivels will be inspected to ensure the integrity of all points along the sampling assembly.

The sampler will always be set while it is resting on a stable surface. Once set, a safety pin will be set in place on the triggering mechanism and remain in place until the sampler is swung outboard of the vessel rail. Special care will be exercised when removing the safety pin to ensure personal safety in the event of a gear or winch failure. Fingers will not be placed through the ring of the pin when it is removed and hands will be kept completely clear of the sampler interior after the pin has been removed. If a sampler is retrieved that has not been tripped, it will be lowered to a stable surface before any worker contact.

During grab retrieval, one crew member will watch for the appearance of the grab sampler and alert the winch operator when the sampler is first visible below the water surface. Attempting to bring a swinging grab sampler on board poses a serious risk of being hit or knocked overboard. The winch operator will minimize swinging before the grab sampler is brought on board for the crew to secure. Hard hats and gloves will always be worn when handling the grab sampler.

The winch drum, blocks, capstan, and any area between the grab sampler and railings, the deck, and heavy equipment all represent significant pinching and crushing hazards. Only experienced crew members will operate the winch or capstan during a sampling event. Other crew members will exercise care to avoid these potentially hazardous areas.

13.3 Chemical Hazards

Contact with marine sediment at some sampling stations near the Elliott West CSO Storage and Treatment Facility and Denny Way CSO outfalls may present a health hazard from chemical constituents of the sediment, such as PAHs, PCBs, and mercury. Potential routes of exposure to chemical hazards include **inhalation, skin and eye absorption, ingestion, and injection**. Crew members will exercise caution to avoid coming into contact with sediment at all stations during sampling operations. Protective equipment will include chemical-resistant gloves, safety glasses or goggles, and protective clothing (i.e. rain gear). Crew members will exercise good personal hygiene after sampling and prior to eating or drinking.

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FIGURES

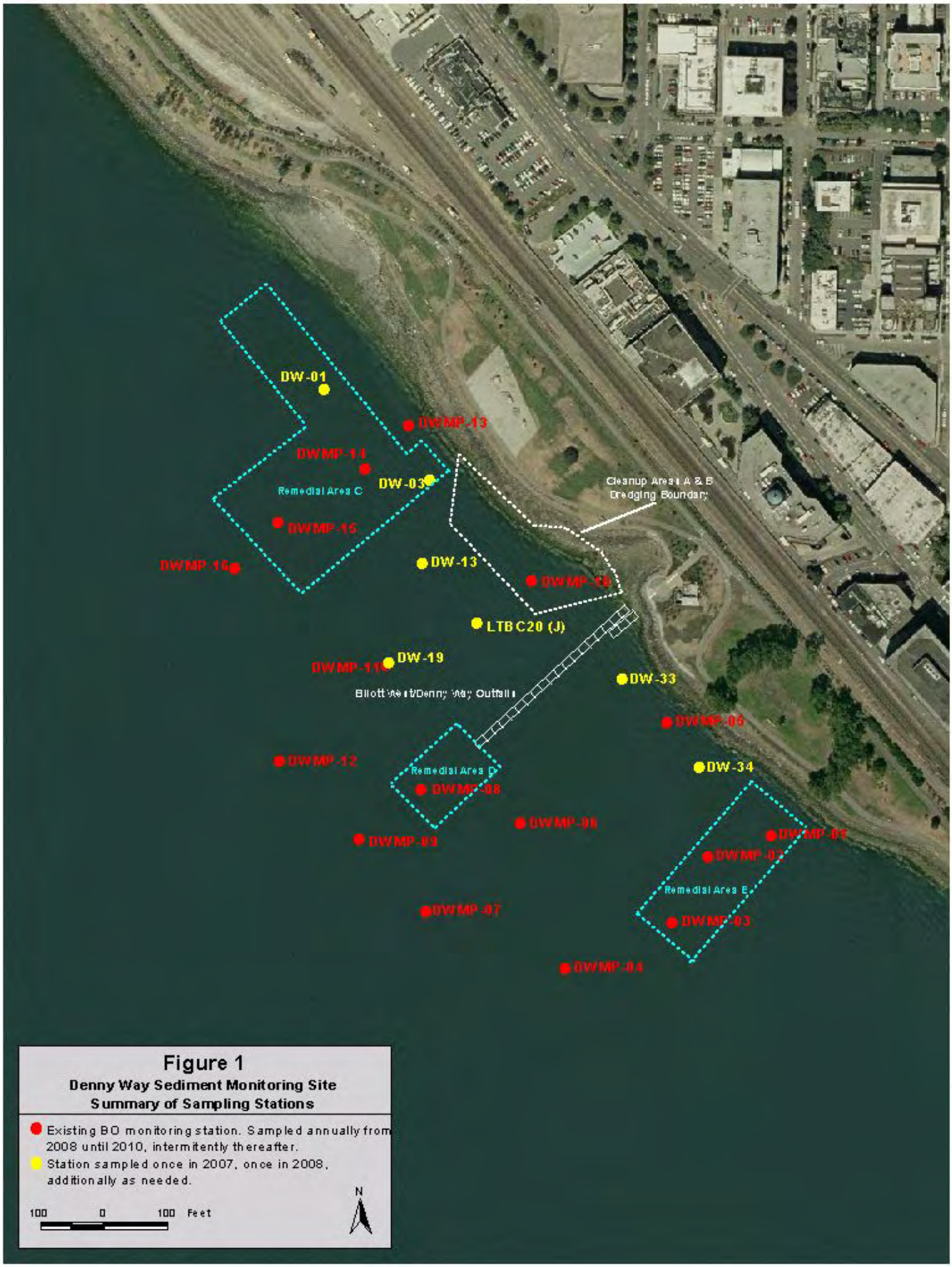

Figure 1

Denny Way Sediment Monitoring Site
Summary of Sampling Stations

- Existing BO monitoring station. Sampled annually from 2008 until 2010, intermitently thereafter.
- Station sampled once in 2007, once in 2008, additionally as needed.

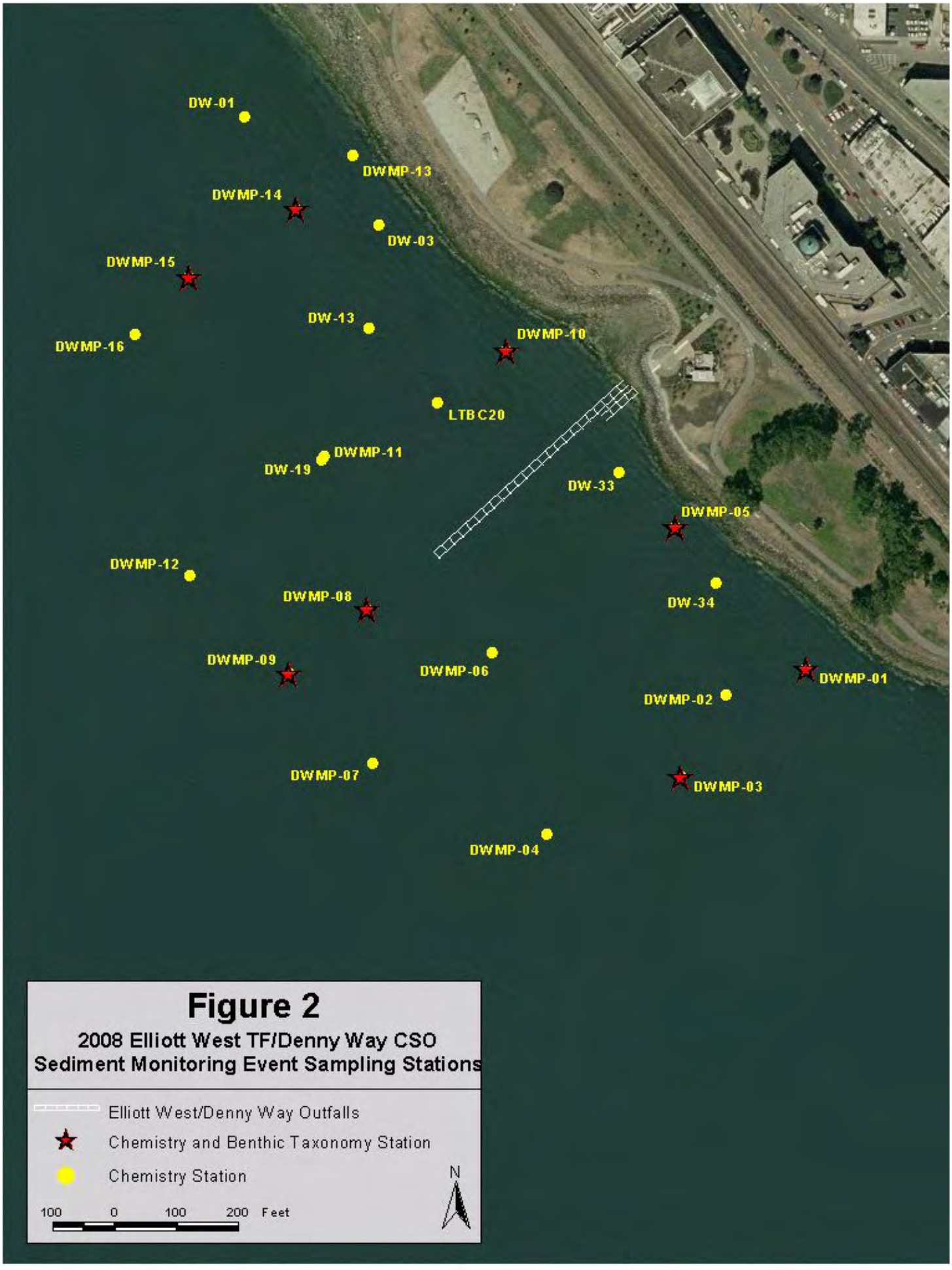
DW-01
DWMP-13
DWMP-14
DW-03
DWMP-15
DW-13
DWMP-16
DWMP-10
LTBC20
DWMP-11
DW-19
DW-33
DWMP-05
DWMP-12
DWMP-08
DW-34
DWMP-09
DWMP-06
DWMP-01
DWMP-02
DWMP-07
DWMP-03
DWMP-04
Figure 2
2008 Elliott West TF/Denny Way CSO
Sediment Monitoring Event Sampling Stations
Elliott West/Denny Way Outfalls
Chemistry and Benthic Taxonomy Station
Chemistry Station
100 0 100 200 Feet
N

FIGURE 4

KING COUNTY ENVIRONMENTAL LABORATORY
STANDARD FIELD SHEET

Fieldsheet ID: 421235_22JUN1999_101133 Page: 1

MAJOR LAKES (wtr col)

Project Number: 421235 Personnel: _____

Sample Number	P15790-1	P15790-2	P15790-3
Locator	0618	0623	0625
Short Loc. Desc.		Rosemnt SD	Sammslough
Locator Desc.		LAKE SAMM/WEST SHORE-ROSEMONT STOR	Lake Sammamish
Site	MAJOR LAKES	MAJOR LAKES	MAJOR LAKES
Sample Depth			
Collect Date			
Comments			
EH, FIELD			
SED DEPTH			
SED SAMP RANGE			
SED TYPE			
TIME			
Dept., Matrix, Prod			
	3 FRSHWTRSED AVS	3 FRSHWTRSED AVS	3 FRSHWTRSED AVS
	3 FRSHWTRSED NH3	3 FRSHWTRSED NH3	3 FRSHWTRSED NH3
	3 FRSHWTRSED PSD	3 FRSHWTRSED PSD	3 FRSHWTRSED PSD
	3 FRSHWTRSED TOC	3 FRSHWTRSED TOC	3 FRSHWTRSED TOC
	3 FRSHWTRSED TOTP	3 FRSHWTRSED TOTP	3 FRSHWTRSED TOTP
	3 FRSHWTRSED TOTS	3 FRSHWTRSED TOTS	3 FRSHWTRSED TOTS
	3 FRSHWTRSED TOTSULFIDE	3 FRSHWTRSED TOTSULFIDE	3 FRSHWTRSED TOTSULFIDE
	6 FRSHWTRSED HG-CVAA	6 FRSHWTRSED HG-CVAA	6 FRSHWTRSED HG-CVAA
	6 FRSHWTRSED PP ICPMS	6 FRSHWTRSED PP ICPMS	6 FRSHWTRSED PP ICPMS
	7 FRSHWTRSED BNA	7 FRSHWTRSED BNA	7 FRSHWTRSED BNA
	7 FRSHWTRSED CHLOROBENZENES	7 FRSHWTRSED CHLOROBENZENES	7 FRSHWTRSED CHLOROBENZENES
	7 FRSHWTRSED CLPESTPCB	7 FRSHWTRSED CLPESTPCB	7 FRSHWTRSED CLPESTPCB
	7 FRSHWTRSED HERB	7 FRSHWTRSED HERB	7 FRSHWTRSED HERB
	7 FRSHWTRSED OPPEST	7 FRSHWTRSED OPPEST	7 FRSHWTRSED OPPEST
	7 FRSHWTRSED TRIBUTYLTIN	7 FRSHWTRSED TRIBUTYLTIN	7 FRSHWTRSED TRIBUTYLTIN
	7 FRSHWTRSED WTPH-HCID	7 FRSHWTRSED WTPH-HCID	7 FRSHWTRSED WTPH-HCID

End of Fieldsheet.

FIGURE 3

KING COUNTY ENVIRONMENTAL LABORATORY
CHAIN OF CUSTODY FORM

LABORATORY WORK ORDER

Chain of Custody

Project Name:
Project Number:
Laboratory Project Manager:
Telephone Number:

King County Department of Natural Resources
Water and Land Resources Division
Environmental Laboratory
322 West Ewing Street
Seattle, Washington 98119-1507

				Analyses																
Sample Number	Locator	Collect Date	Collect Time	BNAS	BUTYLTIN	CHLOROBENZENES	METHYL MERCURY	PCBS	METALS - ICP	MERCURY - CVAA	AMMONIA	OIL & GREASE	PSD	TOC	SOLIDS	SULFIDE		Number of Containers	Comments

Additional Comments:

Total Number of Containers ___

Sampled By:

Relinquished By:		**Received By:**	
Signature	**Date**	**Signature**	**Date**
Printed Name	**Time**	**Printed Name**	**Time**
Organization		**Organization** King County Environmental Laboratory	

APPENDIX A

TRACE METAL AND TRACE ORGANIC DRY-WEIGHT NORMALIZED METHOD DETECTION LIMITS (MDLS) COMPARED TO RECOMMENDED PRACTICAL QUANTITATION LIMITS (PQLS)

TABLES A-1 THROUGH A-5

Table A-1
Dry-Weight Normalized MDLs for Trace Metals
Compared to SAPA PQLs (all values in mg/Kg)

Trace Metal	WW MDL	DW MDL 25%	DW MDL 50%	DW MDL 75%	DW SAPA PQL
Antimony	1.5	6.0	3.0	2.0	50
Arsenic	1.25	5	2.5	1.7	19
Cadmium	0.10	0.40	0.20	0.13	1.7
Chromium	0.125	0.50	0.25	.17	87
Copper	0.20	0.80	0.40	0.27	130
Lead	0.75	3.0	1.5	1.0	150
Mercury	0.005	0.020	0.010	0.0067	0.14
Nickel	0.25	1.0	0.50	0.33	47
Silver	0.20	0.80	0.40	0.27	2
Zinc	0.25	1.0	0.50	0.33	137

WW MDL – Nominal wet weight method detection limit from Table 9-2.
DW MDL – Dry-weight normalized method detection limit based on percent solids content of 25, 50, and 75%.
DW SAPA PQL – Recommended practical quantitation limit from Sampling and Analysis Plan Appendix (Ecology 2003).

All dry-weight normalized MDLs for trace metals meet the SAPA-recommended PQLs at the range of percent solids from 25 to 75%.

Table A-2
Dry-Weight Normalized MDLs for BNAs
Compared to SAPA PQLs (all values in µg/Kg)

BNA	WW MDL	DW MDL 25%	DW MDL 50%	DW MDL 75%	DW SAPA PQL
1,2,4-Trichlorobenzene	0.27	1.1	0.54	0.36	31
1,2-Dichlorobenzene	0.27	1.1	0.54	0.36	35
1,3-Dichlorobenzene	0.27	1.1	0.54	0.36	37
1,4-Dichlorobenzene	0.27	1.1	0.54	0.36	37
2,4-Dimethylphenol	2.7	11	5.4	3.6	29
2-Methylnaphthalene	2.7	11	5.4	3.6	223
2-Methylphenol	5.3	21	11	7.1	63
4-Methylphenol	5.3	21	11	7.1	223
Acenaphthene	2.7	11	5.4	3.6	167
Acenaphthylene	2.7	11	5.4	3.6	433
Anthracene	2.7	11	5.4	3.6	320
Benzo(a)anthracene	2.7	11	5.4	3.6	433
Benzo(a)pyrene	2.7	11	5.4	3.6	533
Benzo(b)fluoranthene	2.7	11	5.4	3.6	1,067
Benzo(g,h,i)perylene	2.7	11	5.4	3.6	223
Benzo(k)fluoranthene	2.7	11	5.4	3.6	1,067
Benzoic Acid	13	52	26	17	217
Benzyl Alcohol	5.3	21	11	7.1	57
Benzyl Butyl Phthalate	5.3	21	11	7.1	21
Bis(2-Ethylhexyl) Phthalate	5.3	21	11	7.1	433
Caffeine	4.0	16	8	5.2	--
Carbazole	2.0	8.0	4.0	2.6	--
Chrysene	2.7	11	5.4	3.6	467
Coprostanol	53	210	110	71	--
Dibenzo(a,h)anthracene	2.7	11	5.4	3.6	77
Dibenzofuran	2.7	11	5.4	3.6	180
Diethyl Phthalate	5.3	21	11	7.1	67
Dimethyl Phthalate	5.3	21	11	7.1	24
Di-N-Butyl Phthalate	5.3	21	11	7.1	467
Di-N-Octyl Phthalate	5.3	21	11	7.1	2,067
Fluoranthene	2.7	11	5.4	3.6	567
Fluorene	2.7	11	5.4	3.6	180
Hexachlorobenzene	0.53	2.1	1.1	0.71	22
Hexachlorobutadiene	1.3	5.2	2.6	1.7	11
Hexachloroethane	2.7	11	5.4	3.6	47
Indeno(1,2,3-cd)pyrene	2.7	11	5.4	3.6	200
Naphthalene	2.7	11	5.4	3.6	700
N-Nitrosodiphenylamine	5.3	21	11	7.1	28
Pentachlorophenol	13	52	26	17	120
Phenanthrene	2.7	11	5.4	3.6	500
Phenol	5.3	21	11	7.1	140
Pyrene	5.3	21	11	7.1	867
Total 4-Nonylphenol	5.0	20	10	6.7	--

WW MDL – Nominal wet weight method detection limit from Table 9-3.
DW MDL – Dry-weight normalized method detection limit based on percent solids content of 25, 50, and 75%.
DW SAPA PQL – Recommended practical quantitation limit from Sampling and Analysis Plan Appendix (Ecology 2003a).

All dry-weight normalized MDLs for BNA compounds meet the SAPA-recommended PQLs at the range of percent solids from 25 to 75%.

Table A-3
Dry-Weight Normalized MDLs for Chlorinated Pesticides Compared to SAPA PQLs (all values in µg/Kg)

Pesticide	WW MDL	DW MDL 25%	DW MDL 50%	DW MDL 75%	DW SAPA PQL
4,4'-DDD	1.0	4	2	1.3	3.3
4,4'-DDE	1.0	4	2	1.3	2.3
4,4'-DDT	1.0	4	2	1.3	6.7
Aldrin	1.0	4	2	1.3	1.7
Alpha-BHC	0.5	2	1	0.7	--
Alpha-Chlordane	0.5	2	1	0.7	1.7
Beta-BHC	0.5	2	1	0.7	--
Delta-BHC	0.5	2	1	0.7	--
Dieldrin	1.0	4	2	1.3	2.3
Endosulfan I	1.0	4	2	1.3	--
Endosulfan II	1.0	4	2	1.3	--
Endosulfan Sulfate	1.0	4	2	1.3	--
Endrin	1.0	4	2	1.3	--
Endrin Aldehyde	2.0	8	4	2.7	--
Gamma-BHC (Lindane)	0.5	2	1	0.7	1.7
Gamma-Chlordane	0.5	2	1	0.7	1.7
Heptachlor	0.5	2	1	0.7	1.7
Heptachlor Epoxide	0.5	2	1	0.7	--
Methoxychlor	5.0	20	10	6.7	--
Toxaphene	10	40	20	13	--

WW MDL – Nominal wet weight method detection limit from Table 9-4.
DW MDL – Dry-weight normalized method detection limit based on percent solids content of 25, 50, and 75%.
DW SAPA PQL – Recommended practical quantitation limit from Sampling and Analysis Plan Appendix (Ecology 2003).

All dry-weight normalized MDLs for chlorinated pesticides meet the SAPA-recommended PQLs at the range of percent solids from 50 to 75%. Except for DDT, all dry-weight normalized MDLs are above the SAPA-recommended PQL at 25% total solids.

Table A-4
Dry-Weight Normalized MDLs for PCBs Compared to SAPA PQLs (all values in µg/Kg)

PCB	WW MDL	DW MDL 25%	DW MDL 50%	DW MDL 75%	DW SAPA PQL
Aroclor 1016	1.3	5.2	2.6	1.7	6
Aroclor 1221	3.3	13	6.6	4.4	6
Aroclor 1232	3.3	13	6.6	4.4	6
Aroclor 1242	1.3	5.2	2.6	1.6	6
Aroclor 1248	1.3	5.2	2.6	1.7	6
Aroclor 1254	1.3	5.2	2.6	1.7	6
Aroclor 1260	1.3	5.2	2.6	1.7	6

WW MDL – Nominal wet weight method detection limit from Table 9-5.
DW MDL – Dry-weight normalized method detection limit based on percent solids content of 25, 50, and 75%.
DW SAPA PQL – Recommended practical quantitation limit from Sampling and Analysis Plan Appendix (Ecology 2003).

Dry-weight normalized MDLs for PCB Aroclors meet the SAPA-recommended PQLs at the range of percent solids from 25 to 75% with two exceptions. The dry-weight normalized MDLs for Aroclors 1221 and 1232 at 25% and 50% solids exceed the SAPA-recommended PQL of 6 µg/Kg DW.

Table A-5
Dry-Weight Normalized MDLs for VOCs
Compared to SAPA PQLs (all values in µg/Kg)

VOC	WW MDL	DW MDL 25%	DW MDL 50%	DW MDL 75%	DW SAPA PQL
Ethylbenzene	1.0	4.0	2.0	1.3	3.2
Tetrachloroethene (PCE)	1.0	4.0	2.0	1.3	3.2
Trichloroethene (TCE)	1.0	4.0	2.0	1.3	3.2
Total Xylenes	1.0	4.0	2.0	1.3	3.2

WW MDL – Nominal wet weight method detection limit from Table 9-6.
DW MDL – Dry-weight normalized method detection limit based on percent solids content of 25, 50, and 75%.
DW SAPA PQL – Recommended practical quantitation limit from Sampling and Analysis Plan Appendix (Ecology 2003).

Dry-weight normalized MDLs for VOCs meet the SAPA-recommended PQLs at the range of percent solids from 25 to 75% with four exceptions. The dry-weight normalized MDLs for ethylbenzene, PCE, TCE, and total xylenes at 25% solids exceed the SAPA-recommended PQL of 3.2 µg/Kg DW.

APPENDIX B

TRACE METAL AND TRACE ORGANIC QC LIMITS

TABLES B1 – B10

Table B-1a
Laboratory QC Limits for Sediment Metals – SRM Recoveries (PACS-2)

Parameter	Lower Limit (%)	Upper Limit (%)
Chromium	30	70
Copper	78	118
Lead	74	114
Mercury	80	120
Nickel	51	91
Zinc	73	113

Table B-1b
Laboratory QC Limits for Sediment Metals – LCS Recoveries (ERA Soil)

Parameter	Lower Limit (%)	Upper Limit (%)
Antimony	10	211
Arsenic	80	120
Cadmium	80	120
Chromium	79	121
Copper	80	120
Lead	80	120
Nickel	80	120
Silver	66	134
Zinc	79	121

No QA1 flagging occurs as a result of LCS recoveries being outside of control limits.

Table B-2
Laboratory QC Limits for Sediment BNAs, Matrix Spike Recoveries

Parameter	Lower Limit (%)	Upper Limit (%)	Parameter	Lower Limit (%)	Upper Limit (%)
1,2,4-Trichlorobenzene	10	115	Chrysene	14	184
1,2-Dichlorobenzene	10	105	Coprostanol	10	183
1,3-Dichlorobenzene	10	103	Di-N-Butyl Phthalate	10	194
1,4-Dichlorobenzene	10	104	Di-N-Octyl Phthalate	52	151
2,4-Dimethylphenol	10	150	Dibenzo(a,h)anthracene	10	166
2-Methylnaphthalene	22	112	Dibenzofuran	21	134
2-Methylphenol	10	142	Diethyl Phthalate	31	150
4-Methylphenol	10	163	Dimethyl Phthalate	13	162
Acenaphthene	25	130	Fluoranthene	12	188
Acenaphthylene	27	132	Fluorene	22	147
Anthracene	10	181	Hexachlorobenzene	18	151
Benzo(a)anthracene	32	168	Hexachlorobutadiene	10	97
Benzo(a)pyrene	10	200	Hexachloroethane	10	89
Benzo(b)fluoranthene	10	199	Indeno(1,2,3-Cd)Pyrene	10	177
Benzo(g,h,i)perylene	10	173	N-Nitrosodiphenylamine	10	169
Benzo(k)fluoranthene	10	192	Naphthalene	12	97
Benzoic Acid	10	158	Pentachlorophenol	17	170
Benzyl Alcohol	10	138	Phenanthrene	10	200
Benzyl Butyl Phthalate	41	145	Phenol	10	127
Bis(2-Ethylhexyl)Phthalate	10	189	Pyrene	20	174

Table B-3
Laboratory QC Limits for Sediment BNAs, Blank Spike Recoveries

Parameter	Lower Limit (%)	Upper Limit (%)	Parameter	Lower Limit (%)	Upper Limit (%)
1,2,4-Trichlorobenzene	13	110	Chrysene	69	111
1,2-Dichlorobenzene	10	116	Coprostanol	10	159
1,3-Dichlorobenzene	18	95	Di-N-Butyl Phthalate	17	180
1,4-Dichlorobenzene	21	99	Di-N-Octyl Phthalate	10	200
2,4-Dimethylphenol	10	81	Dibenzo(a,h)anthracene	53	129
2-Methylnaphthalene	22	99	Dibenzofuran	37	97
2-Methylphenol	16	91	Diethyl Phthalate	51	118
4-Methylphenol	10	125	Dimethyl Phthalate	38	114
Acenaphthene	29	102	Fluoranthene	55	132
Acenaphthylene	31	101	Fluorene	39	106
Anthracene	45	114	Hexachlorobenzene	40	111
Benzo(a)anthracene	69	117	Hexachlorobutadiene	10	97
Benzo(a)pyrene	15	137	Hexachloroethane	17	92
Benzo(b)fluoranthene	50	121	Indeno(1,2,3-Cd)Pyrene	51	132
Benzo(g,h,i)perylene	46	126	N-Nitrosodiphenylamine	11	148
Benzo(k)fluoranthene	58	128	Naphthalene	17	94
Benzoic Acid	10	170	Pentachlorophenol	38	124
Benzyl Alcohol	10	119	Phenanthrene	57	104
Benzyl Butyl Phthalate	15	183	Phenol	10	107
Bis(2-Ethylhexyl)Phthalate	10	182	Pyrene	48	132

Table B-4
Laboratory QC Limits for Sediment BNAs, Surrogate Recoveries

Parameter	Lower Limit (%)	Upper Limit (%)
2,4,6-Tribromophenol	29	112
2-Fluorophenol	10	112
d5-Phenol	10	106
d5-Nitrobenzene	28	94
d4-2-Chlorophenol	11	105
d4-1,2-Dichlorobenzene	24	91
2-Fluorobiphenyl	31	101
d14-Terphenyl	51	130

Table B-5
Laboratory QC Limits for Sediment BNAs, SRM Recoveries

Parameter	Lower Limit (%)	Upper Limit (%)
Anthracene	28	98
Benzo(a)anthracene	66	124
Benzo(a)pyrene	60	116
Benzo(b)fluoranthene	52	190
Benzo(g,h,i)perylene	15	121
Benzo(k)fluoranthene	60	146
Chrysene	77	136
Dibenzo(a,h)anthracene	10	200
Fluoranthene	45	126
Indeno(1,2,3-Cd)Pyrene	33	121
Naphthalene	10	29
Phenanthrene	51	106
Pyrene	36	135

Table B-6
Laboratory QC Limits for Sediment Pesticides and PCBs
Matrix Spike Recoveries

Parameter	Lower Limit (%)	Upper Limit (%)
4,4'-DDD	41	157
4,4'-DDE	59	125
4,4'-DDT	50	144
Aldrin	61	119
Alpha-BHC	59	111
Aroclor 1016	43	176
Aroclor 1260	13	198
Beta-BHC	60	119
Delta-BHC	54	126
Dieldrin	60	139
Endosulfan I	64	113
Endosulfan II	36	146
Endosulfan Sulfate	46	113
Endrin	62	166
Endrin Aldehyde	10	66
Gamma-BHC (Lindane)	61	135
Heptachlor	52	157
Heptachlor Epoxide	61	118
Methoxychlor	53	129

Table B-7
Laboratory QC Limits for Sediment Pesticides and PCBs
Blank Spike Recoveries

Parameter	Lower Limit (%)	Upper Limit (%)
4,4'-DDD	78	121
4,4'-DDE	75	111
4,4'-DDT	57	145
Aldrin	28	113
Alpha-BHC	20	99
Aroclor 1016	35	111
Aroclor 1260	47	146
Beta-BHC	66	102
Delta-BHC	63	108
Dieldrin	58	139
Endosulfan I	62	104
Endosulfan II	72	109
Endosulfan Sulfate	61	104
Endrin	60	160
Endrin Aldehyde	0	77
Gamma-BHC (Lindane)	27	130
Heptachlor	20	137
Heptachlor Epoxide	59	107
Methoxychlor	72	131

Table B-8
Laboratory QC Limits for Sediment Pesticides and PCBs
SRM and Surrogate Recoveries

Parameter	Lower Limit (%)	Upper Limit (%)
4,4'-DDT	10	200
Alpha-Chlordane	48	144
Aroclor 1254	57	139
Decachlorobiphenyl	43	160
2,4,5,6-Tetrachloro-m-xylene	35	144

Table B-9
Laboratory QC Limits for Sediment VOCs, Matrix Spike Recoveries

Parameter	Lower Limit (%)	Upper Limit (%)
1,1,2-Trichloroethene	35	118
Ethylbenzene	70	130
Tetrachloroethene	70	130
Total Xylenes	70	130

Table B-10
Laboratory QC Limits for Sediment VOCs, Surrogate Recoveries

Parameter	Lower Limit (%)	Upper Limit (%)
4-Bromofluorobenzene	91	107
d4-1,2-Dichloroethane	76	120
d8-Toluene	88	105

APPENDIX C
LABORATORY INFORMATION MANAGEMENT SYSTEM (LIMS)
PRODUCTS AND LIST TYPES
TABLE C-1

Table C-1
King County Environmental Laboratory
Laboratory Information Management System (LIMS)
LIMS Products and List Types

Parameter	LIMS Product	LIMS List Type
Ammonia	NH3-KCL	CVNH3-KCL
PSD	PSD	CVPSD
TOC	TOC	CVTOC
Total Solids	TOTS	CVTOTS
Total Sulfide	TOTSULFIDE	CVTOTSULFIDE
Volatile Solids	TVS	CVTVS
Mercury by CVAA	HG-CVAA	MTHG-MIDS, 6-SED
Other Metals by ICP	AS-ICP, CD-ICP, CR-ICP, CU-ICP, PB-ICP, AG-ICP, ZN-ICP	MTICP-SED, 6-SED
BNAs (low-level)	BNASMS	ORBNASMS
Chlorinated Pesticides (low-level)	PESTLL	ORPESTLL
PCBs (low-level)	PCBLL	ORPCBLL
VOCs	VOA-GC/MS-LOWSED	ORVOA-LOWSED

CVAA – Cold vapor atomic absorption spectroscopy.
ICP – Inductively coupled plasma optic emission spectroscopy.

Appendix I

QA1 Reports

KING COUNTY ENVIRONMENTAL LABORATORY
QUALITY ASSURANCE REVIEW

For

Denny Way CSO and Elliott West CSO
Nearshore Sediment Remediation
Pre Dredging Perimeter Monitoring Event
November - 2007

Prepared by:

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INTRODUCTION

This quality assurance (QA) narrative is intended to document the QA review conducted on the chemistry analyses performed for the Denny Way CSO and Elliott West CSO Nearshore Sediment Remediation Pre Dredging Perimeter Monitoring Event. The QA narrative is organized into the five sections listed below.

- General Comments
- Sample Collection
- Conventional Analyses
- Metal Chemistry
- Organic Chemistry

An overview of the approach used for the QA review is detailed in the *General Comments* section. Additional information specific to each analysis is included in the appropriate analytical section.

This QA review and narrative (specifically defined as QA1) have been conducted in accordance with guidelines established through the Puget Sound Dredged Disposal Analysis (PSDDA) program, Sediment Management Standards (WAC 173-204-610) and the Sediment Sampling and Analysis Appendix (SAPA), WDOE 2003. Other approaches incorporated in the QA review have been established through collaboration between the King County Environmental Laboratory (KC Laboratory) and the Washington State Department of Ecology (Ecology) Sediment Management Unit.

GENERAL COMMENTS

Scope of Samples Submitted
This QA review is associated with marine sediment samples collected on November 14, 2007 as part of the Denny Way CSO and Elliott West CSO Nearshore Sediment Remediation Pre Dredging Perimeter Monitoring Event.

Except where noted in the subcontracting sections of this QA review, all analyses have been conducted by the King County Environmental Laboratory (KCEL). Sediment analytical data are reported with associated data qualifiers and have undergone QA1 review, as summarized in this narrative report.

Completeness
Completeness has been evaluated for this data submission and QA review by considering the following criteria:

- Comparing reported data to the planned project analyses summarized in Table 1.
- Compliance with storage conditions and holding times.
- Frequency of analysis of the complete set of quality control (QC) samples outlined in Table 2.

Subcontracted Analyses
Analyses that have been subcontracted and the issues associated with these subcontracted analyses are noted in this narrative.

Methods
Analytical methods are noted in the applicable analytical sections of this QA review.

Target Lists
The reported target lists have been compared to the target analytes listed in *Table 1 - Marine Sediment Quality Standards Chemical Criteria* and *Table 3 - Puget Sound Marine Sediment Cleanup Screening Levels Chemical Criteria* contained in Chapter 173-204 WAC.

Detection Limits
As part of the QA1 review, the detection limits reported for each parameter have been reviewed against the detection limit requirements defined in the SAP. When sample results have been reported as less than the Method Detection Limit (<MDL) and the associated detection limits are higher than those defined in the SAP, the particular samples and parameters have been identified and the circumstances explained. These summaries are included with each analytical section of this QA review.

The KC Laboratory reports include both the reporting detection limit (RDL) and the method detection limit (MDL) for each sample and parameter, where applicable. The RDL is defined as *the minimum concentration of a chemical constituent that can be reliably quantified while t*he MDL is defined as *the minimum concentration of a chemical constituent that can be detected*. Some subcontracted laboratory data are available with an MDL only, in accordance with the subcontracting laboratory policies. For some methods the detection limits reported may vary from sample to sample depending on the amount of sample analyzed and any additional dilutions required.

Storage Conditions and Holding Times
Storage conditions and holding times have been evaluated using guidelines defined in the project SAP. Preparation and analysis holding times for each method are summarized in each analytical section.

Method Blanks
Method blank results have been used to evaluate the possible laboratory contamination of samples. Method blank results have been reviewed for the presence of analytes detected at or greater than the MDL. For analytes where the method blank response was at or above the MDL all associated sample results have been qualified with a B flag.

Standard Reference Materials
Standard reference material (SRM) recoveries have been used to evaluate possible low or high analytical bias on a batch-specific basis. SRM analysis is included with metals and selected organic and conventional parameters (see Table 2). SRMs are purchased from outside agencies (NIST or NRCC) and must have a certified analyte value in order for a particular parameter to be evaluated. All associated sample results for the certified analytes are flagged if the SRM recoveries are unacceptable. Associated sample results are flagged with an L whenever recoveries are measured above the acceptance limits and are flagged with a G when recoveries are measured below the acceptance limits.

Matrix Spikes
Matrix spike recoveries have been used to evaluate possible low or high analytical bias on a matrix and batch-specific basis. Matrix spikes are analyzed with metals, organics and selected conventionals parameters (see Table 2). Associated sample results are flagged with an L whenever recoveries are measured above the acceptance limits and are flagged with a G when recoveries are measured below the acceptance limits (but at or above 10%). Associated results are flagged with an X whenever recoveries are less than 10%.

For Metals only, matrix spike recovery results are used to qualify sample data only when the sample levels in the spiked sample are less than 4 times the spiked concentration. High sample levels relative to the spiked concentration can compromise the measurement of accurate spike recoveries.

Laboratory Replicate Samples
Replicate analysis (laboratory duplicates or triplicates) is used as an indicator of method precision and is used to qualify data on an analyte and batch-specific basis. Not all replicate data are used, however, as an indicator for data qualification. Only sets of replicate results which include at least one result greater than the RDL are considered for data qualification. These guidelines have been used to account for the fact that precision obtained near the detection limit is not representative of precision obtained throughout the entire analytical range. Associated results are flagged with an E whenever the measured precision is unacceptable (greater than the acceptance limit).

Surrogates
Surrogate recoveries have been used to evaluate possible low or high analytical bias on a sample-specific basis. Surrogates are only analyzed for organic parameters. Individual sample results are flagged with an L whenever recoveries are measured above the acceptance limits and are flagged with a G when recoveries are measured below the acceptance limits (but at or above 10%). Associated results are flagged with an X whenever recoveries are less than 10%.

Data Qualifiers
The data qualification guidelines described above has been summarized in Table 3. This table conforms to the guidelines in the 2003 SAPA and also shows the data qualifiers used for the Sedqual electronic data format.

Units and Significant Figures
Units and the reporting basis vary, depending on the parameter and are explained in the analytical sections below. Data generally have been reported to three significant figures if above the RDL and two significant figures if equal to or below the RDL.

SAMPLE COLLECTION

This section describes sampling activities associated with the collection of 8 marine sediment samples on November 14, 2007. All sampling was conducted by Anchor Environmental, LLC. All sampling activities were conducted following guidance suggested in the Puget Sound Protocols (PSEP, 1996 and 1998).

Sampling Locations and Station Positioning

Sampling locations (stations) were selected and the prescribed coordinates determined prior to field activities. The prescribed station coordinates are presented in the following table. Also presented in the table are the actual coordinates recorded during sampling activities. All station coordinates are recorded in state plane coordinate system North American Datum 1983 (NAD83).

SEDIMENT GRAB SAMPLING POINTS, November 2007

Lab Number	Locator	Cast #	Grabs Accepted	Prescribed Northing	Actual Northing	Prescribed Easting	Actual Easting
L44480-1	DW-01			229703		1263143	
		1	1		229693		1263149
L44480-2	DW-03			229529		1263359	
		1	1		229533		1263359
		2	1		229533		1263363
L44480-3	DW-13			229363		1263343	
		1	1		229351		1263347
L44480-4	DW-19			229150		1263268	
		1	1		229147		1263266
L44480-5	DW-33			229130		1263747	
		1	1		229110		1263731
L44480-6	DW-34			228952		1263903	
		1	1		228918		1263869
L44480-7	LTBC20 (J)			229246		1263461	
		1	1		229253		1263461
L44480-8	LTBC20 (J)			229246		1263461	
	(Field Rep)	1	1		229234		1263460

Sediment grab samples were collected from the Anchor Environmetnal research vessel *RV Roostertail*, which is equipped with a differential global positioning system (DGPS). Field coordinates were recorded using DGPS for each deployment grab sampler as it contacted the sediment. All field coordinates for individual casts listed in the above table are within the +/- 6 meter accuracy limits, as defined in the SAP, with the following exceptions. The casts at locations DW-33 & DW-34 were sampled 6.1 and 10.4 meters, respectively, from the prescribed coordinate location due to the presence of inferior sample material and subsequent unacceptable grabs at the prescribed coordinates.

Sample Description Table

Lab Sample #	Locator	Sample Collection	Average Sediment Sampling Depth (cm)	Sample Usage
L44480-1	DW-01	Surface Grabs	11	Chemistry
L44480-2	DW-03	Surface Grabs	7	Chemistry
L44480-3	DW-13	Surface Grabs	13	Chemistry
L44480-4	DW-19	Surface Grabs	14	Chemistry
L44480-5	DW-33	Surface Grabs	12	Chemistry
L44480-6	DW-34	Surface Grabs	10	Chemistry
L44480-7	LTBC20	Surface Grabs	11	Chemistry
L44480-8	LTBC20	Surface Grabs	13	Chemistry

Sample Collection

Sediment was collected at each station using a stainless steel, modified, 0.1 m^2 Van Veen grab sampler deployed via hydrowire. For each acceptable deployment, between 7-14 cm of sediment was recovered in each grab.

Water depth at the 7 subtidal sample stations ranged between 23.9 and 63.4 MLLW.

Sample Handling

At each station, approximately equal amounts of sediment from the top 10 cm (7 cm for DW-03) were subsampled from each grab at each sample location through the use of a stainless steel sampling spoon. The sediment was placed into a stainless steel compositing bowl and covered with foil. The sediment within the bowl was thoroughly homogenized and split out into pre-labeled containers. Sample containers were supplied by the King County Environmental Laboratory and were pre-cleaned according to analytical specifications.

Decontamination

Two sets of the compositing bowls and sub-sampling and mixing equipment were used to sample each station, and was thoroughly decontaminated by scrubbing with a brush and distilled water and Alconox followed by a distilled water rinse. The Van Veen grab sampler was decontaminated between stations by scrubbing with a brush and ambient seawater, followed by a thorough *in situ* rinsing.

Sample Storage and Preservation

Samples were stored in ice-filled coolers from the time of collection until delivery to the King County Environmental Laboratory. Samples were delivered under chain-of-custody and were maintained as such throughout the analytical process. Samples were stored frozen (-18°C) by the laboratory until analysis with the exception of samples for particle size distribution (PSD). PSD samples were stored refrigerated at approximately 4°C. A more complete description of sample handling and storage can be found in each analytical chemistry section of this narrative.

Copies of chain-of-custody forms and field notes are included as an appendix to this QA review narrative. The collect time is defined as that time that sampling commences at each station.

CONVENTIONAL ANALYSES

Completeness

Conventional data are reported for all samples and parameters summarized in Table 1. These samples were analyzed in association with the complete set of QC samples outlined in Table 2.

Subcontracted Analyses

All analyses were performed at the King County Environmental Lab.

Methods

PSD analysis was performed in accordance with ASTM and Puget Sound Protocols methodologies (*Recommended Protocols for Measuring Conventional Sediment Variables in Puget Sound* - page 9 - PSEP, 1986). TOC analysis was performed in accordance with SM5310-B and EPA 9060. Total solids analyses were performed in accordance with SM2540-G.

Detection Limits

The detection limits (MDLs) reported for Conventionals parameters are all within the requirements defined in the SAP, except for the following:

Parameter (mg/Kg)	Sample ID#	SAP MDL (dry wt.)	Reported MDL (dry wt.)	Reason for higher MDL Value
Total Organic Carbon	L44480-1 to 8	1000	(1)	Reduced sample size analyzed. All samples had detectable levels of TOC.

(1) See attached SAP MDL Comparison table

In all cases where the reported MDL was higher than the SAP MDL, a detectable level was measured, therefore project objectives were met.

Reporting Requirements (significant figures, units, basis and qualifiers)

For analyses performed at the KC Laboratory, data are reported in accordance with laboratory policy at the time the data were generated. Data are reported to three significant figures for results greater than the RDL and two significant figures for results equal to or less than the RDL. For results reported with less than two or three significant figures, significant zeroes are implied. This may not apply to subcontracted data.

In the Comprehensive Report attached, Conventionals parameters are reported in mg/Kg, dry weight basis, for TOC. Particle Size Distribution (PSD) and Total Solids are reported in percent, wet weight basis. For all parameters, the MDL and RDL values for each individual sample are reported in the same units and basis as the sample result. Any result measured at less than the MDL or less than the RDL, a <MDL or <RDL qualifier is added, respectively. Other qualifiers added are based on QA/QC failures and are individually explained in this narrative.

Storage Conditions and Holding Times

Sample storage conditions and holding times have been evaluated using guidelines established in the SAP. The dates and holding time criteria for the actual storage conditions used for conventional analyses are listed in the table below.

Parameter	Lab ID#	Date Collected	Prep Date	Date Analyzed	Sample Holding Time	Extract Holding Time
Particle Size Distribution	L44480-1,2,3,4,5,6,7,8	14-Nov-2007	19-Dec-2007	20-Dec-2007	6 months at 4°C	NA
Total Organic Carbon	L44480-1,2,3,4,5,6,7,8	14-Nov-2007	19-Nov-2007	05-Dec-2007	6 months at -18°C	6 months at -18°C
Total Solids	L44480-1,2,3,4,5,6,7,8	14-Nov-2007	19-Nov-2007	19-Nov-2007	6 months at -18°C	NA

Sample storage conditions and holding times were met for all samples in this data submission.

Method Blanks

Method blanks were analyzed in connection with total solids and total organic carbon analyses. All method blanks results were less than the MDL.

Standard Reference Materials

An SRM (Buffalo River Sediment) was analyzed in connection with TOC analysis. The percent recovery for the SRM analysis was within the 80 to 120% QC limits.

Matrix Spikes

The matrix spike recovery for TOC were within the 75 to 125% acceptance limits.. The acceptance limits are not applicable when the unspiked sample level is 4 times or greater than the spiked concentration.

Laboratory Replicate Samples

A set of laboratory triplicates was analyzed for each of the conventional parameters. The percent relative standard deviation (%RSD) for each triplicate set was less than or equal to the 20% acceptance limit.

METALS CHEMISTRY

Completeness
Metal chemistry data are reported for all samples and parameters summarized in Table 1. These samples were analyzed for mercury and other metals in association with the complete set of QC samples outlined in Table 2.

Subcontracted Analyses
Metals analysis was not subcontracted for these sets of samples.

Methods
Mercury analysis was performed in accordance with EPA Method 7471A. Analysis for other metals was performed in accordance with EPA method 3050B/6010B.

Target List
The reported target list includes all metals specified in Table 1.

Detection Limits
The detection limits (MDLs) reported for Metals parameters are all within the requirements defined by the SAP with the exception of those noted on the SAP MDL comparison table. The MDL for mercury samples L44480-1 & 6 was elevated due to necessary dilution of the sample.

Reporting Requirements (significant figures, units, basis and qualifiers)
For analyses performed at the KC Laboratory, data are reported in accordance with laboratory policy at the time the data were generated. Data are reported to three significant figures for results greater than the RDL and two significant figures for results equal to or less than the RDL. For results reported with less than two or three significant figures, significant zeroes are implied.

In the Comprehensive Report attached, Metals parameters are reported in mg/Kg, dry weight basis, for all elements. The MDL and RDL values for each individual sample are reported in the same units and basis as the sample result. Any result measured at less than the MDL or less than the RDL, a <MDL or <RDL qualifier is added, respectively. Other qualifiers added are based on QA/QC failures and are individually explained in this narrative.

Storage Conditions and Holding Times
Sample storage conditions and holding times have been evaluated using guidelines established during the Third Annual PSDDA Review Meeting. The dates and holding time criteria for the actual storage conditions used for metals analyses are listed in the table below.

Parameter	Lab ID#	Date Collected	Date Digested/ Extracted	Date Analyzed	Sample Holding Time	Digestate/Extract Holding Time
Total Metals	L44480-1 through-8	11/14/2007	12/20/2007	12/20/2007	2 Years at -18°C	6 months
Total Mercury	L44480-1 through-8	11/14/2007	12/3/2007	12/3/2007	28 days at -18°C	NA

Sample storage conditions and holding times were met for all samples in this data submission.

Method Blanks
All metals method blanks results were less than the MDL

Standard Reference Materials
The SRM analyzed in association with samples included in this data submission is National Research Council of Canada PACS-2. This SRM is not certified for Silver, Arsenic or Cadmium. Acceptance limits for the certified elements have been developed using historical lab data since

the certified SRM values and limits were determined with different analysis techniques. SRM recoveries outside these lab-defined limits indicate the method has not performed as expected and the sample data have been qualified to indicate the expected bias.

All metals SRM recoveries were within the lab defined limits indicated in the SAP.

A laboratory control sample (LCS) ERA Soil was also analyzed with the total metals digestion. All recoveries were within the certified limits of the sample. The LCS is used as a secondary check for the total metals digestion procedure because the certified values for the elements are determined using the same methodology. No results from the LCS are used to qualify data.

Matrix Spikes

All matrix spike recoveries were within the 75 to 125% QC limits with the following exceptions:

- The reported matrix spike recovery of 24% for Antimony in WG94850 for sample numbers L44480-1 through 8 failed to meet the 75 to 125% QC acceptance criteria. All antimony results have been qualified with a “G”.
- The reported matrix spike duplicate recovery of 28% for Mercury in WG94501 for sample numbers L44480-1 through 8 failed to meet the 75 to 125% acceptance criteria. Since the matrix spike for these samples was acceptable, sample data has not been qualified based on the matrix spike duplicate recovery.

Laboratory Replicate Samples

The relative percent differences (RPDs) for laboratory duplicate results for all metals were less than or equal to the QC limit of 20% with the exceptions: The reported RPD of 60% for Mercury in WG94501 for sample numbers L44480-1 through 8 failed to meet the 20% QC acceptance limit. Mercury results for all samples in this data submission have been qualified with an “E”.

ORGANIC CHEMISTRY

Completeness

Organics data are reported for all samples and parameters summarized in Table 1. These samples were analyzed in association with the complete set of QC samples outlined in Table 2.

Methods

BNA analysis was performed in accordance with EPA method 8270. PCB analysis was performed in accordance with EPA method 8082.

Target List

The reported BNA target list includes all compounds specified in *Table 1 - Marine Sediment Quality Standards Chemical Criteria* and *Table 3 - Puget Sound Marine Sediment Cleanup Screening Levels Chemical Criteria* contained in Chapter 173-204 WAC with the exception of benzo(j)fluoranthene. The KC Laboratory has verified that analytical conditions are sufficient to calculate a total benzofluoranthene result using the reported *b* and *k* isomers.

Reported PCB data include Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260.

Detection Limits, Units and Significant Figures

The detection limits (MDLs), as reported on a wet weight basis for Organics parameters, are all within the requirements defined in the SAP, except for the following:

PCBs

The reported MDLs for Aroclors 1016, 1232 and 1242 in selected samples were greater than the wet weight MDL values listed in the SAP. The reported MDLs for these Aroclors were elevated to compensate for overlap of PCB congeners from other Aroclors detected in these samples. Detectable levels of Aroclors 1260, 1254 and 1248 were reported in all samples.

For Non-ionizable Organic parameters, MDL values were also converted to an Organic Carbon (OC) basis, using the TOC values determined for each sample. The attached SMS OC and Dry Weight Comparison table list those samples where the reported MDL value did not meet the SAP requirements, when converted to an OC basis.

BNAs

All of the OC normalized Non-ionizable Organic parameters met the SAP required limits.

PCBs

The reported OC MDLs for Aroclors 1016, 1232 and 1242 in selected samples were greater than the values listed in the SAP. As stated above, the MDLs were elevated to compensate for overlap of PCB congeners from other Aroclors detected in the samples.

Reporting Requirements (significant figures, units, basis and qualifiers)

For analyses performed at the KC Laboratory, data are reported in accordance with laboratory policy at the time the data were generated. Data are reported to three significant figures for results greater than the RDL and two significant figures for results equal to or less than the RDL. For results reported with less than two or three significant figures, significant zeroes are implied.

In the Comprehensive Report attached, Organics parameters are reported in ug/Kg, dry weight basis. In this report format, non-ionizable organic parameters have not been converted to mg/Kg TOC. For all parameters, the MDL and RDL values for each individual sample are reported in the same units and basis as the sample result. Any result measured at less than the MDL or less than the RDL, a <MDL or <RDL qualifier is added, respectively. Other qualifiers added are based on QC failures and are individually explained in this narrative.

Storage Conditions and Holding Times

Sample storage conditions and holding times have been evaluated using guidelines established in the SAPA (WDOE, 2003). The dates and holding time criteria for the actual storage conditions used for organics analyses are listed in the table below.

Parameter	Lab ID#	Date Collected	Date Extracted	Date Analyzed	Sample Holding Time	Extract Holding Time
BNAs	L44480-1 to 8	14-Nov-07	19-Nov-07	28-Nov-07	1 year at -18°C	40 days at 4°C
PCBs	L44480-1 to 8	14-Nov-07	20-Nov-07	26, 27-Dec-07	1 year at -18°C	40 days at 4°C

Sample storage conditions and holding times were met for all samples in this data submission.

Method Blanks

Method blanks were analyzed for all Organics parameters and all method blank results were less than the MDL, except as noted below:

1. BNAs

The method blank analyzed with BNAs for L44480 had a result above the MDL for Bis (2-Ethylhexyl) Phthalate (20.0 ug/Kg) and Di-N-Butyl Phthalate (10.9 ug/Kg). Sample results for Bis (2-Ethylhexyl) Phthalate and Di-N-Butyl Phthalate for that batch (L44480) have been qualified with the B flag. All Bis (2-Ethylhexyl) Phthalate and Di-N-Butyl Phthalate results for these samples should be treated as estimated values.

Surrogate Recoveries

Surrogate recovery acceptance limits for sediment samples have been developed based on historical lab performance using the current analytical methods. Recoveries measured above the acceptance limits are flagged with an L. Recoveries measured below the acceptance limits (but at or above 10%) are flagged with a G. Recoveries below 10% are flagged with an X. Surrogate recovery summaries for each method are shown below.

1. BNAs

For BNA sample data, surrogate recoveries are evaluated separately for the acid and base/neutral fractions. Within each fraction, 2 or more surrogates must be outside the acceptance limits in order to qualify the associated sample data. All BNA surrogate recoveries were within the lab-specific acceptance limits.

2. PCBs

Sample data are qualified when individual surrogate recoveries are outside lab-specific acceptance limits. All surrogate recoveries were within the lab-specific acceptance limits for all samples in this data submission.

Standard Reference Materials (SRMs)

The SRM results associated with these samples are summarized below, according to the analysis method. Acceptance limits for the certified parameters reported in this data set have been developed using historical lab data. SRM recoveries outside these lab-defined limits indicate the method has not performed as expected and the associated sample data have been flagged.

1. BNAs

The sediment SRM analyzed in association with the reported BNA results is 1944, certified by the National Institute of Standards and Technology (NIST). The certified organics parameters in SRM 1944 are only a partial list of all the BNA compounds reported in this analysis. All measured recoveries for this SRM were within acceptance limits for this data set.

2. PCBs
The sediment SRM analyzed in association with the reported PCB results is HS-2, certified by the National Research Council of Canada. SRM HS-2 contains Aroclor 1254. Measured recoveries for this SRM were within acceptance limits.

Matrix Spikes
Matrix Spikes have been analyzed for each method. Recovery acceptance limits for each parameter in sediment have been developed based on historical lab performance using the current analytical methods. When applicable, matrix spike recoveries outside these lab-defined limits indicate the method has not performed as expected and the associated sample data have been flagged.

1. BNAs
Each of the reported BNA compounds was included in the matrix spike and measured recoveries for each were within their acceptance limits.

2. PCBs and Chlorinated Pesticides
Aroclor 1260 and 1016 only are used as the spiking parameters for PCB matrix spike. The measured recovery for each spiked parameter was above their acceptance limits. All results for Aroclor 1016 and 1260 have been flagged with an "L" qualifier.

Laboratory Replicate Samples
A laboratory duplicate sample(s) was analyzed for each Organics parameter. The relative percent differences (RPDs) for laboratory duplicate for all parameters at or above the RDL were less than or equal to the acceptance limit of 35%, except for the following:

1. PCB
The RPD for Aroclor 1248, 1254 and 1260 for the duplicate analysis of sample L44480-3 were 69, 69 and 80% respectively. All sample results for these parameters have been flagged with an "E" qualifier to indicate estimated results.

Additional QA Issues:

PCB Analysis:
PCB data reported for this set of samples include numeric values for only those Aroclors that could be positively identified in each sample and were measured above the detection limit. Identification of Aroclors 1016, 1232 and 1242 was not possible for selected samples (L44480-1 through – 4, -6 through -8) due to the overlap of the congeners from Aroclors 1248, 1254 and 1260. For those Aroclors where this overlap was significant enough to interfere, the result is reported as <MDL with elevated MDL and RDL values. The elevated MDL represents the maximum amount that would have been reported for that Aroclor had it been positively identified. The RDL value has also been elevated by the same proportion.

The table below lists the samples and affected Aroclors.

Lab Sample Number	PCB 1016	PCB 1232	PCB 1242
L44480-1	x	x	x
L44480-2	x		
L44480-3	x		
L44480-4	x	x	x
L44480-6	x	x	x
L44480-7	x		
L44480-8	x		

TABLE 1
SEDIMENT SAMPLE INVENTORY

Sample	Locator / Description (see SAP)	PSD	Solids	TOC	Metals[1]	BNAs[2]	PCBs	Comments
L44480-1	DW-01	X	X	X	X	X	X	
L44480-2	DW-03	X	X	X	X	X	X	
L44480-3	DW-13	X	X	X	X	X	X	
L44480-4	DW-19	X	X	X	X	X	X	
L44480-5	DW-33	X	X	X	X	X	X	
L44480-6	DW-34	X	X	X	X	X	X	
L44480-7	LTBC20	X	X	X	X	X	X	
L44480-8	LTBC20	X	X	X	X	X	X	Field Replicate

1 Metals = Hg, Sb, As, Cd, Cr, Cu, Pb, Ni, Ag, Zn
2 BNAs = includes Chlorobenzenes

TABLE 2
QC SAMPLE FREQUENCY FOR SEDIMENT CHEMICAL AND PHYSICAL PARAMETERS

Parameter	Method Blank	Duplicate	Triplicate	Matrix Spike	SRM	Surrogates
PSD	No	See Triplicate	5% minimum, 1 per QC batch	No	No	No
Total Solids	1 per QC batch	See Triplicate	5% minimum, 1 per QC batch	No	No	No
TOC	1 per QC batch	See Triplicate	5% minimum, 1 per QC batch	5% minimum, 1 per QC batch	1 per QC batch	No
Metals	1 per QC batch	5% minimum, 1 per QC batch	No	5% minimum, 1 per QC batch	1 per QC batch	No
BNAs	1 per QC batch	5% minimum, 1 per QC batch	No	5% minimum, 1 per QC batch	1 per QC batch	Yes
PCBs	1 per QC batch	5% minimum, 1 per QC batch	No	5% minimum, 1 per QC batch	1 per QC batch	Yes

TABLE 3 - SUMMARY OF SEDIMENT DATA QUALIFIERS

Condition to Qualify	King County Data Qualifier	Sedqual Data Qualifier	Organic QC Limits	Metal QC Limits	Conventional QC Limits	Comment
very low matrix spike recovery	X	X	< 10 %	< 10 %	< 10 %	
low matrix spike recovery	G	G	Compound specific	< 75%	< 75% *	
high matrix spike recovery	L	L	Compound specific	>125%	>125% *	
low standard reference material recovery	G	G	Compound and SRM specific	Element and SRM specific	< 80%	
high standard reference material recovery	L	L	Compound and SRM specific	Element and SRM specific	>120%	
high duplicate relative percent difference	E	E	>35 %	>20%	NA	for organics and metals
high triplicate relative standard deviation	E	E	NA	NA	> 20%	for conventionals
less than the reporting detection limit	<RDL**	T	NA	NA	NA	
less than the method detection limit	<MDL	U	NA	NA	NA	
contamination detected in method blank	B	B	>/=MDL	>/=MDL	>/=MDL	
biased data based on very low surrogate recoveries	X	X	any surrogate <10%	NA	NA	
biased data based on low surrogate recoveries	G	G	Surrogate specific	NA	NA	At least 2 surrogates < limit for BNAs
biased data based on high surrogate recoveries	L	L	Surrogate specific	NA	NA	At least 2 surrogates > limit for BNAs
rejected - unusable for all purposes	R	J or Q	NA	NA	NA	
a sample handling criteria has not been met	H	H	NA	NA	NA	container, hold time, preservation
		-				

* 65% to 135% for Total Sulfides.

** For Sedqual files, <MDL uses a “U” flag, <RDL is not flagged since the RDL value is not included in the Sedqual templates generated by King County.

KING COUNTY ENVIRONMENTAL LABORATORY
QUALITY ASSURANCE REVIEW

For

Denny Way CSO and Elliott West CSO
Nearshore Sediment Remediation
Post Dredging Dredge Prism Event
January - 2008

Prepared by:

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INTRODUCTION

This quality assurance (QA) narrative is intended to document the QA review conducted on the chemistry analyses performed for the Denny Way CSO and Elliott West CSO Nearshore Sediment Remediation Post Dredging Dredge Prism Monitoring Event. The QA narrative is organized into the five sections listed below.

- General Comments
- Sample Collection
- Conventional Analyses
- Metal Chemistry
- Organic Chemistry

An overview of the approach used for the QA review is detailed in the *General Comments* section. Additional information specific to each analysis is included in the appropriate analytical section.

This QA review and narrative (specifically defined as QA1) have been conducted in accordance with guidelines established through the Puget Sound Dredged Disposal Analysis (PSDDA) program, Sediment Management Standards (WAC 173-204-610) and the Sediment Sampling and Analysis Appendix (SAPA), WDOE 2003. Other approaches incorporated in the QA review have been established through collaboration between the King County Environmental Laboratory (KC Laboratory) and the Washington State Department of Ecology (Ecology) Sediment Management Unit.

GENERAL COMMENTS

Scope of Samples Submitted
This QA review is associated with marine sediment samples collected on January 15, 2008 as part of the Denny Way CSO and Elliott West CSO Nearshore Sediment Remediation Post Dredging Dredge Prism Monitoring Event.

Except where noted in the subcontracting sections of this QA review, all analyses have been conducted by the King County Environmental Laboratory (KCEL). Sediment analytical data are reported with associated data qualifiers and have undergone QA1 review, as summarized in this narrative report.

Completeness
Completeness has been evaluated for this data submission and QA review by considering the following criteria:

- Comparing reported data to the planned project analyses summarized in Table 1.
- Compliance with storage conditions and holding times.
- Frequency of analysis of the complete set of quality control (QC) samples outlined in Table 2.

Subcontracted Analyses
Analyses that have been subcontracted and the issues associated with these subcontracted analyses are noted in this narrative.

Methods
Analytical methods are noted in the applicable analytical sections of this QA review.

Target Lists
The reported target lists have been compared to the target analytes listed in *Table 1 - Marine Sediment Quality Standards Chemical Criteria* and *Table 3 - Puget Sound Marine Sediment Cleanup Screening Levels Chemical Criteria* contained in Chapter 173-204 WAC.

Detection Limits
As part of the QA1 review, the detection limits reported for each parameter have been reviewed against the detection limit requirements defined in the SAP. When sample results have been reported as less than the Method Detection Limit (<MDL) and the associated detection limits are higher than those defined in the SAP, the particular samples and parameters have been identified and the circumstances explained. These summaries are included with each analytical section of this QA review.

The KC Laboratory reports include both the reporting detection limit (RDL) and the method detection limit (MDL) for each sample and parameter, where applicable. The RDL is defined as *the minimum concentration of a chemical constituent that can be reliably quantified while t*he MDL is defined as *the minimum concentration of a chemical constituent that can be detected*. Some subcontracted laboratory data are available with an MDL only, in accordance with the subcontracting laboratory policies. For some methods the detection limits reported may vary from sample to sample depending on the amount of sample analyzed and any additional dilutions required.

Storage Conditions and Holding Times
Storage conditions and holding times have been evaluated using guidelines defined in the project SAP. Preparation and analysis holding times for each method are summarized in each analytical section.

Method Blanks
Method blank results have been used to evaluate the possible laboratory contamination of samples. Method blank results have been reviewed for the presence of analytes detected at or greater than the MDL. For analytes where the method blank response was at or above the MDL all associated sample results have been qualified with a B flag.

Standard Reference Materials
Standard reference material (SRM) recoveries have been used to evaluate possible low or high analytical bias on a batch-specific basis. SRM analysis is included with metals and selected organic and conventional parameters (see Table 2). SRMs are purchased from outside agencies (NIST or NRCC) and must have a certified analyte value in order for a particular parameter to be evaluated. All associated sample results for the certified analytes are flagged if the SRM recoveries are unacceptable. Associated sample results are flagged with an L whenever recoveries are measured above the acceptance limits and are flagged with a G when recoveries are measured below the acceptance limits.

Matrix Spikes
Matrix spike recoveries have been used to evaluate possible low or high analytical bias on a matrix and batch-specific basis. Matrix spikes are analyzed with metals, organics and selected conventionals parameters (see Table 2). Associated sample results are flagged with an L whenever recoveries are measured above the acceptance limits and are flagged with a G when recoveries are measured below the acceptance limits (but at or above 10%). Associated results are flagged with an X whenever recoveries are less than 10%.

For Metals only, matrix spike recovery results are used to qualify sample data only when the sample levels in the spiked sample are less than 4 times the spiked concentration. High sample levels relative to the spiked concentration can compromise the measurement of accurate spike recoveries.

Laboratory Replicate Samples
Replicate analysis (laboratory duplicates or triplicates) is used as an indicator of method precision and is used to qualify data on an analyte and batch-specific basis. Not all replicate data are used, however, as an indicator for data qualification. Only sets of replicate results which include at least one result greater than the RDL are considered for data qualification. These guidelines have been used to account for the fact that precision obtained near the detection limit is not representative of precision obtained throughout the entire analytical range. Associated results are flagged with an E whenever the measured precision is unacceptable (greater than the acceptance limit).

Surrogates
Surrogate recoveries have been used to evaluate possible low or high analytical bias on a sample-specific basis. Surrogates are only analyzed for organic parameters. Individual sample results are flagged with an L whenever recoveries are measured above the acceptance limits and are flagged with a G when recoveries are measured below the acceptance limits (but at or above 10%). Associated results are flagged with an X whenever recoveries are less than 10%.

Data Qualifiers
The data qualification guidelines described above has been summarized in Table 3. This table conforms to the guidelines in the 2003 SAPA and also shows the data qualifiers used for the Sedqual electronic data format.

Units and Significant Figures
Units and the reporting basis vary, depending on the parameter and are explained in the analytical sections below. Data generally have been reported to three significant figures if above the RDL and two significant figures if equal to or below the RDL.

SAMPLE COLLECTION

This section describes sampling activities associated with the collection of 7 marine sediment samples on January 15, 2008. All sampling activities were conducted following guidance suggested in the Puget Sound Protocols (PSEP, 1996 and 1998).

Sampling Locations and Station Positioning

Sampling locations (stations) were selected and the prescribed coordinates determined prior to field activities. The prescribed station coordinates are presented in the following table. Also presented in the table are the actual coordinates recorded during sampling activities. All station coordinates are recorded in state plane coordinate system North American Datum 1983 (NAD83).

DENNY WAY CHEM. SEDIMENT GRAB SAMPLING POINTS, January 2008

Lab Number	Locator	Cast #	Grabs Accepted	Prescribed Northing	Actual Northing	Prescribed Easting	Actual Easting
L44926-1	DWPD-01			299275		1263562	
		1	1		229274		1263562
L44926-2	DWPD-02			229418		1263436	
		1	1		229417		1263436
L44926-3	DWPD-03			229578		1263420	
			multiple		229539		1263418
L44926-4	DWPD-04			229493		1263513	
			multiple		229314		1263607
L44926-5	DWPD-05			229394		1263688	
			multiple		229400		1263664
L44926-6	DW105 1-2 ft		core sample	229326	229327	1263612	1263613
L44926-7	DW105 0-1 ft		core sample	Same as above	Same as above	Same as above	Same as above

Sediment grab samples were collected from the Anchor Environmental research vessel *RV Roostertail*, which is equipped with a differential global positioning system (DGPS). Field coordinates were recorded using DGPS for each deployment of the grab sampler as it contacted the sediment. All field coordinates for individual casts listed in the above table are within the +/- 6 meter accuracy limits, as defined in the SAP, with the following exceptions. Locations DWPD-03, -04 and -05 were sampled 12, 62 and 7.5 meters, respectively from the prescribed coordinate locations due to the presence of inferior sample material at the proposed coordinates.

Sample Description Table

Lab Sample #	Locator	Sample Collection	Average Sediment Sampling Depth (cm)	Sample Usage
L44926-1	DWPD-01	Surface Grabs	15	Chemistry
L44926-2	DWPD-02	Surface Grabs	8	Chemistry
L44926-3	DWPD-03	Surface Grabs	< 10	Chemistry
L44926-4	DWPD-04	Surface Grabs	< 10	Chemistry
L44926-5	DWPD-05	Surface Grabs	< 10	Chemistry
L44926-6	DW105	Core Section	1 to 2 ft	Chemistry
L44926-7	DW105	Core Section	0 to 1 ft	Chemistry

Sample Collection

Surface sediment was collected at locations DWPD- 01, -02, -03, -04 and -05 using a stainless steel, modified, 0.1 m^2 Van Veen grab sampler deployed via hydrowire. For each acceptable deployment, between 8-15 cm of sediment was recovered. Multiple sampler deployments were performed to collect sufficient sample volume to perform all chemistry analyses.

A sediment core (DW105) was collected using a piston coring device fitted with a polycarbonate tube. There was 2 feet of recovery for the collected core.

Water depth at the 8 subtidal cap sample stations ranged between 7.1 and 28.9 meters (not corrected for tide).

Sample Handling

At locations DWPD-01 and -02, sediment from the top 10 and 8 cm, respectively, were sub-sampled from the single Van Veen grab through the use of a stainless steel sampling spoon. At locations DWPD-03, -04 and -05, the gravel and rock in the sediment prevented full penetration and proper closure of the Van Veen samplers so less than 10 cm of depth was collected per grab. Multiple grabs were therefore needed in order to composite enough material for testing. For all samples, the sediment was placed into a stainless steel compositing bowl, covered with foil. The sediment within the bowl was then thoroughly homogenized and split out into pre-labeled containers. Sample containers were supplied by the King County Environmental Laboratory and were pre-cleaned according to analytical specifications.

At the core location, sediment was sectioned into two 1-ft intervals (i.e., 0 to 1 ft, and 1 to 2 ft). Sediment from each 1-ft interval was subsampled through the use of a stainless steel sampling spoon. The sediment was placed into a stainless steel compositing bowl, covered with foil. The sediment within the bowl was then thoroughly homogenized and split out into pre-labeled containers. Sample containers were supplied by the King County Environmental Laboratory and were pre-cleaned according to analytical specifications.

Decontamination

Two sets of the compositing bowls and sub-sampling and mixing equipment were used to sample each station, and was thoroughly decontaminated by scrubbing with a brush and distilled water and Alconox followed by a distilled water rinse. The Van Veen grab sampler was decontaminated between stations by scrubbing with a brush and ambient seawater, followed by a thorough *in situ* rinsing. The polycarbonate coring tube was pre-decontaminated, followed by a thorough *in situ* rinsing.

Sample Storage and Preservation

Samples were stored in ice-filled coolers from the time of collection until delivery to the King County Environmental Laboratory. Samples were delivered under chain-of-custody and were maintained as such throughout the analytical process. Samples were stored frozen (-18°C) by the laboratory until analysis with the exception of samples for particle size distribution (PSD). PSD samples were stored refrigerated at approximately 4°C. A more complete description of sample handling and storage can be found in each analytical chemistry section of this narrative.

Copies of chain-of-custody forms and field notes are included as an appendix to this QA review narrative. The collect time is defined as that time that sampling commences at each station.

CONVENTIONAL ANALYSES

Completeness

Conventional data are reported for all samples and parameters summarized in Table 1. These samples were analyzed in association with the complete set of QC samples outlined in Table 2.

Subcontracted Analyses

All analyses were performed at the King County Environmental Lab.

Methods

PSD analysis was performed in accordance with ASTM and Puget Sound Protocols methodologies (*Recommended Protocols for Measuring Conventional Sediment Variables in Puget Sound* - page 9 - PSEP, 1986). TOC analysis was performed in accordance with SM5310-B and EPA 9060. Total solids analyses were performed in accordance with SM2540-G.

Detection Limits

The detection limits (MDLs) reported for Conventionals parameters are all within the requirements defined in the SAP, except for the following:

Parameter (mg/Kg)	Sample ID#	SAP MDL (dry wt.)	Reported MDL (dry wt.)	Reason for higher MDL Value
Total Organic Carbon	L44926-1, 2, 4 to 7	1000	(1)	Reduced sample size analyzed and necessary dilution of the sample.

(1) See attached SAP MDL Comparison table

In all cases where the reported MDL was higher than the SAP MDL, a detectable level was measured, therefore project objectives were met.

Reporting Requirements (significant figures, units, basis and qualifiers)

For analyses performed at the KC Laboratory, data are reported in accordance with laboratory policy at the time the data were generated. Data are reported to three significant figures for results greater than the RDL and two significant figures for results equal to or less than the RDL. For results reported with less than two or three significant figures, significant zeroes are implied. This may not apply to subcontracted data.

In the Comprehensive Report attached, Conventionals parameters are reported in mg/Kg, dry weight basis, for TOC. Particle Size Distribution (PSD) and Total Solids are reported in percent, wet weight basis. For all parameters, the MDL and RDL values for each individual sample are reported in the same units and basis as the sample result. Any result measured at less than the MDL or less than the RDL, a <MDL or <RDL qualifier is added, respectively. Other qualifiers added are based on QA/QC failures and are individually explained in this narrative.

Storage Conditions and Holding Times

Sample storage conditions and holding times have been evaluated using guidelines established in the SAP. The dates and holding time criteria for the actual storage conditions used for conventional analyses are listed in the table below.

Parameter	Lab ID#	Date Collected	Prep Date	Date Analyzed	Sample Holding Time	Extract Holding Time
Particle Size Distribution	L44926-1,2,3,4,5,6,7	15-Jan-08	29-Jan-08	30-Jan-08	6 months at 4°C	NA
Total Organic Carbon	L44926-1,2,3,4,5,6,7	15-Jan-08	06-Feb-08	13-Mar-08	6 months at -18°C	6 months at -18°C
Total Solids	L44926-1,2,3,4,5,6,7	15-Jan-08	06-Feb-08	06-Feb-08	6 months at -18°C	NA

Sample storage conditions and holding times were met for all samples in this data submission.

Method Blanks

Method blanks were analyzed in connection with total solids and total organic carbon analyses. All method blanks results were less than the MDL.

Standard Reference Materials

An SRM (Buffalo River Sediment) was analyzed in connection with TOC analysis. The percent recovery for the SRM analysis was within the 80 to 120% QC limits.

Matrix Spikes

The matrix spike recovery for TOC were within the 75 to 125% acceptance limits.. The acceptance limits are not applicable when the unspiked sample level is 4 times or greater than the spiked concentration.

Laboratory Replicate Samples

A set of laboratory triplicates was analyzed for each of the conventional parameters. The percent relative standard deviation (%RSD) for each triplicate set was less than or equal to the 20% acceptance limit.

METALS CHEMISTRY

Completeness
Metal chemistry data are reported for all samples and parameters summarized in Table 1. These samples were analyzed for mercury and other metals in association with the complete set of QC samples outlined in Table 2.

Subcontracted Analyses
Metals analysis was not subcontracted for these sets of samples.

Methods
Mercury analysis was performed in accordance with EPA Method 7471A. Analysis for other metals was performed in accordance with EPA method 3050B/6010B.

Target List
The reported target list includes all metals specified in Table 1.

Detection Limits
The detection limits (MDLs) reported for Metals parameters are all within the requirements defined by the SAP, except for Total Mercury. For samples L44926-2, -4, -6 and -7, extra dilutions were required thus elevating the MDL and RDL values for Total Mercury. Since Mercury was detected in all samples, the elevated detection limits did not compromise the project objectives.

Reporting Requirements (significant figures, units, basis and qualifiers)
For analyses performed at the KC Laboratory, data are reported in accordance with laboratory policy at the time the data were generated. Data are reported to three significant figures for results greater than the RDL and two significant figures for results equal to or less than the RDL. For results reported with less than two or three significant figures, significant zeroes are implied.

In the Comprehensive Report attached, Metals parameters are reported in mg/Kg, dry weight basis, for all elements. The MDL and RDL values for each individual sample are reported in the same units and basis as the sample result. Any result measured at less than the MDL or less than the RDL, a <MDL or <RDL qualifier is added, respectively. Other qualifiers added are based on QA/QC failures and are individually explained in this narrative.

Storage Conditions and Holding Times
Sample storage conditions and holding times have been evaluated using guidelines established during the Third Annual PSDDA Review Meeting. The dates and holding time criteria for the actual storage conditions used for metals analyses are listed in the table below.

Parameter	Lab ID#	Date Collected	Date Digested/ Extracted	Date Analyzed	Sample Holding Time	Digestate/Extract Holding Time
Total Metals	L44926-1 through-7	1/15/2008	1/24/2008	1/24/2008	2 Years at -18°C	6 months
Total Mercury	L44926-1 through-7	1/15/2008	1/28/2008	1/29/2008	28 days at -18°C	NA

Sample storage conditions and holding times were met for all samples in this data submission.

Method Blanks
All metals method blanks results were less than the MDL

Standard Reference Materials
The SRM analyzed in association with samples included in this data submission is National Research Council of Canada PACS-2. This SRM is not certified for Silver, Arsenic or Cadmium. Acceptance limits for the certified elements have been developed using historical lab data since the certified SRM values and limits were determined with different analysis techniques. SRM recoveries outside these lab-defined limits indicate the method has not performed as expected and the sample data have been qualified to indicate the expected bias.

All metals SRM recoveries were within the lab defined limits indicated in the SAP.

A laboratory control sample (LCS) ERA Soil was also analyzed with the total metals digestion. All recoveries were within the certified limits of the sample. The LCS is used as a secondary check for the total metals digestion procedure because the certified values for the elements are determined using the same methodology. No results from the LCS are used to qualify data.

Matrix Spikes
All matrix spike recoveries were within the 75 to 125% QC limits with the following exceptions:

- The reported matrix spike recovery of 17% for Antimony in WG95153 for sample numbers L44926-1 through -7 failed to meet the 75 to 125% QC acceptance criteria. Antimony results for all samples in this data submission have been qualified with a “G”.
- The reported matrix spike recovery of 23% for Mercury in WG95161 for sample numbers L44926-1 through -7 failed to meet the 75 to 125% acceptance criteria. The reported matrix spike duplicate recovery of 35% for Mercury in WG95161 also failed to meet the 75 to 125% QC acceptance criteria. The relative percent differences (RPDs) between the matrix and the matrix spike duplicate for mercury, failed to meet the 20% QC acceptance limit. It is expected that the unacceptable recovery is due to the observed in-homogeneity of the background levels of mercury in these samples rather than a low bias. Mercury results for all samples in this data submission have therefore been qualified with an “E”.

Laboratory Replicate Samples
The relative percent differences (RPDs) for laboratory duplicate results for all metals were less than or equal to the QC limit of 20% with the exceptions:

- The reported RPD for Cadmium in WG95153 for sample numbers L44926-1 through 7 failed to meet the 20% QC acceptance limit. Cadmium results for all samples in this data submission have been qualified with an “E”.
- The reported RPD of 64% and 59% for Mercury in WG95161 for sample numbers L44926-1 through 7 failed to meet the 20% QC acceptance limit. Mercury results for all samples in this data submission have been qualified with an “E”.

ORGANIC CHEMISTRY

Completeness
Organics data are reported for all samples and parameters summarized in Table 1. These samples were analyzed in association with the complete set of QC samples outlined in Table 2.

Methods
BNA analysis was performed in accordance with EPA method 8270. PCB analysis was performed in accordance with EPA method 8082A.

Target List
The reported BNA target list includes all compounds specified in *Table 1 - Marine Sediment Quality Standards Chemical Criteria* and *Table 3 - Puget Sound Marine Sediment Cleanup Screening Levels Chemical Criteria* contained in Chapter 173-204 WAC with the exception of benzo(j)fluoranthene. The KC Laboratory has verified that analytical conditions are sufficient to calculate a total benzofluoranthene result using the reported *b* and *k* isomers.

Reported PCB data include Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260.

Detection Limits, Units and Significant Figures
The detection limits (MDLs), as reported on a wet weight basis for Organics parameters, are all within the requirements defined in the SAP, except for the following:

BNAs
The reported MDLs for all compounds for samples L44926-1, 2, 4, 6, 7 were increased due to high levels of co-extractives which necessitate dilution of the samples.

PCBs
The reported MDLs for Aroclors 1016, 1232 and 1242 in all samples (and for 1221 in all samples but L44926-3) were greater than the wet weight MDL values listed in the SAP. The reported MDLs for these Aroclors were elevated to compensate for overlap of PCB congeners from other Aroclors detected in the samples. Elevated MDLs for all Aroclors in samples L44926-1 and -2 were due to additional dilutions done prior to analysis. Detectable levels of Aroclors 1260, 1254 and 1248 were reported in all samples.

For Non-ionizable Organic parameters, MDL values were also converted to an Organic Carbon (OC) basis, using the TOC values determined for each sample. The attached SMS OC and Dry Weight Comparison table list those samples where the reported MDL value did not meet the SMS requirements, when converted to an OC basis.

BNAs
All of the OC normalized Non-ionizable Organic parameters met the SMS required limits. For sample L44926-1, the MDL for 2,4-Dimethylphenol was slightly higher than the SMS dry weight limit due to the dilution needed and the low percent solids for this sample.

PCBs
The reported OC MDLs for Aroclors 1016, 1232 and 1242 in all samples (and for 1221 in all samples but L44926-3) were greater than the values listed in the SAP. As stated above, the MDLs were elevated to compensate for overlap of PCB congeners from other Aroclors detected in the samples.

Reporting Requirements (significant figures, units, basis and qualifiers)
For analyses performed at the KC Laboratory, data are reported in accordance with laboratory policy at the time the data were generated. Data are reported to three significant figures for results greater than the RDL and two significant figures for results equal to or less than the RDL.

For results reported with less than two or three significant figures, significant zeroes are implied. This may not apply to subcontracted data.

In the Comprehensive Report attached, Organics parameters are reported in ug/Kg, dry weight basis. In this report format, non-ionizable organic parameters have not been converted to mg/Kg TOC. For all parameters, the MDL and RDL values for each individual sample are reported in the same units and basis as the sample result. Any result measured at less than the MDL or less than the RDL, a <MDL or <RDL qualifier is added, respectively. Other qualifiers added are based on QA/QC failures and are individually explained in this narrative.

Storage Conditions and Holding Times

Sample storage conditions and holding times have been evaluated using guidelines established in the SAPA (WDOE, 2003). The dates and holding time criteria for the actual storage conditions used for organics analyses are listed in the table below.

Parameter	Lab ID#	Date Collected	Date Extracted	Date Analyzed	Sample Holding Time	Extract Holding Time
BNA	L44926-1, 2, 4, 6, 7	15-Jan-08	25-Jan-08	31-Jan-08	1 year at -18°C	40 days at 4°C
	L44926-3, 5	15-Jan-08	25-Jan-08	01-Feb-08		
PCB	L44926-1, 3, 5	15-Jan-08	24-Jan-08	21-Feb-08	14 Days at 4°C	Same as sample
	L44926-2, 4, 6, 7	15-Jan-08	24-Jan-08	26-Jan-08		

Sample storage conditions and holding times were met for all samples in this data submission.

Method Blanks

Method blanks were analyzed for all Organics parameters and all method blank results were less than the MDL, except as noted below:

1. BNAs

The method blank analyzed with BNAs for L44926 had a result above the MDL for Benzyl Butyl Phthalate (2.09 ug/Kg), Bis (2-Ethylhexyl) Phthalate (10.2 ug/Kg) and Di-n-Butyl Phthalate (4.3 ug/Kg). Sample results for Benzyl Butyl Phthalate, Bis (2-Ethylhexyl) Phthalate and Di-n-Butyl Phthalate for that batch (L44926) have been qualified with the B flag. All Benzyl Butyl Phthalate, Bis (2-Ethylhexyl) Phthalate and Di-n-Butyl Phthalate results for these samples should be treated as estimated values.

Surrogate Recoveries

Surrogate recovery acceptance limits for sediment samples have been developed based on historical lab performance using the current analytical methods. Recoveries measured above the acceptance limits are flagged with an L. Recoveries measured below the acceptance limits (but at or above 10%) are flagged with a G. Recoveries below 10% are flagged with an X. Surrogate recovery summaries for each method are shown below.

1. BNAs

For BNA sample data, surrogate recoveries are evaluated separately for the acid and base/neutral fractions. Within each fraction, 2 or more surrogates must be outside the acceptance limits in order to qualify the associated sample data. All BNA surrogate recoveries for the samples were within the lab-specific acceptance limits.

2. PCBs

Sample data are qualified when individual surrogate recoveries are outside lab-specific acceptance limits. For each set of analyses, all surrogate recoveries were within the lab-specific acceptance limits for all samples in this data submission with the exception of DCB for sample L44926-2. The DCB recovery for that sample was 1014%. All results for that sample have been flagged with an "L" qualifier.

Standard Reference Materials (SRMs)

The SRM results associated with these samples are summarized below, according to the analysis method. Acceptance limits for the certified parameters reported in this data set have been developed using historical lab data. SRM recoveries outside these lab-defined limits indicate the method has not performed as expected and the associated sample data have been flagged.

1. BNA

The sediment SRM analyzed in association with the reported BNA results is 1944, certified by the National Institute of Standards and Technology (NIST). The certified organics parameters in SRM 1944 are only a partial list of all the BNA compounds reported in this analysis. All measured recoveries for this SRM were within acceptance limits for this data set.

2. PCB

The sediment SRM analyzed in association with the reported PCB results is HS-2, certified by the National Research Council of Canada. SRM HS-2 contains Aroclor 1254. The measured recovery for this SRM was within acceptance limits.

Matrix Spikes

Matrix Spikes have been analyzed for each method. Recovery acceptance limits for each parameter in sediment have been developed based on historical lab performance using the current analytical methods. The acceptance limits are not applicable when the unspiked sample level was 4 times or greater than the spiked concentration. When applicable, matrix spike recoveries outside these lab-defined limits indicate the method has not performed as expected and the associated sample data have been flagged.

1. BNA

Each of the reported BNA compounds was included in the matrix spike and measured recoveries for each were within their acceptance limits with the exception of Benzoic Acid with a recovery of 185%. An "L" flag was added to the sample results for Benzoic Acid.

2. PCB

Aroclor 1260 and 1016 only are used as the spiking parameters for PCB matrix spike. The measured recovery for each spiked parameter was within their acceptance limits.

Laboratory Replicate Samples

A laboratory duplicate sample(s) was analyzed for each Organics parameter. The relative percent differences (RPDs) for laboratory duplicate for all parameters at or above the RDL were less than or equal to the acceptance limit of 35%.

Additional QA Issues:

PCB Analysis:

PCB data reported for this set of samples include numeric values for only those Aroclors that could be positively identified in each sample and were measured above the detection limit. Identification of Aroclors 1016, 1221, 1232 and 1242 was not possible for all samples (L44926-1 through -7) due to the overlap of the congeners from Aroclors 1248, 1254 and 1260. For those Aroclors and samples where this overlap has occurred, the result is reported as <MDL with elevated MDL and RDL values. The elevated MDL represents the maximum amount that would have been reported for that Aroclor had it been positively identified. The RDL value has also been elevated by the same proportion.

The table below lists the samples and affected Aroclors.

Lab Sample Number	PCB 1016	PCB-1221	PCB 1232	PCB 1242
L44926-1	x	x	x	x
L44926-2	x	x	x	x
L44926-3	x		x	x
L44926-4	x	x	x	x
L44926-5	x	x	x	x
L44926-6	x	x	x	x
L44926-7	x	x	x	x

TABLE 1
SEDIMENT SAMPLE INVENTORY

Sample	Locator / Description (see SAP)	PSD	Solids	TOC	Metals[1]	BNA[2]	PCB	Comments
L44926-1	DWPD-01	X	X	X	X	X	X	
L44926-2	DWPD-02	X	X	X	X	X	X	
L44926-3	DWPD-03	X	X	X	X	X	X	
L44926-4	DWPD-04	X	X	X	X	X	X	
L44926-5	DWPD-05	X	X	X	X	X	X	
L44926-6	DW105	X	X	X	X	X	X	core, 1 to 2 ft
L44926-7	DW105	X	X	X	X	X	X	core, 0 to 1 ft

1 Metals = Hg, Sb, As, Cd, Cr, Cu, Pb, Ni, Ag, Zn
2 BNAs = includes Chlorobenzenes

TABLE 2
QC SAMPLE FREQUENCY FOR SEDIMENT CHEMICAL AND PHYSICAL PARAMETERS

Parameter	Method Blank	Duplicate	Triplicate	Matrix Spike	SRM	Surrogates
PSD	No	See Triplicate	5% minimum, 1 per QC batch	No	No	No
Total Solids	1 per QC batch	See Triplicate	5% minimum, 1 per QC batch	No	No	No
TOC	1 per QC batch	See Triplicate	5% minimum, 1 per QC batch	5% minimum, 1 per QC batch	1 per QC batch	No
Metals	1 per QC batch	5% minimum, 1 per QC batch	No	5% minimum, 1 per QC batch	1 per QC batch	No
BNAs	1 per QC batch	5% minimum, 1 per QC batch	No	5% minimum, 1 per QC batch	1 per QC batch	Yes
PCBs	1 per QC batch	5% minimum, 1 per QC batch	No	5% minimum, 1 per QC batch	1 per QC batch	Yes

TABLE 3 - SUMMARY OF SEDIMENT DATA QUALIFIERS

Condition to Qualify	King County Data Qualifier	Sedqual Data Qualifier	Organic QC Limits	Metal QC Limits	Conventional QC Limits	Comment
very low matrix spike recovery	X	X	< 10 %	< 10 %	< 10 %	
low matrix spike recovery	G	G	Compound specific	< 75%	< 75% *	
high matrix spike recovery	L	L	Compound specific	>125%	>125% *	
low standard reference material recovery	G	G	Compound and SRM specific	Element and SRM specific	< 80%	
high standard reference material recovery	L	L	Compound and SRM specific	Element and SRM specific	>120%	
high duplicate relative percent difference	E	E	>35 %	>20%	NA	for organics and metals
high triplicate relative standard deviation	E	E	NA	NA	> 20%	for conventionals
less than the reporting detection limit	<RDL**	T	NA	NA	NA	
less than the method detection limit	<MDL	U	NA	NA	NA	
contamination detected in method blank	B	B	>/=MDL	>/=MDL	>/=MDL	
biased data based on very low surrogate recoveries	X	X	any surrogate <10%	NA	NA	
biased data based on low surrogate recoveries	G	G	Surrogate specific	NA	NA	At least 2 surrogates < limit for BNAs
biased data based on high surrogate recoveries	L	L	Surrogate specific	NA	NA	At least 2 surrogates > limit for BNAs
rejected - unusable for all purposes	R	J or Q	NA	NA	NA	
a sample handling criteria has not been met	H	H	NA	NA	NA	container, hold time, preservation
		-				

* 65% to 135% for Total Sulfides.

** For Sedqual files, <MDL uses a “U” flag, <RDL is not flagged since the RDL value is not included in the Sedqual templates generated by King County.

KING COUNTY ENVIRONMENTAL LABORATORY
QUALITY ASSURANCE REVIEW

For

Denny Way CSO and Elliott West CSO
Nearshore Sediment Remediation
Post Dredging Perimeter Monitoring Event
April - 2008

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INTRODUCTION

This quality assurance (QA) narrative is intended to document the QA review conducted on the chemistry analyses performed for the Denny Way CSO and Elliott West CSO Nearshore Sediment Remediation Post Dredging Perimeter Monitoring Event. The QA narrative is organized into the five sections listed below.

- General Comments
- Sample Collection
- Conventional Analyses
- Metal Chemistry
- Organic Chemistry

An overview of the approach used for the QA review is detailed in the *General Comments* section. Additional information specific to each analysis is included in the appropriate analytical section.

This QA review and narrative (specifically defined as QA1) have been conducted in accordance with guidelines established through the Puget Sound Dredged Disposal Analysis (PSDDA) program, Sediment Management Standards (WAC 173-204-610) and the Sediment Sampling and Analysis Appendix (SAPA), WDOE 2003. Other approaches incorporated in the QA review have been established through collaboration between the King County Environmental Laboratory (KC Laboratory) and the Washington State Department of Ecology (Ecology) Sediment Management Unit.

GENERAL COMMENTS

Scope of Samples Submitted

This QA review is associated with marine sediment samples collected on April 2, 2008 as part of the Denny Way CSO and Elliott West CSO Nearshore Sediment Remediation Post Dredging Perimeter Monitoring Event.

Except where noted in the subcontracting sections of this QA review, all analyses have been conducted by the King County Environmental Laboratory (KCEL). Sediment analytical data are reported with associated data qualifiers and have undergone QA1 review, as summarized in this narrative report.

Completeness

Completeness has been evaluated for this data submission and QA review by considering the following criteria:

- Comparing reported data to the planned project analyses summarized in Table 1.
- Compliance with storage conditions and holding times.
- Frequency of analysis of the complete set of quality control (QC) samples outlined in Table 2.

Subcontracted Analyses

Analyses that have been subcontracted and the issues associated with these subcontracted analyses are noted in this narrative.

Methods

Analytical methods are noted in the applicable analytical sections of this QA review.

Target Lists

The reported target lists have been compared to the target analytes listed in *Table 1 - Marine Sediment Quality Standards Chemical Criteria* and *Table 3 - Puget Sound Marine Sediment Cleanup Screening Levels Chemical Criteria* contained in Chapter 173-204 WAC.

Detection Limits

As part of the QA1 review, the detection limits reported for each parameter have been reviewed against the detection limit requirements defined in the SAP. When sample results have been reported as less than the Method Detection Limit (<MDL) and the associated detection limits are higher than those defined in the SAP, the particular samples and parameters have been identified and the circumstances explained. These summaries are included with each analytical section of this QA review.

The KC Laboratory reports include both the reporting detection limit (RDL) and the method detection limit (MDL) for each sample and parameter, where applicable. The RDL is defined as *the minimum concentration of a chemical constituent that can be reliably quantified while t*he MDL is defined as *the minimum concentration of a chemical constituent that can be detected*. Some subcontracted laboratory data are available with an MDL only, in accordance with the subcontracting laboratory policies. For some methods the detection limits reported may vary from sample to sample depending on the amount of sample analyzed and any additional dilutions required.

Storage Conditions and Holding Times

Storage conditions and holding times have been evaluated using guidelines defined in the project SAP. Preparation and analysis holding times for each method are summarized in each analytical section.

Method Blanks
Method blank results have been used to evaluate the possible laboratory contamination of samples. Method blank results have been reviewed for the presence of analytes detected at or greater than the MDL. For analytes where the method blank response was at or above the MDL all associated sample results have been qualified with a B flag.

Standard Reference Materials
Standard reference material (SRM) recoveries have been used to evaluate possible low or high analytical bias on a batch-specific basis. SRM analysis is included with metals and selected organic and conventional parameters (see Table 2). SRMs are purchased from outside agencies (NIST or NRCC) and must have a certified analyte value in order for a particular parameter to be evaluated. All associated sample results for the certified analytes are flagged if the SRM recoveries are unacceptable. Associated sample results are flagged with an L whenever recoveries are measured above the acceptance limits and are flagged with a G when recoveries are measured below the acceptance limits.

Matrix Spikes
Matrix spike recoveries have been used to evaluate possible low or high analytical bias on a matrix and batch-specific basis. Matrix spikes are analyzed with metals, organics and selected conventionals parameters (see Table 2). Associated sample results are flagged with an L whenever recoveries are measured above the acceptance limits and are flagged with a G when recoveries are measured below the acceptance limits (but at or above 10%). Associated results are flagged with an X whenever recoveries are less than 10%.

For Metals only, matrix spike recovery results are used to qualify sample data only when the sample levels in the spiked sample are less than 4 times the spiked concentration. High sample levels relative to the spiked concentration can compromise the measurement of accurate spike recoveries.

Laboratory Replicate Samples
Replicate analysis (laboratory duplicates or triplicates) is used as an indicator of method precision and is used to qualify data on an analyte and batch-specific basis. Not all replicate data are used, however, as an indicator for data qualification. Only sets of replicate results which include at least one result greater than the RDL are considered for data qualification. These guidelines have been used to account for the fact that precision obtained near the detection limit is not representative of precision obtained throughout the entire analytical range. Associated results are flagged with an E whenever the measured precision is unacceptable (greater than the acceptance limit).

Surrogates
Surrogate recoveries have been used to evaluate possible low or high analytical bias on a sample-specific basis. Surrogates are only analyzed for organic parameters. Individual sample results are flagged with an L whenever recoveries are measured above the acceptance limits and are flagged with a G when recoveries are measured below the acceptance limits (but at or above 10%). Associated results are flagged with an X whenever recoveries are less than 10%.

Data Qualifiers
The data qualification guidelines described above has been summarized in Table 3. This table conforms to the guidelines in the 2003 SAPA and also shows the data qualifiers used for the Sedqual electronic data format.

Units and Significant Figures
Units and the reporting basis vary, depending on the parameter and are explained in the analytical sections below. Data generally have been reported to three significant figures if above the RDL and two significant figures if equal to or below the RDL.

SAMPLE COLLECTION

This section describes sampling activities associated with the collection of 7 marine sediment samples on April 2, 2008. All sampling was conducted by the King County Environmental Lab. All sampling activities were conducted following guidance suggested in the Puget Sound Protocols (PSEP, 1996 and 1998).

Sampling Locations and Station Positioning

Sampling locations (stations) were selected and the prescribed coordinates determined prior to field activities. The prescribed station coordinates are presented in the following table. Also presented in the table are the actual coordinates recorded during sampling activities. All station coordinates are recorded in state plane coordinate system North American Datum 1983 (NAD83).

SEDIMENT GRAB SAMPLING POINTS, April 2008

Lab Number	Locator	Cast	Grabs Accepted	Prescribed Northing	Actual Northing	Prescribed Easting	Actual Easting	Offset (m)
L45314-1	DW-01			229703		1263143		
		1	2		229703		1263140	
		2	1		229696		1263137	
L45314-2	DW-03			229529		1263359		
		1	1		229530		1263359	
		2	1		229524		1263359	
		3	1		229539		1263356	
L45314-3	DW-13			229363		1263343		
		1	2		229362		1263340	
		2	1		229363		1263343	
L45314-4	DW-19			229150		1263268		
		1	1		229154		1263269	
		1	2		229149		1263268	
L45314-5	DW-33			229130		1263747		
		1	1		229132		1263747	
		2	1		229138		1263744	
		3	1		229136		1263738	
L45314-6	DW-34			228952		1263903		
		1	1		228896		1263880	18.5
		2	2		228898		1263874	18.7
L45314-7	LTBC20			229246		1263461		
		1	1		229237		1263455	
		2	1		229239		1263454	
		3	1		229242		1263459	

Sediment grab samples were collected from the King County Environmental Lab research vessel *RV Liberty*, which is equipped with a differential global positioning system (DGPS). Field coordinates were recorded using DGPS for each deployment grab sampler as it contacted the sediment. All field coordinates for individual casts listed in the above table are within the +/- 6 meter accuracy limits, as defined in the SAP, with one exception. Location DW-34 was sampled

18.5 and 18.6 meters from the prescribed coordinate location due to the presence of inferior sample material and unacceptable grabs at the originally prescribed coordinates.

Sample Description Table

Lab Sample #	Locator	Sample Collection	Average Sediment Sampling Depth (cm)	Sample Usage
L45314-1	DW-01	Surface Grabs	14	Chemistry
L45314-2	DW-03	Surface Grabs	5	Chemistry
L45314-3	DW-13	Surface Grabs	13	Chemistry
L45314-4	DW-19	Surface Grabs	14	Chemistry
L45314-5	DW-33	Surface Grabs	7	Chemistry
L45314-6	DW-34	Surface Grabs	11	Chemistry
L45314-7	LTBC20	Surface Grabs	14	Chemistry

Sample Collection

Sediment was collected at each station using a stainless steel, modified, 0.1 m^2 Van Veen grab sampler deployed via hydrowire. For each acceptable deployment, between 5-14 cm of sediment was recovered. Multiple sampler deployments were performed to collect sufficient sample volume to perform all chemistry analyses.

Water depth at the 7 subtidal cap sample stations ranged between 6.2 and 8.6 ft (not corrected for tide).

Sample Handling

At locations DW-01, -13, -19, -34 and LTBC20 sediment from the top 10 cm was sub-sampled from the Van Veen grabs through the use of a stainless steel sampling spoon. At locations DW-03 and -33, full penetration of the Van Veen samplers was not possible for all grabs so less than 10 cm of depth, on average, was collected. The sediment was placed into a stainless steel compositing bowl, covered with foil. The sediment within the bowl was then thoroughly homogenized and split out into pre-labeled containers. Sample containers were supplied by the King County Environmental Laboratory and were pre-cleaned according to analytical specifications.

Decontamination

Separate compositing bowls and sub-sampling and mixing equipment were used to sample each station to avoid cross contamination of the samples. The Van Veen grab sampler was decontaminated between stations by scrubbing with a brush and ambient seawater, followed by a thorough *in situ* rinsing.

Sample Storage and Preservation

Samples were stored in ice-filled coolers from the time of collection until delivery to the King County Environmental Laboratory. Samples were delivered under chain-of-custody and were maintained as such throughout the analytical process. Samples were stored frozen (-18°C) by the laboratory until analysis with the exception of samples for particle size distribution (PSD). PSD samples were stored refrigerated at approximately 4°C. A more complete description of sample handling and storage can be found in each analytical chemistry section of this narrative.

Copies of chain-of-custody forms and field notes are included as an appendix to this QA review narrative. The collect time is defined as that time that sampling commences at each station.

CONVENTIONAL ANALYSES

Completeness

Conventional data are reported for all samples and parameters summarized in Table 1. These samples were analyzed in association with the complete set of QC samples outlined in Table 2.

Subcontracted Analyses

All analyses were performed at the King County Environmental Lab.

Methods

PSD analysis was performed in accordance with ASTM and Puget Sound Protocols methodologies (*Recommended Protocols for Measuring Conventional Sediment Variables in Puget Sound* - page 9 - PSEP, 1986). TOC analysis was performed in accordance with SM5310-B and EPA 9060. Total solids analyses were performed in accordance with SM2540-G.

Detection Limits

The detection limits (MDLs) reported for Conventionals parameters are all within the requirements defined in the SAP, except for the following:

Parameter (mg/Kg)	Sample ID#	SAP MDL (dry wt.)	Reported MDL (dry wt.)	Reason for higher MDL Value
Total Organic Carbon	L45314-1, 4, 6	1000	(1)	Reduced sample size analyzed and necessary dilution of the sample.

(1) See attached SAP MDL Comparison table

In all cases where the reported MDL was higher than the SAP MDL, a detectable level was measured, therefore project objectives were met.

Reporting Requirements (significant figures, units, basis and qualifiers)

For analyses performed at the KC Laboratory, data are reported in accordance with laboratory policy at the time the data were generated. Data are reported to three significant figures for results greater than the RDL and two significant figures for results equal to or less than the RDL. For results reported with less than two or three significant figures, significant zeroes are implied. This may not apply to subcontracted data.

In the Comprehensive Report attached, Conventionals parameters are reported in mg/Kg, dry weight basis, for TOC. Particle Size Distribution (PSD) and Total Solids are reported in percent, wet weight basis. For all parameters, the MDL and RDL values for each individual sample are reported in the same units and basis as the sample result. Any result measured at less than the MDL or less than the RDL, a <MDL or <RDL qualifier is added, respectively. Other qualifiers added are based on QA/QC failures and are individually explained in this narrative.

Storage Conditions and Holding Times

Sample storage conditions and holding times have been evaluated using guidelines established in the SAP. The dates and holding time criteria for the actual storage conditions used for conventional analyses are listed in the table below.

Parameter	Lab ID#	Date Collected	Prep Date	Date Analyzed	Sample Holding Time	Extract Holding Time
Particle Size Distribution	L45314-1,2,3,4,5,6,7	02-Apr-2008	14-Apr-2008	16-Apr-2008	6 months at ≤6°C	NA
Total Organic Carbon	L45314-1,2,3,4,5,6,7	02-Apr-2008	30-Apr-2008	09-May-2008	6 months at -18°C	6 months at -18°C
Total Solids	L45314-1,2,3,4,5,6,7	02-Apr-2008	30-Apr-2008	30-Apr-2008	6 months at -18°C	NA

Sample storage conditions and holding times were met for all samples in this data submission.

Method Blanks

Method blanks were analyzed in connection with total solids and total organic carbon analyses. All method blanks results were less than the MDL.

Standard Reference Materials

An SRM (Buffalo River Sediment) was analyzed in connection with TOC analysis. The percent recovery for the SRM analysis was within the 80 to 120% QC limits.

Matrix Spikes

The matrix spike recovery for TOC were within the 75 to 125% acceptance limits.. The acceptance limits are not applicable when the unspiked sample level is 4 times or greater than the spiked concentration.

Laboratory Replicate Samples

A set of laboratory triplicates was analyzed for each of the conventional parameters. The percent relative standard deviation (%RSD) for each triplicate set was less than or equal to the 20% acceptance limit with the exception of the gravel category. The %RSD for the gravel category was 65%. The gravel category represented less than 4% of the total mass of the sample. The results for this category have been flagged with an E qualifier. No other corrective action was taken.

METALS CHEMISTRY

Completeness
Metal chemistry data are reported for all samples and parameters summarized in Table 1. These samples were analyzed for mercury and other metals in association with the complete set of QC samples outlined in Table 2.

Subcontracted Analyses
Metals analysis was not subcontracted for these sets of samples.

Methods
Mercury analysis was performed in accordance with EPA Method 7471A. Analysis for other metals was performed in accordance with EPA method 3050B/6010B.

Target List
The reported target list includes all metals specified in Table 1.

Detection Limits
The detection limits (MDLs) reported for Metals parameters are all within the requirements defined by the SAP.

Reporting Requirements (significant figures, units, basis and qualifiers)
For analyses performed at the KC Laboratory, data are reported in accordance with laboratory policy at the time the data were generated. Data are reported to three significant figures for results greater than the RDL and two significant figures for results equal to or less than the RDL. For results reported with less than two or three significant figures, significant zeroes are implied.

In the Comprehensive Report attached, Metals parameters are reported in mg/Kg, dry weight basis, for all elements. The MDL and RDL values for each individual sample are reported in the same units and basis as the sample result. Any result measured at less than the MDL or less than the RDL, a <MDL or <RDL qualifier is added, respectively. Other qualifiers added are based on QA/QC failures and are individually explained in this narrative.

Storage Conditions and Holding Times
Sample storage conditions and holding times have been evaluated using guidelines established during the Third Annual PSDDA Review Meeting. The dates and holding time criteria for the actual storage conditions used for metals analyses are listed in the table below.

Parameter	Lab ID#	Date Collected	Date Digested/ Extracted	Date Analyzed	Sample Holding Time	Digestate/Extract Holding Time
Total Metals	L45314-1 - 7	4/2/2008	5/1/2008	5/1/2008	2 Years at -18°C	6 months
Total Mercury	L45314-1 - 7	4/2/2008	4/22/2008	4/22/2008	28 days at -18°C	NA

Sample storage conditions and holding times were met for all samples in this data submission.

Method Blanks
All metals method blanks results were less than the MDL

Standard Reference Materials
The SRM analyzed in association with samples included in this data submission is National Research Council of Canada PACS-2. This SRM is not certified for Silver, Arsenic or Cadmium. Acceptance limits for the certified elements have been developed using historical lab data since the certified SRM values and limits were determined with different analysis techniques. SRM recoveries outside these lab-defined limits indicate the method has not performed as expected and the sample data have been qualified to indicate the expected bias.

All metals SRM recoveries were within the lab defined limits indicated in the SAP.

A laboratory control sample (LCS) ERA Soil was also analyzed with the total metals digestion. All recoveries were within the certified limits of the sample. The LCS is used as a secondary check for the total metals digestion procedure because the certified values for the elements are determined using the same methodology. No results from the LCS are used to qualify data.

Matrix Spikes
All matrix spike recoveries were within the 75 to 125% QC limits with the following exceptions:

- The reported matrix spike recovery of 20% for Antimony in WG96419 for sample numbers L45314-1 - 7 failed to meet the 75 to 125% QC acceptance criteria. Antimony results for all samples in WG96419 have been qualified with a “G”.
- The reported matrix spike recovery of 53% for Mercury in WG96285 for sample numbers L45314-1 - 7 failed to meet the 75 to 125% acceptance criteria. The reported matrix spike duplicate recovery of 69% for Mercury for the same samples also failed to meet the 75 to 125% QC acceptance criteria. The relative percent difference (RPD) between the matrix and matrix spike duplicate for mercury of 26% failed to meet the 20% QC acceptance limit. It is expected that the unacceptable recovery is due to the observed in-homogeneity of the background levels of mercury in these samples rather than a low bias. Mercury results for all samples in this data submission have therefore been qualified with an “E”.

Laboratory Replicate Samples
The relative percent differences (RPDs) for laboratory duplicate results for all metals were less than or equal to the QC limit of 20% with the exceptions:
- The reported RPD of 70% for Mercury in WG96285 for sample numbers L45314-1 - 7 failed to meet the 20% QC acceptance limit. Mercury results for all samples in WG96285 have been qualified with an “E”.

ORGANIC CHEMISTRY

Completeness

Organics data are reported for all samples and parameters summarized in Table 1. These samples were analyzed in association with the complete set of QC samples outlined in Table 2.

Methods

BNA analysis was performed in accordance with EPA method 8270. PCB analysis was performed in accordance with EPA methods 8082A.

Target List

The reported BNA target list includes all compounds specified in *Table 1 - Marine Sediment Quality Standards Chemical Criteria* and *Table 3 - Puget Sound Marine Sediment Cleanup Screening Levels Chemical Criteria* contained in Chapter 173-204 WAC with the exception of benzo(j)fluoranthene. The KC Laboratory has verified that analytical conditions are sufficient to calculate a total benzofluoranthene result using the reported *b* and *k* isomers.

Reported PCB data include Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260.

Detection Limits, Units and Significant Figures

The detection limits (MDLs), as reported on a wet weight basis for Organics parameters, are all within the requirements defined in the SAP, except for the following:

PCBs

The reported MDLs for Aroclors 1016, 1221, 1232 and 1242 in samples L45314-1, 4, 6, 7 were greater than the wet weight MDL values listed in the SAP. The reported MDLs for these Aroclors were elevated to compensate for overlap of PCB congeners from other Aroclors detected in the samples. Detectable levels of Aroclors 1260, 1254 and 1248 were reported in all samples.

For Non-ionizable Organic parameters, MDL values were also converted to an Organic Carbon (OC) basis, using the TOC values determined for each sample. The attached SMS OC and Dry Weight Comparison table list those samples where the reported MDL value did not meet the SAP requirements, when converted to an OC basis.

BNAs

All of the OC normalized Non-ionizable Organic parameters met the SAP required limits.

PCBs

The reported OC MDLs for Aroclors 1016, 1221, 1232 and 1242 in selected samples were greater than the values listed in the SAP. As stated above, the MDLs were elevated to compensate for overlap of PCB congeners from other Aroclors detected in the samples.

Reporting Requirements (significant figures, units, basis and qualifiers)

For analyses performed at the KC Laboratory, data are reported in accordance with laboratory policy at the time the data were generated. Data are reported to three significant figures for results greater than the RDL and two significant figures for results equal to or less than the RDL. For results reported with less than two or three significant figures, significant zeroes are implied. This may not apply to subcontracted data.

In the Comprehensive Report attached, Organics parameters are reported in ug/Kg, dry weight basis. In this report format, non-ionizable organic parameters have not been converted to mg/Kg TOC. For all parameters, the MDL and RDL values for each individual sample are reported in the same units and basis as the sample result. Any result measured at less than the MDL or less than the RDL, a <MDL or <RDL qualifier is added, respectively. Other qualifiers added are based on QA/QC failures and are individually explained in this narrative.

Storage Conditions and Holding Times

Sample storage conditions and holding times have been evaluated using guidelines established in the SAPA (WDOE, 2003). The dates and holding time criteria for the actual storage conditions used for organics analyses are listed in the table below.

Parameter	Lab ID#	Date Collected	Date Extracted	Date Analyzed	Sample Holding Time	Extract Holding Time
BNAs	L45314-1 to 7	02-Apr-08	08-Apr-08	15, 16-Apr-08	1 year at -18°C	40 days at 4°C
PCBs	L45314-1 to 7	02-Apr-08	11-Apr-08	13-May-08	1 year at -18°C	40 days at 4°C

Sample storage conditions and holding times were met for all samples in this data submission.

Method Blanks

Method blanks were analyzed for all Organics parameters and all method blank results were less than the MDL, except as noted below:

1. BNAs

The method blank analyzed with BNAs for L45314 had a result above the MDL for Benzyl Butyl Phthalate (4.28 ug/Kg), Bis (2-Ethylhexyl) Phthalate (11.8 ug/Kg) and Di-N-Butyl Phthalate (5.2 ug/Kg). Sample results for Benzyl Butyl Phthalate, Bis (2-Ethylhexyl) Phthalate and Di-N-Butyl Phthalate for that batch (L45314) have been qualified with the B flag. All Benzyl Butyl Phthalate, Bis (2-Ethylhexyl) Phthalate and Di-N-Butyl Phthalate results for these samples should be treated as estimated values.

Surrogate Recoveries

Surrogate recovery acceptance limits for sediment samples have been developed based on historical lab performance using the current analytical methods. Recoveries measured above the acceptance limits are flagged with an L. Recoveries measured below the acceptance limits (but at or above 10%) are flagged with a G. Recoveries below 10% are flagged with an X. Surrogate recovery summaries for each method are shown below.

1. BNAs

For BNA sample data, surrogate recoveries are evaluated separately for the acid and base/neutral fractions. Within each fraction, 2 or more surrogates must be outside the acceptance limits in order to qualify the associated sample data. All BNA surrogate recoveries were within the lab-specific acceptance limits.

2. PCBs

Sample data are qualified when individual surrogate recoveries are outside lab-specific acceptance limits. For each set of analyses, all surrogate recoveries were within the lab-specific acceptance limits for all samples in this data submission.

Standard Reference Materials (SRMs)

The SRM results associated with these samples are summarized below, according to the analysis method. Acceptance limits for the certified parameters reported in this data set have been developed using historical lab data. SRM recoveries outside these lab-defined limits indicate the method has not performed as expected and the associated sample data have been flagged.

1. BNAs

The sediment SRM analyzed in association with the reported BNA results is 1944, certified by the National Institute of Standards and Technology (NIST). The certified organics parameters in

SRM 1944 are only a partial list of all the BNA compounds reported in this analysis. All measured recoveries for this SRM were within acceptance limits for this data set.

2. PCBs
The sediment SRM analyzed in association with the reported PCB results is HS-2, certified by the National Research Council of Canada. SRM HS-2 contains Aroclor 1254. The measured recovery for this SRM was within acceptance limits.

Matrix Spikes
Matrix Spikes have been analyzed for each method. Recovery acceptance limits for each parameter in sediment have been developed based on historical lab performance using the current analytical methods. The acceptance limits are not applicable when the unspiked sample level was 4 times or greater than the spiked concentration. When applicable, matrix spike recoveries outside these lab-defined limits indicate the method has not performed as expected and the associated sample data have been flagged.

1. BNAs
Each of the reported BNA compounds was included in the matrix spike and measured recoveries for each were within their acceptance limits.

2. PCBs
Aroclor 1260 and 1016 only are used as the spiking parameters for PCB matrix spike. The measured recovery for each spiked parameter was within their acceptance limits.

Laboratory Replicate Samples
A laboratory duplicate sample(s) was analyzed for each Organics parameter. The relative percent differences (RPDs) for laboratory duplicate for all parameters at or above the RDL were less than or equal to the acceptance limit of 35%, except for the following:

1. BNA
The RPD for Bis (2-ethylhexyl) phthalate and Pyrene for the duplicate analysis of sample L45314-3 were 41 and 38% respectively. All sample results for these parameters have been flagged with an "E" qualifier to indicate estimated results.

Additional QA Issues:

PCB Analysis:
PCB data reported for this set of samples include numeric values for only those Aroclors that could be positively identified in each sample and were measured above the detection limit. Identification of Aroclors 1016, 1221, 1232 and 1242 was not possible for all samples (L45314-1, -4, -6, -7) due to the overlap of the congeners from Aroclors 1248, 1254 and 1260. For those Aroclors where this overlap has occurred, the result is reported as <MDL with elevated MDL and RDL values. The elevated MDL represents the maximum amount that would have been reported for that Aroclor had it been positively identified. The RDL value has also been elevated by the same proportion.
The table below lists the samples and affected Aroclors.

Lab Sample Number	PCB 1016	PCB-1221	PCB 1232	PCB 1242
L45314-1	x		x	x
L45314-4	x	x	x	x
L45314-6	x		x	x
L45314-7	x		x	x

TABLE 1
SEDIMENT SAMPLE INVENTORY

Sample	Locator / Description (see SAP)	PSD	Solids	TOC	Metals[1]	BNAs[2]	PCBs	Comments
L45314-1	DW-01	X	X	X	X	X	X	
L45314-2	DW-03	X	X	X	X	X	X	
L45314-3	DW-13	X	X	X	X	X	X	
L45314-4	DW-19	X	X	X	X	X	X	
L45314-5	DW-33	X	X	X	X	X	X	
L45314-6	DW-34	X	X	X	X	X	X	
L45314-7	LTBC20	X	X	X	X	X	X	

1 Metals = Hg, Sb, As, Cd, Cr, Cu, Pb, Ni, Ag, Zn
2 BNAs = includes Chlorobenzenes

TABLE 2
QC SAMPLE FREQUENCY FOR SEDIMENT CHEMICAL AND PHYSICAL PARAMETERS

Parameter	Method Blank	Duplicate	Triplicate	Matrix Spike	SRM	Surrogates
PSD	No	See Triplicate	5% minimum, 1 per QC batch	No	No	No
Total Solids	1 per QC batch	See Triplicate	5% minimum, 1 per QC batch	No	No	No
TOC	1 per QC batch	See Triplicate	5% minimum, 1 per QC batch	5% minimum, 1 per QC batch	1 per QC batch	No
Metals	1 per QC batch	5% minimum, 1 per QC batch	No	5% minimum, 1 per QC batch	1 per QC batch	No
BNAs	1 per QC batch	5% minimum, 1 per QC batch	No	5% minimum, 1 per QC batch	1 per QC batch	Yes
PCBs	1 per QC batch	5% minimum, 1 per QC batch	No	5% minimum, 1 per QC batch	1 per QC batch	Yes

TABLE 3 - SUMMARY OF SEDIMENT DATA QUALIFIERS

Condition to Qualify	King County Data Qualifier	Sedqual Data Qualifier	Organic QC Limits	Metal QC Limits	Conventional QC Limits	Comment
very low matrix spike recovery	X	X	< 10 %	< 10 %	< 10 %	
low matrix spike recovery	G	G	Compound specific	< 75%	< 75% *	
high matrix spike recovery	L	L	Compound specific	- 125%	- 125% *	
low standard reference material recovery	G	G	Compound and SRM specific	Element and SRM specific	< 80%	
high standard reference material recovery	L	L	Compound and SRM specific	Element and SRM specific	- 120%	
high duplicate relative percent difference	E	E	- 35 %	- 20%	NA	for organics and metals
high triplicate relative standard deviation	E	E	NA	NA	- 20%	for conventionals
less than the reporting detection limit	<RDL**	T	NA	NA	NA	
less than the method detection limit	<MDL	U	NA	NA	NA	
contamination detected in method blank	B	B	- /=MDL	- /=MDL	- /=MDL	
biased data based on very low surrogate recoveries	X	X	any surrogate <10%	NA	NA	
biased data based on low surrogate recoveries	G	G	Surrogate specific	NA	NA	At least 2 surrogates < limit for BNAs
biased data based on high surrogate recoveries	L	L	Surrogate specific	NA	NA	At least 2 surrogates > limit for BNAs
rejected - unusable for all purposes	R	J or Q	NA	NA	NA	
a sample handling criteria has not been met	H	H	NA	NA	NA	container, hold time, preservation
		-				

* 65% to 135% for Total Sulfides.

** For Sedqual files, <MDL uses a “U” flag, <RDL is not flagged since the RDL value is not included in the Sedqual templates generated by King County.

Appendix J

Lab Reports

King County Environmental Lab Analytical Report

PROJECT: 423368-80	Locator: DW-01	Locator: DW-03	Locator: DW-13	Locator: DW-19	Locator: DW-33	Locator: DW-34	Locator: LTBC20	Locator: LTBC20
	Descrip: DENNY WAY NEARSHOR	Descrip: DENNY WAY NEARSHOR	Descrip: DENNY WAY NEARSHOR	Descrip: DENNY WAY NEARSHOR	Descrip: DENNY WAY NEARSHOR	Descrip: DENNY WAY NEARSHOR	Descrip: E BAY HOTSPOT GRAB	Descrip: E BAY HOTSPOT GRAB
	Client Loc:	Client Loc:	Client Loc:	Client Loc:	Client Loc:	Client Loc:	Client Loc:	Client Loc:
	Sampled: 11/14/07 9:05:00 AM	Sampled: 11/14/07 10:00:00 AM	Sampled: 11/14/07 11:00:00 AM	Sampled: 11/14/07 11:30:00 AM	Sampled: 11/14/07 2:20:00 PM	Sampled: 11/14/07 1:20:00 PM	Sampled: 11/14/07 11:55:00 AM	Sampled: 11/14/07 12:30:00 PM
	TimeSpan:	TimeSpan:	TimeSpan:	TimeSpan:	TimeSpan:	TimeSpan:	TimeSpan:	TimeSpan:
	Lab ID: L44480-1	Lab ID: L44480-2	Lab ID: L44480-3	Lab ID: L44480-4	Lab ID: L44480-5	Lab ID: L44480-6	Lab ID: L44480-7	Lab ID: L44480-8
	Matrix: SALTWTRSED	Matrix: SALTWTRSED	Matrix: SALTWTRSED	Matrix: SALTWTRSED	Matrix: SALTWTRSED	Matrix: SALTWTRSED	Matrix: SALTWTRSED	Matrix: SALTWTRSED
	% Solids: 52.7	% Solids: 75.9	% Solids: 59.6	% Solids: 53.3	% Solids: 90	% Solids: 66.6	% Solids: 69.3	% Solids: 63.2

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis				
COMBINED LABS																																	
M=CV ASTM D422(03-02-005-001)																																	
Clay *	14.1		0.5	1	%	2.6		0.5	1	%	8.7		0.5	1	%	16.1		0.5	1	%	1.5		0.5	1	%	8.5		0.5	1	%	5.1		0.5	1	%	6.1		0.5	1	%
Fines *	60.4		0.5	1	%	6.3		0.5	1	%	25.4		0.5	1	%	54.8		0.5	1	%	1.5		0.5	1	%	28.9		0.5	1	%	12		0.5	1	%	12.7		0.5	1	%
Gravel *	0.2	<RDL	0.1	1	%	80.2		0.1	1	%	0.9	<RDL	0.1	1	%	0.7	<RDL	0.1	1	%	89		0.1	1	%	0.8	<RDL	0.1	1	%	0.8	<RDL	0.1	1	%	1.1		0.1	1	%
p+0.00 *	0.4	<RDL	0.1	1	%	4.3		0.1	1	%	1.5		0.1	1	%	0.6	<RDL	0.1	1	%	4.3		0.1	1	%	0.9	<RDL	0.1	1	%	1.6		0.1	1	%	1.7		0.1	1	%
p+1.00 *	0.8	<RDL	0.1	1	%	2.8		0.1	1	%	14.9		0.1	1	%	6.6		0.1	1	%	1.7		0.1	1	%	9.9		0.1	1	%	27.8		0.1	1	%	21.3		0.1	1	%
p+10.0(equal/more than) *	8.3		0.5	1	%	1.1		0.5	1	%	5.8		0.5	1	%	9.7		0.5	1	%	1		0.5	1	%	5.7		0.5	1	%	2.5		0.5	1	%	2.4		0.5	1	%
p+2.00 *	5.1		0.1	1	%	4.4		0.1	1	%	38.8		0.1	1	%	20.1		0.1	1	%	1.3		0.1	1	%	28.2		0.1	1	%	41.2		0.1	1	%	43.4		0.1	1	%
p+3.00 *	11.1		0.1	1	%	2.4		0.1	1	%	14.2		0.1	1	%	8.7		0.1	1	%	0.9	<RDL	0.1	1	%	17.4		0.1	1	%	11.4		0.1	1	%	13.3		0.1	1	%
p+4.00 *	14.7		0.1	1	%	1.7		0.1	1	%	5.4		0.1	1	%	7.3		0.1	1	%	0.5	<RDL	0.1	1	%	12.5		0.1	1	%	3.5		0.1	1	%	4		0.1	1	%
p+5.00 *	10.8		0.5	1	%	2.1		0.5	1	%	7.3		0.5	1	%	6.4		0.5	1	%		<MDL	0.5	1	%	8.5		0.5	1	%	2.5		0.5	1	%	3.6		0.5	1	%
p+6.00 *	22.4		0.5	1	%		<MDL	0.5	1	%	2.9		0.5	1	%	14.5		0.5	1	%		<MDL	0.5	1	%	4.2		0.5	1	%		<MDL	0.5	1	%	0.6	<RDL	0.5	1	%
p+7.00 *	7.5		0.5	1	%	1.6		0.5	1	%	4.4		0.5	1	%	8.9		0.5	1	%		<MDL	0.5	1	%	3.5		0.5	1	%	2.5		0.5	1	%	2.4		0.5	1	%
p+8.00 *	5.8		0.5	1	%		<MDL	0.5	1	%	2.2		0.5	1	%	8.9		0.5	1	%		<MDL	0.5	1	%	4.2		0.5	1	%	1.9		0.5	1	%		<MDL	0.5	1	%
p+9.00 *	5.8		0.5	1	%	1.6		0.5	1	%	2.9		0.5	1	%	6.4		0.5	1	%	0.5	<RDL	0.5	1	%	2.8		0.5	1	%	2.5		0.5	1	%	3.6		0.5	1	%
p-1.00 *		<MDL	0.1	1	%	13		0.1	1	%	0.6	<RDL	0.1	1	%	0.4	<RDL	0.1	1	%	36.6		0.1	1	%	0.6	<RDL	0.1	1	%	0.7	<RDL	0.1	1	%	0.5	<RDL	0.1	1	%
p-2.00 *		<MDL	0.1	1	%	5.5		0.1	1	%	0.1	<RDL	0.1	1	%		<MDL	0.1	1	%	11.8		0.1	1	%		<MDL	0.1	1	%		<MDL	0.1	1	%	0.4	<RDL	0.1	1	%
p-2.00(less than) *	0.1	<RDL	0.1	1	%	61.6		0.1	1	%	0.2	<RDL	0.1	1	%	0.3	<RDL	0.1	1	%	40.5		0.1	1	%	0.1	<RDL	0.1	1	%		<MDL	0.1	1	%	0.2	<RDL	0.1	1	%
Sand *	32.1		0.1	1	%	15.6		0.1	1	%	74.7		0.1	1	%	43.3		0.1	1	%	8.6		0.1	1	%	68.8		0.1	1	%	85.5		0.1	1	%	83.6		0.1	1	%
Silt *	46.4		0.5	1	%	3.7		0.5	1	%	16.7		0.5	1	%	38.7		0.5	1	%		<MDL	0.5	1	%	20.5		0.5	1	%	7		0.5	1	%	6.7		0.5	1	%
M=CV EPA 9060-PSEP09(03-04-002-003)																																	
Total Organic Carbon	20700		2700	5450	mg/Kg	24200		2100	4310	mg/Kg	16800		2200	4380	mg/Kg	19300		3900	7710	mg/Kg	11100		2200	4400	mg/Kg	14500		2300	4460	mg/Kg	9510		1300	2660	mg/Kg	16100		2500	4940	mg/Kg
M=CV SM2540-G (03-01-007-002)																																	
Total Solids *	52.7		0.005	0.01	%	75.9		0.005	0.01	%	59.6		0.005	0.01	%	53.3		0.005	0.01	%	90		0.005	0.01	%	66.6		0.005	0.01	%	69.3		0.005	0.01	%	63.2		0.005	0.01	%
M=ES NONE																																	
Field Personnel	RP/DG				none	RP/DG				none	RP/DG				none	RP/DG				none	RP/DG				none	RP/DG				none	RP/DG				none	RP/DG				none
Sample Depth *	15.9				m	12.2				m	16.3				m	22.3				m	9.7				m	10.9				m	16				m	15.3				m
Sampling Method *	20132				none	20132				none	20132				none	20132				none	20132				none	20132				none	20132				none	20132				none
Sediment Sampling Depth *	11				cm	7				cm	13				cm	14				cm	12				cm	10				cm	11				cm	13				cm
Sediment Sampling Range *	10				cm	6				cm	10				cm	10				cm	10				cm	9				cm	10				cm	10				cm
Sediment Type	22N20				none	3HN30				none	23N20				none	23W20				none	44N30				none	23N20				none	23N20				none	23W26				none
Tidal Condition	S				none	E				none	E				none	E				none	S				none	E				none	E				none	E				none
Tide Height *	40.4				ft	29.5				ft	43.3				ft	63.4				ft	23.9				ft	29.9				ft	43.3				ft	41.7				ft
M=MT EPA 747A (06-03-004-003)																																	
Mercury, Total, CVAA	1.19	E	0.047	0.476	mg/Kg	0.277	E	0.0063	0.0632	mg/Kg	0.22	E	0.0082	0.0829	mg/Kg	0.612	E	0.0092	0.0921	mg/Kg	0.038	<RDL,E	0.0056	0.0553	mg/Kg	0.465	E	0.038	0.371	mg/Kg	0.186	E	0.0069	0.0698	mg/Kg	0.272	E	0.0078	0.0771	mg/Kg
M=MT EPA3050B/6010B MOD(6-2-04-02)																																	
Antimony, Total, ICP		<MDL,G	1.4	7.08	mg/Kg		<MDL,G	0.99	4.91	mg/Kg		<MDL,G	1.3	6.26	mg/Kg		<MDL,G	1.4	7	mg/Kg	1.1	<RDL,G	0.83	4.14	mg/Kg		<MDL,G	1.1	5.6	mg/Kg		<MDL,G	1.1	5.4	mg/Kg		<MDL,G	1.2	5.92	mg/Kg
Arsenic, Total, ICP	9.7	<RDL	2.3	11.8	mg/Kg	6.5	<RDL	1.6	8.18	mg/Kg	6.2	<RDL	2	10.4	mg/Kg	8.6	<RDL	2.3	11.7	mg/Kg	2.1	<RDL	1.3	6.9	mg/Kg	7.8	<RDL	1.8	9.32	mg/Kg	8.2	<RDL	1.7	9	mg/Kg	7.3	<RDL	1.9	9.86	mg/Kg
Cadmium, Total, ICP	0.93	<RDL	0.19	0.943	mg/Kg	0.28	<RDL	0.13	0.655	mg/Kg	0.35	<RDL	0.17	0.834	mg/Kg	0.934		0.19	0.932	mg/Kg	0.17	<RDL	0.11	0.552	mg/Kg	0.782		0.15	0.746	mg/Kg	0.19	<RDL	0.14	0.72	mg/Kg	0.28	<RDL	0.16	0.788	mg/Kg
Chromium, Total, ICP	48.4		0.28	1.41	mg/Kg	19.5		0.2	0.982	mg/Kg	24.2		0.25	1.25	mg/Kg	43.5		0.28	1.4	mg/Kg	11.4		0.17	0.828	mg/Kg	34.1		0.23	1.12	mg/Kg	22.4		0.22	1.08	mg/Kg	20.9		0.24	1.18	mg/Kg
Copper, Total, ICP	69.8		0.38	1.89	mg/Kg	36.6		0.26	1.31	mg/Kg	37.9		0.34	1.67	mg/Kg	53.1		0.38	1.87	mg/Kg	20.6		0.22	1.1	mg/Kg	54.8		0.3	1.49	mg/Kg	26.4		0.29	1.44	mg/Kg	33.9		0.32	1.58	mg/Kg
Lead, Total, ICP	107		1.9	9.43	mg/Kg	25		1.3	6.55	mg/Kg	34.6		1.7	8.34	mg/Kg	77.1		1.9	9.32	mg/Kg	12		1.1	5.52	mg/Kg	95		1.5	7.46	mg/Kg	20.8		1.4	7.2	mg/Kg	28.3		1.6	7.88	mg/Kg
Nickel, Total, ICP	44		0.47	2.35	mg/Kg	15.4		0.33	1.63	mg/Kg	22.1		0.42	2.08	mg/Kg	42.8		0.47	2.33	mg/Kg	14.9		0.28	1.38	mg/Kg	29.9		0.38	1.86	mg/Kg	16.9		0.36	1.8	mg/Kg	19.5		0.4	1.98	mg/Kg
Silver, Total, ICP	5.52		0.38	1.89	mg/Kg	0.94	<RDL	0.26	1.31	mg/Kg	1.96		0.34	1.67	mg/Kg	4.15		0.38	1.87	mg/Kg	0.47	<RDL	0.22	1.1	mg/Kg	4.13		0.3	1.49	mg/Kg	1.54		0.29	1.44	mg/Kg	1.82		0.32	1.58	mg/Kg
Zinc, Total, ICP	121		0.47	2.35	mg/Kg	56		0.33	1.63	mg/Kg	85.9		0.42	2.08	mg/Kg	109		0.47	2.33	mg/Kg	37.3		0.28	1.38	mg/Kg	109		0.38	1.86	mg/Kg	67.1		0.36	1.8	mg/Kg	78.3		0.4	1.98	mg/Kg
M=OR EPA 3550B/8270C (7-3-01-004)																																	
1,2,4-Trichlorobenzene		<MDL	0.19	0.38	ug/Kg		<MDL	0.13	0.264	ug/Kg		<MDL	0.17	0.336	ug/Kg		<MDL	0.19	0.375	ug/Kg		<MDL	0.11	0.222	ug/Kg		<MDL	0.15	0.3	ug/Kg		<MDL	0.14	0.289	ug/Kg		<MDL	0.16	0.316	ug/Kg
1,2-Dichlorobenzene		<MDL	0.38	0.759	ug/Kg		<MDL	0.26	0.527	ug/Kg		<MDL	0.34	0.671	ug/Kg		<MDL	0.38	0.75	ug/Kg		<MDL	0.22	0.444	ug/Kg		<MDL	0.3	0.601	ug/Kg		<MDL	0.29	0.577	ug/Kg		<MDL	0.32	0.633	ug/Kg
1,3-Dichlorobenzene		<MDL	0.38	0.759	ug/Kg		<MDL	0.26	0.527	ug/Kg		<MDL	0.34	0.671	ug/Kg		<MDL	0.38	0.75	ug/Kg		<MDL	0.22	0.444	ug/Kg		<MDL	0.3	0.601	ug/Kg		<MDL	0.29	0.577	ug/Kg		<MDL	0.32	0.633	ug/Kg
1,4-Dichlorobenzene	4.21		0.38	0.759	ug/Kg		<MDL	0.26	0.527	ug/Kg		<MDL	0.34	0.671	ug/Kg	4.99		0.38	0.75	ug/Kg	0.688		0.22	0.444	ug/Kg	3.06		0.3	0.601	ug/Kg	1.24		0.29	0.577	ug/Kg	2.77		0.32	0.633	ug/Kg
2,4-Dimethylphenol		<MDL	1.9	3.8	ug/Kg		<MDL	1.3	2.64	ug/Kg		<MDL	1.7	3.36	ug/Kg		<MDL	1.9	3.75	ug/Kg		<MDL	1.1	2.22	ug/Kg		<MDL	1.5	3	ug/Kg		<MDL	1.4	2.89	ug/Kg		<MDL	1.6	3.16	ug/Kg
2-Methylnaphthalene	30.6		3.8	7.59	ug/Kg	9.24		2.6	5.27	ug/Kg	7.79		3.4	6.71	ug/Kg	7.3	<RDL	3.8	7.5	ug/Kg		<MDL	2.2	4.44	ug/Kg	20		3	6.01	ug/Kg		<MDL	2.9	5.77	ug/Kg		<MDL	3.2	6.33	ug/Kg
2-Methylphenol		<MDL	3.8	7.59	ug/Kg		<MDL	2.6	5.27	ug/Kg		<MDL	3.4	6.71	ug/Kg		<MDL	3.8	7.5	ug/Kg		<MDL	2.2	4.44	ug/Kg		<MDL	3	6.01	ug/Kg		<MDL	2.9	5.77	ug/Kg		<MDL	3.2	6.33	ug/Kg
4-Methylphenol	14	<RDL	7.6	15.2	ug/Kg	25		5.3	10.5	ug/Kg		<MDL	6.7	13.4	ug/Kg		<MDL	7.5	15	ug/Kg		<MDL	4.4	8.89	ug/Kg	11	<RDL	6	12	ug/Kg		<MDL	5.8	11.5	ug/Kg		<MDL	6.3	12.7	ug/Kg
Acenaphthene	101		3.8	7.59	ug/Kg	10.8		2.6	5.27	ug/Kg	17.3		3.4	6.71	ug/Kg	12.4		3.8	7.5	ug/Kg	4	<RDL	2.2	4.44	ug/Kg	58.9		3	6.01	ug/Kg	10.4		2.9	5.77	ug/Kg	15.1		3.2	6.33	ug/Kg
Acenaphthylene	159		3.8	7.59	ug/Kg	45.8		2.6	5.27	ug/Kg	28.4		3.4	6.71	ug/Kg	30.6		3.8	7.5	ug/Kg	4	<RDL	2.2	4.44	ug/Kg	62.3		3	6.01	ug/Kg	16.9		2.9	5.77	ug/Kg	24.8		3.2	6.33	ug/Kg
Anthracene	848		3.8	7.59	ug/Kg	490		2.6	5.27	ug/Kg	166		3.4	6.71	ug/Kg	76.9		3.8	7.5	ug/Kg	23.6		2.2	4.44	ug/Kg	245		3	6.01	ug/Kg	95.1		2.9	5.77	ug/Kg	84.8		3.2	6.33	ug/Kg
Benzo(a)anthracene	1040		3.8	7.59	ug/Kg	487		2.6	5.27	ug/Kg	285		3.4	6.71	ug/Kg	229		3.8	7.5	ug/Kg	55.8		2.2	4.44	ug/Kg	440		3	6.01	ug/Kg	185		2.9	5.77	ug/Kg	207		3.2	6.33	ug/Kg
Benzo(a)pyrene	865		3.8	7.59	ug/Kg	460		2.6	5.27	ug/Kg	329		3.4	6.71	ug/Kg	276		3.8	7.5	ug/Kg	60.9		2.2	4.44	ug/Kg	592		3	6.01	ug/Kg	189		2.9	5.77	ug/Kg	245		3.2	6.33	ug/Kg
Benzo(b)fluoranthene	753		3.8	7.59	ug/Kg	518		2.6	5.27	ug/Kg	349		3.4	6.71	ug/Kg	311		3.8	7.5	ug/Kg	64		2.2	4.44	ug/Kg	706		3	6.01	ug/Kg	202		2.9	5.77	ug/Kg	318		3.2	6.33	ug/Kg
Benzo(g,h,i)perylene	381		3.8	7.59	ug/Kg	195		2.6	5.27	ug/Kg	201		3.4	6.71	ug/Kg	171		3.8	7.5	ug/Kg	37		2.2	4.44	ug/Kg	302		3	6.01	ug/Kg	106		2.9	5.77	ug/Kg	144		3.2	6.33	ug/Kg
Benzo(k)fluoranthene	871		3.8	7.59	ug/Kg	478		2.6	5.27	ug/Kg	332		3.4	6.71	ug/Kg	199		3.8	7.5	ug/Kg	59.9		2.2	4.44	ug/Kg	515		3	6.01	ug/Kg	192		2.9	5.77	ug/Kg	209		3.2	6.33	ug/Kg
Benzoic Acid	183		19	38	ug/Kg	107		13	26.4	ug/Kg	129		17	33.6	ug/Kg	191		19	37.5	ug/Kg	85.4		11	22.2	ug/Kg	124		15	30	ug/Kg	104		14	28.9	ug/Kg	118		16	31.6	ug/Kg
Benzyl Alcohol		<MDL	3.8	7.59	ug/Kg		<MDL	2.6	5.27	ug/Kg	6.73		3.4	6.71	ug/Kg		<MDL	3.8	7.5	ug/Kg	14.9		2.2	4.44	ug/Kg		<MDL	3	6.01	ug/Kg		<MDL	2.9	5.77	ug/Kg		<MDL	3.2	6.33	ug/Kg
Benzyl Butyl Phthalate	203		1.9	3.8	ug/Kg	43.5		1.3	2.64	ug/Kg	82.9		1.7	3.36	ug/Kg	79.2		1.9	3.75	ug/Kg	49.6		1.1	2.22	ug/Kg	135		1.5	3	ug/Kg	58		1.4	2.89	ug/Kg	76.4		1.6	3.16	ug/Kg
Bis(2-Ethylhexyl)Phthalate	1520	B	7.6	15.2	ug/Kg	361	B	5.3	10.5	ug/Kg	369	B	6.7	13.4	ug/Kg	1050	B	7.5	15	ug/Kg	83.4	B	4.4	8.89	ug/Kg	1610	B	6	12	ug/Kg	284	B	5.8	11.5	ug/Kg	854	B	6.3	12.7	ug/Kg
Caffeine	22		7.6	15.2	ug/Kg		<MDL	5.3	10.5	ug/Kg		<MDL	6.7	13.4	ug/Kg		<MDL	7.5	15	ug/Kg		<MDL	4.4	8.89	ug/Kg		<MDL	6	12	ug/Kg		<MDL	5.8	11.5	ug/Kg		<MDL	6.3	12.7	ug/Kg
Carbazole	264		3.8	7.59	ug/Kg	187		2.6	5.27	ug/Kg	81.9		3.4	6.71	ug/Kg	37.7		3.8	7.5	ug/Kg	10.4		2.2	4.44	ug/Kg	136		3	6.01	ug/Kg	33		2.9	5.77	ug/Kg	41.1		3.2	6.33	ug/Kg
Chrysene	1210		3.8	7.59	ug/Kg	875		2.6	5.27	ug/Kg	398		3.4	6.71	ug/Kg	281		3.8	7.5	ug/Kg	85		2.2	4.44	ug/Kg	628		3	6.01	ug/Kg	248		2.9	5.77	ug/Kg	326		3.2	6.33	ug/Kg
Coprostanol		<MDL	76	152	ug/Kg		<MDL	53	105	ug/Kg		<MDL	67	134	ug/Kg		<MDL	75	150	ug/Kg		<MDL	44	88.9	ug/Kg		<MDL	60	120	ug/Kg	844		58	115	ug/Kg		<MDL	63	127	ug/Kg
Dibenzo(a,h)anthracene	173		3.8	7.59	ug/Kg	98.7		2.6	5.27	ug/Kg	75		3.4	6.71	ug/Kg	56.7		3.8	7.5	ug/Kg	14.7		2.2	4.44	ug/Kg	126		3	6.01	ug/Kg	49.1		2.9	5.77	ug/Kg	65		3.2	6.33	ug/Kg
Dibenzofuran	85.7		3.8	7.59	ug/Kg	16.7		2.6	5.27	ug/Kg	13.4		3.4	6.71	ug/Kg	6.9	<RDL	3.8	7.5	ug/Kg	3.2	<RDL	2.2	4.44	ug/Kg	32.4		3	6.01	ug/Kg	7.22		2.9	5.77	ug/Kg	6.77		3.2	6.33	ug/Kg
Diethyl Phthalate		<MDL	7.6	15.2	ug/Kg		<MDL	5.3	10.5	ug/Kg		<MDL	6.7	13.4	ug/Kg		<MDL	7.5	15	ug/Kg		<MDL	4.4	8.89	ug/Kg		<MDL	6	12	ug/Kg		<MDL	5.8	11.5	ug/Kg		<MDL	6.3	12.7	ug/Kg
Dimethyl Phthalate		<MDL	7.6	15.2	ug/Kg		<MDL	5.3	10.5	ug/Kg		<MDL	6.7	13.4	ug/Kg		<MDL	7.5	15	ug/Kg		<MDL	4.4	8.89	ug/Kg	27.6		6	12	ug/Kg		<MDL	5.8	11.5	ug/Kg		<MDL	6.3	12.7	ug/Kg
Di-N-Butyl Phthalate	174	B	7.6	15.2	ug/Kg	21.3	B	5.3	10.5	ug/Kg	31.5	B	6.7	13.4	ug/Kg	38.8	B	7.5	15	ug/Kg	25	B	4.4	8.89	ug/Kg	57.8	B	6	12	ug/Kg	22.5	B	5.8	11.5	ug/Kg	27.7	B	6.3	12.7	ug/Kg
Di-N-Octyl Phthalate		<MDL	7.6	15.2	ug/Kg		<MDL	5.3	10.5	ug/Kg		<MDL	6.7	13.4	ug/Kg		<MDL	7.5	15	ug/Kg		<MDL	4.4	8.89	ug/Kg		<MDL	6	12	ug/Kg		<MDL	5.8	11.5	ug/Kg		<MDL	6.3	12.7	ug/Kg
Fluoranthene	2220		3.8	7.59	ug/Kg	706		2.6	5.27	ug/Kg	490		3.4	6.71	ug/Kg	388		3.8	7.5	ug/Kg	126		2.2	4.44	ug/Kg	839		3	6.01	ug/Kg	306		2.9	5.77	ug/Kg	354		3.2	6.33	ug/Kg
Fluorene	174		3.8	7.59	ug/Kg	67.5		2.6	5.27	ug/Kg	46.1		3.4	6.71	ug/Kg	17		3.8	7.5	ug/Kg	5.64		2.2	4.44	ug/Kg	71.6		3	6.01	ug/Kg	17.5		2.9	5.77	ug/Kg	18.7		3.2	6.33	ug/Kg
Hexachlorobenzene	23.9		0.19	0.38	ug/Kg		<MDL	0.13	0.264	ug/Kg		<MDL	0.17	0.336	ug/Kg		<MDL	0.19	0.375	ug/Kg		<MDL	0.11	0.222	ug/Kg		<MDL	0.15	0.3	ug/Kg		<MDL	0.14	0.289	ug/Kg		<MDL	0.16	0.316	ug/Kg
Hexachlorobutadiene		<MDL	0.95	1.9	ug/Kg		<MDL	0.66	1.32	ug/Kg		<MDL	0.84	1.68	ug/Kg		<MDL	0.94	1.88	ug/Kg		<MDL	0.56	1.11	ug/Kg		<MDL	0.75	1.5	ug/Kg		<MDL	0.72	1.44	ug/Kg		<MDL	0.79	1.58	ug/Kg
Hexachloroethane		<MDL	1.9	3.8	ug/Kg		<MDL	1.3	2.64	ug/Kg		<MDL	1.7	3.36	ug/Kg		<MDL	1.9	3.75	ug/Kg		<MDL	1.1	2.22	ug/Kg		<MDL	1.5	3	ug/Kg		<MDL	1.4	2.89	ug/Kg		<MDL	1.6	3.16	ug/Kg
Indeno(1,2,3-Cd)Pyrene	376		3.8	7.59	ug/Kg	209		2.6	5.27	ug/Kg	185		3.4	6.71	ug/Kg	150		3.8	7.5	ug/Kg	33.6		2.2	4.44	ug/Kg	293		3	6.01	ug/Kg	101		2.9	5.77	ug/Kg	131		3.2	6.33	ug/Kg
Naphthalene	35.7		3.8	7.59	ug/Kg	11.8		2.6	5.27	ug/Kg	8.67		3.4	6.71	ug/Kg	12.1		3.8	7.5	ug/Kg		<MDL	2.2	4.44	ug/Kg	32.1		3	6.01	ug/Kg	3.9	<RDL	2.9	5.77	ug/Kg	6.3

King County Environmental Lab Analytical Report

PROJECT: 423368-80																																			
	Locator:	DWPD-01				Locator:	DWPD-02				Locator:	DWPD-03				Locator:	DWPD-04				Locator:	DWPD-05				Locator:	DW105 1 - 2 ft				Locator:	DW105 0 - 1 ft			
	Descrip:	DENNY WAY NEAR SHO				Descrip:	DENNY WAY NEAR SHO				Descrip:	DENNY WAY NEAR SHO				Descrip:	DENNY WAY NEAR SHO				Descrip:	DENNY WAY NEAR SHO				Descrip:	DENNY WAY CLEANUP				Descrip:	DENNY WAY CLEANUP			
	Sampled:	01/15/08 10:25:00 AM				Sampled:	01/15/08 11:30:00 AM				Sampled:	01/15/08 1:20:00 PM				Sampled:	01/15/08 2:00:00 PM				Sampled:	01/15/08 2:45:00 PM				Sampled:	01/15/08 3:45:00 PM				Sampled:	01/15/08 3:50:00 PM			
	Lab ID:	L44926-1				Lab ID:	L44926-2				Lab ID:	L44926-3				Lab ID:	L44926-4				Lab ID:	L44926-5				Lab ID:	L44926-6				Lab ID:	L44926-7			
	Matrix:	SALTWTRSED				Matrix:	SALTWTRSED				Matrix:	SALTWTRSED				Matrix:	SALTWTRSED				Matrix:	SALTWTRSED				Matrix:	SALTWTRSED				Matrix:	SALTWTRSED			
	% Solids:	33.7				% Solids:	38.8				% Solids:	81.9				% Solids:	69.8				% Solids:	79.9				% Solids:	65.8				% Solids:	75.6			

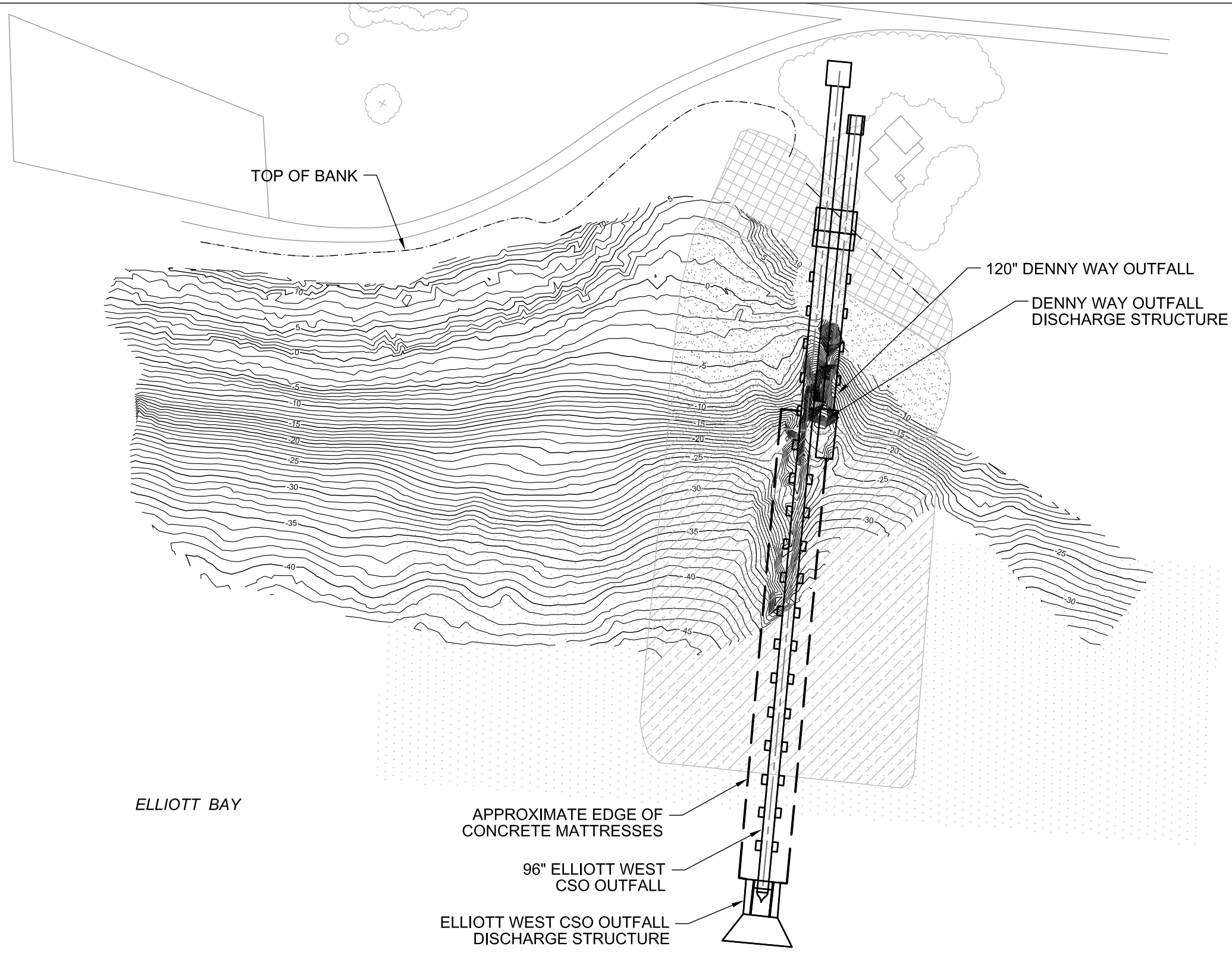
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis		
COMBINED LABS																																		
M=CV ASTM D422(03-02-005-001)																																		
Clay *	8.4		1.4	2.81	%	10.9		1.2	2.43	%	3.9		0.56	1.13	%	5.8		0.72	1.44	%	3.1		0.63	1.25	%	6.2		0.69	1.38	%	1.3		0.64	1.28	%
Dry Weight Factor	8.3					6.3					1.4					2.1					1.6					2.1					1.7				
Fines *	63.3		1.4	2.81	%	38.8		1.2	2.43	%	7.3		0.56	1.13	%	19.4		0.72	1.44	%	7.5		0.63	1.25	%	17.3		0.69	1.38	%	5.7		0.64	1.28	%
Gravel *		<MDL	0.28	2.81	%	3.8		0.24	2.43	%	26		0.11	1.13	%	21.2		0.14	1.44	%	23.6		0.13	1.25	%	6.3		0.14	1.38	%	2.6		0.13	1.28	%
p+0.00 *	1.3		0.28	2.81	%	6		0.24	2.43	%	9.8		0.11	1.13	%	2.5		0.14	1.44	%	5.4		0.13	1.25	%	4.3		0.14	1.38	%	1.8		0.13	1.28	%
p+1.00 *	3.2		0.28	2.81	%	6.4		0.24	2.43	%	15.7		0.11	1.13	%	3.7		0.14	1.44	%	8.6		0.13	1.25	%	9.2		0.14	1.38	%	4.8		0.13	1.28	%
p+10.0(equal/more than) *	5.6		1.4	2.81	%	7.3		1.2	2.43	%	2.3		0.56	1.13	%	4.3		0.72	1.44	%	2.5		0.63	1.25	%	2.8		0.69	1.38	%	1.3		0.64	1.28	%
p+2.00 *	6.3		0.28	2.81	%	18.1		0.24	2.43	%	22.1		0.11	1.13	%	13.8		0.14	1.44	%	23.3		0.13	1.25	%	28		0.14	1.38	%	32.1		0.13	1.28	%
p+3.00 *	11.7		0.28	2.81	%	20.3		0.24	2.43	%	10		0.11	1.13	%	26.2		0.14	1.44	%	21.2		0.13	1.25	%	25.3		0.14	1.38	%	39.2		0.13	1.28	%
p+4.00 *	12.1		0.28	2.81	%	5.7		0.24	2.43	%	3.1		0.11	1.13	%	11.8		0.14	1.44	%	8.1		0.13	1.25	%	5.5		0.14	1.38	%	11		0.13	1.28	%
p+5.00 *	22.5		1.4	2.81	%	18.2		1.2	2.43	%	1.7		0.56	1.13	%	6.5		0.72	1.44	%	2.5		0.63	1.25	%	2.8		0.69	1.38	%	1.9		0.64	1.28	%
p+6.00 *	12.7		1.4	2.81	%	2.4		1.2	2.43	%	0.6	<RDL	0.56	1.13	%	4.3		0.72	1.44	%	0.6	<RDL	0.63	1.25	%	2.8		0.69	1.38	%	0.6	<RDL	0.64	1.28	%
p+7.00 *	16.9		1.4	2.81	%	4.9		1.2	2.43	%	1.1		0.56	1.13	%	0.7	<RDL	0.72	1.44	%	1.3		0.63	1.25	%	4.8		0.69	1.38	%	1.3		0.64	1.28	%
p+8.00 *	2.8		1.4	2.81	%	2.4		1.2	2.43	%		<MDL	0.56	1.13	%	2.2		0.72	1.44	%		<MDL	0.63	1.25	%	0.7	<RDL	0.69	1.38	%	0.6	<RDL	0.64	1.28	%
p+9.00 *	2.8		1.4	2.81	%	3.6		1.2	2.43	%	1.7		0.56	1.13	%	1.4		0.72	1.44	%	0.6	<RDL	0.63	1.25	%	3.5		0.69	1.38	%		<MDL	0.64	1.28	%
p-1.00 *		<MDL	0.28	2.81	%	1.5		0.24	2.43	%	8.7		0.11	1.13	%	2.1		0.14	1.44	%	6.3		0.13	1.25	%	3.3		0.14	1.38	%	0.8	<RDL	0.13	1.28	%
p-2.00 *		<MDL	0.28	2.81	%		<MDL	0.24	2.43	%	3.2		0.11	1.13	%	1.3		0.14	1.44	%	3		0.13	1.25	%	3		0.14	1.38	%	0.3	<RDL	0.13	1.28	%
p-2.00(less than) *		<MDL	0.28	2.81	%	2.2		0.24	2.43	%	14.2		0.11	1.13	%	17.9		0.14	1.44	%	14.3		0.13	1.25	%		<MDL	0.14	1.38	%	1.5		0.13	1.28	%
Sand *	34.6		0.28	2.81	%	56.5		0.24	2.43	%	60.6		0.11	1.13	%	57.9		0.14	1.44	%	66.6		0.13	1.25	%	72.3		0.14	1.38	%	88.9		0.13	1.28	%
Silt *	54.8		1.4	2.81	%	27.9		1.2	2.43	%	3.4		0.56	1.13	%	13.7		0.72	1.44	%	4.4		0.63	1.25	%	11		0.69	1.38	%	4.5		0.64	1.28	%
M=CV EPA 9060-PSEP96(337V3)																																		
Total Organic Carbon	49300		3900	7450	mg/Kg	131000		8800	17800	mg/Kg	4820		490	987	mg/Kg	16600		3600	7290	mg/Kg	10500		2800	5590	mg/Kg	22800		3200	6520	mg/Kg	12000		2800	5610	mg/Kg
M=CV SM2540-G (03-01-007-002)																																		
Total Solids *	33.7		0.005	0.01	%	38.8		0.005	0.01	%	81.9		0.005	0.01	%	69.8		0.005	0.01	%	79.9		0.005	0.01	%	65.8		0.005	0.01	%	75.6		0.005	0.01	%
M=MT EPA 7471A (06-01-004-003)																																		
Mercury, Total, CVAA	0.439	E	0.015	0.155	mg/Kg	3.35	E	0.13	1.29	mg/Kg	0.0988	E	0.0059	0.0585	mg/Kg	1.18	E	0.034	0.351	mg/Kg	0.087	E	0.0063	0.0621	mg/Kg	1.2	E	0.036	0.371	mg/Kg	0.81	E	0.033	0.328	mg/Kg
M=MT EPA3050B/6010B MOD(6-2-04-02)																																		
Antimony, Total, ICP		<MDL,G	2.2	11.1	mg/Kg	5.2	<RDL,G	1.9	9.64	mg/Kg		<MDL,G	0.92	4.57	mg/Kg		<MDL,G	1.1	5.36	mg/Kg		<MDL,G	0.94	4.68	mg/Kg	1.3	<RDL,G	1.1	5.68	mg/Kg		<MDL,G	0.99	4.93	mg/Kg
Arsenic, Total, ICP	9.2	<RDL	3.6	18.5	mg/Kg	11	<RDL	3.1	16.1	mg/Kg	3.5	<RDL	1.5	7.61	mg/Kg	4.4	<RDL	1.7	8.94	mg/Kg	2.9	<RDL	1.5	7.8	mg/Kg	6.4	<RDL	1.8	9.47	mg/Kg	4	<RDL	1.6	8.21	mg/Kg
Cadmium, Total, ICP	0.56	<RDL,E	0.3	1.48	mg/Kg	18.4	E	0.26	1.29	mg/Kg	0.16	<RDL,E	0.12	0.609	mg/Kg	1.31	E	0.14	0.715	mg/Kg	0.16	<RDL,E	0.13	0.623	mg/Kg	1.48	E	0.15	0.757	mg/Kg	1.14	E	0.13	0.657	mg/Kg
Chromium, Total, ICP	40.9		0.45	2.22	mg/Kg	70.9		0.39	1.93	mg/Kg	21.1		0.18	0.913	mg/Kg	36.4		0.21	1.07	mg/Kg	24.4		0.19	0.935	mg/Kg	46.5		0.23	1.14	mg/Kg	31.9		0.2	0.987	mg/Kg
Copper, Total, ICP	34.4		0.59	2.96	mg/Kg	381		0.52	2.57	mg/Kg	19.3		0.24	1.22	mg/Kg	74.8		0.29	1.43	mg/Kg	26		0.25	1.25	mg/Kg	87.7		0.3	1.52	mg/Kg	103		0.26	1.31	mg/Kg
Lead, Total, ICP	35.6		3	14.8	mg/Kg	1130		2.6	12.9	mg/Kg	17.5		1.2	6.09	mg/Kg	136		1.4	7.15	mg/Kg	31.5		1.3	6.23	mg/Kg	178		1.5	7.57	mg/Kg	216		1.3	6.57	mg/Kg
Nickel, Total, ICP	51.6		0.74	3.71	mg/Kg	45.4		0.64	3.22	mg/Kg	28.6		0.31	1.53	mg/Kg	39.3		0.36	1.79	mg/Kg	29		0.31	1.56	mg/Kg	48		0.38	1.9	mg/Kg	37.8		0.33	1.64	mg/Kg
Silver, Total, ICP	2.6	<RDL	0.59	2.96	mg/Kg	25.4		0.52	2.57	mg/Kg	1	<RDL	0.24	1.22	mg/Kg	5.01		0.29	1.43	mg/Kg	1.2	<RDL	0.25	1.25	mg/Kg	6.96		0.3	1.52	mg/Kg	3.98		0.26	1.31	mg/Kg
Zinc, Total, ICP	105		0.74	3.71	mg/Kg	1750		0.64	3.22	mg/Kg	48.4		0.31	1.53	mg/Kg	158		0.36	1.79	mg/Kg	53.3		0.31	1.56	mg/Kg	172		0.38	1.9	mg/Kg	143		0.33	1.64	mg/Kg
M=OR EPA 3550B/8270C (7-3-01-004)																																		
1,2,4-Trichlorobenzene		<MDL	3	5.93	ug/Kg		<MDL	2.6	5.15	ug/Kg		<MDL	0.12	0.244	ug/Kg		<MDL	1.4	2.87	ug/Kg		<MDL	0.13	0.25	ug/Kg		<MDL	1.5	3.04	ug/Kg		<MDL	1.3	2.65	ug/Kg
1,2-Dichlorobenzene		<MDL	5.9	11.9	ug/Kg		<MDL	5.2	10.3	ug/Kg		<MDL	0.24	0.488	ug/Kg		<MDL	2.9	5.73	ug/Kg		<MDL	0.25	0.501	ug/Kg		<MDL	3	6.08	ug/Kg		<MDL	2.6	5.29	ug/Kg
1,3-Dichlorobenzene		<MDL	5.9	11.9	ug/Kg		<MDL	5.2	10.3	ug/Kg		<MDL	0.24	0.488	ug/Kg		<MDL	2.9	5.73	ug/Kg		<MDL	0.25	0.501	ug/Kg		<MDL	3	6.08	ug/Kg		<MDL	2.6	5.29	ug/Kg
1,4-Dichlorobenzene		<MDL	5.9	11.9	ug/Kg		<MDL	5.2	10.3	ug/Kg	3.69		0.24	0.488	ug/Kg	107		2.9	5.73	ug/Kg	9.3		0.25	0.501	ug/Kg	471		3	6.08	ug/Kg	216		2.6	5.29	ug/Kg
2,4-Dimethylphenol		<MDL	30	59.3	ug/Kg		<MDL	26	51.5	ug/Kg		<MDL	1.2	2.44	ug/Kg		<MDL	14	28.7	ug/Kg		<MDL	1.3	2.5	ug/Kg		<MDL	15	30.4	ug/Kg		<MDL	13	26.5	ug/Kg
2-Methylnaphthalene	197		59	119	ug/Kg	534		52	103	ug/Kg	7.96		2.4	4.88	ug/Kg	325		29	57.3	ug/Kg	15		2.5	5.01	ug/Kg	678		30	60.8	ug/Kg	171		26	52.9	ug/Kg
2-Methylphenol		<MDL	59	119	ug/Kg		<MDL	52	103	ug/Kg		<MDL	2.4	4.88	ug/Kg		<MDL	29	57.3	ug/Kg		<MDL	2.5	5.01	ug/Kg		<MDL	30	60.8	ug/Kg		<MDL	26	52.9	ug/Kg
4-Methylphenol		<MDL	120	237	ug/Kg		<MDL	100	206	ug/Kg		<MDL	4.9	9.77	ug/Kg		<MDL	57	115	ug/Kg		<MDL	5	10	ug/Kg		<MDL	61	122	ug/Kg		<MDL	53	106	ug/Kg
Acenaphthene		<MDL	59	119	ug/Kg	1170		52	103	ug/Kg	6.56		2.4	4.88	ug/Kg	193		29	57.3	ug/Kg	36.7		2.5	5.01	ug/Kg	210		30	60.8	ug/Kg	242		26	52.9	ug/Kg
Acenaphthylene		<MDL	59	119	ug/Kg	215		52	103	ug/Kg		<MDL	2.4	4.88	ug/Kg		<MDL	29	57.3	ug/Kg	4.3	<RDL	2.5	5.01	ug/Kg		<MDL	30	60.8	ug/Kg		<MDL	26	52.9	ug/Kg
Anthracene		<MDL	59	119	ug/Kg	2050		52	103	ug/Kg	21.2		2.4	4.88	ug/Kg	155		29	57.3	ug/Kg	38.4		2.5	5.01	ug/Kg	234		30	60.8	ug/Kg	345		26	52.9	ug/Kg
Benzo(a)anthracene	100	<RDL	59	119	ug/Kg	4280		52	103	ug/Kg	30.2		2.4	4.88	ug/Kg	255		29	57.3	ug/Kg	74.3		2.5	5.01	ug/Kg	397		30	60.8	ug/Kg	496		26	52.9	ug/Kg
Benzo(a)pyrene	174		59	119	ug/Kg	4100		52	103	ug/Kg	34.2		2.4	4.88	ug/Kg	264		29	57.3	ug/Kg	77.8		2.5	5.01	ug/Kg	359		30	60.8	ug/Kg	491		26	52.9	ug/Kg
Benzo(b)fluoranthene	192		59	119	ug/Kg	3760		52	103	ug/Kg	38.8		2.4	4.88	ug/Kg	272		29	57.3	ug/Kg	63.5		2.5	5.01	ug/Kg	312		30	60.8	ug/Kg	434		26	52.9	ug/Kg
Benzo(g,h,i)perylene		<MDL	59	119	ug/Kg	2100		52	103	ug/Kg	16.8		2.4	4.88	ug/Kg	112		29	57.3	ug/Kg	39.7		2.5	5.01	ug/Kg	135		30	60.8	ug/Kg	218		26	52.9	ug/Kg
Benzo(k)fluoranthene	68	<RDL	59	119	ug/Kg	3070		52	103	ug/Kg	26.3		2.4	4.88	ug/Kg	182		29	57.3	ug/Kg	59.2		2.5	5.01	ug/Kg	307		30	60.8	ug/Kg	390		26	52.9	ug/Kg
Benzoic Acid		<MDL,L	300	593	ug/Kg		<MDL,L	260	515	ug/Kg		<MDL,L	12	24.4	ug/Kg		<MDL,L	140	287	ug/Kg		<MDL,L	13	25	ug/Kg		<MDL,L	150	304	ug/Kg		<MDL,L	130	265	ug/Kg
Benzyl Alcohol		<MDL	59	119	ug/Kg		<MDL	52	103	ug/Kg		<MDL	2.4	4.88	ug/Kg		<MDL	29	57.3	ug/Kg		<MDL	2.5	5.01	ug/Kg		<MDL	30	60.8	ug/Kg		<MDL	26	52.9	ug/Kg
Benzyl Butyl Phthalate		<MDL,B	30	59.3	ug/Kg		<MDL,B	26	51.5	ug/Kg	10.2	B	1.2	2.44	ug/Kg	79.7	B	14	28.7	ug/Kg	6.8	B	1.3	2.5	ug/Kg	66.3	B	15	30.4	ug/Kg	97.1	B	13	26.5	ug/Kg
Bis(2-Ethylhexyl)Phthalate	973	B	120	237	ug/Kg	884	B	100	206	ug/Kg	98.4	B	4.9	9.77	ug/Kg	2050	B	57	115	ug/Kg	93.6	B	5	10	ug/Kg	2360	B	61	122	ug/Kg	1560	B	53	106	ug/Kg
Caffeine		<MDL	120	237	ug/Kg		<MDL	100	206	ug/Kg		<MDL	4.9	9.77	ug/Kg		<MDL	57	115	ug/Kg		<MDL	5	10	ug/Kg		<MDL	61	122	ug/Kg		<MDL	53	106	ug/Kg
Carbazole		<MDL	59	119	ug/Kg	492		52	103	ug/Kg		<MDL	2.4	4.88	ug/Kg		<MDL	29	57.3	ug/Kg	4.5	<RDL	2.5	5.01	ug/Kg		<MDL	30	60.8	ug/Kg		<MDL	26	52.9	ug/Kg
Chrysene	128		59	119	ug/Kg	4850		52	103	ug/Kg	74.7		2.4	4.88	ug/Kg	365		29	57.3	ug/Kg	84.1		2.5	5.01	ug/Kg	471		30	60.8	ug/Kg	550		26	52.9	ug/Kg
Coprostanol		<MDL	1200	2370	ug/Kg		<MDL	1000	2060	ug/Kg		<MDL	49	97.7	ug/Kg	4540		570	1150	ug/Kg		<MDL	50	100	ug/Kg	5410		610	1220	ug/Kg		<MDL	530	1060	ug/Kg
Dibenzo(a,h)anthracene		<MDL	59	119	ug/Kg	843		52	103	ug/Kg	5.58		2.4	4.88	ug/Kg	43	<RDL	29	57.3	ug/Kg	14.5		2.5	5.01	ug/Kg	63.1		30	60.8	ug/Kg	75.4		26	52.9	ug/Kg
Dibenzofuran		<MDL	59	119	ug/Kg	338		52	103	ug/Kg	4	<RDL	2.4	4.88	ug/Kg	128		29	57.3	ug/Kg	15.3		2.5	5.01	ug/Kg	118		30	60.8	ug/Kg	105		26	52.9	ug/Kg
Diethyl Phthalate		<MDL	120	237	ug/Kg		<MDL	100	206	ug/Kg		<MDL	4.9	9.77	ug/Kg		<MDL	57	115	ug/Kg		<MDL	5	10	ug/Kg		<MDL	61	122	ug/Kg		<MDL	53	106	ug/Kg
Dimethyl Phthalate		<MDL	120	237	ug/Kg		<MDL	100	206	ug/Kg		<MDL	4.9	9.77	ug/Kg		<MDL	57	115	ug/Kg		<MDL	5	10	ug/Kg		<MDL	61	122	ug/Kg		<MDL	53	106	ug/Kg
Di-N-Butyl Phthalate		<MDL,B	120	237	ug/Kg	351	B	100	206	ug/Kg	8.7	<RDL,B	4.9	9.77	ug/Kg	66	<RDL,B	57	115	ug/Kg	8.1	<RDL,B	5	10	ug/Kg	274	B	61	122	ug/Kg	70	<RDL,B	53	106	ug/Kg
Di-N-Octyl Phthalate		<MDL	120	237	ug/Kg		<MDL	100	206	ug/Kg		<MDL	4.9	9.77	ug/Kg		<MDL	57	115	ug/Kg		<MDL	5	10	ug/Kg		<MDL	61	122	ug/Kg		<MDL	53	106	ug/Kg
Fluoranthene	259		59	119	ug/Kg	9740		52	103	ug/Kg	55.8		2.4	4.88	ug/Kg	769		29	57.3	ug/Kg	158		2.5	5.01	ug/Kg	1310		30	60.8	ug/Kg	1590		26	52.9	ug/Kg
Fluorene		<MDL	59	119	ug/Kg	1160		52	103	ug/Kg	8.67		2.4	4.88	ug/Kg	195		29	57.3	ug/Kg	25.8		2.5	5.01	ug/Kg	231		30	60.8	ug/Kg	242		26	52.9	ug/Kg
Hexachlorobenzene		<MDL	3	5.93	ug/Kg		<MDL	2.6	5.15	ug/Kg		<MDL	0.12	0.244	ug/Kg		<MDL	1.4	2.87	ug/Kg		<MDL	0.13	0.25	ug/Kg		<MDL	1.5	3.04	ug/Kg		<MDL	1.3	2.65	ug/Kg
Hexachlorobutadiene		<MDL	15	29.7	ug/Kg		<MDL	13	25.8	ug/Kg		<MDL	0.61	1.22	ug/Kg		<MDL	7.2	14.3	ug/Kg		<MDL	0.63	1.25	ug/Kg		<MDL	7.6	15.2	ug/Kg		<MDL	6.6	13.2	ug/Kg
Hexachloroethane		<MDL	30	59.3	ug/Kg		<MDL	26	51.5	ug/Kg		<MDL	1.2	2.44	ug/Kg		<MDL	14	28.7	ug/Kg		<MDL	1.3	2.5	ug/Kg		<MDL	15	30.4	ug/Kg		<MDL	13	26.5	ug/Kg
Indeno(1,2,3-Cd)Pyrene	62	<RDL	59	119	ug/Kg	1950		52	103	ug/Kg	16.5		2.4	4.88	ug/Kg	127		29	57.3	ug/Kg	38.7		2.5	5.01	ug/Kg	166		30	60.8	ug/Kg	233		26	52.9	ug/Kg
Naphthalene	120	<RDL	59	119	ug/Kg	523		52	103	ug/Kg	6.26		2.4	4.88	ug/Kg	660		29	57.3	ug/Kg	21		2.5	5.01	ug/Kg	609		30	60.8	ug/Kg	184		26	52.9	ug/Kg
N-Nitrosodiphenylamine		<MDL	120	237	ug/Kg		<MDL	100	206	ug/Kg		<MDL	4.9	9.77	ug/Kg		<MDL	57	115	ug/Kg		<MDL	5	10	ug/Kg		<MDL	61	122	ug/Kg		<MDL	53	106	ug/Kg
Pentachlorophenol		<MDL	300	593	ug/Kg		<MDL	260	515	ug/Kg	30.6		12	24.4	ug/Kg		<MDL	140	287	ug/Kg		<MDL	13	25	ug/Kg		<MDL	150	304	ug/Kg		<MDL	130	265	ug/Kg
Phenanthrene	181		59	119	ug/Kg	9120		52	103	ug/Kg	43.5		2.4	4.88	ug/Kg	759		29	57.3	ug/Kg	133		2.5	5.01	ug/Kg	1040		30	60.8	ug/Kg	1180		26	52.9	ug/Kg
Phenol		<MDL	120	237	ug/Kg		<MDL	100	206	ug/Kg		<MDL	4.9	9.77	ug/Kg		<MDL	57	115	ug/Kg		<MDL	5	10	ug/Kg		<MDL	61	122	ug/Kg		<MDL	53	106	ug/Kg
Pyrene	256		59	119	ug/Kg	10200		52	103	ug/Kg	68		2.4	4.88	ug/Kg	738		29	57.3	ug/Kg	207		2.5	5.01	ug/Kg	1100		30	60.8	ug/Kg	1570		26	52.9	ug/Kg
Total 4-Nonylphenol		<MDL	150	297	ug/Kg		<MDL	130	258	ug/Kg		<MDL	6.1	12.2	ug/Kg		<MDL	72	143	ug/Kg	74.2		6.3	12.5	ug/Kg		<MDL	76	152	ug/Kg	1400		66	132	ug/Kg
Total HPAHS	1280		59	119	ug/Kg	44800		52	103	ug/Kg	366		2.4	4.88	ug/Kg	3120		29	57.3	ug/Kg	816		2.5	5.01	ug/Kg	4620		30	60.8	ug/Kg	6040		26	52.9	ug/Kg
Total LPAHs	608		59	119	ug/Kg	14800		52	103	ug/Kg	94.1		2.4	4.88	ug/Kg	2320		29	57.3	ug/Kg	274		2.5	5.01	ug/Kg	3010		30	60.8	ug/Kg	2350		26	52.9	ug/Kg
M=OR EPA 8081A/8082 (7-3-103-000)																																		
Aroclor 1016		<MDL	80	162	ug/Kg		<MDL,L	200	394	ug/Kg		<MDL	7.9	15.8	ug/Kg		<MDL	210	421	ug/Kg		<MDL	11	21.9	ug/Kg		<MDL	300	596	ug/Kg		<MDL	130	265	ug/Kg
Aroclor 1221		<MDL	33	68	ug/Kg		<MDL,L	70	137	ug/Kg		<MDL	3.3	6.51	ug/Kg		<MDL	60	120	ug/Kg		<MDL	4.3	8.41	ug/Kg		<MDL	91	181	ug/Kg		<MDL	26	52	ug/Kg
Aroclor 1232		<MDL	150	303	ug/Kg		<MDL,L	70	137	ug/Kg		<MDL	17	34.1	ug/Kg		<MDL	340	699	ug/Kg		<MDL	23	45.8	ug/Kg		<MDL	560	1110	ug/Kg		<MDL	290	595	ug/Kg
Aroclor 1242		<MDL	100	203	ug/Kg		<MDL,L	390	763	ug/Kg		<MDL	16	30.6	ug/Kg		<MDL	300	589	ug/Kg		<MDL	18	33.9	ug/Kg		<MDL	460	918	ug/Kg		<MDL	200	407	ug/Kg
Aroclor 1248	78.3		3.9	7.92	ug/Kg	161	L	3.4	6.88	ug/Kg	17.8		1.6	3.26	ug/Kg	264		1.9	3.83	ug/Kg	13.4		1.6	3.34	ug/Kg	389		2	4.06	ug/Kg	189		1.7	3.53	ug/Kg
Aroclor 1254	88.7		3.9	7.92	ug/Kg	192	L	3.4	6.88	ug/Kg	35.9		1.6	3.26	ug/Kg	350		1.9	3.83	ug/Kg	16.6		1.6

King County Environmental Lab Analytical Report

| PROJECT: 423368-80 | | |

Appendix K

eTrac Engineering, L.L.C. Surveys



Legend

EXISTING SITE FEATURES

- EXISTING OUTFALL RIPRAP
- EXISTING SAND VENEER
- EXISTING BOULDERS AND COBBLES
- EXISTING SEDIMENT CAP
- -10 — BATHYMETRIC CONTOURS AND ELEVATION IN FEET (2-FOOT INTERVAL)

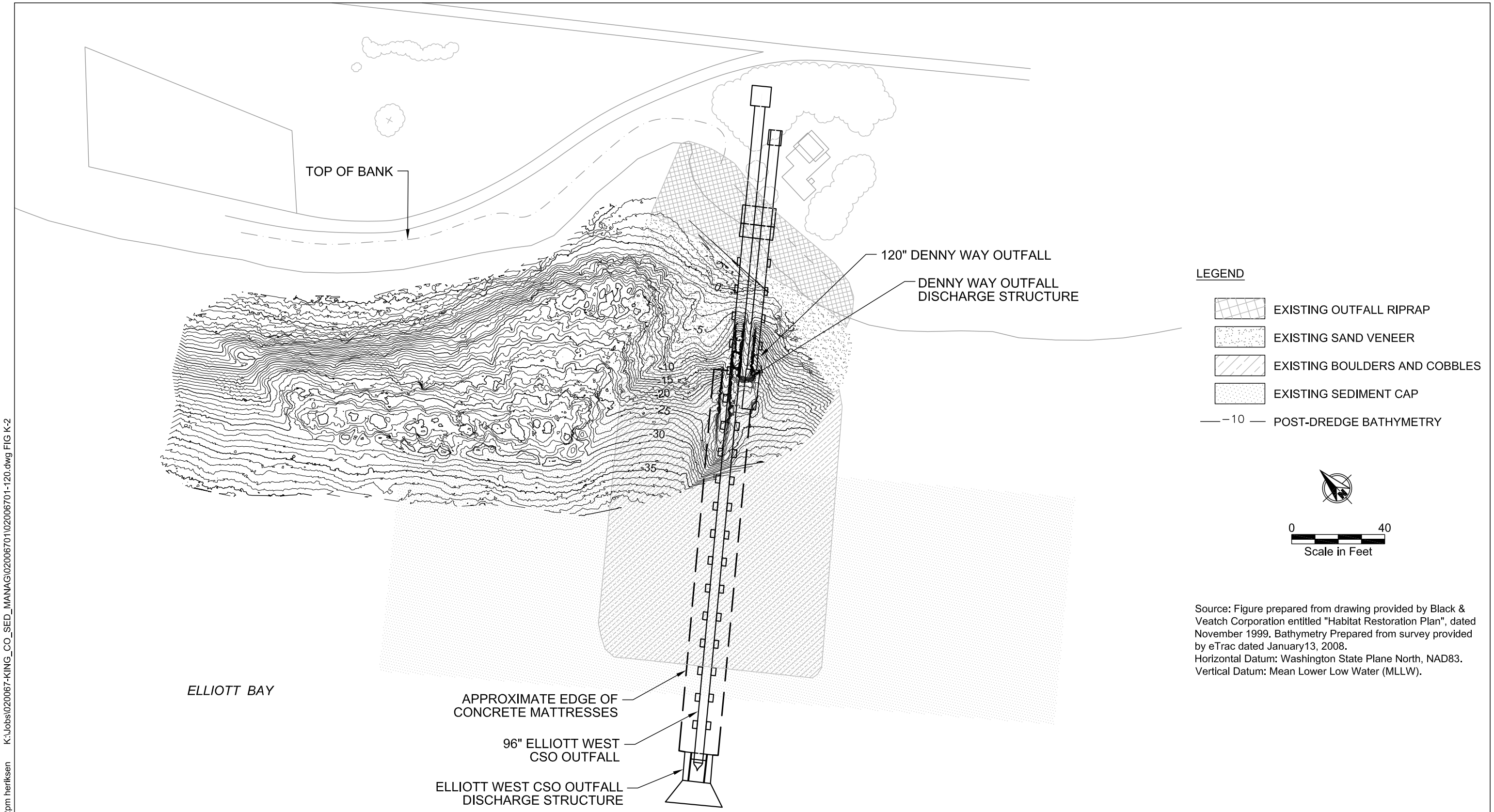
0 80
Scale in Feet

Source: Figure prepared from drawing provided by Black & Veatch Corporation entitled "Habitat Restoration Plan", dated November 1999.
Bathymetry Prepared from survey provided by eTrac dated October 30, 2007.
Horizontal Datum: Washington State Plane North, NAD83.
Vertical Datum: Mean Lower Low Water (MLLW).

Oct 08, 2008 12:51pm heriksen K:\Jobs\020067-KING_CO_SED_MANAG\020067010\020067701-119.dwg FIG K-1

ANCHOR ENVIRONMENTAL, L.L.C.

Figure K-1
Pre-Dredge Survey
Denny Way CSO Nearshore Interim Sediment Cleanup Project

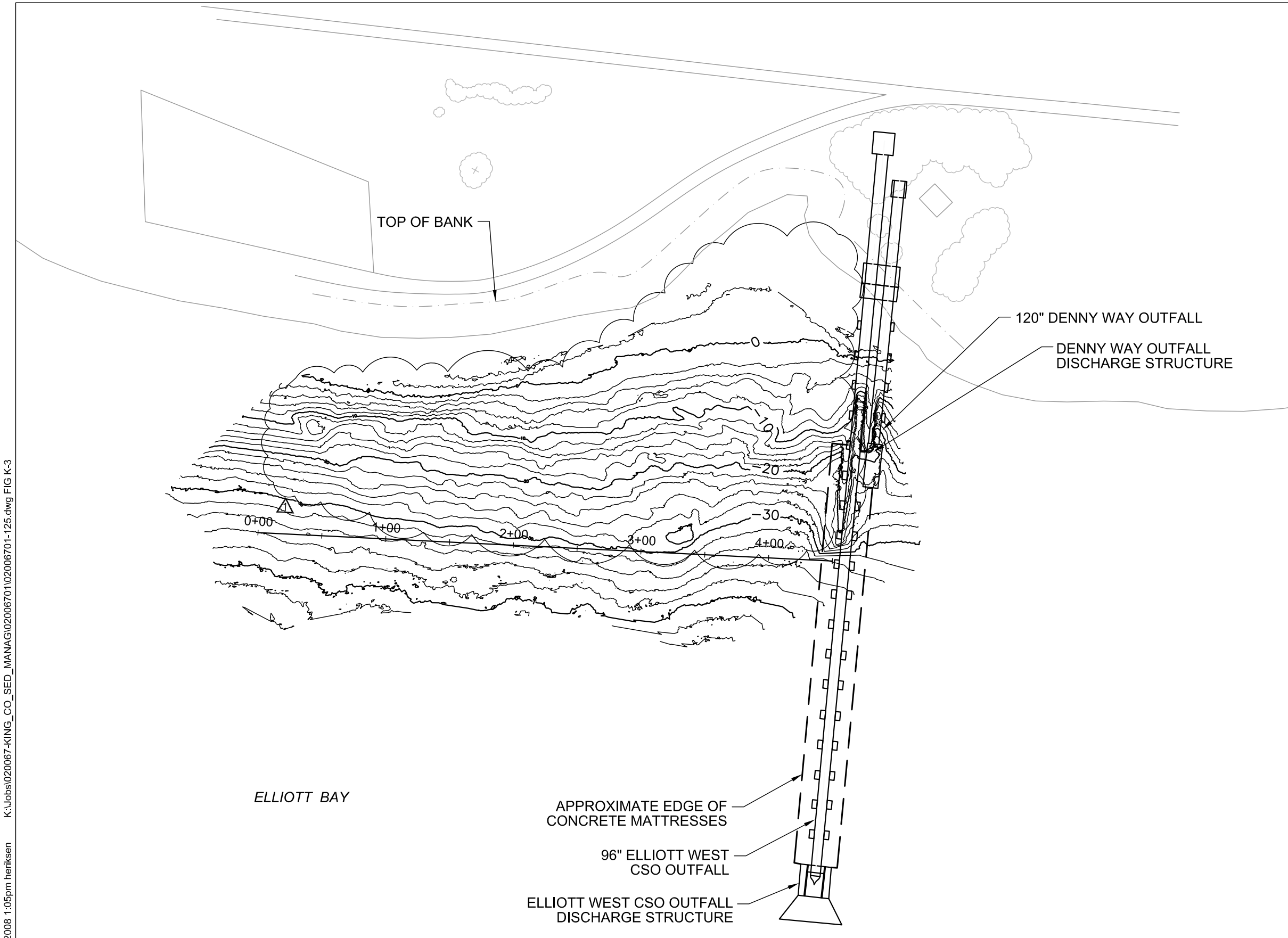


Source: Figure prepared from drawing provided by Black & Veatch Corporation entitled "Habitat Restoration Plan", dated November 1999. Bathymetry Prepared from survey provided by eTrac dated January13, 2008.
Horizontal Datum: Washington State Plane North, NAD83.
Vertical Datum: Mean Lower Low Water (MLLW).

Oct 08, 2008 12:52pm heriksen K:\Jobs\020067-KING_CO_SED_MANAG\020067\01\020067\01-120.dwg FIG K-2

ANCHOR ENVIRONMENTAL, L.L.C.

Figure K-2
Post-Dredge Survey
Denny Way CSO Nearshore Interim Sediment Cleanup Project



LEGEND

—=10— APPROXIMATE POST-DREDGE CONTOUR

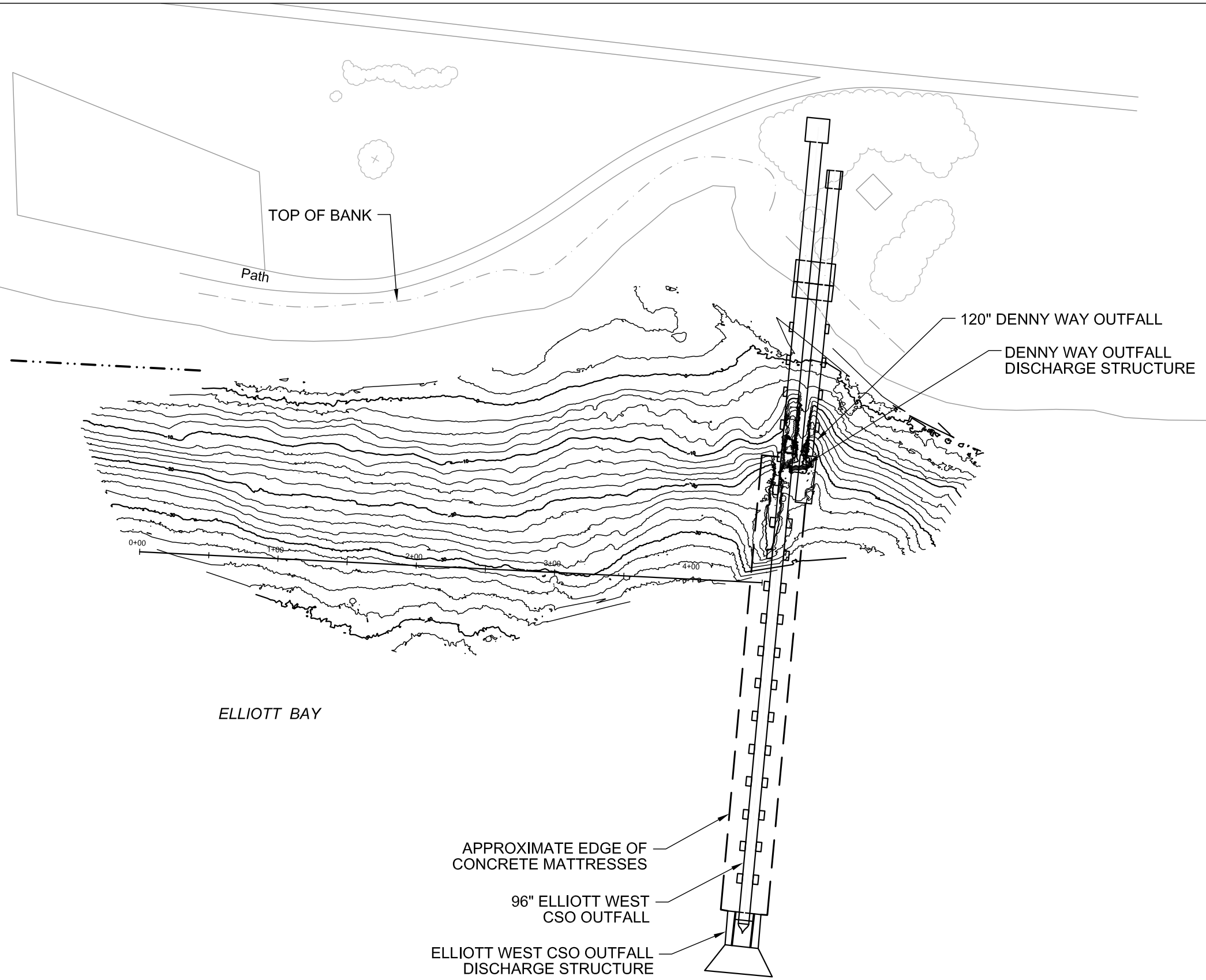
0 50
SCALE IN FEET

NOTES:
1. FIGURE PREPARED FROM DRAWING PROVIDED BY BLACK & VEATCH CORPORATION ENTITLED "HABITAT RESTORATION PLAN", DATED NOVEMBER 1999.
2. BATHYMETRY PREPARED FROM SURVEY PROVIDED BY eTRAC DATED FEBRUARY 4, 2008.
3. HORIZONTAL DATUM: SP NAD 83 WA N
4. VERTICAL DATUM: MLLW

Oct 08, 2008 1:05pm heriksen K:\Jobs\020067-KING_CO_SED_MANAG\020067010\02006701-125.dwg FIG K-3

ANCHOR ENVIRONMENTAL, L.L.C.

Figure K-3
Post-Base Backfill Survey
Denny Way CSO Nearshore Interim Sediment Cleanup Project



LEGEND

——⁻¹⁰—— POST-HABITAT CONTOUR IN FEET

NOTES:
1. FIGURE PREPARED FROM DRAWING PROVIDED BY BLACK & VEATCH CORPORATION ENTITLED "HABITAT RESTORATION PLAN", DATED NOVEMBER 1999.
2. BATHYMETRY PREPARED FROM SURVEY PROVIDED BY eTRAC DATED FEBRUARY 15, 2008.
3. HORIZONTAL DATUM: SP NAD 83 WA N
4. VERTICAL DATUM: MLLW

0 80
Scale in Feet

Oct 08, 2008 1:07pm heriksen K:\Jobs\020067-KING_CO_SED_MANAG\020067011020067011-122.dwg FIG K-4

ANCHOR ENVIRONMENTAL, L.L.C.

Figure K-4
Post-Habitat Mix Survey
Denny Way CSO Nearshore Interim Sediment Cleanup Project