Attachment C

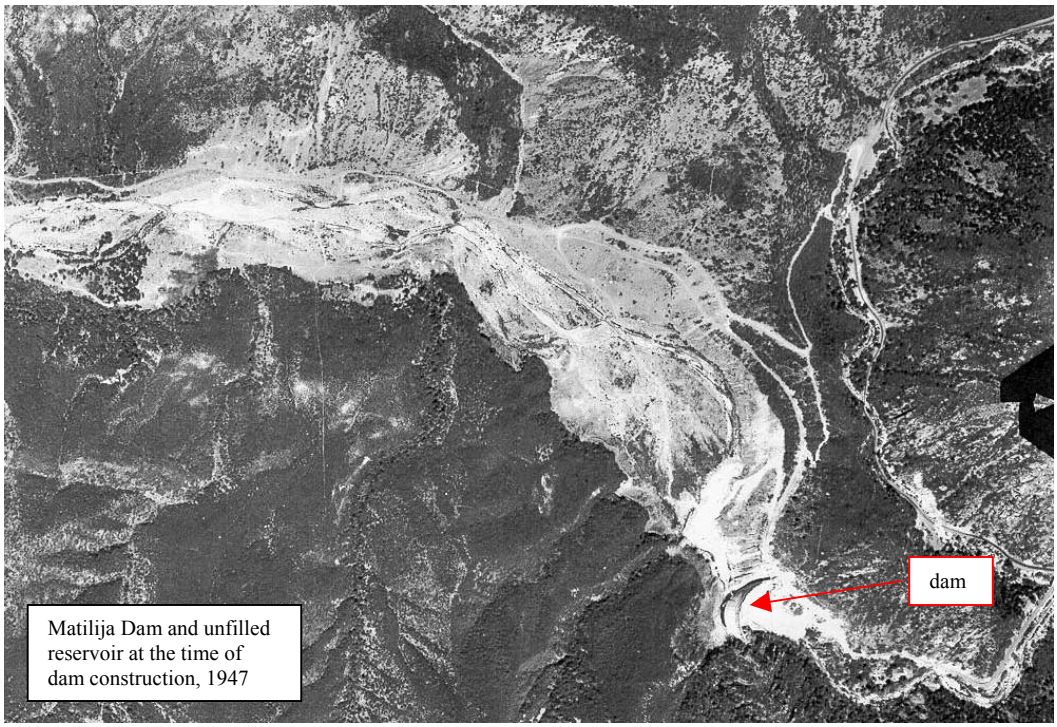
Characterization of Impounded Sediments

US Army Corps
of Engineers

Los Angeles District
Geotechnical Branch

Impounded sediment characterization, Matilija Dam, Matilija Creek watershed, Ventura County, California

Suitability of sediment for beach nourishment, natural release, or upland disposal



Matilija Dam and unfilled reservoir at the time of dam construction, 1947

by
US Army Corps of Engineers, Los Angeles District
Engineering Division, Geotechnical Branch
Geology and Investigations Section
911 Wilshire Blvd, Los Angeles, CA 90017

(mailing addr: CESPL-ED-GG, PO Box 532711, LA, CA 90053-2325
email: mchatman@spl.usace.army.mil
ph. 213-452-3585)

29 April 2002

Contents

Figures

Attachments

Abstract. Impounded sediment of Matilija Dam is under study for a variety of "disposal" options, including several *upland disposal* options, and *beach nourishment*. The U.S. Army Corps of Engineers-Geotechnical Branch (*hereafter* "USACE-Geotech") fall-2001 testing of impounded sediment *quality* (i.e., contaminants) and *gradation* provides a technical footing for further consideration of each disposal option as this feasibility study proceeds.

USACE-Geotech gradation tests of impounded sediments delineate few segregated sand zones. Most have substantial in-mixing of fines and/or coarse material. Depending on the to-be-determined target beach grain-size compatibility criteria, some of the material from the delta front and upstream possibly may be used on beaches. None of the material below the reservoir pool (about ¼ of the total) would be suitable for beach nourishment based on excessive fines. Most of the material in the upstreammost parts of reservoir infilling (about 1/3 of the total impounded sediment) has excessive coarse material and is not suitable for beaches unless processed to remove gravel, cobbles, and boulders, but additional sampling (by trenching) is needed to quantify the coarse fraction. That material ultimately may be shown to be best left in place. There are no formal regulatory criteria to assess beach-suitability of sediments based on contaminants, so USACE-Geotech used the Puget Sound Dredged Disposal Analysis (PSDDA) sediment quality criteria to screen 39 samples of impounded sediments from 15 drill holes. *None of the impounded sediments exceed PSDDA limits for the 81 analytes determined and thus all are suitable for beach nourishment, with regard to contaminants* at this screening level (the analytes include 17 pesticides, 4 butyltins, 7 PCBs, 17 PAHs, 13 phenols, 11 metals, 6 pthalates, TrPH, oil and grease, ammonia, total sulfides, water soluble sulfides, calcium carbonate; in addition, total solids, total volatile solids, and pH were determined). In a few instances, the more rigorous but equally non-regulatory NOAA sediment quality assessment criteria were exceeded by some samples for some analytes; those instances are documented. Historical research and regulatory database research determined no deleterious past use of the reservoir's contributory watershed: *no* metals mining or prospecting, no industrial development or agriculture, extremely limited commercial development. Past recreational use of the reservoir occurred; in that era, DDT likely was used for mosquito control. DDT was detected in some samples.

Prior to any sampling, EPA reviewed the Sampling and Analysis plan and stated that the Plan was suitable for this phase of study but that additional sediment *quality* and *gradation* tests would have to be performed on the sediment as it is mined for transport to the beach, so as to more precisely qualify it. There are no indications through testing or research to date that any of the impounded sediments qualify as *hazardous waste* (the upland disposal criteria) but for verification, some leachate tests for 40 CRF, Part 261 analytes are warranted prior to upland disposal.

The problem. Matilija Dam was built in 1947 for water supply. Deterioration of the dam's concrete (see attachment 1's fig. 1) led to two dam notching exercises in the past, to reduce stresses on the upper part of the dam. This reduced reservoir capacity. Historical aerial photography from 1947 through 2000 (figs. 1, 2, 3, 4, this report) demonstrates an 18-year period between 1960 and 1978 over which most of the remaining reservoir capacity was lost due to infilling with sediment, this following a 13-year time period (the first thirteen years of the reservoir's existence) in which there was very little sedimentation. From 1978 to 2000, a twelve-year period, there was little additional change in the volume of impounded sediment (see figs. 3, 4), but the damage has been done: the reservoir is nearly full, with just 300- to 400 ac-ft of the original 6,000 ac-ft of capacity remaining.

Goals of the sediment sampling and contaminant testing. Actions under consideration regarding Matilija Dam include demolition. If the dam were to be removed, the approximately 6

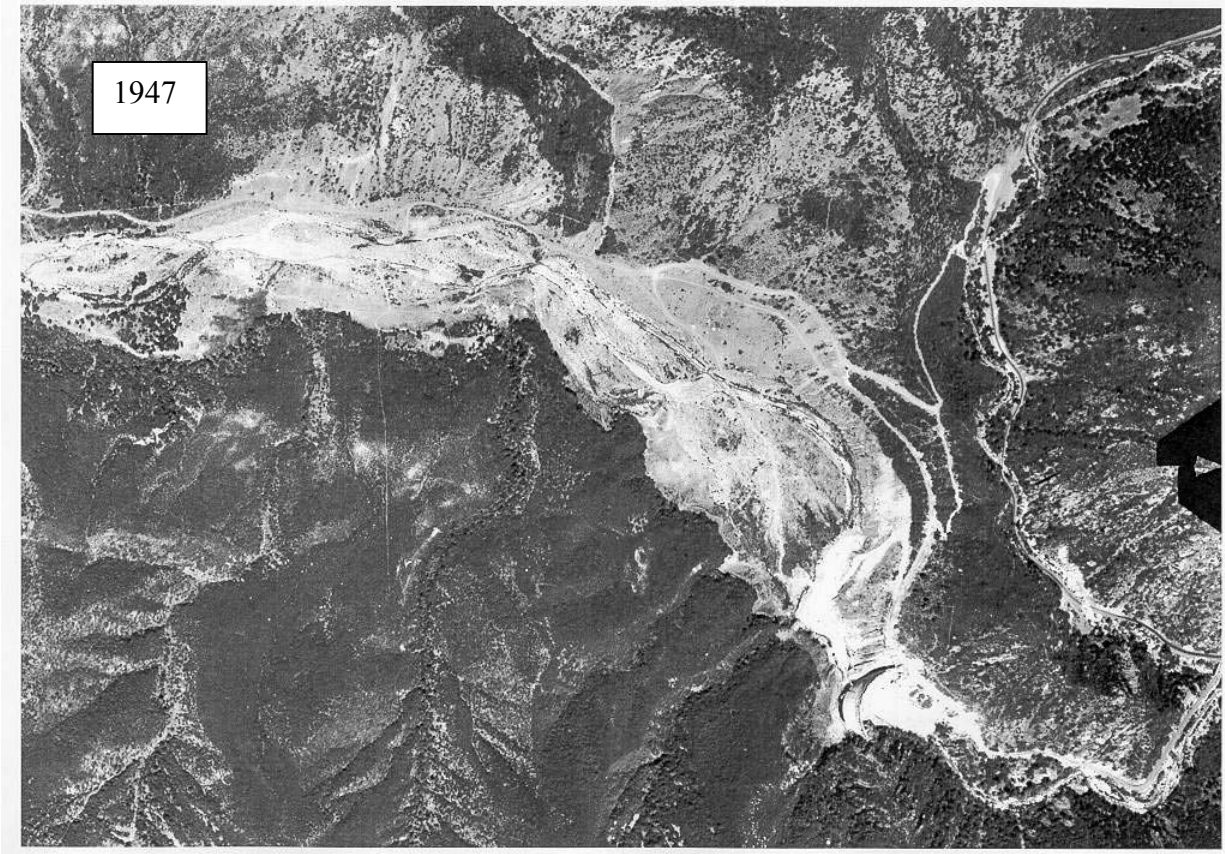


Figure 1.--Matilija Reservoir in 1947, with unfilled reservoir. Note dam in lower right of frame, as pointed out in the cover photo of this report. Photograph by "Tubis", supplied by EDR, Inc's. aerial photo database search.

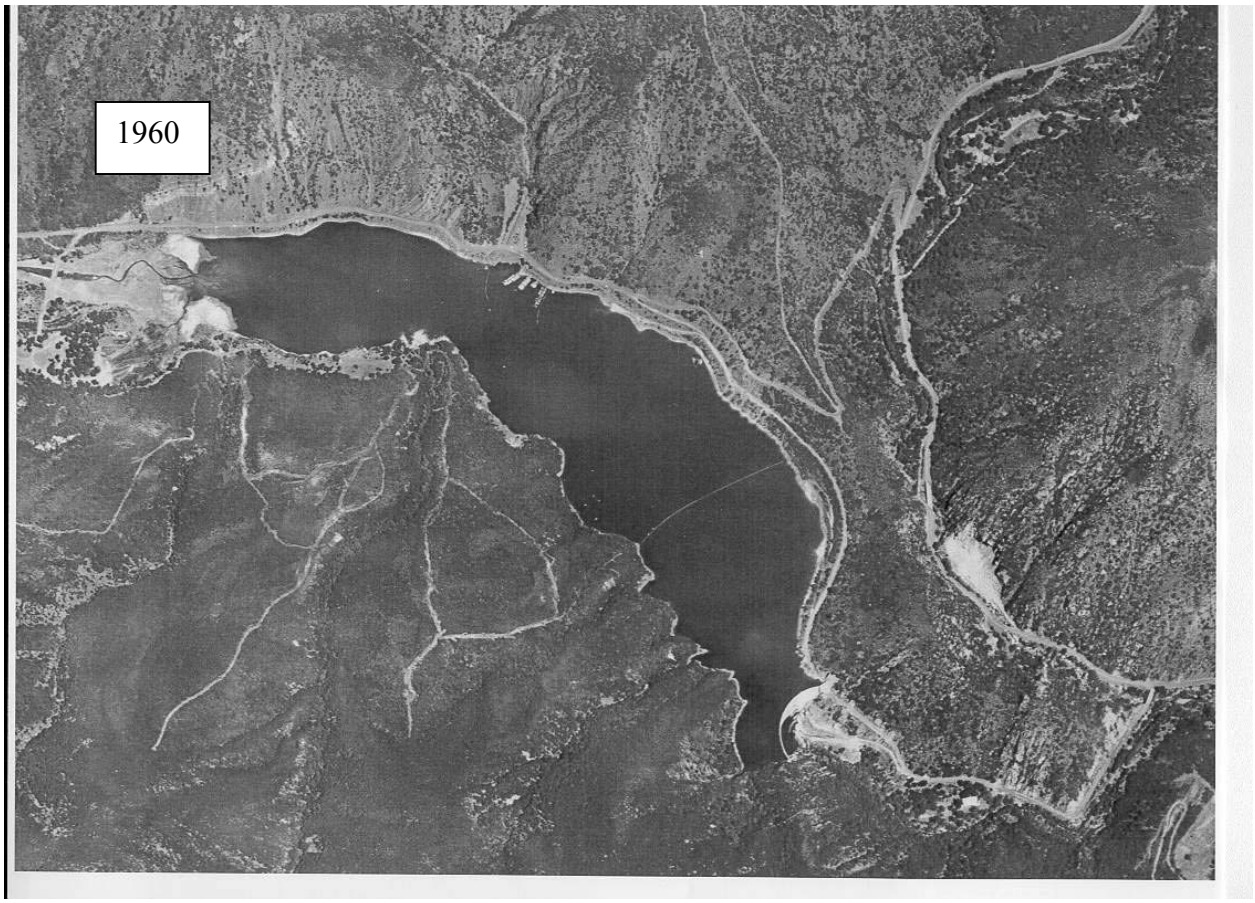


Figure 2.-- Matilija Reservoir in 1960. Note dam in lower right of frame, boat docks on the reservoir, top, center of frame, small delta in upstreammost part of reservoir (far left of frame). Photograph by "Mark Hurd", supplied by EDR, Inc's. aerial photo database search.

o

Figure 3.-- Matilija Reservoir in 1978. Note dam in lower right of frame, very small remnant of reservoir pool. Photograph by "Pacific Air", supplied by EDR, Inc's. aerial photo database search.

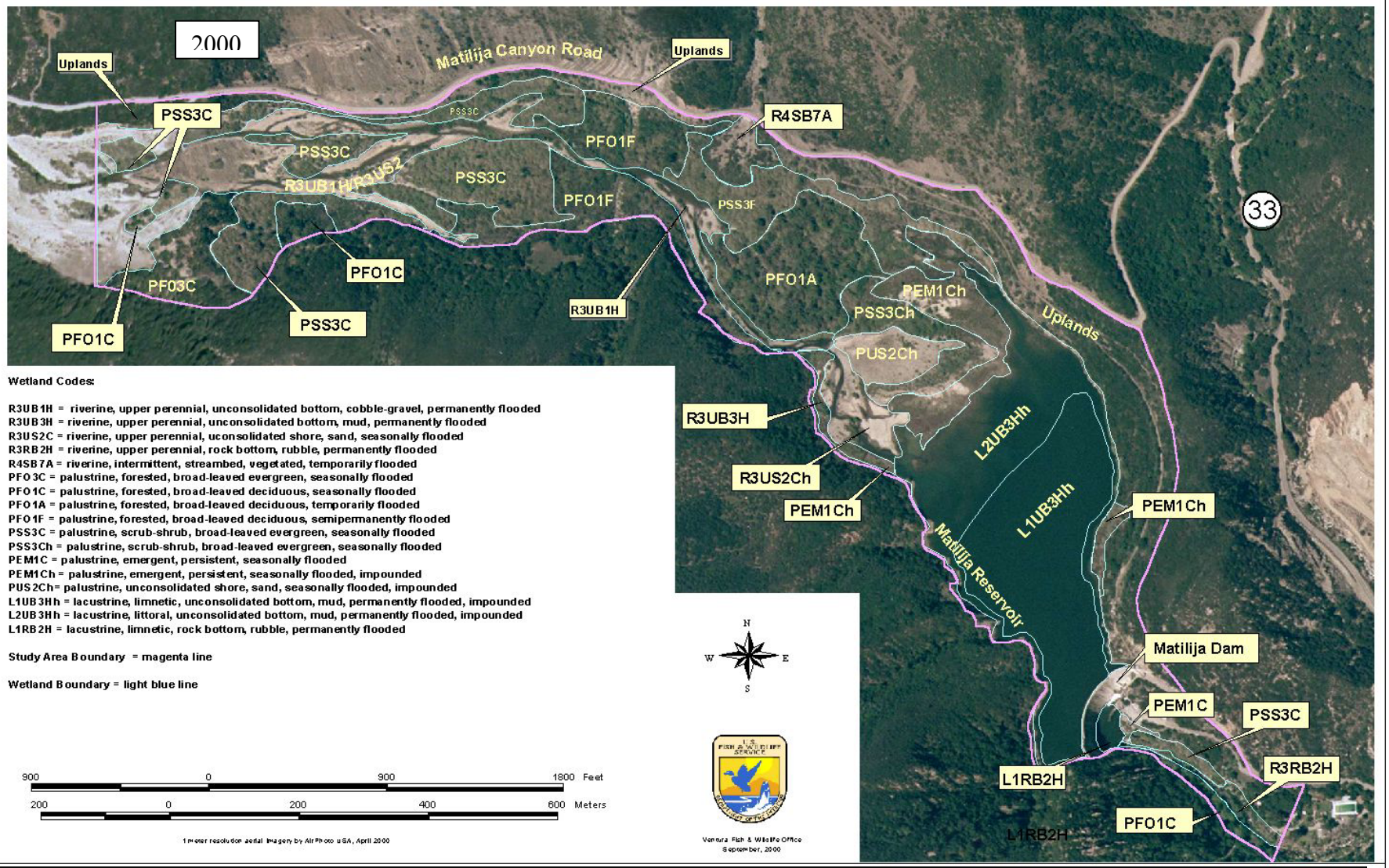


Figure 4.--Matilija Reservoir in April 2000. Note water level is higher than in the 1978 photo (fig. 3). Photograph, annotations from U.S. Fish and Wildlife Service.

oo

o
million cu yds of sediment impounded behind it would have to be dealt with. With the dam removed, impounded sediments would meet one or more of three possible fates:

- 1) natural erosion would move them down Matilija Creek, ultimately to the ocean;
- 2) selective mining, sorting, and transport would take suitable portions for any of a variety of uses, including:
    - *near-site surface terracing with stabilization on the south bank of the reservoir area;*
    - *land-fill cover and related uses;*
    - *land-fill disposal;*
    - *commercial aggregate and stone;*
    - *beach nourishment;*
- 3) some combination of 1) and 2); for example, at least some part of the downstream-most sediments at the dam face would have to be excavated and moved to allow room for demolition, even if natural erosion is selected as the ultimate fate.

In August and September 2001, these impounded sediments were drilled and sampled by the U.S. Dept. of Interior, Bureau of Reclamation (hereafter, "*Reclamation*") at 15 locations, utilizing an exploration program by Reclamation and a gradation (i.e., particle-size analysis) sampling plan and a Sampling and Analysis Plan[1] for potential contaminants by the US Army Corps of Engineers, Geotechnical Branch (hereafter "*USACE-Geotech*"). The exploration was technically rigorous, requiring both truck- and barge-mounted drill apparatus and sensitivity for work performed in a wetland environment containing at least one threatened species (the Southern California red-legged frog). The USACE-Geotech Soils Testing Laboratory in El Monte, CA, preformed the gradation tests on all tested samples (83), and USACE-Geotech used four different contracted contaminant-testing laboratories (see attachment 2) for the potential contaminant analyte testing. Contaminant test results are in attachment 3. Collectively, assessment of the results of these tests allow it to be ascertained whether sediments generally are suitable for the various uses under consideration but additional monitoring sampling would take place during any excavation. The drilling and sampling program is documented in a report by Reclamation (2002).

Sampling and analysis plan and related findings. The Sampling and Analysis Plan developed prior to inception of field work by USACE-Geotech (attachment 1) lists the sampling protocols used in the field. The Plan includes research into past uses of the watershed upstream of the impounded sediments, and heavy factoring of perceived past uses into the chosen analytical suite applied to samples. The Plan was reviewed and accepted by EPA. Past use of the watershed is documented, below.

Past use of the watershed and existing natural conditions. Currently, the approximately 55 sq mi contributory watershed of the impounded reservoir sediments is about 85% comprised of the Matilija Wilderness (see fig. 5), a largely pristine area drained by Matilija Creek and the North Fork, Matilija Creek. The other approximately 15% of the contributory watershed is composed of relatively short streams that flow northward off the north slope of the Santa Ynez Mountains, and south-east draining Rattlesnake Canyon, which is about 1-½ mi long. About 2-½ square miles of the contributory watershed is privately held, semi-developed land with cabins and other

[1] See attachment 1 for the complete sampling and analysis plan.

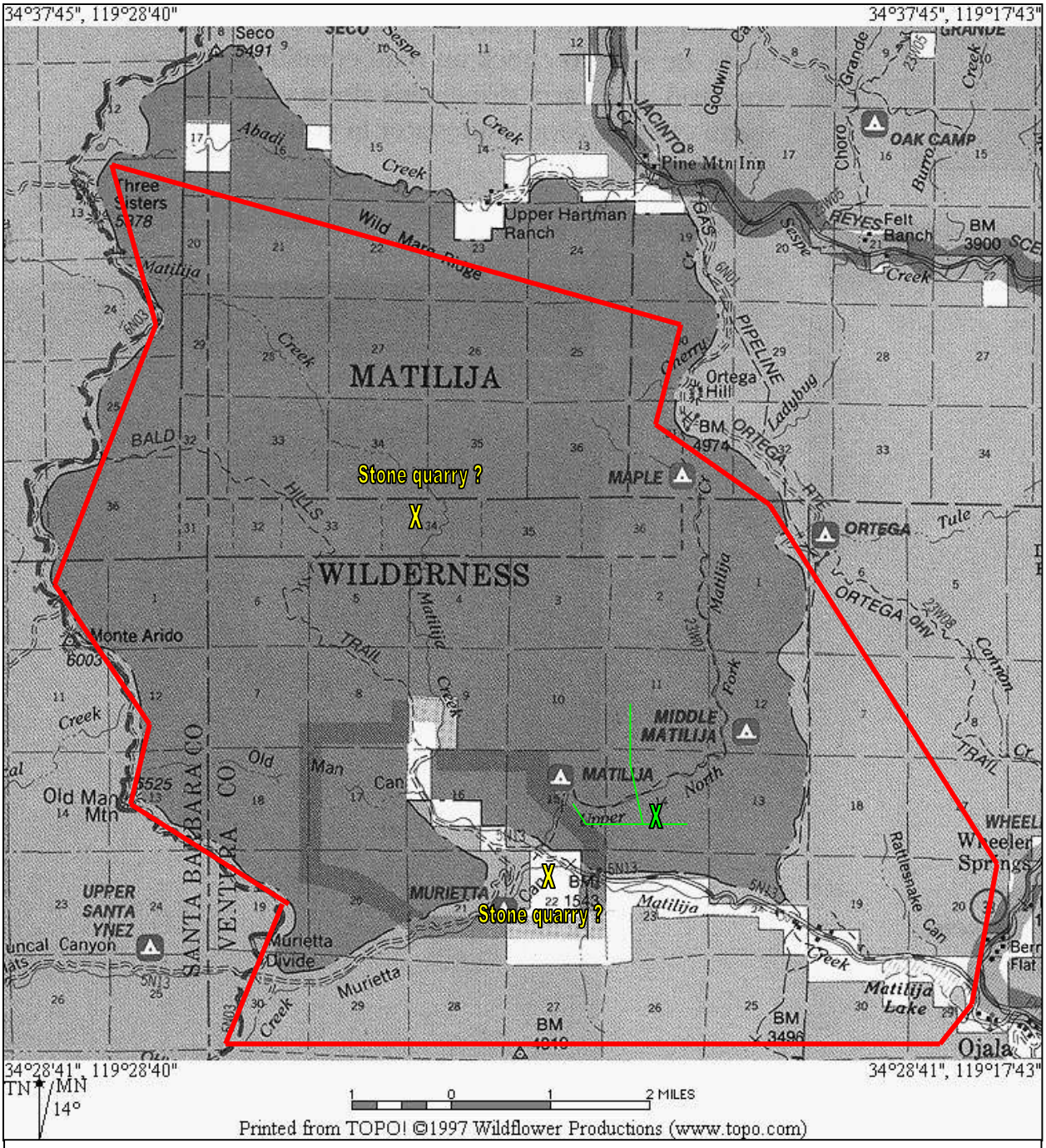


Figure 5.--The approximated contributory watershed of Matilija Reservoir (inside the red polygon). Note Matilija Creek, North Fork, Matilija Creek, Rattlesnake Canyon, and the Reservoir (labeled as Matilija Lake" on above map). White areas on map for seven miles upstream of dam are private lands, some of which is developed into home and cabin sites. Note two yellow "X's"; southern one is excavation seen on 1959 and 1978 aerial photos; northern one is much larger and seen on 1959 aerial photos. Both suspected to be stone quarries. Note green lines and green "X", which are surface scrapings seen on 1959 aerial photos by Robinson: possible mineral prospecting. Original base from US Forest Service map; this figure constructed with a digital base of that Forest Service map taken from a Wildflower Productions' TOPO! CD.

residences (note the white "privately held" area on fig. 5, along Matilija Creek immediately upstream from the reservoir).

Agricultural use. It was considered that the privately owned, yet rural land (fig. 5, white areas) extending for eight miles upstream of the reservoir, or some part of the Los Padres National Forest (all shaded land, dark and light, on fig. 5) might have been used for agricultural purposes in the past. Agricultural use suggests possible pesticide application, and pesticide application suggests possible impounded sediment contamination. Therefore, all reservoir sediment samples collected in 2001 were tested for a suite of pesticide compounds (see attachment 3). Aerial photos of the study area were examined for any evidence of past agricultural use. Available NRCS (U.S. Dept. Agriculture, Natural Resource Conservation Service) aerial photos included sets from:

- 1953 (black-and-white, partial coverage with no index; does not cover study area);
- 1959 (black-and-white, covers Matilija Creek for first 3 miles upstream of the dam);
- 1978 (black-and-white, full coverage of the study area);
- 1996 (color, covers Matilija Creek for first 6 miles upstream of the dam).

These photographs contain no evidence of agricultural land use. See also "*additional aerial photo search*" section, below.

Recreational use. The reservoir, now of very limited utility as a body of water, was not always in this condition (see fig. 2). Prior to silting in, Matilija Reservoir was an active recreational facility, and, as such there likely was pesticide spraying in the area for mosquitoes. If that was done, DDT-based pesticides very likely would have been used (Steve Jewitt, District Conservationist, NRCS, Somis Field Ofc., Somis CA, personal commun. to Mark Chatman, USACE-Geotech, 9 April, 2002). This is an alternative possibility for introduction of DDT into the reservoir sediments. DDT is present.

Mining, with discussion of general geologic setting. The entire contributory watershed is under tectonic stresses that force connate Ventura Basin waters to the surface in several locations as cool-water, sulfurous, *non*-metalliferous springs (Robert Lambeth, personal commun. to Mark Chatman, USACE-Geotech, 9 April 2002). Bedrock is exposed or under a thin veneer of soil in the vicinity of the reservoir. This bedrock is composed of interbedded limestones, sandstones, and shales. Prior to designating the Matilija Wilderness, a comprehensive all-minerals resource survey was done by the U.S. Bureau of Mines (Lambeth, 1982), a report that was instrumental in determining the absence of any significant mining in the contributory watershed to the reservoir. Within 1-½ mi of the impounded sediments of Matilija Reservoir are three locations at which limestone prospects exist and one for sandstone (fig. 6). The sandstone site is outside of the contributory watershed. Other stone production occurred farther upstream (fig. 5). One prospect is known for uranium minerals (fig. 6); it is not in the contributory watershed.

Limestone. The three limestone prospects, known as the Argilla group, Matilija group, and Ventura Cement Co. deposit (sites 1, 2, 3, respectively, on fig. 6) are sites at which Eocene-age algal limestone of the Sierra Blanca Formation were suggested, seventy-years-ago, to be potential sources of high-quality, dense, industrial limestone, but the localities, only approximately located, have never been developed to the point where production took place (Weber and others, 1973, *citing* Tucker and Sampson, 1932, pp. 266-268, *and citing* Bowen, *o*

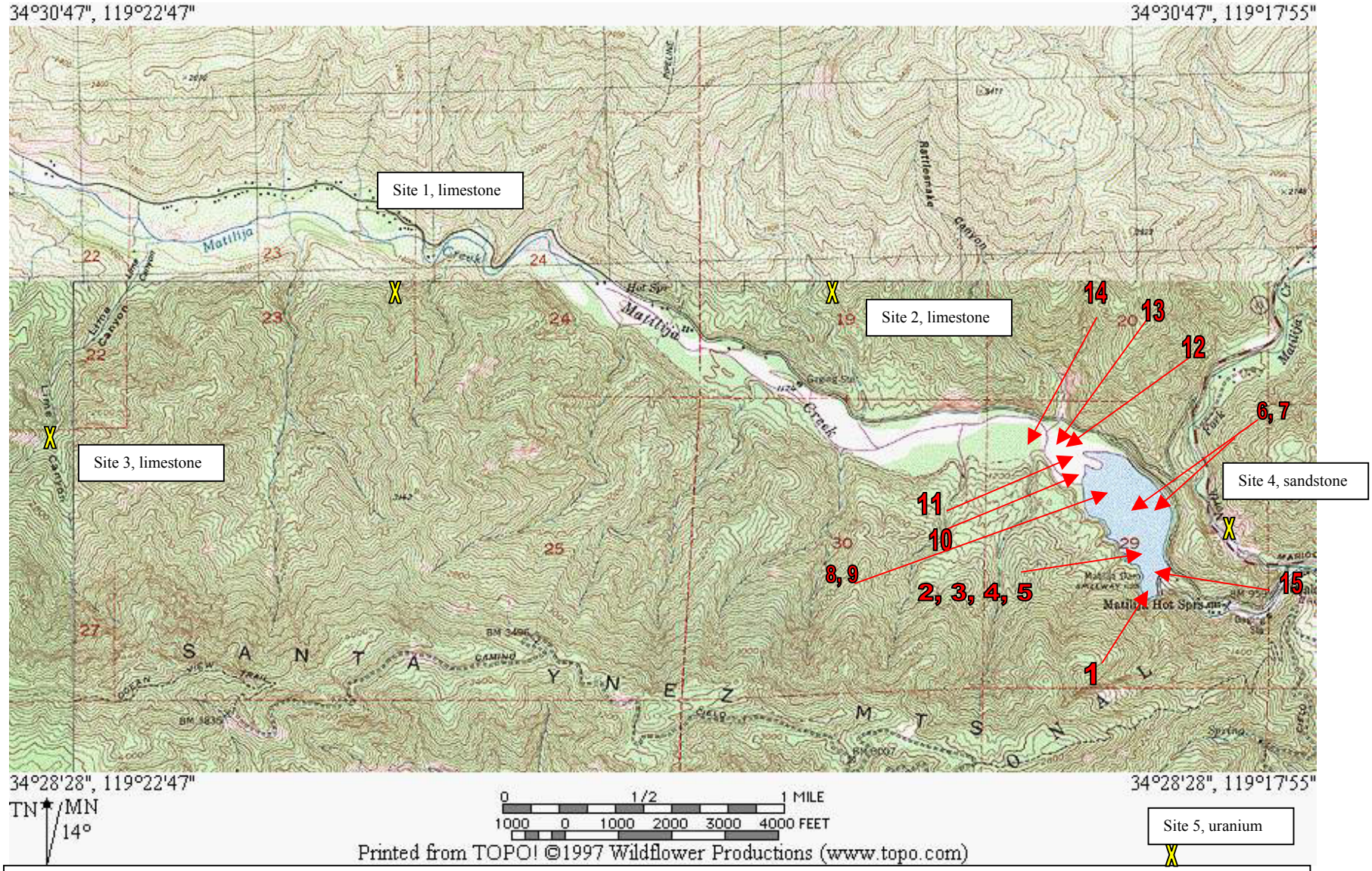


Figure 6.--The closest mineral prospect sites in the contributory watershed of Matilija Reservoir (see others on fig. 5). Note Matilija Dam and the Reservoir. Shown by yellow 'X' with annotation. Also shown are 2001 Reclamation drill sites (red nos. 1-15; these are abbreviations. Hole MDH-02-01 is shown as "2" on map; hole MDH-08-01 is shown as "8", etc.). Original base from US Geological Survey Matilija 7.5 minute quadrangle map; this figure constructed with a digital base of that USGS map taken from a Wildflower Productions' TOPO! CD.

o
1966, p. 229). The Ventura Cement Co. deposit (site 3, fig. 6) is apparently the location anecdotally cited as the locus of past 'mining in Lime Canyon'. The Matilija group (site 2, fig. 6) is apparently the location of anecdotally cited past 'gold mining in Rattlesnake Canyon', which, in fact, is *un*related to metals mining or prospecting. These prospects are mentioned here for completeness and also due to the fact that at least the *Matilija* and *Ventura Cement* localities are anecdotally and erroneously confused with past 'metals mining'. The literature and discussions with professionals who performed comprehensive mineral resources field assessments in the past in the contributory watershed indicate there *has not* been any metals-related mining or prospecting. The fact that all three of these limestone prospect areas are within the contributory watershed of the reservoir is irrelevant; many acres of naturally occurring limestone bedrock also is exposed and none of it is a factor that could potentially degrade the quality of sediments accumulated in the reservoir.

Sandstone. The sandstone locality (site 4, fig. 6) reportedly utilizes Eocene-age Coldwater Formation sandstone as riprap and other stone products (Weber and others, 1973, p. 63). Between 1949, the year of initial operations at the mine, and 1980, 400,000 tons (short tons) of "Matilija sandstone" had been mined there. In 1980 the site was known as the Schmidt Quarry (Lambeth, 1982, p. 8). By January 2001, the location was renamed "Ojai Quarry", and was still in operation, shipping broken stone products produced from talus or colluvial[2] materials mined from benches terraced high upon the hillside (USACE-Geotech field observation, Jan. 2001). Ojai Quarry, mentioned here because of its proximity to the reservoir, is *not* within the contributory watershed of Matilija Reservoir impounded sediments and therefore is irrelevant to the quality of sediments impounded in the reservoir. But the quarry may be of value to this study in that it could be a point of disposal/utilization of rock from within the impounded sediments in the event that one of the many the mining-segregation-transport sediment-removal scenarios actually would be put into place in the future.

Unspecified types of stone. Lambeth (1982, p. 8) mentions an unspecified type of stone produced in small quantities within the Matilija Wilderness "for local use" but does not give locations. The aerial photo review by USACE-Geotech located two excavations (see fig. 5), where it is likely that stone was produced. The northern location is substantially larger than the southern one.

Uranium. A uranium-bearing mineral known as torbernite [hydrated copper-uranyl phosphate ($Cu(UO_2)_2(PO_4)_2 \cdot 10H_2O$)] occurs in a prospect on the bluffs at one location above Matilija Reservoir. The visible torbernite crystals[3] are exposed in a series of prospect trenches (Robert Lambeth, personal commun. to Mark Chatman, USACE-Geotech, 9 April 2002). The location described by Mr. Lambeth possibly is the same cited and *approximately* located on a map in Weber and others (1973, pl. 3 and p. 66, *citing* Troxel and others, 1957, p. 676), about a mile and a quarter south-southeast of the Matilija Dam (see site 5, fig. 6, this report), although the mineral description from Troxel and others (1957) is different: "carnotite and other uranium minerals ... occur in lenses or pods of carbonaceous material in sandstone beds that lie in the gradational

[2] Colluvium is broken rock formed naturally by mass wasting and weathering; in other words the rock has *not* been comminuted by the actions of flowing water, and thus is *not* alluvium.
[3] Torbernite typically occurs as green, flat, tabular, fluorescent crystals (Amethyst Galleries, Inc, 2002, *website data*).

contact between the Coldwater and Sespe Formations." There is no report of any mineral production from the site. The location was not field checked for this paper, but if the approximately located site on the map by Weber and others (1973) is correct, then this prospect *is not* within the contributory watershed of the impounded sediments at Matilija Reservoir, and is such a case would be irrelevant to the quality of the impounded sediments: the Weber and others (1973) plot is on land tributary to Kennedy Canyon which flows into the Ventura River directly and downstream of Matilija Dam. Torbernite is a naturally occurring copper-and-uranium mineral. No tests specifically for uranium were done on any of the collected sediment samples from this study, but copper was tested for in all the collected sediment samples from the reservoir. Copper, therefore, can be used in this instance as a tracer or a double check for anomalous torbernite contribution to the impounded sediments. Copper was not substantially elevated in any samples; in three samples, copper concentrations slightly exceed the NOAA ERL, as discussed below.

Systematic bulldozer trenching in the contributory watershed was apparent in a set of 1959-era aerial photographs (see text, below, under "*additional aerial photo search*"); these may have been for uranium. The areas were largely overgrown in a 1994 set of photos (see text below) and not visible in the 1996 NRCS set of photos.

HTRW Regulatory database survey. In a search for potentially problematic past land use that could involve HTRW[4], a forty-one-database search of regulated activities/commodities was contracted to EDR, Inc., Southport, CT, in April 2002. Regulated activities and commodities covered in the search include handlers, storers, or transporters of hazardous materials and waste, State and Federal environmental protection problem sites, such as CERCLA, USTs and leaking USTs, sites of known or suspected groundwater contamination, sites of hazardous materials spills or cleanups. For complete listing of databases searched, see attachment 4. The search area was the first nine miles of Matilija Creek upstream from the dam, and for 1 mile on either side (fig. 7). The area selected for this search was delineated on the basis that it is the only place in the contributory watershed where there has been any development. There were no findings of significance in the database search. The only site inside of or upstream from the study area found via the database search is "Pro Ex. Fork Lift Propane", 3260 Matilija Canyon Road (Ojai, CA), listed because it is authorized to hold as much as 500 gal. of propane gas on the property (see fig. 7, site no. 1), according to the "business plan" filed with Ventura County Environmental Health Div.

Sanborn maps. In further research with regard to past, potentially deleterious activities, a search of Sanborn fire insurance maps was done under contract by EDR, Inc. There are no Sanborn maps for this area.

o

[4] potentially *h*azardous, *t*oxic, or *r*adioactive *w*aste

o
o
oo

Figure 7.--Regulatory database search area (green-dotted polygon) by EDR, Inc., extends for 8 miles upstream of the dam along Matilija Creek and one mile on either side of the creek. Red, numbered triangles are the findings from EDR search (see details in attachment 4). Triangles #2 and #3 are irrelevant as they are downstream of the reservoir. Triangle #1 is discussed in text, above ("HTRW regulatory database survey"). for more detail, use WORD's "zoom" feature. If the zoom has not been activated, click on view, toolbars, standard, down arrow, add more buttons, and click "zoom".

o

Additional aerial photo search. In addition to the 1953, 1959, 1978, and 1996 sets of NRCS aerial photos (see "agricultural use" section of text, above), a comprehensive search for aerial photos was contracted to EDR, Inc. The results are in the chart below

Aerial photo search results and findings, from EDR, Inc. databases.			
year/source	type/scale	coverage	assessment by USACE-Geotech
1947 / Tubis	black-and-white 1" = 666 '	Dam under construction and unfilled reservoir, Matilija Creek only, upstream to Lime Canyon	No evidence of agriculture or mining
1959 / Robinson	black-and-white 1" = 555 '	Dam and Matilija Creek only, upstream to Murrieta Canyon	No evidence of agriculture; evidence of possible bulldozer scrapings for uranium prospecting(?) shown on fig. 1 (overgrown by 1994); recreational use of reservoir (boating); delta barely starting to form at far upstream end of reservoir.
1960 / Mark Hurd	black-and-white 1" = 555 '	Dam and Matilija Creek only, upstream to Lime Canyon	No evidence of agriculture or mining; delta barely starting to form at far upstream end of reservoir; recreational use of reservoir (boating)
1978 / Pacific Air	false color (infrared?) 1" = 666 '	Dam and Matilija Creek only, upstream to Old Man Canyon	No evidence of agriculture or mining; reservoir nearly the same areal extent as in 2001
1989 / Pacific Air	black-and-white 1" = 1,000 '	Dam and Matilija Creek only, upstream of reservoir to Lime Canyon	No evidence of agriculture or mining; water level high
1994 / U.S. Geological Survey	black-and-white 1" = 666 '	Dam and Matilija Creek only, upstream of reservoir to Old Man Canyon	No evidence of agriculture; small excavation and dirt road on ridge north of Matilija Creek seen, about 1,000 ft south of the limestone #2 pit shown on fig. 2, this report; possible limestone prospect.

Suitability of sediments for beach nourishment and natural erosion. Numerous Southern California recreational beaches are regularly in need of good sand sources to replenish sand lost to a variety of causes. This replenishment is known as *beach nourishment*. Of all the possible fates for the Matilija Dam impounded sediment, beach nourishment requires the most rigorous testing for potential contaminants (see attachment 3 for analytes list) because sediment, if placed on a beach, would be in and near the ocean and in sensitive littoral and benthic environments, to be populated by a variety of ocean organisms. Caution with regard to keeping potential contaminants out of that part of the environment is very important. The same testing regime should be applied to assess the impacts of natural erosion because, ultimately, the sediment would enter the ocean and at least some part would become incorporated into beaches. In addition to potential contaminants, the gradation, or particle-size distribution also must considered. Gradation is covered in subsequent sections of this text.

Specific analytes chosen for testing. As seen in attachment 3, specific analytes were chosen for testing. The list of analytes was selected on the follow considerations. The "full suite" of analyses (all analytes listed in attachment 3, including metals, pesticides, butyltins, phthalates, PCBs, PAHs, and phenols, plus some basic physical and chemical characteristics, 90 tests in all) is suitable as a first-level screening of sediment for all end uses, verifying, for example that the material tested would or would not be suitable (in terms of contaminants only) for beach nourishment or upland disposal. But the full suite is costly to run, and so was applied selectively

to only certain samples among the 15 drill sites [see drill sites on fig. 6, above], using criteria of location and field-identified gradation. Initially, as per the Sampling and Analysis Plan (attachment 1), cross-hole compositing was to be applied so that these tests could be considered as a screening of the overall mass of generally silty material or generally sandy material. In practice, no cross-hole or intra-hole compositing was applied in the field. Some samples to which the full suite was applied are mostly silts; others are mostly sands (see logs, Reclamation, 2002). A summary of the holes, environments, and tests is summarized in the chart below:

Summary of HTRW tests run.			
hole	***environment***	***no. of samples from hole/ type material***	***full or partial suite of tests***
1	reservoir, below existing pool, near dam face	2 / mostly silt	all tested with "***full*** suite"
2	reservoir, below existing pool	3 / mostly silt	all tested with "partial suite"
3	reservoir, below existing pool	3 / mostly silt w/ one sandy zone	all tested with "partial suite"
4	reservoir, at sediment "delta front"	1 / mostly silt	all tested with "partial suite"
5	reservoir, below existing pool	2 / mostly silt w/ one sandy zone	all tested with "***full*** suite"
6	reservoir, near sediment "delta front"	1 / mostly silt	all tested with "***full*** suite"
7	reservoir, near sediment "delta front"	1 / silt zone and major sandy zones	all tested with "partial suite"
8	coarser materials upstream of "delta front"	3 / half to mostly sand	all tested with "partial suite"
9	coarser materials upstream of "delta front"	4 / half to mostly sand; w/ a silt zone	one tested with "***full*** suite"; the rest with "partial suite"
10	coarser materials upstream of "delta front"	4 / sand, silt, and gravel zones	all tested with "***full*** suite"
11/11B	coarser materials upstream of "delta front"	3 / sand, silt, and gravel zones	all tested with "partial suite"
12	coarsest materials, upstream end of sediment	1 / sand, silt, and gravel zones	all tested with "partial suite"
13	coarsest materials, upstream end of sediment	1 / sand, silt, and gravel zones	all tested with "partial suite"
14	coarsest materials, upstream end of sediment	2 / sand, and gravel zones	all tested with "partial suite"
15	reservoir, below existing pool	8 / mostly silt w/ one sandy zone	all tested with "partial suite"

Based on the past use of the contributory watershed, it was thought by USACE-Geotech and the EPA to be effective and sufficient to test most samples for a reduced number of analytes, or a "partial suite" of tests. The partial suite includes eleven metals[5] of environmental interest, twenty-one different chlorinated pesticides[6], pH, ammonia, percent total solids, percent volatile solids, total organic carbon, total sulfides and soluble sulfides, oil and grease and TrPH[7]. The partial suite was selected to target potential contaminants most likely to occur in the study area and upstream contributory watershed, based on the known past use and natural conditions:

- no industry or commercial development, such as factories, gas stations, or dumps in the reservoir area, or upstream;
- land has been within the National Forest system for many years, with 85% of contributory watershed designated "Wilderness";
- permissively anticipated past agricultural land use (with pesticide application);
- anecdotal reports of metals prospecting;

[5] Antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc.
[6] See attachment 3.
[7] Total recoverable petroleum hydrocarbons.

- hot springs in the vicinity of the dam, suggesting possibility of naturally-occurring metals migration.

Thus, from the above list, the partial suite of tests focused on metals and pesticides. In all, over $48,000 worth of lab tests were run for analytes; another $2,700 was spent on gradation analyses.

Test results and assessment. Results in attachment 3, below, are organized by drill hole number. Locations of the holes are shown on fig. 6. All holes bear the prefix "MDH-xx-01" in the table below, which stand for "*Matilija Drill Hole-xx (hole number)-and "01" (for 2001, the year of the drilling)*". Hole 11B is a continuation of hole 11. All drilling was done by the U.S. Dept. of Interior, Bureau of Reclamation, in August and September, 2001. Descriptions of the hole locations are in the chart, above ("*Summary of HTRW tests run*").

There are not national criteria or widely-applied numerical tools for assessing test results, nor are there such specific standards for southern California. Therefore the *sediment quality guideline* ("SQG") known as Puget Sound Dredged Disposal Analysis (PSDDS), developed by a multi-agency[8] consortium (PSSDA, 2000), was applied to the test results as a screening standard. PSDDS is an informal standard, not a regulated one. Applying PSDDS, it can be seen from attachment 3 that in no instance do the concentrations of any analyte exceed Screening Level (SL) or Maximum Level (ML) concentrations developed under PSSDA (see SL and ML columns in attachment 3). In that regard, based on potential contaminants only, ***any*** *of the sampled material in Matilija Dam* ***would be suitable*** *for use on a beach or for natural release that would eventually transport it to a beach*. EPA will decide, based on these data, whether Tier III (biological testing) is needed prior to any actual beach application, and has already stated that additional sampling for contaminants (Tier II sampling) must be done while materials are dewatered and prepared for selectively mining and transport to a beach. Gradation is discussed later in this report.

USACE-Geotech also compares test results to another, more rigorous, yet still informal SQG developed by NOAA[9] (1999), and documented in Long and others (1995), by which "Effects Range - Low" (ERL) and "Effects Range - Median (ERM)" concentrations are recognized. Applying NOAA's ERLs and ERMs, it can be seen from attachment 3 that in no instance do the concentrations of any analyte exceed ERMs (see ERL and ERM columns in attachment 3). In several instances, nickel exceeds the ERL; in a few instances DDT components or total chlorinated pesticides exceeds the ERL; and rarely, copper, mercury, or and arsenic exceed the ERL. In two instances, specific PAHs exceed the ERL (see chart below). It is not unusual for sediment testing in southern California to encounter nickel and DDT components in exceedance of the ERL.

Chain-of-custody forms for these samples are available for examination at USACE-Geotech.

[8] US Army Corps of Engineers, Seattle District; U.S. Environmental Protection Agency, Region 10; Washington Dept. of Natural Resources; and Washington Dept. of Ecology.
[9] National Oceanic and Atmospheric Administration.

Sample test results exceeding NOAA ERLs.			
Hole / sample no.	***Analyte - quantity***	***ERL***	***Note***
Nickel			
01-01 / 28.3- 33.3 ft	Nickel 23.5 mg/kg	20.9 mg/kg	n/a
01-01 / 73.3- 78.1 ft	Nickel 22.4 mg/kg	20.9 mg/kg	n/a
02-01 / 23- 28 ft	Nickel 22.6 mg/kg	20.9 mg/kg	n/a
02-01 / 63- 68 ft	Nickel 21.5 mg/kg	20.9 mg/kg	n/a
05-01 / 18- 23 ft	Nickel 26.9 mg/kg	20.9 mg/kg	n/a
06-01 / 18- 23 ft	Nickel 27.1 mg/kg	20.9 mg/kg	n/a
07-01 / 21- 23 ft	Nickel 22.5 mg/kg	20.9 mg/kg	n/a
10-01 / 22.8- 27.8 ft	Nickel 23.5 mg/kg	20.9 mg/kg	n/a
11-01 / 52.7- 55 ft	Nickel 22.1 mg/kg	20.9 mg/kg	n/a
11B-01 / 33- 33.5 ft	Nickel 22.5 mg/kg	20.9 mg/kg	n/a
12-01 / 23- 24 ft	Nickel 21.6 mg/kg	20.9 mg/kg	n/a
14-01 / 13.5- 18 ft	Nickel 22.1 mg/kg	20.9 mg/kg	n/a
14-01 / 18- 21.5 ft	Nickel 22.3 mg/kg	20.9 mg/kg	n/a
15-01 / 18- 28 ft	Nickel 22.2 mg/kg	20.9 mg/kg	n/a
15-01 / 28- 38 ft	Nickel 22.6 mg/kg	20.9 mg/kg	n/a
15-01 / 38- 48 ft	Nickel 23.7 mg/kg	20.9 mg/kg	n/a
15-01 / 48- 58 ft	Nickel 26.6 mg/kg	20.9 mg/kg	n/a
15-01 / 58- 68 ft	Nickel 26.2 mg/kg	20.9 mg/kg	n/a
15-01 / 68- 78 ft	Nickel 27.9 mg/kg	20.9 mg/kg	n/a
15-01 / 78- 85 ft	Nickel 34.5 mg/kg	20.9 mg/kg	n/a
Copper			
05-01 / 18- 23 ft	Copper 34.2 mg/kg	34 mg/kg	n/a
15-01 / 68- 78 ft	Copper 38.0 mg/kg	34 mg/kg	n/a
15-01 / 78- 85 ft	Copper 42.1 mg/kg	34 mg/kg	n/a
Mercury			
04-01 / 18- 23 ft	Mercury 0.19 mg/kg	0.15 mg/kg	n/a
09-01 / 52.7- 55 ft	Mercury 0.18 mg/kg	0.15 mg/kg	n/a
11-01 / 52.7- 55 ft	Mercury 0.153 mg/kg	0.15 mg/kg	n/a
15-01 / 58- 68 ft	Mercury 0.195 mg/kg	0.15 mg/kg	n/a
Arsenic			
15-01 / 78- 85 ft	Arsenic 8.7 mg/kg	8.2 mg/kg	n/a
Total chlorinated pesticides			
01-01 / 73.3- 78.3 ft	Total chlorinated pesticides 12.3 ug/kg	6.8 ug/kg	not quantifiable, based on non-quantifiable presences of 4,4'-DDD, 4,4'-DDE, and gamma BHC Lindane, all of which were present in quantities below the MRL
07-01 / 21- 23 ft	Total chlorinated pesticides 9.0 ug/kg	6.8 ug/kg	only 8.2 ug/kg is quantifiable, based on non-quantifiable presence of Endrin Aldehyde, which was present in quantities below the MRL
Total DDT			
01-01 / 28.3- 33.3 ft	Total DDT 3.9 ug/kg	1.58 ug/kg	from 4,4'-DDD and 4,4'-DDE
02-01 / 63- 68 ft	Total DDT 3.9 ug/kg	1.58 ug/kg	not quantifiable, based on non-quantifiable components of 4,4'-DDD, which was present in quantities below the MRL
07-01 / 21- 23 ft	Total DDT 5.9 ug/kg	1.58 ug/kg	from 4,4'-DDD and 4,4'-DDE
15-01 / 28 - 38 ft	Total DDT 5.4 ug/kg	1.58 ug/kg	not quantifiable, based on non-quantifiable component of 4,4'-DDT, which was present in quantities below

Sample test results exceeding NOAA ERLs.			
Hole / sample no.	***Analyte - quantity***	***ERL***	***Note***
			the MRL
15-01 / 58 - 68 ft	Total DDT 2.4 ug/kg	1.58 ug/kg	not quantifiable, based on non-quantifiable component of 4,4'-DDD, which was present in quantities below the MRL
15-01 / 68 - 78 ft	Total DDT 3.5 ug/kg	1.58 ug/kg	not quantifiable, based on non-quantifiable component of 4,4'-DDD, which was present in quantities below the MRL
4,4'-DDD			
15-01 / 58 - 68 ft	4,4'-DDD 2.4 ug/kg	1.0 ug/kg	not quantifiable, present in quantities below the MRL
15-01 / 68 - 78 ft	4,4'-DDD 3.5 ug/kg	1.0 ug/kg	not quantifiable, present in quantities below the MRL
4,4'-DDE			
07-01 / 21- 23 ft	4,4'-DDE 2.5 ug/kg	2.2 ug/kg	n/a
4,4'-DDT			
07-01 / 21- 23 ft	4,4'-DDT 3.4 ug/kg	2.3 ug/kg	n/a
15-01 / 28 - 38 ft	4,4'-DDT 3.4 ug/kg	5.4 ug/kg	not quantifiable, present in quantities below the MRL
Fluorene (a PAH)			
01-01 / 73.3- 78.3 ft	Fluorene 28 ug/kg	19 mg/kg	n/a
2-Methylnapthalene (a PAH)			
05-01 / 18- 23 ft	2-Methylnapthalene 88 ug/kg	70 ug/kg	n/a

Gradation. Gradation tests were run on a number of intervals in all borings; 83 samples in all (see logs, Reclamation, 2002). Gradation is of value to learn if sediment would be compatible with the sediments of a sediment-starved beach targeted for nourishment. Target beaches have not yet been selected at this point in the study. When they are, their sediment gradation profiles will be compared here to the gradation test results. As per EPA, additional gradation sampling would be done during preparation of materials for shipment to any beach.

Suitability of impounded sediments for upland disposal. All of the non-beach nourishment applications under consideration for Matilija Reservoir impounded sediments fall under the heading of "upland disposal", including:

- terracing of sediments on one of the reservoir banks;
- land-fill cover and other utilitarian landfill uses;
- land-fill disposal;
- commercial stone and aggregate products production or use as agricultural soil.

According to the EPA, suitability of the sediment for upland disposal is determined through this process:

- the material must be shown not to be classified as hazardous waste, as per Title 22 of the CCR (California Code of Regulations)[10];
- if tests show potentially troublesome contaminants, leachate tests are in order;

[10] Title 22 of the California Code of Regulations defines hazardous waste in Division 4.5, Chapter 11, Article 1, Sub-section 66261.3.

- a landfill still can accept the material for disposal if it is hazardous waste, provided it is informed prior to acceptance and provided it is authorized to accept hazardous waste;
- for a landfill to accept impounded sediments, they would have to be at least 50% solids, so dewatering prior to shipment would be necessary (Michael Lyons, EPA, personal commun. to Mark Chatman, USACE-Geotech, 18 July 2001).

Examination CCR Title 22 clearly reveals that the regulation draws on Code of Federal Regulations (CFR) 40 CFR, Part 261, so the cited definitions in this report are drawn from 40 CFR, Part 261. Regulation 40 CFR, Part 261 requires 60 pages to define hazardous waste; an attempt to condense the definition into those parts applicable to study area sediments follows.

Test results compared to 40 CFR, Part 261 definitions. Hazardous wastes exhibit ignitability, corrosivity, reactivity, or toxicity characteristics (40 CFR, pp. 50-53).

Concerning ignitability, Reclamation's 2001 drill holes numbered 3, 4, 5, 6, and 7 (see fig. 6) all encountered natural methane gas pockets below the water level on the current "delta front". Methane can be ignited and is explosive in certain concentrations. Study of the gas determined its source is rotting vegetation (Reclamation, 2002). This natural product should off-gas as impounded sediments are dewatered. Off-gassing occurs naturally from the sediment pile now, even under the water: bubbles of methane are commonly seen rising to the water surface in the reservoir.

Concerning corrosivity, excavation for upland disposal would expose the currently submerged, sediments to the atmosphere and meteoric waters. Some of these sediments have some sulfide content, as is to be expected in a chemically reducing environment with organic content. It was considered that these materials potentially might contain enough sulfides to acidify meteoric waters passing through them if they were to be exposed to the air, as in under draining and excavation for transport and disposal. Therefore, tests for calcium-carbonate content, total sulfides, and water-soluble sulfides were run on all samples. Sulfide is present, but calcium carbonate also is present in considerable amounts. Any acid formed is expected to be neutralized by the calcium carbonate.

No characteristics that would qualify as reactivity are known.

Concerning toxicity, specific regulatory limits for toxicity contaminants are listed in 40 CFR Part 261 (p. 52), as reproduced in the chart below; these limits are for LEACHATES gathered subsequent to leachate tests. No such tests have been performed on Matilija Reservoir samples. The table serves to clarify which of the toxicity-determining substances are present in samples collected to date and which substances were not searched for in samples collected to date:

Maximum leachate concentrations for toxicity determination				
Contaminant	**Regulatory limit (m/L) (mg/L = mg/kg)**	**All reservoir samples tested for this constituent**	**Some reservoir samples contain this substance**	**No reservoir samples contain this substance**
Barium	100.0	none tested	unknown	unknown
Benzene	0.5	none tested but all tested for TrPH and grease/oil	unknown	unknown

Maximum leachate concentrations for toxicity determination				
Contaminant	**Regulatory limit (m/L) (mg/L = mg/kg)**	**All reservoir samples tested for this constituent**	**Some reservoir samples contain this substance**	**No reservoir samples contain this substance**
Cadmium	1.0	X see metals list	X in all samples	
Carbon tetrachloride	0.5	none tested	unknown	unknown
Chlordane	0.03	X see pesticides list	X in one sample only	
Chlorobenzene	100.0	none tested but all tested for TrPH and grease/oil	unknown	unknown
Chloroform	6.0	none tested	unknown	unknown
Chromium	5.0	X see metals list	X in all samples	
o-Cresol	200.0	none tested but all tested for TrPH and grease/oil	unknown	unknown
m-Cresol	200.0	none tested but all tested for TrPH and grease/oil	unknown	unknown
p-Cresol	200.0	none tested but all tested for TrPH and grease/oil	unknown	unknown
Cresol	200.0	none tested but all tested for TrPH and grease/oil	unknown	unknown
2, 4 D	10.0	none tested but all tested for TrPH and grease/oil	unknown	unknown
1, 4-Dichlorobenzene	7.5	none tested but all tested for TrPH and grease/oil	unknown	unknown
1, 2-Dichloroethane	0.5	none tested but all tested for TrPH and grease/oil	unknown	unknown
1, 1-Dichloroethylene	0.7	none tested but all tested for TrPH and grease/oil	unknown	unknown
2, 4-Dinitrotoluene	0.13	none tested but all tested for TrPH and grease/oil	unknown	unknown
Endrin	0.02	X see pesticides list		X
Heptachlor (& its epoxide)	0.008	X see pesticides list		X
Hexachlorobenzene	0.13	none tested but all tested for TrPH and grease/oil	unknown	unknown
Hexachlorobutadiene	0.5	none tested but all tested for TrPH and grease/oil	unknown	unknown
Hexachloroethane	3.0	none tested but all tested for TrPH and grease/oil	unknown	unknown
Lead	5.0	X see metals list	X in all samples	
Lindane	0.4	X see pesticides list		X
Mercury	0.2	X see metals list	X in all samples	
Methoxychlor	10.0	X see pesticides list		X
Methyl ethyl ketone	200.0	none tested but all tested for TrPH and grease/oil	unknown	unknown
Nitrobenzene	2.0	none tested but all tested for TrPH and grease/oil	unknown	unknown

Maximum leachate concentrations for toxicity determination				
Contaminant	**Regulatory limit (m/L) (mg/L = mg/kg)**	**All reservoir samples tested for this constituent**	**Some reservoir samples contain this substance**	**No reservoir samples contain this substance**
Pentachlorophenol	100.0	X see pesticides list		X (of those tested)
Pyridine	5.0	none tested	unknown	unknown
Selenium	1.0	X see metals list	X in all samples	
Silver	5.0	X see metals list	X in all samples	
Tetrachloroethylene	0.7	none tested but all tested for TrPH and grease/oil	unknown	unknown
Toxaphene	0.5	X see pesticides list		X
Trichloroethylene	0.5	none tested but all tested for TrPH and grease/oil	unknown	unknown
2, 4, 5-Trichlorophenol	400.0	X see phenols list		X (of those tested)
2, 4, 6-Trichlorophenol	2.0	X see phenols list		X (of those tested)
2, 4, 5-TP (Silvex)	1.0	none tested	unknown	unknown
Vinyl chloride	0.2	none tested	unknown	unknown.

40 CFR (pp. 53-58) lists numerous other hazardous wastes defined in terms of the industrial processes from which they were derived. Primarily these are spent halogenated and non-halogenated solvents, electroplating sludges and pickling solutions, filters and purification wastewaters, petroleum industry sludges, and some leachates. Since these industrial processes did not take place in the watershed, the list does not apply to Matilija Reservoir sediments.

Another 12 pages of discarded chemical products, container residues, and spill residues are listed in 40 CFR (pp. 59-71) as additional hazardous materials. These are not considered applicable to Matilija Reservoir

*Assessment of result*s. Regarding hazardous materials classification and the status of Matilija Reservoir sediments. There is no evidence to support classifying any of the sediments sampled to date as hazardous materials. It is recommended that some bulk sampling leachate tests be performed at the time of dewatering and prior to any excavation to verify that none of the leachate standards listed in the chart above are exceeded by the sediments.

Cited references for text and for attachments.

Bowen, O. E., 1966, Limestone, dolomite and lime products, *in* Mineral resources of California: California Division of Mines and Geology Bulletin 191, pp. 221-233.

Dibblee, T. W., Jr., 1975, Geologic map of the Matilija quadrangle, California: US Geological Survey Open File Report 82-75, 1:24,000-scale map.

Lambeth, R. H., 1982, Mineral resources of the Matilija RARE II Area (no. 5129), Ventura and Santa Barbara Counties, California: U.S. Bureau of Mines Open File Report, (Mineral Land Assessment Series) MLA 64-82, 13 pp., 1 pl.

Long, E. R., D. D. MacDonald, S. L. Smith, and F. D. Caldert, 1995, Incidence of adverse biological effects within ranges of chemical concentrations in marine and estuarine sediments: Environmental Management, vol. 19:81-97.

Lowe, D. R., 1969, Santa Margarita Formation (upper Miocene), upper Sespe Creek area, Ventura County, California, in Field trip guidebook, SEPM, Pacific Coast Section, October 17-17, 1969.

NOAA (M. F. Buchman), 1999, NOAA Screening Quick Reference Tables: NOAA HAZMAT Report 99-1, Seattle WA, Coastal Protection and Restoration Division, National Oceanic and Atmospheric Administration.

PSSDA, 2000, Dredged material evaluation and disposal procedures, a users manual for the Puget Sound Dredged Disposal Analysis (PSSDA) Program: unpubl. manual, U.S. Army Corps of Engineers, Seattle District, U.S. Environmental Protection Agency, Region 10, Washington Department of Natural Resources, and Washington Department of Ecology, February 2000.

Troxel, B. W., M. C. Stinson, and C. W. Chesterman, 1957, Uranium, *in* Mineral commodities of California: California Division of Mines Bulletin 176, pp. 669-687.

Tucker, W. B., and R. J. Sampson, 1932, Ventura County, *in* Mining in California: California Division of Mines Report 28, pp. 247-277.

Reclamation (*US Dept. of Interior, Bureau of Reclamation*), 2002, Matilija Dam ecosystem restoration feasibility study, geotechnical field investigations, Ventura County, California: unpublished document prepared by Bureau of Reclamation, Mid-Pacific Regional Office, Division of Design and Construction, Field Operations Branch, Geology Section, March 2002, various pagination.

Weber, F. H., Jr., G. B. Cleveland, J. E. Kahle, E. F. Kiessling, R. V. Miller, M. F. Mills, D. M. Morton, and B. A. Cilweck, 1973, Geology and mineral resources of southern Ventura County, California: California Division of Mines and Geology Preliminary Report 14, 102 pp., 5 pl.

Attachments

1 Sampling and Analysis Plan

2 List of analytical labs performing sediment quality tests

3 Results of sediment quality tests

4 EDR, Inc. regulatory database records search results

Attachment 1 begins on following page

US Army Corps
of Engineers

Los Angeles District
Geotechnical Branch

Sampling and analysis plan (SAP) for Matilija Dam impounded sediment characterization, Matilija Creek watershed, Ventura County, California

(Matilija Dam, 30 Jan. 2001)

By
US Army Corps of Engineers, Los Angeles District
Engineering Division, Geotechnical Branch
Geology and Investigations Section
911 Wilshire Blvd, Los Angeles, CA 90017

(mailing addr: CESPL-ED-GG, PO Box 532711, LA, CA 90053-2325
email: mchatman@spl.usace.army.mil
ph. 213-452-3585)

17 July 2001

1.0. ***Objective***. The reservoir area behind the dam (originally with 7,000 ac-ft capacity) has nearly filled with impounded sediment, having some 300 to 400 ac-ft of storage left (see fig. 2, on p. 3, supplied by U.S. Fish and Wildlife Service--USFWS). The concrete, thin-arch, 190-ft-tall dam, built in 1947-1948, suffers from cracked and weakened concrete due to alkali-silica reaction (see fig. 1). To reduce stresses, it has been lowered by notching by 30 ft along the crest (see cover photo). By design, flood-stage spills are simply over that crest. Previous evaluators have stated that at some point in the future this dam may become a public safety issue due to the concrete deterioration.

Figure 1.--Cracked concrete in one 6-ft-tall construction lift, on dam's left half by the powerhouse, close-up (top) and distant views.

The current issue is protection of steelhead trout, to be accomplished via re-opening the 55 sq mi of Matilija Creek watershed above the dam to steelhead spawning. At least some of that area traditionally was used for spawning by the species, and its numbers have dwindled markedly since the dam was built (documented in other project documents).

USACE (US Army Corps of Engineers, Los Angeles District) was called to assistance by Ventura County Flood Control District, and USACE-Geotech (the Geotechnical Branch) subsequently has been tasked with designing and

implementing exploration, testing, and engineering analysis that will supply answers regarding all of the alternatives under consideration:

Lavender-colored line is roughly the boundary of original reservoir pool; excluding the "uplands" and the zone below the dam; wetland zone L2UB3Hh is currently the upstream-most area that is consistently within the remaining reservoir pool; zones PEM1Ch, R3US2Ch are approximately the front of the active delta; areas upstream formerly were the active delta front, but have become filled in with sediments and buried under coarser and more recent alluvium.

00

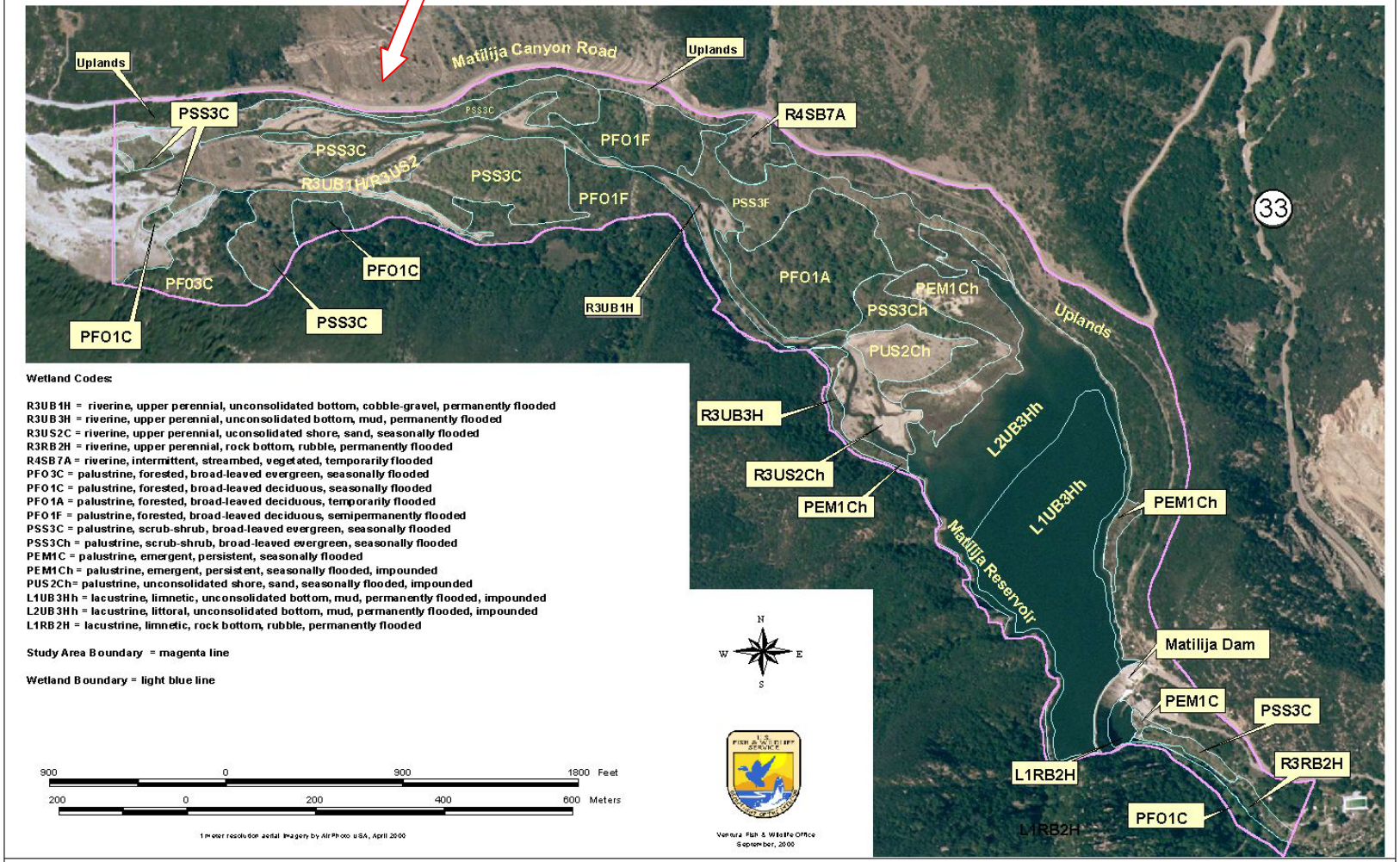


Figure 2.--The Matilija reservoir in April 2000. See note added at top of graphic. Original graphic from USFWS, Ventura Ofc., and was intended originally to show wetlands types and boundaries in the reservoir and surrounding areas. Use zoom in WORD for more detail.

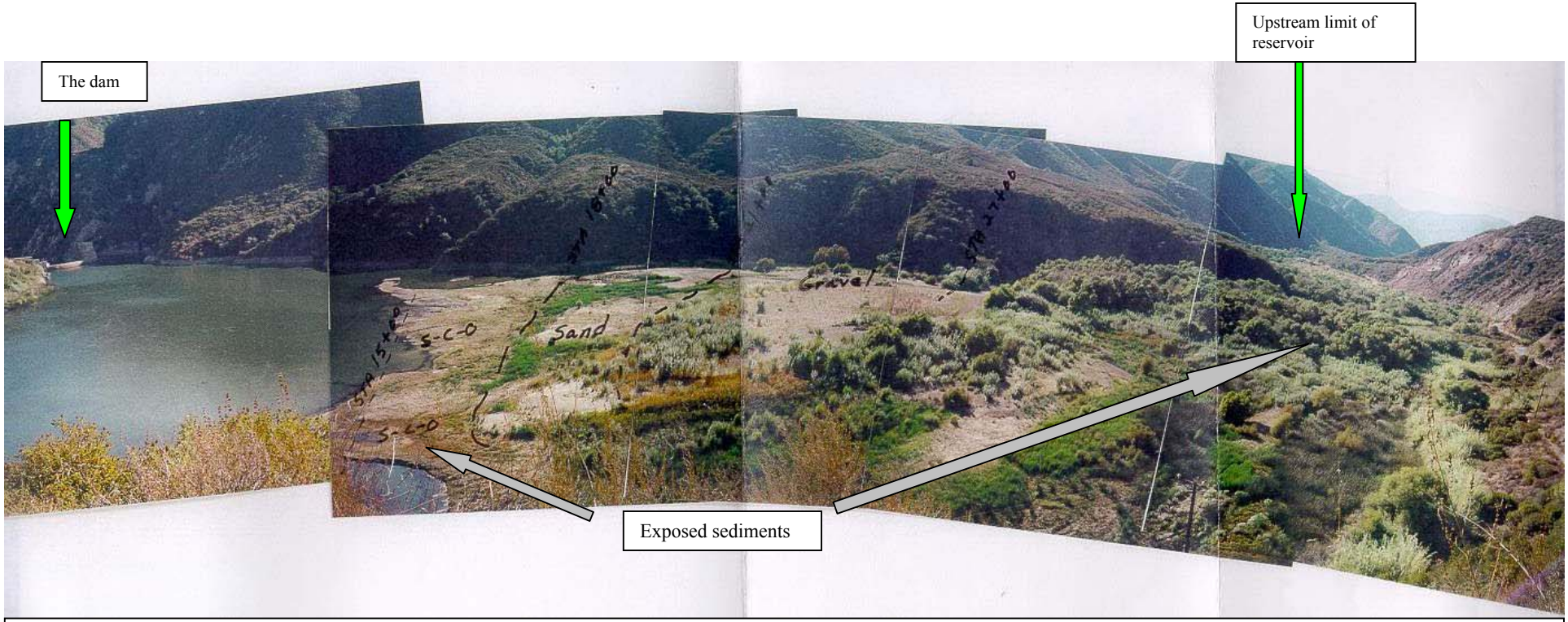
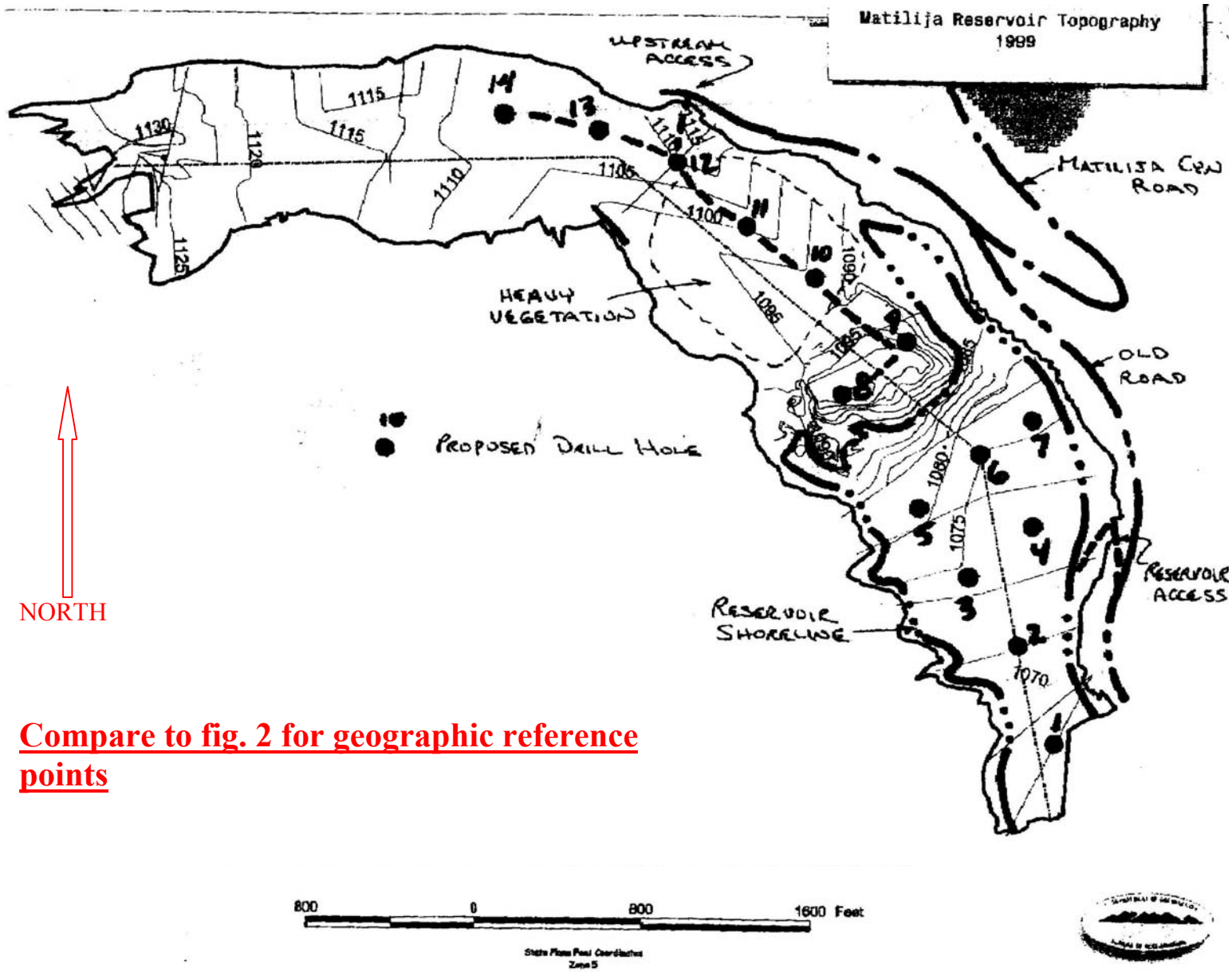


Figure 3.--Composite photo of impounded sediments, view to the south. Scanned from Reclamation's Feb. 2000 exploration report.



Compare to fig. 2 for geographic reference points

Figure 4.--Proposed drill sites for spring 2001 drilling. From drawing by Reclamation.

NUMBER OF DRILL HOLE	CURRENT GROUND SURFACE ELEVATION	1947 GROUND SURFACE ELEVATION (1)	Δ (FT) (2)	TOTAL DEPTH (FT) (3)	DEPTH WATER (FT)
DRILL HOLES DRILLED IN RESERVOIR POND (BARGE-MOUNTED DRILL RIG)					
1	1068	980	88	100	18
2	1071	1000	71	80	15
3	1073	1015	58	65	13
4	1074	1015	59	70	12
5	1077	1020	57	65	9
6	1075	1023	52	60	11
7	1081	1020	61	70	5
DRILL HOLES DRILLED UPSTREAM OF RESERVOIR POND (MOBILE DRILL RIG)					
8	1098	1038	60	70	N/A
9	1095	1035	60	70	
10	1095	1042	53	60	
11	1100	1054	46	55	
12	1110	1060	40	50	
13	1106	1076	30	40	
14	1108	1086	22	30	
TOTAL LINEAL FEET OF DRILLING				**885**	

NOTES:

(1) The 1947 ground surface is the approximate pre-dam ground surface.

(2) The difference in elevation between the current and the 1947 ground surfaces at the drill hole location.

(3) The total depth should extend each drill hole approximately 5 to 10 feet deeper than the 1947 (pre-dam) ground surface.

o

Figure 5.--Proposed drill depths. From pre-drilling work on the project area by Reclamation. Refer to fig. 4 for hole locations.

- from fish ladders to dam demolition, including engineering the demolition;
- from sediment trucking, conveyor transport, or sluicing to off-site locations, to on-site terracing and impounding; to natural erosion transport;
- from beach nourishment use of the sands to wasting and landfilling of all the materials; encompassing also potential segregation of salable aggregate.

For the purposes of this SAP, the initial focus of USACE-Geotech is to characterize that sediment and develop information that would assist in deciding what to do with it. Sediment characteristics, primarily gradation, will have to be determined, as will the identity of in-sediment contaminants, if any. Reclamation (U.S. Dep. of Interior, Bureau of Reclamation) estimated 6 million cu yds of sediments are impounded behind Matilija Dam. A view of the surface area to be drilled is in fig. 3. An approximate array of drill holes and drill depths currently under consideration are shown in figs. 4 and 5.

2.0. ***Contaminant assessment plan.*** The USACE-Geotech assessment is comprised of three main tasks:

a) Background data search and analysis, including:
- NCRS (Natural Resource Conservation Service) records search for evidence of past agricultural activity in the watershed, upstream from the project area;
- Research of the geologic literature of the watershed, to see if there is any basis to anecdotal reports of past mining in the watershed; this may include site visit to some mines or prospects;
- A contracted "corridor search" of approximately 70 hazardous materials databases, followed by USACE-Geotech analysis of the dumped data;
- Results of Dec. 1999 testing by Reclamation;

b) New testing of additional samples of the impounded sediment;

c) A technical analysis report of the results of a) and b), above, with discussion of the various end-use applications of the sediments; the report to be forwarded for regulatory approval in the event that a certain end-use is selected in the planning and feasibility process.

2.1. *Anticipated sampling and testing regime*. The need for knowledge about the contaminants in the sediments, or lack thereof, is to allow decisions to be made about end-use of the sediments. Since there are a mixture of cobbles/boulders, with sands and silts, and probably some clays, there are few end uses that can take all the materials as they are, unsorted. The only alternatives currently under consideration that can accommodate such a gradation are phased, natural stream erosion of the sediments, and impounding the sediments in terraces on the south side of the reservoir (and even the impounding option will require removal of the largest of the alluvial materials, such as large boulders). Therefore, the detailed logging of the subsurface by on-site geologists will determine, as drilling proceeds, the best intervals for sampling. Discreet finer-grained sediment zones (silts and clays) will be sampled because they are most likely to be the traps of any contaminants. Discreet sandy zones also will be sampled as the sand fraction is the most likely to be assigned and end-use of beach nourishment. Alluvial aggregate greater than ¾ inch in size will not be sampled. Zones of coarse material (cobbles and boulders), which will be brought up by the drilling process as crushed rock, will not be sampled. This will require flexibility in the numbers and locations of the samples. If, for example, logging of the boreholes

demonstrates that the materials below the existing reservoir pool are nearly all silts, then they will not be useful for beach nourishment, and testing will shift more to area where sands are being encountered. Similarly, if, for example, the non-inundated areas of impounded sediments are shown to have much more cobble and boulder fractions than anticipated, their utility as beach nourishment will be reduced and their potential to trap contaminants will be reduced; again, sampling would be redirected to other more useful locations.

In reality, samples for contaminants will be collected at least as frequently as samples for engineering/physical parameters, but due to economics (a cost of $1,652.36 for the full suite of tests, per sample, and a cost of $724.65 per sample for the abbreviated test suite-see below for tests), composting of sample material will have to take place. For the purposes of estimating, a sampling plan of thirty total samples has been selected and budgeted. To assure that sufficient materials are collected, samples will be taken approximately every 20 ft and stored on ice, then combined later as the geology and logging clarifies gradational trends in the subsurface. Cross-hole compositing will be used if beneficial to the project goals. Of the 30 samples, it is anticipated that four will be tested for the full suite of contaminants (see table 1), and that all those would be composited samples, two of the silts/clays and two of sands that appear to have potential for use on the beach. The other 26 samples would be from silt or clays or sands, as appropriate, distributed in a manner that best will characterize the subsurface materials. These 26 samples will have a reduced suite of tests: only the physical/convention tests; the metals suite; and the pesticide suite (see table 1). This abbreviated suite is based on the assumption that the results from the background data search and analysis will reveal few or no potentially problematic past land use upstream, but those potential problems that are most likely to exist in some degree would be found through this abbreviated test suite. There has been no USACE-Geotech research of past use in the watershed, but it is apparent that:

- It is encompassed by the Los Padres National Forest, where industry likely would not be permitted to operate;
- Past agricultural use would be logical to anticipate but acreage involved probably would be small due to the narrowness of the valley.

Reclamation, in their April 2000 appraisal (p. 44) states, “there are no known sources of artificial contamination, such as mining, agriculture, or industry upstream of Matilija Reservoir.” In addition, from past experience, the typical anecdotal report of past “mining” in an area turns out to be a small prospect pit or underground tunnel in rock wherein the natural mineral occurrence exposed at the surface has significantly more responsibility for the presence of analytes in the watershed as does the pit or other results of mining. But this potential problem too could be detected via the USACE-Geotech abbreviated test suite.

Hot springs. One other condition that could impact the testing results is the presence of hot springs in the watershed, so some potentially deleterious minerals may be migrating in the overall system, but not necessarily in concentrations that exceed tolerable limits. It is anticipated that the metals suite and the physical/conventional test suite will identify any problems in these suites of analytes. Very limited test results from Matilija Hot Springs (just d/s of the dam) water samples from 1976 are:

- mean pH of 8.1; range of 7.1 to 8.4;
- mean alkalinity of 224; range of 176-312;

0

Table 1.—USACE contaminant test suite for sediment. This is the full suite. Table prepared by G. Dombrosky.

	Analytical Method [1]	Method Reporting Limit	Units [2]	Sediment Quality Guidelines (SQGs) ERL (Long et al., 1999)	ERM (Long et al., 1999)	SL (PSDDA, 1998)	ML (PSDDA, 1998)	Sample Testing Results [3]				
PHYSICAL/CONVENTIONALS												
Total Solids (wet weight)	APHA 2540B	0.1	%									
Total Volatile Solids (wet weight)	APHA 2540G	0.01	%									
pH	EPA 9045C	0.1	pH units									
Ammonia	EPA 350.1M	0.2	mg/kg									
Total Organic Carbon	EPA 9060M	500	mg/kg									
Soluble Sulfides	Plumb	0.1	mg/kg									
Total Sulfides	Plumb	0.1	mg/kg									
Oil and Grease	EPA 413.2	10	mg/kg									
Total Recoverable Petroleum Hydrocarbons	EPA 418.1	6	mg/kg									
METALS												
Antimony (Sb)	EPA 6020	0.05	mg/kg			15	200					
Arsenic (As)	EPA 6020	0.5	mg/kg	8.2	70	57	700					
Cadmium (Cd)	EPA 6020	0.05	mg/kg	1.2	9.6	5.1	14					
Chromium (Cr)	EPA 6020	0.2	mg/kg	81	370							
Copper (Cu)	EPA 6020	0.1	mg/kg	34	270	390	1,300					
Lead (Pb)	EPA 6020	0.05	mg/kg	46.7	218	450	1,200					
Mercury (Hg)	EPA 7471A	0.01	mg/kg	0.15	0.71	0.41	2.3					
Nickel (Ni)	EPA 6020	0.2	mg/kg	20.9	51.6	140	370					
Selenium (Se)	EPA 7741	0.17	mg/kg									
Silver (Ag)	EPA 6020	0.02	mg/kg	1	3.7	6.1	8.4					
Zinc (Zn)	EPA 6020	0.5	mg/kg	150	410	410	3,800					
ORGANICS												
PESTICIDES												
Total Chlorinated Pesticides [4]	EPA 8081A	1	ug/kg	6.8	108.1	56.9	69.0					
Aldrin	EPA 8081A	1	ug/kg			10						
alpha BHC	EPA 8081A	1	ug/kg									
alpha-Chlordane	EPA 8081A	1	ug/kg			10						
beta-BHC	EPA 8081A	1	ug/kg									
delta-BHC	EPA 8081A	1	ug/kg									
Dieldrin	EPA 8081A	1	ug/kg	0.02	8.0	10						
Endosulfan I	EPA 8081A	1	ug/kg									
Endosulfan II	EPA 8081A	1	ug/kg									
Endosulfan Sulfate	EPA 8081A	1	ug/kg									
Endrin	EPA 8081A	1	ug/kg									

Table 1.—USACE contaminant test suite for sediment. This is the full suite. Table prepared by G. Dombrosky.

	Analytical Method [1]	Method Reporting Limit	Units [2]	Sediment Quality Guidelines (SQGs) ERL (Long et al., 1999)	ERM (Long et al., 1999)	SL (PSDDA, 1998)	ML (PSDDA, 1998)	Sample Testing Results [3]				
gamma-BHC Lindane	EPA 8081A	1	ug/kg			10						
gamma-Chlordane	EPA 8081A	1	ug/kg									
Heptachlor	EPA 8081A	1	ug/kg			10						
Toxaphene	EPA 8081A	10	ug/kg									
Total DDT [5]	EPA 8081A	1	ug/kg	1.58	46.1	6.9	69.0					
4,4'-DDD	EPA 8081A	1	ug/kg	1.0	7.0							
4,4'-DDE	EPA 8081A	1	ug/kg	2.2	27							
4,4'-DDT	EPA 8081A	1	ug/kg	2.0	20							
ORGANOTINS												
Total Organotins [4]			ug/kg									
Monobutyltin	Krone	1	ug/kg									
Dibutyltin	Krone	1	ug/kg									
Tributyltin	Krone	1	ug/kg									
Tetrabutyltin	Krone	0.5	ug/kg			0.15 [7]						
PHTHALATES												
Total phthalates [4]			ug/kg			23,170						
Bis (2-ethylhexyl) phthalate	EPA 8270C	6.7	ug/kg			8,300						
Butyl benzyl phthalate	EPA 8270C	6.7	ug/kg			970						
Diethyl phthalate	EPA 8270C	6.7	ug/kg			1,200						
Dimethyl phthalate	EPA 8270C	6.7	ug/kg			1,400						
Di-n-butyl phthalate	EPA 8270C	6.7	ug/kg			5,100						
Di-n-octyl phthalate	EPA 8270C	6.7	ug/kg			6,200						
POLYCHLORINATED BIPHENYLS (PCB)												
Total PCBs [4]			ug/kg	22.7	180	130	3,100					
Aroclor 1016	EPA 8082	10	ug/kg									
Aroclor 1221	EPA 8082	20	ug/kg									
Aroclor 1232	EPA 8082	10	ug/kg									
Aroclor 1242	EPA 8082	10	ug/kg									
Aroclor 1248	EPA 8082	10	ug/kg									
Aroclor 1254	EPA 8082	10	ug/kg									
Aroclor 1260	EPA 8082	10	ug/kg									
POLYNUCLEAR AROMATICS HYDROCARBONS (PAH)												
Total PAHs [4]			ug/kg	4,022	44,792							
2-Methylnaphthalene	EPA 8270C	3	ug/kg	70	670	670	1,900					
Acenaphthene	EPA 8270C	2	ug/kg	16	500	500	2,000					

Table 1.—USACE contaminant test suite for sediment. This is the full suite. Table prepared by G. Dombrosky.

	Analytical Method [1]	Method Reporting Limit	Units [2]	Sediment Quality Guidelines (SQGs) ERL (Long et al., 1999)	ERM (Long et al., 1999)	SL (PSDDA, 1998)	ML (PSDDA, 1998)	Sample Testing Results [3]				
Acenaphthylene	EPA 8270C	2	ug/kg	44	640	560	1,300					
Anthracene	EPA 8270C	2	ug/kg	85.3	1,100	960	13,000					
Benzo(a)anthracene	EPA 8270C	2	ug/kg	261	1,600	1,300	5,100					
Benzo(a,e)pyrene	EPA 8270C	0.8	ug/kg	430	1,600	1,600	3,600					
Benzo(b)fluoranthene	EPA 8270C	2	ug/kg			1,600	4,950					
Benzo(k)fluoranthene	EPA 8270C	2	ug/kg			1,600	4,950					
Benzo(g,h,i)perylene	EPA 8270C	2	ug/kg			670	3,200					
Chrysene	EPA 8270C	2	ug/kg	384	2,800	1,400	21,000					
Dibenzo(a,h)anthracene	EPA 8270C	2	ug/kg	63.4	260	230	1,900					
Fluoranthene	EPA 8270C	2	ug/kg	600	5,100	1,700	30,000					
Fluorene	EPA 8270C	2	ug/kg	19	540	540	3,600					
Indeno(1,2,3-cd)pyrene	EPA 8270C	0.8	ug/kg			600	4,400					
Naphthalene	EPA 8270C	2	ug/kg	160	2,100	2,100	2,400					
Phenanthrene	EPA 8270C	2	ug/kg	240	1,500	1,500	21,000					
Pyrene	EPA 8270C	2	ug/kg	665	2,600	2,600	16,000					
PHENOLS												
Total Phenols			ug/kg			1582	5777					
2,4-Dimethylphenol	EPA 8270C	33	ug/kg			29	210					
2-Methylphenol	EPA 8270C	20	ug/kg			63	77					
4-Methylphenol	EPA 8270C	33	ug/kg			670	3,600					
Pentachlorophenol	EPA 8270C	33	ug/kg			400	690					

Notes:

Table 1.—USACE contaminant test suite for sediment. This is the full suite. Table prepared by G. Dombrosky.

	Analytical Method [1]	Method Reporting Limit	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL (Long et al., 1999)	ERM (Long et al., 1999)	SL (PSDDA, 1998)	ML (PSDDA, 1998)					

(1) Analytical Method
EPA = United States Environmental Protection Agency
EPA Methods are EPA SW-846, 1994 3rd Edition or EPA 600/4-79-020, March 1983
APHA = American Public Health Association
APHA Method is APHA Standard Methods, 18th Edition, 1992
Plumb = Procedure for Handling and Chemical Analysis of Sediment and Water Samples. Tech Rep. USEPA/CE-81, Russell H. Plumb, Jr., 1981.

(2) Units: mg/kg = milligrams per kilogram, parts per million (dry weight unless otherwise noted)
ug/kg = micrograms per kilogram, parts per billion (dry weight unless otherwise noted)

(3) ND = not detected at or above lowest Method Reporting Limit value for the particular compound(s) of interest

(4) Total Chlorinated Pesticides, Total Organotins, Total Phthalates, Total PCBs, Total PAHs, and Total Phenols = sum of named compounds and their derivatives

(5) Total DDT = sum of 4,4'-DDE; 4,4'-DDD; and 4,4'-DDT

(6) Total Solids is the average of the three results computed by each of the laboratories. Individual results are available in Attachment 1A.

(7) Tributyltin (interstitial water)

(8) Reporting limits for analyses of Phthalates on Composite #3 are 2 ug/kg for Bis(2-ethylhexyl)phthalate, 13 ug/kg for Butyl Benzylphthalate, and 0.6 ug/kg for Di-n-octylphthalate.

(9) Reporting limits for analyses of PAHs on Composite #3 are 6.7 ug/kg, except for analyses for Benzo(g,h,i)perylene, Dibenzo(a,h)anthracene, Fluoranthene, and Indeno(1,2,3-cd)pyrene, which was 13 ug/kg

(10) Reporting limits for analyses of Phenols on Composite #3 are 30 ug/kg for 2,4-Dimethylphenol and 4-Methylphenol, 20 ug/kg for methylphenol, and 9 ug/kg Pentachlorophenol

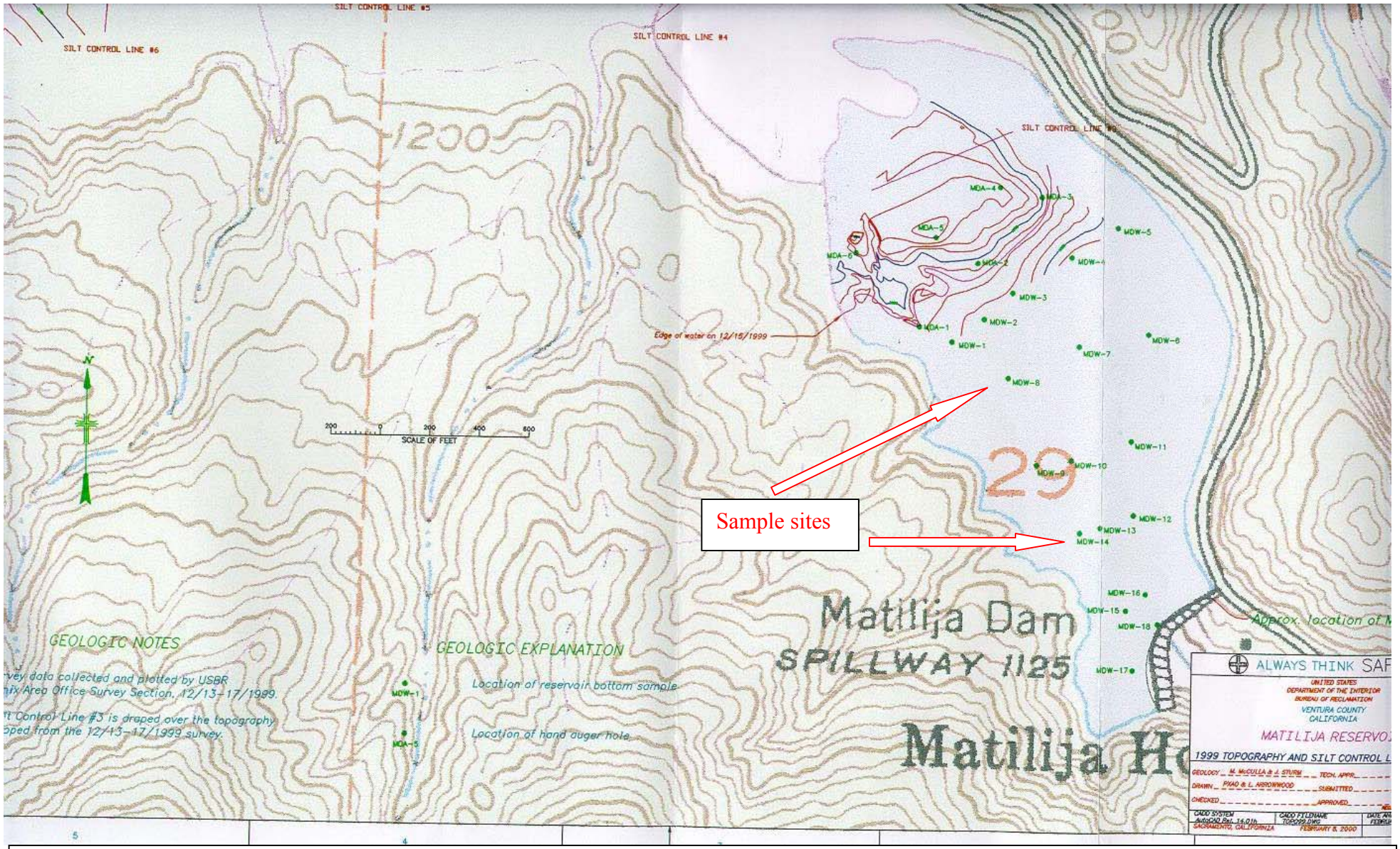


Figure 6.—Reclamation's sample locations from Dec. 1999. "MDA" prefixes are land based borings, "MDW" prefixes are from beneath reservoir pool. Scanned from Reclamation's Feb. 2000 exploration report. Use zoom feature in WORD to see more detail.

0

- mean sulfate concentrations of 244 mg/l; range of 208-282.

(data from Reclamation's April 2000 appraisal report, pp. 44-45; test by Ventura County).

Bacteria. Data will be obtained from MESA (Matilija Environmental Study Area)or USFWS (U.S. Fish and Wildlife Service) on fecal coliform data from water tests in the reservoir. There are several homes upstream of the dam and they are reported by MESA to all be on septic systems for sewage disposal. The results would be no more than an advisory if the coliform levels are high. There is no coliform component of the beach compatibility test suite used by USACE.

Sampling and testing with regard to the two primary impounded sediment disposal considerations. Regardless of the means employed to move[11] the impounded sediments behind Matilija dam, ultimately, they will be "disposed" of by one of two means: 1) beach nourishment; or 2) stabilizing or impounding them in some upland area (e.g., landfill cover, aggregate, fill, etc.). The current exploration and testing effort is designed to characterize those sediments regarding their suitability for beach nourishment and upland disposal. Completion of the testing suite shown in table 1 will provide knowledge on whether the contaminants in the sediments, if any, would preclude their use as beach nourishment (note the *SQGs*, or tolerable contaminant levels listed in table 1 for each applicable analyte). Completion of the gradation characterizations that will be performed on collected samples will address the particle size of the sediments, another essential criteria for beach nourishment. According to EPA representative Steven John, Los Angeles:

> *Materials to be used for beach nourishment are typically (by Corps and EPA policy) required to have no greater than 10% more fine- grained materials than the receiver site. Typical southern California beaches are 95-99% sand; materials used as nourishment would have to be 85-89%, at minimum, sand. Materials discharged to the nearshore environment, where existing sediment has greater quantities of fine grained materials, can include more fine-grained materials as the winnowing effect of the waters removes fine-grained components while moving coarser grained materials to the beach. EPA typically does not allow materials with less than 70-75% sand to be used for nourishment (either direct beach deposit or nearshore discharge). If there are no deposits of material behind Matilija Dam that are predominantly sand, or if screening of deposits to remove fine grained components is not practicable, use of Matilija sediments for beach nourishment (beach or nearshore) may not be possible*
>
> *...additional characterization or confirmatory testing (physical and chemical) may be necessary during the excavation process. Provided no elevated levels of contaminants of concern are discovered during the initial stages of confirmatory testing, this testing element may be eliminated at some future date. Quality control for physical compatibility would be retained.* (from correspondence by John to US Army Corps of Engineer's Mark Chatman, 15 March 2001).

For *upland disposal* options, criteria of the California Regional Water Quality-Control Board and the State Department of Toxic Substances Control (DTSC) are applicable. Documentation of the

[11] Methods considered to date include handling with earth-moving equipment to some degree and then trucking, sluicing, or conveyor transport to the ultimate disposal.

RWQCB criteria were still being sought at the time of this writing. The DTSC oversight on upland disposal applies only if the material is *hazardous waste*, as per the definition of hazardous waste in the California Code of Regulation, Title 22, Div. 45, Chapter 11 (data from DTSC Field Duty Officer Andre Amy, Glendale Office, as per phone conversation with US Army Corps of engineer's Mark Chatman, 17 July 2001.

3.0. ***Sampling protocols***. Due to the chosen drilling and core recovery method (continuous dry core from inside a HSA), sleeved samples will not be recovered. Samples for environmental tests will be cut from these cores as soon as is practicable after they are recovered and removed from the core device. Exposure time, once the core is removed from the borehole, should be minimized to avoid drying and exposure to air. Samples will be collected from the cores w/ stainless steel scraping or cutting devices, mixed in a stainless steel bow (if a composited sample), and placed directly into lab jars, as specified below. Disposable rubber gloves will be worn during sample collection. Gloves will be changed between the taking of individual samples. Clean-up of sampling tools, which will be done between collection of individual samples, will be with *Alquinox* and creek or reservoir water for the first wash, then tools and sampler will be double-rinsed with de-ionized water. Wash water will not be released into the study area, but will be collected for disposal off site. The overall objective is to minimize any cross-contamination of samples.

Quantities of samples. For each sample at least 24 oz of material will be collected in at least two separate containers. Depending on the lab actually selected to do the analysis, the volume of material and number of containers may be adjusted slightly. Samples will be placed in new, clean, pre-labeled glass containers provided by the lab. Data to be recorded on sample labels includes date, time, sampler, hole location, depth or depth range. Jars will be packed full to minimize head space

Preservation of samples. Samples will be kept in an iced cooler, maintained at 4°C., plus or minus 2°C.

Sample retention time. 7 days. See table 2, below. The practicable way of addressing retention time would be to ship every 3 or 4 days to the lab.

Table 2.—Retention time and handling of sediment samples, for specific tests suites.

Test or suite	Retention time	Container/minimum volume of sample	Temperature/ preservatives	Other
Physical/conventional				
Total solids, total volatile solids	14 days	Glass/	In cooler, 4°C., plus or minus 2°C./ No preservatives	
pH	7 days	Glass/	In cooler, 4°C., plus or minus 2°C./ No preservatives	
Ammonia	7 days	No container type specified/	In cooler, 4°C., plus or minus 2°C./ No preservatives	
Total organic carbon	14 days	Glass, 8-oz, wide-mouth w/ Teflon-lined lid/	In cooler, 4°C., plus or minus 2°C./ No preservatives	

Table 2.—Retention time and handling of sediment samples, for specific tests suites.				
Test or suite	Retention time	Container/minimum volume of sample	Temperature/ preservatives	Other
Total sulfides	7 days	Glass/	In cooler, 4°C., plus or minus 2°C./ No preservatives[12]	
Oil & grease	No limit specified	No container type specified/	No specifications	
Metals suite (except mercury)				
9 metal analytes	6 months	Glass, 8-oz, wide-mouth w/ Teflon-lined lid/	In cooler, 4°C., plus or minus 2°C./ No preservatives	
Mercury	28 days	Glass, 8-oz, wide-mouth w/ Teflon-lined lid/	In cooler, 4°C., plus or minus 2°C.[13]/ No preservatives	
Organics				
Pesticides and organotins	14 days to extraction; 30 days to analysis	Glass, 8-oz, wide-mouth w/ Teflon-lined lid/	In cooler, 4°C., plus or minus 2°C.[14]/ No preservatives	
Petroleum hydrocarbons	28 days	Glass, 8-oz, wide-mouth w/ Teflon-lined lid/	In cooler, 4°C., plus or minus 2°C./ No preservatives	
Phthalates, PAHs, Phenols	10 days to extraction; 30 days to analysis	Glass, 8-oz, wide-mouth w/ Teflon-lined lid/	In cooler, 4°C., plus or minus 2°C./ No preservatives	
PCBs	14 days to extraction; 30 days to analysis	Glass, 8-oz, wide-mouth w/ Teflon-lined lid/	In cooler, 4°C., plus or minus 2°C./ No preservatives	
Data from Final SAP, A-2 & A-3 borrow areas for pilot in-situ capping project, Palos Verdes Shelf Superfund Investigation, March 2000, prepared primarily by Fred Schauffler, pp. 25-26. Criteria attributed to Calscience Environmental Laboratory.				

Chain of custody. A chain of custody must be maintained by each individual collecting the samples. It is assumed that there will be no more than two geologists handling the samples, one on the barge-mounted rig on the reservoir, and one on the truck rig. Details for shipping from Ventura to the contract sample analysis lab in San Diego are still being developed. The lab will be:

NREL (Navy Regional Environmental Laboratory)
Public Works Center C-910
Naval Air Station North Island Bldg M-9
San Diego, CA 92135
ph. (619) 545-8431
(619) 545-0793 FAX
A point of contact at the number above is:

[12] Zinc acetate recommended by Calscience Environmental Laboratory as a preservative; USACE typically does not use any preservatives on samples for this test.
[13] USACE uses the same 4°C. temperature. Calscience Environmental Laboratory recommends freezing the sample at –18°C.
[14] USACE uses the same 4°C. temperature. Calscience Environmental Laboratory recommends freezing the sample at –18°C.

Lyn Vasquez VasquezLT@PWCSD.Navy.Mil
An alternate POC is the lab director, Joe Arlauskas (619-545-8432)

The potential scenarios are: 1) USACE representative will enter the chain of custody, collect the samples from Reclamation, and take care of forwarding to the lab; or 2) a lab representative may enter the chain of custody; but most likely, 3) the samples will be shipped in coolers to the lab from Ojai, CA, or Ventura, CA. The lab will supply coolers and sample jars. USACE-Geotech will se to it that these supplies are either shipped to Reclamation in the field or will deliver them directly to the field.

Compositing. On regular intervals, about every day or every other day, logs will be examined and decisions made about compositing of sample material prior to lab analysis. Due to high cost of lab tests, intra-hole compositing will be a necessity and cross-hole compositing will be considered. The loggers of the holes will have major input into the selection and compositing of samples. With the general division of approximately 15 lab samples from the reservoir area for lab testing and another 15 for lab testing from the exposed sediments upstream of the reservoir, intervals will have to be selected such that sand units that look promising for beach nourishment are assessed for potential contaminants. Similarly, silts and clays should be evaluated for contaminants. As the drilling and logging proceeds, the stratigraphy of the impounded sediments will become more apparent. It is better to take too many samples at the beginning and develop a good way of compositing them after a day or two of experience with the logging makes subsurface trends, or lack thereof, more apparent.

QA. QA tests will be at the standard used by the selected lab.

4.0. ***Test results from previous sampling***. The Bureau of Reclamation has been actively evaluating and exploring the project area since at least 1999. Reclamation's Dec. 1999 sample sites, fig. 6, consisted of 6 ten-foot-deep hand-auger borings into the downstream edge of the exposed sediments (the current delta front), and 18 samples from the sediments inundated by the reservoir pool, collected with a drop probe (collects the upper 1 foot of sediment). From the hand-auger borings 6 samples were collected from select horizons (see table 3, below); from the group of drop-probe samples, 6 were selected for testing (see table 3). Of the completed contaminant tests on these samples, those that are applicable to the USACE suite for contaminants include:

the metals suite
total organic carbon
sulfur (total sulfur was determined rather than total sulfides).

Specific test results have not been obtained by USACE-Geotech; Reclamation's verbal summary of their test results from their April 2000 appraisal report (p. 45) is that tests showed

- non-toxic metal concentrations;
- "sulfur concentrations just above protocol concentrations for acid mine drainage."

Gradation. Gradations were determined for material sampled from the exposed delta front (MDA prefix, table 3, and fig. 6), and generalized as:

70- 75% sand, 10-20% silt, 3-85% clay, 5-12% gravel (Reclamation's April 2000 appraisal report, p. 43).

Gradations were determined for material sampled beneath the reservoir pool (MDW prefix, table 3, and fig. 9), and generalized as:

60% silt, 25% sand, 15% clay (Reclamation's April 2000 appraisal report, p. 43).

Gradation tests will be performed by USACE-Geotech as a part of the current sampling program.

5.0. ***The sulfur issue***. Reclamation raised a point about sulfur content of the sediments, particularly those inundated in a reducing environment below the reservoir pool: tests run to date detect the presence of sulfur. When this material is drained and exposed to air in preparation for excavation and transport, will that the sulfur oxidize and become noxious to breathe, or combine with rainwater or creek water to form H_2SO_4 ? Is this potential "acid mine drainage"? That potential chemical reaction needs to be addressed prior to excavations. Substantive information on this issue is being sought from the California Regional Water-Quality Control Board and the State Dept. of Toxic Substances Control. The EPA already has been queried.

MDW-prefixed samples are from beneath the existing reservoir pool, in the top 1–ft of sediments

Sample Identification	Gradation	Moisture	Sediment Toxicity
MDW-1	X		X
MDW-2	X	X	
MDW-3	X	X	X
MDW-4	X	X	
MDW-5	X	X	
MDW-6	X		X
MDW-7	X		
MDW-8	X	X	
MDW-9	X	X	
MDW-10	X	X	X
MDW-11	X		
MDW-12	X		
MDW-13	X	X	X
MDW-14	X		
MDW-15	X		
MDW-16	X	X	X
MDW-17	X		
MDW-18	X		

MDA-prefixed samples are from hand-auger borings at the delta front

Auger Hole	Interval (ft.)	Gradation	Moisture	Sediment Toxicity
MDA-1	1.0-2.0	X	X	
MDA-1	2.0-3.0	X	X	
MDA-1	4.0-5.0	X	X	
MDA-1	9.0-10.0	X	X	X
MDA-2	1.0-2.0	X	X	
MDA-2	4.0-5.0	X	X	
MDA-2	6.0-7.0	X	X	
MDA-2	7.0-8.0			X
MDA-2	8.0-9.0	X	X	
MDA-3	1.0-2.0	X	X	
MDA-3	4.0-5.0	X	X	
MDA-3	6.0-7.0			X
MDA-3	7.0-8.0	X	X	
MDA-4	1.0-2.0	X	X	
MDA-4	6.0-7.0	X	X	
MDA-4	9.0-10.0	X	X	
MDA-4	10.0-10.5			X
MDA-5	0.0-1.0	X	X	
MDA-5	5.0-6.0	X	X	
MDA-5	7.0-8.0	X	X	
MDA-5	8.0-9.0			X

Table 3.--Sampled horizons, Reclamations 1999 samples. Data from Reclamation's Feb. 2000 exploration report.

Attachment 2.--Analytical labs performing chemical tests on impounded sediment samples, Matilija Dam.		
Test	**Analytical lab**	**Note**
Total solids	NREL[15]	--
Volatile solids	NREL	--
pH	NREL	--
Ammonia	Columbia Analytical Services[16]	Subcontracted by NREL
Total Organic Carbon	Columbia Analytical Services	Subcontracted by NREL
Metals (suite of 11)	Columbia Analytical Services	Subcontracted by NREL
Calcium carbonate	QORE Property Sciences, Birmingham, AL	Subcontracted by NREL
Oil & Grease	Associated Laboratories, Orange, CA	Subcontracted by NREL
TrPH	Associated Laboratories, Orange, CA	Subcontracted by NREL
Total Sulfides	Associated Laboratories, Orange, CA	Subcontracted by NREL
Soluble Sulfides	Associated Laboratories, Orange, CA	Subcontracted by NREL
Pesticides	Columbia Analytical Services	Subcontracted by NREL
PAHs	Columbia Analytical Services	Subcontracted by NREL
PCBs	Columbia Analytical Services	Subcontracted by NREL
Phthalates	Columbia Analytical Services	Subcontracted by NREL
Phenols	Columbia Analytical Services	Subcontracted by NREL
Organotins (butyltins)	Columbia Analytical Services	Subcontracted by NREL.

[15] Navy Regional Environmental Laboratory, Public Works Center, Code 910, Naval Air Station, North Island Bldg. M-9, San Diego, CA 92135.
[16] Columbia Analytical Services, 1317 South 13th Avenue, PO Box 479, Kelso, WA 98626.

br

First set of five samples--holes 01-01 and 02-01:

Attachment 3.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-01-01 28.3-33.3'	MDH-01-01 73.3-78.3'	MDH-02-01 23-28'	MDH-02-01 39.5-43'	MDH-02-01 63-68'
				(Long et al., 1999)		(PSDDA, 2000)						
PHYSICAL/CONVENTIONALS												
Total Solids (wet weight)	EPA 160.3M	0.01	%					57.4	70.1	63.8	68.6	70.5
Total Volatile Solids (wet weight)	SM 2540G	0.01	%					9.85	4.91	6.85	3.67	4.96
pH	EPA 9045	0.1	pH units					6.9	7.2	7.1	7.2	7.2
Ammonia	EPA 350.1M	0.5 / 0.5	mg/kg					253	85.2	128	38.5	109
Total Organic Carbon	EPA 9060M	500/ 300	mg/kg					50900	11900	29000	22700	10500
Soluble Sulfides	EPA/CE-81-1	0.1	mg/kg					137	73	99	124	148
Total Sulfides	EPA 9030B	3	mg/kg					41	33	62	43	23
Calcium carbonate	ASTM D-4373	0.1	%					0.10	0.20	0.10	0.10	0.20
Oil and Grease	EPA 413.2	10	mg/kg					31	33	30	29	26
Total Recoverable Petroleum Hydrocarbons	EPA 413.1	10	mg/kg					34	30	23	29	23
METALS												
Antimony (Sb)	EPA 6020	varies see test columns	mg/kg			15	200	0.23 w/ MRL 0.05 / MDL 0.03	0.19 w/ MRL 0.06 / MDL 0.03	0.19 w/ MRL 0.05 / MDL 0.03	0.15 w/ MRL 0.05 / MDL 0.03	0.15 w/ MRL 0.05 / MDL 0.03
Arsenic (As)	EPA 6020	varies see test columns	mg/kg	8.2	70	57	700	6.65 w/ MRL 0.49 / MDL 0.05	6.81 w/ MRL 0.57 / MDL 0.06	6.69 w/ MRL 0.47 / MDL 0.05	6.00 w/ MRL 0.52 / MDL 0.05	5.71 w/ MRL 0.52 / MDL 0.05
Cadmium (Cd)	EPA 6020	varies see test columns	mg/kg	1.2	9.6	5.1	14	0.44 w/ MRL 0.02 / MDL 0.01	0.31 w/ MRL 0.02 / MDL 0.01	0.33 w/ MRL 0.02 / MDL 0.01	0.25 w/ MRL 0.02 / MDL 0.01	0.31 w/ MRL 0.02 / MDL 0.01
Chromium (Cr)	EPA 6020	varies see test columns	mg/kg	81	370			25.4 w/ MRL 0.20 / MDL 0.09	28.5 w/ MRL 0.23 / MDL 0.10	28.5 w/ MRL 0.19 / MDL 0.08	18.6 w/ MRL 0.21 / MDL 0.09	25.8 w/ MRL 0.21 / MDL 0.09
Copper (Cu)	EPA 6020	varies see test columns	mg/kg	34	270	390	1,300	32.4 w/ MRL 0.20 / MDL 0.09	32.6 w/ MRL 0.23 / MDL 0.10	30.3 w/ MRL 0.19 / MDL 0.08	23.8 w/ MRL 0.21 / MDL 0.09	32.1 w/ MRL 0.21 / MDL 0.09
Lead (Pb)	EPA 6020	varies see test	mg/kg	46.7	218	450	1,200	33.0 w/ MRL 0.05 /	18.3 w/ MRL 0.06 /	20.3 w/ MRL 0.05 /	13.7 w/ MRL 0.05 /	18.7 w/ MRL 0.05 /

Attachment 3.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-01-01 28.3-33.3'	MDH-01-01 73.3-78.3'	MDH-02-01 23-28'	MDH-02-01 39.5-43'	MDH-02-01 63-68'
				(Long et al., 1999)		(PSDDA, 2000)						
		columns						MDL 0.04	MDL 0.05	MDL 0.04	MDL 0.04	MDL 0.04
Mercury (Hg)	EPA 7471A	varies see test columns	mg/kg	0.15	0.71	0.41	2.3	0.09 w/ MRL 0.02 / MDL 0.01	0.06 w/ MRL 0.02 / MDL 0.01	0.07 w/ MRL 0.01 / MDL 0.01	0.11 w/ MRL 0.02 / MDL 0.01	0.08 w/ MRL 0.02 / MDL 0.01
Nickel (Ni)	EPA 6020	varies see test columns	mg/kg	20.9	51.6	140	370	*23.5* w/ MRL 0. 2 / MDL 0.2	*22.4* w/ MRL 0.2 / MDL 0.2	*22.6* w/ MRL 0.2 / MDL 0.2	17.6 w/ MRL 0.2 / MDL 0.2	*21.5* w/ MRL 0.2 / MDL 0.2
Selenium (Se)	EPA 7742	varies see test columns	mg/kg					0.52 w/ MRL 0.10 / MDL 0.04	0.71 w/ MRL 0.12 / MDL 0.05	0.54 w/ MRL 0.09 / MDL 0.04	0.45 w/ MRL 0.10 / MDL 0.04	0.65 w/ MRL 0.11 / MDL 0.04
Silver (Ag)	EPA 6020	varies see test columns	mg/kg	1	3.7	6.1	8.4	0.15 w/ MRL 0.02 / MDL 0.01	0.14 w/ MRL 0.02 / MDL 0.01	0.15 w/ MRL 0.02 / MDL 0.01	0.08 w/ MRL 0.02 / MDL 0.01	0.14 w/ MRL 0.02 / MDL 0.01
Zinc (Zn)	EPA 6020	varies see test columns	mg/kg	150	410	410	3,800	97.7 w/ MRL 0.5 / MDL 0.2	83.8 w/ MRL 0.6 / MDL 0.2	93.5 w/ MRL 0.5 / MDL 0.2	64.2 w/ MRL 0.5 / MDL 0.2	80.3 w/ MRL 0.05 / MDL 0.02
ORGANICS												
PESTICIDES												
Total Chlorinated Pesticides [4]	EPA 8081A	varies see test columns	ug/kg	6.8	108.1	56.9	69.0	3.9	*12.3*	ND	ND	3.9
Aldrin	EPA 8081A	varies see test columns	ug/kg			10		ND w/ MRL 1.8 / MDL 0.42	ND w/ MRL 14 / MDL 3.3	ND w/ MRL 17 / MDL 4.0	ND w/ MRL 15 / MDL 3.4	ND w/ MRL 15 / MDL 3.5
alpha BHC	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.8 / MDL 0.18	ND w/ MRL 14 / MDL 1.5	ND w/ MRL 17 / MDL 4.4	ND w/ MRL 15 / MDL 1.5	ND w/ MRL 15 / MDL 3.9
alpha-Chlordane	EPA 8081A	varies see test columns	ug/kg			10		ND w/ MRL 2.1 / MDL 2.1	ND w/ MRL 14 / MDL 1.5	ND w/ MRL 17 / MDL 1.8	ND w/ MRL 15 / MDL 2.2	ND w/ MRL 15 / MDL 1.6
beta-BHC	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.8 / MDL 0.18	ND w/ MRL 14 / MDL 2.1	ND w/ MRL 17 / MDL 2.5	ND w/ MRL 15 / MDL 2.2	ND w/ MRL 15 / MDL 2.2
delta-BHC	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.8 / MDL 0.66	ND w/ MRL 14 / MDL 5.1	ND w/ MRL 17 / MDL 6.3	ND w/ MRL 15 / MDL 5.4	ND w/ MRL 15 / MDL 5.5
Dieldrin	EPA 8081A	varies see test	ug/kg	0.02	8.0	10		ND w/ MRL 1.8 /	ND w/ MRL 14 /	ND w/ MRL 17 /	ND w/ MRL 15 /	ND w/ MRL 15 /

Attachment 3.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-01-01 28.3-33.3'	MDH-01-01 73.3-78.3'	MDH-02-01 23-28'	MDH-02-01 39.5-43'	MDH-02-01 63-68'
				(Long et al., 1999)		(PSDDA, 2000)						
		columns						MDL 0.54	MDL 4.3	MDL 5.2	MDL 4.5	MDL 4.5
Endosulfan I	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.8 / MDL 0.22	ND w/ MRL 14 / MDL 1.7	ND w/ MRL 17 / MDL 2.7	ND w/ MRL 15 / MDL 1.8	ND w/ MRL 15 / MDL 1.9
Endosulfan II	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.8 / MDL 0.39	ND w/ MRL 14 / MDL 3.0	ND w/ MRL 17 / MDL 3.7	ND w/ MRL 15 / MDL 3.2	ND w/ MRL 15 / MDL 3.3
Endosulfan Sulfate	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.9 / MDL 1.9	ND w/ MRL 14 / MDL 2.3	ND w/ MRL 17 / MDL 2.7	ND w/ MRL 15 / MDL 2.4	ND w/ MRL 15 / MDL 2.4
Endrin	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.8 / MDL 0.32	ND w/ MRL 14 / MDL 1.9	ND w/ MRL 17 / MDL 2.3	ND w/ MRL 15 / MDL 2.0	ND w/ MRL 15 / MDL 2.0
gamma-BHC Lindane	EPA 8081A	varies see test columns	ug/kg			10		ND w/ MRL 1.8 / MDL 1.9	3.8 w/ MRL 14 / MDL 3.4	ND w/ MRL 17 / MDL 4.1	ND w/ MRL 15 / MDL 15	ND w/ MRL 15 / MDL 15
gamma-Chlordane	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.8 / MDL 0.85	ND w/ MRL 14 / MDL 2.1	ND w/ MRL 17 / MDL 2.5	ND w/ MRL 15 / MDL 2.2	ND w/ MRL 15 / MDL 2.2
Heptachlor	EPA 8081A	varies see test columns	ug/kg			10		ND w/ MRL 1.8 / MDL 1.8	ND w/ MRL 14 / MDL 1.9	ND w/ MRL 17 / MDL 2.3	ND w/ MRL 15 / MDL 2.0	ND w/ MRL 15 / MDL 2.0
Toxaphene	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 88 / MDL 9.9	ND w/ MRL 690 / MDL 78	ND w/ MRL 840 / MDL 95	ND w/ MRL 730 / MDL 82	ND w/ MRL 740 / MDL 83
Total DDT [5]	EPA 8081A	varies see test columns	ug/kg	1.58	46.1	6.9	69.0	*3.9*	*8.5*	ND	ND	*3.9*
4,4'-DDD	EPA 8081A	varies see test columns)	ug/kg	1.0	7.0			*1.8* w/ MRL 1.8 / MDL 0.27	*3.5* w/ MRL 14 / MDL 2.1	ND w/ MRL 17 / MDL 2.6	ND w/ MRL 15 / MDL 2.2	*3.9* w/ MRL 15 / MDL 2.3
4,4'-DDE	EPA 8081A	varies see test columns	ug/kg	2.2	27			2.1 w/ MRL 1.8 / MDL 0.44	*5.0* w/ MRL 14 / MDL 3.4	ND w/ MRL 17 / MDL 4.2	ND w/ MRL 15 / MDL 3.6	ND w/ MRL 15 / MDL 4.4
4,4'-DDT	EPA 8081A	varies see test columns	ug/kg	2.0	20			ND w/ MRL 1.8 / MDL 0.92	ND w/ MRL 14 / MDL 2.4	ND w/ MRL 17 / MDL 2.9	ND w/ MRL 15 / MDL 2.5	ND w/ MRL 15 / MDL 2.5
Heptachlor Epoxide	EPA 8081A	varies	ug/kg					ND w/	ND w/	ND w/	ND w/	ND w/

Attachment 3.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-01-01 28.3-33.3'	MDH-01-01 73.3-78.3'	MDH-02-01 23-28'	MDH-02-01 39.5-43'	MDH-02-01 63-68'
				(Long et al., 1999)		(PSDDA, 2000)						
		see test columns						MRL 1.8 / MDL 0.24	MRL 14 / MDL 1.9	MRL 17 / MDL 2.3	MRL 15 / MDL 2.0	MRL 15 / MDL 2.0
Endrin Aldehyde	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.8 / MDL 0.63	ND w/ MRL 14 / MDL 4.9	ND w/ MRL 17 / MDL 6.0	ND w/ MRL 15 / MDL 5.2	ND w/ MRL 15 / MDL 5.2
Endrin Ketone	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.8 / MDL 0.64	ND w/ MRL 14 / MDL 3.0	ND w/ MRL 17 / MDL 2.7	ND w/ MRL 15 / MDL 2.4	ND w/ MRL 15 / MDL 3.0
Methoxychlor	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.8 / MDL 0.29	ND w/ MRL 14 / MDL 3.7	ND w/ MRL 17 / MDL 2.8	ND w/ MRL 15 / MDL 2.4	ND w/ MRL 15 / MDL 2.4
ORGANOTINS												
Total Organotins [4]			ug/kg					ND	ND	NT	NT	NT
Monobutyltin (n-Butyltin)	Krone	varies see tests column	ug/kg					ND w/ MRL 1.8 / MDL 0.53	ND w/ MRL 1.4 / MDL 0.42	NT	NT	NT
Di-n-butyltin	Krone	varies see tests column	ug/kg					ND w/ MRL 1.8 / MDL 0.54	ND w/ MRL 1.4 / MDL 0.42	NT	NT	NT
Tri-n-butyltin	Krone	varies see tests column	ug/kg					ND w/ MRL 1.8 / MDL 0.57	ND w/ MRL 1.4 / MDL 0.44	NT	NT	NT
Tetra-n-butyltin	Krone	varies see tests column	ug/kg			0.15 [7]		ND w/ MRL 1.8 / MDL 0.68	ND w/ MRL 1.4 / MDL 0.53	NT	NT	NT
PHTHALATES												
Total phthalates [4]			ug/kg			23,170		852.8	688.9	NT	NT	NT
Bis (2-ethylhexyl) phthalate	EPA 8270C	varies see tests column	ug/kg			8,300		830 w/ MRL 360 / MDL 220	670 w/ MRL 280 / MDL 170	NT	NT	NT
Butyl benzyl phthalate	EPA 8270C	varies see tests column	ug/kg			970		2.5 w/ MRL 18 / MDL 2.5	1.9 w/ MRL 14 / MDL 1.9	NT	NT	NT
Diethyl phthalate	EPA 8270C	varies see tests column	ug/kg			1,200		8.2 w/ MRL 18 / MDL 2.9	4.2 w/ MRL 14 / MDL 4.2	NT	NT	NT
Dimethyl phthalate	EPA 8270C	varies see tests	ug/kg			1,400		4.6 w/ MRL 18 /	3.6 w/ MRL 14 /	NT	NT	NT

Attachment 3.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-01-01 28.3-33.3'	MDH-01-01 73.3-78.3'	MDH-02-01 23-28'	MDH-02-01 39.5-43'	MDH-02-01 63-68'
				(Long et al., 1999)		(PSDDA, 2000)						
		column						MDL 5.4	MDL 3.6			
Di-n-butyl phthalate	EPA 8270C	varies see tests column	ug/kg			5,100		4.6 w/ MRL 18 / MDL 4.6	6.9 w/ MRL 14 / MDL 3.6	NT	NT	NT
Di-n-octyl phthalate	EPA 8270C	varies see tests column	ug/kg			6,200		2.9 w/ MRL 18 / MDL 2.9	2.3 w/ MRL 14 / MDL 2.3	NT	NT	NT
POLYCHLORINATED BIPHENYLS (PCB)												
Total PCBs [4]			ug/kg	22.7	180	130	3,100	ND	ND	NT	NT	NT
Aroclor 1016	EPA 8082	varies see tests column	ug/kg					ND w/ MRL 18 / MDL 4.2	ND w/ MRL 14 / MDL 3.3	NT	NT	NT
Aroclor 1221	EPA 8082	varies see tests column	ug/kg					ND w/ MRL 36 / MDL 4.2	ND w/ MRL 28 / MDL 3.3	NT	NT	NT
Aroclor 1232	EPA 8082	varies see tests column	ug/kg					ND w/ MRL 18 / MDL 4.2	ND w/ MRL 14 / MDL 3.3	NT	NT	NT
Aroclor 1242	EPA 8082	varies see tests column	ug/kg					ND w/ MRL 18 / MDL 4.2	ND w/ MRL 14 / MDL 3.3	NT	NT	NT
Aroclor 1248	EPA 8082	varies see tests column	ug/kg					ND w/ MRL 18 / MDL 42	ND w/ MRL 14 / MDL 3.3	NT	NT	NT
Aroclor 1254	EPA 8082	varies see tests column	ug/kg					ND w/ MRL 18 / MDL 4.2	ND w/ MRL 14 / MDL 3.3	NT	NT	NT
Aroclor 1260	EPA 8082	varies see tests column	ug/kg					ND w/ MRL 18 / MDL 4.2	ND w/ MRL 14 / MDL 3.3	NT	NT	NT
POLYNUCLEAR AROMATICS HYDROCARBONS (PAH)												
Total PAHs [4]			ug/kg	4,022	44,792			190.04	402.55	NT	NT	NT
2-Methylnaphthalene	EPA 8270C	varies see tests column	ug/kg	70	670	670	1,900	28 w/ MRL 18 / MDL 5.3	63 w/ MRL 14 / MDL 4.2	NT	NT	NT
Acenaphthene	EPA 8270C	varies see tests	ug/kg	16	500	500	2,000	4.6 w/ MRL 18 /	3.6 w/ MRL 14 /	NT	NT	NT

Attachment 3.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"		Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
					ERL	ERM	SL	ML	MDH-01-01 28.3-33.3'	MDH-01-01 73.3-78.3'	MDH-02-01 23-28'	MDH-02-01 39.5-43'	MDH-02-01 63-68'
					(Long et al., 1999)		(PSDDA, 2000)						
			column						MDL 4.6	MDL 3.6			
	Acenaphthylene	EPA 8270C	varies see tests column	ug/kg	44	640	560	1,300	2.9 w/ MRL 18 / MDL 2.9	2.3 w/ MRL 14 / MDL 2.3	NT	NT	NT
	Anthracene	EPA 8270C	varies see tests column	ug/kg	85.3	1,100	960	13,000	4.1 w/ MRL 18 / MDL 4.1	3.2 w/ MRL 14 / MDL 3.2	NT	NT	NT
	Benzo(a)anthracene	EPA 8270C	varies see tests column	ug/kg	261	1,600	1,300	5,100	4.8 w/ MRL 18 / MDL 1.9	9.2 w/ MRL 14 / MDL 1.5	NT	NT	NT
	Benzo(a)pyrene	EPA 8270C	varies see tests column	ug/kg	430	1,600	1,600	3,600	3.5 w/ MRL 18 / MDL 1.7	1.4 w/ MRL 14 / MDL 1.4	NT	NT	NT
	Benzo(b)fluoranthene	EPA 8270C	varies see tests column	ug/kg			1,600	4,950	7.2 w/ MRL 18 / MDL 1.7	18 w/ MRL 14 / MDL 1.3	NT	NT	NT
	Benzo(k)fluoranthene	EPA 8270C	varies see tests column	ug/kg			1,600	4,950	2.9 w/ MRL 18 / MDL 2.9	2.8 w/ MRL 14 / MDL 2.2	NT	NT	NT
	Benzo(g,h,i)perylene	EPA 8270C	varies see tests column	ug/kg			670	3,200	1.9 w/ MRL 18 / MDL 1.9	13 w/ MRL 14 / MDL 1.5	NT	NT	NT
	Chrysene	EPA 8270C	varies see tests column	ug/kg	384	2,800	1,400	21,000	13 w/ MRL 18 / MDL 2.0	55 w/ MRL 14 / MDL 1.5	NT	NT	NT
	Dibenzo(a,h)anthracene	EPA 8270C	varies see tests column	ug/kg	63.4	260	230	1,900	1.7 w/ MRL 18 / MDL 1.7	1.4 w/ MRL 14 / MDL 1.4	NT	NT	NT
	Fluoranthene	EPA 8270C	varies see tests column	ug/kg	600	5,100	1,700	30,000	8.9 w/ MRL 18 / MDL 4.3	14 w/ MRL 14 / MDL 3.4	NT	NT	NT
	Fluorene	EPA 8270C	varies see tests column	ug/kg	19	540	540	3,600	5.8 w/ MRL 18 / MDL 4.2	28 w/ MRL 14 / MDL 3.3	NT	NT	NT
	Indeno(1,2,3-cd)pyrene	EPA 8270C	varies see tests column	ug/kg			600	4,400	0.84 w/ MRL 18 / MDL 0.84	0.65 w/ MRL 14 / MDL 0.65	NT	NT	NT
	Naphthalene	EPA 8270C	varies	ug/kg	160	2,100	2,100	2,400	56 w/	18 w/	NT	NT	NT

Attachment 3.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"		Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
					ERL	ERM	SL	ML	MDH-01-01 28.3-33.3'	MDH-01-01 73.3-78.3'	MDH-02-01 23-28'	MDH-02-01 39.5-43'	MDH-02-01 63-68'
					(Long et al., 1999)		(PSDDA, 2000)						
			see tests column						MRL 18 / MDL 2.6	MRL 14 / MDL 2.1			
	Phenanthrene	EPA 8270C	varies see tests column	ug/kg	240	1,500	1,500	21,000	36 w/ MRL 18 / MDL 3.6	150 w/ MRL 14 / MDL 2.8	NT	NT	NT
	Pyrene	EPA 8270C	varies see tests column	ug/kg	665	2,600	2,600	16,000	8.9 w/ MRL 18 / MDL 4.6	19 w/ MRL 14 / MDL 3.6	NT	NT	NT
	PHENOLS												
	Total Phenols [4]			ug/kg			1582	5777	220.8	92	NT	NT	NT
	2,4-Dimethylphenol	EPA 8270C	varies see tests column	ug/kg			29	210	27 w/ MRL 88 / MDL 27	21 w/ MRL 69 / MDL 21	NT	NT	NT
	2-Methylphenol	EPA 8270C	varies see tests column	ug/kg			63	77	10 w/ MRL 18 / MDL 4.2	3.3 w/ MRL 14 / MDL 3.3	NT	NT	NT
	4-Methylphenol	EPA 8270C	varies see tests column	ug/kg			670	3,600	73 w/ MRL 18 / MDL 4.2,	3.3 w/ MRL 14 / MDL 3.3	NT	NT	NT
	Pentachlorophenol	EPA 8270C	varies see tests column	ug/kg			400	690	4.1 w/ MRL 88 / MDL 4.1	3.2 w/ MRL 69 / MDL 3.2	NT	NT	NT
	2-Chlorophenol	EPA 8270C	varies see tests column	ug/kg					4.6 w/ MRL 18 / MDL 4.6	3.6 w/ MRL 14 / MDL 3.6	NT	NT	NT
	4-Chloro-3-methylphenol	EPA 8270C	varies see tests column	ug/kg					4.9 w/ MRL 18 / MDL 4.9	3.8 w/ MRL 14 / MDL 3.8	NT	NT	NT
	2,4-Dichlorophenol	EPA 8270C	varies see tests column	ug/kg					5.0 w/ MRL 18 / MDL 5.0	3.9 w/ MRL 14 / MDL 3.9	NT	NT	NT
	2-Nitrophenol	EPA 8270C	varies see tests column	ug/kg					4.5 w/ MRL 18 / MDL 4.5	3.5 w/ MRL 14 / MDL 3.5	NT	NT	NT
	4-Nitrophenol	EPA 8270C	varies see tests column	ug/kg					4.1 w/ MRL 180 / MDL 4.1	3.2 w/ MRL 140 / MDL 3.2	NT	NT	NT
	2,4-Dinitrophenol	EPA 8270C	varies	ug/kg					24 w/	19 w/	NT	NT	NT

Attachment 3.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-01-01 28.3-33.3'	MDH-01-01 73.3-78.3'	MDH-02-01 23-28'	MDH-02-01 39.5-43'	MDH-02-01 63-68'
				(Long et al., 1999)		(PSDDA, 2000)						
		see tests column						MRL 360 / MDL 24	MRL 280 / MDL 19			
2-Methyl-4,6-dinitrophenol	EPA 8270C	varies see tests column	ug/kg					5.5 w/ MRL 180 / MDL 5.5	4.3 w/ MRL 140 / MDL 4.3	NT	NT	NT
2,4,5-Trichlorophenol	EPA 8270C	varies see tests column	ug/kg					6.5 w/ MRL 18 / MDL 6.5	5.1 w/ MRL 14 / MDL 5.1	NT	NT	NT
2,4,6-Trichlorophenol	EPA 8270C	varies see tests column	ug/kg					6.6 w/ MRL 18 / MDL 6.6	5.2 w/ MRL 14 / MDL 5.2	NT	NT	NT
Phenol	EPA 8270C	varies see tests column	ug/kg					41 w/ MRL 53 / MDL 4.9	9.6 w/ MRL 42 / MDL 3.8	NT	NT	NT

Second set of five samples--holes 03-01, 04-01, and upper part of 05-01:

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-03-01 23.3-28.3'	MDH-03-01 38.3-43.3'	MDH-03-01 53.3-58.3'	MDH-04-01 13-18'	MDH-05-01 18-23'
				(Long et al., 1999)		(PSDDA, 2000)						
PHYSICAL/CONVENTIONALS												
Total Solids (wet weight)	EPA 160.3M	--	%					63.1	69.5	71.4	67.0	60.7
Total Volatile Solids (wet weight)	SM 2540G	0.01	%					7.91	4.88	3.81	4.53	4.86
pH	EPA 9045	0.1	pH units					6.9	7.1	7.0	6.7	7.2
Ammonia	EPA 350.1M	varies see tests column	mg/kg					126 w/ MRL 0.05 / MDL 0.05	82.7 w/ MRL 0.05 / MDL 0.05	68.4 w/ MRL 0.05 / MDL 0.05	62.2 w/ MRL 0.05 / MDL 0.05	102 w/ MRL 0.02 / MDL 0.02
Total Organic Carbon	EPA 9060M	500/ 300	mg/kg					27400	15100	10400	14800	13900
Soluble Sulfides	EPA/CE-81-1	0.1	mg/kg					65	302	102	80	116

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-03-01 23.3-28.3'	MDH-03-01 38.3-43.3'	MDH-03-01 53.3-58.3'	MDH-04-01 13-18'	MDH-05-01 18-23'
				(Long et al., 1999)		(PSDDA, 2000)						
Total Sulfides	EPA 9030B	3	mg/kg					45	161	50	44	3
Calcium carbonate	ASTM D-4373	0.1	%						0.36	0.36	0.20	0.52
Oil and Grease	EPA 413.2	10	mg/kg					27	25	23	21	18
Total Recoverable Petroleum Hydrocarbons	EPA 413.1	10	mg/kg					15	11	11	12	18
METALS												
Antimony (Sb)	EPA 6020	varies see test columns	mg/kg			15	200	0.17 w/ MRL 0.05 / MDL 0.03	0.15 w/ MRL 0.06 / MDL 0.04	0.16 w/ MRL 0.06 / MDL 0.04	0.13 w/ MRL 0.05 / MDL 0.03	0.13 w/ MRL 0.05 / MDL 0.03
Arsenic (As)	EPA 6020	varies see test columns	mg/kg	8.2	70	57	700	5.36 w/ MRL 0.52 / MDL 0.05	5.97 w/ MRL 0.58 / MDL 0.06	5.95 w/ MRL 0.59 / MDL 0.06	5.89 w/ MRL 0.53 / MDL 0.05	7.5 w/ MRL 0.5 / MDL 0.2
Cadmium (Cd)	EPA 6020	varies see test columns	mg/kg	1.2	9.6	5.1	14	0.29 w/ MRL 0.02 / MDL 0.01	0.28 w/ MRL 0.02 / MDL 0.01	0.29 w/ MRL 0.02 / MDL 0.01	0.26 w/ MRL 0.02 / MDL 0.01	0.33 w/ MRL 0.05 / MDL 0.03
Chromium (Cr)	EPA 6020	varies see test columns	mg/kg	81	370			19.9 w/ MRL 0.21 / MDL 0.09	18.5 w/ MRL 0.23 / MDL 0.11	23.4 w/ MRL 0.24 / MDL 0.11	21.9 w/ MRL 0.21 / MDL 0.10	28.5 w/ MRL 0.21 / MDL 0.04
Copper (Cu)	EPA 6020	varies see test columns	mg/kg	34	270	390	1,300	24.8 w/ MRL 0.21 / MDL 0.09	25.2 w/ MRL 0.23 / MDL 0.11	26.3 w/ MRL 0.24 / MDL 0.11	25.4 w/ MRL 0.21 / MDL 0.10	34.2 w/ MRL 0.10 / MDL 0.05
Lead (Pb)	EPA 6020	varies see test columns	mg/kg	46.7	218	450	1,200	17.3 w/ MRL 0.05 / MDL 0.04	14.6 w/ MRL 0.06 / MDL 0.05	15.9 w/ MRL 0.06 / MDL 0.05	16.6 w/ MRL 0.05 / MDL 0.04	18.3 w/ MRL 0.05 / MDL 0.04
Mercury (Hg)	EPA 7471A	varies see test columns	mg/kg	0.15	0.71	0.41	2.3	0.11 w/ MRL 0.02 / MDL 0.01	0.06 w/ MRL 0.02 / MDL 0.01	0.07 w/ MRL 0.02 / MDL 0.01	0.19 w/ MRL 0.01 / MDL 0.01	0.058 w/ MRL 0.015 / MDL 0.007
Nickel (Ni)	EPA 6020	varies see test columns	mg/kg	20.9	51.6	140	370	18.7 w/ MRL 0.2 / MDL 0.2	18.5 w/ MRL 0.2 / MDL 0.2	20.6 w/ MRL 0.2 / MDL 0.2	19.2 w/ MRL 0.2 / MDL 0.2	26.9 w/ MRL 0.5 / MDL 0.3
Selenium (Se)	EPA 7742	varies see test columns	mg/kg					0.43 w/ MRL 0. 10 / MDL 0.04	0.65 w/ MRL 0.12 / MDL 0.05	0.70 w/ MRL 0.12 / MDL 0.05	0.66 w/ MRL 0.11 / MDL 0.04	0.70 w/ MRL 0.21 / MDL 0.03
Silver (Ag)	EPA 6020	varies see test columns	mg/kg	1	3.7	6.1	8.4	0.10 w/ MRL 0.02 / MDL 0.01	0.11 w/ MRL 0.02 / MDL 0.01	0.11 w/ MRL 0.02 / MDL 0.01	0.11 w/ MRL 0.02 / MDL 0.01	0.13 w/ MRL 0.02 / MDL 0.01
Zinc (Zn)	EPA 6020	varies	mg/kg	150	410	410	3,800	70.1 w/	67.4 w/	76.1 w/	69.1 w/	91.9 w/

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-03-01 23.3-28.3'	MDH-03-01 38.3-43.3'	MDH-03-01 53.3-58.3'	MDH-04-01 13-18'	MDH-05-01 18-23'
				(Long et al., 1999)		(PSDDA, 2000)						
		see test columns						MRL 0.5 / MDL 0.2	MRL 0.6 / MDL 0.2	MRL 0.6 / MDL 0.2	MRL 0.5 / MDL 0.2	MRL 0.5 / MDL 0.3
ORGANICS												
PESTICIDES												
Total Chlorinated Pesticides [4]			ug/kg	6.8	108.1	56.9	69.0	ND	ND	ND	ND	ND
Aldrin	EPA 8081A	varies see test columns	ug/kg			10		ND w/ MRL 15 / MDL 3.5	ND w/ MRL 14 / MDL 3.3	ND w/ MRL 15 / MDL 3.4	ND w/ MRL 15 / MDL 3.5	ND w/ MRL 15 / MDL 3.4
alpha BHC	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 15 / MDL 4.1	ND w/ MRL 14 / MDL 3.5	ND w/ MRL 15 / MDL 3.5	ND w/ MRL 15 / MDL 1.6	ND w/ MRL 15 / MDL 3.4
alpha-Chlordane	EPA 8081A	varies see test columns	ug/kg			10		ND w/ MRL 15 / MDL 1.6	ND w/ MRL 14 / MDL 1.6	ND w/ MRL 15 / MDL 1.6	ND w/ MRL 15 / MDL 1.6	ND w/ MRL 15 / MDL 2.2
beta-BHC	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 15 / MDL 2.2	ND w/ MRL 14 / MDL 2.1	ND w/ MRL 15 / MDL 2.1	ND w/ MRL 15 / MDL 2.2	ND w/ MRL 15 / MDL 2.2
delta-BHC	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 15 / MDL 5.4	ND w/ MRL 14 / MDL 5.2	ND w/ MRL 15 / MDL 5.3	ND w/ MRL 15 / MDL 5.5	ND w/ MRL 15 / MDL 5.4
Dieldrin	EPA 8081A	varies see test columns	ug/kg	0.02	8.0	10		ND w/ MRL 15 / MDL 4.5	ND w/ MRL 14 / MDL 4.3	ND w/ MRL 15 / MDL 4.4	ND w/ MRL 15 / MDL 4.6	ND w/ MRL 15 / MDL 4.5
Endosulfan I	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 15 / MDL 1.8	ND w/ MRL 14 / MDL 1.8	ND w/ MRL 15 / MDL 1.8	ND w/ MRL 15 / MDL 1.9	ND w/ MRL 15 / MDL 1.8
Endosulfan II	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 15 / MDL 3.2	ND w/ MRL 14 / MDL 3.1	ND w/ MRL 15 / MDL 3.1	ND w/ MRL 15 / MDL 3.3	ND w/ MRL 15 / MDL 3.2
Endosulfan Sulfate	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 15 / MDL 2.4	ND w/ MRL 14 / MDL 2.3	ND w/ MRL 15 / MDL 2.3	ND w/ MRL 15 / MDL 2.4	ND w/ MRL 15 / MDL 2.4
Endrin	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 15 / MDL 2.0	ND w/ MRL 14 / MDL 1.9	ND w/ MRL 15 / MDL 1.9	ND w/ MRL 15 / MDL 2.0	ND w/ MRL 15 / MDL 19
gamma-BHC Lindane	EPA 8081A	varies see test columns	ug/kg			10		ND w/ MRL 15 / MDL 15	ND w/ MRL 14 / MDL 14	ND w/ MRL 15 / MDL 3.6	ND w/ MRL 15 / MDL 15	ND w/ MRL 15 / MDL 15

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-03-01 23.3-28.3'	MDH-03-01 38.3-43.3'	MDH-03-01 53.3-58.3'	MDH-04-01 13-18'	MDH-05-01 18-23'
				(Long et al., 1999)		(PSDDA, 2000)						
gamma-Chlordane	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 15 / MDL 2.2	ND w/ MRL 14 / MDL 2.1	ND w/ MRL 15 / MDL 2.1	ND w/ MRL 15 / MDL 2.2	ND w/ MRL 15 / MDL 2.2
Heptachlor	EPA 8081A	varies see test columns	ug/kg			10		ND w/ MRL 15 / MDL 2.0	ND w/ MRL 14 / MDL 1.9	ND w/ MRL 15 / MDL 2.0	ND w/ MRL 15 / MDL 2.1	ND w/ MRL 15 / MDL 2.0
Toxaphene	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 740 / MDL 83	ND w/ MRL 700 / MDL 79	ND w/ MRL 710 / MDL 80	ND w/ MRL 750 / MDL 84	ND w/ MRL 720 / MDL 81
Total DDT [5]	EPA 8081A	varies see test columns	ug/kg	1.58	46.1	6.9	69.0	ND	ND	ND	ND	ND
4,4'-DDD	EPA 8081A	varies see test columns	ug/kg	1.0	7.0			ND w/ MRL 15 / MDL 2.3	ND w/ MRL 14 / MDL 2.2	ND w/ MRL 15 / MDL 2.2	ND w/ MRL 15 / MDL 2.3	ND w/ MRL 15 / MDL 2.2
4,4'-DDE	EPA 8081A	varies see test columns	ug/kg	2.2	27			ND w/ MRL 15 / MDL 3.6	ND w/ MRL 14 / MDL 3.5	ND w/ MRL 15 / MDL 3.5	ND w/ MRL 15 / MDL 3.7	ND w/ MRL 15 / MDL 3.6
4,4'-DDT	EPA 8081A	varies see test columns	ug/kg	2.0	20			ND w/ MRL 15 / MDL 2.5	ND w/ MRL 14 / MDL 2.4	ND w/ MRL 15 / MDL 2.5	ND w/ MRL 15 / MDL 2.6	ND w/ MRL 15 / MDL 2.5
Heptachlor Epoxide	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 15 / MDL 2.0	ND w/ MRL 14 / MDL 2.1	ND w/ MRL 15 / MDL 2.0	ND w/ MRL 15 / MDL 2.1	ND w/ MRL 15 / MDL 2.0
Endrin Aldehyde	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 15 / MDL 5.2	ND w/ MRL 14 / MDL 5.0	ND w/ MRL 15 / MDL 5.1	ND w/ MRL 15 / MDL 5.3	ND w/ MRL 15 / MDL 5.1
Endrin Ketone	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 15 / MDL 2.4	ND w/ MRL 14 / MDL 2.4	ND w/ MRL 15 / MDL 2.3	ND w/ MRL 15 / MDL 2.4	ND w/ MRL 15 / MDL 2.3
Methoxychlor	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 15 / MDL 2.4	ND w/ MRL 14 / MDL 2.3	ND w/ MRL 15 / MDL 2.3	ND w/ MRL 15 / MDL 2.4	ND w/ MRL 15 / MDL 2.4
ORGANOTINS												
Total Organotins [4]			ug/kg					NT	NT	NT	NT	ND
Monobutyltin (n-Butyltin)	Krone	1.5 / 0.44 for 05-01	ug/kg					NT	NT	NT	NT	ND
Di-n-butyltin	Krone	1.5 / 0.44 for	ug/kg					NT	NT	NT	NT	ND

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-03-01 23.3-28.3'	MDH-03-01 38.3-43.3'	MDH-03-01 53.3-58.3'	MDH-04-01 13-18'	MDH-05-01 18-23'
				(Long et al., 1999)		(PSDDA, 2000)						
		05-01										
Tri-n-butyltin	Krone	1.5 / 0.46 for 05-01	ug/kg					NT	NT	NT	NT	ND
Tetra-n-butyltin	Krone	1.5 / 0.56 for 05-01	ug/kg			0.15 [7]		NT	NT	NT	NT	ND
PHTHALATES												
Total phthalates [4]			ug/kg			23,170		NT	NT	NT	NT	426.8
Bis (2-ethylhexyl) phthalate	EPA 8270C	290 / 180 for 05-01	ug/kg			8,300		NT	NT	NT	NT	410
Butyl benzyl phthalate	EPA 8270C	15 / 2.0 for 05-01	ug/kg			970		NT	NT	NT	NT	2.0
Diethyl phthalate	EPA 8270C	15 / 4.4 for 05-01	ug/kg			1,200		NT	NT	NT	NT	4.9
Dimethyl phthalate	EPA 8270C	15 / 3.7 for 05-01	ug/kg			1,400		NT	NT	NT	NT	3.7
Di-n-butyl phthalate	EPA 8270C	15 / 3.8 for 05-01	ug/kg			5,100		NT	NT	NT	NT	3.8
Di-n-octyl phthalate	EPA 8270C	15 / 2.4 for 05-01	ug/kg			6,200		NT	NT	NT	NT	2.4
POLYCHLORINATED BIPHENYLS (PCB)												
Total PCBs [4]			ug/kg	22.7	180	130	3,100	NT	NT	NT	NT	ND
Aroclor 1016	EPA 8082	15 / 3.5 for 05-01	ug/kg					NT	NT	NT	NT	ND
Aroclor 1221	EPA 8082	29 / 3.5 for 05-01	ug/kg					NT	NT	NT	NT	ND
Aroclor 1232	EPA 8082	15 / 3.5 for 05-01	ug/kg					NT	NT	NT	NT	ND
Aroclor 1242	EPA 8082	15 / 3.5 for 05-01	ug/kg					NT	NT	NT	NT	ND
Aroclor 1248	EPA 8082	15 / 3.5 for 05-01	ug/kg					NT	NT	NT	NT	ND
Aroclor 1254	EPA 8082	15 / 3.5 for 05-01	ug/kg					NT	NT	NT	NT	ND
Aroclor 1260	EPA 8082	15 / 3.5 for 05-01	ug/kg					NT	NT	NT	NT	ND
POLYNUCLEAR AROMATICS HYDROCARBONS (PAH)												
Total PAHs [4]			ug/kg	4,022	44,792			NT	NT	NT	NT	355.98

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-03-01 23.3-28.3'	MDH-03-01 38.3-43.3'	MDH-03-01 53.3-58.3'	MDH-04-01 13-18'	MDH-05-01 18-23'
				(Long et al., 1999)		(PSDDA, 2000)						
2-Methylnaphthalene	EPA 8270C	15 / 4.4 for 05-01	ug/kg	70	670	670	1,900	NT	NT	NT	NT	***88***
Acenaphthene	EPA 8270C	15 / 3.8 for 05-01	ug/kg	16	500	500	2,000	NT	NT	NT	NT	3.8
Acenaphthylene	EPA 8270C	15 / 2.4 for 05-01	ug/kg	44	640	560	1,300	NT	NT	NT	NT	2.4
Anthracene	EPA 8270C	15 / 3.4 for 05-01	ug/kg	85.3	1,100	960	13,000	NT	NT	NT	NT	3.8
Benzo(a)anthracene	EPA 8270C	15 / 1.6 for 05-01	ug/kg	261	1,600	1,300	5,100	NT	NT	NT	NT	6.7
Benzo(a,e)pyrene	EPA 8270C	15 / 1.4 for 05-01	ug/kg	430	1,600	1,600	3,600	NT	NT	NT	NT	1.4
Benzo(b)fluoranthene	EPA 8270C	15 / 1.4 for 05-01	ug/kg			1,600	4,950	NT	NT	NT	NT	16
Benzo(k)fluoranthene	EPA 8270C	15 / 2.3 for 05-01	ug/kg			1,600	4,950	NT	NT	NT	NT	2.3
Benzo(g,h,i)perylene	EPA 8270C	15 / 1.5 for 05-01	ug/kg			670	3,200	NT	NT	NT	NT	1.5
Chrysene	EPA 8270C	15 / 1.6 for 05-01	ug/kg	384	2,800	1,400	21,000	NT	NT	NT	NT	42
Dibenzo(a,h)anthracene	EPA 8270C	15 / 1.4 for 05-01	ug/kg	63.4	260	230	1,900	NT	NT	NT	NT	1.4
Fluoranthene	EPA 8270C	15 / 3.5 for 05-01	ug/kg	600	5,100	1,700	30,000	NT	NT	NT	NT	12
Fluorene	EPA 8270C	15 / 3.4 for 05-01	ug/kg	19	540	540	3,600	NT	NT	NT	NT	14
Indeno(1,2,3-cd)pyrene	EPA 8270C	15 / 0.68 for 05-01	ug/kg			600	4,400	NT	NT	NT	NT	0.68
Naphthalene	EPA 8270C	15 / 2.2 for 05-01	ug/kg	160	2,100	2,100	2,400	NT	NT	NT	NT	24
Phenanthrene	EPA 8270C	15 / 3.0 for 05-01	ug/kg	240	1,500	1,500	21,000	NT	NT	NT	NT	120
Pyrene	EPA 8270C	15 / 3.7 for 05-01	ug/kg	665	2,600	2,600	16,000	NT	NT	NT	NT	16
PHENOLS												
Total Phenols [4]			ug/kg			1582	5777	NT	NT	NT	NT	93.9
2,4-Dimethylphenol	EPA 8270C	72 / 22 for	ug/kg			29	210	NT	NT	NT	NT	22

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"		Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
					ERL	ERM	SL	ML	MDH-03-01 23.3-28.3'	MDH-03-01 38.3-43.3'	MDH-03-01 53.3-58.3'	MDH-04-01 13-18'	MDH-05-01 18-23'
					(Long et al., 1999)		(PSDDA, 2000)						
			05-01										
	2-Methylphenol	EPA 8270C	15 / 3.5 for 05-01	ug/kg			63	77	NT	NT	NT	NT	3.5
	4-Methylphenol	EPA 8270C	15 / 3.4 for 05-01	ug/kg			670	3,600	NT	NT	NT	NT	3.4
	Pentachlorophenol	EPA 8270C	140 / 3.3 for 05-01	ug/kg			400	690	NT	NT	NT	NT	3.3
	2-Chlorophenol	EPA 8270C	15 / 3.8 for 05-01	ug/kg					NT	NT	NT	NT	3.8
	4-Chloro-3-methylphenol	EPA 8270C	72 / 4.0 for 05-01	ug/kg					NT	NT	NT	NT	4.0
	2,4-Dichlorophenol	EPA 8270C	15 / 4.1 for 05-01	ug/kg					NT	NT	NT	NT	4.1
	2-Nitrophenol	EPA 8270C	15 / 3.6 for 05-01	ug/kg					NT	NT	NT	NT	3.6
	4-Nitrophenol	EPA 8270C	150 / 3.3 for 05-01	ug/kg					NT	NT	NT	NT	3.3
	2,4-Dinitrophenol	EPA 8270C	290 / 19 for 05-01	ug/kg					NT	NT	NT	NT	19
	2-Methyl-4,6-dinitrophenol	EPA 8270C	150 / 4.5 for 05-01	ug/kg					NT	NT	NT	NT	4.5
	2,4,5-Trichlorophenol	EPA 8270C	15 / 5.3 for 05-01	ug/kg					NT	NT	NT	NT	5.3
	2,4,6-Trichlorophenol	EPA 8270C	15 / 5.4 for 05-01	ug/kg					NT	NT	NT	NT	5.4
	Phenol	EPA 8270C	44 / 4.0 for 05-01	ug/kg					NT	NT	NT	NT	8.7

Third set of five samples--lower part of hole 05-01, holes 06-01, 07-01, and upper part of hole 08-01:

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium";	Analytical Method [1]	Method Reporting Limit /	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]
				ERL	ERM	SL	ML	

								MDH-05-01 48-53'	MDH-06-01 18-23'	MDH-07-01 21-23'	MDH-08-01 8.8-10.8'	MDH-08-01 27.5-32.5'
				(Long et al., 1999)		(PSDDA, 2000)						
PHYSICAL/CONVENTIONALS												
Total Solids (wet weight)	EPA 160.3M	0.01	%					71.7	63.4	63.3	72.2	70.8
Total Volatile Solids (wet weight)	SM 2540G	0.01	%					3.68	5.45	8.07	2.31	4.02
pH	EPA 9045	0.1	pH units					7.2	7.1	6.8	0.5	7.0
Ammonia	EPA 350.1M	varies see tests column	mg/kg					48.1 w/ MRL 0.02 / MDL 0.02	94 w/ MRL 0.02 / MDL 0.02	155 w/ MRL 0.05 / MDL 0.02	0.5 w/ MRL 0.05 / MDL 0.05	45.1 w/ MRL 0.05 / MDL 0.05
Total Organic Carbon	EPA 9060M	500/ 300	mg/kg					10300	16200	37500	5500	14300
Soluble Sulfides	EPA/CE-81-1	0.1	mg/kg					248	318	51	9	16
Total Sulfides	EPA 9030B	3	mg/kg					28	26	11	7	18
Calcium carbonate	ASTM D-4373	0.1	%					0.20	0.20	0.36	0.20	0.20
Oil and Grease	EPA 413.2	10	mg/kg					25	34	48	27	84
Total Recoverable Petroleum Hydrocarbons	EPA 413.1	10	mg/kg					22	34	45	25	78
METALS												
Antimony (Sb)	EPA 6020	varies see test columns	mg/kg			15	200	0.06 w/ MRL 0.03 / MDL 0.02	0.14 w/ MRL 0.05 / MDL 0.03	0.13 w/ MRL 0.05 / MDL 0.03	0.19 w/ MRL 0.05 / MDL 0.03	0.17 w/ MRL 0.06 / MDL 0.03
Arsenic (As)	EPA 6020	varies see test columns	mg/kg	8.2	70	57	700	5.0 w/ MRL 0.5 / MDL 0.2	7.2 w/ MRL 0.5 / MDL 0.2	5.7 w/ MRL 0.5 / MDL 0.2	5.38 w/ MRL 0.54 / MDL 0.05	5.05 w/ MRL 0.58 / MDL 0.06
Cadmium (Cd)	EPA 6020	varies see test columns	mg/kg	1.2	9.6	5.1	14	0.25 w/ MRL 0.05 / MDL 0.03	0.37 w/ MRL 0.05 / MDL 0.03	0.25 w/ MRL 0.05 / MDL 0.03	0.21 w/ MRL 0.02 / MDL 0.01	0.25 w/ MRL 0.02 / MDL 0.01
Chromium (Cr)	EPA 6020	varies see test columns	mg/kg	81	370			16.4 w/ MRL 0.22 / MDL 0.04	29.9 w/ MRL 0.22 / MDL 0.04	21.6 w/ MRL 0.21 / MDL 0.04	18.7 w/ MRL 0.22 / MDL 0.10	17.2 w/ MRL 0.23 / MDL 0.10
Copper (Cu)	EPA 6020	varies see test columns	mg/kg	34	270	390	1,300	18.9 w/ MRL 0.11 / MDL 0.05	33.8 w/ MRL 0.11 / MDL 0.05	28.6 w/ MRL 0.11 / MDL 0.05	19.5 w/ MRL 0.22 / MDL 0.10	21.6 w/ MRL 0.23 / MDL 0.10
Lead (Pb)	EPA 6020	varies see test columns	mg/kg	46.7	218	450	1,200	10.3 w/ MRL 0.05 / MDL 0.04	18.6 w/ MRL 0.05 / MDL 0.04	18.1 w/ MRL 0.05 / MDL 0.04	10.8 w/ MRL 0.05 / MDL 0.04	12.4 w/ MRL 0.06 / MDL 0.05
Mercury (Hg)	EPA 7471A	varies see test columns	mg/kg	0.15	0.71	0.41	2.3	0.053 w/ MRL 0.015 / MDL 0.007	0.069 w/ MRL 0.14 / MDL 0.07	0.04 w/ MRL 0.02 / MDL 0.01	0.04 w/ MRL 0.02 / MDL 0.01	0.06 w/ MRL 0.02 / MDL 0.01
Nickel (Ni)	EPA 6020	varies see test columns	mg/kg	20.9	51.6	140	370	16.2 w/ MRL 0.5 / MDL 0.3	27.1 w/ MRL 0.5 / MDL 0.3	22.5 w/ MRL 0.32 / MDL 0.32	16.1 w/ MRL 0.2 / MDL 0.2	16.4 w/ MRL 0.2 / MDL 0.2
Selenium (Se)	EPA 7742	varies see test columns	mg/kg					0.53 w/ MRL 0.22 / MDL 0.03	0.73 w/ MRL 0.22 / MDL 0.03	0.2 w/ MRL 0.2 / MDL 0.1	0.55 w/ MRL 0.11 / MDL 0.04	0.48 w/ MRL 0.12 / MDL 0.05
Silver (Ag)	EPA 6020	varies	mg/kg	1	3.7	6.1	8.4	0.04 w/	0.13 w/	0.06 w/	0.07 w/	0.08 w/

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-05-01 48-53'	MDH-06-01 18-23'	MDH-07-01 21-23'	MDH-08-01 8.8-10.8'	MDH-08-01 27.5-32.5'
				(Long et al., 1999)		(PSDDA, 2000)						
		see test columns						MRL 0.01 / MDL 0.00	MRL 0.02 / MDL 0.01	MRL 0.02 / MDL 0.01	MRL 0.02 / MDL 0.01	MRL 0.02 / MDL 0.01
Zinc (Zn)	EPA 6020	varies see test columns	mg/kg	150	410	410	3,800	53.8 w/ MRL 0.5 / MDL 0.3	90.9 w/ MRL 0.5 / MDL 0.3	79.7 w/ MRL 0.5 / MDL 0.3	55.4 w/ MRL 0.5 / MDL 0.2	59.4 w/ MRL 0.6 / MDL 0.2
ORGANICS												
PESTICIDES												
Total Chlorinated Pesticides [4]			ug/kg	6.8	108.1	56.9	69.0	ND	ND	*9.0*	ND	ND
Aldrin	EPA 8081A	varies see test columns	ug/kg			10		ND w/ MRL 13 / MDL 3.1	ND w/ MRL 16 / MDL 3.6	ND w/ MRL 1.5 / MDL 0.35	ND w/ MRL 1.3 / MDL 0.31	ND w/ MRL 14 / MDL 3.3
alpha BHC	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 13 / MDL 1.4	ND w/ MRL 16 / MDL 3.8	ND w/ MRL 1.3 / MDL 0.31	ND w/ MRL 1.3 / MDL 0.39	ND w/ MRL 14 / MDL 1.5
alpha-Chlordane	EPA 8081A	varies see test columns	ug/kg			10		ND w/ MRL 13 / MDL 1.4	ND w/ MRL 16 / MDL 1.7	ND w/ MRL 1.5 / MDL 1.5	ND w/ MRL 1.3 / MDL 0.14	ND w/ MRL 14 / MDL 1.5
beta-BHC	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 13 / MDL 2.0	ND w/ MRL 16 / MDL 2.3	ND w/ MRL 1.5 / MDL 0.22	ND w/ MRL 1.3 / MDL 1.3	ND w/ MRL 14 / MDL 2.1
delta-BHC	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 13 / MDL 4.8	ND w/ MRL 16 / MDL 5.6	ND w/ MRL 1.5 / MDL 0.55	ND w/ MRL 1.3 / MDL 0.48	ND w/ MRL 14 / MDL 5.2
Dieldrin	EPA 8081A	varies see test columns	ug/kg	0.02	8.0	10		ND w/ MRL 13 / MDL 4.0	ND w/ MRL 16 / MDL 4.7	ND w/ MRL 1.5 / MDL 0.46	ND w/ MRL 1.3 / MDL 0.40	ND w/ MRL 14 / MDL 4.3
Endosulfan I	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 13 / MDL 1.6	ND w/ MRL 16 / MDL 1.9	ND w/ MRL 2.2 / MDL 2.2	ND w/ MRL 1.3 / MDL 0.16	ND w/ MRL 14 / MDL 1.8
Endosulfan II	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 13 / MDL 2.9	ND w/ MRL 16 / MDL 3.3	ND w/ MRL 1.5 / MDL 1.2	ND w/ MRL 1.3 / MDL 0.29	ND w/ MRL 14 / MDL 3.1
Endosulfan Sulfate	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 13 / MDL 2.1	ND w/ MRL 16 / MDL 2.5	ND w/ MRL 1.5 / MDL 1.3	ND w/ MRL 1.3 / MDL 0.34	ND w/ MRL 14 / MDL 2.3
Endrin	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 13 / MDL 1.8	ND w/ MRL 16 / MDL 2.0	ND w/ MRL 1.5 / MDL 1.5	ND w/ MRL 1.3 / MDL 0.18	ND w/ MRL 14 / MDL 1.9

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-05-01 48-53'	MDH-06-01 18-23'	MDH-07-01 21-23'	MDH-08-01 8.8-10.8'	MDH-08-01 27.5-32.5'
				(Long et al., 1999)		(PSDDA, 2000)						
gamma-BHC Lindane	EPA 8081A	varies see test columns	ug/kg			10		ND w/ MRL 13 / MDL 13	ND w/ MRL 16 / MDL 16	2.3 w/ MRL 1.5 / MDL 0.36	ND w/ MRL 2.3 / MDL 2.3	ND w/ MRL 14 / MDL 3.4
gamma-Chlordane	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 13 / MDL 2.0	ND w/ MRL 16 / MDL 2.3	ND w/ MRL 1.5 / MDL 1.5	ND w/ MRL 1.3 / MDL 0.20	ND w/ MRL 14 / MDL 2.1
Heptachlor	EPA 8081A	varies see test columns	ug/kg			10		ND w/ MRL 13 / MDL 1.8	ND w/ MRL 16 / MDL 2.1	ND w/ MRL 1.5 / MDL 0.21	ND w/ MRL 1.3 / MDL 0.18	ND w/ MRL 14 / MDL 1.9
Toxaphene	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 650 / MDL 73	ND w/ MRL 760 / MDL 85	ND w/ MRL 74 / MDL 8.3	ND w/ MRL 65 / MDL 7.3	ND w/ MRL 700 / MDL 79
Total DDT [5]	EPA 8081A	varies see test columns	ug/kg	1.58	46.1	6.9	69.0	ND	ND	5.9	ND	ND
4,4'-DDD	EPA 8081A	varies see test columns	ug/kg	1.0	7.0			ND w/ MRL 13 / MDL 2.0	ND w/ MRL 16 / MDL 2.3	ND w/ MRL 1.6 / MDL 1.6	ND w/ MRL 1.3 / MDL 1.3	ND w/ MRL 14 / MDL 2.2
4,4'-DDE	EPA 8081A	varies see test columns	ug/kg	2.2	27			ND w/ MRL 13 / MDL 3.2	ND w/ MRL 16 / MDL 3.8	2.5 w/ MRL 1.5 / MDL 0.37	ND w/ MRL 1.3 / MDL 0.33	ND w/ MRL 14 / MDL 3.5
4,4'-DDT	EPA 8081A	varies see test columns	ug/kg	2.0	20			ND w/ MRL 13 / MDL 2.2	ND w/ MRL 16 / MDL 2.6	3.4 w/ MRL 1.5 / MDL 0.25	ND w/ MRL 1.3 / MDL 1.3	ND w/ MRL 14 / MDL 2.4
Heptachlor Epoxide	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 13 / MDL 1.8	ND w/ MRL 16 / MDL 2.1	ND w/ MRL 1.5 / MDL 0.21	ND w/ MRL 1.3 / MDL 0.18	ND w/ MRL 14 / MDL 1.9
Endrin Aldehyde	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 13 / MDL 4.6	ND w/ MRL 16 / MDL 5.4	0.80 w/ MRL 1.5 / MDL 0.53	ND w/ MRL 1.3 / MDL 0.46	ND w/ MRL 14 / MDL 5.0
Endrin Ketone	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 13 / MDL 3.1	ND w/ MRL 16 / MDL 4.9	ND w/ MRL 1.5 / MDL 1.5	ND w/ MRL 1.6 / MDL 1.6	ND w/ MRL 14 / MDL 4.8
Methoxychlor	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 13 / MDL 2.1	ND w/ MRL 16 / MDL 2.5	ND w/ MRL 1.9 / MDL 1.9	ND w/ MRL 1.3 / MDL 0.21	ND w/ MRL 14 / MDL 3.9
ORGANOTINS												
Total Organotins [4]			ug/kg					0.55	ND	NT	NT	NT

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-05-01 48-53'	MDH-06-01 18-23'	MDH-07-01 21-23'	MDH-08-01 8.8-10.8'	MDH-08-01 27.5-32.5'
				(Long et al., 1999)		(PSDDA, 2000)						
Monobutyltin (n-Butyltin)	Krone	varies see test columns	ug/kg					0.55 w/ MRL 1.3 / MDL 0.39	ND w/ MRL 1.6 / MDL 0.46	NT	NT	NT
Di-n-butyltin	Krone	varies see test columns	ug/kg					ND w/ MRL 1.3 / MDL 0.40	ND w/ MRL 1.6 / MDL 0.47	NT	NT	NT
Tri-n-butyltin	Krone	varies see test columns	ug/kg					ND w/ MRL 1.3 / MDL 0.42	ND w/ MRL 1.6 / MDL 0.49	NT	NT	NT
Tetra-n-butyltin	Krone	varies see test columns	ug/kg			0.15 [7]		ND w/ MRL 1.3 / MDL 0.5	ND w/ MRL 1.6 / MDL 0.59	NT	NT	NT
PHTHALATES												
Total phthalates [4]			ug/kg			23,170		178.2	207.1	NT	NT	NT
Bis (2-ethylhexyl) phthalate	EPA 8270C	varies see test columns	ug/kg			8,300		160 w/ MRL 260 / MDL 160	190 w/ MRL 310 / MDL 190	NT	NT	NT
Butyl benzyl phthalate	EPA 8270C	varies see test columns	ug/kg			970		1.8 w/ MRL 13 / MDL 1.8	2.1 w/ MRL 16 / MDL 2.1	NT	NT	NT
Diethyl phthalate	EPA 8270C	varies see test columns	ug/kg			1,200		4.5 w/ MRL 13 / MDL 4.0	4.6 w/ MRL 16 / MDL 4.6	NT	NT	NT
Dimethyl phthalate	EPA 8270C	varies see test columns	ug/kg			1,400		3.4 w/ MRL 13 / MDL 2.1	3.9 w/ MRL 16 / MDL 3.9	NT	NT	NT
Di-n-butyl phthalate	EPA 8270C	varies see test columns	ug/kg			5,100		6.4 w/ MRL 13 / MDL 3.4	4.0 w/ MRL 16 / MDL 4.0	NT	NT	NT
Di-n-octyl phthalate	EPA 8270C	varies see test columns	ug/kg			6,200		2.1 w/ MRL 13 / MDL 2.1	2.5 w/ MRL 16 / MDL 2.5	NT	NT	NT
POLYCHLORINATED BIPHENYLS (PCB)												
Total PCBs [4]			ug/kg	22.7	180	130	3,100	ND	ND	NT	NT	NT
Aroclor 1016	EPA 8082	varies see test columns	ug/kg					ND w/ MRL 13 / MDL 3.1	ND w/ MRL 16 / MDL 3.7	NT	NT	NT

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-05-01 48-53'	MDH-06-01 18-23'	MDH-07-01 21-23'	MDH-08-01 8.8-10.8'	MDH-08-01 27.5-32.5'
				(Long et al., 1999)		(PSDDA, 2000)						
Aroclor 1221	EPA 8082	varies see test columns	ug/kg					ND w/ MRL 26 / MDL 3.1	ND w/ MRL 31 / MDL 3.7	NT	NT	NT
Aroclor 1232	EPA 8082	varies see test columns	ug/kg					ND w/ MRL 13 / MDL 3.1	ND w/ MRL 16 / MDL 3.7	NT	NT	NT
Aroclor 1242	EPA 8082	varies see test columns	ug/kg					ND w/ MRL 13 / MDL 3.1	ND w/ MRL 16 / MDL 3.7	NT	NT	NT
Aroclor 1248	EPA 8082	varies see test columns	ug/kg					ND w/ MRL 13 / MDL 3.1	ND w/ MRL 16 / MDL 3.7	NT	NT	NT
Aroclor 1254	EPA 8082	varies see test columns	ug/kg					ND w/ MRL 13 / MDL 3.1	ND w/ MRL 16 / MDL 3.7	NT	NT	NT
Aroclor 1260	EPA 8082	varies see test columns	ug/kg					ND w/ MRL 13 / MDL 3.1	ND w/ MRL 16 / MDL 3.7	NT	NT	NT
POLYNUCLEAR AROMATICS HYDROCARBONS (PAH)												
Total PAHs [4]			ug/kg	4,022	44,792			193.92	243.92	NT	NT	NT
2-Methylnaphthalene	EPA 8270C	varies see test columns	ug/kg	70	670	670	1,900	33 w/ MRL 13 / MDL 3.9	35 w/ MRL 16 / MDL 4.6	NT	NT	NT
Acenaphthene	EPA 8270C	varies see test columns	ug/kg	16	500	500	2,000	3.4 w/ MRL 13 / MDL 3.4	4.0 w/ MRL 16 / MDL 4.0	NT	NT	NT
Acenaphthylene	EPA 8270C	varies see test columns	ug/kg	44	640	560	1,300	2.1 w/ MRL 13 / MDL 2.1	2.5 w/ MRL 16 / MDL 2.5	NT	NT	NT
Anthracene	EPA 8270C	varies see test columns	ug/kg	85.3	1,100	960	13,000	3.0 w/ MRL 13 / MDL 3.0	3.5 w/ MRL 16 / MDL 3.5	NT	NT	NT
Benzo(a)anthracene	EPA 8270C	varies see test columns	ug/kg	261	1,600	1,300	5,100	3.6 w/ MRL 13 / MDL 1.4	6.1 w/ MRL 16 / MDL 1.7	NT	NT	NT
Benzo(a)pyrene	EPA 8270C	varies see test columns	ug/kg	430	1,600	1,600	3,600	1.3 w/ MRL 13 / MDL 1.3	1.5 w/ MRL 16 / MDL 1.5	NT	NT	NT

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-05-01 48-53'	MDH-06-01 18-23'	MDH-07-01 21-23'	MDH-08-01 8.8-10.8'	MDH-08-01 27.5-32.5'
				(Long et al., 1999)		(PSDDA, 2000)						
Benzo(b)fluoranthene	EPA 8270C	varies see test columns	ug/kg			1,600	4,950	12 w/ MRL 13 / MDL 1.2	15 w/ MRL 16 / MDL 1.4	NT	NT	NT
Benzo(k)fluoranthene	EPA 8270C	varies see test columns	ug/kg			1,600	4,950	2.1 w/ MRL 13 / MDL 2.1	2.5 w/ MRL 16 / MDL 2.5	NT	NT	NT
Benzo(g,h,i)perylene	EPA 8270C	varies see test columns	ug/kg			670	3,200	5.1 w/ MRL 13 / MDL 1.4	8.6 w/ MRL 16 / MDL 1.6	NT	NT	NT
Chrysene	EPA 8270C	varies see test columns	ug/kg	384	2,800	1,400	21,000	24 w/ MRL 13 / MDL 1.4	32 w/ MRL 16 / MDL 1.7	NT	NT	NT
Dibenzo(a,h)anthracene	EPA 8270C	varies see test columns	ug/kg	63.4	260	230	1,900	1.3 w/ MRL 13 / MDL 1.4	1.5 w/ MRL 16 / MDL 1.5	NT	NT	NT
Fluoranthene	EPA 8270C	varies see test columns	ug/kg	600	5,100	1,700	30,000	6.2 w/ MRL 13 / MDL 3.2	7.0 w/ MRL 16 / MDL 3.7	NT	NT	NT
Fluorene	EPA 8270C	varies see test columns	ug/kg	19	540	540	3,600	6.2 w/ MRL 13 / MDL 3.1	14 w/ MRL 16 / MDL 3.6	NT	NT	NT
Indeno(1,2,3-cd)pyrene	EPA 8270C	varies see test columns	ug/kg			600	4,400	0.62 w/ MRL 13 / MDL 0.62	0.72 w/ MRL 16 / MDL 0.72	NT	NT	NT
Naphthalene	EPA 8270C	varies see test columns	ug/kg	160	2,100	2,100	2,400	11 w/ MRL 13 / MDL 2.0	15 w/ MRL 16 / MDL 2.3	NT	NT	NT
Phenanthrene	EPA 8270C	varies see test columns	ug/kg	240	1,500	1,500	21,000	69 w/ MRL 13 / MDL 2.7	80 w/ MRL 16 / MDL 3.1	NT	NT	NT
Pyrene	EPA 8270C	varies see test columns	ug/kg	665	2,600	2,600	16,000	10 w/ MRL 13 / MDL 3.4	15 w/ MRL 16 / MDL 3.9	NT	NT	NT
PHENOLS												
Total Phenols [4]			ug/kg			1582	5777	83.5	99.1	NT	NT	NT
2,4-Dimethylphenol	EPA 8270C	varies see test columns	ug/kg			29	210	20 w/ MRL 65 / MDL 20	23 w/ MRL 76 / MDL 23	NT	NT	NT

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-05-01 48-53'	MDH-06-01 18-23'	MDH-07-01 21-23'	MDH-08-01 8.8-10.8'	MDH-08-01 27.5-32.5'
				(Long et al., 1999)		(PSDDA, 2000)						
2-Methylphenol	EPA 8270C	varies see test columns	ug/kg			63	77	3.1 w/ MRL 13 / MDL 3.1	3.7 w/ MRL 16 / MDL 3.7	NT	NT	NT
4-Methylphenol	EPA 8270C	varies see test columns	ug/kg			670	3,600	3.1 w/ MRL 13 / MDL 3.1	3.6 w/ MRL 16 / MDL 3.6	NT	NT	NT
Pentachlorophenol	EPA 8270C	varies see test columns	ug/kg			400	690	3.0 w/ MRL 130 / MDL 3.0	3.5 w/ MRL 150 / MDL 3.5	NT	NT	NT
2-Chlorophenol	EPA 8270C	varies see test columns	ug/kg					3.4 w/ MRL 13 / MDL 3.4	4.0 w/ MRL 16 / MDL 4.0	NT	NT	NT
4-Chloro-3-methylphenol	EPA 8270C	varies see test columns	ug/kg					3.6 w/ MRL 65 / MDL 3.6	4.2 w/ MRL 76 / MDL 4.2	NT	NT	NT
2,4-Dichlorophenol	EPA 8270C	varies see test columns	ug/kg					3.7 w/ MRL 13 / MDL 3.7	4.3 w/ MRL 16 / MDL 4.3	NT	NT	NT
2-Nitrophenol	EPA 8270C	varies see test columns	ug/kg					3.3 w/ MRL 13 / MDL 3.3	3.8 w/ MRL 16 / MDL 3.8	NT	NT	NT
4-Nitrophenol	EPA 8270C	varies see test columns	ug/kg					3.0 w/ MRL 130 / MDL 3.0	3.5 w/ MRL 160 / MDL 3.5	NT	NT	NT
2,4-Dinitrophenol	EPA 8270C	varies see test columns	ug/kg					20 w/ MRL 260 / MDL 17	20 w/ MRL 310 / MDL 20	NT	NT	NT
2-Methyl-4,6-dinitrophenol	EPA 8270C	varies see test columns	ug/kg					4.0 w/ MRL 130 / MDL 4.0	4.7 w/ MRL 160 / MDL 4.7	NT	NT	NT
2,4,5-Trichlorophenol	EPA 8270C	varies see test columns	ug/kg					4.8 w/ MRL 13 / MDL 4.8	5.6 w/ MRL 16 / MDL 5.6	NT	NT	NT
2,4,6-Trichlorophenol	EPA 8270C	varies see test columns	ug/kg					4.9 w/ MRL 13 / MDL 4.9	5.7 w/ MRL 13 / MDL 5.7	NT	NT	NT
Phenol	EPA 8270C	varies see test	ug/kg					3.6 w/ MRL 39 /	9.5 w/ MRL 46 /	NT	NT	NT

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"		Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
					ERL	ERM	SL	ML	MDH-05-01 48-53'	MDH-06-01 18-23'	MDH-07-01 21-23'	MDH-08-01 8.8-10.8'	MDH-08-01 27.5-32.5'
					(Long et al., 1999)		(PSDDA, 2000)						
			columns						MDL 3.6	MDL 4.2			

Fourth set of five samples--lower part of hole 08-01, hole 09-01:

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"		Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
					ERL	ERM	SL	ML	MDH-08-01 47.5-52.5'	MDH-09-01 12.7-17.7'	MDH-09-01 32.7-37.7'	MDH-09-01 42.7-47.7'	MDH-09-01 52.7-55'
					(Long et al., 1999)		(PSDDA, 2000)						
PHYSICAL/CONVENTIONALS													
	Total Solids (wet weight)	EPA 160.3M	0.01	%					76.2	86.2	65.5	72.3	77.8
	Total Volatile Solids (wet weight)	SM 2540G	0.01	%					2.69	2.49	5.25	3.02	2.01
	pH	EPA 9045	0.1	pH units					6.8	8.1	8.0	6.8	7.1
	Ammonia	EPA 350.1M	varies see tests column	mg/kg					37.6 w/ MRL 0.5 / MDL 0.5	6.4 w/ MRL 0.4 / MDL 0.2	18.3 w/ MRL 0.4 / MDL 0.2	23.4 w/ MRL 0.4 / MDL 0.2	13.1 w/ MRL 0.4 / MDL 0.2
	Total Organic Carbon	EPA 9060M	500/ 300	mg/kg					9100	3900	9600	8900	4300
	Soluble Sulfides	EPA/CE-81-1	0.1	mg/kg					447	24	212	329	230
	Total Sulfides	EPA 9030B	3	mg/kg					88	5	41	79	44
	Calcium carbonate	ASTM D-4373	0.1	%					0.20	0.36	0.20	0.20	0.10
	Oil and Grease	EPA 413.2	10	mg/kg					16	18	15	18	51
	Total Recoverable Petroleum Hydrocarbons	EPA 413.1	10	mg/kg					16	16	15	18	48
METALS													
	Antimony (Sb)	EPA 6020	varies see test columns	mg/kg			15	200	0.16 w/ MRL 0.06 / MDL 0.03	0.17 w/ MRL 0.06 / MDL 0.04	0.16 w/ MRL 0.06 / MDL 0.03	0.14 w/ MRL 0.06 / MDL 0.04	0.10 w/ MRL 0.05 / MDL 0.03
	Arsenic (As)	EPA 6020	varies see test columns	mg/kg	8.2	70	57	700	4.37 w/ MRL 0.55 / MDL 0.06	5.72 w/ MRL 0.61 / MDL 0.06	4.72 w/ MRL 0.55 / MDL 0.06	3.98 w/ MRL 0.59 / MDL 0.06	3.18 w/ MRL 0.53 / MDL 0.05

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-08-01 47.5-52.5'	MDH-09-01 12.7-17.7'	MDH-09-01 32.7-37.7'	MDH-09-01 42.7-47.7'	MDH-09-01 52.7-55'
				(Long et al., 1999)		(PSDDA, 2000)						
Cadmium (Cd)	EPA 6020	varies see test columns	mg/kg	1.2	9.6	5.1	14	0.20 w/ MRL 0.02 / MDL 0.01	0.27 w/ MRL 0.02 / MDL 0.01	0.20 w/ MRL 0.02 / MDL 0.01	0.18 w/ MRL 0.02 / MDL 0.01	0.16 w/ MRL 0.02 / MDL 0.01
Chromium (Cr)	EPA 6020	varies see test columns	mg/kg	81	370			14.4 w/ MRL 0.22 / MDL 0.01	18.4 w/ MRL 0.2 / MDL 0.01	16.6 w/ MRL 0.2 / MDL 0.1	15.3 w/ MRL 0.2 / MDL 0.1	14.2 w/ MRL 0.2 / MDL 0.1
Copper (Cu)	EPA 6020	varies see test columns	mg/kg	34	270	390	1,300	20.4 w/ MRL 0.22 / MDL 0.01	22.1 w/ MRL 0.2 / MDL 0.1	22.3 w/ MRL 0.2 / MDL 0.1	17.5 w/ MRL 0.2 / MDL 0.1	15.2 w/ MRL 0.2 / MDL 0.1
Lead (Pb)	EPA 6020	varies see test columns	mg/kg	46.7	218	450	1,200	12.4 w/ MRL 0.06 / MDL 0.04	13.8 w/ MRL 0.06 / MDL 0.05	14.0 w/ MRL 0.06 / MDL 0.04	11.4 w/ MRL 0.06 / MDL 0.05	9.30 w/ MRL 0.05 / MDL 0.04
Mercury (Hg)	EPA 7471A	varies see test columns	mg/kg	0.15	0.71	0.41	2.3	0.04 w/ MRL 0.02 / MDL 0.01	0.05 w/ MRL 0.02 / MDL 0.01	0.04 w/ MRL 0.02 / MDL 0.01	0.06 w/ MRL 0.02 / MDL 0.01	0.18 w/ MRL 0.01 / MDL 0.01
Nickel (Ni)	EPA 6020	varies see test columns	mg/kg	20.9	51.6	140	370	16.3 w/ MRL 0.2 / MDL 0.2	19.5 w/ MRL 0.2 / MDL 0.2	16.3 w/ MRL 0.2 / MDL 0.2	14.8 w/ MRL 0.2 / MDL 0.2	13.4 w/ MRL 0.2 / MDL 0.2
Selenium (Se)	EPA 7742	varies see test columns	mg/kg					0.41 w/ MRL 0.11 / MDL 0.04	0.57 w/ MRL 0.12 / MDL 0.05	0.56 w/ MRL 0.11 / MDL 0.04	0.44 w/ MRL 0.12 / MDL 0.05	0.32 w/ MRL 0.11 / MDL 0.04
Silver (Ag)	EPA 6020	varies see test columns	mg/kg	1	3.7	6.1	8.4	0.07 w/ MRL 0.02 / MDL 0.01	0.08 w/ MRL 0.02 / MDL 0.01	0.09 w/ MRL 0.02 / MDL 0.01	0.06 w/ MRL 0.02 / MDL 0.01	0.05 w/ MRL 0.02 / MDL 0.01
Zinc (Zn)	EPA 6020	varies see test columns	mg/kg	150	410	410	3,800	57.2 w/ MRL 0.6 / MDL 0.2	68.3 w/ MRL 0.6 / MDL 0.2	59.2 w/ MRL 0.6 / MDL 0.2	51.4 w/ MRL 0.6 / MDL 0.2	45.2 w/ MRL 0.5 / MDL 0.2
ORGANICS												
PESTICIDES												
Total Chlorinated Pesticides [4]			ug/kg	6.8	108.1	56.9	69.0	ND	ND	ND	ND	ND
Aldrin	EPA 8081A	varies see test columns	ug/kg			10		ND w/ MRL 14 / MDL 3.1	ND w/ MRL 13 / MDL 2.9	ND w/ MRL 17 / MDL 3.8	ND w/ MRL 12 / MDL 2.8	ND w/ MRL 13 / MDL 3.0
alpha BHC	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 14 / MDL 3.3	ND w/ MRL 13 / MDL 1.3	ND w/ MRL 17 / MDL 1.7	ND w/ MRL 12 / MDL 1.2	ND w/ MRL 13 / MDL 1.4
alpha-Chlordane	EPA 8081A	varies see test	ug/kg			10		ND w/ MRL 14 /	ND w/ MRL 13 /	ND w/ MRL 17 /	ND w/ MRL 12 /	ND w/ MRL 13 /

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-08-01 47.5-52.5'	MDH-09-01 12.7-17.7'	MDH-09-01 32.7-37.7'	MDH-09-01 42.7-47.7'	MDH-09-01 52.7-55'
				(Long et al., 1999)		(PSDDA, 2000)						
		columns						MDL 1.5	MDL 1.4	MDL 1.8	MDL 1.3	MDL 1.4
beta-BHC	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 14 / MDL 2.0	ND w/ MRL 13 / MDL 1.8	ND w/ MRL 17 / MDL 2.4	ND w/ MRL 12 / MDL 1.8	ND w/ MRL 13 / MDL 1.9
delta-BHC	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 14 / MDL 4.9	ND w/ MRL 13 / MDL 4.5	ND w/ MRL 17 / MDL 6.0	ND w/ MRL 12 / MDL 4.4	ND w/ MRL 13 / MDL 4.8
Dieldrin	EPA 8081A	varies see test columns	ug/kg	0.02	8.0	10		ND w/ MRL 14 / MDL 4.1	ND w/ MRL 13 / MDL 3.8	ND w/ MRL 17 / MDL 5.0	ND w/ MRL 12 / MDL 3.6	ND w/ MRL 13 / MDL 4.0
Endosulfan I	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 14 / MDL 2.2	ND w/ MRL 13 / MDL 1.5	ND w/ MRL 17 / MDL 2.0	ND w/ MRL 12 / MDL 1.5	ND w/ MRL 13 / MDL 1.6
Endosulfan II	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 14 / MDL 2.9	ND w/ MRL 13 / MDL 2.7	ND w/ MRL 17 / MDL 3.6	ND w/ MRL 12 / MDL 2.6	ND w/ MRL 13 / MDL 2.8
Endosulfan Sulfate	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 14 / MDL 2.2	ND w/ MRL 13 / MDL 2.0	ND w/ MRL 17 / MDL 2.6	ND w/ MRL 12 / MDL 1.9	ND w/ MRL 13 / MDL 2.1
Endrin	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 14 / MDL 1.8	ND w/ MRL 13 / MDL 1.7	ND w/ MRL 17 / MDL 2.2	ND w/ MRL 12 / MDL 1.6	ND w/ MRL 13 / MDL 1.7
gamma-BHC Lindane	EPA 8081A	varies see test columns	ug/kg			10		ND w/ MRL 14 / MDL 14	ND w/ MRL 13 / MDL 3.0	ND w/ MRL 17 / MDL 4.0	ND w/ MRL 12 / MDL 2.9	ND w/ MRL 13 / MDL 3.2
gamma-Chlordane	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 14 / MDL 2.0	ND w/ MRL 13 / MDL 1.8	ND w/ MRL 17 / MDL 2.4	ND w/ MRL 12 / MDL 1.8	ND w/ MRL 13 / MDL 1.9
Heptachlor	EPA 8081A	varies see test columns	ug/kg			10		ND w/ MRL 14 / MDL 1.8	ND w/ MRL 13 / MDL 1.7	ND w/ MRL 17 / MDL 2.2	ND w/ MRL 12 / MDL 1.6	ND w/ MRL 13 / MDL 1.8
Toxaphene	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 660 / MDL 75	ND w/ MRL 610 / MDL 69	ND w/ MRL 810 / MDL 91	ND w/ MRL 590 / MDL 66	ND w/ MRL 640 / MDL 72
Total DDT [5]	EPA 8081A	varies see test columns	ug/kg	1.58	46.1	6.9	69.0	ND	ND	ND	ND	ND
4,4'-DDD	EPA 8081A	varies	ug/kg	1.0	7.0			ND w/	ND w/	ND w/	ND w/	ND w/

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-08-01 47.5-52.5'	MDH-09-01 12.7-17.7'	MDH-09-01 32.7-37.7'	MDH-09-01 42.7-47.7'	MDH-09-01 52.7-55'
				(Long et al., 1999)		(PSDDA, 2000)						
		see test columns						MRL 14 / MDL 2.0	MRL 13 / MDL 1.9	MRL 17 / MDL 2.5	MRL 12 / MDL 1.8	MRL 13 / MDL 2.0
4,4'-DDE	EPA 8081A	varies see test columns	ug/kg	2.2	27			ND w/ MRL 14 / MDL 3.3	ND w/ MRL 13 / MDL 3.0	ND w/ MRL 17 / MDL 4.0	ND w/ MRL 12 / MDL 2.9	ND w/ MRL 13 / MDL 3.2
4,4'-DDT	EPA 8081A	varies see test columns	ug/kg	2.0	20			ND w/ MRL 14 / MDL 2.3	ND w/ MRL 13 / MDL 2.1	ND w/ MRL 17 / MDL 2.8	ND w/ MRL 12 / MDL 2.0	ND w/ MRL 13 / MDL 2.2
Heptachlor Epoxide	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 14 / MDL 1.8	ND w/ MRL 13 / MDL 1.7	ND w/ MRL 17 / MDL 2.2	ND w/ MRL 12 / MDL 1.6	ND w/ MRL 13 / MDL 1.8
Endrin Aldehyde	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 14 / MDL 4.7	ND w/ MRL 13 / MDL 4.3	ND w/ MRL 17 / MDL 5.7	ND w/ MRL 12 / MDL 4.2	ND w/ MRL 13 / MDL 4.6
Endrin Ketone	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 14 / MDL 2.9	ND w/ MRL 13 / MDL 2.0	ND w/ MRL 17 / MDL 2.6	ND w/ MRL 12 / MDL 2.7	ND w/ MRL 13 / MDL 2.1
Methoxychlor	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 14 / MDL 2.2	ND w/ MRL 13 / MDL 2.0	ND w/ MRL 17 / MDL 2.6	ND w/ MRL 12 / MDL 1.9	ND w/ MRL 13 / MDL 2.1
ORGANOTINS												
Total Organotins [4]			ug/kg					NT	NT	NT	NT	ND
Monobutyltin (n-Butyltin)	Krone	1.3 / 0.39 for 09-01	ug/kg					NT	NT	NT	NT	ND
Di-n-butyltin	Krone	1.3 / 0.40 for 09-01	ug/kg					NT	NT	NT	NT	ND
Tri-n-butyltin	Krone	1.3 / 0.41 for 09-01	ug/kg					NT	NT	NT	NT	ND
Tetra-n-butyltin	Krone	1.3 / 0.50 for 09-01	ug/kg			0.15 [7]		NT	NT	NT	NT	ND
PHTHALATES												
Total phthalates [4]	EPA 8270C	varies	ug/kg			23,170		NT	NT	NT	NT	397.4
Bis (2-ethylhexyl) phthalate	EPA 8270C	260 / 160 for 09-01	ug/kg			8,300		NT	NT	NT	NT	310
Butyl benzyl phthalate	EPA 8270C	13 / 1.8 for 09-01	ug/kg			970		NT	NT	NT	NT	1.8
Diethyl phthalate	EPA 8270C	13 / 3.9 for	ug/kg			1,200		NT	NT	NT	NT	5.6

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-08-01 47.5-52.5'	MDH-09-01 12.7-17.7'	MDH-09-01 32.7-37.7'	MDH-09-01 42.7-47.7'	MDH-09-01 52.7-55'
				(Long et al., 1999)		(PSDDA, 2000)						
		09-01										
Dimethyl phthalate	EPA 8270C	13 / 3.3 for 09-01	ug/kg			1,400		NT	NT	NT	NT	3.3
Di-n-butyl phthalate	EPA 8270C	13 / 3.3 for 09-01	ug/kg			5,100		NT	NT	NT	NT	5.7
Di-n-octyl phthalate	EPA 8270C	13 / 2.1 for 09-01	ug/kg			6,200		NT	NT	NT	NT	71
POLYCHLORINATED BIPHENYLS (PCB)												
Total PCBs [4]			ug/kg	22.7	180	130	3,100	NT	NT	NT	NT	ND
Aroclor 1016	EPA 8082	13 / 3.1 for 09-01	ug/kg					NT	NT	NT	NT	ND
Aroclor 1221	EPA 8082	26 / 3.1 for 09-01	ug/kg					NT	NT	NT	NT	ND
Aroclor 1232	EPA 8082	13 / 3.1 for 09-01	ug/kg					NT	NT	NT	NT	ND
Aroclor 1242	EPA 8082	13 / 3.1 for 09-01	ug/kg					NT	NT	NT	NT	ND
Aroclor 1248	EPA 8082	13 / 3.1 for 09-01	ug/kg					NT	NT	NT	NT	ND
Aroclor 1254	EPA 8082	13 / 3.1 for 09-01	ug/kg					NT	NT	NT	NT	ND
Aroclor 1260	EPA 8082	13 / 3.1 for 09-01	ug/kg					NT	NT	NT	NT	ND
POLYNUCLEAR AROMATICS HYDROCARBONS (PAH)												
Total PAHs [4]			ug/kg	4,022	44,792			NT	NT	NT	NT	180.51
2-Methylnaphthalene	EPA 8270C	13 / 3.9 for 09-01	ug/kg	70	670	670	1,900	NT	NT	NT	NT	34
Acenaphthene	EPA 8270C	13 / 3.3 for 09-01	ug/kg	16	500	500	2,000	NT	NT	NT	NT	3.5
Acenaphthylene	EPA 8270C	13 / 2.1 for 09-01	ug/kg	44	640	560	1,300	NT	NT	NT	NT	2.3
Anthracene	EPA 8270C	13 / 3.0 for 09-01	ug/kg	85.3	1,100	960	13,000	NT	NT	NT	NT	3.0
Benzo(a)anthracene	EPA 8270C	13 / 1.4 for 09-01	ug/kg	261	1,600	1,300	5,100	NT	NT	NT	NT	4.6
Benzo(a)pyrene	EPA 8270C	13 / 1.3 for 09-01	ug/kg	430	1,600	1,600	3,600	NT	NT	NT	NT	3.8

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-08-01 47.5-52.5'	MDH-09-01 12.7-17.7'	MDH-09-01 32.7-37.7'	MDH-09-01 42.7-47.7'	MDH-09-01 52.7-55'
				(Long et al., 1999)		(PSDDA, 2000)						
Benzo(b)fluoranthene	EPA 8270C	13 / 1.2 for 09-01	ug/kg			1,600	4,950	NT	NT	NT	NT	9.5
Benzo(k)fluoranthene	EPA 8270C	13 / 2.1 for 09-01	ug/kg			1,600	4,950	NT	NT	NT	NT	2.6
Benzo(g,h,i)perylene	EPA 8270C	13 / 1.4 for 09-01	ug/kg			670	3,200	NT	NT	NT	NT	6.3
Chrysene	EPA 8270C	13 / 1.4 for 09-01	ug/kg	384	2,800	1,400	21,000	NT	NT	NT	NT	24
Dibenzo(a,h)anthracene	EPA 8270C	13 / 1.3 for 09-01	ug/kg	63.4	260	230	1,900	NT	NT	NT	NT	1.3
Fluoranthene	EPA 8270C	13 / 3.1 for 09-01	ug/kg	600	5,100	1,700	30,000	NT	NT	NT	NT	7.1
Fluorene	EPA 8270C	13 / 3.1 for 09-01	ug/kg	19	540	540	3,600	NT	NT	NT	NT	4.5
Indeno(1,2,3-cd)pyrene	EPA 8270C	13 / 0.61 for 09-01	ug/kg			600	4,400	NT	NT	NT	NT	0.61
Naphthalene	EPA 8270C	13 / 1.9 for 09-01	ug/kg	160	2,100	2,100	2,400	NT	NT	NT	NT	8.8
Phenanthrene	EPA 8270C	13 / 2.6 for 09-01	ug/kg	240	1,500	1,500	21,000	NT	NT	NT	NT	55
Pyrene	EPA 8270C	13 / 3.3 for 09-01	ug/kg	665	2,600	2,600	16,000	NT	NT	NT	NT	9.6
PHENOLS												
Total Phenols [4]			ug/kg			1582	5777	NT	NT	NT	NT	83.3
2,4-Dimethylphenol	EPA 8270C	64 / 20 for 09-01	ug/kg			29	210	NT	NT	NT	NT	20
2-Methylphenol	EPA 8270C	13 / 3.1 for 09-01	ug/kg			63	77	NT	NT	NT	NT	3.1
4-Methylphenol	EPA 8270C	13 / 3.0 for 09-01	ug/kg			670	3,600	NT	NT	NT	NT	5.2
Pentachlorophenol	EPA 8270C	64 / 3.0 for 09-01	ug/kg			400	690	NT	NT	NT	NT	3.0
2-Chlorophenol	EPA 8270C	13 / 3.4 for 09-01	ug/kg					NT	NT	NT	NT	3.4
4-Chloro-3-methylphenol	EPA 8270C	13 / 3.6 for 09-01	ug/kg					NT	NT	NT	NT	3.6
2,4-Dichlorophenol	EPA 8270C	13 / 3.6 for	ug/kg					NT	NT	NT	NT	3.6

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-08-01 47.5-52.5'	MDH-09-01 12.7-17.7'	MDH-09-01 32.7-37.7'	MDH-09-01 42.7-47.7'	MDH-09-01 52.7-55'
				(Long et al., 1999)		(PSDDA, 2000)						
		09-01										
	2-Nitrophenol	EPA 8270C	13 / 3.2 for 09-01	ug/kg				NT	NT	NT	NT	3.2
	4-Nitrophenol	EPA 8270C	130 / 3.0 for 09-01	ug/kg				NT	NT	NT	NT	3.0
	2,4-Dinitrophenol	EPA 8270C	260 / 17 for 09-01	ug/kg				NT	NT	NT	NT	17
	2-Methyl-4,6-dinitrophenol	EPA 8270C	130 / 4.0 for 09-01	ug/kg				NT	NT	NT	NT	4.0
	2,4,5-Trichlorophenol	EPA 8270C	13 / 4.7 for 09-01	ug/kg				NT	NT	NT	NT	4.7
	2,4,6-Trichlorophenol	EPA 8270C	13 / 4.8 for 09-01	ug/kg				NT	NT	NT	NT	4.8
	Phenol	EPA 8270C	39 / 3.6 for 09-01	ug/kg				NT	NT	NT	NT	4.7

Fifth set of five samples-- holes 10-01, 11-01:

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-10-01 11.3-12.8'	MDH-10-01 22.8-27.8'	MDH-10-01 37.8-40.8'	MDH-10-01 47.8-52.8'	MDH-11-01 13-16.2'
				(Long et al., 1999)		(PSDDA, 2000)						
PHYSICAL/CONVENTIONALS												
Total Solids (wet weight)	EPA 160.3M	0.01	%					75.6	75.6	80.9	78.6	87.2
Total Volatile Solids (wet weight)	SM 2540G	0.01	%					5.80	2.52	2.30	2.40	2.08
pH	EPA 9045	0.1	pH units					7.6	7.8	8.0	7.7	8.0
Ammonia	EPA 350.1M	0.2 / 0.2	mg/kg					6.1	5.4	7.4	9.5	1.2
Total Organic Carbon	EPA 9060M	500/ 300	mg/kg					4600	5000	5200	9630	4500
Soluble Sulfides	EPA/CE-81-1	0.1	mg/kg					7.7	325	54	55	1

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-10-01 11.3-12.8'	MDH-10-01 22.8-27.8'	MDH-10-01 37.8-40.8'	MDH-10-01 47.8-52.8'	MDH-11-01 13-16.2'
				(Long et al., 1999)		(PSDDA, 2000)						
Total Sulfides	EPA 9030B	3	mg/kg					ND	28	5	6	2
Calcium carbonate	ASTM D-4373	0.1	%					0.20	0.10	0.10	0.20	0.10
Oil and Grease	EPA 413.2	10	mg/kg					23	31	35	54	18
Total Recoverable Petroleum Hydrocarbons	EPA 413.1	10	mg/kg					18	26	35	49	16
METALS												
Antimony (Sb)	EPA 6020	varies see test columns	mg/kg			15	200	0.13 w/ MRL 0.05 / MDL 0.03	0.15 w/ MRL 0.06 / MDL 0.03	0.11 w/ MRL 0.06 / MDL 0.04	0.10 w/ MRL 0.06 / MDL 0.03	0.12 w/ MRL 0.06 / MDL 0.03
Arsenic (As)	EPA 6020	varies see test columns	mg/kg	8.2	70	57	700	5.5 w/ MRL 0.5 / MDL 0.2	7.0 w/ MRL 0.6 / MDL 0.2	5.1 w/ MRL 0.6 / MDL 0.2	3.5 w/ MRL 0.6 / MDL 0.2	6.2 w/ MRL 0.6 / MDL 0.2
Cadmium (Cd)	EPA 6020	varies see test columns	mg/kg	1.2	9.6	5.1	14	0.19 w/ MRL 0.05 / MDL 0.03	0.27 w/ MRL 0.06 / MDL 0.03	0.19 w/ MRL 0.06 / MDL 0.04	0.16 w/ MRL 0.05 / MDL 0.03	0.22 w/ MRL 0.06 / MDL 0.03
Chromium (Cr)	EPA 6020	varies see test columns	mg/kg	81	370			17.3 w/ MRL 0.21 / MDL 0.04	24.7 w/ MRL 0.23 / MDL 0.05	16.8 w/ MRL 0.24 / MDL 0.05	18.1 w/ MRL 0.22 / MDL 0.04	21.6 w/ MRL 0.23 / MDL 0.05
Copper (Cu)	EPA 6020	varies see test columns	mg/kg	34	270	390	1,300	17.8 w/ MRL 0.11 / MDL 0.05	26.4 w/ MRL 0.12 / MDL 0.06	18.4 w/ MRL 0.12 / MDL 0.06	17.9 w/ MRL 0.11 / MDL 0.06	23.9 w/ MRL 0.12 / MDL 0.06
Lead (Pb)	EPA 6020	varies see test columns	mg/kg	46.7	218	450	1,200	10.6 w/ MRL 0.05 / MDL 0.04	14.6 w/ MRL 0.06 / MDL 0.05	10.1 w/ MRL 0.06 / MDL 0.05	9.83 w/ MRL 0.06 / MDL 0.04	13.1 w/ MRL 0.06 / MDL 0.05
Mercury (Hg)	EPA 7471A	varies see test columns	mg/kg	0.15	0.71	0.41	2.3	0.049 w/ MRL 0.012 / MDL 0.006	0.049 w/ MRL 0.015 / MDL 0.008	0.082 w/ MRL 0.017 / MDL 0.009	0.039 w/ MRL 0.015 / MDL 0.007	0.153 w/ MRL 0.018 / MDL 0.009
Nickel (Ni)	EPA 6020	varies see test columns	mg/kg	20.9	51.6	140	370	15.9 w/ MRL 0.5 / MDL 0.3	23.5 w/ MRL 0.6 / MDL 0.3	16.8 w/ MRL 0.6 / MDL 0.4	16.7 w/ MRL 0.6 / MDL 0.3	22.1 w/ MRL 0.3 / MDL 0.3
Selenium (Se)	EPA 7742	varies see test columns	mg/kg					0.40 w/ MRL 0.21 / MDL 0.03	0.43 w/ MRL 0.23 / MDL 0.03	0.37 w/ MRL 0.24 / MDL 0.04	0.42 w/ MRL 0.22 / MDL 0.03	0.2 w/ MRL 0.2 / MDL 0.1
Silver (Ag)	EPA 6020	varies see test columns	mg/kg	1	3.7	6.1	8.4	0.06 w/ MRL 0.02 / MDL 0.01	0.08 w/ MRL 0.02 / MDL 0.01	0.07 w/ MRL 0.02 / MDL 0.01	0.06 w/ MRL 0.02 / MDL 0.01	0.06 w/ MRL 0.02 / MDL 0.01
Zinc (Zn)	EPA 6020	varies	mg/kg	150	410	410	3,800	53.6 w/	75.3 w/	54.4 w/	51.3 w/	77.2 w/

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-10-01 11.3-12.8'	MDH-10-01 22.8-27.8'	MDH-10-01 37.8-40.8'	MDH-10-01 47.8-52.8'	MDH-11-01 13-16.2'
				(Long et al., 1999)		(PSDDA, 2000)						
		see test columns						MRL 0.5 / MDL 0.3	MRL 0.6 / MDL 0.3	MRL 0.6 / MDL 0.4	MRL 0.6 / MDL 0.3	MRL 0.6 / MDL 0.3
ORGANICS												
PESTICIDES												
Total Chlorinated Pesticides [4]	EPA 8081A	varies see tests column	ug/kg	6.8	108.1	56.9	69.0	ND	ND	ND	ND	ND
Aldrin	EPA 8081A	varies see tests column	ug/kg			10		ND w/ MRL 13 / MDL 3.0	ND w/ MRL 17 / MDL 3.8	ND w/ MRL 12 / MDL 2.8	ND w/ MRL 14 / MDL 3.1	ND w/ MRL 1.2 / MDL 0.27
alpha BHC	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 13 / MDL 1.3	ND w/ MRL 17 / MDL 1.7	ND w/ MRL 12 / MDL 1.2	ND w/ MRL 14 / MDL 1.4	ND w/ MRL 1.2 / MDL 0.12
alpha-Chlordane	EPA 8081A	varies see tests column	ug/kg			10		ND w/ MRL 13 / MDL 1.4	ND w/ MRL 17 / MDL 1.8	ND w/ MRL 12 / MDL 1.3	ND w/ MRL 14 / MDL 1.5	ND w/ MRL 1.2 / MDL 0.13
beta-BHC	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 13 / MDL 1.3	ND w/ MRL 17 / MDL 2.4	ND w/ MRL 12 / MDL 1.8	ND w/ MRL 14 / MDL 2.0	ND w/ MRL 1.2 / MDL 0.17
delta-BHC	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 13 / MDL 4.7	ND w/ MRL 17 / MDL 6.0	ND w/ MRL 12 / MDL 4.4	ND w/ MRL 14 / MDL 4.9	ND w/ MRL 1.2 / MDL 0.43
Dieldrin	EPA 8081A	varies see tests column	ug/kg	0.02	8.0	10		ND w/ MRL 13 / MDL 3.9	ND w/ MRL 17 / MDL 5.0	ND w/ MRL 12 / MDL 3.6	ND w/ MRL 14 / MDL 4.1	ND w/ MRL 1.2 / MDL 0.45
Endosulfan I	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 13 / MDL 1.6	ND w/ MRL 17 / MDL 2.0	ND w/ MRL 12 / MDL 1.5	ND w/ MRL 14 / MDL 1.7	ND w/ MRL 1.2 / MDL 0.15
Endosulfan II	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 13 / MDL 2.8	ND w/ MRL 17 / MDL 3.6	ND w/ MRL 12 / MDL 2.6	ND w/ MRL 14 / MDL 2.9	ND w/ MRL 1.2 / MDL 0.26
Endosulfan Sulfate	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 13 / MDL 2.1	ND w/ MRL 17 / MDL 2.6	ND w/ MRL 12 / MDL 1.9	ND w/ MRL 14 / MDL 2.2	ND w/ MRL 1.2 / MDL 0.19
Endrin	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 13 / MDL 1.7	ND w/ MRL 17 / MDL 2.2	ND w/ MRL 12 / MDL 1.6	ND w/ MRL 14 / MDL 1.8	ND w/ MRL 1.2 / MDL 0.16
gamma-BHC Lindane	EPA 8081A	varies	ug/kg			10		ND w/	ND w/	ND w/	ND w/	ND w/

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-10-01 11.3-12.8'	MDH-10-01 22.8-27.8'	MDH-10-01 37.8-40.8'	MDH-10-01 47.8-52.8'	MDH-11-01 13-16.2'
				(Long et al., 1999)		(PSDDA, 2000)						
		see tests column						MRL 13 / MDL 3.1	MRL 17 / MDL 4.0	MRL 12 / MDL 2.9	MRL 14 / MDL 3.3	MRL 1.2 / MDL 0.98
	gamma-Chlordane	EPA 8081A	varies see tests column	ug/kg				ND w/ MRL 13 / MDL 1.9	ND w/ MRL 17 / MDL 2.4	ND w/ MRL 12 / MDL 1.8	ND w/ MRL 14 / MDL 2.0	ND w/ MRL 1.2 / MDL 0.70
	Heptachlor	EPA 8081A	varies see tests column	ug/kg			10	ND w/ MRL 13 / MDL 1.8	ND w/ MRL 17 / MDL 2.2	ND w/ MRL 12 / MDL 1.6	ND w/ MRL 14 / MDL 1.8	ND w/ MRL 1.2 / MDL 0.16
	Toxaphene	EPA 8081A	varies see tests column	ug/kg				ND w/ MRL 630 / MDL 71	ND w/ MRL 810 / MDL 91	ND w/ MRL 590 / MDL 66	ND w/ MRL 660 / MDL 75	ND w/ MRL 58 / MDL 6.5
	Total DDT [5]	EPA 8081A	varies see tests column	ug/kg	1.58	46.1	6.9	69.0	ND	ND	ND	ND	ND
	4,4'-DDD	EPA 8081A	varies see tests column	ug/kg	1.0	7.0			ND w/ MRL 13 / MDL 2.0	ND w/ MRL 17 / MDL 2.5	ND w/ MRL 12 / MDL 1.8	ND w/ MRL 14 / MDL 2.0	ND w/ MRL 1.2 / MDL 0.18
	4,4'-DDE	EPA 8081A	varies see tests column	ug/kg	2.2	27			ND w/ MRL 13 / MDL 3.1	ND w/ MRL 17 / MDL 4.0	ND w/ MRL 12 / MDL 2.9	ND w/ MRL 14 / MDL 3.3	ND w/ MRL 1.2 / MDL 0.29
	4,4'-DDT	EPA 8081A	varies see tests column	ug/kg	2.0	20			ND w/ MRL 13 / MDL 2.2	ND w/ MRL 17 / MDL 2.8	ND w/ MRL 12 / MDL 2.0	ND w/ MRL 14 / MDL 2.3	ND w/ MRL 1.2 / MDL 0.20
	Heptachlor Epoxide	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 13 / MDL 1.8	ND w/ MRL 17 / MDL 2.3	ND w/ MRL 12 / MDL 1.6	ND w/ MRL 14 / MDL 1.8	ND w/ MRL 1.2 / MDL 0.95
	Endrin Aldehyde	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 13 / MDL 4.5	ND w/ MRL 17 / MDL 5.7	ND w/ MRL 12 / MDL 4.2	ND w/ MRL 14 / MDL 4.7	ND w/ MRL 1.2 / MDL 0.41
	Endrin Ketone	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 13 / MDL 2.1	ND w/ MRL 17 / MDL 2.6	ND w/ MRL 12 / MDL 1.9	ND w/ MRL 14 / MDL 2.8	ND w/ MRL 1.2 / MDL 1.2
	Methoxychlor	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 13 / MDL 2.1	ND w/ MRL 17 / MDL 2.6	ND w/ MRL 12 / MDL 1.9	ND w/ MRL 14 / MDL 2.2	ND w/ MRL 1.2 / MDL 1.1
	ORGANOTINS											
	Total Organotins [4]			ug/kg					ND	ND	ND	ND	NT
	Monobutyltin (n-Butyltin)	Krone	varies	ug/kg					ND w/	ND w/	ND w/	ND w/	NT

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"		Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
					ERL	ERM	SL	ML	MDH-10-01 11.3-12.8'	MDH-10-01 22.8-27.8'	MDH-10-01 37.8-40.8'	MDH-10-01 47.8-52.8'	MDH-11-01 13-16.2'
					(Long et al., 1999)		(PSDDA, 2000)						
			see tests column						MRL 1.3 / MDL 0.38	MRL 1.6 / MDL 0.49	MRL 1.2 / MDL 0.36	MRL 1.3 / MDL 0.40	
	Di-n-butyltin	Krone	varies see tests column	ug/kg					ND w/ MRL 1.3 / MDL 0.39	ND w/ MRL 1.6 / MDL 0.50	ND w/ MRL 1.2 / MDL 0.36	ND w/ MRL 1.3 / MDL 0.41	NT
	Tri-n-butyltin	Krone	varies see tests column	ug/kg					ND w/ MRL 1.3 / MDL 0.41	ND w/ MRL 1.6 / MDL 0.52	ND w/ MRL 1.2 / MDL 0.38	ND w/ MRL 1.3 / MDL 0.42	NT
	Tetra-n-butyltin	Krone	varies see tests column	ug/kg			0.15 [7]		ND w/ MRL 1.3 / MDL 0.49	ND w/ MRL 1.6 / MDL 0.63	ND w/ MRL 1.2 / MDL 0.46	ND w/ MRL 1.3 / MDL 0.51	NT
	PHTHALATES												
	Total phthalates [4]			ug/kg			23,170		177.7	222.5	163.5	259.6	NT
	Bis (2-ethylhexyl) phthalate	EPA 8270C	varies see tests column	ug/kg			8,300		160 w/ MRL 260 / MDL 160	200 w/ MRL 330 / MDL 200	150 w/ MRL 240 / MDL 150	240 w/ MRL 270 / MDL 170	NT
	Butyl benzyl phthalate	EPA 8270C	varies see tests column	ug/kg			970		1.8 w/ MRL 13 / MDL 1.8	2.3 w/ MRL 17 / MDL 2.3	1.7 w/ MRL 12 / MDL 1.7	1.9 w/ MRL 14 / MDL 1.9	NT
	Diethyl phthalate	EPA 8270C	varies see tests column	ug/kg			1,200		7.2 w/ MRL 13 / MDL 3.9	9.1 w/ MRL 17 / MDL 4.9	3.6 w/ MRL 12 / MDL 3.6	7.4 w/ MRL 14 / MDL 4.0	NT
	Dimethyl phthalate	EPA 8270C	varies see tests column	ug/kg			1,400		3.3 w/ MRL 13 / MDL 3.3	4.2 w/ MRL 17 / MDL 4.2	3.1 w/ MRL 12 / MDL 3.1	3.4 w/ MRL 14 / MDL 3.4	NT
	Di-n-butyl phthalate	EPA 8270C	varies see tests column	ug/kg			5,100		3.3 w/ MRL 13 / MDL 3.3	4.2 w/ MRL 17 / MDL 4.2	3.1 w/ MRL 12 / MDL 3.1	4.7 w/ MRL 14 / MDL 3.5	NT
	Di-n-octyl phthalate	EPA 8270C	varies see tests column	ug/kg			6,200		2.1 w/ MRL 13 / MDL 2.1	2.7 w/ MRL 17 / MDL 2.7	2.0 w/ MRL 12 / MDL 2.0	2.2 w/ MRL 14 / MDL 2.2	NT
	POLYCHLORINATED BIPHENYLS (PCB)												
	Total PCBs [4]			ug/kg	22.7	180	130	3,100	ND	ND	ND	ND	NT
	Aroclor 1016	EPA 8082	varies see tests column	ug/kg					ND w/ MRL 13 / MDL 3.1	ND w/ MRL 17 / MDL 3.9	ND w/ MRL 12 / MDL 2.8	ND w/ MRL 14 / MDL 3.2	NT
	Aroclor 1221	EPA 8082	varies	ug/kg					ND w/	ND w/	ND w/	ND w/	NT

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"		Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
					ERL	ERM	SL	ML	MDH-10-01 11.3-12.8'	MDH-10-01 22.8-27.8'	MDH-10-01 37.8-40.8'	MDH-10-01 47.8-52.8'	MDH-11-01 13-16.2'
					(Long et al., 1999)		(PSDDA, 2000)						
			see tests column						MRL 26 / MDL 3.1	MRL 33 / MDL 3.9	MRL 24 / MDL 2.8	MRL 27 / MDL 3.2	
	Aroclor 1232	EPA 8082	varies see tests column	ug/kg					ND w/ MRL 13 / MDL 3.1	ND w/ MRL 17 / MDL 3.9	ND w/ MRL 12 / MDL 2.8	ND w/ MRL 14 / MDL 3.2	NT
	Aroclor 1242	EPA 8082	varies see tests column	ug/kg					ND w/ MRL 13 / MDL 3.1	ND w/ MRL 17 / MDL 3.9	ND w/ MRL 12 / MDL 2.8	ND w/ MRL 14 / MDL 3.2	NT
	Aroclor 1248	EPA 8082	varies see tests column	ug/kg					ND w/ MRL 13 / MDL 3.1	ND w/ MRL 17 / MDL 3.9	ND w/ MRL 12 / MDL 2.8	ND w/ MRL 14 / MDL 3.2	NT
	Aroclor 1254	EPA 8082	varies see tests column	ug/kg					ND w/ MRL 13 / MDL 3.1	ND w/ MRL 17 / MDL 3.9	ND w/ MRL 12 / MDL 2.8	ND w/ MRL 14 / MDL 3.2	NT
	Aroclor 1260	EPA 8082	varies see tests column	ug/kg					ND w/ MRL 13 / MDL 3.1	ND w/ MRL 17 / MDL 3.9	ND w/ MRL 12 / MDL 2.8	ND w/ MRL 14 / MDL 3.2	NT
	POLYNUCLEAR AROMATICS HYDROCARBONS (PAH)												
	Total PAHs [4]			ug/kg	4,022	44,792			84.3	154.56	114.46	136.53	NT
	2-Methylnaphthalene	EPA 8270C	varies see tests column	ug/kg	70	670	670	1,900	13 w/ MRL 13 / MDL 3.8	27 w/ MRL 17 / MDL 4.9	15 w/ MRL 12 / MDL 3.6	23 w/ MRL 14 / MDL 4.0	NT
	Acenaphthene	EPA 8270C	varies see tests column	ug/kg	16	500	500	2,000	3.3 w/ MRL 13 / MDL 3.3	4.2 w/ MRL 17 / MDL 4.2	3.1 w/ MRL 12 / MDL 3.1	3.5 w/ MRL 14 / MDL 3.5	NT
	Acenaphthylene	EPA 8270C	varies see tests column	ug/kg	44	640	560	1,300	2.1 w/ MRL 13 / MDL 2.1	2.6 w/ MRL 17 / MDL 2.6	1.9 w/ MRL 12 / MDL 1.9	2.2 w/ MRL 14 / MDL 2.2	NT
	Anthracene	EPA 8270C	varies see tests column	ug/kg	85.3	1,100	960	13,000	3.0 w/ MRL 13 / MDL 3.0	3.8 w/ MRL 17 / MDL 3.8	2.8 w/ MRL 12 / MDL 2.8	3.1 w/ MRL 14 / MDL 3.1	NT
	Benzo(a)anthracene	EPA 8270C	varies see tests column	ug/kg	261	1,600	1,300	5,100	2.4 w/ MRL 13 / MDL 1.4	4.1 w/ MRL 17 / MDL 1.8	2.9 w/ MRL 12 / MDL 1.3	2.4 w/ MRL 14 / MDL 1.4	NT
	Benzo(a)pyrene	EPA 8270C	varies see tests column	ug/kg	430	1,600	1,600	3,600	1.3 w/ MRL 13 / MDL 1.3	2.9 w/ MRL 17 / MDL 1.6	1.2 w/ MRL 12 / MDL 1.2	1.3 w/ MRL 14 / MDL 1.3	NT
	Benzo(b)fluoranthene	EPA 8270C	varies	ug/kg			1,600	4,950	4.8 w/	9.0 w/	7.9 w/	6.8 w/	NT

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"		Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
					ERL	ERM	SL	ML	MDH-10-01 11.3-12.8'	MDH-10-01 22.8-27.8'	MDH-10-01 37.8-40.8'	MDH-10-01 47.8-52.8'	MDH-11-01 13-16.2'
					(Long et al., 1999)		(PSDDA, 2000)						
			see tests column						MRL 13 / MDL 1.2	MRL 17 / MDL 1.5	MRL 12 / MDL 1.1	MRL 14 / MDL 1.3	
	Benzo(k)fluoranthene	EPA 8270C	varies see tests column	ug/kg			1,600	4,950	2.1 w/ MRL 13 / MDL 2.1	2.6 w/ MRL 17 / MDL 2.6	1.9 w/ MRL 12 / MDL 1.9	2.1 w/ MRL 14 / MDL 2.1	NT
	Benzo(g,h,i)perylene	EPA 8270C	varies see tests column	ug/kg			670	3,200	1.3 w/ MRL 13 / MDL 1.3	1.7 w/ MRL 17 / MDL 1.7	4.8 w/ MRL 12 / MDL 1.3	1.4 w/ MRL 14 / MDL 1.4	NT
	Chrysene	EPA 8270C	varies see tests column	ug/kg	384	2,800	1,400	21,000	11 w/ MRL 13 / MDL 1.4	24 w/ MRL 17 / MDL 1.8	20 w/ MRL 12 / MDL 1.3	23 w/ MRL 14 / MDL 1.5	NT
	Dibenzo(a,h)anthracene	EPA 8270C	varies see tests column	ug/kg	63.4	260	230	1,900	1.3 w/ MRL 13 / MDL 1.3	1.6 w/ MRL 17 / MDL 1.6	1.2 w/ MRL 12 / MDL 1.2	1.3 w/ MRL 14 / MDL 1.3	NT
	Fluoranthene	EPA 8270C	varies see tests column	ug/kg	600	5,100	1,700	30,000	3.2 w/ MRL 13 / MDL 3.1	6.7 w/ MRL 17 / MDL 3.9	5.4 w/ MRL 12 / MDL 2.9	5.8 w/ MRL 14 / MDL 3.2	NT
	Fluorene	EPA 8270C	varies see tests column	ug/kg	19	540	540	3,600	3.9 w/ MRL 13 / MDL 3.9	3.8 w/ MRL 17 / MDL 3.8	2.8 w/ MRL 12 / MDL 2.8	3.2 w/ MRL 14 / MDL 3.2	NT
	Indeno(1,2,3-cd)pyrene	EPA 8270C	varies see tests column	ug/kg			600	4,400	0.60 w/ MRL 13 / MDL 0.60	0.76 w/ MRL 17 / MDL 0.76	0.56 w/ MRL 12 / MDL 0.56	0.63 w/ MRL 14 / MDL 0.63	NT
	Naphthalene	EPA 8270C	varies see tests column	ug/kg	160	2,100	2,100	2,400	4.1 w/ MRL 13 / MDL 1.9	7.4 w/ MRL 17 / MDL 2.4	4.3 w/ MRL 12 / MDL 1.8	5.9 w/ MRL 14 / MDL 2.0	NT
	Phenanthrene	EPA 8270C	varies see tests column	ug/kg	240	1,500	1,500	21,000	22 w/ MRL 13 / MDL 2.6	44 w/ MRL 17 / MDL 3.3	31 w/ MRL 12 / MDL 2.4	43 w/ MRL 14 / MDL 2.7	NT
	Pyrene	EPA 8270C	varies see tests column	ug/kg	665	2,600	2,600	16,000	4.9 w/ MRL 13 / MDL 3.3	8.4 w/ MRL 17 / MDL 4.2	7.7 w/ MRL 12 / MDL 3.1	7.9 w/ MRL 14 / MDL 3.4	NT
	PHENOLS												
	Total Phenols [4]			ug/kg			1582	5777	79.2	101.3	73.4	83.1	NT
	2,4-Dimethylphenol	EPA 8270C	varies see tests column	ug/kg			29	210	20 w/ MRL 64 / MDL 20	25 w/ MRL 81 / MDL 25	18 w/ MRL 59 / MDL 18	20 w/ MRL 66 / MDL 20	NT
	2-Methylphenol	EPA 8270C	varies	ug/kg			63	77	3.1 w/	3.9 w/	2.8 w/	3.2 w/	NT

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"		Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
					ERL	ERM	SL	ML	MDH-10-01 11.3-12.8'	MDH-10-01 22.8-27.8'	MDH-10-01 37.8-40.8'	MDH-10-01 47.8-52.8'	MDH-11-01 13-16.2'
					(Long et al., 1999)		(PSDDA, 2000)						
			see tests column						MRL 13 / MDL 3.1	MRL 17 / MDL 3.9	MRL 12 / MDL 2.8	MRL 14 / MDL 3.2	
	4-Methylphenol	EPA 8270C	varies see tests column	ug/kg			670	3,600	3.0 w/ MRL 13 / MDL 3.0	3.8 w/ MRL 17 / MDL 3.8	2.8 w/ MRL 12 / MDL 2.8	3.1 w/ MRL 14 / MDL 3.1	NT
	Pentachlorophenol	EPA 8270C	varies see tests column	ug/kg			400	690	2.9 w/ MRL 130 / MDL 2.9	3.7 w/ MRL 160 / MDL 3.7	2.7 w/ MRL 120 / MDL 2.7	3.0 w/ MRL 130 / MDL 3.0	NT
	2-Chlorophenol	EPA 8270C	varies see tests column	ug/kg					3.3 w/ MRL 13 / MDL 3.3	4.2 w/ MRL 17 / MDL 4.2	3.1 w/ MRL 12 / MDL 3.1	3.5 w/ MRL 14 / MDL 3.5	NT
	4-Chloro-3-methylphenol	EPA 8270C	varies see tests column	ug/kg					3.5 w/ MRL 63 / MDL 3.5	4.5 w/ MRL 81 / MDL 4.5	3.3 w/ MRL 59 / MDL 3.3	3.7 w/ MRL 66 / MDL 3.7	NT
	2,4-Dichlorophenol	EPA 8270C	varies see tests column	ug/kg					3.6 w/ MRL 13 / MDL 3.6	4.5 w/ MRL 17 / MDL 4.5	3.3 w/ MRL 12 / MDL 3.3	3.7 w/ MRL 14 / MDL 3.7	NT
	2-Nitrophenol	EPA 8270C	varies see tests column	ug/kg					3.2 w/ MRL 13 / MDL 3.2	4.1 w/ MRL 17 / MDL 4.1	3.0 w/ MRL 12 / MDL 3.0	3.3 w/ MRL 14 / MDL 3.3	NT
	4-Nitrophenol	EPA 8270C	varies see tests column	ug/kg					2.9 w/ MRL 130 / MDL 2.9	3.7 w/ MRL 170 / MDL 3.7	2.7 w/ MRL 120 / MDL 2.7	3.1 w/ MRL 140 / MDL 3.1	NT
	2,4-Dinitrophenol	EPA 8270C	varies see tests column	ug/kg					17 w/ MRL 260 / MDL 17	22 w/ MRL 330 / MDL 22	16 w/ MRL 240 / MDL 16	18 w/ MRL 270 / MDL 18	NT
	2-Methyl-4,6-dinitrophenol	EPA 8270C	varies see tests column	ug/kg					3.9 w/ MRL 130 / MDL 3.9	5.0 w/ MRL 170 / MDL 5.0	3.7 w/ MRL 120 / MDL 3.7	4.1 w/ MRL 140 / MDL 4.1	NT
	2,4,5-Trichlorophenol	EPA 8270C	varies see tests column	ug/kg					4.6 w/ MRL 13 / MDL 4.6	5.9 w/ MRL 17 / MDL 5.9	4.3 w/ MRL 12 / MDL 4.3	4.9 w/ MRL 14 / MDL 4.9	NT
	2,4,6-Trichlorophenol	EPA 8270C	varies see tests column	ug/kg					4.7 w/ MRL 13 / MDL 4.6	6.0 w/ MRL 17 / MDL 6.0	4.4 w/ MRL 12 / MDL 4.4	4.9 w/ MRL 14 / MDL 4.9	NT
	Phenol	EPA 8270C	varies see tests column	ug/kg					3.5 w/ MRL 38 / MDL 3.5	4.5 w/ MRL 49 / MDL 4.5	3.3 w/ MRL 36 / MDL 3.3	4.6 w/ MRL 40 / MDL 3.7	NT

Sixth set of five samples-- holes 11B-01, 12-01, 13-01, and upper part of 14-01:

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-11B-01 23-24.5'	MDH-11B-01 33-33.5'	MDH-12-01 23-24'	MDH-13-01 26.5-27.7'	MDH-14-01 13.5-18'
				(Long et al., 1999)		(PSDDA, 2000)						
PHYSICAL/CONVENTIONALS												
Total Solids (wet weight)	EPA 160.3M	0.01	%					83.0	84.5	78.4	74.6	83.7
Total Volatile Solids (wet weight)	SM 2540G	0.01	%					2.13	2.04	1.66	2.31	2.12
pH	EPA 9045	0.1	pH units					7.8	8.1	7.8	7.7	8.1
Ammonia	EPA 350.1M	0.2 / 0.2	mg/kg					3.6	5.2	25.8	6.1	0.5
Total Organic Carbon	EPA 9060M	500/ 300	mg/kg					4300	4700	5400	8700	5700
Soluble Sulfides	EPA/CE-81-1	0.1	mg/kg					171	12	515	35	10
Total Sulfides	EPA 9030B	3	mg/kg					21	2	15	4	2
Calcium carbonate	ASTM D-4373	0.1	%					0.20	0.10	0.20	0.20	0.20
Oil and Grease	EPA 413.2	10	mg/kg					19	21	20	13	17
Total Recoverable Petroleum Hydrocarbons	EPA 413.1	10	mg/kg					17	19	20	13	17
METALS												
Antimony (Sb)	EPA 6020	varies see test column	mg/kg			15	200	0.11 w/ MRL 0.05 / MDL 0.03	0.14 w/ MRL 0.06 / MDL 0.04	0.13 w/ MRL 0.06 / MDL 0.04	0.10 w/ MRL 0.06 / MDL 0.04	0.18 w/ MRL 0.06 / MDL 0.04
Arsenic (As)	EPA 6020	varies see test column	mg/kg	8.2	70	57	700	5.4 w/ MRL 0.5 / MDL 0.2	3.8 w/ MRL 0.6 / MDL 0. 2	7.5 w/ MRL 0.6 / MDL 0.2	5.4 w/ MRL 0.6 / MDL 0.2	4.5 w/ MRL 0.6 / MDL 0.2
Cadmium (Cd)	EPA 6020	varies see test column	mg/kg	1.2	9.6	5.1	14	0.20 w/ MRL 0.05 / MDL 0.03	0.16 w/ MRL 0.06 / MDL 0.04	0.20 w/ MRL 0.06 / MDL 0.04	0.24 w/ MRL 0.06 / MDL 0.03	0.34 w/ MRL 0.06 / MDL 0.04
Chromium (Cr)	EPA 6020	varies see test column	mg/kg	81	370			17.6 w/ MRL 0.21 / MDL 0.04	21.1 w/ MRL 0.24 / MDL 0.05	19.7 w/ MRL 0.24 / MDL 0.05	18.1 w/ MRL 0.22 / MDL 0.04	21.6 w/ MRL 0.24 / MDL 0.05
Copper (Cu)	EPA 6020	varies see test column	mg/kg	34	270	390	1,300	21.7 w/ MRL 0.11 / MDL 0.05	25.2 w/ MRL 0.12 / MDL 0.06	22.2 w/ MRL 0.12 / MDL 0.06	23.4 w/ MRL 0.11 / MDL 0.06	25.1 w/ MRL 0.12 / MDL 0.06
Lead (Pb)	EPA 6020	varies see test column	mg/kg	46.7	218	450	1,200	11.3 w/ MRL 0.05 / MDL 0.04	12.6 w/ MRL 0.06 / MDL 0.05	12.0 w/ MRL 0.06 / MDL 0.05	12.0 w/ MRL 0.06 / MDL 0.04	12.5 w/ MRL 0.06 / MDL 0.05
Mercury (Hg)	EPA 7471A	varies see test column	mg/kg	0.15	0.71	0.41	2.3	0.039 w/ MRL 0.017 / MDL 0.009	0.042 w/ MRL 0.020 / MDL 0.010	0.048 w/ MRL 0.019 / MDL 0.009	0.066 w/ MRL 0.019 / MDL 0.009	0.055 w/ MRL 0.019 / MDL 0.009

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-11B-01 23-24.5'	MDH-11B-01 33-33.5'	MDH-12-01 23-24'	MDH-13-01 26.5-27.7'	MDH-14-01 13.5-18'
				(Long et al., 1999)		(PSDDA, 2000)						
Nickel (Ni)	EPA 6020	varies see test column	mg/kg	20.9	51.6	140	370	17.2 w/ MRL 0.3 / MDL 0.3	22.5 w/ MRL 0.4 / MDL 0.4	21.6 w/ MRL 0.4 / MDL 0.4	18.5 w/ MRL 0.3 / MDL 0.3	22.1 w/ MRL 0.4 / MDL 0.4
Selenium (Se)	EPA 7742	varies see test column	mg/kg					0.2 w/ MRL 0.2 / MDL 0.1	0.1 w/ MRL 0.2 / MDL 0.1	0.2 w/ MRL 0.2 / MDL 0.1	0.3 w/ MRL 0.2 / MDL 0.1	1.0 w/ MRL 0.2 / MDL 0.1
Silver (Ag)	EPA 6020	varies see test column	mg/kg	1	3.7	6.1	8.4	0.05 w/ MRL 0.02 / MDL 0.01	0.08 w/ MRL 0.02 / MDL 0.01	0.06 w/ MRL 0.02 / MDL 0.01	0.05 w/ MRL 0.02 / MDL 0.01	0.07 w/ MRL 0.02 / MDL 0.01
Zinc (Zn)	EPA 6020	varies see test column	mg/kg	150	410	410	3,800	60.7 w/ MRL 0.5 / MDL 0.3	77.0 w/ MRL 0.6 / MDL 0.4	72.0 w/ MRL 0.6 / MDL 0.4	62.7 w/ MRL 0.6 / MDL 0.3	75.2 w/ MRL 0.6 / MDL 0. 4
ORGANICS												
PESTICIDES												
Total Chlorinated Pesticides [4]			ug/kg	6.8	108.1	56.9	69.0	0.25	ND	0.53	ND	ND
Aldrin	EPA 8081A	varies see tests column	ug/kg			10		ND w/ MRL 1.3 / MDL 0.30	ND w/ MRL 1.2 / MDL 0.28	ND w/ MRL 1.2 / MDL 0.28	ND w/ MRL 1.4 / MDL 0.31	ND w/ MRL 1.2 / MDL 0.28
alpha BHC	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 1.3 / MDL 0.14	ND w/ MRL 1.2 / MDL 0.12	ND w/ MRL 1.2 / MDL 0.13	ND w/ MRL 1.4 / MDL 0.14	ND w/ MRL 1.2 / MDL 0.12
alpha-Chlordane	EPA 8081A	varies see tests column	ug/kg			10		0.25 w/ MRL 1.3 / MDL 0.14	ND w/ MRL 1.2 / MDL 0.13	ND w/ MRL 1.2 / MDL 0.17	ND w/ MRL 1.4 / MDL 0.31	ND w/ MRL 1.2 / MDL 0.13
beta-BHC	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 1.3 / MDL 0.19	ND w/ MRL 1.2 / MDL 0.18	ND w/ MRL 1.2 / MDL 0.18	ND w/ MRL 1.4 / MDL 0.20	ND w/ MRL 1.2 / MDL 0.18
delta-BHC	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 1.3 / MDL 0.48	ND w/ MRL 1.2 / MDL 0.44	ND w/ MRL 1.2 / MDL 0.45	ND w/ MRL 1.4 / MDL 0.49	ND w/ MRL 1.2 / MDL 0.44
Dieldrin	EPA 8081A	varies see tests column	ug/kg	0.02	8.0	10		ND w/ MRL 1.3 / MDL 0.40	ND w/ MRL 1.2 / MDL 0.77	ND w/ MRL 1.2 / MDL 0.37	ND w/ MRL 1.7 / MDL 1.7	ND w/ MRL 1.2 / MDL 0.66
Endosulfan I	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 1.3 / MDL 0.56	ND w/ MRL 1.2 / MDL 0.15	ND w/ MRL 1.2 / MDL 0.18	ND w/ MRL 1.4 / MDL 0.74	ND w/ MRL 1.2 / MDL 0.33
Endosulfan II	EPA 8081A	varies see tests	ug/kg					ND w/ MRL 1.3 /	ND w/ MRL 1.2 /	ND w/ MRL 1.2 /	ND w/ MRL 1.4 /	ND w/ MRL 1.2 /

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"		Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
					ERL	ERM	SL	ML	MDH-11B-01 23-24.5'	MDH-11B-01 33-33.5'	MDH-12-01 23-24'	MDH-13-01 26.5-27.7'	MDH-14-01 13.5-18'
					(Long et al., 1999)		(PSDDA, 2000)						
			column						MDL 0.96	MDL 0.26	MDL 0.27	MDL 0.29	MDL 0.26
	Endosulfan Sulfate	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 1.3 / MDL 0.21	ND w/ MRL 1.2 / MDL 0.19	ND w/ MRL 1.2 / MDL 0.32	ND w/ MRL 1.4 / MDL 1.4	ND w/ MRL 1.2 / MDL 0.19
	Endrin	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 1.3 / MDL 0.17	ND w/ MRL 1.2 / MDL 0.16	ND w/ MRL 1.2 / MDL 1.2	ND w/ MRL 1.4 / MDL 0.18	ND w/ MRL 1.2 / MDL 0.16
	gamma-BHC Lindane	EPA 8081A	varies see tests column	ug/kg			10		ND w/ MRL 1.3 / MDL 0.32	ND w/ MRL 1.2 / MDL 1.2	ND w/ MRL 1.2 / MDL 0.77	ND w/ MRL 5.2 / MDL 5.2	ND w/ MRL 1.2 / MDL 1.2
	gamma-Chlordane	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 1.3 / MDL 0.19	ND w/ MRL 1.2 / MDL 0.75	ND w/ MRL 1.2 / MDL 0.18	ND w/ MRL 1.8 / MDL 1.8	ND w/ MRL 1.2 / MDL 0.85
	Heptachlor	EPA 8081A	varies see tests column	ug/kg			10		ND w/ MRL 1.3 / MDL 0.18	ND w/ MRL 1.2 / MDL 0.16	ND w/ MRL 1.2 / MDL 0.17	ND w/ MRL 1.4 / MDL 0.82	ND w/ MRL 1.2 / MDL 0.16
	Toxaphene	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 64 / MDL 7.2	ND w/ MRL 59 / MDL 6.6	ND w/ MRL 60 / MDL 6.8	ND w/ MRL 66 / MDL 47	ND w/ MRL 59 / MDL 6.6
	Total DDT [5]	EPA 8081A	varies see tests column	ug/kg	1.58	46.1	6.9	69.0	ND	ND	0.53	ND	ND
	4,4'-DDD	EPA 8081A	varies see tests column	ug/kg	1.0	7.0			ND w/ MRL 1.4 / MDL 1.4	ND w/ MRL 1.2 / MDL 0.18	ND w/ MRL 1.2 / MDL 0.22	ND w/ MRL 3.5 / MDL 3.5	ND w/ MRL 1.2 / MDL 0.18
	4,4'-DDE	EPA 8081A	varies see tests column	ug/kg	2.2	27			ND w/ MRL 1.3 / MDL 0.54	ND w/ MRL 1.3 / MDL 1.3	0.53 w/ MRL 1.2 / MDL 0.30	ND w/ MRL 1.4 / MDL 0.33	ND w/ MRL 1.2 / MDL 0.29
	4,4'-DDT	EPA 8081A	varies see tests column	ug/kg	2.0	20			ND w/ MRL 1.3 / MDL 0.22	ND w/ MRL 1.2 / MDL 0.80	ND w/ MRL 1.2 / MDL 0.21	ND w/ MRL 1.4 / MDL 0.23	ND w/ MRL 1.2 / MDL 0.20
	Heptachlor Epoxide	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 1.3 / MDL 0.18	ND w/ MRL 1.2 / MDL 0.16	ND w/ MRL 1.2 / MDL 0.17	ND w/ MRL 1.4 / MDL 0.18	ND w/ MRL 1.2 / MDL 0.54
	Endrin Aldehyde	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 1.3 / MDL 0.46	ND w/ MRL 1.2 / MDL 0.42	ND w/ MRL 1.2 / MDL 0.43	ND w/ MRL 1.4 / MDL 0.90	ND w/ MRL 1.2 / MDL 0.42
	Endrin Ketone	EPA 8081A	varies	ug/kg					ND w/	ND w/	ND w/	ND w/	ND w/

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-11B-01 23-24.5'	MDH-11B-01 33-33.5'	MDH-12-01 23-24'	MDH-13-01 26.5-27.7'	MDH-14-01 13.5-18'
				(Long et al., 1999)		(PSDDA, 2000)						
		see tests column						MRL 2.2 / MDL 2.2	MRL 1.2 / MDL 1.2	MRL 1.2 / MDL 0.65	MRL 3.1 / MDL 3.1	MRL 1.2 / MDL 0.19
	Methoxychlor	EPA 8081A	varies see tests column	ug/kg				ND w/ MRL 1.3 / MDL 0.21	ND w/ MRL 1.2 / MDL 1.2	ND w/ MRL 1.2 / MDL 0.46	ND w/ MRL 1.4 / MDL 1.4	ND w/ MRL 1.2 / MDL 0.19
	ORGANOTINS											
	Total Organotins [4]			ug/kg				NT	NT	NT	NT	NT
	Monobutyltin (n-Butyltin)	Krone	n/a	ug/kg				NT	NT	NT	NT	NT
	Di-n-butyltin	Krone	n/a	ug/kg				NT	NT	NT	NT	NT
	Tri-n-butyltin	Krone	n/a	ug/kg				NT	NT	NT	NT	NT
	Tetra-n-butyltin	Krone	n/a	ug/kg			0.15 [7]	NT	NT	NT	NT	NT
	PHTHALATES											
	Total phthalates [4]			ug/kg			23,170	NT	NT	NT	NT	NT
	Bis (2-ethylhexyl) phthalate	EPA 8270C	n/a	ug/kg			8,300	NT	NT	NT	NT	NT
	Butyl benzyl phthalate	EPA 8270C	n/a	ug/kg			970	NT	NT	NT	NT	NT
	Diethyl phthalate	EPA 8270C	n/a	ug/kg			1,200	NT	NT	NT	NT	NT
	Dimethyl phthalate	EPA 8270C	n/a	ug/kg			1,400	NT	NT	NT	NT	NT
	Di-n-butyl phthalate	EPA 8270C	n/a	ug/kg			5,100	NT	NT	NT	NT	NT
	Di-n-octyl phthalate	EPA 8270C	n/a	ug/kg			6,200	NT	NT	NT	NT	NT
	POLYCHLORINATED BIPHENYLS (PCB)											
	Total PCBs [4]			ug/kg	22.7	180	130	3,100	NT	NT	NT	NT	NT
	Aroclor 1016	EPA 8082	n/a	ug/kg					NT	NT	NT	NT	NT
	Aroclor 1221	EPA 8082	n/a	ug/kg					NT	NT	NT	NT	NT
	Aroclor 1232	EPA 8082	n/a	ug/kg					NT	NT	NT	NT	NT
	Aroclor 1242	EPA 8082	n/a	ug/kg					NT	NT	NT	NT	NT
	Aroclor 1248	EPA 8082	n/a	ug/kg					NT	NT	NT	NT	NT
	Aroclor 1254	EPA 8082	n/a	ug/kg					NT	NT	NT	NT	NT
	Aroclor 1260	EPA 8082	n/a	ug/kg					NT	NT	NT	NT	NT
	POLYNUCLEAR AROMATICS HYDROCARBONS (PAH)											
	Total PAHs [4]			ug/kg	4,022	44,792			NT	NT	NT	NT	NT
	2-Methylnaphthalene	EPA 8270C	n/a	ug/kg	70	670	670	1,900	NT	NT	NT	NT	NT
	Acenaphthene	EPA 8270C	n/a	ug/kg	16	500	500	2,000	NT	NT	NT	NT	NT
	Acenaphthylene	EPA 8270C	n/a	ug/kg	44	640	560	1,300	NT	NT	NT	NT	NT
	Anthracene	EPA 8270C	n/a	ug/kg	85.3	1,100	960	13,000	NT	NT	NT	NT	NT
	Benzo(a)anthracene	EPA 8270C	n/a	ug/kg	261	1,600	1,300	5,100	NT	NT	NT	NT	NT

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-11B-01 23-24.5'	MDH-11B-01 33-33.5'	MDH-12-01 23-24'	MDH-13-01 26.5-27.7'	MDH-14-01 13.5-18'
				(Long et al., 1999)		(PSDDA, 2000)						
Benzo(a,e)pyrene	EPA 8270C	n/a	ug/kg	430	1,600	1,600	3,600	NT	NT	NT	NT	NT
Benzo(b)fluoranthene	EPA 8270C	n/a	ug/kg			1,600	4,950	NT	NT	NT	NT	NT
Benzo(k)fluoranthene	EPA 8270C	n/a	ug/kg			1,600	4,950	NT	NT	NT	NT	NT
Benzo(g,h,i)perylene	EPA 8270C	n/a	ug/kg			670	3,200	NT	NT	NT	NT	NT
Chrysene	EPA 8270C	n/a	ug/kg	384	2,800	1,400	21,000	NT	NT	NT	NT	NT
Dibenzo(a,h)anthracene	EPA 8270C	n/a	ug/kg	63.4	260	230	1,900	NT	NT	NT	NT	NT
Fluoranthene	EPA 8270C	n/a	ug/kg	600	5,100	1,700	30,000	NT	NT	NT	NT	NT
Fluorene	EPA 8270C	n/a	ug/kg	19	540	540	3,600	NT	NT	NT	NT	NT
Indeno(1,2,3-cd)pyrene	EPA 8270C	n/a	ug/kg			600	4,400	NT	NT	NT	NT	NT
Naphthalene	EPA 8270C	n/a	ug/kg	160	2,100	2,100	2,400	NT	NT	NT	NT	NT
Phenanthrene	EPA 8270C	n/a	ug/kg	240	1,500	1,500	21,000	NT	NT	NT	NT	NT
Pyrene	EPA 8270C	n/a	ug/kg	665	2,600	2,600	16,000	NT	NT	NT	NT	NT
PHENOLS												
Total Phenols [4]			ug/kg			1582	5777	NT	NT	NT	NT	NT
2,4-Dimethylphenol	EPA 8270C	n/a	ug/kg			29	210	NT	NT	NT	NT	NT
2-Methylphenol	EPA 8270C	n/a	ug/kg			63	77	NT	NT	NT	NT	NT
4-Methylphenol	EPA 8270C	n/a	ug/kg			670	3,600	NT	NT	NT	NT	NT
Pentachlorophenol	EPA 8270C	n/a	ug/kg			400	690	NT	NT	NT	NT	NT

Seventh set of five samples-- lower part of hole14-01, and upper part of hole 15-01:

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-14-01 18-21.5'	MDH-15-01 12-18'	MDH-15-01 18-28'	MDH-15-01 28-38'	MDH-15-01 38-48'
				(Long et al., 1999)		(PSDDA, 2000)						
PHYSICAL/CONVENTIONALS												
Total Solids (wet weight)	EPA 160.3M	0.01	%					81.3	67.3	59.7	65.8	69.5
Total Volatile Solids (wet weight)	SM 2540G	0.01	%					1.98	4.25	6.75	6.73	3.81
pH	EPA 9045	0.1	pH units					8.0	7.0	7.6	7.1	7.1

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-14-01 18-21.5'	MDH-15-01 12-18'	MDH-15-01 18-28'	MDH-15-01 28-38'	MDH-15-01 38-48'
				(Long et al., 1999)		(PSDDA, 2000)						
Ammonia	EPA 350.1M	varies see tests column	mg/kg					0.2 w/ MRL 0.02 / MDL 0.02	49.9 w/ MRL 0.2 / MDL 0.2	118 w/ MRL 0.4 / MDL 0.2	146 w/ MRL 0.4 / MDL 0.2	60.1 w/ MRL 0.2 / MDL 0.2
Total Organic Carbon	EPA 9060M	500/ 300	mg/kg					5000	12600	17700	22300	8500
Soluble Sulfides	EPA/CE-81-1	0.1	mg/kg					2	317	275	120	198
Total Sulfides	EPA 9030B	3	mg/kg					2	91	91	36	46
Calcium carbonate	ASTM D-4373	0.1	%					0.10	0.20	0.20	0.52	0.20
Oil and Grease	EPA 413.2	10	mg/kg					39	36	19	18	33
Total Recoverable Petroleum Hydrocarbons	EPA 413.1	10	mg/kg					27	30	16	18	33
METALS												
Antimony (Sb)	EPA 6020	varies see test column	mg/kg			15	200	0.14 w/ MRL 0.06 / MDL 0.04	0.13 w/ MRL 0.06 / MDL 0.03	0.17 w/ MRL 0.06 / MDL 0.03	0.19 w/ MRL 0.06 / MDL 0.03	0.11 w/ MRL 0.06 / MDL 0.03
Arsenic (As)	EPA 6020	varies see test column	mg/kg	8.2	70	57	700	4.6 w/ MRL 0.6 / MDL 0.2	5.8 w/ MRL 0.6 / MDL 0.2	6.58 w/ MRL 0.56 / MDL 0.06	6.49 w/ MRL 0.57 / MDL 0.06	6.8 w/ MRL 0.6 / MDL 0.2
Cadmium (Cd)	EPA 6020	varies see test column	mg/kg	1.2	9.6	5.1	14	0.23 w/ MRL 0.06 / MDL 0.04	0.29 w/ MRL 0.06 / MDL 0.03	0.32 w/ MRL 0.02 / MDL 0.01	0.33 w/ MRL 0.02 / MDL 0.01	0.27 w/ MRL 0.06 / MDL 0.03
Chromium (Cr)	EPA 6020	varies see test column	mg/kg	81	370			24.3 w/ MRL 0.24 / MDL 0.05	20.5 w/ MRL 0.22 / MDL 0.04	28.0 w/ MRL 0.2 / MDL 0.1	28.5 w/ MRL 0.2 / MDL 0.1	26.6 w/ MRL 0.23 / MDL 0.04
Copper (Cu)	EPA 6020	varies see test column	mg/kg	34	270	390	1,300	26.9 w/ MRL 0.12 / MDL 0.06	25.5 w/ MRL 0.11 / MDL 0.06	29.5 w/ MRL 0.2 / MDL 0.1	29.3 w/ MRL 0.2 / MDL 0.1	29.0 w/ MRL 0.11 / MDL 0.06
Lead (Pb)	EPA 6020	varies see test column	mg/kg	46.7	218	450	1,200	12.1 w/ MRL 0.06 / MDL 0.05	13.4 w/ MRL 0.06 / MDL 0.04	21.5 w/ MRL 0.06 / MDL 0.04	23.0 w/ MRL 0.06 / MDL 0.05	16.0 w/ MRL 0.06 / MDL 0.04
Mercury (Hg)	EPA 7471A	varies see test column	mg/kg	0.15	0.71	0.41	2.3	0.056 w/ MRL 0.019 / MDL 0.010	0.116 w/ MRL 0.017 / MDL 0.008	0.07 w/ MRL 0.01 / MDL 0.00	0.08 w/ MRL 0.01 / MDL 0.01	0.057 w/ MRL 0.013 / MDL 0.006
Nickel (Ni)	EPA 6020	varies see test column	mg/kg	20.9	51.6	140	370	22.3 w/ MRL 0.4 / MDL 0.4	20.9 w/ MRL 0.6 / MDL 0.3	22.2 w/ MRL 0.2 / MDL 0.2	22.6 w/ MRL 0.2 / MDL 0.2	23.7 w/ MRL 0.6 / MDL 0.3
Selenium (Se)	EPA 7742	varies see test	mg/kg					0.5 w/ MRL 0.2 /	0.58 w/ MRL 0.22 /	0.73 w/ MRL 0.11 /	0.80 w/ MRL 0.11 /	0.48 w/ MRL 0.23 /

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-14-01 18-21.5'	MDH-15-01 12-18'	MDH-15-01 18-28'	MDH-15-01 28-38'	MDH-15-01 38-48'
				(Long et al., 1999)		(PSDDA, 2000)						
		column						MDL 0.1	MDL 0.03	MDL 0.04	MDL 0.05	MDL 0.03
Silver (Ag)	EPA 6020	varies see test column	mg/kg	1	3.7	6.1	8.4	0.07 w/ MRL 0.02 / MDL 0.01	0.10 w/ MRL 0.02 / MDL 0.01	0.11 w/ MRL 0.02 / MDL 0.01	0.13 w/ MRL 0.02 / MDL 0.01	0.10 w/ MRL 0.02 / MDL 0.01
Zinc (Zn)	EPA 6020	varies see test column	mg/kg	150	410	410	3,800	74.4 w/ MRL 0.6 / MDL 0.4	67.7 w/ MRL 0.6 / MDL 0.3	79.4 w/ MRL 0.6 / MDL 0.2	82.1 w/ MRL 0.6 / MDL 0.2	77.5 w/ MRL 0.6 / MDL 0.3
ORGANICS												
PESTICIDES												
Total Chlorinated Pesticides [4]			ug/kg	6.8	108.1	56.9	69.0	ND	ND	ND	5.4	ND
Aldrin	EPA 8081A	varies see test columns	ug/kg			10		ND w/ MRL 1.2 / MDL 0.28	ND w/ MRL 16 / MDL 3.6	ND w/ MRL 16 / MDL 3.7	ND w/ MRL 16 / MDL 3.7	ND w/ MRL 14 / MDL 3.2
alpha BHC	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.2 / MDL 0.13	ND w/ MRL 16 / MDL 1.6	ND w/ MRL 16 / MDL 3.7	ND w/ MRL 16 / MDL 3.8	ND w/ MRL 14 / MDL 1.4
alpha-Chlordane	EPA 8081A	varies see test columns	ug/kg			10		ND w/ MRL 1.2 / MDL 0.13	ND w/ MRL 16 / MDL 1.7	ND w/ MRL 16 / MDL 1.7	ND w/ MRL 16 / MDL 1.7	ND w/ MRL 14 / MDL 1.5
beta-BHC	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.2 / MDL 0.18	ND w/ MRL 16 / MDL 2.3	ND w/ MRL 16 / MDL 2.3	ND w/ MRL 16 / MDL 2.4	ND w/ MRL 14 / MDL 1.4
delta-BHC	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.2 / MDL 0.45	ND w/ MRL 16 / MDL 5.7	ND w/ MRL 16 / MDL 5.8	ND w/ MRL 16 / MDL 5.9	ND w/ MRL 14 / MDL 5.0
Dieldrin	EPA 8081A	varies see test columns	ug/kg	0.02	8.0	10		ND w/ MRL 1.2 / MDL 0.58	ND w/ MRL 16 / MDL 4.8	ND w/ MRL 16 / MDL 4.8	ND w/ MRL 16 / MDL 4.9	ND w/ MRL 14 / MDL 4.2
Endosulfan I	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.2 / MDL 0.15	ND w/ MRL 16 / MDL 1.9	ND w/ MRL 16 / MDL 2.0	ND w/ MRL 16 / MDL 2.0	ND w/ MRL 14 / MDL 1.7
Endosulfan II	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.2 / MDL 0.27	ND w/ MRL 16 / MDL 3.4	ND w/ MRL 16 / MDL 3.4	ND w/ MRL 16 / MDL 3.5	ND w/ MRL 14 / MDL 3.0
Endosulfan Sulfate	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.2 / MDL 0.20	ND w/ MRL 16 / MDL 2.5	ND w/ MRL 16 / MDL 2.5	ND w/ MRL 16 / MDL 2.6	ND w/ MRL 14 / MDL 2.2
Endrin	EPA 8081A	varies	ug/kg					ND w/	ND w/	ND w/	ND w/	ND w/

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"		Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
					ERL	ERM	SL	ML	MDH-14-01 18-21.5'	MDH-15-01 12-18'	MDH-15-01 18-28'	MDH-15-01 28-38'	MDH-15-01 38-48'
					(Long et al., 1999)		(PSDDA, 2000)						
			see test columns						MRL 1.2 / MDL 0.16	MRL 16 / MDL 2.1	MRL 16 / MDL 2.1	MRL 16 / MDL 2.1	MRL 14 / MDL 1.8
	gamma-BHC Lindane	EPA 8081A	varies see test columns	ug/kg			10		ND w/ MRL 1.2 / MDL 0.66	ND w/ MRL 16 / MDL 16	ND w/ MRL 16 / MDL 3.8	ND w/ MRL 16 / MDL 4.2	ND w/ MRL 14 / MDL 3.3
	gamma-Chlordane	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.2 / MDL 0.78	ND w/ MRL 16 / MDL 2.3	ND w/ MRL 16 / MDL 2.3	ND w/ MRL 16 / MDL 2.4	ND w/ MRL 14 / MDL 2.0
	Heptachlor	EPA 8081A	varies see test columns	ug/kg			10		ND w/ MRL 1.2 / MDL 0.17	ND w/ MRL 16 / MDL 2.1	ND w/ MRL 16 / MDL 2.2	ND w/ MRL 16 / MDL 2.2	ND w/ MRL 14 / MDL 1.9
	Toxaphene	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 60 / MDL 6.8	ND w/ MRL 770 / MDL 87	ND w/ MRL 780 / MDL 88	ND w/ MRL 790 / MDL 89	ND w/ MRL 670 / MDL 76
	Total DDT [5]	EPA 8081A	varies see test columns	ug/kg	1.58	46.1	6.9	69.0	ND	ND	ND	5.4	ND
	4,4'-DDD	EPA 8081A	varies see test columns	ug/kg	1.0	7.0			ND w/ MRL 1.2 / MDL 0.19	ND w/ MRL 16 / MDL 2.4	ND w/ MRL 16 / MDL 2.4	ND w/ MRL 16 / MDL 2.4	ND w/ MRL 14 / MDL 2.1
	4,4'-DDE	EPA 8081A	varies see test columns	ug/kg	2.2	27			ND w/ MRL 1.2 / MDL 0.30	ND w/ MRL 16 / MDL 3.8	ND w/ MRL 16 / MDL 3.9	ND w/ MRL 16 / MDL 3.9	ND w/ MRL 14 / MDL 3/4
	4,4'-DDT	EPA 8081A	varies see test columns	ug/kg	2.0	20			ND w/ MRL 1.2 / MDL 0.21	ND w/ MRL 16 / MDL 2.7	ND w/ MRL 16 / MDL 2.7	5.4 w/ MRL 16 / MDL 2.7	ND w/ MRL 14 / MDL 2.3
	Heptachlor Epoxide	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.2 / MDL 0.36	ND w/ MRL 16 / MDL 2.1	ND w/ MRL 16 / MDL 2.2	ND w/ MRL 16 / MDL 2.2	ND w/ MRL 14 / MDL 1.9
	Endrin Aldehyde	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.2 / MDL 0.43	ND w/ MRL 16 / MDL 5.5	ND w/ MRL 16 / MDL 5.5	ND w/ MRL 16 / MDL 5.6	ND w/ MRL 14 / MDL 4.8
	Endrin Ketone	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.2 / MDL 0.19	ND w/ MRL 16 / MDL 4.8	ND w/ MRL 16 / MDL 2.5	ND w/ MRL 16 / MDL 5.5	ND w/ MRL 14 / MDL 4.7
	Methoxychlor	EPA 8081A	varies see test columns	ug/kg					ND w/ MRL 1.2 / MDL 0.20	ND w/ MRL 16 / MDL 2.5	ND w/ MRL 16 / MDL 2.6	ND w/ MRL 16 / MDL 2.6	ND w/ MRL 14 / MDL 4.7

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-14-01 18-21.5'	MDH-15-01 12-18'	MDH-15-01 18-28'	MDH-15-01 28-38'	MDH-15-01 38-48'
				(Long et al., 1999)		(PSDDA, 2000)						
ORGANOTINS												
Total Organotins [4]			ug/kg					NT	NT	NT	NT	NT
Monobutyltin (n-Butyltin)	Krone	n/a	ug/kg					NT	NT	NT	NT	NT
Di-n-butyltin	Krone	n/a	ug/kg					NT	NT	NT	NT	NT
Tri-n-butyltin	Krone	n/a	ug/kg					NT	NT	NT	NT	NT
Tetra-n-butyltin	Krone	n/a	ug/kg			0.15 [7]		NT	NT	NT	NT	NT
PHTHALATES												
Total phthalates [4]			ug/kg			23,170		NT	NT	NT	NT	NT
Bis (2-ethylhexyl) phthalate	EPA 8270C	n/a	ug/kg			8,300		NT	NT	NT	NT	NT
Butyl benzyl phthalate	EPA 8270C	n/a	ug/kg			970		NT	NT	NT	NT	NT
Diethyl phthalate	EPA 8270C	n/a	ug/kg			1,200		NT	NT	NT	NT	NT
Dimethyl phthalate	EPA 8270C	n/a	ug/kg			1,400		NT	NT	NT	NT	NT
Di-n-butyl phthalate	EPA 8270C	n/a	ug/kg			5,100		NT	NT	NT	NT	NT
Di-n-octyl phthalate	EPA 8270C	n/a	ug/kg			6,200		NT	NT	NT	NT	NT
POLYCHLORINATED BIPHENYLS (PCB)												
Total PCBs [4]			ug/kg	22.7	180	130	3,100	NT	NT	NT	NT	NT
Aroclor 1016	EPA 8082	n/a	ug/kg					NT	NT	NT	NT	NT
Aroclor 1221	EPA 8082	n/a	ug/kg					NT	NT	NT	NT	NT
Aroclor 1232	EPA 8082	n/a	ug/kg					NT	NT	NT	NT	NT
Aroclor 1242	EPA 8082	n/a	ug/kg					NT	NT	NT	NT	NT
Aroclor 1248	EPA 8082	n/a	ug/kg					NT	NT	NT	NT	NT
Aroclor 1254	EPA 8082	n/a	ug/kg					NT	NT	NT	NT	NT
Aroclor 1260	EPA 8082	n/a	ug/kg					NT	NT	NT	NT	NT
POLYNUCLEAR AROMATICS HYDROCARBONS (PAH)												
Total PAHs [4]			ug/kg	4,022	44,792			NT	NT	NT	NT	NT
2-Methylnaphthalene	EPA 8270C	n/a	ug/kg	70	670	670	1,900	NT	NT	NT	NT	NT
Acenaphthene	EPA 8270C	n/a	ug/kg	16	500	500	2,000	NT	NT	NT	NT	NT
Acenaphthylene	EPA 8270C	n/a	ug/kg	44	640	560	1,300	NT	NT	NT	NT	NT
Anthracene	EPA 8270C	n/a	ug/kg	85.3	1,100	960	13,000	NT	NT	NT	NT	NT
Benzo(a)anthracene	EPA 8270C	n/a	ug/kg	261	1,600	1,300	5,100	NT	NT	NT	NT	NT
Benzo(a,e)pyrene	EPA 8270C	n/a	ug/kg	430	1,600	1,600	3,600	NT	NT	NT	NT	NT
Benzo(b)fluoranthene	EPA 8270C	n/a	ug/kg			1,600	4,950	NT	NT	NT	NT	NT
Benzo(k)fluoranthene	EPA 8270C	n/a	ug/kg			1,600	4,950	NT	NT	NT	NT	NT
Benzo(g,h,i)perylene	EPA 8270C	n/a	ug/kg			670	3,200	NT	NT	NT	NT	NT

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]				
				ERL	ERM	SL	ML	MDH-14-01 18-21.5'	MDH-15-01 12-18'	MDH-15-01 18-28'	MDH-15-01 28-38'	MDH-15-01 38-48'
				(Long et al., 1999)		(PSDDA, 2000)						
Chrysene	EPA 8270C	n/a	ug/kg	384	2,800	1,400	21,000	NT	NT	NT	NT	NT
Dibenzo(a,h)anthracene	EPA 8270C	n/a	ug/kg	63.4	260	230	1,900	NT	NT	NT	NT	NT
Fluoranthene	EPA 8270C	n/a	ug/kg	600	5,100	1,700	30,000	NT	NT	NT	NT	NT
Fluorene	EPA 8270C	n/a	ug/kg	19	540	540	3,600	NT	NT	NT	NT	NT
Indeno(1,2,3-cd)pyrene	EPA 8270C	n/a	ug/kg			600	4,400	NT	NT	NT	NT	NT
Naphthalene	EPA 8270C	n/a	ug/kg	160	2,100	2,100	2,400	NT	NT	NT	NT	NT
Phenanthrene	EPA 8270C	n/a	ug/kg	240	1,500	1,500	21,000	NT	NT	NT	NT	NT
Pyrene	EPA 8270C	n/a	ug/kg	665	2,600	2,600	16,000	NT	NT	NT	NT	NT
PHENOLS												
Total Phenols [4]			ug/kg			1582	5777	NT	NT	NT	NT	NT
2,4-Dimethylphenol	EPA 8270C	n/a	ug/kg			29	210	NT	NT	NT	NT	NT
2-Methylphenol	EPA 8270C	n/a	ug/kg			63	77	NT	NT	NT	NT	NT
4-Methylphenol	EPA 8270C	n/a	ug/kg			670	3,600	NT	NT	NT	NT	NT
Pentachlorophenol	EPA 8270C	n/a	ug/kg			400	690	NT	NT	NT	NT	NT

Eighth set of five samples-- lower part of hole 15-01:

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]			
				ERL	ERM	SL	ML	MDH-15-01 48-58'	MDH-15-01 58-68'	MDH-15-01 68-78'	MDH-15-01 78-85'
				(Long et al., 1999)		(PSDDA, 2000)					
PHYSICAL/CONVENTIONALS											
Total Solids (wet weight)	EPA 160.3M	0.01	%					71.8	72.3	69.4	67.2
Total Volatile Solids (wet weight)	SM 2540G	0.01	%					3.54	4.48	5.24	5.65
pH	EPA 9045	0.1	pH units					7.1	7.0	7.2	7.2
Ammonia	EPA 350.1M	0.2 / 0.2	mg/kg					76.4 w/ MRL 0.2 / MDL 0.2	90.6 w/ MRL 0.2 / MDL 0.2	108 w/ MRL 0.2 / MDL 0.2	106 w/ MRL 0.2 / MDL 0.2
Total Organic Carbon	EPA 9060M	500/ 300	mg/kg					10300	13600	12100	11900

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]			
				ERL	ERM	SL	ML	MDH-15-01 48-58'	MDH-15-01 58-68'	MDH-15-01 68-78'	MDH-15-01 78-85'
				(Long et al., 1999)		(PSDDA, 2000)					
Soluble Sulfides	EPA/CE-81-1	0.1	mg/kg					30	35	312	75
Total Sulfides	EPA 9030B	3	mg/kg					5	10	74	41
Calcium carbonate	ASTM D-4373	0.1	%					0.20	0.52	0.36	0.20
Oil and Grease	EPA 413.2	10	mg/kg					22	30	32	24
Total Recoverable Petroleum Hydrocarbons	EPA 413.1	10	mg/kg					30	30	34	20
METALS											
Antimony (Sb)	EPA 6020	varies see test columns	mg/kg			15	200	0.14 w/ MRL 0.06 / MDL 0.04	0.12 w/ MRL 0.06 / MDL 0.03	0.15 w/ MRL 0.05 / MDL 0.03	0.18 w/ MRL 0.05 / MDL 0.03
Arsenic (As)	EPA 6020	varies see test columns	mg/kg	8.2	70	57	700	7.2 w/ MRL 0.6 / MDL 0.2	7.2 w/ MRL 0.6 / MDL 0.2	7.6 w/ MRL 0.5 / MDL 0.2	*8.7* w/ MRL 0.5 / MDL 0.2
Cadmium (Cd)	EPA 6020	varies see test columns	mg/kg	1.2	9.6	5.1	14	0.34 w/ MRL 0.06 / MDL 0.04	0.31 w/ MRL 0.06 / MDL 0.03	0.35 w/ MRL 0.05 / MDL 0.03	0.40 w/ MRL 0.05 / MDL 0.03
Chromium (Cr)	EPA 6020	varies see test columns	mg/kg	81	370			30.8 w/ MRL 0.24 / MDL 0.05	29.5 w/ MRL 0.23 / MDL 0.05	32.0 w/ MRL 0.21 / MDL 0.04	41.1 w/ MRL 0.21 / MDL 0.04
Copper (Cu)	EPA 6020	varies see test columns	mg/kg	34	270	390	1,300	33.4 w/ MRL 0.12 / MDL 0.06	31.4 w/ MRL 0.11 / MDL 0.06	38.0 w/ MRL 0.10 / MDL 0.05	42.1 w/ MRL 0.11 / MDL 0.05
Lead (Pb)	EPA 6020	varies see test columns	mg/kg	46.7	218	450	1,200	18.8 w/ MRL 0.06 / MDL 0.05	17.6 w/ MRL 0.06 / MDL 0.05	20.0 w/ MRL 0.05 / MDL 0.04	24.1 w/ MRL 0.05 / MDL 0.04
Mercury (Hg)	EPA 7471A	varies see test columns	mg/kg	0.15	0.71	0.41	2.3	0.135 w/ MRL 0.016 / MDL 0.008	0.195 w/ MRL 0.014 / MDL 0.007	0.094 w/ MRL 0.016 / MDL 0.008	0.102 w/ MRL 0.017 / MDL 0.009
Nickel (Ni)	EPA 6020	varies see test columns	mg/kg	20.9	51.6	140	370	26.6 w/ MRL 0.6 / MDL 0.4	26.2 w/ MRL 0.6 / MDL 0.3	27.9 w/ MRL 0.5 / MDL 0.3	34.5 w/ MRL 0.5 / MDL 0.3
Selenium (Se)	EPA 7742	varies see test columns	mg/kg					0.70 w/ MRL 0.24 / MDL 0.04	0.68 w/ MRL 0.23 / MDL 0.03	0.79 w/ MRL 0.21 / MDL 0.03	0.82 w/ MRL 0.21 / MDL 0.03
Silver (Ag)	EPA 6020	varies see test columns	mg/kg	1	3.7	6.1	8.4	0.12 w/ MRL 0.02 / MDL 0.01	0.12 w/ MRL 0.02 / MDL 0.01	0.14 w/ MRL 0.02 / MDL 0.01	0.33 w/ MRL 0.02 / MDL 0.01

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)					Sample Testing Results [3]			
				ERL	ERM	SL	ML		MDH-15-01 48-58'	MDH-15-01 58-68'	MDH-15-01 68-78'	MDH-15-01 78-85'
				(Long et al., 1999)		(PSDDA, 2000)						
Zinc (Zn)	EPA 6020	varies see test columns	mg/kg	150	410	410	3,800		89.4 w/ MRL 0.6 / MDL 0.4	86.5 w/ MRL 0.6 / MDL 0.3	92.7 w/ MRL 0.5 / MDL 0.3	112 w/ MRL 0.5 / MDL 0.3
ORGANICS												
PESTICIDES												
Total Chlorinated Pesticides [4]			ug/kg	6.8	108.1	56.9	69.0		ND	2.4	3.5	ND
Aldrin	EPA 8081A	varies see tests column	ug/kg			10			ND w/ MRL 15 / MDL 3.3	ND w/ MRL 14 / MDL 3.3	ND w/ MRL 15 / MDL 3.4	ND w/ MRL 15 / MDL 3.5
alpha BHC	EPA 8081A	varies see tests column	ug/kg						ND w/ MRL 15 / MDL 1.5	ND w/ MRL 14 / MDL 3.2	ND w/ MRL 15 / MDL 1.5	ND w/ MRL 15 / MDL 1.6
alpha-Chlordane	EPA 8081A	varies see tests column	ug/kg			10			ND w/ MRL 15 / MDL 1.6	ND w/ MRL 14 / MDL 1.5	ND w/ MRL 15 / MDL 1.6	ND w/ MRL 15 / MDL 1.6
beta-BHC	EPA 8081A	varies see tests column	ug/kg						ND w/ MRL 15 / MDL 2.1	ND w/ MRL 14 / MDL 2.1	ND w/ MRL 15 / MDL 2.2	ND w/ MRL 15 / MDL 2.2
delta-BHC	EPA 8081A	varies see tests column	ug/kg						ND w/ MRL 15 / MDL 5.3	ND w/ MRL 14 / MDL 5.1	ND w/ MRL 15 / MDL 5.4	ND w/ MRL 15 / MDL 5.5
Dieldrin	EPA 8081A	varies see tests column	ug/kg	0.02	8.0	10			ND w/ MRL 15 / MDL 4.4	ND w/ MRL 14 / MDL 4.3	ND w/ MRL 15 / MDL 4.7	ND w/ MRL 15 / MDL 4.6
Endosulfan I	EPA 8081A	varies see tests column	ug/kg						ND w/ MRL 15 / MDL 1.8	ND w/ MRL 14 / MDL 1.7	ND w/ MRL 15 / MDL 1.8	ND w/ MRL 15 / MDL 1.9
Endosulfan II	EPA 8081A	varies see tests column	ug/kg						ND w/ MRL 15 / MDL 1.9	ND w/ MRL 14 / MDL 3.0	ND w/ MRL 15 / MDL 3.2	ND w/ MRL 15 / MDL 3.3
Endosulfan Sulfate	EPA 8081A	varies see tests column	ug/kg						ND w/ MRL 15 / MDL 2.3	ND w/ MRL 14 / MDL 2.2	ND w/ MRL 15 / MDL 2.3	ND w/ MRL 15 / MDL 2.4
Endrin	EPA 8081A	varies see tests column	ug/kg						ND w/ MRL 15 / MDL 1.9	ND w/ MRL 14 / MDL 1.9	ND w/ MRL 15 / MDL 1.9	ND w/ MRL 15 / MDL 2.0
gamma-BHC Lindane	EPA 8081A	varies see tests	ug/kg			10			ND w/ MRL 15 /	ND w/ MRL 14 /	ND w/ MRL 15 /	ND w/ MRL 15 /

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]			
				ERL	ERM	SL	ML	MDH-15-01 48-58'	MDH-15-01 58-68'	MDH-15-01 68-78'	MDH-15-01 78-85'
				(Long et al., 1999)		(PSDDA, 2000)					
		column						MDL 15	MDL 14	MDL 15	MDL 15
gamma-Chlordane	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 15 / MDL 2.1	ND w/ MRL 14 / MDL 2.1	ND w/ MRL 15 / MDL 2.2	ND w/ MRL 15 / MDL 2.2
Heptachlor	EPA 8081A	varies see tests column	ug/kg			10		ND w/ MRL 15 / MDL 2.0	ND w/ MRL 14 / MDL 1.9	ND w/ MRL 15 / MDL 2.0	ND w/ MRL 15 / MDL 2.0
Toxaphene	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 710 / MDL 80	ND w/ MRL 690 / MDL 78	ND w/ MRL 720 / MDL 81	ND w/ MRL 740 / MDL 83
Total DDT [5]	EPA 8081A	varies see tests column	ug/kg	1.58	46.1	6.9	69.0	ND	*2.4*	*3.5*	ND
4,4'-DDD	EPA 8081A	varies see tests column	ug/kg	1.0	7.0			ND w/ MRL 15 / MDL 2.2	2.4 w/ MRL 14 / MDL 2.1	3.5 w/ MRL 15 / MDL 2.2	ND w/ MRL 15 / MDL 2.3
4,4'-DDE	EPA 8081A	varies see tests column	ug/kg	2.2	27			ND w/ MRL 15 / MDL 3.5	ND w/ MRL 14 / MDL 3.4	ND w/ MRL 15 / MDL 3.6	ND w/ MRL 15 / MDL 3.7
4,4'-DDT	EPA 8081A	varies see tests column	ug/kg	2.0	20			ND w/ MRL 15 / MDL 2.4	ND w/ MRL 14 / MDL 2.4	ND w/ MRL 15 / MDL 2.5	ND w/ MRL 15 / MDL 2.5
Heptachlor Epoxide	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 15 / MDL 2.0	ND w/ MRL 14 / MDL 1.9	ND w/ MRL 15 / MDL 2.0	ND w/ MRL 15 / MDL 2.1
Endrin Aldehyde	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 15 / MDL 5.0	ND w/ MRL 14 / MDL 4.9	ND w/ MRL 15 / MDL 5.1	ND w/ MRL 15 / MDL 5.3
Endrin Ketone	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 15 / MDL 2.3	ND w/ MRL 14 / MDL 5.2	ND w/ MRL 15 / MDL 7.4	ND w/ MRL 15 / MDL 2.4
Methoxychlor	EPA 8081A	varies see tests column	ug/kg					ND w/ MRL 15 / MDL 2.3	ND w/ MRL 14 / MDL 2.3	ND w/ MRL 15 / MDL 2.4	ND w/ MRL 15 / MDL 2.4
ORGANOTINS											
Total Organotins [4]			ug/kg					NT	NT	NT	NT
Monobutyltin (n-Butyltin)	Krone	n/a	ug/kg					NT	NT	NT	NT

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method [1]	Method Reporting Limit / Method Detection Limit[1a]	Units [2]	Sediment Quality Guidelines (SQGs)				Sample Testing Results [3]			
				ERL	ERM	SL	ML	MDH-15-01 48-58'	MDH-15-01 58-68'	MDH-15-01 68-78'	MDH-15-01 78-85'
				(Long et al., 1999)		(PSDDA, 2000)					
Di-n-butyltin	Krone	n/a	ug/kg					NT	NT	NT	NT
Tri-n-butyltin	Krone	n/a	ug/kg					NT	NT	NT	NT
Tetra-n-butyltin	Krone	n/a	ug/kg			0.15 [7]		NT	NT	NT	NT
PHTHALATES											
Total phthalates [4]			ug/kg			23,170		NT	NT	NT	NT
Bis (2-ethylhexyl) phthalate	EPA 8270C	n/a	ug/kg			8,300		NT	NT	NT	NT
Butyl benzyl phthalate	EPA 8270C	n/a	ug/kg			970		NT	NT	NT	NT
Diethyl phthalate	EPA 8270C	n/a	ug/kg			1,200		NT	NT	NT	NT
Dimethyl phthalate	EPA 8270C	n/a	ug/kg			1,400		NT	NT	NT	NT
Di-n-butyl phthalate	EPA 8270C	n/a	ug/kg			5,100		NT	NT	NT	NT
Di-n-octyl phthalate	EPA 8270C	n/a	ug/kg			6,200		NT	NT	NT	NT
POLYCHLORINATED BIPHENYLS (PCB)											
Total PCBs [4]			ug/kg	22.7	180	130	3,100	NT	NT	NT	NT
Aroclor 1016	EPA 8082	n/a	ug/kg					NT	NT	NT	NT
Aroclor 1221	EPA 8082	n/a	ug/kg					NT	NT	NT	NT
Aroclor 1232	EPA 8082	n/a	ug/kg					NT	NT	NT	NT
Aroclor 1242	EPA 8082	n/a	ug/kg					NT	NT	NT	NT
Aroclor 1248	EPA 8082	n/a	ug/kg					NT	NT	NT	NT
Aroclor 1254	EPA 8082	n/a	ug/kg					NT	NT	NT	NT
Aroclor 1260	EPA 8082	n/a	ug/kg					NT	NT	NT	NT
POLYNUCLEAR AROMATICS HYDROCARBONS (PAH)											
Total PAHs [4]			ug/kg	4,022	44,792			NT	NT	NT	NT
2-Methylnaphthalene	EPA 8270C	n/a	ug/kg	70	670	670	1,900	NT	NT	NT	NT
Acenaphthene	EPA 8270C	n/a	ug/kg	16	500	500	2,000	NT	NT	NT	NT
Acenaphthylene	EPA 8270C	n/a	ug/kg	44	640	560	1,300	NT	NT	NT	NT
Anthracene	EPA 8270C	n/a	ug/kg	85.3	1,100	960	13,000	NT	NT	NT	NT
Benzo(a)anthracene	EPA 8270C	n/a	ug/kg	261	1,600	1,300	5,100	NT	NT	NT	NT
Benzo(a,e)pyrene	EPA 8270C	n/a	ug/kg	430	1,600	1,600	3,600	NT	NT	NT	NT
Benzo(b)fluoranthene	EPA 8270C	n/a	ug/kg			1,600	4,950	NT	NT	NT	NT
Benzo(k)fluoranthene	EPA 8270C	n/a	ug/kg			1,600	4,950	NT	NT	NT	NT
Benzo(g,h,i)perylene	EPA 8270C	n/a	ug/kg			670	3,200	NT	NT	NT	NT
Chrysene	EPA 8270C	n/a	ug/kg	384	2,800	1,400	21,000	NT	NT	NT	NT
Dibenzo(a,h)anthracene	EPA 8270C	n/a	ug/kg	63.4	260	230	1,900	NT	NT	NT	NT
Fluoranthene	EPA 8270C	n/a	ug/kg	600	5,100	1,700	30,000	NT	NT	NT	NT

Attachment 3, contin.—Matilija Dam removal study--test results for potential contaminants in impounded sediments.

Abbreviations used for SQG's: ERL = "effects range -low"; ERM = "effects range - medium"; SL = "screening level" ML = "maximum level"	Analytical Method (1)	Method Reporting Limit / Method Detection Limit(1a)	Units (2)	Sediment Quality Guidelines (SQGs)					Sample Testing Results (3)			
				ERL	ERM	SL	ML		MDH-15-01 48-58'	MDH-15-01 58-68'	MDH-15-01 68-78'	MDH-15-01 78-85'
				(Long et al., 1999)		(PSDDA, 2000)						
Fluorene	EPA 8270C	n/a	ug/kg	19	540	540	3,600		NT	NT	NT	NT
Indeno(1,2,3-cd)pyrene	EPA 8270C	n/a	ug/kg			600	4,400		NT	NT	NT	NT
Naphthalene	EPA 8270C	n/a	ug/kg	160	2,100	2,100	2,400		NT	NT	NT	NT
Phenanthrene	EPA 8270C	n/a	ug/kg	240	1,500	1,500	21,000		NT	NT	NT	NT
Pyrene	EPA 8270C	n/a	ug/kg	665	2,600	2,600	16,000		NT	NT	NT	NT
PHENOLS												
Total Phenols (4)			ug/kg			1582	5777		NT	NT	NT	NT
2,4-Dimethylphenol	EPA 8270C	n/a	ug/kg			29	210		NT	NT	NT	NT
2-Methylphenol	EPA 8270C	n/a	ug/kg			63	77		NT	NT	NT	NT
4-Methylphenol	EPA 8270C	n/a	ug/kg			670	3,600		NT	NT	NT	NT
Pentachlorophenol	EPA 8270C	n/a	ug/kg			400	690		NT	NT	NT	NT

(1) Analytical Method
EPA = United States Environmental Protection Agency
EPA Methods are EPA SW-846, 1994 3rd Edition or EPA 600/4-79-020, March 1983
SM = Standard Methods for wastewater analysis
ASTM = American Society for Testing and Materials
Plumb = Procedure for Handling and Chemical Analysis of Sediment and Water Samples. Tech Rep. USEPA/CE-81, Russell H. Plumb, Jr., 1981.
Krone =

(1a) If only one value is listed in the column, it is the MRL (method reporting limit); the second value listed in this column is the MDL (the method detection limit). In the individual test results columns, if a numerical value is listed, that analyte is present, but is *quantifiable* only if value listed also is above the MRL (method reporting limit); analyte values in numerical range *between* the MDL and MRL are estimates only; condition usually due to interference within the testing machinery from other substances within the sample.

(2) Units: all listed values based on dry weight unless otherwise noted; ug/kg = micrograms per kilogram, parts per billion; mg/kg = milligrams per kilogram, parts per million (dry weight unless otherwise noted)

(3) ND = not detected at or above lowest Method Detection Limit value for the particular compound(s) of interest
NT = not tested for a given analyte

(4) Total Chlorinated Pesticides, Total Organotins (Butyltins), Total Phthalates, Total PCBs, Total PAHs, and Total Phenols = sum of named compounds and their derivatives

(5) Total DDT = sum of 4,4'-DDE; 4,4'-DDD; and 4,4'-DDT

(7) Tributyltin (interstitial water)

br

Attachment 4
The EDR, Inc. regulatory database search results
--see separate electronic .pdf format file for this information--
named "attach 4_matilsesrept.pdf

The EDR Corridor Study Report

Study Area
Matilija Reservoir
Ojai, CA 93023

April 11, 2002

Inquiry number 760139.1s

Environmental Data Resources, Inc.

***The* Source For Environmental Risk Management Data**

3530 Post Road
Southport, Connecticut 06490

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR).

TARGET PROPERTY INFORMATION

ADDRESS

MATILIJA RESERVOIR
OJAI, CA 93023

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records within the requested search area for the following databases:

FEDERAL ASTM STANDARD

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
CORRACTS	Corrective Action Report
RCRIS-TSD	Resource Conservation and Recovery Information System
RCRIS-LQG	Resource Conservation and Recovery Information System
RCRIS-SQG	Resource Conservation and Recovery Information System
ERNS	Emergency Response Notification System

STATE ASTM STANDARD

AWP	Annual Workplan Sites
Cal-Sites	Calsites Database
CHMIRS	California Hazardous Material Incident Report System
Notify 65	Proposition 65 Records
Toxic Pits	Toxic Pits Cleanup Act Sites
SWF/LF	Solid Waste Information System
WMUDS/SWAT	Waste Management Unit Database
CA BOND EXP. PLAN	Bond Expenditure Plan
CA FID UST	Facility Inventory Database

FEDERAL ASTM SUPPLEMENTAL

CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
Delisted NPL	National Priority List Deletions
FINDS	Facility Index System/Facility Identification Initiative Program Summary Report
HMIRS	Hazardous Materials Information Reporting System
MLTS	Material Licensing Tracking System
MINES	Mines Master Index File
NPL Liens	Federal Superfund Liens
PADS	PCB Activity Database System
RAATS	RCRA Administrative Action Tracking System
TRIS	Toxic Chemical Release Inventory System

EXECUTIVE SUMMARY

TSCA ..... Toxic Substances Control Act
FTTS ..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

AST ..... Aboveground Petroleum Storage Tank Facilities
CLEANERS ..... Cleaner Facilities
CA WDS ..... Waste Discharge System
DEED ..... List of Deed Restrictions
CA SLIC ..... Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
HAZNET ..... Hazardous Waste Information System

EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas ..... Former Manufactured Gas (Coal Gas) Sites

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STATE ASTM STANDARD

CORTESE: This database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release and all solid waste disposal facilities from which there is known migration. The source is the California Environmental Protection Agency/Office of Emergency Information.

A review of the Cortese list, as provided by EDR, has revealed that there is 1 Cortese site within the searched area.

Site	Address	Map ID	Page
MC INNES RANCH	***350 RICE RD***	***2***	***3***

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 01/17/2002 has revealed that there is 1 LUST site within the searched area.

Site	Address	Map ID	Page
MC INNES RANCH	***350 RICE RD***	***2***	***3***

EXECUTIVE SUMMARY

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, and dated 01/17/2002 has revealed that there is 1 UST site within the searched area.

Site	Address	Map ID	Page
MCINNES RANCH	***350 RICE ROAD***	***2***	***4***

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 2 HIST UST sites within the searched area.

Site	Address	Map ID	Page
MCINNES RANCH	***350 RICE ROAD***	***2***	***4***
FLYING H INC	484 CAMINO CIELO	3	5

EXECUTIVE SUMMARY

Please refer to the end of the findings report for unmapped orphan sites due to poor or inadequate address information.

MAP FINDINGS SUMMARY

Database	Total Plotted
FEDERAL ASTM STANDARD	
NPL	0
Proposed NPL	0
CERCLIS	0
CERC-NFRAP	0
CORRACTS	0
RCRIS-TSD	0
RCRIS Lg. Quan. Gen.	0
RCRIS Sm. Quan. Gen.	0
ERNS	0
STATE ASTM STANDARD	
AWP	0
Cal-Sites	0
CHMIRS	0
Cortese	1
Notify 65	0
Toxic Pits	0
State Landfill	0
WMUDS/SWAT	0
LUST	1
CA Bond Exp. Plan	0
UST	1
CA FID UST	0
HIST UST	2
FEDERAL ASTM SUPPLEMENTAL	
CONSENT	0
ROD	0
Delisted NPL	0
FINDS	0
HMIRS	0
MLTS	0
MINES	0
NPL Liens	0
PADS	0
RAATS	0
TRIS	0
TSCA	0
FTTS	0
STATE OR LOCAL ASTM SUPPLEMENTAL	
AST	0
CLEANERS	0

MAP FINDINGS SUMMARY

Database	Total Plotted
CA WDS	0
DEED	0
CA SLIC	0
HAZNET	0
EDR PROPRIETARY HISTORICAL DATABASES	
Coal Gas	0

* Sites may be listed in more than one database

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

---

1 **PRO EX. FORK LIFT PROPANE** **VENTURA CO. BWT** **S104994411**
3260 MATILIJA CANYON RD **N/A**
OJAI, CA

BWT:
Facility ID: 0-004425
Region: VENTURA
Information Type: Business Plan

---

2 **MC INNES RANCH** **LUST** **S102433138**
350 RICE RD **Cortese** **N/A**
OXNARD, CA 93030

State LUST:
Cross Street: COLONIA
Qty Leaked: Not reported
Case Number C-88069
Reg Board: Los Angeles Region
Chemical: Diesel
Lead Agency: Regional Board
Local Agency : 56000
Case Type: Other ground water affected
Status: Signed off, remedial action completed or deemed unnecessary
County: Ventura
Abate Method: Excavate and Treat - remove contaminated soil and treat (includes spreading or land farming), Pump and Treat Ground Water - generally employed to remove dissolved contaminants

Review Date:	Not reported	Confirm Leak:	Not reported
Workplan:	9/27/1989	Prelim Assess:	9/27/1989
Pollution Char:	Not reported	Remed Plan:	Not reported
Remed Action:	10/7/1992	Monitoring:	10/7/1992

Close Date: 3/31/1994
Release Date: 5/1/1988
Cleanup Fund Id : Not reported
Discover Date : Not reported
Enforcement Dt : Not reported
Enf Type: Not reported
Enter Date : 6/21/1988
Funding: Not reported
Staff Initials: UNK
How Discovered: Not reported
How Stopped: Not reported
Interim : Yes
Leak Cause: Not reported
Leak Source: Not reported
MTBE Date : Not reported
Max MTBE GW : Not reported
MTBE Tested: Not Required to be Tested.
Priority: Not reported
Local Case # : Not reported
Beneficial: Not reported
Staff : JH
GW Qualifies : Not reported
Max MTBE Soil : Not reported
Soil Qualifies : Not reported
Hydr Basin #: Not reported
Operator : OLD CASE #930300043
Oversight Prgm: RB Lead Underground Storage Tank

MC INNES RANCH (Continued) **S102433138**

Oversight Prgm : UST
Review Date : 3/25/1994
Stop Date : Not reported
Work Suspended : Not reported
Responsible Party THE SAMMIS COMPANY
RP Address: 650 HAMPSHIRE RD, STE 200, WESTLAKE VILLAGE, CA 91316
Global Id: T0611100316
Org Name: Not reported
Contact Person: Not reported
MTBE Conc: 0
Mtbe Fuel: 0
Water System Name: HAILWOOD INC WATER SYSTEM NO 9
Well Name: WELL 09
Distance To Lust: 4551.910030871762839688424 8687
Waste Discharge Global ID: W0611102510
Waste Disch Assigned Name: 01N/21W-06L05 S

LUST Region 4:
Report Date: 5/1/1988
Lead Agency: Regional Board
Local Agency: 56000
Case Number: C-88069
Substance: Diesel
Case Type: Groundwater
Status: Signed off, remedial action completed or deemed unnecessary
Region: 4
Staff: Not reported

LUST Region VN:
Facility ID: 88069
Status: Active

CORTESE:
Reg Id: C-88069
Region: CORTESE
Reg By: Leaking Underground Storage Tanks

---

2 **MCINNES RANCH** **UST** **U001579802**
350 RICE ROAD **HIST UST** **N/A**
OXNARD, CA 93030

UST HIST:
Facility ID: 22535
Tank Num: 1 | Container Num: ONE
Tank Capacity: 550 | Year Installed: Not reported
Tank Used for: PRODUCT
Type of Fuel: UNLEADED | Tank Construction: Not reported
Leak Detection: Pressure Test
Contact Name: DONALD DUTAN | Telephone: (805) 485-5511
Total Tanks: 2 | Region: STATE
Facility Type: 2 | Other Type: RANCH

Facility ID: 22535
Tank Num: 2 | Container Num: TWO
Tank Capacity: 280 | Year Installed: Not reported
Tank Used for: PRODUCT
Type of Fuel: DIESEL | Tank Construction: Not reported
Leak Detection: Pressure Test
Contact Name: DONALD DUTAN | Telephone: (805) 485-5511
Total Tanks: 2 | Region: STATE

MCINNES RANCH (Continued) **U001579802**

Facility Type: 2 Other Type: RANCH

UST Ventura County Active & Inactive:
Facility ID: D 525
Facility Status: INACTIVE
Box No: UGTCLO 04
Region: Ventura County

---

3 **FLYING H INC** **HIST UST** **U001579628**
484 CAMINO CIELO **N/A**
OJAI, CA 93023

UST HIST:

Facility ID:	1148		
Tank Num:	1	Container Num:	1
Tank Capacity:	550	Year Installed:	Not reported
Tank Used for:	PRODUCT		
Type of Fuel:	REGULAR	Tank Construction:	Not reported
Leak Detection:	None		
Contact Name:	Not reported	Telephone:	(000) 000-0000
Total Tanks:	1	Region:	STATE
Facility Type:	2	Other Type:	Not reported

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)	Facility ID
MARICOPA	S102440620	USFS-OZENA STATION	HIGHWAY 33	93023	LUST	89176
OJAI	1000350400	HAPPY VALLEY SCHOOL	8585 HWY 150	93023	RCRIS-SQG, FINDS	
OJAI	S103678938	COUNTY OF VENTURA PUBLIC WORKS AGCY	HWY 33 / RANCHO RD	93023	HAZNET	CAH111000546
OJAI	U003101567	U. S. FOREST SERVICE-OZENA	HWY 33		UST	D 341
OJAI	S104566963	ROSE VALLEY	APPROX 15 MI FROM OJAI ON HWY 33	93023	HAZNET	CAC001386056
OJAI	S103954555	CALTRANS DISTRICT 7	1116 MARICOPA HYW	93023	HAZNET	CAD982470072
OJAI	S104994405	ROYAL CLEANERS	1205 MARICOPA HW #B	93023	VENTURA CO. BWT	0-003149
OJAI	U003142352	RAME, JACK APACHE CYN RANCH	31046 MARICOPA HWY		UST	D1245
OJAI	S101482848	FARMONT CORPORATION	OFF HWY 150 AT RANCHO MATILIJA	93023	Cal-Sites	56010005
OJAI	S102363101	OJAI REFUSE TRANSFER STATION	OLD BALDWIN ROAD		SWF/LF	56-AA-0002

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List
Source: EPA
Telephone: N/A
National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 01/29/02
Date Made Active at EDR: 02/25/02
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 02/04/02
Elapsed ASTM days: 21
Date of Last EDR Contact: 02/04/02

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 6
Telephone: 214-655-6659

EPA Region 8
Telephone: 303-312-6774

Proposed NPL: Proposed National Priority List Sites
Source: EPA
Telephone: N/A

Date of Government Version: 01/17/02
Date Made Active at EDR: 02/25/02
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 02/04/02
Elapsed ASTM days: 21
Date of Last EDR Contact: 02/04/02

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA
Telephone: 703-413-0223
CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 11/21/01
Date Made Active at EDR: 02/04/02
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 12/26/01
Elapsed ASTM days: 40
Date of Last EDR Contact: 12/26/01

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned
Source: EPA
Telephone: 703-413-0223
As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 11/21/01
Date Made Active at EDR: 02/04/02
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 12/26/01
Elapsed ASTM days: 40
Date of Last EDR Contact: 12/16/01

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 800-424-9346
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 11/14/01
Date Made Active at EDR: 01/14/02
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 11/14/01
Elapsed ASTM days: 61
Date of Last EDR Contact: 03/11/02

RCRIS: Resource Conservation and Recovery Information System
Source: EPA/NTIS
Telephone: 800-424-9346
Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Date of Government Version: 06/21/00
Date Made Active at EDR: 07/31/00
Database Release Frequency: Varies
Date of Data Arrival at EDR: 07/10/00
Elapsed ASTM days: 21
Date of Last EDR Contact: 01/14/02

ERNS: Emergency Response Notification System
Source: EPA/NTIS
Telephone: 202-260-2342
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 08/08/00
Date Made Active at EDR: 09/06/00
Database Release Frequency: Varies
Date of Data Arrival at EDR: 08/11/00
Elapsed ASTM days: 26
Date of Last EDR Contact: 02/01/02

FEDERAL ASTM SUPPLEMENTAL RECORDS

BRS: Biennial Reporting System
Source: EPA/NTIS
Telephone: 800-424-9346
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/99
Database Release Frequency: Biennially
Date of Last EDR Contact: 03/18/02
Date of Next Scheduled EDR Contact: 06/17/02

CONSENT: Superfund (CERCLA) Consent Decrees
Source: EPA Regional Offices
Telephone: Varies
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: N/A
Database Release Frequency: Varies
Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

ROD: Records Of Decision
Source: NTIS
Telephone: 703-416-0223
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 09/30/00
Database Release Frequency: Annually
Date of Last EDR Contact: 01/07/02
Date of Next Scheduled EDR Contact: 04/08/02

DELISTED NPL: National Priority List Deletions
Source: EPA
Telephone: N/A
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 01/29/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 02/04/02
Date of Next Scheduled EDR Contact: 05/06/02

FINDS: Facility Index System/Facility Identification Initiative Program Summary Report
Source: EPA
Telephone: N/A
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 10/29/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/07/02
Date of Next Scheduled EDR Contact: 04/08/02

HMIRS: Hazardous Materials Information Reporting System
Source: U.S. Department of Transportation
Telephone: 202-366-4526
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/30/01
Database Release Frequency: Annually
Date of Last EDR Contact: 01/21/02
Date of Next Scheduled EDR Contact: 04/22/02

MLTS: Material Licensing Tracking System
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/25/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/07/02
Date of Next Scheduled EDR Contact: 04/08/02

MINES: Mines Master Index File
Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959

Date of Government Version: 12/14/01
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 01/02/02
Date of Next Scheduled EDR Contact: 04/01/02

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 205-564-4267
Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 02/26/02
Date of Next Scheduled EDR Contact: 05/27/02

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-260-3936
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 09/30/01
Database Release Frequency: Annually
Date of Last EDR Contact: 02/12/02
Date of Next Scheduled EDR Contact: 05/13/02

RAATS: RCRA Administrative Action Tracking System
Source: EPA
Telephone: 202-564-4104
RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 03/11/02
Date of Next Scheduled EDR Contact: 06/10/02

TRIS: Toxic Chemical Release Inventory System
Source: EPA
Telephone: 202-260-1531
Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/99
Database Release Frequency: Annually
Date of Last EDR Contact: 12/26/01
Date of Next Scheduled EDR Contact: 03/25/02

TSCA: Toxic Substances Control Act
Source: EPA
Telephone: 202-260-5521
Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/98
Database Release Frequency: Every 4 Years
Date of Last EDR Contact: 01/22/02
Date of Next Scheduled EDR Contact: 04/22/02

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-564-2501
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 01/11/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 12/26/01
Date of Next Scheduled EDR Contact: 03/25/02

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
Source: EPA
Telephone: 202-564-2501

Date of Government Version: 01/14/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 12/26/01
Date of Next Scheduled EDR Contact: 03/25/02

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STATE OF CALIFORNIA ASTM STANDARD RECORDS

AWP: Annual Workplan Sites
Source: California Environmental Protection Agency
Telephone: 916-323-3400
Known Hazardous Waste Sites. California DTSC's Annual Workplan (AWP), formerly BEP, identifies known hazardous substance sites targeted for cleanup.

Date of Government Version: 11/08/00
Date Made Active at EDR: 03/02/01
Database Release Frequency: Annually
Date of Data Arrival at EDR: 01/31/01
Elapsed ASTM days: 30
Date of Last EDR Contact: 02/04/02

CAL-SITES: Calsites Database
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database.

Date of Government Version: 10/01/00
Date Made Active at EDR: 11/22/00
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 10/30/00
Elapsed ASTM days: 23
Date of Last EDR Contact: 01/07/02

CHMIRS: California Hazardous Material Incident Report System
Source: Office of Emergency Services
Telephone: 916-845-8400
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/94
Date Made Active at EDR: 04/24/95
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 03/13/95
Elapsed ASTM days: 42
Date of Last EDR Contact: 03/01/02

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
Source: CAL EPA/Office of Emergency Information
Telephone: 916-445-6532
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 04/01/01
Date Made Active at EDR: 07/26/01
Database Release Frequency: Varies
Date of Data Arrival at EDR: 05/29/01
Elapsed ASTM days: 58
Date of Last EDR Contact: 01/28/02

NOTIFY 65: Proposition 65 Records
Source: State Water Resources Control Board
Telephone: 916-445-3846
Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/93
Date Made Active at EDR: 11/19/93
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 11/01/93
Elapsed ASTM days: 18
Date of Last EDR Contact: 01/21/02

TOXIC PITS: Toxic Pits Cleanup Act Sites
Source: State Water Resources Control Board
Telephone: 916-227-4364
Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/95
Date Made Active at EDR: 09/26/95
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 08/30/95
Elapsed ASTM days: 27
Date of Last EDR Contact: 02/04/02

SWF/LF (SWIS): Solid Waste Information System
Source: Integrated Waste Management Board
Telephone: 916-341-6320
Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 12/17/01
Date Made Active at EDR: 01/15/02
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 12/17/01
Elapsed ASTM days: 29
Date of Last EDR Contact: 03/18/02

WMUDS/SWAT: Waste Management Unit Database
Source: State Water Resources Control Board
Telephone: 916-227-4448
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/00
Date Made Active at EDR: 05/10/00
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 04/10/00
Elapsed ASTM days: 30
Date of Last EDR Contact: 03/12/02

LUST: Leaking Underground Storage Tank Information System
Source: State Water Resources Control Board
Telephone: 916-341-5740
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 01/17/02
Date Made Active at EDR: 02/12/02
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 01/21/02
Elapsed ASTM days: 22
Date of Last EDR Contact: 01/21/02

CA BOND EXP. PLAN: Bond Expenditure Plan
Source: Department of Health Services
Telephone: 916-255-2118
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/89
Date Made Active at EDR: 08/02/94
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 07/27/94
Elapsed ASTM days: 6
Date of Last EDR Contact: 05/31/94

CA UST:

UST: Active UST Facilities
Source: SWRCB
Telephone: 916-341-5700
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 01/17/02
Date Made Active at EDR: 02/12/02
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 01/21/02
Elapsed ASTM days: 22
Date of Last EDR Contact: 01/21/02

CA FID UST: Facility Inventory Database
Source: California Environmental Protection Agency
Telephone: 916-445-6532
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/94
Date Made Active at EDR: 09/29/95
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 09/05/95
Elapsed ASTM days: 24
Date of Last EDR Contact: 12/28/98

HIST UST: Hazardous Substance Storage Container Database
Source: State Water Resources Control Board
Telephone: 916-341-5700
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/90
Date Made Active at EDR: 02/12/91
Database Release Frequency: No Update Planned
Date of Data Arrival at EDR: 01/25/91
Elapsed ASTM days: 18
Date of Last EDR Contact: 07/26/01

STATE OF CALIFORNIA ASTM SUPPLEMENTAL RECORDS

AST: Aboveground Petroleum Storage Tank Facilities
Source: State Water Resources Control Board
Telephone: 916-227-4382
Registered Aboveground Storage Tanks.

Date of Government Version: 02/27/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 02/04/02
Date of Next Scheduled EDR Contact: 05/06/02

CLEANERS: Cleaner Facilities
Source: Department of Toxic Substance Control
Telephone: 916-225-0873
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 07/27/01
Database Release Frequency: Annually
Date of Last EDR Contact: 01/07/02
Date of Next Scheduled EDR Contact: 04/08/02

CA WDS: Waste Discharge System
Source: State Water Resources Control Board
Telephone: 916-657-1571
Sites which have been issued waste discharge requirements.

Date of Government Version: 07/19/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/19/02
Date of Next Scheduled EDR Contact: 06/24/02

DEED: List of Deed Restrictions
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
The use of recorded land use restrictions is one of the methods the DTSC uses to protect the public from unsafe exposures to hazardous substances and wastes.

Date of Government Version: 02/11/02
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 02/19/02
Date of Next Scheduled EDR Contact: 04/08/02

HAZNET: Hazardous Waste Information System
Source: California Environmental Protection Agency
Telephone: 916-255-1136
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/00
Database Release Frequency: Annually
Date of Last EDR Contact: 02/12/02
Date of Next Scheduled EDR Contact: 05/13/02

LOCAL RECORDS

ALAMEDA COUNTY:

Local Oversight Program Listing of UGT Cleanup Sites
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 07/01/01
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 01/28/02
Date of Next Scheduled EDR Contact: 04/29/02

Underground Tanks
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700

Date of Government Version: 12/01/00
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 01/28/02
Date of Next Scheduled EDR Contact: 04/29/02

CONTRA COSTA COUNTY:

Site List
Source: Contra Costa Health Services Department
Telephone: 925-646-2286
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 09/01/00
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 03/04/02
Date of Next Scheduled EDR Contact: 06/03/02

FRESNO COUNTY:

CUPA Resources List
Source: Dept. of Community Health
Telephone: 559-445-3271
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 01/02/02
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 02/12/02
Date of Next Scheduled EDR Contact: 05/13/02

KERN COUNTY:

Underground Storage Tank Sites & Tanks Listing
Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Kern County Sites and Tanks Listing.

Date of Government Version: 12/20/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/04/02
Date of Next Scheduled EDR Contact: 06/03/02

LOS ANGELES COUNTY:

List of Solid Waste Facilities
Source: La County Department of Public Works
Telephone: 818-458-5185

Date of Government Version: 11/09/99
Database Release Frequency: Varies
Date of Last EDR Contact: 02/20/02
Date of Next Scheduled EDR Contact: 05/20/02

City of El Segundo Underground Storage Tank
Source: City of El Segundo Fire Department
Telephone: 310-607-2239

Date of Government Version: 03/01/02
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 02/18/02
Date of Next Scheduled EDR Contact: 05/20/02

City of Long Beach Underground Storage Tank
Source: City of Long Beach Fire Department
Telephone: 562-570-2543

Date of Government Version: 10/01/99
Database Release Frequency: Annually
Date of Last EDR Contact: 02/25/02
Date of Next Scheduled EDR Contact: 05/27/02

City of Torrance Underground Storage Tank
Source: City of Torrance Fire Department
Telephone: 310-618-2973

Date of Government Version: 11/01/01
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 02/18/02
Date of Next Scheduled EDR Contact: 05/20/02

City of Los Angeles Landfills
Source: Engineering & Construction Division
Telephone: 213-473-7869

Date of Government Version: 08/31/99
Database Release Frequency: Varies
Date of Last EDR Contact: 02/18/02
Date of Next Scheduled EDR Contact: 05/20/02

HMS: Street Number List
Source: Department of Public Works
Telephone: 626-458-3517
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 11/29/01
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 02/18/02
Date of Next Scheduled EDR Contact: 05/20/02

Site Mitigation List
Source: Community Health Services
Telephone: 323-890-7806
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/11/01
Database Release Frequency: Annually
Date of Last EDR Contact: 02/18/02
Date of Next Scheduled EDR Contact: 05/20/02

San Gabriel Valley Areas of Concern
Source: EPA Region 9
Telephone: 415-744-2407
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/98
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 06/29/99
Date of Next Scheduled EDR Contact: N/A

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

MARIN COUNTY:

Underground Storage Tank Sites
Source: Public Works Department Waste Management
Telephone: 415-499-6647
Currently permitted USTs in Marin County.

Date of Government Version: 03/05/01
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 02/04/02
Date of Next Scheduled EDR Contact: 05/06/02

NAPA COUNTY:

Sites With Reported Contamination
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 10/01/01
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 01/02/02
Date of Next Scheduled EDR Contact: 04/01/02

Closed and Operating Underground Storage Tank Sites
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269

Date of Government Version: 10/01/01
Database Release Frequency: Annually
Date of Last EDR Contact: 01/02/02
Date of Next Scheduled EDR Contact: 04/01/02

ORANGE COUNTY:

List of Underground Storage Tank Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 11/27/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/12/02
Date of Next Scheduled EDR Contact: 06/10/02

List of Underground Storage Tank Facilities
Source: Health Care Agency
Telephone: 714-834-3446
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 11/27/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/12/02
Date of Next Scheduled EDR Contact: 06/10/02

List of Industrial Site Cleanups
Source: Health Care Agency
Telephone: 714-834-3446
Petroleum and non-petroleum spills.

Date of Government Version: 10/24/00
Database Release Frequency: Annually
Date of Last EDR Contact: 03/12/02
Date of Next Scheduled EDR Contact: 06/10/02

PLACER COUNTY:

Master List of Facilities
Source: Placer County Health and Human Services
Telephone: 530-889-7312
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 01/31/02
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 01/02/02
Date of Next Scheduled EDR Contact: 03/25/02

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Source: Department of Public Health
Telephone: 909-358-5055
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 09/05/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/21/02
Date of Next Scheduled EDR Contact: 04/22/02

Underground Storage Tank Tank List
Source: Health Services Agency
Telephone: 909-358-5055

Date of Government Version: 08/01/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/21/02
Date of Next Scheduled EDR Contact: 04/22/02

SACRAMENTO COUNTY:

CS - Contaminated Sites
Source: Sacramento County Environmental Management
Telephone: 916-875-8406

Date of Government Version: 01/15/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 02/04/02
Date of Next Scheduled EDR Contact: 05/06/02

ML - Regulatory Compliance Master List
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 11/21/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 02/04/02
Date of Next Scheduled EDR Contact: 05/06/02

SAN BERNARDINO COUNTY:

Hazardous Material Permits
Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 01/02/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/12/02
Date of Next Scheduled EDR Contact: 06/10/02

SAN DIEGO COUNTY:

Solid Waste Facilities
Source: Department of Health Services
Telephone: 619-338-2209
San Diego County Solid Waste Facilities.

Date of Government Version: 08/01/00
Database Release Frequency: Varies
Date of Last EDR Contact: 02/25/02
Date of Next Scheduled EDR Contact: 05/27/02

Hazardous Materials Management Division Database
Source: Hazardous Materials Management Division
Telephone: 619-338-2268
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 12/25/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/07/02
Date of Next Scheduled EDR Contact: 04/08/02

SAN FRANCISCO COUNTY:

Local Oversite Facilities
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920

Date of Government Version: 03/01/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/12/02
Date of Next Scheduled EDR Contact: 06/10/02

Underground Storage Tank Information
Source: Department of Public Health
Telephone: 415-252-3920

Date of Government Version: 12/01/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/12/02
Date of Next Scheduled EDR Contact: 06/10/02

SAN MATEO COUNTY:

Fuel Leak List
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921

Date of Government Version: 12/06/01
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 01/28/02
Date of Next Scheduled EDR Contact: 04/29/02

Business Inventory
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 05/15/01
Database Release Frequency: Annually
Date of Last EDR Contact: 01/15/02
Date of Next Scheduled EDR Contact: 04/15/02

SANTA CLARA COUNTY:

Fuel Leak Site Activity Report
Source: Santa Clara Valley Water District
Telephone: 408-265-2600

Date of Government Version: 01/03/02
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 01/04/02
Date of Next Scheduled EDR Contact: 04/01/02

Hazardous Material Facilities
Source: City of San Jose Fire Department
Telephone: 408-277-4659

Date of Government Version: 06/13/00
Database Release Frequency: Annually
Date of Last EDR Contact: 03/12/02
Date of Next Scheduled EDR Contact: 06/10/02

SOLANO COUNTY:

Leaking Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 01/02/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/18/02
Date of Next Scheduled EDR Contact: 06/17/02

Underground Storage Tanks
Source: Solano County Department of Environmental Management
Telephone: 707-421-6770

Date of Government Version: 01/02/02
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/18/02
Date of Next Scheduled EDR Contact: 06/17/02

SONOMA COUNTY:

Leaking Underground Storage Tank Sites
Source: Department of Health Services
Telephone: 707-565-6565

Date of Government Version: 11/29/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/29/02
Date of Next Scheduled EDR Contact: 04/29/02

SUTTER COUNTY:

Underground Storage Tanks
Source: Sutter County Department of Agriculture
Telephone: 530-822-7500

Date of Government Version: 07/01/01
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 01/07/02
Date of Next Scheduled EDR Contact: 04/08/02

VENTURA COUNTY:

Inventory of Illegal Abandoned and Inactive Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 04/02/01
Database Release Frequency: Annually
Date of Last EDR Contact: 02/25/02
Date of Next Scheduled EDR Contact: 05/27/02

Listing of Underground Tank Cleanup Sites
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/24/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/18/02
Date of Next Scheduled EDR Contact: 06/17/02

Underground Tank Closed Sites List
Source: Environmental Health Division
Telephone: 805-654-2813
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 05/24/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/15/02
Date of Next Scheduled EDR Contact: 04/15/02

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 11/06/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 03/18/02
Date of Next Scheduled EDR Contact: 06/17/02

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Source: Yolo County Department of Health
Telephone: 530-666-8646

Date of Government Version: 11/20/01
Database Release Frequency: Annually
Date of Last EDR Contact: 01/21/02
Date of Next Scheduled EDR Contact: 04/22/02

California Regional Water Quality Control Board (RWQCB) LUST Records

LUST REG 1: Active Toxic Site Investigation
Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-576-2220
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/01
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 02/25/02
Date of Next Scheduled EDR Contact: 05/27/02

LUST REG 2: Fuel Leak List
Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457

Date of Government Version: 12/01/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/28/02
Date of Next Scheduled EDR Contact: 04/15/02

LUST REG 3: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147

Date of Government Version: 11/19/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 02/18/02
Date of Next Scheduled EDR Contact: 05/20/02

LUST REG 4: Underground Storage Tank Leak List
Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-266-6600
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 08/09/01 Date of Last EDR Contact: 01/02/02
Database Release Frequency: No Update Planned Date of Next Scheduled EDR Contact: 04/01/02

LUST REG 5: Leaking Underground Storage Tank Database
Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-255-3125

Date of Government Version: 01/02/02 Date of Last EDR Contact: 01/07/02
Database Release Frequency: Quarterly Date of Next Scheduled EDR Contact: 04/08/02

LUST REG 6L: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 916-542-5424

Date of Government Version: 01/02/02 Date of Last EDR Contact: 01/07/02
Database Release Frequency: Quarterly Date of Next Scheduled EDR Contact: 04/08/02

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-346-7491

Date of Government Version: 01/02/02 Date of Last EDR Contact: 01/07/02
Database Release Frequency: Quarterly Date of Next Scheduled EDR Contact: 04/08/02

LUST REG 7: Leaking Underground Storage Tank Case Listing
Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-346-7491

Date of Government Version: 01/23/02 Date of Last EDR Contact: 01/02/02
Database Release Frequency: Semi-Annually Date of Next Scheduled EDR Contact: 04/01/02

LUST REG 8: Leaking Underground Storage Tanks
Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4498
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 07/23/01 Date of Last EDR Contact: 02/12/02
Database Release Frequency: No Update Planned Date of Next Scheduled EDR Contact: 05/13/02

LUST REG 9: Leaking Underground Storage Tank Report
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/01 Date of Last EDR Contact: 01/21/02
Database Release Frequency: No Update Planned Date of Next Scheduled EDR Contact: 04/22/02

California Regional Water Quality Control Board (RWQCB) SLIC Records

SLIC REG 1: Active Toxic Site Investigations
Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220

Date of Government Version: 02/01/01 Date of Last EDR Contact: 03/01/02
Database Release Frequency: Semi-Annually Date of Next Scheduled EDR Contact: 05/27/02

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 12/01/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/28/02
Date of Next Scheduled EDR Contact: 04/15/02

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 02/19/02
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 02/18/02
Date of Next Scheduled EDR Contact: 05/20/02

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Any contaminated site that impacts groundwater or has the potential to impact groundwater.

Date of Government Version: 09/13/01
Database Release Frequency: Quarterly
Date of Last EDR Contact: 01/28/02
Date of Next Scheduled EDR Contact: 04/29/02

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-855-3075
Unregulated sites that impact groundwater or have the potential to impact groundwater.

Date of Government Version: 01/02/02
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 01/07/02
Date of Next Scheduled EDR Contact: 04/08/02

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583

Date of Government Version: 07/19/01
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 01/07/02
Date of Next Scheduled EDR Contact: 04/08/02

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-3298

Date of Government Version: 07/31/01
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 01/08/02
Date of Next Scheduled EDR Contact: 04/08/02

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980

Date of Government Version: 03/01/02
Database Release Frequency: Annually
Date of Last EDR Contact: 03/04/02
Date of Next Scheduled EDR Contact: 06/03/02

EDR PROPRIETARY HISTORICAL DATABASES

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines/Electrical Transmission Lines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines and electrical transmission lines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 1999 from the U.S. Fish and Wildlife Service.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.