Mercury Concentrations Bordering The Hamilton Army Air Field Remediation Site: September, 2001

Report to USACE District,
San Francisco

Prepared by
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Background

The re-establishment of wetlands in the San Francisco Bay/Delta System using dredged material from back channels has the potential for mobilizing mercury (Hg) present in the sediments. The primary route of entry of mercury from sediments into the Bay ecosystem is through the formation of the highly bioavailable form, methylmercury (MeHg). Methylmercury formation is favored under certain conditions characteristic of wetland environments.

This report references:

1. "Appraisal of Mercury Methylation and Bioaccumulation Potential at Hamilton Army Airfield, Summer, 2001." Scope of Work prepared for USACE District, San Francisco by USACE Engineer Research and Development Center, Waterways Experiment Station, 17 April, 2001 (Appendix D)

2. "Development of a Management Plan for the Control of Mercury Methylation in Seasonal and Tidal Wetlands Construction in the San Francisco Bay System." Proposal prepared for USACE District, San Francisco by USACE Engineer Research and Development Center, Waterways Experiment Station, 30 October, 2000 (Appendix E)

3. "Dredging-Related Methylmercury Issues in the San Francisco Bay Area." White Paper prepared for USACE District, San Francisco by USACE Engineer Research and Development Center, Waterways Experiment Station, 24 August, 2000 (Appendix F)

Reference 1 is the Scope of Work for the study which is the subject of this report and describes a project to lay the groundwork for a comprehensive investigation by assessing the pre-construction soil/sediment levels of total Hg and MeHg, and the methylation and bioaccumulation potential of mercury at the Hamilton Army Airfield (HAAF) Wetland Restoration Site. Complete coverage of the HAAF site was planned, with emphasis on sampling alongside tidal creeks and ponds. The planned sampling locations included areas from the San Pablo Bay edge to the upland dry areas and areas that are seasonally wet. This report presents the results of dry season sampling and begins the establishment of a reference base against which future mercury management results can be compared. In Reference 2 the state of the science regarding mercury methylation in sediments and its transfer to the food web in wetland ecosytems was reviewed, and a three year study was proposed having as its objective development of management solutions for mitigating the ecological mobility of mercury in constructed wetlands. Reference 3 contains a survey of the literature and discusses mercury and methylmercury bioaccumulation, biomagnification, sediment concentrations and other issues relating to mercury and dredging in San Francisco Bay.

Sampling Areas

Permission to sample within the HAAF site was denied by the HAAF site environmental coordinator. Consequently, sampling locations were limited to areas outside, but adjacent to the HAAF property. Samples were collected from four geographic areas (Specific details of the sampling sites and a map of their locations are found in Appendices A and B). Sampling was carried out 10-14 September, 2001 – climatic conditions were characteristically dry.

Area 1: The marsh adjoining San Pablo Bay on the east side of the HAAF property. This is a tidal marsh area that floods during high tide and storm events. Samples were taken near the water's edge, along the sides of tidal creeks that snake through the marsh, and at the edges of several small ponds.

Area 2: The State Lands Commission (SLC) property, also known as the Antenna Field was transferred from the Department of Defense to the SLC in 1974 and had been used as a communications location and a small arms firing range. The marsh area outside the levy is a continuation of the same marsh sampled in area 1. In addition to these marsh locations, areas inside the levy were sampled. The inside areas flood during the wet season, but were extremely dry during this initial sampling effort.

Area 3: The Bel Marin Keys Unit V project site is located in an unincorporated area of northeastern Marin County. It is bounded by Novato Creek to the north, San Pablo Bay and the inactive antenna field of the HAAF on the east and south, and the Pacheco Ponds Wildlife Area on the west and southwest. The project site encompasses approximately 1,600 acres consisting primarily of cultivated fields, non-tidal salt marshes, brackish ponds, and tidal salt marshes. The property has easements for flood protection, levee access, sanitary pipelines, and overhead electrical lines (http://www.coastalconservancy.ca.gov/belmarin/historic.html).

The Bel Marin Keys Unit V area adjoining the HAAF to the north is similar to some of the terrain within the HAAF site itself. The Bel Marin Keys area was probably diked during the same time period as the HAAF and used for similar purposes until the airfield was constructed. Current use of this area is primarily agriculture (straw and oat hay). The area has several drainage creeks traversing it, but was very dry elsewhere.

Area 4: A reference site was selected in China Camp State Park, approximately 6.5 km SSE of the HAAF in San Rafael, CA. This area is low, tidally flooded and sparsely covered with *Spartina foliosa* and *Salicornia sp.* vegetation. Samples were taken near the waters edge and along tidal creeks. The site is exposed to the same wind, tide and wave fields as the HAAF site.

Materials and Methods

Samples were collected by personnel from MEC Analytical, Tiburon, CA under the direction of a scientist from the USACE Engineer Research and Development Center (ERDC). When an appropriate sample site was selected by the ERDC scientist, the team collected five sediment samples and when available, five tissue samples. Locations were selected based upon geographical area, proximity to tidal creeks and ponds, and accessibility of sediment/soil. All samples were collected during a one week period, kept on ice in the field, transferred to the MEC Analytical laboratory each night and stored at 4°C. Samples were shipped to the ERDC Environmental Chemistry Laboratory in Omaha, NB, on ice as soon as possible after the sampling was finished. (Sample shipment was delayed by several days due to the events of September 11.)

Sediment collection methods

Sediments/soils were collected by scooping sediment into pre-cleaned glass jars with a clean stainless steel hand trowel. Clean gloves were worn by all personnel handing the samples and trowels were cleaned between each station. The top 2 cm of sediment/soil were collected while trying to minimize excess organic material in the sample. The sample jars were capped with a teflon lid and placed on ice in a cooler. Five replicates were taken from each site while being careful not to collect from the same sediment/soil surfaces as previous replicates. All five replicates were collected within a one m^2 area.

Tissue collection methods

Two tissue collection methods were used. Mussels (*Modiolus sp.)* were collected by hand from the vicinity of the sediment samples, wiped clean with a dry paper towel and placed in pre-cleaned jars. No attempt was made to shuck them in the field. Small fish and a few small crabs were collected by placing fish traps in several creeks overnight. All organisms were placed whole in pre-cleaned glass jars and stored on ice. Organisms were found at only a few stations.

Chemical Analysis

Analysis of sediment and tissue samples was performed by the ERDC Environmental and Molecular Chemistry Branch in Omaha, NE.

Total Mercury in Sediment

Sediment samples were dried at 105^{o}C and ground with a mortar and pestle in preparation for analysis. For each dried sample, a 1.0 g aliquot was digested in a BOD bottle with concentrated hydrochloric acid and concentrated nitric acid for 15 min at room temperature. Each sample was then heated for 1 hr with 99 mL reagent water and 15 mL 5% (w/v) potassium permanganate at 95^{o}C. Samples were allowed to cool, after which 10 mL sodium chloride-hydroxylamine hydrochloride solution (144 g NaCl and 144 g $NH_2OH{\cdot}HCl$ in 1 L reagent water) was added. An aliquot of the digestate was mixed with 10% (w/v) stannous chloride in 7% (v/v) hydrochloric acid solution and injected onto a CETAC M6000A mercury analyzer equipped with a long path cell. Samples were monitored at 254 nm.

Total Mercury in Tissue

Tissue samples were homogenized. A 0.5-1.0 g sample aliquot (wet weight) was digested with a 5/2 (v/v) sulfuric acid/nitric acid mixture at 95 ^{o}C for 1 hr. Saturated solutions of potassium permanganate and potassium persulfate were added to the cooled sample, after which sodium chloride-hydroxylamine hydrochloride solution was added to reduce excess permanganate. The samples were filtered and determined by monitoring cold vapor fluorescence at 254 nm.

Methylmercury in Sediment

Methylmercury determinations were performed under clean room conditions and with appropriate personal protective equipment. Approximately 0.25 g sediment was weighed into a Teflon container (100 mL volume) containing 60 mL 0.4% HCl and 200 µL 1% APDC (pyrrolidine carbodithioic acid, ammonium salt, 97%). The sample was distilled at 130^{o}C for 3.5 to 3.7 hr under 60 mL min^{-1} flow of high purity nitrogen. The distillation apparatus was situated in a laminar flow hood. The distillate was collected in a refrigerated Teflon container primed with 20 mL Barnstead Nanopure water. After the distillation was complete, the distillate was transferred to a 250 mL Erlenmeyer flask and the volume brought to approximately 100 mL with Barnstead Nanopure water. The flask was topped with a four-way valve glass stopcock. Ethylation of the mercury species was initiated by

Table 1. Grouping of stations By moisture/location.

Location							
Bay Edge	Mid Marsh	High Marsh	Antenna Field	BM Creek/pond	BM Seasonal	BM Disposal	Reference
Moisture							
Wet/damp	Damp/dry	Damp/dry	Dry/seasonal	Wet/damp	Dry	Dry	Wet/damp
Sample Identification Codes							
SM-1	SM-2	SM-6	AF-26	BM-48	BM-56	BM-52	R-43
SM-3	SM-4	SM-7	AF-27	BM-49	BM-57	BM-53	R-44
SM-10	SM-5	SM-9	AF-28	BM-50	BM-58	BM-54	R-45
SM-13	SM-8	SM-12	AF-29	BM-51		BM-55	R-46
SM-17	SM-11	SM-15	AF-30	BM-59			R-47
SM-19	SM-14	SM-16	AF-31	BM-60			
SM-21	SM-18	SM-20	AF-32	BM-61			
SM-23	SM-24	SM-22	AF-33				
SM-38		SM-25	AF-34				
SM-39		SM-40	AF-35				
		SM-41	AF-36				
			AF-37				

addition of 500 µL 2 M sodium acetate buffer and 200 µL 1% sodium tetraethylborate in 2% KOH. The ethylation reaction proceeded for 20 min with all valves closed. High purity nitrogen was then bubbled through the reaction mixture at 250 mL min^{-1}, and organomercury species were collected through the opened valve onto a quartz tube packed with 3 g Carbotrap 20/40 mesh graphitized carbon black. After 20 min, the sample container was closed and nitrogen was directed only through the quartz tube for 7 min. The quartz tube was inserted into a tubular heating jacket heated to 350^oC for 2 min under a 50 mL min^{-1} flow of ultra high purity argon. The gas flow proceeded through a 1 m U-shaped glass column (2 mm ID, 0.25 in OD) with 3% OV-17 on Chromasorb WHP 80/100 mesh packing. The column was fitted into a HP 5890 gas chromatography oven held at 100^oC. After leaving the chromatography column, the flow was directed to a quartz pyrolysis tube held at approximately 700^oC by a nichrome wire coil controlled by a variable autotransformer. Pyrolysis products were observed by using a Tekran Model 2500 CVAFS Mercury Detector. Analog data were collected on a Shimadzu C-R4A Chromatopac integrator. The instrument was calibrated daily with five methylmercury standard concentrations over a range from 50 pg g^{-1} to 5000 pg g^{-1} with an acceptable relative standard deviation of 25 for the mean response factor. Each analytical run included multiple distillation and bubbling blanks, a laboratory control sample, matrix spike, matrix spike duplicate and a sample prepared from a certified reference material.

Results and Discussion

Stations were assigned to one of eight locations according to soil type and moisture content. Table 1 lists the station identification codes that were assigned to each group of five replicates.

Appendix A lists detailed information concerning the stations and appendix B locates these stations on the map of the area. The locations are:

HAAF Bay Edge – Samples taken in the salt marsh area at or near the edge of San Pablo Bay. Flora is primarily *Spartina foliosa.* The Bay Edge samples were taken within 1 m of the water line and at one station (SM-10), samples were actually taken in very shallow water. All of these stations are covered by water daily during the normal tidal cycles of San Pablo Bay.

HAAF Mid Marsh – Samples were taken mid-way between San Pablo Bay and the levee bordering the HAAF property . Flora is a mixture of *Spartina foliosa, Salicornia sp.* and dried weeds. Most samples were taken alongside tidal creeks while several were taken in areas that were not crossed by creeks. Sediments ranged from wet to dry with most areas being damp or moist. The entire marsh area outside the levee is subject to flooding during high tidal cycles or storm surges.

HAAF High Marsh – Samples were taken close to the levee on the bay side. Some tidal creeks are located in this area but the creek beds are 1 M or more lower then the marshland. Flora is primarily *Salicornia sp.* and dried weeds. The HAAF high marsh areas are similar to the mid-marsh areas. The primary creek running through the high marsh area south of the antenna fields boundary is fed by large pumps used to drain the HAAF property. This creek meanders through the marsh and empties into San Pablo Bay. During high tide when the pumps are not running, water can flow from the bay up these creek channels and into the high marsh areas. The high marsh area is underwater only during extremely high tides and storm events.

Antenna Field – This area is bounded by the bay levee and the access road levee. Historically it was used to locate communications and radar antennas and was also used as a firing range. The area is very dry with heavy weed cover and does not connect to the bay. There are no creeks in this area. Sediment samples were extremely dry and powdery and the vegetation cover had to be scraped off to collect them. This is a seasonal wetland that will be flooded during the rainy season (Personal Communication).

Bel Marin (BM) Keys Creek/Pond – Samples were taken at the sides of a pond and at the edges of a drainage creek that flows through the area bordering cultivated fields. The creek bed is 1-2 m below the level of the cultivated fields and drains this agricultural land. Water is pumped from this creek system into the bay when levels rise after rain events. There is minimal tidal action in these creeks, although some bay water does back-flow into them through the pump station during high tide. Salinity in the drainage creek was 29 – 30‰. This group of samples also includes a hyper saline pond (> 60‰ salinity) and an area at the base of the bay levee that was very dry. Most samples were taken as close to the water as possible, usually on small ledges formed along the creek banks or mudflats at the waters edge. One exception was station 51, which was taken on very dry ground. This sample is quite different from the others in this group due to it's complete lack of moisture.

Bel Marin (BM) Keys Seasonal – This area is a seasonal wetland bounded by levees. During this sampling period, the area was dry and covered with weeds and grass. The soil at these stations was extremely dry and powdery. The only time water covers this area is during the rainy season when the surrounding levees trap the rain water. There is no direct tidal connection to the bay.

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Bel Marin (BM) Keys Disposal – This is an area in the NE corner of the property bordered by the San Pablo Bay levee and the Novato River levee. Dredged material was disposed here in the 1980's. The area is not in cultivation, but was covered with dry grasses and weeds and was extremely dry. Due to its location, rain would quickly run off into the drainage creeks located outside the disposal area, allowing the sediment to dry quickly and not hold moisture.

Reference Marsh – This is a salt marsh in the China Camp State Park, with a mixture of *Spartina foliosa* and *Salicornia sp.* dominating the site. The China Camp State Park Reference site was selected because of it's similarity to the HAAF Bay Edge sample sites and is located on the edge of San Pablo Bay. The area is tidally inundated and all samples were taken from the tidal water line to approximately 30 m above the line, and alongside a tidal creek. The entire sample area is underwater during high tide. All sediment samples were wet or damp.

Total mercury

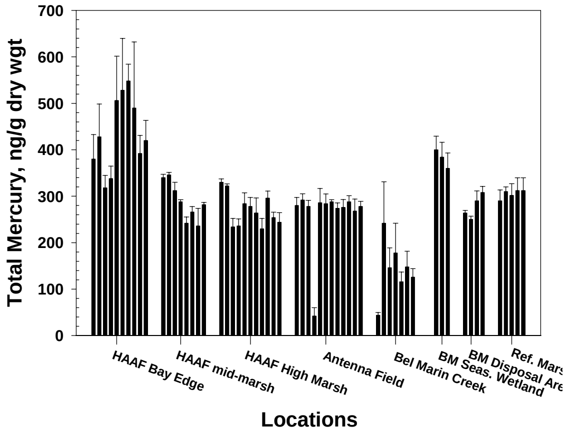
Of the 300 samples analyzed for total Hg none were below MDL. Concentrations of individual samples ranged from 30 to more than 700 ng g^{-1} with a mean of 292 and median of 290 ng g^{-1}. Although the mean and median are for all practical purposes indistinguishable, the data were non-normally distributed as measured by the Kolmogorov-Smirnov test. The mean/median total Hg concentrations are in agreement with levels previously reported. In the 1997 San Francisco Estuary Institute survey ambient mercury levels for SF Bay sediments were reported as 250 ng g^{-1} in sediments with < 40% fines, and 430 ng g^{-1} in sediments having 40 – 100% fines.

Table 2. Total mercury statistical analysis

Location	Median ng g^{-1}	Mean of Ranks	Tukey Ranking*	N	Mean ng g^{-1}	Standard Deviation
Bay Edge	420	264	A	50	435	102
BM Seasonal	380	257	A	15	381	33.8
Reference	300	180	B	25	303	22.5
Mid Marsh	285	146	C	40	289	41.9
Antenna Field	280	125	CD	60	261	68.8
BM Disposal	270	129	D	20	278	26.1
High Marsh	260	116	D	55	270	37.7
BM Creek	130	32	E	35	143	71.2

*Medians with same letter designation do not differ statistically, P # 0.05

Total Hg concentrations are analyzed statistically in Table 2 and shown as bar graphs by location in Figure 1. Highest concentrations of total mercury were found at the HAAF Bay Edge and Bel Marin Seasonal stations and lowest were at the Bel Marin Creek stations. The Antenna Field stations were the most consistent in terms of total mercury concentrations, but also produced one station that was



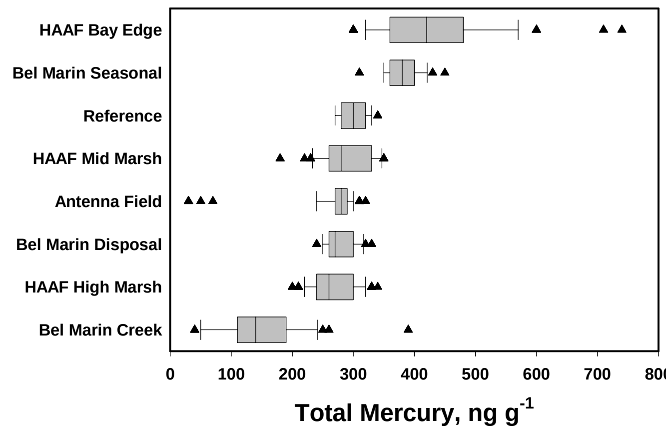


Figure 1. Total Mercury by station and location. Means and standard deviations.

Figure 2. Total mercury in sediments grouped by location. Boxes are medians and interquartile range. Whiskers are 10th and 90th percentiles. Triangles are outliers.

markedly lower than all the others. Means and standard deviations are given for comparison with the medians, and medians are tested for significant difference (P # 0.05) by Tukey's Test. Medians with the same letter designation are not statistically different. HAAF Bay Edge and BM Seasonal medians were the highest and did not differ, with medians of 420 and 380 ng g^{-1}, respectively. Next in rank was the Reference Marsh site with a median of 300 ng g^{-1}. Total mercury concentrations diminished for the HAAF sediments as elevation and distance from the HAAF Bay Edge increased. The HAAF Mid Marsh sediments and the Antenna Field sediments had median total mercury concentrations of 285 and 280 ng g^{-1}. The HAAF High Marsh sediments were lowest in total mercury of the HAAF samples with a median of 260 ng g^{-1}. Lowest total Hg concentrations of all locations surveyed were found at the Bel Marin Creek sites. These data are shown as box plots in Figure 2 and the interquartile ranges, 10th and 90th percentiles and outliers are plotted.

Methylmercury

The measured MeHg concentrations of individual sediment samples ranged from 0.5 to 15 ng g^{-1} with 13% of the samples being below the MDL (0.050 ng g^{-1}). These were set at one-half the detection limit for calculation of statistics and the resulting mean of all samples was 1.47 ng g^{-1}. The MeHg concentrations were more highly skewed than were the total Hg concentrations and were also highly variable within a location. Data are compared in Table 3 and means and standard deviations at each station within a location are also shown graphically in Figure 3. Means ranged from 0.537 at the Bel Marin Disposal site to as high as 2.99 ng g^{-1} at the Reference Salt Marsh. Medians were much more consistent across locations. The HAAF High Marsh samples were highest. These had a median MeHg content of 1.10 ng g^{-1} and differed by Tukey's Test only with the Antenna Field and Bel Marin Disposal area sediments. The MeHg box plots (Figure 4) perhaps best reveal the variability across all sites by showing the large number of high outliers that were found.

Table 3. Methylmercury statistical analysis.

Location	Median ng g^{-2}	Mean of Ranks	Tukey Ranking*	N	Mean ng g^{-2}	Standard Deviation
High Marsh	1.10	172	A	55	1.82	2.15
Bay Edge	1.01	181	AB	50	1.89	2.33
Reference	1.00	157	ABC	25	2.99	4.14
BM Seasonal	0.610	148	ABC	15	0.906	0.731
Mid Marsh	0.570	140	ABC	40	0.778	0.816
BM Creek	0.450	138	ABC	35	1.39	2.11
Antenna Field	0.380	138	BC	60	1.13	1.56
BM Disposal	0.160	94.9	C	20	0.537	0.893

* Medians with same letter designation do not differ statistically, P # 0.05

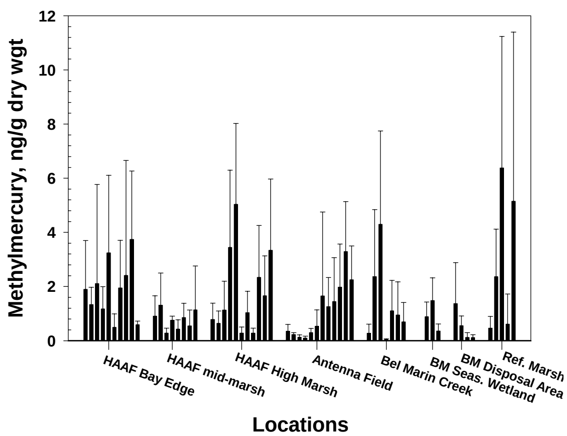


Figure 3. Methylmercury by station and location. Bars are means, whiskers are standard deviations.

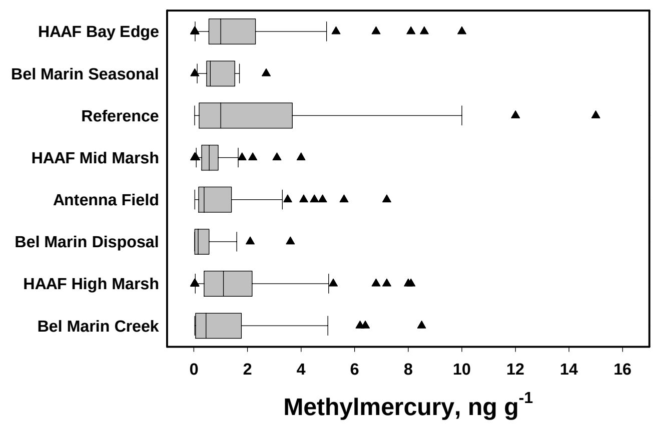


Figure 4. Methylmercury in sediments grouped by location. Boxes are medians and interquartile range. Whiskers are 10th and 90th percentiles. Triangles are outliers.

Methylmercury as a percent of total mercury

The significance of the ratio of MeHg to total Hg has been discussed in detail previously (Appendix D, Appendix E) and will not be repeated here. Suffice it to say that high MeHg/Total Hg ratios in a sample indicate conditions are present that favor mobilization of mercury by conversion to its most bioavailable form. The ratio of MeHg to total Hg in a sediment can be taken as an indicator of the MeHg production *potential* and will be used in that sense in the discussion to follow. Conditions that favor mercury methylation in sediments and soils are detailed in Appendix E and include those that typify the channels of salt marsh wetlands. Statistical comparisons of mercury methylation potential are made in Table 4 and are shown as bar graphs in Figure 5. As with the MeHg concentration data there is a large measure of heterogeneity. The HAAF High Marsh, Bel Marin Creek, and HAAF Bay Edge locations have the highest median MeHg percentages and differ statistically from the lowest

Table 4. Methylmercury as percent of total mercury, statistical analysis..

Location	Median %	Mean of Ranks	Tukey Ranking*	N	Mean %	Standard Deviation
HAAF High Marsh	0.406	173	A	55	0.692	0.842
BM Creek	0.333	176	A	35	0.934	1.33
HAAF Bay Edge	0.222	154	A	50	0.455	0.608
Reference	0.211	143	AB	25	0.866	1.36
HAAF Mid Marsh	0.192	138	AB	40	0.267	0.272
Antenna Field	0.166	143	AB	60	0.421	0.558
BM Seasonal	0.165	135	AB	15	0.240	0.202
BM Disposal	0.057	94.6	B	20	0.203	0.342

*Medians with same letter do not differ significantly, P # 0.05

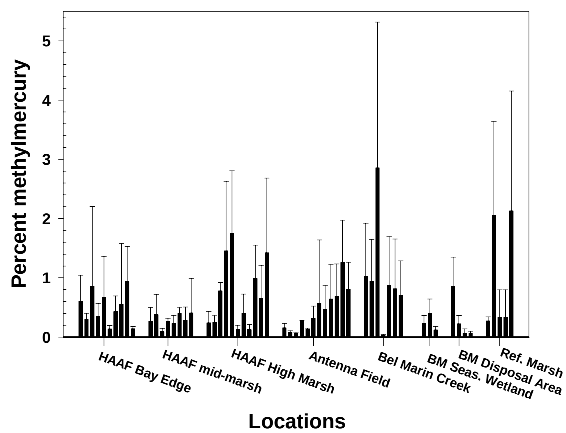


Figure 5. Percentage of methylmercury in total sediment mercury by location. Bars are means, whiskers are standard deviations.

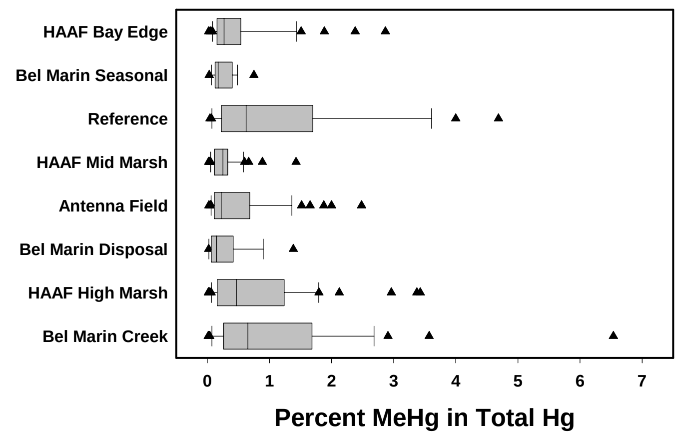


Figure 6. Percent methylmercury in total sediment mercury grouped by location. Boxes are medians and interquartile range. Whiskers are 10th and 90th percentiles. Triangles are outliers.

median, the Bel Marin Disposal site (Table 4). There is considerable overlap among locations. The box plots, again, show high skewedness and variability (Figure 6).

Comparison of Locations for Mercury Methylation Potential

In order to better distinguish locations with high mercury methylation potential from those with low methylation potential the overall mean and median percent MeHg in total Hg of all samples were calculated and the sample results of the individual sites at each location compared against them. Figure 7 shows the usual box plot data and includes a mean line. The median is 0.284% and numerous outliers above the 90th percentile range up to 6.5% MeHg in total Hg. For purposes of discussion, percentages of MeHg in total Hg greater than the mean will be considered indicative of high methylation potential.

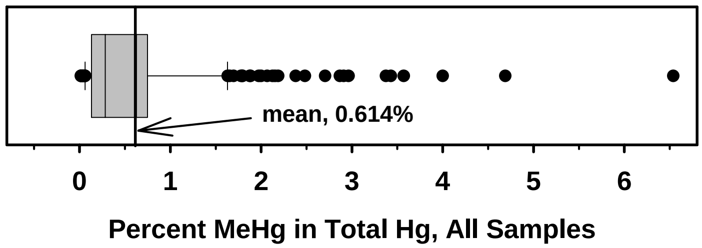


Figure 6. Box plot of overall percentage of MeHg in total Hg.

The mean is actually at about the 70th percentile, so that would define high methylation potential as being percentages in the upper 30% of all samples.

Table 5 identifys stations at which the percent MeHg in total Hg exceeds the grand mean (0.614%) in one or more of the five samples at that station, and lists the stations by location as in Table 1. The location with the fewest "hits" was Bel Marin Seasonal. Only one sample out of 15

Table 5. Identification of stations within locations with highest %MeHg in total Hg*

Location							
Bay Edge	Mid Marsh	High Marsh	Antenna Field	BM Creek/pond	BM Seasonal	BM Disposal	Reference
Moisture							
Wet/damp	Damp/dry	Damp/dry	Dry/seasonal	Wet/damp	Dry	Dry	Wet/damp
Percent of stations with Exceedences							
60%	38%	64%	50%	86%	33%	25%	60%
Sample Identification Codes							
SM-1	SM-2	SM-6	AF-26	BM-48	BM-56	BM-52	R-43
SM-3	SM-4	SM-7	AF-27	BM-49	BM-57	BM-53	R-44
SM-10	SM-5	SM-9	AF-28	BM-50	BM-58	BM-54	R-45
SM-13	SM-8	SM-12	AF-29	BM-51		BM-55	R-46
SM-17	SM-11	SM-15	AF-30	BM-59			R-47
SM-19	SM-14	SM-16	AF-31	BM-60			
SM-21	SM-18	SM-20	AF-32	BM-61			
SM-23	SM-24	SM-22	AF-33				
SM-38		SM-25	AF-34				
SM-39		SM-40	AF-35				
		SM-41	AF-36				
			AF-37				

*Highlighted station codes have %MeHg in total Hg in at least one of the five replicate samples exceeding the grand mean percentage.

exceeded the grand mean percent MeHg in total Hg. Bel Marin Disposal was similar, with one station out of four exceedences. These two locations appear to have the lowest mercury methylation potential of the eight locations surveyed. Both locations are characterized as "dry." However, it is also true that the fewest number of stations were assigned to the two locations. The location with the highest methylation potential appears to be Bel Marin Creek with all but one of the stations having exceedences.

Table 6. Concentrations of total Hg and MeHg, and percentage of MeHg in total Hg in high methylation samples (above 0.614% MeHg)

Sample ID	Hg (ng/g)	MeHg (ng/g)	Percent MeHg
HAAF Bay Edge (wet/damp)			
SM-1-1	380	4.60	1.211
SM-10-2	300	8.60	2.867
SM-17-1	430	8.10	1.884
SM-21-1	600	4.60	0.767
SM-23-2	420	10.0	2.381
SM-38-1	450	6.80	1.511
-4	370	5.30	1.432
-5	380	4.30	1.132
HAAF Mid Marsh (damp/dry)			
SM-2-5	330	2.20	0.667
SM-4-5	350	3.10	0.886
SM-24-1	280	4.00	1.429
HAAF High Marsh (damp/dry)			
SM-9-4	250	2.20	0.880
-5	250	2.10	0.840
SM-12-1	250	3.97	1.587
-2	210	2.60	1.238
-3	240	8.10	3.375
SM-15-1	280	5.03	1.796
-2	270	8.00	2.963
-3	290	5.20	1.792
-4	320	6.80	2.125
SM-25-3	280	3.60	1.286
-4	300	4.90	1.633
SM-40-4	260	4.20	1.615
SM-41-1	260	3.40	1.308
-2	210	7.20	3.429
-5	260	4.10	1.577
Bel Marin Disposal Area (dry)			
BM-52-1	270	2.1	0.778
-3	260	3.60	1.385
Bel Marin Seasonal Wetlands (dry)			
BM-57-2	360	2.70	0.750

Sample ID	Hg (ng/g)	MeHg (ng/g)	Percent MeHg
Bel Marin Creek/Pond (wet/damp)			
BM-48-3	40	0.79	1.975
BM-49-1	390	6.20	1.590
-3	180	1.90	1.056
-5	180	3.20	1.778
BM-50-1	140	5.00	3.571
-2	130	8.50	6.538
-3	130	1.30	1.000
-4	220	6.40	2.909
BM-59-3	140	1.70	1.214
-5	130	2.80	2.154
BM-60-4	150	3.10	2.067
BM-61-2	120	1.80	1.500
-4	130	1.00	0.769
Antenna Field (dry)			
AF-32-5	290	7.20	2.483
AF-33-4	270	2.20	0.815
-5	270	2.60	0.963
AF-34-2	270	2.90	1.074
-5	290	3.50	1.207
AF-35-1	290	4.80	1.655
AF-36-1	280	5.60	2.000
-3	240	4.50	1.875
-4	240	3.10	1.292
-5	290	2.40	0.828
AF-37-1	270	4.10	1.519
-3	290	2.45	0.845
-5	290	2.50	0.862
Reference Salt Marsh (wet/damp)			
R-44-3	280	3.00	1.071
-4	300	5.09	1.697
R-45-3	300	2.00	0.667
-4	320	7.00	2.188
-5	300	12.0	4.000
R-46-5	300	2.60	0.867
R-47-1	300	3.20	1.067
-2	320	15.0	4.688
-4	270	7.30	2.704

Table 7. Comparison of total Hg, MeHg, and percentage of MeHg in total Hg in high methylation samples identified in Table 6.

Total Mercury			Methylmercury			Percent MeHg in Total Hg		
Location	median (ng g^{-1})	Dunn's Test	Location	mean (ng g^{-1})	Fisher's LSD	Location	median (%)	N.S.*
HAAF Bay Edge	400	A	HAAF Bay Edge	6.54	A	Bel Marin Creek	1.778	A
HAAF Mid Marsh	330	AB	Reference Marsh	6.35	AB	Reference Marsh	1.697	A
Reference Marsh	300	AB	HAAF High	4.76	AB	HAAF High	1.615	A
Antenna Field	280	B	Antenna Field	3.68	B	HAAF Bay Edge	1.471	A
HAAF High	260	B	Bel Marin Creek	3.36	B	Antenna Field	1.207	A
Bel Marin Creek	140	C	HAAF Mid Marsh	3.10	B	HAAF Mid Marsh	0.886	A

*N.S. Not significant, $P < 0.05$, one-way ANOVA on ranks.

Bel Marin Creek station 51, as stated in the station descriptions above, was exceptionally dry. It is worth noting that while the six Bel Marin Creek stations that were wet or moist were all high methylation (Table 5), station BM-51 was not among them, and in fact averaged only 0.026% MeHg in total Hg. This observation is consistent with previous studies relating redox state, microbial assemblages and other properties of sediments that relate to wetness with the production of MeHg (Appendices E, F).

The HAAF High Marsh and the Reference Salt Marsh locations also had relatively high methylation potential with each having 60% of stations with at least one sample above the mean percentage of MeHg in total Hg. These locations were also characterized as wet/damp. The Antenna Field was intermediate with 50% of the statons exceeding the grand mean. Table 6 identifys the high methylation samples and shows the concentrations of total Hg, MeHg, and the percentage MeHg in total Hg in those samples at each of the locations. These data are summarized and compared in Table 7. The locations with the least methylation potential, Bel Marin Disposal Area and Bel Marin Seasonal Wetlands were excluded from the comparison. Total Hg data were non-normally distributed and were tested with One Way ANOVA on ranks. Dunn's test was used for median comparisons because groups were of unequal size. Methylmercury data met the requirements for parametric statistics and were tested with One Way ANOVA. Tukey's test did not detect a difference between any mean pairs although a significant difference was found by the ANOVA ($P = 0.018$). Therefore, Fisher's Least Significant Difference (LSD) was used and is reported in Table 7. The percentage of MeHg in total Hg was also tested by One Way ANOVA on ranks and no statistically significant differences between any median pairs were found.

The location with the highest total Hg concentrations, HAAF Bay Edge, also had the highest mean MeHg concentrations (Table 6). This is consistent with observations made in other studies

(Appendix F) in which MeHg formation was found to be favored when there was more inorganic mercury available for conversion. However, the Reference Salt Marsh sediments contained the two highest MeHg outliers (12.0 and 15.0 ng g^{-1}) and total Hg and MeHg concentrations at the two physically similar locations were not significantly different. Total Hg concentrations at the Bel Marin Creek stations were significantly lower than those of any other location differing statistically only with those of HAAF Bay Edge. The median percentages of MeHg in total mercury of the high methylation samples at the six locations did not differ by one-way ANOVA on ranks ($P < 0.05$), but again suggested a higher Hg methylation potential existed at the Bel Marin Creek location than at the others (Table 7).

Mercury Bioaccumulation

Table 8. Bioaccumulation Factor (BAF) means comparison and sediment total Hg and MeHg concentrations

Location	Organism	BAF mean	BAF SD	N	Tukey Ranking*	Sediment total Hg ng g^{-1}	Sediment MeHg ng g^{-1}
High Marsh SM 7	Crab	0.792	0.00	1	A	320	0.641
Bay Edge SM 10	Clam	0.368	0.067	5	B	318	2.11
Bay Edge SM 1	Clam	0.356	0.032	4	BC	390	1.90
Bay Edge SM 13	Clam	0.333	0.070	4	BC	335	1.18
Bay Edge SM 3	Clam	0.249	0.032	5	BC	428	1.33
Bay Edge SM 17	Clam	0.198	0.031	5	C	506	3.24

* BAF means with same letter designation do not differ statistically, P # 0.05

Soil/sediment dwelling organism samples were taken at five of the HAAF Bay Edge sites and at one HAAF High Marsh site. Nearly all biota were small clams, *Modiolus sp.* Two small crabs (species not identified) were found at HAAF High Marsh site SM 7. The Hg content of the tissue samples was reported as total Hg on a wet weight basis. In order to calculate bioaccumulation factors ([tissue Hg]/[sediment Hg], BAF) the dry weight concentration was estimated by assuming an 85% moisture content. The data were normally distributed with homogeneous variances enabling comparison of means. Results are shown in Table 8. The BAF for the single crab sample was significantly higher than all clam BAFs at about 0.8. The clam BAFs were largely similar and ranged 0.2 – 0.37. Neither sediment total Hg nor MeHg varied directly with tissue Hg concentrations or BAFs. This may be the result of insufficient numbers of samples as correlations have been observed in other studies (Appendices E, F). The magnitude of the BAFs is somewhat low but not outside the range reported in other studies. In most cases BAFs for benthic organisms have been observed to be near unity (Appendices E, F).

Summary

Sixty sediment/soil sampling stations with five replicates at each station were distributed over the bay-side perimeter of the HAAF Remediation Site and at a reference salt marsh. The sixty stations were assigned to eight locations in which geophysical conditions and wetness/dryness were generally similar. Samples were analyzed for total Hg and MeHg. Biota were collected at the sediment/soil sample sites when present and were also analyzed for total Hg. The highest median total Hg concentrations were found along the HAAF Bay Edge and in the Bel Marin Seasonal Wetland. These averaged 400 ng g^{-1} on a dry weight basis. Most of the other samples averaged about 300 ng g^{-1}, and samples at one location, Bel Marin Creek/Pond had unusually low median total Hg concentrations of 130 ng g^{-1}. There were both high and low total Hg outliers. The MeHg concentrations were highly variable and contained numerous high (but not low) outliers. The highest median MeHg concentrations were found at two HAAF locations: HAAF High Marsh and HAAF Bay Edge. These had 1.0 – 1.1 ng g^{-1} median MeHg concentrations. The Reference salt marsh was consistently the third highest location for both total Hg and MeHg, and had the highest outliers observed (12 and 15 ng g^{-1}).

The potential for the formation of MeHg was gauged by the percentage of MeHg in total Hg of each sample taken. On this basis the location with the highest methylation potential Bel Marin Creek/Pond. However, this was also the site with the lowest total Hg concentrations. Although the potential for methylation appeared somewhat higher at this location there were no statistically significant differences with any of the other locations. Highest production of MeHg occurred at the HAAF Bay Edge and at the Reference Salt Marsh locations. The MeHg concentrations at the HAAF High Marsh location was somewhat less than these but the difference was not statistically significant. The least amounts of MeHg were found at the two driest locations, Bel Marin Seasonal Wetland and Bel Marin Disposal Area.

Acknowledgements

The authors would like to acknowledge the long hours put in by the employees of the MEC Analytical Tiburon office. These scientists provided logistical support and did most of the sample collection. Ms. Cindy Word of the MEC Analytical Seattle office created the map in Appendix B, based upon GPS data collected in the field. We are grateful to Mr. Eric Polson, a contractor working for the San Francisco District for his assistance in gaining access to the Bel Marin Keys area for sampling. We acknowledge the support of Mr. Edward Keller and his staff at HAAF for their assistance with this project.

Appendix A. Station Data For HAAF Sampling Week of 10 September 2001.

SM = salt marsh, AF = antenna field, R = China Grove State park reference site, BM = Bel Marin Keys Unit V

Station #	Date	Time	# of replicates			Latitude	Longitude	GPS error in feet	General Notes
			Sediment		Tissue				
			Total	MeHg	Total				
SM-1	9/10/2001	1112	5	5	4	38 02.904	122 29.613	NA	Station located just north (6.5 M) and west (10 M) of main channel entrance to salt marsh. Pickle weed transitioning to Spartina closer to channel. No tissue available for replicate 5.
SM-2	9/10/2001	1225	5	5	0	38 02.892	122 29.713	15	Along edge of creek leading to pump station at Bay levee. Heavy sticker weed thistle growth. Small flat area 20 cm above water level. Soil is damp
SM-3	9/10/2001	1420	5	5	5	38 02.960	122 29.551	13	Just on south side of smaller channel entrance (~150 M north of main channel), lots of root mass in samples.
SM-4	9/10/2001	1443	5	5	0	38 03.002	122 29.626	NA	On edge of tidal creek. Mixed Spartina and pickleweed. West of SM-3. Approximately 200 M from bay. Large amount of root in sediment. Sediment fairly dry.
SM-5	9/10/2001	1513	5	5	0	38 03.018	122 29.693	12.5	Above creek on pickleweed flat. Dry sediment. Well above tide line. Heavy pickleweed cover.
SM-6	9/10/2001	1600	5	5	0	38 03.067	122 29.789	10.7	High pickleweed area. Dry sediment. 10 M bayside of levee at T-junction of creek. 1-11/2 M above water. Put out minnow trap, but nothing in it the next day.
SM-7	9/10/2001	1655	5	5	1	38 20.910	122 29.776	15	Small tidal creek off of the main channel near loop road and landing lights. Put out minnow trap, after 2 days only caught 2 small crabs. May not be enough tissue to analyze.
SM-8	9/10/2001	1715	5	5	0	38 02.916	122 29.833	9.9	Flooded pickleweed area. Water ~ 3 cm deep. At end of multiple tide channels. Sediment is "solid".
SM-9	9/11/2001	918	5	5	0	38 02.873	122 29.912	16.2	Dry upland type area. 5 M inside levee. 25 M south of boat dock. Heavy pickleweed cover. Area does flood. At south property line.
SM-10	9/11/2001	1030	5	5	5	38 03.116	122 29.550	14	On edge of bay in Spartina marsh. Thin water cover over part of area. About 30 M south of rock jetty. Sediment is stiff with root mass.

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Station #	Date	Time	# of replicates			Latitude	Longitude	GPS error in feet	General Notes
			Sediment		Tissue				
			Total	MeHg	Total				
SM-11	9/11/2001	1045	5	5	0	38 03.135	122 29.637	28	10 M. south of pole with yellow triangle on top. Heavy pickleweed. Solid sediment, damp ground but not wet.
SM-12	9/11/2001	1110	5	5	0	38 03.139	122 29.723	16.1	By small pond in middle of field. Samples taken at edge of pond in mud flat. Mixed Spartina, pickleweed. Some root mass and dead plant material in sample. Under surficial sediment, sediment turns black, but has no strong odor.
SM-13	9/11/2001	1315	5	5	4	38 03.235	122 29.543	26	On edge of bay. High Spartina marsh. Narrow band Spartina before it transitions to pickleweed. Approximately 100 M north of rock jetty.
SM-14	9/11/2001	1335	5	5	0	38 03.255	122 29.584	16.5	Heavy pickleweed cover. Dry area. Sediment moist. 1/2 way between bay and levee. Sediment solid, not much root mass in it.
SM-15	9/11/2001	1400	5	5	0	38 03.277	122 29.604	16	At edge of small pond in mud flat area. Pond about 50 M in diameter. Mud flat about 1 M wide. Very black under about 5mm of top layer. Some sulfide smell.
SM-16	9/11/2001	1420	5	5	0	38 03.366	122 29.623	13.4	10 M from levee. On edge of creek that parallels levee but about 2 M above water. Steep bank. 20 M north of pipe line. Solid dry.
SM-17	9/11/2001	1510	5	5	5	38 03.334	122 29.526	13.6	On edge of bay in Spartina marsh, just above water line. High root content in samples.
SM-18	9/11/2001	1532	5	5	0	38 03.352	122 29.559	25	1/2 way between bay and levee. Pickleweed cover. Sediment dry. No open water near.
SM-19	9/12/2001	1030	5	5	0	38 03.402	122 29.534	13	Edge of bay about 1 M above water. Pickleweed partial cover, visible mud. No Spartina. Heavy organic debris in samples.
SM-20	9/12/2001	1047	5	5	0	38 03.419	122 29.576	18	Approximately 20 M from levee. Dry, heavy pickleweed. A lot of dead dry brush (old pickleweed?). About 10 M from creek by levee but feeder creeks nearby. Sediment pretty dry.
SM-21	9/12/2001	1115	5	5	0	38 03.455	122 29.506	17	On edge of bay. Barren mudflat just above water level. Mud flat 1/2 - 1 M wide at this tidal cycle. Some organic matter. Not a lot of root mass.

Appendix A. Station Data For HAAF Sampling Week of 10 September 2001.

SM = salt marsh, AF = antenna field, R = China Grove State park reference site, BM = Bel Marin Keys Unit V

Station #	Date	Time	# of replicates			Latitude	Longitude	GPS error in feet	General Notes
			Sediment		Tissue				
			Total	MeHg	Total				
SM-22	9/12/2001	1130	5	5	0	38 03.472	122 29.547	17	25 M from levee. 5 M from creek and 5 M each direction (N-S) to pump station outfalls. Very dry soil with some dead stem matter. Mixed pickleweed and other weedy plants. More of an upland location.
SM-23	9/12/2001	1204	5	5	0	38 03.525	122 29.440	9.5	Small peninsula (3 x 4 M) covered with short Spartina some root, not as heavy as some. Approximately 1/2 M above water level. Fairly dry sediment.
SM-24	9/12/2001	1220	5	5	0	38 03.533	122 29.485	NA	1/2 way between levee and bay. Heavy pickleweed. Soil is moist but not wet. Some dead plant debris in sample.
SM-25	9/12/2001	1250	5	5	0	38 03.535	122 29.528	15	3 M from levee next to creek (between levee and creek). Small patch of mud flat with Spartina. Very little debris in sample. About 1/2 M above water in creek, but area does flood at higher tide.
AF-26	9/13/2001	825	5	5	0	38 03.641	122 29.751	14	Very dry and hard ground. No moisture anywhere. This area floods in the winter. Heavy weed cover, all going to seed.
AF-27	9/13/2001	836	5	5	0	38 03.635	122 29.722	10.4	Same as # AF-26
AF-28	9/13/2001	848	5	5	0	38 03.629	122 29.660	14	Same as # AF-26
AF-29	9/13/2001	910	5	5	0	38 03.617	122 29.507	NA	Same as # AF-26
AF-30	9/13/2001	930	5	5	0	38 03.699	122 29.544	NA	Sediment not quite as hard/dry. More root material. Weed cover not as thick. Ground is softer, easier to dig. About 60 M from bay levee.
AF-31	9/13/2001	940	5	5	0	38 03.715	122 29.646	10	Small depression (maybe 20 cm deep). Sparser weed cover. About 100 M from road.
AF-32	9/13/2001	1010	5	5	0	38 03.844	122 29.657	19	Dry soil, weedy.
AF-33	9/13/2001	1018	5	5	0	38 03.823	122 29.631	25	Lower weed growth, disturbed area. Very dry.
AF-34	9/13/2001	1030	5	5	0	38 03.733	122 29.512	17	Heavy vegetation. Significant root mass in soil. Dry.
AF-35	9/13/2001	1058	5	5	0	38 03.760	122 29.436	8	Low vegetation. Dry soil.
AF-36	9/13/2001	1110	5	5	0	38 03.820	122 29.499	10	Middle of field between road and levee. Weed cover, dry soil.
AF-37	9/13/2001	1120	5	5	0	38 03.886	122 29.572	15	Heavy weed cover. Bone dry.

Appendix A. Station Data For HAAF Sampling Week of 10 September 2001.

SM = salt marsh, AF = antenna field, R = China Grove State park reference site, BM = Bel Marin Keys Unit V

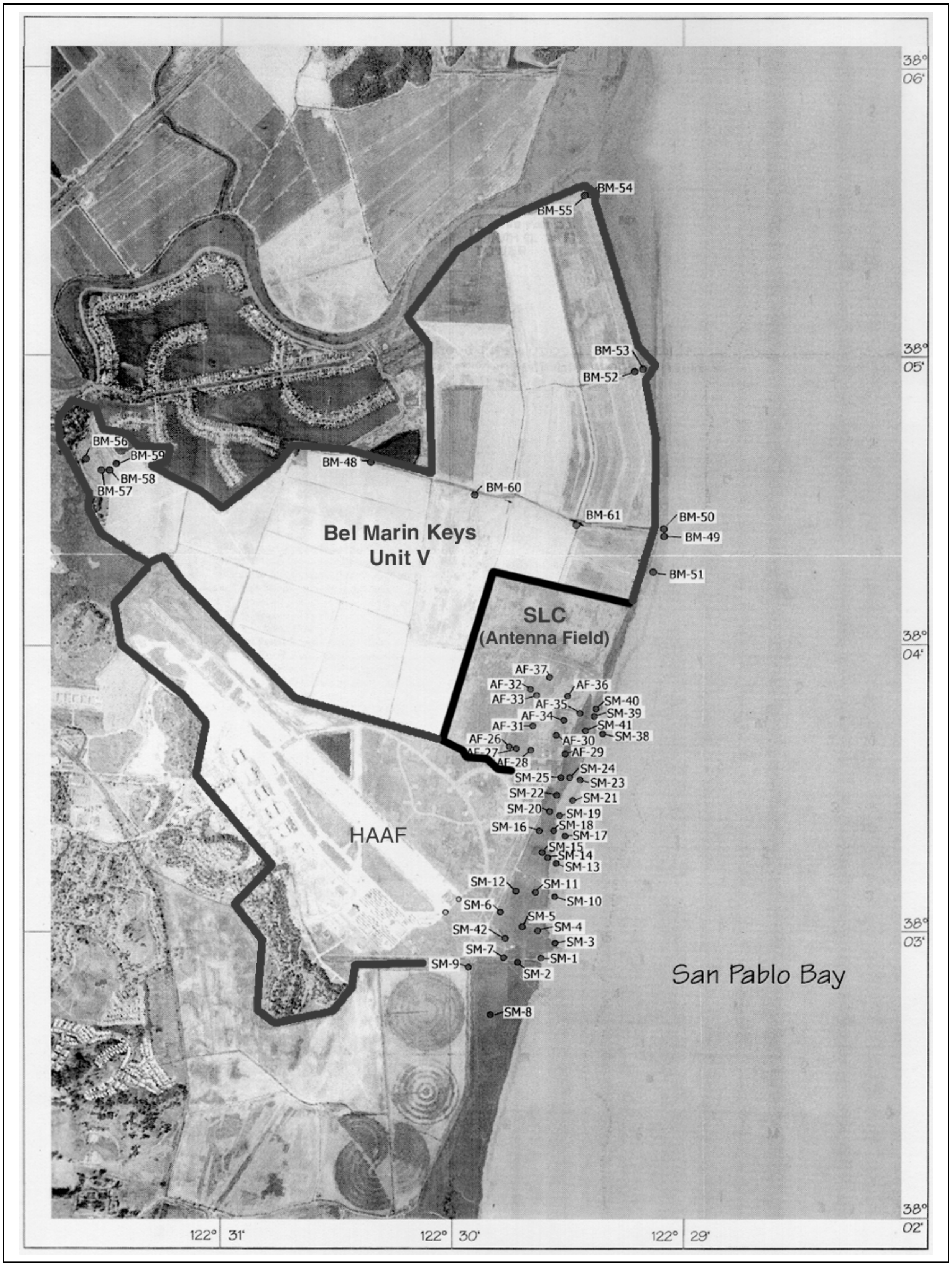
Station #	Date	Time	# of replicates			Latitude	Longitude	GPS error in feet	General Notes
			Sediment		Tissue				
			Total	MeHg	Total				
SM-38	9/13/2001	1205	5	5	0	38 03.688	122 29.349	18	On edge of bay toward north end of antenna field. Mud flat about 1 M above water. Vertical drop off at bank edge.
SM-39	9/13/2001	1220	5	5	0	38 03.753	122 29.338	23	On edge of bay like SM-38. 1/2 M above water. Very little vegetation.
SM-40	9/13/2001	1240	5	5	0	38 03.772	122 29.372	19	15 M from levee. Heavy pickleweed area. Damp soil. No creeks nearby.
SM-41	9/13/2001	1300	5	5	0	38 03.701	122 29.417	16	15 M from levee. Heavy pickleweed area. Damp soil. Creek about 10 M toward levee but wet only in low places.
SM-42	9/13/2001	1340	0	0	1	38 02.975	122 29.767	20	Small pond alongside road. Set minnow trap and retrieved enough minnows for 1 replicate sample. No sediment taken here.
R-43	9/13/2001	1540	5	5	0	38 00.395	122 28.745	18	Edge of Spartina marsh transitioning to pickleweed. Area wet at higher tide. Sediment wet with some root mass. At China Camp State park.
R-44	9/13/2001	1555	5	5	0	38 00.411	122 28.758	19	Same as #R43. Very wet sediment.
R-45	9/13/2001	1612	5	5	0	38 00.423	122 28.781	15	20-25 M from waters edge. Sediment wet with moderate root mass. Mixed Spartina and pickleweed. Area flooded during higher tide.
R-46	9/13/2001	1625	5	5	0	38 00.429	122 28.802	26	Same as other reference stations.
R-47	9/13/2001	1640	5	5	0	38 00.443	122 28.819	20	Very wet. More Spartina, water about 2 M from site.
BM-48	9/14/2001	900	5	5	0	38 04.644	122 30.350	19	Edge of borrow pit/small pond. Very saline (60 ppt). Sample on edge of water inside "salt crust" zone on mud flat. Heavy algae in water. Not much growing on mud bank till pickleweed starts about 5 M from water.
BM-49	9/14/2001	925	5	5	0	38 04.372	122 29.086	19	Alongside pump station in Bell Main Keys area at bay levee. Just inside levee. Heavy pickleweed growth. Salt water from bay flows back from bay to inside creeks during high tides. Salinity is 30 ppt.
BM-50	9/14/2001	955	5	5	0	38 04.399	122 29.085	18	Inside levee. Mixed pickleweed and other weed species. Very dry and hard. Rarely floods.

Appendix A. Station Data For HAAF Sampling Week of 10 September 2001.

SM = salt marsh, AF = antenna field, R = China Grove State park reference site, BM = Bel Marin Keys Unit V

Station #	Date	Time	# of replicates			Latitude	Longitude	GPS error in feet	General Notes
			Sediment		Tissue				
			Total	MeHg	Total				
BM-51	9/14/2001	1012	5	5	0	38 04.249	122 29.130	15	10 M inside bay levee south of pump station. Mixed pickleweed and other species. Very dry cracked ground next to agriculture fields (oat hay/straw).
BM-52	9/14/2001	1050	5	5	0	38 04.947	122 29.206	12	South end of old dredge disposal site at NE corner of property. Very dry and hard. South end should be finer material from late 80's dredging disposal. Heavy low weed cover.
BM-53	9/14/2001	1103	5	5	0	38 04.955	122 29.172	18	15 M from bay levee. In area where weir gate was during disposal operations. Ground very hard/dry. Dry weeded vegetation.
BM-54	9/14/2001	1135	5	5	0	38 05.560	122 29.405	16	NE corner of dredge disposal site. 3M south of north levee. Very hard, low vegetation.
BM-55	9/14/2001	1140	5	5	0	38 05.559	122 29.424	11	SW area of disposal site. 5-8 M from north levee. Short grass vegetation. Rock hard soil.
BM-56	9/14/2001	1400	5	5	0	38 04.641	122 31.574	16	Seasonal wetland area. Surrounded by small levee. Not farmed. Tall grass and weeds. Very dry, thick grass cover.
BM-57	9/14/2001	1410	5	5	0	38 04.601	122 31.509	24	Same as #BM-56 but at other end of impoundment.
BM-58	9/14/2001	1422	5	5	0	38 04.605	122 31.490	16	In side impoundment alongside levee. About 1/2 M below middle area. Pickleweed in this lower area.
BM-59	9/14/2001	1440	5	5	0	38 04.624	122 31.613	20	Middle of non-flowing creek by road. Creek bed covered by heavy layer of leaf and organic matter. Wet mud under organic cover. Water can be found 10-20 cm below surface. Very soft below organic cover.
BM-60	9/14/2001	1530	5	5	0	38 04.519	122 29.897	15	Along edge of creek leading to pump station at Bay levee. Heavy sticker weed thistle growth. Small flat area 20 cm above water level. Soil is damp
BM-61	9/14/2001	1550	5	5	0	38 04.413	122 29.463	14	On edge of creek leading to pump station. Thin edge of Spartina by water. Very narrow (10-20 cm) mud flat along edge. Creek is about 4 M wide and 1 M deep. Salinity is 29 ppt.

Appendix B. Map Of Sampling Locations (Excluding Reference Site).



Appendix C. Chemistry Data

Environmental Laboratory
Environmental Chemistry Branch - Omaha
420 S 18th St Omaha NE 68102
(402)444-4300

Results for Mercury in Tissue Samples
Project Name: San Francisco Bay System Wetland Testing
Project Number: 6478

Note: Sample preparation and analysis was performed at the ECB - Vicksburg facility.

ECB Sample ID	Client Sample ID	Hg Result (mg/kg)	Hg Result (ng/g)
M010899-295	SM-1 #1	0.018	**18**
M010899-296	SM-1 #2	0.016	**16**
M010899-297	SM-1 #3	0.017	**17**
M010899-298	SM-1 #4	0.03	**30**
M010899-300	SM-3 1-TIS	0.021	**21**
M010899-301	SM-3 2-TIS	0.018	**18**
M010899-302	SM-3 3-TIS	0.018	**18**
M010899-303	SM-3 4-TIS	0.01	**10**
M010899-304	SM-3 5-TIS	0.014	**14**
M010899-305	SM-10 #1	0.021	**21**
M010899-306	SM-10 #2	0.016	**16**
M010899-307	SM-10 #3	0.017	**17**
M010899-308	SM-10 #4	0.014	**14**
M010899-309	SM-10 #5	0.019	**19**
M010899-310	SM-13 #1	0.018	**18**
M010899-311	SM-13 #2	0.017	**17**
M010899-313	SM-13 #4	0.018	**18**
M010899-314	SM-13 5	0.013	**13**
M010899-315	SM-18 1	0.016	**16**
M010899-316	SM-17 2	0.016	**16**
M010899-317	SM-17 3	0.017	**17**
M010899-318	SM-17 4	0.011	**11**
M010899-319	SM-17 5	0.014	**14**
M010899-320	SM-42 1	0.037	**37**
M010899-323	SM7-1	0.038	**38**

Sample Results for Mercury by Method 7471A
Project Name: San Francisco Bay System Wetland Testing
Project Number: 6478

Sample ID	Client Sample ID	Sample Date	% Solids	Digestion Date	Analysis Date	WG#	Sample Result (mg/kg)	Dilution	Reporting Limit (mg/kg)	Method Detection Limit (mg/kg)
M010899-001	SM-1 #1	9/10/2001	39.4	10/1/2001	10/2/2001	WG8999	0.38	1	0.003	0.0005
M010899-002	SM-1 #2	9/10/2001	38.6	10/1/2001	10/2/2001	WG8999	0.36	1	0.003	0.0005
M010899-003	SM-1 #3	9/10/2001	33.6	10/1/2001	10/2/2001	WG8999	0.47	1	0.003	0.0005
M010899-004	SM-1 #4	9/10/2001	33.7	10/1/2001	10/2/2001	WG8999	0.35	1	0.003	0.0005
M010899-005	SM-1 #5	9/10/2001	37.5	10/1/2001	10/2/2001	WG8999	0.34	1	0.003	0.0005
M010899-006	SM-2 #1	9/10/2001	38.8	10/1/2001	10/2/2001	WG8999	0.34	1	0.003	0.0005
M010899-007	SM-2 #2	9/10/2001	40.2	10/1/2001	10/2/2001	WG8999	0.34	1	0.003	0.0005
M010899-008	SM-2 #3	9/10/2001	37.6	10/1/2001	10/2/2001	WG8999	0.35	1	0.003	0.0005
M010899-009	SM-2 #4	9/10/2001	39.2	10/1/2001	10/2/2001	WG8999	0.34	1	0.003	0.0005
M010899-010	SM-2 #5	9/10/2001	40.6	10/1/2001	10/2/2001	WG8999	0.33	1	0.003	0.0005
M010899-011	SM-3 #1	9/10/2001	42.6	10/1/2001	10/2/2001	WG8999	0.5	1	0.003	0.0005
M010899-012	SM-3 #2	9/10/2001	43.1	10/1/2001	10/2/2001	WG8999	0.48	1	0.003	0.0005
M010899-013	SM-3 #3	9/10/2001	46.7	10/1/2001	10/2/2001	WG8999	0.43	1	0.003	0.0005
M010899-014	SM-3 #4	9/10/2001	46.7	10/1/2001	10/2/2001	WG8999	0.32	1	0.003	0.0005
M010899-015	SM-3 #5	9/10/2001	44.4	10/1/2001	10/2/2001	WG8999	0.41	1	0.003	0.0005
M010899-016	SM-4 #1	9/10/2001	44.5	10/1/2001	10/2/2001	WG8999	0.35	1	0.003	0.0005
M010899-017	SM-4 #2	9/10/2001	43.3	10/1/2001	10/2/2001	WG8999	0.34	1	0.003	0.0005
M010899-018	SM-4 #3	9/10/2001	44.1	10/1/2001	10/2/2001	WG9000	0.34	1	0.003	0.0005
M010899-019	SM-4 #4	9/10/2001	42.2	10/1/2001	10/2/2001	WG9000	0.35	1	0.003	0.0005
M010899-020	SM-4 #5	9/10/2001	42.6	10/1/2001	10/2/2001	WG9000	0.35	1	0.003	0.0005
M010899-021	SM-5 #1	9/10/2001	54.6	10/1/2001	10/2/2001	WG9000	0.33	1	0.003	0.0005
M010899-022	SM-5 #2	9/10/2001	55.9	10/1/2001	10/2/2001	WG9000	0.31	1	0.003	0.0005
M010899-023	SM-5 #3	9/10/2001	55.9	10/1/2001	10/2/2001	WG9000	0.29	1	0.003	0.0005
M010899-024	SM-5 #4	9/10/2001	62.6	10/1/2001	10/2/2001	WG9000	0.3	1	0.003	0.0005

M010899-025	SM-5 #5	9/10/2001	56.8	10/1/2001	10/2/2001	WG9000	0.33	1	0.003	0.0005
M010899-026	SM-6 #1	9/10/2001	56.4	10/1/2001	10/2/2001	WG9000	0.34	1	0.003	0.0005
M010899-027	SM-6 #2	9/10/2001	55.7	10/1/2001	10/2/2001	WG9000	0.33	1	0.003	0.0005
M010899-028	SM-6 #3	9/10/2001	55.6	10/1/2001	10/2/2001	WG9000	0.33	1	0.003	0.0005
M010899-029	SM-6 #4	9/10/2001	54	10/1/2001	10/2/2001	WG9000	0.33	1	0.003	0.0005
M010899-030	SM-6 #5	9/10/2001	54.6	10/1/2001	10/2/2001	WG9000	0.32	1	0.003	0.0005
M010899-031	SM-7 #1	9/10/2001	62.8	10/1/2001	10/2/2001	WG9000	0.32	1	0.003	0.0005
M010899-032	SM-7 #2	9/10/2001	65.4	10/1/2001	10/2/2001	WG9000	0.32	1	0.003	0.0005
M010899-033	SM-7 #3	9/10/2001	52.1	10/1/2001	10/2/2001	WG9000	0.32	1	0.003	0.0005
M010899-034	SM-7 #4	9/10/2001	56.5	10/1/2001	10/2/2001	WG9000	0.32	1	0.003	0.0005
M010899-035	SM-7 #5	9/10/2001	58.1	10/1/2001	10/2/2001	WG9000	0.33	1	0.003	0.0005
M010899-036	SM-8 #1	9/10/2001	41	10/1/2001	10/2/2001	WG9000	0.28	1	0.003	0.0005
M010899-037	SM-8 #2	9/10/2001	45.6	10/1/2001	10/2/2001	WG9000	0.29	1	0.003	0.0005
M010899-038	SM-8 #3	9/10/2001	52.8	10/4/2001	10/5/2001	WG9030	0.29	1	0.003	0.0005
M010899-039	SM-8 #4	9/10/2001	47.7	10/4/2001	10/5/2001	WG9030	0.29	1	0.003	0.0005
M010899-040	SM-8 #5	9/10/2001	44.3	10/4/2001	10/5/2001	WG9030	0.29	1	0.003	0.0005
M010899-041	SM-9 #1	9/11/2001	50.5	10/4/2001	10/5/2001	WG9030	0.24	1	0.003	0.0005
M010899-042	SM-9 #2	9/11/2001	44.1	10/4/2001	10/5/2001	WG9030	0.21	1	0.003	0.0005
M010899-043	SM-9 #3	9/11/2001	44.1	10/4/2001	10/5/2001	WG9030	0.22	1	0.003	0.0005
M010899-044	SM-9 #4	9/11/2001	48.2	10/4/2001	10/5/2001	WG9030	0.25	1	0.003	0.0005
M010899-045	SM-9 #5	9/11/2001	43.3	10/4/2001	10/5/2001	WG9030	0.25	1	0.003	0.0005
M010899-046	SM-10 #1	9/11/2001	36	10/4/2001	10/5/2001	WG9030	0.33	1	0.003	0.0005
M010899-047	SM-10 #2	9/11/2001	41	10/4/2001	10/5/2001	WG9030	0.3	1	0.003	0.0005
M010899-048	SM-10 #3	9/11/2001	45.7	10/4/2001	10/5/2001	WG9030	0.3	1	0.003	0.0005
M010899-049	SM-10 #4	9/11/2001	43.3	10/4/2001	10/5/2001	WG9030	0.36	1	0.003	0.0005
M010899-050	SM-10 #5	9/11/2001	43.2	10/4/2001	10/5/2001	WG9030	0.3	1	0.003	0.0005
M010899-051	SM-11 #1	9/11/2001	44.6	10/4/2001	10/5/2001	WG9030	0.23	1	0.003	0.0005
M010899-052	SM-11 #2	9/11/2001	43.8	10/4/2001	10/5/2001	WG9030	0.26	1	0.003	0.0005
M010899-053	SM-11 #3	9/11/2001	41.4	10/4/2001	10/5/2001	WG9030	0.24	1	0.003	0.0005
M010899-054	SM-11 #4	9/11/2001	43.1	10/4/2001	10/5/2001	WG9030	0.25	1	0.003	0.0005
M010899-055	SM-11 #5	9/11/2001	42	10/4/2001	10/5/2001	WG9030	0.23	1	0.003	0.0005
M010899-056	SM-12 #1	9/11/2001	36.4	10/4/2001	10/5/2001	WG9030	0.25	1	0.003	0.0005
M010899-057	SM-12 #2	9/11/2001	30.2	10/4/2001	10/5/2001	WG9031	0.21	1	0.003	0.0005
M010899-058	SM-12 #3	9/11/2001	31.2	10/4/2001	10/5/2001	WG9031	0.24	1	0.003	0.0005
M010899-059	SM-12 #4	9/11/2001	33	10/4/2001	10/5/2001	WG9031	0.24	1	0.003	0.0005
M010899-060	SM-12 #5	9/11/2001	29.9	10/4/2001	10/5/2001	WG9031	0.24	1	0.003	0.0005

M010899-061	SM-13 #1	9/11/2001	42.4	10/4/2001	10/5/2001	WG9031	0.3	1	0.003	0.0005
M010899-062	SM-13 #2	9/11/2001	37.1	10/4/2001	10/5/2001	WG9031	0.36	1	0.003	0.0005
M010899-063	SM-13 #3	9/11/2001	45.3	10/4/2001	10/5/2001	WG9031	0.35	1	0.003	0.0005
M010899-064	SM-13 #4	9/11/2001	46.5	10/4/2001	10/5/2001	WG9031	0.32	1	0.003	0.0005
M010899-065	SM-13 #5	9/11/2001	41.1	10/4/2001	10/5/2001	WG9031	0.36	1	0.003	0.0005
M010899-066	SM-14 #1	9/11/2001	46.2	10/4/2001	10/5/2001	WG9031	0.25	1	0.003	0.0005
M010899-067	SM-14 #2	9/11/2001	48.9	10/4/2001	10/5/2001	WG9031	0.27	1	0.003	0.0005
M010899-068	SM-14 #3	9/11/2001	47.5	10/4/2001	10/5/2001	WG9031	0.28	1	0.003	0.0005
M010899-069	SM-14 #4	9/11/2001	48.2	10/4/2001	10/5/2001	WG9031	0.27	1	0.003	0.0005
M010899-070	SM-14 #5	9/11/2001	51.8	10/4/2001	10/5/2001	WG9031	0.26	1	0.003	0.0005
M010899-071	SM-15 #1	9/11/2001	29.5	10/4/2001	10/5/2001	WG9031	0.28	1	0.003	0.0005
M010899-072	SM-15 #2	9/11/2001	27	10/4/2001	10/5/2001	WG9031	0.27	1	0.003	0.0005
M010899-073	SM-15 #3	9/11/2001	29	10/4/2001	10/5/2001	WG9031	0.29	1	0.003	0.0005
M010899-074	SM-15 #4	9/11/2001	30.4	10/4/2001	10/5/2001	WG9031	0.32	1	0.003	0.0005
M010899-075	SM-15 #5	9/11/2001	26.7	10/4/2001	10/5/2001	WG9031	0.26	1	0.003	0.0005
M010899-076	SM-16 #1	9/11/2001	54	10/4/2001	10/5/2001	WG9031	0.3	1	0.003	0.0005
M010899-077	SM-16 #2	9/11/2001	48.3	10/11/2001	10/12/2001	WG9075	0.29	1	0.003	0.0005
M010899-078	SM-16 #3	9/11/2001	50.3	10/11/2001	10/12/2001	WG9075	0.28	1	0.003	0.0005
M010899-079	SM-16 #4	9/11/2001	50.9	10/11/2001	10/12/2001	WG9075	0.27	1	0.003	0.0005
M010899-080	SM-17 #1	9/11/2001	42.4	10/11/2001	10/12/2001	WG9075	0.43	1	0.003	0.0005
M010899-081	SM-17 #2	9/11/2001	43.9	10/11/2001	10/12/2001	WG9075	0.55	1	0.003	0.0005
M010899-082	SM-17 #3	9/11/2001	40.1	10/11/2001	10/12/2001	WG9075	0.6	1	0.003	0.0005
M010899-083	SM-17 #4	9/11/2001	46.1	10/11/2001	10/12/2001	WG9075	0.38	1	0.003	0.0005
M010899-084	SM-17 #5	9/11/2001	36.4	10/11/2001	10/12/2001	WG9075	0.57	1	0.003	0.0005
M010899-085	SM-18 #1	9/11/2001	40.9	10/11/2001	10/12/2001	WG9075	0.25	1	0.003	0.0005
M010899-086	SM-18 #2	9/11/2001	48.5	10/11/2001	10/12/2001	WG9075	0.18	1	0.003	0.0005
M010899-087	SM-18 #3	9/11/2001	57.7	10/11/2001	10/12/2001	WG9075	0.22	1	0.003	0.0005
M010899-088	SM-18 #4	9/11/2001	48.8	10/11/2001	10/12/2001	WG9075	0.25	1	0.003	0.0005
M010899-089	SM-18 #5	9/11/2001	65.6	10/11/2001	10/12/2001	WG9075	0.28	1	0.003	0.0005
M010899-090	SM-19 #1	9/12/2001	48.5	10/11/2001	10/12/2001	WG9075	0.48	1	0.003	0.0005
M010899-091	SM-19 #2	9/12/2001	40.5	10/11/2001	10/12/2001	WG9075	0.55	1	0.003	0.0005
M010899-092	SM-19 #3	9/12/2001	56.9	10/11/2001	10/12/2001	WG9075	0.48	1	0.003	0.0005
M010899-093	SM-19 #4	9/12/2001	40.8	10/11/2001	10/12/2001	WG9075	0.42	1	0.003	0.0005
M010899-094	SM-19 #5	9/12/2001	42.9	10/11/2001	10/12/2001	WG9075	0.71	1	0.003	0.0005
M010899-095	SM-20 #1	9/12/2001	43.2	10/11/2001	10/12/2001	WG9076	0.25	1	0.003	0.0005
M010899-096	SM-20 #2	9/12/2001	37.9	10/11/2001	10/12/2001	WG9076	0.25	1	0.003	0.0005

M010899-097	SM-20 #3	9/12/2001	37.7	10/11/2001	10/12/2001	WG9076	0.26	1	0.003	0.0005
M010899-098	SM-20 #4	9/12/2001	42.7	10/11/2001	10/12/2001	WG9076	0.24	1	0.003	0.0005
M010899-099	SM-20 #5	9/12/2001	51.7	10/11/2001	10/12/2001	WG9076	0.32	1	0.003	0.0005
M010899-100	SM-21 #1	9/12/2001	37.3	10/11/2001	10/12/2001	WG9076	0.6	1	0.003	0.0005
M010899-101	SM-21 #2	9/12/2001	43.3	10/11/2001	10/12/2001	WG9076	0.53	1	0.003	0.0005
M010899-102	SM-21 #3	9/12/2001	43.2	10/11/2001	10/12/2001	WG9076	0.57	1	0.003	0.0005
M010899-103	SM-21 #4	9/12/2001	39.8	10/11/2001	10/12/2001	WG9076	0.51	1	0.003	0.0005
M010899-104	SM-21 #5	9/12/2001	36.9	10/11/2001	10/12/2001	WG9076	0.53	1	0.003	0.0005
M010899-105	SM-22 #1	9/12/2001	71.6	10/11/2001	10/12/2001	WG9076	0.2	1	0.003	0.0005
M010899-106	SM-22 #2	9/12/2001	70.1	10/11/2001	10/12/2001	WG9076	0.26	1	0.003	0.0005
M010899-107	SM-22 #3	9/12/2001	77.2	10/11/2001	10/12/2001	WG9076	0.22	1	0.003	0.0005
M010899-108	SM-22 #4	9/12/2001	81.1	10/11/2001	10/12/2001	WG9076	0.24	1	0.003	0.0005
M010899-109	SM-22 #5	9/12/2001	69.5	10/11/2001	10/12/2001	WG9076	0.23	1	0.003	0.0005
M010899-110	SM-23 #1	9/12/2001	40.8	10/11/2001	10/12/2001	WG9076	0.47	1	0.003	0.0005
M010899-111	SM-23 #2	9/12/2001	58.8	10/11/2001	10/12/2001	WG9076	0.42	1	0.003	0.0005
M010899-112	SM-23 #3	9/12/2001	46.7	10/11/2001	10/12/2001	WG9076	0.4	1	0.003	0.0005
M010899-113	SM-23 #4	9/12/2001	31.8	10/17/2001	10/18/2001	WG9128	0.74	1	0.003	0.0005
M010899-114	SM-23 #5	9/12/2001	55.5	10/17/2001	10/18/2001	WG9129	0.42	1	0.003	0.0005
M010899-115	SM-24 #1	9/12/2001	48.9	10/17/2001	10/18/2001	WG9129	0.28	1	0.003	0.0005
M010899-116	SM-24 #2	9/12/2001	49	10/17/2001	10/18/2001	WG9129	0.28	1	0.003	0.0005
M010899-117	SM-24 #3	9/12/2001	48.3	10/17/2001	10/18/2001	WG9129	0.28	1	0.003	0.0005
M010899-118	SM-24 #4	9/12/2001	45.5	10/17/2001	10/18/2001	WG9129	0.29	1	0.003	0.0005
M010899-119	SM-24 #5	9/12/2001	45.6	10/17/2001	10/18/2001	WG9129	0.28	1	0.003	0.0005
M010899-120	SM-25 #1	9/12/2001	44.1	10/17/2001	10/18/2001	WG9129	0.29	1	0.003	0.0005
M010899-121	SM-25 #2	9/12/2001	41.5	10/17/2001	10/18/2001	WG9129	0.29	1	0.003	0.0005
M010899-122	SM-25 #3	9/12/2001	42.9	10/17/2001	10/18/2001	WG9129	0.28	1	0.003	0.0005
M010899-123	SM-25 #4	9/12/2001	38.8	10/17/2001	10/18/2001	WG9129	0.3	1	0.003	0.0005
M010899-124	SM-25 #5	9/12/2001	45	10/25/2001	10/26/2001	WG9230	0.32	1	0.003	0.0005
M010899-125	AF-26 #1	9/13/2001	95	10/17/2001	10/18/2001	WG9129	0.28	1	0.003	0.0005
M010899-126	AF-26 #2	9/13/2001	93.2	10/17/2001	10/18/2001	WG9129	0.27	1	0.003	0.0005
M010899-127	AF-26 #3	9/13/2001	93.3	10/17/2001	10/18/2001	WG9129	0.27	1	0.003	0.0005
M010899-128	AF-26 #4	9/13/2001	95.9	10/17/2001	10/18/2001	WG9129	0.31	1	0.003	0.0005
M010899-129	AF-26 #5	9/13/2001	94.7	10/17/2001	10/18/2001	WG9129	0.27	1	0.003	0.0005
M010899-130	AF-27 #1	9/13/2001	94.8	10/17/2001	10/18/2001	WG9129	0.28	1	0.003	0.0005
M010899-131	AF-27 #2	9/13/2001	94.5	10/17/2001	10/18/2001	WG9129	0.31	1	0.003	0.0005
M010899-132	AF-27 #3	9/13/2001	93.1	10/17/2001	10/18/2001	WG9129	0.29	1	0.003	0.0005

M010899-133	AF-27 #4	9/13/2001	92.9	10/17/2001	10/18/2001	WG9129	0.28	1	0.003	0.0005
M010899-134	AF-27 #5	9/13/2001	96.5	10/17/2001	10/18/2001	WG9129	0.3	1	0.003	0.0005
M010899-135	AF-28 #1	9/13/2001	95.5	10/17/2001	10/18/2001	WG9130	0.29	1	0.003	0.0005
M010899-136	AF-28 #2	9/13/2001	94.6	10/17/2001	10/18/2001	WG9130	0.28	1	0.003	0.0005
M010899-137	AF-28 #3	9/13/2001	94.9	10/17/2001	10/18/2001	WG9130	0.29	1	0.003	0.0005
M010899-138	AF-28 #4	9/13/2001	94.4	10/17/2001	10/18/2001	WG9130	0.26	1	0.003	0.0005
M010899-139	AF-28 #5	9/13/2001	94.5	10/17/2001	10/18/2001	WG9130	0.27	1	0.003	0.0005
M010899-140	AF-29 #1	9/13/2001	98.6	10/17/2001	10/18/2001	WG9130	0.03	1	0.003	0.0005
M010899-141	AF-29 #2	9/13/2001	98.6	10/17/2001	10/18/2001	WG9130	0.03	1	0.003	0.0005
M010899-142	AF-29 #3	9/13/2001	97.6	10/17/2001	10/18/2001	WG9130	0.05	1	0.003	0.0005
M010899-143	AF-29 #4	9/13/2001	97.8	10/17/2001	10/18/2001	WG9130	0.03	1	0.003	0.0005
M010899-144	AF-29 #5	9/13/2001	96	10/17/2001	10/18/2001	WG9130	0.07	1	0.003	0.0005
M010899-145	AF-30 #1	9/13/2001	86.8	10/17/2001	10/18/2001	WG9130	0.31	1	0.003	0.0005
M010899-146	AF-30 #2	9/13/2001	87.8	10/17/2001	10/18/2001	WG9130	0.29	1	0.003	0.0005
M010899-147	AF-30 #3	9/13/2001	87.3	10/17/2001	10/18/2001	WG9130	0.32	1	0.003	0.0005
M010899-148	AF-30 #4	9/13/2001	87	10/17/2001	10/18/2001	WG9130	0.26	1	0.003	0.0005
M010899-149	AF-30 #5	9/13/2001	87	10/17/2001	10/18/2001	WG9130	0.25	1	0.003	0.0005
M010899-150	AF-31 #1	9/13/2001	91.8	10/17/2001	10/18/2001	WG9130	0.3	1	0.003	0.0005
M010899-151	AF-31 #2	9/13/2001	89.9	10/17/2001	10/18/2001	WG9130	0.26	1	0.003	0.0005
M010899-152	AF-31 #3	9/13/2001	92.9	10/17/2001	10/18/2001	WG9130	0.31	1	0.003	0.0005
M010899-153	AF-31 #4	9/13/2001	93.6	10/17/2001	10/18/2001	WG9130	0.27	1	0.003	0.0005
M010899-154	AF-31 #5	9/13/2001	93	10/17/2001	10/18/2001	WG9130	0.28	1	0.003	0.0005
M010899-155	AF-32 #1	9/13/2001	94.5	10/25/2001	10/26/2001	WG9230	0.29	1	0.003	0.0005
M010899-156	AF-32 #2	9/13/2001	92.8	10/25/2001	10/26/2001	WG9230	0.29	1	0.003	0.0005
M010899-157	AF-32 #3	9/13/2001	95.1	10/25/2001	10/26/2001	WG9230	0.29	1	0.003	0.0005
M010899-158	AF-32 #4	9/13/2001	94.2	10/25/2001	10/26/2001	WG9230	0.28	1	0.003	0.0005
M010899-159	AF-33 #1	9/13/2001	88.5	10/25/2001	10/26/2001	WG9230	0.28	1	0.003	0.0005
M010899-160	AF-33 #2	9/13/2001	88	10/25/2001	10/26/2001	WG9230	0.26	1	0.003	0.0005
M010899-161	AF-33 #3	9/13/2001	86.9	10/25/2001	10/26/2001	WG9230	0.29	1	0.003	0.0005
M010899-162	AF-33 #4	9/13/2001	89.1	10/25/2001	10/26/2001	WG9230	0.27	1	0.003	0.0005
M010899-163	AF-33 #5	9/13/2001	89.1	10/25/2001	10/26/2001	WG9230	0.27	1	0.003	0.0005
M010899-164	AF-34 #1	9/13/2001	89	10/25/2001	10/26/2001	WG9230	0.25	1	0.003	0.0005
M010899-165	AF-34 #2	9/13/2001	88.5	10/25/2001	10/26/2001	WG9230	0.27	1	0.003	0.0005
M010899-166	AF-34 #3	9/13/2001	91.5	10/25/2001	10/26/2001	WG9230	0.28	1	0.003	0.0005
M010899-167	AF-34 #4	9/13/2001	87.6	10/25/2001	10/26/2001	WG9230	0.29	1	0.003	0.0005
M010899-168	AF-34 #5	9/13/2001	89.3	10/25/2001	10/26/2001	WG9230	0.29	1	0.003	0.0005

M010899-169	AF-35 #1	9/13/2001	87.5	10/25/2001	10/26/2001	WG9230	0.29	1	0.003	0.0005
M010899-170	AF-35 #2	9/13/2001	88.9	10/25/2001	10/26/2001	WG9230	0.28	1	0.003	0.0005
M010899-171	AF-35 #3	9/13/2001	89.9	10/25/2001	10/26/2001	WG9230	0.31	1	0.003	0.0005
M010899-172	AF-35 #4	9/13/2001	84.8	10/25/2001	10/26/2001	WG9230	0.28	1	0.003	0.0005
M010899-173	AF-35 #5	9/13/2001	86.2	10/25/2001	10/26/2001	WG9230	0.28	1	0.003	0.0005
M010899-174	AF-36 #1	9/13/2001	87.1	10/25/2001	10/26/2001	WG9231	0.28	1	0.003	0.0005
M010899-175	AF-36 #2	9/13/2001	89.9	10/25/2001	10/26/2001	WG9231	0.29	1	0.003	0.0005
M010899-176	AF-36 #3	9/13/2001	89.2	10/25/2001	10/26/2001	WG9231	0.24	1	0.003	0.0005
M010899-177	AF-36 #4	9/13/2001	90	10/25/2001	10/26/2001	WG9231	0.24	1	0.003	0.0005
M010899-178	AF-36 #5	9/13/2001	87.3	10/25/2001	10/26/2001	WG9231	0.29	1	0.003	0.0005
M010899-179	AF-37 #1	9/13/2001	89.2	10/25/2001	10/26/2001	WG9231	0.27	1	0.003	0.0005
M010899-180	AF-37 #2	9/13/2001	91	10/25/2001	10/26/2001	WG9231	0.27	1	0.003	0.0005
M010899-181	AF-37 #3	9/13/2001	89.6	10/25/2001	10/26/2001	WG9231	0.29	1	0.003	0.0005
M010899-182	AF-37 #4	9/13/2001	91.8	10/25/2001	10/26/2001	WG9231	0.27	1	0.003	0.0005
M010899-183	AF-37 #5	9/13/2001	90.1	10/25/2001	10/26/2001	WG9231	0.29	1	0.003	0.0005
M010899-184	SM-38 #1	9/13/2001	51.7	10/25/2001	10/26/2001	WG9231	0.45	1	0.003	0.0005
M010899-185	SM-38 #2	9/13/2001	54.7	10/25/2001	10/26/2001	WG9231	0.41	1	0.003	0.0005
M010899-186	SM-38 #3	9/13/2001	59.4	10/25/2001	10/26/2001	WG9231	0.35	1	0.003	0.0005
M010899-187	SM-38 #4	9/13/2001	53.7	10/25/2001	10/26/2001	WG9231	0.37	1	0.003	0.0005
M010899-188	SM-38 #5	9/13/2001	57.3	10/25/2001	10/26/2001	WG9231	0.38	1	0.003	0.0005
M010899-189	SM-39 #1	9/13/2001	58.2	10/25/2001	10/26/2001	WG9231	0.37	1	0.003	0.0005
M010899-190	SM-39 #2	9/13/2001	55.8	10/25/2001	10/26/2001	WG9231	0.43	1	0.003	0.0005
M010899-191	SM-39 #3	9/13/2001	64.6	10/25/2001	10/26/2001	WG9231	0.46	1	0.003	0.0005
M010899-192	SM-39 #4	9/13/2001	58.3	10/25/2001	10/26/2001	WG9231	0.46	1	0.003	0.0005
M010899-193	SM-39 #5	9/13/2001	53.9	10/25/2001	10/26/2001	WG9231	0.38	1	0.003	0.0005
M010899-194	SM-40 #1	9/13/2001	43.1	11/1/2001	11/2/2001	WG9299	0.27	1	0.003	0.0005
M010899-195	SM-40 #2	9/13/2001	41.7	11/1/2001	11/2/2001	WG9299	0.25	1	0.003	0.0005
M010899-196	SM-40 #3	9/13/2001	44.5	11/1/2001	11/2/2001	WG9299	0.24	1	0.003	0.0005
M010899-197	SM-40 #4	9/13/2001	41.5	11/1/2001	11/2/2001	WG9299	0.26	1	0.003	0.0005
M010899-198	SM-40 #5	9/13/2001	42.2	11/1/2001	11/2/2001	WG9299	0.25	1	0.003	0.0005
M010899-199	SM-41 #1	9/13/2001	41	11/1/2001	11/2/2001	WG9299	0.26	1	0.003	0.0005
M010899-200	SM-41 #2	9/13/2001	34.7	11/1/2001	11/2/2001	WG9299	0.21	1	0.003	0.0005
M010899-201	SM-41 #3	9/13/2001	35.7	11/1/2001	11/2/2001	WG9299	0.25	1	0.003	0.0005
M010899-202	SM-41 #4	9/13/2001	36.8	11/1/2001	11/2/2001	WG9299	0.24	1	0.003	0.0005
M010899-203	SM-41 #5	9/13/2001	39.7	11/1/2001	11/2/2001	WG9299	0.26	1	0.003	0.0005
M010899-205	R-43 #1	9/13/2001	46.3	11/1/2001	11/2/2001	WG9299	0.28	1	0.003	0.0005

M010899-206	R-43 #2	9/13/2001	42.2	11/1/2001	11/2/2001	WG9299	0.27	1	0.003	0.0005
M010899-207	R-43 #3	9/13/2001	42.2	11/1/2001	11/2/2001	WG9299	0.29	1	0.003	0.0005
M010899-208	R-43 #4	9/13/2001	43.7	11/1/2001	11/2/2001	WG9299	0.28	1	0.003	0.0005
M010899-209	R-43 #5	9/13/2001	37.6	11/1/2001	11/2/2001	WG9299	0.33	1	0.003	0.0005
M010899-210	R-45 #1	9/13/2001	37.3	11/1/2001	11/2/2001	WG9299	0.31	1	0.003	0.0005
M010899-211	R-45 #2	9/13/2001	37.1	11/1/2001	11/2/2001	WG9299	0.32	1	0.003	0.0005
M010899-212	R-45 #3	9/13/2001	40.5	11/1/2001	11/2/2001	WG9299	0.3	1	0.003	0.0005
M010899-213	R-45 #4	9/13/2001	32.9	11/1/2001	11/2/2001	WG9299	0.32	1	0.003	0.0005
M010899-214	R-45 #5	9/13/2001	38	11/1/2001	11/2/2001	WG9299	0.3	1	0.003	0.0005
M010899-215	R-46 #1	9/13/2001	45.6	11/1/2001	11/2/2001	WG9300	0.27	1	0.003	0.0005
M010899-216	R-46 #2	9/13/2001	31.3	11/1/2001	11/2/2001	WG9300	0.34	1	0.003	0.0005
M010899-217	R-46 #3	9/13/2001	46.4	11/1/2001	11/2/2001	WG9300	0.3	1	0.003	0.0005
M010899-218	R-46 #4	9/13/2001	40.9	11/1/2001	11/2/2001	WG9300	0.3	1	0.003	0.0005
M010899-219	R-46 #5	9/13/2001	33.9	11/1/2001	11/2/2001	WG9300	0.3	1	0.003	0.0005
M010899-220	R-47 #1	9/13/2001	34.7	11/1/2001	11/2/2001	WG9300	0.3	1	0.003	0.0005
M010899-221	R-47 #2	9/13/2001	30.4	11/1/2001	11/2/2001	WG9300	0.32	1	0.003	0.0005
M010899-222	R-47 #3	9/13/2001	36.7	11/1/2001	11/2/2001	WG9300	0.34	1	0.003	0.0005
M010899-223	R-47 #4	9/13/2001	38.9	11/1/2001	11/2/2001	WG9300	0.27	1	0.003	0.0005
M010899-224	R-47 #5	9/13/2001	40.3	11/1/2001	11/2/2001	WG9300	0.33	1	0.003	0.0005
M010899-225	BM-48 #1	9/14/2001	55.8	11/1/2001	11/2/2001	WG9300	0.04	1	0.003	0.0005
M010899-226	BM-48 #2	9/14/2001	46.8	11/1/2001	11/2/2001	WG9300	0.04	1	0.003	0.0005
M010899-227	BM-48 #3	9/14/2001	45.3	11/1/2001	11/2/2001	WG9300	0.04	1	0.003	0.0005
M010899-228	BM-48 #4	9/14/2001	58.4	11/1/2001	11/2/2001	WG9300	0.05	1	0.003	0.0005
M010899-229	BM-48 #5	9/14/2001	56.9	11/1/2001	11/2/2001	WG9300	0.05	1	0.003	0.0005
M010899-230	BM-49 #1	9/14/2001	49.3	11/1/2001	11/2/2001	WG9300	0.39	1	0.003	0.0005
M010899-231	BM-49 #2	9/14/2001	65.6	11/1/2001	11/2/2001	WG9300	0.26	1	0.003	0.0005
M010899-232	BM-49 #3	9/14/2001	65.4	11/1/2001	11/2/2001	WG9300	0.18	1	0.003	0.0005
M010899-233	BM-49 #4	9/14/2001	74	11/1/2001	11/2/2001	WG9300	0.2	1	0.003	0.0005
M010899-234	BM-49 #5	9/14/2001	70.2	11/1/2001	11/2/2001	WG9300	0.18	1	0.003	0.0005
M010899-235	BM-50 #1	9/14/2001	95.9	11/1/2001	11/2/2001	WG9301	0.14	1	0.003	0.0005
M010899-236	BM-50 #2	9/14/2001	91.1	11/1/2001	11/2/2001	WG9301	0.13	1	0.003	0.0005
M010899-237	BM-50 #3	9/14/2001	90	11/1/2001	11/2/2001	WG9301	0.13	1	0.003	0.0005
M010899-238	BM-50 #4	9/14/2001	94.2	11/1/2001	11/2/2001	WG9301	0.22	1	0.003	0.0005
M010899-239	BM-50 #5	9/14/2001	93.2	11/1/2001	11/2/2001	WG9301	0.11	1	0.003	0.0005
M010899-240	BM-51 #1	9/14/2001	87.3	11/1/2001	11/2/2001	WG9301	0.22	1	0.003	0.0005
M010899-241	BM-51 #2	9/14/2001	91.2	11/1/2001	11/2/2001	WG9301	0.25	1	0.003	0.0005

M010899-242	BM-51 #3	9/14/2001	86.1	11/1/2001	11/2/2001	WG9301	0.19	1	0.003	0.0005
M010899-243	BM-51 #4	9/14/2001	92.1	11/1/2001	11/2/2001	WG9301	0.14	1	0.003	0.0005
M010899-244	BM-51 #5	9/14/2001	94	11/1/2001	11/2/2001	WG9301	0.09	1	0.003	0.0005
M010899-245	BM-52 #1	9/14/2001	94.1	11/1/2001	11/2/2001	WG9301	0.27	1	0.003	0.0005
M010899-246	BM-52 #2	9/14/2001	93.9	11/1/2001	11/2/2001	WG9301	0.26	1	0.003	0.0005
M010899-247	BM-52 #3	9/14/2001	93.1	11/1/2001	11/2/2001	WG9301	0.26	1	0.003	0.0005
M010899-248	BM-52 #4	9/14/2001	93.2	11/1/2001	11/2/2001	WG9301	0.26	1	0.003	0.0005
M010899-249	BM-52 #5	9/14/2001	92.2	11/1/2001	11/2/2001	WG9301	0.27	1	0.003	0.0005
M010899-250	BM-53 #1	9/14/2001	96.3	11/1/2001	11/2/2001	WG9301	0.25	1	0.003	0.0005
M010899-251	BM-53 #2	9/14/2001	96	11/1/2001	11/2/2001	WG9301	0.25	1	0.003	0.0005
M010899-252	BM-53 #3	9/14/2001	95.9	11/1/2001	11/2/2001	WG9301	0.26	1	0.003	0.0005
M010899-253	BM-53 #4	9/14/2001	96.4	11/1/2001	11/2/2001	WG9301	0.24	1	0.003	0.0005
M010899-254	BM-53 #5	9/14/2001	96.6	11/1/2001	11/2/2001	WG9301	0.25	1	0.003	0.0005
M010899-255	BM-54 #1	9/14/2001	91.8	11/8/2001	11/9/2001	WG9379	0.29	1	0.003	0.0005
M010899-256	BM-54 #2	9/14/2001	90.3	11/8/2001	11/9/2001	WG9379	0.32	1	0.003	0.0005
M010899-257	BM-54 #3	9/14/2001	92.1	11/8/2001	11/9/2001	WG9379	0.26	1	0.003	0.0005
M010899-258	BM-54 #4	9/14/2001	93.6	11/8/2001	11/9/2001	WG9379	0.29	1	0.003	0.0005
M010899-259	BM-54 #5	9/14/2001	93.6	11/8/2001	11/9/2001	WG9379	0.29	1	0.003	0.0005
M010899-260	BM-55 #1	9/14/2001	90.5	11/8/2001	11/9/2001	WG9379	0.3	1	0.003	0.0005
M010899-261	BM-55 #2	9/14/2001	93.1	11/8/2001	11/9/2001	WG9379	0.3	1	0.003	0.0005
M010899-262	BM-55 #3	9/14/2001	96.1	11/8/2001	11/9/2001	WG9379	0.31	1	0.003	0.0005
M010899-263	BM-55 #4	9/14/2001	95.3	11/8/2001	11/9/2001	WG9379	0.33	1	0.003	0.0005
M010899-264	BM-55 #5	9/14/2001	93.9	11/8/2001	11/9/2001	WG9379	0.3	1	0.003	0.0005
M010899-265	BM-56 #1	9/14/2001	90.1	11/8/2001	11/9/2001	WG9379	0.45	1	0.003	0.0005
M010899-266	BM-56 #2	9/14/2001	91.5	11/8/2001	11/9/2001	WG9379	0.38	1	0.003	0.0005
M010899-267	BM-56 #3	9/14/2001	94.5	11/8/2001	11/9/2001	WG9379	0.39	1	0.003	0.0005
M010899-268	BM-56 #4	9/14/2001	93.9	11/8/2001	11/9/2001	WG9379	0.4	1	0.003	0.0005
M010899-269	BM-56 #5	9/14/2001	91.8	11/8/2001	11/9/2001	WG9379	0.38	1	0.003	0.0005
M010899-270	BM-57 #1	9/14/2001	92.2	11/8/2001	11/9/2001	WG9379	0.43	1	0.003	0.0005
M010899-271	BM-57 #2	9/14/2001	92	11/8/2001	11/9/2001	WG9379	0.36	1	0.003	0.0005
M010899-272	BM-57 #3	9/14/2001	91.2	11/8/2001	11/9/2001	WG9379	0.35	1	0.003	0.0005
M010899-273	BM-57 #4	9/14/2001	90.1	11/8/2001	11/9/2001	WG9379	0.38	1	0.003	0.0005
M010899-274	BM-57 #5	9/14/2001	88.5	11/8/2001	11/9/2001	WG9379	0.4	1	0.003	0.0005
M010899-275	BM-58 #1	9/14/2001	90.7	11/8/2001	11/9/2001	WG9380	0.31	1	0.003	0.0005
M010899-276	BM-58 #2	9/14/2001	92.1	11/8/2001	11/9/2001	WG9380	0.37	1	0.003	0.0005
M010899-277	BM-58 #3	9/14/2001	93	11/8/2001	11/9/2001	WG9380	0.35	1	0.003	0.0005

M010899-278	BM-58 #4	9/14/2001	91.5	11/8/2001	11/9/2001	WG9380	0.4	1	0.003	0.0005
M010899-279	BM-58 #5	9/14/2001	92.4	11/8/2001	11/9/2001	WG9380	0.37	1	0.003	0.0005
M010899-280	BM-59 #1	9/14/2001	19	11/8/2001	11/9/2001	WG9380	0.12	1	0.003	0.0005
M010899-281	BM-59 #2	9/14/2001	19.6	11/8/2001	11/9/2001	WG9380	0.1	1	0.003	0.0005
M010899-282	BM-59 #3	9/14/2001	18.7	11/8/2001	11/9/2001	WG9380	0.14	1	0.003	0.0005
M010899-283	BM-59 #4	9/14/2001	19.1	11/8/2001	11/9/2001	WG9380	0.09	1	0.003	0.0005
M010899-284	BM-59 #5	9/14/2001	20	11/8/2001	11/9/2001	WG9380	0.13	1	0.003	0.0005
M010899-285	BM-60 #1	9/14/2001	54.6	11/8/2001	11/9/2001	WG9380	0.19	1	0.003	0.0005
M010899-286	BM-60 #2	9/14/2001	54.8	11/8/2001	11/9/2001	WG9380	0.17	1	0.003	0.0005
M010899-287	BM-60 #3	9/14/2001	53.1	11/8/2001	11/9/2001	WG9380	0.11	1	0.003	0.0005
M010899-288	BM-60 #4	9/14/2001	45.4	11/8/2001	11/9/2001	WG9380	0.15	1	0.003	0.0005
M010899-289	BM-60 #5	9/14/2001	58	11/8/2001	11/9/2001	WG9380	0.12	1	0.003	0.0005
M010899-290	BM-61 #1	9/14/2001	37.6	11/8/2001	11/9/2001	WG9380	0.15	1	0.003	0.0005
M010899-291	BM-61 #2	9/14/2001	51.3	11/8/2001	11/9/2001	WG9380	0.12	1	0.003	0.0005
M010899-292	BM-61 #3	9/14/2001	57	11/8/2001	11/9/2001	WG9380	0.13	1	0.003	0.0005
M010899-293	BM-61 #4	9/14/2001	49	11/8/2001	11/9/2001	WG9380	0.13	1	0.003	0.0005
M010899-294	BM-61 #5	9/14/2001	47.6	11/8/2001	11/9/2001	WG9380	0.1	1	0.003	0.0005
M010899-295	SM-1 #1 (TISSUE)	9/10/2001					NR			
M010899-296	SM-1 #2 (TISSUE)	9/10/2001					NR			
M010899-297	SM-1 #3 (TISSUE)	9/10/2001					NR			
M010899-298	SM-1 #4 (TISSUE)	9/10/2001					NR			
M010899-300	SM-3 #1 (TISSUE)	9/10/2001					NR			
M010899-301	SM-3 #2 (TISSUE)	9/10/2001					NR			
M010899-302	SM-3 #3 (TISSUE)	9/10/2001					NR			
M010899-303	SM-3 #4 (TISSUE)	9/10/2001					NR			
M010899-304	SM-3 #5 (TISSUE)	9/10/2001					NR			
M010899-305	SM-10 #1 (TISSUE)	9/11/2001					NR			
M010899-306	SM-10 #2 (TISSUE)	9/11/2001					NR			
M010899-307	SM-10 #3 (TISSUE)	9/11/2001					NR			
M010899-308	SM-10 #4 (TISSUE)	9/11/2001					NR			
M010899-309	SM-10 #5 (TISSUE)	9/11/2001					NR			
M010899-310	SM-13 #1 (TISSUE)	9/11/2001					NR			
M010899-311	SM-13 #2 (TISSUE)	9/11/2001					NR			
M010899-313	SM-13 #4 (TISSUE)	9/11/2001					NR			
M010899-314	SM-13 #5 (TISSUE)	9/11/2001					NR			
M010899-315	SM-17 #1 (TISSUE)	9/11/2001					NR			

M010899-316	SM-17 #2 (TISSUE)	9/11/2001					NR			
M010899-317	SM-17 #3 (TISSUE)	9/11/2001					NR			
M010899-318	SM-17 #4 (TISSUE)	9/11/2001					NR			
M010899-319	SM-17 #5 (TISSUE)	9/11/2001					NR			
M010899-320	SM-42 (TISSUE)	9/13/2001					NR			
M010899-321	SM-16 #5	9/11/2001	48.9							
M010899-322	AF-32 #5	9/13/2001					NR			
M010924-001	SM-7 #1 (TISSUE)	9/13/2001					NR			
M010924-002	R-44 #1	9/13/2001	34.6	11/8/2001	11/9/2001	WG9378	0.31	1	0.003	0.0005
M010924-003	R-44 #2	9/13/2001	41	11/8/2001	11/9/2001	WG9378	0.29	1	0.003	0.0005
M010924-004	R-44 #3	9/13/2001	43.4	11/8/2001	11/9/2001	WG9378	0.28	1	0.003	0.0005
M010924-005	R-44 #4	9/13/2001	32.9	11/8/2001	11/9/2001	WG9378	0.3	1	0.003	0.0005
M010924-006	R-44 #5	9/13/2001	43.3	11/8/2001	11/9/2001	WG9378	0.27	1	0.003	0.0005
M010924-007	A7-32-5	9/13/2001	92.2	11/8/2001	11/9/2001	WG9378	0.29	1	0.003	0.0005
M010924-008	SM-16-5	9/13/2001	48.9	11/8/2001	11/9/2001	WG9378	0.25	1	0.003	0.0005

Sample Results for Mercury and Methylmercury **8-Feb-02**

Project Name: San Francisco Bay System Wetland Testing

Project Number: 6478

NOTE: The Laboratory Reporting Limit for Methylmercury is 0.050 ng/g.

ECB Sample ID	Client Sample ID	Sample Date	% Solids	Hg Digestion Date	Hg Analysis Date	Hg Result (ng/g)	Hg Result (mg/kg)	MeHg Distillation Date	MeHg Analysis Date	MeHg Result (ng/g)
M010899-001	SM-1 #1	9/10/2001	39.4	10/1/2001	10/2/2001	**380**	0.38	10/18/2001	10/19/2001	**4.6**
M010899-002	SM-1 #2	9/10/2001	38.6	10/1/2001	10/2/2001	**360**	0.36	1/8/2002	1/9/2002	**<0.050**
M010899-003	SM-1 #3	9/10/2001	33.6	10/1/2001	10/2/2001	**470**	0.47	10/18/2001	10/19/2001	**2.5**
M010899-004	SM-1 #4	9/10/2001	33.7	10/1/2001	10/2/2001	**350**	0.35	1/17/2002	1/18/2002	**1.8**
M010899-005	SM-1 #5	9/10/2001	37.5	10/1/2001	10/2/2001	**340**	0.34	10/18/2001	10/19/2001	**0.56**
M010899-006	SM-2 #1	9/10/2001	38.8	10/1/2001	10/2/2001	**340**	0.34	10/23/2001	10/24/2001	**0.91**
M010899-007	SM-2 #2	9/10/2001	40.2	10/1/2001	10/2/2001	**340**	0.34	1/22/2002	1/23/2002	**0.32**
M010899-008	SM-2 #3	9/10/2001	37.6	10/1/2001	10/2/2001	**350**	0.35	10/18/2001	10/19/2001	**0.47**
M010899-009	SM-2 #4	9/10/2001	39.2	10/1/2001	10/2/2001	**340**	0.34	10/18/2001	10/19/2001	**0.63**
M010899-010	SM-2 #5	9/10/2001	40.6	10/1/2001	10/2/2001	**330**	0.33	10/23/2001	10/24/2001	**2.2**
M010899-011	SM-3 #1	9/10/2001	42.6	10/1/2001	10/2/2001	**500**	0.50	10/18/2001	10/19/2001	**2.3**
M010899-012	SM-3 #2	9/10/2001	43.1	10/1/2001	10/2/2001	**480**	0.48	10/18/2001	10/19/2001	**1.6**
M010899-013	SM-3 #3	9/10/2001	46.7	10/1/2001	10/2/2001	**430**	0.43	10/18/2001	10/19/2001	**1.2**
M010899-014	SM-3 #4	9/10/2001	46.7	10/1/2001	10/2/2001	**320**	0.32	10/18/2001	10/19/2001	**0.69**
M010899-015	SM-3 #5	9/10/2001	44.4	10/1/2001	10/2/2001	**410**	0.41	11/6/2001	11/7/2001	**0.87**
M010899-016	SM-4 #1	9/10/2001	44.5	10/1/2001	10/2/2001	**350**	0.35	1/17/2002	1/18/2002	**0.17**
M010899-017	SM-4 #2	9/10/2001	43.3	10/1/2001	10/2/2001	**340**	0.34	11/19/2001	11/20/2001	**1.1**
M010899-018	SM-4 #3	9/10/2001	44.1	10/1/2001	10/2/2001	**340**	0.34	11/6/2001	11/7/2001	**0.40**
M010899-019	SM-4 #4	9/10/2001	42.2	10/1/2001	10/2/2001	**350**	0.35	11/19/2001	11/20/2001	**1.8**
M010899-020	SM-4 #5	9/10/2001	42.6	10/1/2001	10/2/2001	**350**	0.35	1/29/2002	1/30/2002	**3.1**
M010899-021	SM-5 #1	9/10/2001	54.6	10/1/2001	10/2/2001	**330**	0.33	11/6/2001	11/7/2001	**0.066**
M010899-022	SM-5 #2	9/10/2001	55.9	10/1/2001	10/2/2001	**310**	0.31	1/22/2002	1/23/2002	**0.41**
M010899-023	SM-5 #3	9/10/2001	55.9	10/1/2001	10/2/2001	**290**	0.29	11/5/2001	11/6/2001	**0.11**

M010899-024	SM-5 #4	9/10/2001	62.6	10/1/2001	10/2/2001	**300**	0.30	11/19/2001	11/20/2001	**0.48**
M010899-025	SM-5 #5	9/10/2001	56.8	10/1/2001	10/2/2001	**330**	0.33	1/16/2002	1/17/2002	**0.32**
M010899-026	SM-6 #1	9/10/2001	56.4	10/1/2001	10/2/2001	**340**	0.34	11/26/2001	11/27/2001	**0.38**
M010899-027	SM-6 #2	9/10/2001	55.7	10/1/2001	10/2/2001	**330**	0.33	12/17/2001	12/18/2001	**0.92**
M010899-028	SM-6 #3	9/10/2001	55.6	10/1/2001	10/2/2001	**330**	0.33	11/6/2001	11/7/2001	**0.12**
M010899-029	SM-6 #4	9/10/2001	54.0	10/1/2001	10/2/2001	**330**	0.33	1/29/2002	1/30/2002	**0.79**
M010899-030	SM-6 #5	9/10/2001	54.6	10/1/2001	10/2/2001	**320**	0.32	1/2/2002	1/23/2002	**1.7**
M010899-031	SM-7 #1	9/10/2001	62.8	10/1/2001	10/2/2001	**320**	0.32	1/22/2002	1/23/2002	**1.30**
M010899-032	SM-7 #2	9/10/2001	65.4	10/1/2001	10/2/2001	**320**	0.32	10/23/2001	10/24/2001	**0.59**
M010899-033	SM-7 #3	9/10/2001	52.1	10/1/2001	10/2/2001	**320**	0.32	11/19/2001	11/20/2001	**0.76**
M010899-034	SM-7 #4	9/10/2001	56.5	10/1/2001	10/2/2001	**320**	0.32	1/22/2002	1/23/2002	**<0.050**
M010899-035	SM-7 #5	9/10/2001	58.1	10/1/2001	10/2/2001	**330**	0.33	10/30/2001	10/31/2001	**0.53**
M010899-036	SM-8 #1	9/10/2001	41.0	10/1/2001	10/2/2001	**280**	0.28	10/23/2001	10/24/2001	**0.90**
M010899-037	SM-8 #2	9/10/2001	45.6	10/1/2001	10/2/2001	**290**	0.29	11/19/2001	11/20/2001	**0.73**
M010899-038	SM-8 #3	9/10/2001	52.8	10/4/2001	10/5/2001	**290**	0.29	2/4/2002	2/5/2002	**0.87**
M010899-039	SM-8 #4	9/10/2001	47.7	10/4/2001	10/5/2001	**290**	0.29	10/23/2001	10/24/2001	**0.51**
M010899-040	SM-8 #5	9/10/2001	44.3	10/4/2001	10/5/2001	**290**	0.29	1/23/2002	1/24/2002	**0.75**
M010899-041	SM-9 #1	9/11/2001	50.5	10/4/2001	10/5/2001	**240**	0.24	11/5/2001	11/6/2001	**<0.050**
M010899-042	SM-9 #2	9/11/2001	44.1	10/4/2001	10/5/2001	**210**	0.21	1/16/2002	1/17/2002	**1.3**
M010899-043	SM-9 #3	9/11/2001	44.1	10/4/2001	10/5/2001	**220**	0.22	11/6/2001	11/7/2001	**<0.050**
M010899-044	SM-9 #4	9/11/2001	48.2	10/4/2001	10/5/2001	**250**	0.25	1/8/2002	1/9/2002	**2.2**
M010899-045	SM-9 #5	9/11/2001	43.3	10/4/2001	10/5/2001	**250**	0.25	1/9/2002	1/10/2002	**2.1**
M010899-046	SM-10 #1	9/11/2001	36.0	10/4/2001	10/5/2001	**330**	0.33	1/9/2002	1/10/2002	**<0.050**
M010899-047	SM-10 #2	9/11/2001	41.0	10/4/2001	10/5/2001	**300**	0.30	1/28/2002	1/29/2002	**8.6**
M010899-048	SM-10 #3	9/11/2001	45.7	10/4/2001	10/5/2001	**300**	0.30	11/6/2001	11/7/2001	**0.063**
M010899-049	SM-10 #4	9/11/2001	43.3	10/4/2001	10/5/2001	**360**	0.36	1/8/2002	1/9/2002	**1.2**
M010899-050	SM-10 #5	9/11/2001	43.2	10/4/2001	10/5/2001	**300**	0.30	11/5/2001	11/6/2001	**0.65**
M010899-051	SM-11 #1	9/11/2001	44.6	10/4/2001	10/5/2001	**230**	0.23	1/8/2002	1/9/2002	**0.75**
M010899-052	SM-11 #2	9/11/2001	43.8	10/4/2001	10/5/2001	**260**	0.26	1/23/2002	1/24/2002	**<0.050**
M010899-053	SM-11 #3	9/11/2001	41.4	10/4/2001	10/5/2001	**240**	0.24	11/14/2001	11/15/2001	**0.48**
M010899-054	SM-11 #4	9/11/2001	43.1	10/4/2001	10/5/2001	**250**	0.25	11/28/2001	11/29/2001	**0.14**

M010899-055	SM-11 #5	9/11/2001	42.0	10/4/2001	10/5/2001	**230**	0.23	10/30/2001	10/31/2001	**0.77**
M010899-056	SM-12 #1	9/11/2001	36.4	10/4/2001	10/5/2001	**250**	0.25	11/5/2001	11/6/2001	**4.0**
M010899-057	SM-12 #2	9/11/2001	30.2	10/4/2001	10/5/2001	**210**	0.21	1/9/2002	1/10/2002	**2.6**
M010899-058	SM-12 #3	9/11/2001	31.2	10/4/2001	10/5/2001	**240**	0.24	1/28/2002	1/29/2002	**8.1**
M010899-059	SM-12 #4	9/11/2001	33.0	10/4/2001	10/5/2001	**240**	0.24	11/14/2001	11/15/2001	**0.78**
M010899-060	SM-12 #5	9/11/2001	29.9	10/4/2001	10/5/2001	**240**	0.24	11/28/2001	11/29/2001	**1.8**
M010899-061	SM-13 #1	9/11/2001	42.4	10/4/2001	10/5/2001	**300**	0.30	11/14/2001	11/15/2001	**0.87**
M010899-062	SM-13 #2	9/11/2001	37.1	10/4/2001	10/5/2001	**360**	0.36	11/5/2001	11/6/2001	**0.17**
M010899-063	SM-13 #3	9/11/2001	45.3	10/4/2001	10/5/2001	**350**	0.35	11/15/2001	11/16/2001	**2.0**
M010899-064	SM-13 #4	9/11/2001	46.5	10/4/2001	10/5/2001	**320**	0.32	11/6/2001	11/7/2001	**0.80**
M010899-065	SM-13 #5	9/11/2001	41.1	10/4/2001	10/5/2001	**360**	0.36	11/20/2001	11/21/2001	**2.0**
M010899-066	SM-14 #1	9/11/2001	46.2	10/4/2001	10/5/2001	**250**	0.25	11/6/2001	11/7/2001	**1.0**
M010899-067	SM-14 #2	9/11/2001	48.9	10/4/2001	10/5/2001	**270**	0.27	11/14/2001	11/15/2001	**1.1**
M010899-068	SM-14 #3	9/11/2001	47.5	10/4/2001	10/5/2001	**280**	0.28	10/24/2001	10/25/2001	**1.4**
M010899-069	SM-14 #4	9/11/2001	48.2	10/4/2001	10/5/2001	**270**	0.27	11/19/2001	11/20/2001	**<0.050**
M010899-070	SM-14 #5	9/11/2001	51.8	10/4/2001	10/5/2001	**260**	0.26	11/14/2001	11/15/2001	**0.71**
M010899-071	SM-15 #1	9/11/2001	29.5	10/4/2001	10/5/2001	**280**	0.28	11/5/2001	11/6/2001	**5.0**
M010899-072	SM-15 #2	9/11/2001	27.0	10/4/2001	10/5/2001	**270**	0.27	11/20/2001	11/21/2001	**8.0**
M010899-073	SM-15 #3	9/11/2001	29.0	10/4/2001	10/5/2001	**290**	0.29	11/14/2001	11/15/2001	**5.2**
M010899-074	SM-15 #4	9/11/2001	30.4	10/4/2001	10/5/2001	**320**	0.32	10/23/2001	10/24/2001	**6.8**
M010899-075	SM-15 #5	9/11/2001	26.7	10/4/2001	10/5/2001	**260**	0.26	12/9/2001	12/10/2001	**0.16**
M010899-076	SM-16 #1	9/11/2001	54.0	10/4/2001	10/5/2001	**300**	0.30	11/14/2001	11/15/2001	**0.053**
M010899-077	SM-16 #2	9/11/2001	48.3	10/11/2001	10/12/2001	**290**	0.29	10/24/2001	10/25/2001	**0.44**
M010899-078	SM-16 #3	9/11/2001	50.3	10/11/2001	10/12/2001	**280**	0.28	1/17/2002	1/18/2002	**<0.050**
M010899-079	SM-16 #4	9/11/2001	50.9	10/11/2001	10/12/2001	**270**	0.27	11/5/2001	11/6/2001	**0.50**
M010899-080	SM-17 #1	9/11/2001	42.4	10/11/2001	10/12/2001	**430**	0.43	12/17/2001	12/18/2001	**8.1**
M010899-081	SM-17 #2	9/11/2001	43.9	10/11/2001	10/12/2001	**550**	0.55	11/5/2001	11/6/2001	**1.8**
M010899-082	SM-17 #3	9/11/2001	40.1	10/11/2001	10/12/2001	**600**	0.60	11/14/2001	11/15/2001	**2.4**
M010899-083	SM-17 #4	9/11/2001	46.1	10/11/2001	10/12/2001	**380**	0.38	11/19/2001	11/20/2001	**0.71**
M010899-084	SM-17 #5	9/11/2001	36.4	10/11/2001	10/12/2001	**570**	0.57	11/29/2001	11/30/2001	**3.2**
M010899-085	SM-18 #1	9/11/2001	40.9	10/11/2001	10/12/2001	**250**	0.25	10/23/2001	10/24/2001	**0.71**

M010899-086	SM-18 #2	9/11/2001	48.5	10/11/2001	10/12/2001	**180**	0.18	1/29/2002	1/30/2002	**0.26**
M010899-087	SM-18 #3	9/11/2001	57.7	10/11/2001	10/12/2001	**220**	0.22	1/29/2002	1/30/2002	**0.22**
M010899-088	SM-18 #4	9/11/2001	48.8	10/11/2001	10/12/2001	**250**	0.25	1/9/2002	1/10/2002	**1.5**
M010899-089	SM-18 #5	9/11/2001	65.6	10/11/2001	10/12/2001	**280**	0.28	2/4/2002	2/5/2002	**<0.050**
M010899-090	SM-19 #1	9/12/2001	48.5	10/11/2001	10/12/2001	**480**	0.48	1/8/2002	1/9/2002	**<0.050**
M010899-091	SM-19 #2	9/12/2001	40.5	10/11/2001	10/12/2001	**550**	0.55	12/9/2001	12/10/2001	**1.1**
M010899-092	SM-19 #3	9/12/2001	56.9	10/11/2001	10/12/2001	**480**	0.48	12/9/2001	12/10/2001	**0.41**
M010899-093	SM-19 #4	9/12/2001	40.8	10/11/2001	10/12/2001	**420**	0.42	1/9/2002	1/10/2002	**<0.050**
M010899-094	SM-19 #5	9/12/2001	42.9	10/11/2001	10/12/2001	**710**	0.71	1/15/2002	1/16/2002	**0.91**
M010899-095	SM-20 #1	9/12/2001	43.2	10/11/2001	10/12/2001	**250**	0.25	1/9/2002	1/10/2002	**0.051**
M010899-096	SM-20 #2	9/12/2001	37.9	10/11/2001	10/12/2001	**250**	0.25	1/8/2002	1/9/2002	**2.0**
M010899-097	SM-20 #3	9/12/2001	37.7	10/11/2001	10/12/2001	**260**	0.26	10/31/2001	11/1/2001	**1.5**
M010899-098	SM-20 #4	9/12/2001	42.7	10/11/2001	10/12/2001	**240**	0.24	11/5/2001	11/6/2001	**1.2**
M010899-099	SM-20 #5	9/12/2001	51.7	10/11/2001	10/12/2001	**320**	0.32	11/14/2001	11/15/2001	**0.43**
M010899-100	SM-21 #1	9/12/2001	37.3	10/11/2001	10/12/2001	**600**	0.60	1/15/2002	1/16/2002	**4.6**
M010899-101	SM-21 #2	9/12/2001	43.3	10/11/2001	10/12/2001	**530**	0.53	12/9/2001	12/10/2001	**1.1**
M010899-102	SM-21 #3	9/12/2001	43.2	10/11/2001	10/12/2001	**570**	0.57	11/20/2001	11/21/2001	**1.3**
M010899-103	SM-21 #4	9/12/2001	39.8	10/11/2001	10/12/2001	**510**	0.51	10/31/2001	11/1/2001	**<0.050**
M010899-104	SM-21 #5	9/12/2001	36.9	10/11/2001	10/12/2001	**530**	0.53	1/16/2002	1/17/2002	**2.7**
M010899-105	SM-22 #1	9/12/2001	71.6	10/11/2001	10/12/2001	**200**	0.20	1/28/2002	1/29/2002	**0.48**
M010899-106	SM-22 #2	9/12/2001	70.1	10/11/2001	10/12/2001	**260**	0.26	11/15/2001	11/16/2001	**0.25**
M010899-107	SM-22 #3	9/12/2001	77.2	10/11/2001	10/12/2001	**220**	0.22	1/17/2002	1/18/2002	**0.055**
M010899-108	SM-22 #4	9/12/2001	81.1	10/11/2001	10/12/2001	**240**	0.24	1/17/2002	1/18/2002	**0.45**
M010899-109	SM-22 #5	9/12/2001	69.5	10/11/2001	10/12/2001	**230**	0.23	12/9/2001	12/10/2001	**0.16**
M010899-110	SM-23 #1	9/12/2001	40.8	10/11/2001	10/12/2001	**470**	0.47	1/9/2002	1/10/2002	**0.39**
M010899-111	SM-23 #2	9/12/2001	58.8	10/11/2001	10/12/2001	**420**	0.42	2/5/2002	2/6/2002	**10**
M010899-112	SM-23 #3	9/12/2001	46.7	10/11/2001	10/12/2001	**400**	0.40	10/24/2001	10/25/2001	**0.66**
M010899-113	SM-23 #4	9/12/2001	31.8	10/17/2001	10/18/2001	**740**	0.74	1/23/2002	1/24/2002	**0.75**
M010899-114	SM-23 #5	9/12/2001	55.5	10/17/2001	10/18/2001	**420**	0.42	1/23/2002	1/24/2002	**0.24**
M010899-115	SM-24 #1	9/12/2001	48.9	10/17/2001	10/18/2001	**280**	0.28	1/8/2002	1/9/2002	**4.0**
M010899-116	SM-24 #2	9/12/2001	49.0	10/17/2001	10/18/2001	**280**	0.28	1/8/2002	1/9/2002	**0.15**

M010899-117	SM-24 #3	9/12/2001	48.3	10/17/2001	10/18/2001	**280**	0.28	10/31/2001	11/1/2001	**0.34**
M010899-118	SM-24 #4	9/12/2001	45.5	10/17/2001	10/18/2001	**290**	0.29	1/8/2002	1/9/2002	**0.32**
M010899-119	SM-24 #5	9/12/2001	45.6	10/17/2001	10/18/2001	**280**	0.28	1/28/2002	1/29/2002	**0.88**
M010899-120	SM-25 #1	9/12/2001	44.1	10/17/2001	10/18/2001	**290**	0.29	11/28/2001	11/29/2001	**<0.050**
M010899-121	SM-25 #2	9/12/2001	41.5	10/17/2001	10/18/2001	**290**	0.29	11/15/2001	11/16/2001	**1.7**
M010899-122	SM-25 #3	9/12/2001	42.9	10/17/2001	10/18/2001	**280**	0.28	11/15/2001	11/16/2001	**3.6**
M010899-123	SM-25 #4	9/12/2001	38.8	10/17/2001	10/18/2001	**300**	0.30	2/4/2002	2/5/2002	**4.9**
M010899-124	SM-25 #5	9/12/2001	45.0	10/25/2001	10/26/2001	**320**	0.32	10/31/2001	11/1/2001	**1.5**
M010899-125	AF-26 #1	9/13/2001	95.0	10/17/2001	10/18/2001	**280**	0.28	12/19/2001	12/20/2001	**0.67**
M010899-126	AF-26 #2	9/13/2001	93.2	10/17/2001	10/18/2001	**270**	0.27	11/28/2001	11/29/2001	**0.47**
M010899-127	AF-26 #3	9/13/2001	93.3	10/17/2001	10/18/2001	**270**	0.27	12/2/2001	12/3/2001	**0.37**
M010899-128	AF-26 #4	9/13/2001	95.9	10/17/2001	10/18/2001	**310**	0.31	11/15/2001	11/16/2001	**0.23**
M010899-129	AF-26 #5	9/13/2001	94.7	10/17/2001	10/18/2001	**270**	0.27	11/18/2001	11/19/2001	**<0.050**
M010899-130	AF-27 #1	9/13/2001	94.8	10/17/2001	10/18/2001	**280**	0.28	10/31/2001	11/1/2001	**0.36**
M010899-131	AF-27 #2	9/13/2001	94.5	10/17/2001	10/18/2001	**310**	0.31	11/15/2001	11/16/2001	**0.22**
M010899-132	AF-27 #3	9/13/2001	93.1	10/17/2001	10/18/2001	**290**	0.29	11/16/2001	11/17/2001	**0.19**
M010899-133	AF-27 #4	9/13/2001	92.9	10/17/2001	10/18/2001	**280**	0.28	11/15/2001	11/16/2001	**0.17**
M010899-134	AF-27 #5	9/13/2001	96.5	10/17/2001	10/18/2001	**300**	0.30	11/20/2001	11/21/2001	**0.19**
M010899-135	AF-28 #1	9/13/2001	95.5	10/17/2001	10/18/2001	**290**	0.29	11/28/2001	11/29/2001	**0.13**
M010899-136	AF-28 #2	9/13/2001	94.6	10/17/2001	10/18/2001	**280**	0.28	11/15/2001	11/16/2001	**0.18**
M010899-137	AF-28 #3	9/13/2001	94.9	10/17/2001	10/18/2001	**290**	0.29	1/15/2002	1/16/2002	**0.069**
M010899-138	AF-28 #4	9/13/2001	94.4	10/17/2001	10/18/2001	**260**	0.26	12/9/2001	12/10/2001	**<0.050**
M010899-139	AF-28 #5	9/13/2001	94.5	10/17/2001	10/18/2001	**270**	0.27	12/2/2001	12/3/2001	**0.24**
M010899-140	AF-29 #1	9/13/2001	98.6	10/17/2001	10/18/2001	**30**	0.03	1/29/2002	1/30/2002	**<0.050**
M010899-141	AF-29 #2	9/13/2001	98.6	10/17/2001	10/18/2001	**30**	0.03	10/31/2001	11/1/2001	**<0.05**
M010899-142	AF-29 #3	9/13/2001	97.6	10/17/2001	10/18/2001	**50**	0.05	11/27/2001	11/28/2001	**0.14**
M010899-143	AF-29 #4	9/13/2001	97.8	10/17/2001	10/18/2001	**30**	0.03	11/27/2001	11/28/2001	**0.085**
M010899-144	AF-29 #5	9/13/2001	96.0	10/17/2001	10/18/2001	**70**	0.07	1/17/2002	1/18/2002	**0.20**
M010899-145	AF-30 #1	9/13/2001	86.8	10/17/2001	10/18/2001	**310**	0.31	11/26/2001	11/27/2001	**<0.05**
M010899-146	AF-30 #2	9/13/2001	87.8	10/17/2001	10/18/2001	**290**	0.29	1/16/2002	1/17/2002	**0.34**
M010899-147	AF-30 #3	9/13/2001	87.3	10/17/2001	10/18/2001	**320**	0.32	1/9/2002	1/10/2002	**0.38**

M010899-148	AF-30 #4	9/13/2001	87.0	10/17/2001	10/18/2001	**260**	0.26	10/31/2001	11/1/2001	**0.41**
M010899-149	AF-30 #5	9/13/2001	87.0	10/17/2001	10/18/2001	**250**	0.25	12/9/2001	12/10/2001	**0.32**
M010899-150	AF-31 #1	9/13/2001	91.8	10/17/2001	10/18/2001	**300**	0.30	11/29/2001	11/30/2001	**<0.050**
M010899-151	AF-31 #2	9/13/2001	89.9	10/17/2001	10/18/2001	**260**	0.26	11/29/2001	11/30/2001	**<0.050**
M010899-152	AF-31 #3	9/13/2001	92.9	10/17/2001	10/18/2001	**310**	0.31	12/11/2001	12/12/2001	**0.56**
M010899-153	AF-31 #4	9/13/2001	93.6	10/17/2001	10/18/2001	**270**	0.27	1/28/2002	1/29/2002	**1.5**
M010899-154	AF-31 #5	9/13/2001	93.0	10/17/2001	10/18/2001	**280**	0.28	1/9/2002	1/10/2002	**0.58**
M010899-155	AF-32 #1	9/13/2001	94.5	10/25/2001	10/26/2001	**290**	0.29	10/24/2001	10/25/2001	**0.15**
M010899-156	AF-32 #2	9/13/2001	92.8	10/25/2001	10/26/2001	**290**	0.29	11/18/2001	11/19/2001	**0.25**
M010899-157	AF-32 #3	9/13/2001	95.1	10/25/2001	10/26/2001	**290**	0.29	10/23/2001	10/24/2001	**0.31**
M010899-158	AF-32 #4	9/13/2001	94.2	10/25/2001	10/26/2001	**280**	0.28	10/31/2001	11/1/2001	**0.36**
M010899-159	AF-33 #1	9/13/2001	88.5	10/25/2001	10/26/2001	**280**	0.28	12/9/2001	12/10/2001	**0.16**
M010899-160	AF-33 #2	9/13/2001	88.0	10/25/2001	10/26/2001	**260**	0.26	10/24/2001	10/25/2001	**0.79**
M010899-161	AF-33 #3	9/13/2001	86.9	10/25/2001	10/26/2001	**290**	0.29	11/13/2001	11/14/2001	**0.53**
M010899-162	AF-33 #4	9/13/2001	89.1	10/25/2001	10/26/2001	**270**	0.27	11/20/2001	11/21/2001	**2.2**
M010899-163	AF-33 #5	9/13/2001	89.1	10/25/2001	10/26/2001	**270**	0.27	10/24/2001	10/25/2001	**2.6**
M010899-164	AF-34 #1	9/13/2001	89.0	10/25/2001	10/26/2001	**250**	0.25	12/11/2001	12/12/2001	**0.38**
M010899-165	AF-34 #2	9/13/2001	88.5	10/25/2001	10/26/2001	**270**	0.27	12/17/2001	12/18/2001	**2.9**
M010899-166	AF-34 #3	9/13/2001	91.5	10/25/2001	10/26/2001	**280**	0.28	11/29/2001	11/30/2001	**0.40**
M010899-167	AF-34 #4	9/13/2001	87.6	10/25/2001	10/26/2001	**290**	0.29	10/30/2001	10/31/2001	**<0.10**
M010899-168	AF-34 #5	9/13/2001	89.3	10/25/2001	10/26/2001	**290**	0.29	12/2/2001	12/3/2001	**3.5**
M010899-169	AF-35 #1	9/13/2001	87.5	10/25/2001	10/26/2001	**290**	0.29	12/10/2001	12/11/2001	**4.8**
M010899-170	AF-35 #2	9/13/2001	88.9	10/25/2001	10/26/2001	**280**	0.28	12/17/2001	12/18/2001	**1.3**
M010899-171	AF-35 #3	9/13/2001	89.9	10/25/2001	10/26/2001	**310**	0.31	12/17/2001	12/18/2001	**0.99**
M010899-172	AF-35 #4	9/13/2001	84.8	10/25/2001	10/26/2001	**280**	0.28	1/23/2002	1/24/2002	**1.5**
M010899-173	AF-35 #5	9/13/2001	86.2	10/25/2001	10/26/2001	**280**	0.28	12/10/2001	12/11/2001	**1.3**
M010899-174	AF-36 #1	9/13/2001	87.1	10/25/2001	10/26/2001	**280**	0.28	2/6/2002	2/6/2002	**5.6**
M010899-175	AF-36 #2	9/13/2001	89.9	10/25/2001	10/26/2001	**290**	0.29	1/16/2002	1/17/2002	**0.85**
M010899-176	AF-36 #3	9/13/2001	89.2	10/25/2001	10/26/2001	**240**	0.24	11/27/2001	11/28/2001	**4.5**
M010899-177	AF-36 #4	9/13/2001	90.0	10/25/2001	10/26/2001	**240**	0.24	11/28/2001	11/29/2001	**3.1**
M010899-178	AF-36 #5	9/13/2001	87.3	10/25/2001	10/26/2001	**290**	0.29	11/27/2001	11/28/2001	**2.4**

M010899-179	AF-37 #1	9/13/2001	89.2	10/25/2001	10/26/2001	**270**	0.27	12/18/2001	12/19/2001	**4.1**
M010899-180	AF-37 #2	9/13/2001	91.0	10/25/2001	10/26/2001	**270**	0.27	11/13/2001	11/14/2001	**1.2**
M010899-181	AF-37 #3	9/13/2001	89.6	10/25/2001	10/26/2001	**290**	0.29	11/18/2001	11/19/2001	**2.5**
M010899-182	AF-37 #4	9/13/2001	91.8	10/25/2001	10/26/2001	**270**	0.27	1/7/2002	1/8/2002	**1.0**
M010899-183	AF-37 #5	9/13/2001	90.1	10/25/2001	10/26/2001	**290**	0.29	1/28/2002	1/29/2002	**2.5**
M010899-184	SM-38 #1	9/13/2001	51.7	10/25/2001	10/26/2001	**450**	0.45	11/20/2001	11/21/2001	**6.8**
M010899-185	SM-38 #2	9/13/2001	54.7	10/25/2001	10/26/2001	**410**	0.41	2/4/2002	2/5/2002	**1.1**
M010899-186	SM-38 #3	9/13/2001	59.4	10/25/2001	10/26/2001	**350**	0.35	2/4/2002	2/5/2002	**1.2**
M010899-187	SM-38 #4	9/13/2001	53.7	10/25/2001	10/26/2001	**370**	0.37	1/28/2002	1/29/2002	**5.3**
M010899-188	SM-38 #5	9/13/2001	57.3	10/25/2001	10/26/2001	**380**	0.38	1/23/2002	1/24/2002	**4.3**
M010899-189	SM-39 #1	9/13/2001	58.2	10/25/2001	10/26/2001	**370**	0.37	11/13/2001	11/14/2001	**0.41**
M010899-190	SM-39 #2	9/13/2001	55.8	10/25/2001	10/26/2001	**430**	0.43	12/17/2001	12/18/2001	**0.52**
M010899-191	SM-39 #3	9/13/2001	64.6	10/25/2001	10/26/2001	**460**	0.46	1/15/2002	1/16/2002	**0.61**
M010899-192	SM-39 #4	9/13/2001	58.3	10/25/2001	10/26/2001	**460**	0.46	11/26/2001	11/27/2001	**0.62**
M010899-193	SM-39 #5	9/13/2001	53.9	10/25/2001	10/26/2001	**380**	0.38	1/15/2002	1/16/2002	**0.78**
M010899-194	SM-40 #1	9/13/2001	43.1	11/1/2001	11/2/2001	**270**	0.27	12/19/2001	12/20/2001	**1.1**
M010899-195	SM-40 #2	9/13/2001	41.7	11/1/2001	11/2/2001	**250**	0.25	121/2/01	12/3/2001	**1.2**
M010899-196	SM-40 #3	9/13/2001	44.5	11/1/2001	11/2/2001	**240**	0.24	1/15/2002	1/16/2002	**1.4**
M010899-197	SM-40 #4	9/13/2001	41.5	11/1/2001	11/2/2001	**260**	0.26	1/16/2002	1/17/2002	**4.2**
M010899-198	SM-40 #5	9/13/2001	42.2	11/1/2001	11/2/2001	**250**	0.25	12/10/2001	12/11/2001	**0.40**
M010899-199	SM-41 #1	9/13/2001	41.0	11/1/2001	11/2/2001	**260**	0.26	12/17/2001	12/18/2001	**3.4**
M010899-200	SM-41 #2	9/13/2001	34.7	11/1/2001	11/2/2001	**210**	0.21	12/10/2001	12/11/2001	**7.2**
M010899-201	SM-41 #3	9/13/2001	35.7	11/1/2001	11/2/2001	**250**	0.25	12/10/2001	12/11/2001	**1.8**
M010899-202	SM-41 #4	9/13/2001	36.8	11/1/2001	11/2/2001	**240**	0.24	12/10/2001	12/11/2001	**0.19**
M010899-203	SM-41 #5	9/13/2001	39.7	11/1/2001	11/2/2001	**260**	0.26	12/19/2001	12/20/2001	**4.1**
M010899-205	R-43 #1	9/13/2001	46.3	11/1/2001	11/2/2001	**280**	0.28	12/16/2001	12/17/2001	**<0.050**
M010899-206	R-43 #2	9/13/2001	42.2	11/1/2001	11/2/2001	**270**	0.27	1/7/2002	1/8/2002	**0.69**
M010899-207	R-43 #3	9/13/2001	42.2	11/1/2001	11/2/2001	**290**	0.29	1/15/2002	1/16/2002	**1.0**
M010899-208	R-43 #4	9/13/2001	43.7	11/1/2001	11/2/2001	**280**	0.28	12/16/2001	12/17/2001	**0.59**
M010899-209	R-43 #5	9/13/2001	37.6	11/1/2001	11/2/2001	**330**	0.33	12/19/2001	12/20/2001	**<0.05**
M010899-210	R-45 #1	9/13/2001	37.3	11/1/2001	11/2/2001	**310**	0.31	11/18/2001	11/19/2001	**0.89**

M010899-211	R-45 #2	9/13/2001	37.1	11/1/2001	11/2/2001	**320**	0.32	2/5/2002	2/6/2002	**10**
M010899-212	R-45 #3	9/13/2001	40.5	11/1/2001	11/2/2001	**300**	0.30	1/23/2002	1/24/2002	**2.0**
M010899-213	R-45 #4	9/13/2001	32.9	11/1/2001	11/2/2001	**320**	0.32	1/23/2002	1/24/2002	**7.0**
M010899-214	R-45 #5	9/13/2001	38.0	11/1/2001	11/2/2001	**300**	0.30	11/20/2001	11/21/2001	**12**
M010899-215	R-46 #1	9/13/2001	45.6	11/1/2001	11/2/2001	**270**	0.27	1/29/2002	1/30/2002	**<0.050**
M010899-216	R-46 #2	9/13/2001	31.3	11/1/2001	11/2/2001	**340**	0.34	1/7/2002	1/8/2002	**<0.050**
M010899-217	R-46 #3	9/13/2001	46.4	11/1/2001	11/2/2001	**300**	0.30	1/22/2002	1/23/2002	**0.27**
M010899-218	R-46 #4	9/13/2001	40.9	11/1/2001	11/2/2001	**300**	0.30	1/22/2002	1/23/2002	**0.13**
M010899-219	R-46 #5	9/13/2001	33.9	11/1/2001	11/2/2001	**300**	0.30	1/22/2002	1/23/2002	**2.6**
M010899-220	R-47 #1	9/13/2001	34.7	11/1/2001	11/2/2001	**300**	0.30	1/15/2002	1/16/2002	**3.2**
M010899-221	R-47 #2	9/13/2001	30.4	11/1/2001	11/2/2001	**320**	0.32	1/16/2002	1/17/2002	**15**
M010899-222	R-47 #3	9/13/2001	36.7	11/1/2001	11/2/2001	**340**	0.34	11/26/2001	11/27/2001	**<0.050**
M010899-223	R-47 #4	9/13/2001	38.9	11/1/2001	11/2/2001	**270**	0.27	12/18/2001	12/19/2001	**7.3**
M010899-224	R-47 #5	9/13/2001	40.3	11/1/2001	11/2/2001	**330**	0.33	12/10/2001	12/11/2001	**0.22**
M010899-225	BM-48 #1	9/14/2001	55.8	11/1/2001	11/2/2001	**40**	0.04	1/17/2002	1/18/2002	**0.076**
M010899-226	BM-48 #2	9/14/2001	46.8	11/1/2001	11/2/2001	**40**	0.04	12/16/2001	12/17/2001	**<0.05**
M010899-227	BM-48 #3	9/14/2001	45.3	11/1/2001	11/2/2001	**40**	0.04	12/11/2001	12/12/2001	**0.79**
M010899-228	BM-48 #4	9/14/2001	58.4	11/1/2001	11/2/2001	**50**	0.05	1/28/2002	1/29/2002	**0.45**
M010899-229	BM-48 #5	9/14/2001	56.9	11/1/2001	11/2/2001	**50**	0.05	1/7/2002	1/8/2002	**<0.050**
M010899-230	BM-49 #1	9/14/2001	49.3	11/1/2001	11/2/2001	**390**	0.39	12/16/2001	12/17/2001	**6.2**
M010899-231	BM-49 #2	9/14/2001	65.6	11/1/2001	11/2/2001	**260**	0.26	12/11/2001	12/12/2001	**0.50**
M010899-232	BM-49 #3	9/14/2001	65.4	11/1/2001	11/2/2001	**180**	0.18	12/19/2001	12/20/2001	**1.9**
M010899-233	BM-49 #4	9/14/2001	74.0	11/1/2001	11/2/2001	**200**	0.20	12/19/2001	12/20/2001	**<0.050**
M010899-234	BM-49 #5	9/14/2001	70.2	11/1/2001	11/2/2001	**180**	0.18	12/11/2001	12/12/2001	**3.2**
M010899-235	BM-50 #1	9/14/2001	95.9	11/1/2001	11/2/2001	**140**	0.14	2/5/2002	2/6/2002	**5.0**
M010899-236	BM-50 #2	9/14/2001	91.1	11/1/2001	11/2/2001	**130**	0.13	2/5/2002	2/6/2002	**8.5**
M010899-237	BM-50 #3	9/14/2001	90.0	11/1/2001	11/2/2001	**130**	0.13	2/5/2002	2/6/2002	**1.3**
M010899-238	BM-50 #4	9/14/2001	94.2	11/1/2001	11/2/2001	**220**	0.22	2/5/2002	2/6/2002	**6.4**
M010899-239	BM-50 #5	9/14/2001	93.2	11/1/2001	11/2/2001	**110**	0.11	1/15/2002	1/16/2002	**0.29**
M010899-240	BM-51 #1	9/14/2001	87.3	11/1/2001	11/2/2001	**220**	0.22	1/9/2002	1/10/2002	**0.033**
M010899-241	BM-51 #2	9/14/2001	91.2	11/1/2001	11/2/2001	**250**	0.25	12/18/2001	12/19/2001	**0.062**

M010899-242	BM-51 #3	9/14/2001	86.1	11/1/2001	11/2/2001	**190**	0.19	1/28/2002	1/29/2002	**0.076**
M010899-243	BM-51 #4	9/14/2001	92.1	11/1/2001	11/2/2001	**140**	0.14	11/28/2001	11/29/2001	**<0.050**
M010899-244	BM-51 #5	9/14/2001	94.0	11/1/2001	11/2/2001	**90**	0.09	1/8/2002	1/9/2002	**<0.050**
M010899-245	BM-52 #1	9/14/2001	94.1	11/1/2001	11/2/2001	**270**	0.27	11/26/2001	11/27/2001	**2.1**
M010899-246	BM-52 #2	9/14/2001	93.9	11/1/2001	11/2/2001	**260**	0.26	12/10/2001	12/11/2001	**<0.050**
M010899-247	BM-52 #3	9/14/2001	93.1	11/1/2001	11/2/2001	**260**	0.26	1/7/2002	1/8/2002	**3.6**
M010899-248	BM-52 #4	9/14/2001	93.2	11/1/2001	11/2/2001	**260**	0.26	1/23/2002	1/24/2002	**<0.050**
M010899-249	BM-52 #5	9/14/2001	92.2	11/1/2001	11/2/2001	**270**	0.27	12/2/2001	12/3/2001	**1.1**
M010899-250	BM-53 #1	9/14/2001	96.3	11/1/2001	11/2/2001	**250**	0.25	1/23/2002	1/24/2002	**1.1**
M010899-251	BM-53 #2	9/14/2001	96.0	11/1/2001	11/2/2001	**250**	0.25	12/11/2001	12/12/2001	**0.18**
M010899-252	BM-53 #3	9/14/2001	95.9	11/1/2001	11/2/2001	**260**	0.26	1/29/2002	1/30/2002	**0.36**
M010899-253	BM-53 #4	9/14/2001	96.4	11/1/2001	11/2/2001	**240**	0.24	12/18/2001	12/19/2001	**0.43**
M010899-254	BM-53 #5	9/14/2001	96.6	11/1/2001	11/2/2001	**250**	0.25	11/26/2001	11/27/2001	**0.70**
M010899-255	BM-54 #1	9/14/2001	91.8	11/8/2001	11/9/2001	**290**	0.29	1/28/2002	1/29/2002	**0.075**
M010899-256	BM-54 #2	9/14/2001	90.3	11/8/2001	11/9/2001	**320**	0.32	1/29/2002	1/30/2002	**<0.050**
M010899-257	BM-54 #3	9/14/2001	92.1	11/8/2001	11/9/2001	**260**	0.26	12/18/2001	12/19/2001	**0.059**
M010899-258	BM-54 #4	9/14/2001	93.6	11/8/2001	11/9/2001	**290**	0.29	1/17/2002	1/18/2002	**<0.050**
M010899-259	BM-54 #5	9/14/2001	93.6	11/8/2001	11/9/2001	**290**	0.29	2/4/2002	2/5/2002	**0.43**
M010899-260	BM-55 #1	9/14/2001	90.5	11/8/2001	11/9/2001	**300**	0.30	12/19/2001	12/20/2001	**<0.2**
M010899-261	BM-55 #2	9/14/2001	93.1	11/8/2001	11/9/2001	**300**	0.30	1/17/2002	1/18/2002	**<0.050**
M010899-262	BM-55 #3	9/14/2001	96.1	11/8/2001	11/9/2001	**310**	0.31	12/10/2001	12/11/2001	**0.28**
M010899-263	BM-55 #4	9/14/2001	95.3	11/8/2001	11/9/2001	**330**	0.33	12/11/2001	12/12/2001	**0.14**
M010899-264	BM-55 #5	9/14/2001	93.9	11/8/2001	11/9/2001	**300**	0.30	12/16/2001	12/17/2001	**<0.050**
M010899-265	BM-56 #1	9/14/2001	90.1	11/8/2001	11/9/2001	**450**	0.45	12/11/2001	12/12/2001	**0.32**
M010899-266	BM-56 #2	9/14/2001	91.5	11/8/2001	11/9/2001	**380**	0.38	12/16/2001	12/17/2001	**0.70**
M010899-267	BM-56 #3	9/14/2001	94.5	11/8/2001	11/9/2001	**390**	0.39	12/16/2001	12/17/2001	**0.49**
M010899-268	BM-56 #4	9/14/2001	93.9	11/8/2001	11/9/2001	**400**	0.40	12/19/2001	12/20/2001	**1.6**
M010899-269	BM-56 #5	9/14/2001	91.8	11/8/2001	11/9/2001	**380**	0.38	12/17/2001	12/18/2001	**1.3**
M010899-270	BM-57 #1	9/14/2001	92.2	11/8/2001	11/9/2001	**430**	0.43	1/17/2002	1/18/2002	**0.50**
M010899-271	BM-57 #2	9/14/2001	92.0	11/8/2001	11/9/2001	**360**	0.36	2/5/2002	2/6/2002	**2.7**
M010899-272	BM-57 #3	9/14/2001	91.2	11/8/2001	11/9/2001	**350**	0.35	2/5/2002	2/6/2002	**1.6**

M010899-273	BM-57 #4	9/14/2001	90.1	11/8/2001	11/9/2001	**380**	0.38	12/18/2001	12/19/2001	**1.7**
M010899-274	BM-57 #5	9/14/2001	88.5	11/8/2001	11/9/2001	**400**	0.40	12/18/2001	12/19/2001	**0.90**
M010899-275	BM-58 #1	9/14/2001	90.7	11/8/2001	11/9/2001	**310**	0.31	11/27/2001	11/28/2001	**<0.050**
M010899-276	BM-58 #2	9/14/2001	92.1	11/8/2001	11/9/2001	**370**	0.37	2/4/2002	2/5/2002	**0.61**
M010899-277	BM-58 #3	9/14/2001	93.0	11/8/2001	11/9/2001	**350**	0.35	12/18/2001	12/19/2001	**0.47**
M010899-278	BM-58 #4	9/14/2001	91.5	11/8/2001	11/9/2001	**400**	0.40	11/27/2001	11/28/2001	**0.12**
M010899-279	BM-58 #5	9/14/2001	92.4	11/8/2001	11/9/2001	**370**	0.37	12/2/2001	12/3/2001	**0.55**
M010899-280	BM-59 #1	9/14/2001	19.0	11/8/2001	11/9/2001	**120**	0.12	12/16/2001	12/17/2001	**0.40**
M010899-281	BM-59 #2	9/14/2001	19.6	11/8/2001	11/9/2001	**100**	0.10	12/2/2001	12/3/2001	**0.15**
M010899-282	BM-59 #3	9/14/2001	18.7	11/8/2001	11/9/2001	**140**	0.14	11/28/2001	11/29/2001	**1.7**
M010899-283	BM-59 #4	9/14/2001	19.1	11/8/2001	11/9/2001	**90**	0.09	11/28/2001	11/29/2001	**0.46**
M010899-284	BM-59 #5	9/14/2001	20.0	11/8/2001	11/9/2001	**130**	0.13	11/26/2001	11/27/2001	**2.8**
M010899-285	BM-60 #1	9/14/2001	54.6	11/8/2001	11/9/2001	**190**	0.19	1/16/2002	1/17/2002	**0.66**
M010899-286	BM-60 #2	9/14/2001	54.8	11/8/2001	11/9/2001	**170**	0.17	1/16/2002	1/17/2002	**<0.050**
M010899-287	BM-60 #3	9/14/2001	53.1	11/8/2001	11/9/2001	**110**	0.11	12/11/2001	12/12/2001	**0.59**
M010899-288	BM-60 #4	9/14/2001	45.4	11/8/2001	11/9/2001	**150**	0.15	1/16/2002	1/17/2002	**3.1**
M010899-289	BM-60 #5	9/14/2001	58.0	11/8/2001	11/9/2001	**120**	0.12	11/29/2001	11/30/2001	**0.37**
M010899-290	BM-61 #1	9/14/2001	37.6	11/8/2001	11/9/2001	**150**	0.15	11/26/2001	11/27/2001	**<0.050**
M010899-291	BM-61 #2	9/14/2001	51.3	11/8/2001	11/9/2001	**120**	0.12	11/26/2001	11/27/2001	**1.8**
M010899-292	BM-61 #3	9/14/2001	57.0	11/8/2001	11/9/2001	**130**	0.13	12/18/2001	12/19/2001	**0.38**
M010899-293	BM-61 #4	9/14/2001	49.0	11/8/2001	11/9/2001	**130**	0.13	12/19/2001	12/20/2001	**1.0**
M010899-294	BM-61 #5	9/14/2001	47.6	11/8/2001	11/9/2001	**100**	0.10	11/20/2001	11/21/2001	**0.26**
M010899-321	SM-16 #5	9/11/2001	48.9	11/8/2001	11/9/2001	**250**	0.25	10/30/2001	10/31/2001	**0.38**
M010899-322	AF-32 #5	9/13/2001	**This sample was not received.**							
M010924-002	R-44 #1	9/13/2001	34.6	11/8/2001	11/9/2001	**310**	0.31	10/30/2001	10/31/2001	**1.8**
M010924-003	R-44 #2	9/13/2001	41.0	11/8/2001	11/9/2001	**290**	0.29	2/4/2002	2/5/2002	**1.3**
M010924-004	R-44 #3	9/13/2001	43.4	11/8/2001	11/9/2001	**280**	0.28	2/4/2002	2/5/2002	**3.0**
M010924-005	R-44 #4	9/13/2001	32.9	11/8/2001	11/9/2001	**300**	0.30	11/6/2001	11/7/2001	**5.1**
M010924-006	R-44 #5	9/13/2001	43.3	11/8/2001	11/9/2001	**270**	0.27	10/30/2001	10/31/2001	**0.61**
M010924-007	A7-32-5	9/13/2001	92.2	11/8/2001	11/9/2001	**290**	0.29	10/30/2001	10/31/2001	**7.2**