FINAL REPORT

AREAS OF CONCERN

EC-RCRA CORRECTIVE ACTION, FACILITY INVESTIGATION (AOC-020, -055, and –061)
EC-RCRA CORRECTIVE ACTION, SITE MONITORING (AOC-133)
EC-RCRA CORRECTIVE ACTION, REMEDIAL ACTION (AOC-099)

VANDENBERG AIR FORCE BASE, CALIFORNIA

Contract No. F41624-00-D-8022
Delivery Order 0059

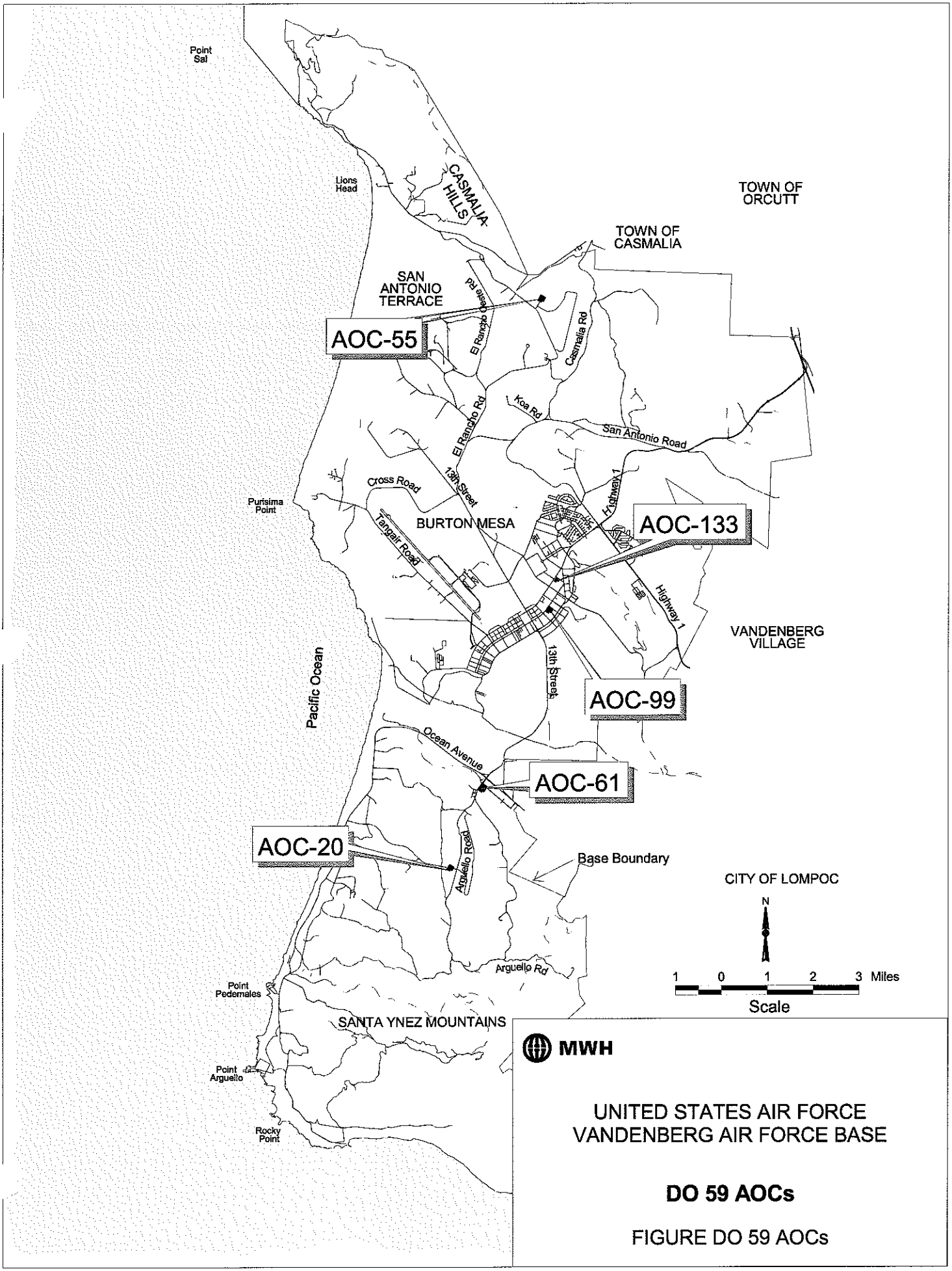
Prepared for:

Air Force Center for Environmental Excellence
Brooks City-Base, Texas

Prepared by:

MWH
1340 Treat Boulevard, Suite 300
Walnut Creek, CA 94597

July 2004


Point Sal
Lions Head
CASMALIA HILLS
TOWN OF ORCUTT
TOWN OF CASMALIA
SAN ANTONIO TERRACE
AOC-55
El Rancho Rd
Casmalia Rd
Koa Rd
San Antonio Road
Cross Road
13th Street
Highway 1
Purisima Point
BURTON MESA
Tangair Road
AOC-133
VANDENBERG VILLAGE
Pacific Ocean
AOC-99
Ocean Avenue
AOC-61
AOC-20
Arguello Road
Base Boundary
CITY OF LOMPOC
N
1 0 1 2 3 Miles
Scale
Point Pedernales
SANTA YNEZ MOUNTAINS
Point Arguello
Rocky Point
MWH
UNITED STATES AIR FORCE
VANDENBERG AIR FORCE BASE
DO 59 AOCs
FIGURE DO 59 AOCs

DESCRIPTION AND AOC SUMMARY

VANDENBERG AIR FORCE BASE, CALIFORNIA
CONTRACT F41624-00-D-8022, DELIVERY ORDER 0059

AOC	Description	Summary of Activities	Recommendation/Summary
020	Building 676, an electrical substation, is located adjacent to Bear Creek Road. Previous investigations show two impacted areas; a culvert and drainage outfall that received discharge from a former OWS. TPH-d/mo was detected at concentrations greater than RWQCB action levels in several surface and near-surface samples to a maximum depth of 5 feet bgs.	Eight borings were advanced to depths ranging from 10 to 61 feet bgs using a Geoprobe or HSA. Seven additional step-out borings were advanced using a hand shovel to complete delineation of TPH in the area of the former culvert. TPH was detected at elevated concentrations relative to action levels in four of the step-out borings. Receptor pathways were analyzed to determine whether a risk-based closure would be appropriate.	Remedial excavation of soil contaminated by TPH-d is not feasible due to ecological concerns associated with the removal and destruction of habitat. The lateral extent of soil impacted by TPH-d covers an approximate 50-foot by 100-foot area to a maximum depth of 5 feet. The combined total quantity of soil associated with the former culvert and outfall structures impacted by TPH-d at concentrations greater than the RWQCB action level is between 500 and 600 cubic yards. All receptor pathways appear to be incomplete and the depth to groundwater is greater than 300 feet. Therefore, AOC-020 is recommended for a risk-based closure (refer to Appendix G).
055	Building 1987 is an operating Minuteman missile launch control facility located at the end of Brioso Road. The facility formerly was serviced by two diesel USTs; a 1,000-gallon UST located at the northeast end of the facility, and a 14,500-gallon UST located south of the facility. Previous investigations detected soil and groundwater impacts associated with the former 14,500-gallon diesel UST that consisted of TPH-d, SVOCs (predominantly PAHs), and trace concentrations of chloroform. The depth to groundwater ranged from 71 to 73 feet bgs.	One temporary well was installed to a depth of 80 feet bgs via HSA to further assess groundwater impact beneath the former diesel UST. Groundwater was encountered at a depth of 73 feet bgs, more than 30 feet below the lowest water depth encountered during the 2001 investigation. Duplicate water samples were collected from the temporary well and analyzed for TPH-d/mo, PAHs, SVOCs and VOCs. Trace levels of TPH-d/mo and bis(2-ethylhexyl)phthalate were detected in water samples. An additional round of groundwater sampling was conducted in March 2004 and sample results confirm previous findings.	The extreme drop in water levels in addition to the presence of chloroform, a common byproduct of treated water, suggests that the source of water beneath AOC-055 is not naturally occurring and was the result of a water leak. Prior investigations have determined that the extent of TPH-d impact is limited to the immediate vicinity of the former diesel UST. Following data validation, if the results of the additional sampling round are consistent with findings from March 2003, or if the contaminants of concern are below agency action levels, the Air Force will recommend closure
061	Building 861 is an office building located at the southeast corner of Arguello Road and Clark Street. The facility formerly contained a generator house and heating system originally fueled by a diesel UST. The diesel UST was removed in 1995 and confirmation soil samples detected low concentrations of TPH-d. Groundwater has been encountered at 9 to 10 feet bgs.	Five borings were each advanced to a depth of 16.5 feet bgs in the immediate vicinity of the former diesel UST. Soil samples were analyzed for TPH-d/mo and BTEX constituents. Only trace concentrations of TPH-d/mo were detected. Grab groundwater samples were collected from each boring and analyzed for TPH-d/mo. No compounds were detected above action levels.	Soil or groundwater samples collected during the investigation did not detect TPH-d/mo or BTEX above agency action levels. Therefore, AOC-061 is recommended for closure under the AOC Program.
099	Building 8305 is a technical support building used for industrial activities and is located near Nevada Avenue and 8th Street. Facility operations include photographic development and metal working that utilize petroleum-based cutting fluids and solvents. In addition, a paint spray booth, sandblast shed, hazardous waste storage area, and lead weight storage area are associated with the facility. Previous investigations indicated surface soil contains elevated concentrations of the metals lead, cadmium and arsenic above residential PRGs and/or BTVs. An alternatives analysis recommended excavation/disposal of selected "hot spots" followed by surface capping.	Six previously defined "hot spots" were excavated to depths ranging from 1 to 3 feet bgs. Approximately 60 cubic yards of soil were removed from the six excavations. Confirmation sampling indicated that there are no remaining concentrations of target metals in soil greater than residential soil PRGs or BTVs. Following remedial excavation, the unlined drainage ditch was graded to drain any future surface water to an existing storm drain system. The graded drainage ditch was lined with concrete. To facilitate site drainage, the unpaved portion of the AOC was paved with asphalt.	Successful remedial excavation of soil impacted by metals was completed and surface grading, paving and restoration activities will divert future stormwater runoff away from the site. Therefore, AOC-099 is recommended for closure under the IRP AOC Program.
133	AOC-133 is located in the cantonment area southeast of the intersection of California Boulevard and Herado Avenue. AOC-133 consists of a former fueling facility that contained four 10,000-gallon unleaded gasoline and diesel fuel USTs and associated product dispensers. The area defined by AOC-133 also includes an area formerly identified as AOC-148, which contained a former wash rack and several demolished maintenance buildings. Following the removal of the USTs, groundwater contamination was discovered. Five monitoring wells were installed during subsequent investigations. Groundwater at AOC-133 has been impacted by TPH-d, TPH-g, BTEX and MTBE. An alternatives analysis recommended the excavation and removal of the residual TPH source followed by monitoring for natural attenuation. Prior to the current phase of work, a total of four monitoring events have been conducted.	Monitoring wells 133-MW01 through 133-MW05 were monitored and sampled during January and March 2003. Water samples were analyzed for TPH-g, TPH-d/mo, VOCs and SVOCs. Depth to groundwater ranged from 4.38 to 6.27 feet bgs. Although trace levels of TPH-g and TPH-d/mo were encountered in each of the wells, concentrations of these constituents above RWQCB action levels were only detected in 133-MW04, the well located closest to the former fueling operations. In addition, 133-MW04 also contained concentrations of benzene and MTBE above agency action levels. Naphthalene was detected at concentrations greater than tap water PRGs. Trace levels of several SVOCs were also detected.	Implement the DO 60 recommendation for removal of the TPH source followed by monitoring for natural attenuation in groundwater beneath AOC-133

AOC - area of concern
bgs - below ground surface
BTV - background threshold values
BTEX – benzene, toluene, ethylbenzene, xylenes
HSA - hollow-stem auger
IRP - Installation Restoration Program
mg/kg - milligrams per kilogram
MTBE – methyl tert-butyl ether
OWS - oil-water separator
PAHs - polycyclic aromatic hydrocarbons
PRG - preliminary remediation goals
RWQCB - Regional Water Quality Control Board
SVOC - semivolatile organic compound
TPH-d - total petroleum hydrocarbons as diesel
TPH-d/mo - total petroleum hydrocarbons as diesel/motor oil
TPH-g – total petroleum hydrocarbons as gasoline
UST - underground storage tank
VOC - volatile organic compound

AOC-020 EVALUATION SHEET

Final – July 2004

BACKGROUND/HISTORY

Building 676 was constructed in 1961 to provide backup power for launch operations and was removed in 1994. An electrical substation was constructed in the vicinity of the former location shortly after the removal of the power plant.

The United States Bureau of Reclamation (USBR) documented one 14,000-gallon underground storage tank at the site (Summary of Tank Listing for Vandenberg AFB, California, dated 1993). It has since been removed by the USBR and was closed by the Regional Water Quality Control Board (RWQCB) in a letter dated July 22, 1997.

An oil/water separator (OWS) was installed in 1985 to intercept material from all floor drains in Building 676, which historically had discharged to grade via a single outlet. Bioenvironmental Engineering Services collected sludge and water samples from the OWS, and soil samples from the drainage ditch and the area north of the building. Analytical results indicated relatively high concentrations of total petroleum hydrocarbons (TPH) in all samples. The contaminated materials were removed during demolition of the facility. Additional study of the as-built engineering diagrams indicates that the OWS was added to the existing drain discharge system. The outlet for the original system was in the same approximate location as that noted when the facility was demolished.

Both the OWS outlet and the original drain outlet discharged into an engineered depression that acted as an evaporation and percolation pond for the discharged wastes. This depression had an overflow that ran under Bear Creek Road to the slope on the north (Tetra Tech's RCRA Corrective Action/RCRA Facility Investigation, Final Work Plan, dated July 1997).

The location of the OWS and engineered depression was completely regraded during the construction of the electrical substation. The overflow that ran under Bear Creek Road no longer exists; however, there is a patch where it appears that a culvert may have been removed. During the field reconnaissance conducted by Montgomery Watson in the summer of 1999, overgrown brush was observed where the culvert outflow previously existed.

INVESTIGATIONS

Tetra Tech (1998)—Supplemental Site Investigation Work Request 10. One surface and one subsurface soil sample were collected at the mouth of the north outfall. The samples were analyzed for metals, total petroleum hydrocarbons as diesel (TPH-d), volatile organic compounds (VOCs), and semivolatile organic compounds (SVOCs). No metals were detected above their respective background threshold values (BTVs). TPH-d was detected at 220 milligrams per kilogram (mg/kg) at a depth of 3 feet below ground surface (bgs). SVOCs were below their respective method detection limits. Three VOCs (1,2-dichlorobenzene, 1,4-dichlorobenzene, and 1,1,1-trichloroethane) were present in the surface samples. Tetra Tech recommended no further action for the VOCs and additional investigation of shallow soil TPH-d impacts.

Montgomery Watson (2001)—Delivery Order 0032. TPH-d was detected (maximum 1,500 mg/kg) above the RWQCB action level (100 mg/kg) in three hand auger borings near the culvert's outlet. Lead and silver were slightly above BTVs, but below their respective residential preliminary remediation goals (PRGs). Arsenic exceeded both its BTV and residential PRG; however, the detected concentrations were below its 99% upper confidence limit BTV and are considered to be naturally occurring. Consequently, metals were not considered to be a site-related issue.

Diethyl phthalate and/or methylene chloride were detected in nine samples at orders of magnitude below residential PRGs. Montgomery Watson recommended additional delineation of TPH impacts and a removal action.

MWH (2003)—Delivery Order 0059. Two separate areas were investigated under DO 59, the former culvert structure and the former outfall structure. The objectives of the investigation were to assess the vertical and lateral extent of soil impacted by diesel and motor oil range TPH (TPH-d/mo) and to determine whether the site conditions warrant a risk-based closure. The sample results for this site do not conclusively match the signature for TPH as diesel fuel. Therefore, results for this site are identified as diesel range TPH.

Eight borings (020-SB04 through 020-SB11) were advanced to depths ranging from 10 to 61 feet bgs (Figure AOC-020a) in accordance with the Work Plan. With the exception of borings 020-SB07 and 020-SB11, which were advanced via hollow stem auger, the remaining borings were advanced via direct push probe. Each of the shallow borings was advanced to a depth of 10 feet bgs, while the two hollow-stem auger borings were advanced to an approximate depth of 60 feet bgs. Groundwater was not encountered during the investigation. Although the Work Plan indicated that deep borings would be advanced to bedrock or groundwater, they were terminated at 60 feet bgs based on the historical extent of vertical impact and the absence of contaminant indicators during drilling. The minor change in scope was subsequently approved by the RWQCB.

Borings 020-SB04 through 020-SB07 were located to assess the extent of TPH impact in the vicinity of the former culvert structure, while borings 020-SB08 through 020-SB11 were placed to assess the extent of TPH impact associated with the former outfall structure. Because the lateral extent of TPH impact associated with the former culvert structure was not fully delineated in the vicinity of 020-SB05, three additional step-out borings (020-SB12 through 020-SB14), each hand shoveled to a depth of 2 feet bgs, were added.

Soil samples collected from the surface to a depth of 30 feet (deeper borings only) were submitted for laboratory analysis in accordance with the Work Plan. In addition, the 60-foot sample collected from 020-SB07 and the 40- and 50-foot samples collected from 020-SB11 were also submitted for analysis.

Analytical results of soil samples collected from step-out borings 020-SB12 through 020-SB14 failed to delineate the extent of TPH in the area of the former culvert structure. Consequently, four additional step-out borings (020-SB15 through 020-SB18) were advanced to establish the lateral limit of the shallow TPH plume. As with the previous step-out borings, each boring was hand shoveled to a depth of 2 feet bgs and sampled at 0.5- and 1.5-foot depths. The deeper samples were analyzed only if the shallow samples contained concentrations of TPH greater than RWQCB action levels.

In an effort to remove soil containing TPH-d concentrations greater than 1,000 mg/kg, hand excavation was conducted to an approximate depth of 2 feet bgs in the vicinity of boring 020-SB01 and 020-SB01A (Figure AOC-020b). Excavated soils were placed in a 55-gallon drum for disposal. Confirmation sample results from 020-SC01 and 020-SC02 indicated TPH-d concentrations ranging from 51.9 to 101 mg/kg and TPH-mo concentrations ranging from 631 to 850 mg/kg.

All shallow soil samples were analyzed for TPH-d/mo. Samples that contained TPH-d/mo concentrations greater than the 100 mg/kg RWQCB action level were also analyzed for SVOCs in accordance with the Work Plan. Soil results are presented in Table AOC-020-Soil. Low to trace levels of SVOCs (bis[2-ethylhexyl]phthalate, diethyl phthalate and/or phenol) were detected below reporting limits in only three surface soil samples (020-SB05, 020-SB06, and 020-SB15). TPH-d/mo was detected at concentrations greater than the reporting limit, but less than 100 mg/kg in several samples across the site. However, TPH-d/mo was detected at concentrations greater than the RWQCB action level in borings 020-SB05

(416.6 mg/kg at surface) and 020-SB07 (259.7 mg/kg at surface and 826.1 mg/kg at 3.5 feet), and step-out borings 020-SB12 (283.5 mg/kg at surface), 020-SB13 (104.4 mg/kg at surface), 020-SB14 (116.5 mg/kg), and 020-SB15 (288.7 mg/kg).

A risk-based analysis was conducted to determine the threat to human health and the environment posed by the site. The analysis consisted of a review of the extent of contamination, product characteristics, pathways and receptors, and product degradation potential. The study confirmed that the site will remain as industrial use and concluded that the contaminants are relatively immobile and the receptor pathways are incomplete. Additionally, the depth to groundwater beneath VAFB Site 5 Cluster, Operable Unit 5 (OU 5) located 0.65 miles west-northwest of AOC-020, was encountered at a depth of more than 300 feet bgs and at a gradient of 0.03 feet per foot to the northeast. Based on the groundwater characteristics beneath OU 5, the depth to groundwater beneath AOC-020 is expected to be greater than 300 feet bgs. Due to the general lack of mobility of TPH-d in soil, the significant depth to groundwater, and the limited vertical extent of TPH-d impact beneath AOC-020, it is unlikely that residual diesel contamination would impact groundwater. Based on these conclusions, AOC-020 is recommended for site closure.

NATURE AND EXTENT OF CONTAMINATION

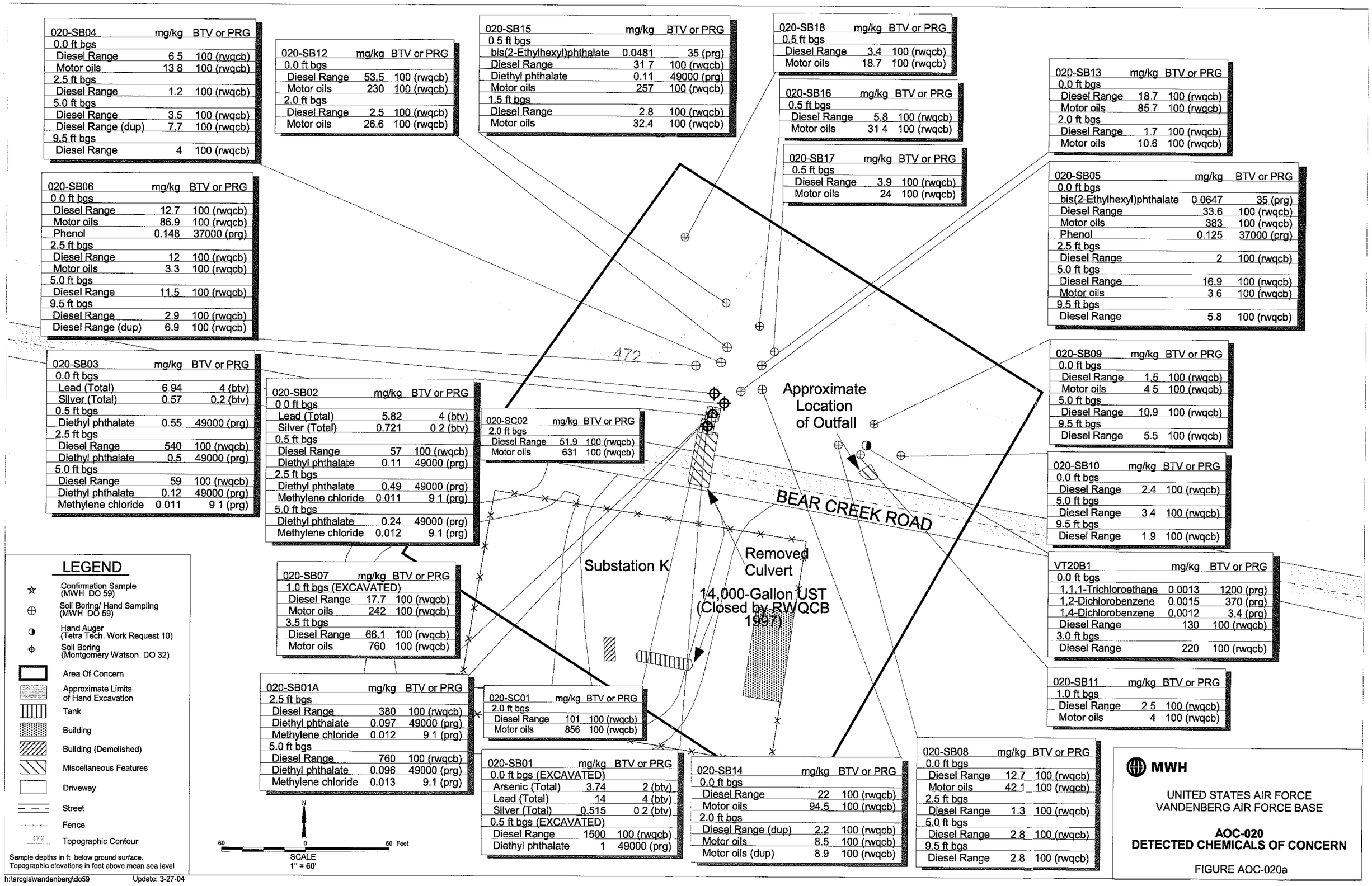
TPH-d/mo concentrations greater than 100 mg/kg have been detected in two separate areas: the area of the former culvert and the area of a drainage outfall. These areas are north of Building No. 676 and across Bear Creek Road. The average depths of TPH impact are 2.5 feet bgs and 3 feet bgs in the centers of the former culvert and outfall structures, respectively. The lateral extent of TPH impact in both areas has been adequately delineated. The lateral extent of TPH impact associated with the former outfall is limited to the immediate vicinity of hand auger boring VT20B1, while the impact of the culvert structure covers an approximate 50-foot by 100-foot area north of the former culvert. Vertically, TPH soil impacts do not extend beyond 6 feet bgs at the former culvert structure. Groundwater was not encountered during the investigation; however, the depth to groundwater beneath the VAFB Site 5 Cluster, Operable Unit 5 (OU 5) is greater than 300 feet bgs

RECOMMENDATION

The data collected during the various phases of investigation have been sufficient to delineate the lateral extent of TPH impact. AOC-020 was studied to determine whether a risk-based closure was appropriate (refer to Appendix G). The study concluded that receptor pathways are incomplete, the chemical characteristics of diesel and motor oil fractions of TPH are relatively insoluble, and that the contaminants are not likely to spread and migrate off site. Additionally, remedial excavation of the contaminated soil is not feasible due to ecological concerns related to the removal and destruction of habitat. Therefore, AOC-020 is recommended for risk-based closure under the AOC Program.

ATTACHMENTS

Figure AOC-020a–Detected Chemicals of Concern
Figure AOC-020b–Limits of Remedial Excavation
Table AOC-020-Soil



020-SB04	mg/kg	BTV or PRG
0.0 ft bgs		
Diesel Range	6.5	100 (rwqcb)
Motor oils	13.8	100 (rwqcb)
2.5 ft bgs		
Diesel Range	1.2	100 (rwqcb)
5.0 ft bgs		
Diesel Range	3.5	100 (rwqcb)
Diesel Range (dup)	7.7	100 (rwqcb)
9.5 ft bgs		
Diesel Range	4	100 (rwqcb)

020-SB12	mg/kg	BTV or PRG
0.0 ft bgs		
Diesel Range	53.5	100 (rwqcb)
Motor oils	230	100 (rwqcb)
2.0 ft bgs		
Diesel Range	2.5	100 (rwqcb)
Motor oils	26.6	100 (rwqcb)

020-SB15	mg/kg	BTV or PRG
0.5 ft bgs		
bis(2-Ethylhexyl)phthalate	0.0481	35 (prg)
Diesel Range	31.7	100 (rwqcb)
Diethyl phthalate	0.11	49000 (prg)
Motor oils	257	100 (rwqcb)
1.5 ft bgs		
Diesel Range	2.8	100 (rwqcb)
Motor oils	32.4	100 (rwqcb)

020-SB18	mg/kg	BTV or PRG
0.5 ft bgs		
Diesel Range	3.4	100 (rwqcb)
Motor oils	18.7	100 (rwqcb)

020-SB16	mg/kg	BTV or PRG
0.5 ft bgs		
Diesel Range	5.8	100 (rwqcb)
Motor oils	31.4	100 (rwqcb)

020-SB17	mg/kg	BTV or PRG
0.5 ft bgs		
Diesel Range	3.9	100 (rwqcb)
Motor oils	24	100 (rwqcb)

020-SB13	mg/kg	BTV or PRG
0.0 ft bgs		
Diesel Range	18.7	100 (rwqcb)
Motor oils	85.7	100 (rwqcb)
2.0 ft bgs		
Diesel Range	1.7	100 (rwqcb)
Motor oils	10.6	100 (rwqcb)

020-SB05	mg/kg	BTV or PRG
0.0 ft bgs		
bis(2-Ethylhexyl)phthalate	0.0647	35 (prg)
Diesel Range	33.6	100 (rwqcb)
Motor oils	383	100 (rwqcb)
Phenol	0.125	37000 (prg)
2.5 ft bgs		
Diesel Range	2	100 (rwqcb)
5.0 ft bgs		
Diesel Range	16.9	100 (rwqcb)
Motor oils	3.6	100 (rwqcb)
9.5 ft bgs		
Diesel Range	5.8	100 (rwqcb)

020-SB06	mg/kg	BTV or PRG
0.0 ft bgs		
Diesel Range	12.7	100 (rwqcb)
Motor oils	86.9	100 (rwqcb)
Phenol	0.148	37000 (prg)
2.5 ft bgs		
Diesel Range	12	100 (rwqcb)
Motor oils	3.3	100 (rwqcb)
5.0 ft bgs		
Diesel Range	11.5	100 (rwqcb)
9.5 ft bgs		
Diesel Range	2.9	100 (rwqcb)
Diesel Range (dup)	6.9	100 (rwqcb)

020-SB03	mg/kg	BTV or PRG
0.0 ft bgs		
Lead (Total)	6.94	4 (btv)
Silver (Total)	0.57	0.2 (btv)
0.5 ft bgs		
Diethyl phthalate	0.55	49000 (prg)
2.5 ft bgs		
Diesel Range	540	100 (rwqcb)
Diethyl phthalate	0.5	49000 (prg)
5.0 ft bgs		
Diesel Range	59	100 (rwqcb)
Diethyl phthalate	0.12	49000 (prg)
Methylene chloride	0.011	9.1 (prg)

020-SB02	mg/kg	BTV or PRG
0.0 ft bgs		
Lead (Total)	5.82	4 (btv)
Silver (Total)	0.721	0.2 (btv)
0.5 ft bgs		
Diesel Range	57	100 (rwqcb)
Diethyl phthalate	0.11	49000 (prg)
2.5 ft bgs		
Diethyl phthalate	0.49	49000 (prg)
Methylene chloride	0.011	9.1 (prg)
5.0 ft bgs		
Diethyl phthalate	0.24	49000 (prg)
Methylene chloride	0.012	9.1 (prg)

020-SC02	mg/kg	BTV or PRG
2.0 ft bgs		
Diesel Range	51.9	100 (rwqcb)
Motor oils	631	100 (rwqcb)

020-SB09	mg/kg	BTV or PRG
0.0 ft bgs		
Diesel Range	1.5	100 (rwqcb)
Motor oils	4.5	100 (rwqcb)
5.0 ft bgs		
Diesel Range	10.9	100 (rwqcb)
9.5 ft bgs		
Diesel Range	5.5	100 (rwqcb)

020-SB10	mg/kg	BTV or PRG
0.0 ft bgs		
Diesel Range	2.4	100 (rwqcb)
5.0 ft bgs		
Diesel Range	3.4	100 (rwqcb)
9.5 ft bgs		
Diesel Range	1.9	100 (rwqcb)

VT20B1	mg/kg	BTV or PRG
0.0 ft bgs		
1,1,1-Trichloroethane	0.0013	1200 (prg)
1,2-Dichlorobenzene	0.0015	370 (prg)
1,4-Dichlorobenzene	0.0012	3.4 (prg)
Diesel Range	130	100 (rwqcb)
3.0 ft bgs		
Diesel Range	220	100 (rwqcb)

020-SB07	mg/kg	BTV or PRG
1.0 ft bgs (EXCAVATED)		
Diesel Range	17.7	100 (rwqcb)
Motor oils	242	100 (rwqcb)
3.5 ft bgs		
Diesel Range	66.1	100 (rwqcb)
Motor oils	760	100 (rwqcb)

020-SB11	mg/kg	BTV or PRG
1.0 ft bgs		
Diesel Range	2.5	100 (rwqcb)
Motor oils	4	100 (rwqcb)

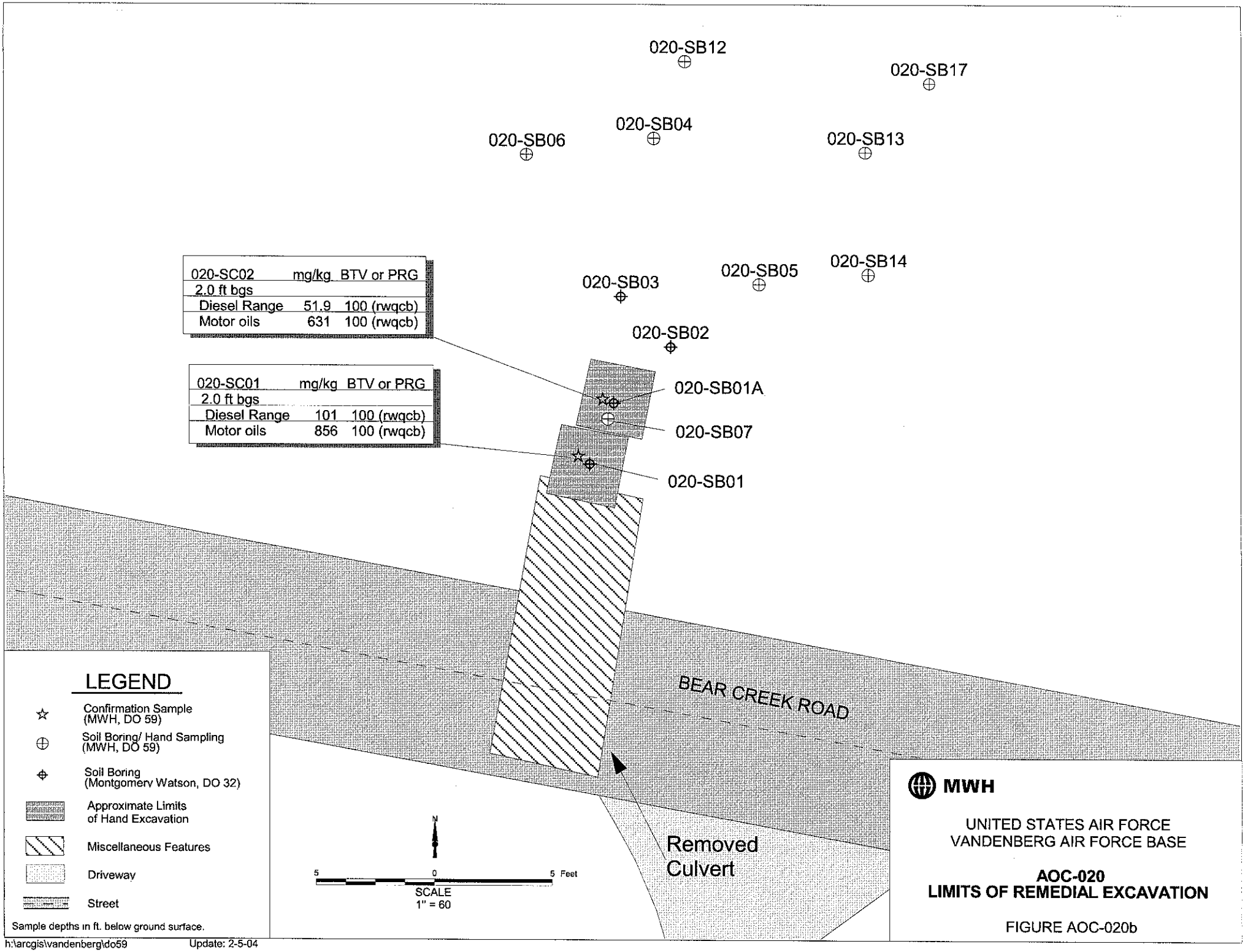
020-SB01A	mg/kg	BTV or PRG
2.5 ft bgs		
Diesel Range	380	100 (rwqcb)
Diethyl phthalate	0.097	49000 (prg)
Methylene chloride	0.012	9.1 (prg)
5.0 ft bgs		
Diesel Range	760	100 (rwqcb)
Diethyl phthalate	0.096	49000 (prg)
Methylene chloride	0.013	9.1 (prg)

020-SC01	mg/kg	BTV or PRG
2.0 ft bgs		
Diesel Range	101	100 (rwqcb)
Motor oils	856	100 (rwqcb)

020-SB01	mg/kg	BTV or PRG
0.0 ft bgs (EXCAVATED)		
Arsenic (Total)	3.74	2 (btv)
Lead (Total)	14	4 (btv)
Silver (Total)	0.515	0.2 (btv)
0.5 ft bgs (EXCAVATED)		
Diesel Range	1500	100 (rwqcb)
Diethyl phthalate	1	49000 (prg)

020-SB14	mg/kg	BTV or PRG
0.0 ft bgs		
Diesel Range	22	100 (rwqcb)
Motor oils	94.5	100 (rwqcb)
2.0 ft bgs		
Diesel Range (dup)	2.2	100 (rwqcb)
Motor oils	8.5	100 (rwqcb)
Motor oils (dup)	8.9	100 (rwqcb)

020-SB08	mg/kg	BTV or PRG
0.0 ft bgs		
Diesel Range	12.7	100 (rwqcb)
Motor oils	42.1	100 (rwqcb)
2.5 ft bgs		
Diesel Range	1.3	100 (rwqcb)
5.0 ft bgs		
Diesel Range	2.8	100 (rwqcb)
9.5 ft bgs		
Diesel Range	2.8	100 (rwqcb)


020-SB12
020-SB17
020-SB04
020-SB06
020-SB13
020-SB14
020-SB05
020-SB03
020-SB02
020-SB01A
020-SB07
020-SB01
020-SC02 mg/kg BTV or PRG
2.0 ft bgs
Diesel Range 51.9 100 (rwqcb)
Motor oils 631 100 (rwqcb)
020-SC01 mg/kg BTV or PRG
2.0 ft bgs
Diesel Range 101 100 (rwqcb)
Motor oils 856 100 (rwqcb)
BEAR CREEK ROAD
Removed Culvert
LEGEND
Confirmation Sample (MWH, DO 59)
Soil Boring/ Hand Sampling (MWH, DO 59)
Soil Boring (Montgomery Watson, DO 32)
Approximate Limits of Hand Excavation
Miscellaneous Features
Driveway
Street
Sample depths in ft. below ground surface.
N
5 0 5 Feet
SCALE
1" = 60
MWH
UNITED STATES AIR FORCE
VANDENBERG AIR FORCE BASE
AOC-020
LIMITS OF REMEDIAL EXCAVATION
FIGURE AOC-020b
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Update: 2-5-04

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 1 of 20)

	BTV			Soil PRG									
Reference:						TetraTech WR10	TetraTech WR10	DO32	DO32	DO32	DO32	DO32
Location ID:						VT20B1	VT20B1	020-SB01	020-SB01	020-SB01A	020-SB01A	020-SB02
Field Sample ID:						VT20B1-0	VT20B1-3	020-SB01-SS0.0	020-SB01-SS0.5	020-SB01A-SS2.5	020-SB01A-SS5.0	020-SB02-SS0.0
Sample Date:						2/9/1998	2/9/1998	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999
Sample Depth:	Type	95% UCL	99% UCL	Residential	Industrial	0.0	3.0	0.0	0.5	2.5	5.0	0.0
General Minerals												
pH	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)												
Aluminum	SDS	7010	10600	76000	100000	3080	NA	3900 J	NA	NA	NA	3770 J
Aluminum	SSDS	11200	19600	76000	100000	NA	3550	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)	NA	NA	3.74 J	NA	NA	NA	0.886 FJ
Barium	SDS	98	172	5400	67000	37.9	NA	65.4 J	NA	NA	NA	41.1 J
Barium	SSDS	35	52	5400	67000	NA	31.2	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)	0.15 FJ	NA	0.132 FJ	NA	NA	NA	0.136 FJ
Beryllium	SSDS	0.8	0.8	150	1900 (ca)	NA	0.16 FJ	NA	NA	NA	NA	NA
Cadmium	SDS	'	'	1.7 (ca)	7.4 (ca)	<1.1	NA	0.404 F	NA	NA	NA	0.379 F
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)	NA	<1.1	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--	1380	NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--	NA	512 FJ	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)	12.6	NA	12.7 J	NA	NA	NA	12.5 J
Chromium	SSDS	108	221	210 (ca)	450 (ca)	NA	11.1	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)	1.2 FJ	NA	1.54 F	NA	NA	NA	1.28 F
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)	NA	1.4 FJ	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000	5.8	NA	7.6 J	NA	NA	NA	3.72 J
Copper	SSDS	37	70	3100	41000	NA	2.4 FJ	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000	4570	NA	4590 J	NA	NA	NA	4110 J
Iron	SSDS	14800	25800	23000	100000	NA	4350	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750	NA	NA	14	NA	NA	NA	5.82 F
Magnesium	SDS	3900	3900	--	--	701	NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--	NA	333 FJ	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000	57.7 J	NA	60 J	NA	NA	NA	112 J
Manganese	SSDS	233	554	1800	19000	NA	72.8 J	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100	0.73 FJ	NA	<11.3	NA	NA	NA	<10.7
Molybdenum	SSDS	3	3	390	5100	NA	<4.3	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000	5.7	NA	12.1	NA	NA	NA	5.71
Nickel	SSDS	10	17	1600	20000	NA	4 FJ	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--	515 FJ	NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--	NA	277 FJ	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100	<1.1	NA	0.515 F	NA	NA	NA	0.721 F
Silver	SSDS	2	2	390	5100	NA	<1.1	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--	<571	NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--	NA	60.2 FJ	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67	NA	NA	0.301	NA	NA	NA	0.264
Vanadium	SDS	25	37	550	7200	12	NA	11.5 J	NA	NA	NA	8.82 J
Vanadium	SSDS	35	61	550	7200	NA	10.3	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000	32.3	NA	97 J	NA	NA	NA	8.31 J
Zinc	SSDS	98	209	23000	100000	NA	3.2	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 2 of 20)

	BTV			Soil PRG		Reference:	TetraTech WR10	TetraTech WR10	DO32	DO32	DO32	DO32	DO32
						Location ID:	VT20B1	VT20B1	020-SB01	020-SB01	020-SB01A	020-SB01A	020-SB02
						Field Sample ID:	VT20B1-0	VT20B1-3	020-SB01-SS0.0	020-SB01-SS0.5	020-SB01A-SS2.5	020-SB01A-SS5.0	020-SB02-SS0.0
						Sample Date:	2/9/1998	2/9/1998	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	0.0	3.0	0.0	0.5	2.5	5.0	0.0
Semivolatile Organic Compounds (mg/kg)													
1,2-Dichlorobenzene	--	--	--	370	370		<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA
Diethyl phthalate	--	--	--	49000	100000		<0.75	<0.71	NA	1 F	0.097 F	0.096 F	NA
Phenol	--	--	--	37000	100000		<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		130 J	220 J	NA	1500	380	760	NA
Motor oils	--	--	--	100 (rwqcb)	--		NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	--	--	--	1200	1200		0.0013 FJ	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA
1,2-Dichlorobenzene	--	--	--	370	370		0.0015 FJ	<0.0054	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		0.0012 FJ	<0.0054	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		<0.0057	<0.0054	NA	<0.0056	0.012	0.013	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 3 of 20)

		BTV		Soil PRG		Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO32
						Location ID:	020-SB02	020-SB02	020-SB02	020-SB03	020-SB03	020-SB03	020-SB03
						Field Sample ID:	020-SB02-SS0.5	020-SB02-SS2.5	020-SB02-SS5.0	020-SB03-SS0.0	020-SB03-SS0.5	020-SB03-SS2.5	020-SB03-SS5.0
						Sample Date:	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	0.5	2.5	5.0	0.0	0.5	2.5	5.0
General Minerals													
pH	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)													
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	4480 J	NA	NA	NA
Aluminum	SSDS	11200	19600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	0.949 FJ	NA	NA	NA
Barium	SDS	98	172	5400	67000		NA	NA	NA	96 J	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	0.167 FJ	NA	NA	NA
Beryllium	SSDS	0.8	0.8	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		NA	NA	NA	0.402 F	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--		NA	NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	13.3 J	NA	NA	NA
Chromium	SSDS	108	221	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	1.42 F	NA	NA	NA
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		NA	NA	NA	4.75 J	NA	NA	NA
Copper	SSDS	37	70	3100	41000		NA	NA	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	4780 J	NA	NA	NA
Iron	SSDS	14800	25800	23000	100000		NA	NA	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		NA	NA	NA	6.94 F	NA	NA	NA
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--		NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	126 J	NA	NA	NA
Manganese	SSDS	233	554	1800	19000		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	<10.4	NA	NA	NA
Molybdenum	SSDS	3	3	390	5100		NA	NA	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		NA	NA	NA	5.18 F	NA	NA	NA
Nickel	SSDS	10	17	1600	20000		NA	NA	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--		NA	NA	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100		NA	NA	NA	0.57 F	NA	NA	NA
Silver	SSDS	2	2	390	5100		NA	NA	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--		NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	0.267	NA	NA	NA
Vanadium	SDS	25	37	550	7200		NA	NA	NA	10.7 J	NA	NA	NA
Vanadium	SSDS	35	61	550	7200		NA	NA	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		NA	NA	NA	12.1 J	NA	NA	NA
Zinc	SSDS	98	209	23000	100000		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE

	BTV			Soil PRG		Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO32
						Location ID:	020-SB02	020-SB02	020-SB02	020-SB03	020-SB03	020-SB03	020-SB03
						Field Sample ID:	020-SB02-SS0.5	020-SB02-SS2.5	020-SB02-SS5.0	020-SB03-SS0.0	020-SB03-SS0.5	020-SB03-SS2.5	020-SB03-SS5.0
						Sample Date:	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	0.5	2.5	5.0	0.0	0.5	2.5	5.0
Semivolatile Organic Compounds (mg/kg)													
1,2-Dichlorobenzene	--	--	--	370	370		<0.35	<1.7	<0.69	NA	<1.5	<1.4	<0.34
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		<0.35	<1.7	<0.69	NA	<1.5	<1.4	<0.34
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		<0.35	<1.7	<0.69	NA	<1.5	<1.4	<0.34
Diethyl phthalate	--	--	--	49000	100000		0.11 F	0.49 F	0.24 F	NA	0.55 F	0.5 F	0.12 F
Phenol	--	--	--	37000	100000		<0.35	<1.7	<0.69	NA	<1.5	<1.4	<0.34
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		57	<10	<10	NA	<11	540	59
Motor oils	--	--	--	100 (rwqcb)	--		NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	--	--	--	1200	1200		<0.0052	<0.0051	<0.0052	NA	<0.0055	<0.0052	<0.0052
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		<0.0052	0.011	0.012	NA	<0.0055	<0.0052	0.011

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
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		BTV		Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB04	020-SB04	020-SB04	020-SB04	020-SB04	020-SB05	020-SB05
						Field Sample ID:	020-SB04-SS0.0	020-SB04-SS2.5	020-SB04-SS5.0	020-SB99-SS5.0	020-SB04-SS10.0	020-SB05-SS0.0	020-SB05-SS2.5
						Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	0.0	2.5	5.0	5.0	9.5	0.0	2.5
General Minerals													
pH	--	--	--	--	--		NA	NA	NA	NA	NA	7	NA
Total Metals (mg/kg)													
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Aluminum	SSDS	11200	19600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Beryllium	SSDS	0.8	0.8	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--		NA	NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Chromium	SSDS	108	221	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA	NA	NA	NA
Copper	SSDS	37	70	3100	41000		NA	NA	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA	NA	NA	NA
Iron	SSDS	14800	25800	23000	100000		NA	NA	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		NA	NA	NA	NA	NA	NA	NA
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--		NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA	NA	NA	NA
Manganese	SSDS	233	554	1800	19000		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SSDS	3	3	390	5100		NA	NA	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA	NA	NA	NA
Nickel	SSDS	10	17	1600	20000		NA	NA	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--		NA	NA	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100		NA	NA	NA	NA	NA	NA	NA
Silver	SSDS	2	2	390	5100		NA	NA	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--		NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA	NA	NA	NA
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA	NA	NA	NA
Vanadium	SSDS	35	61	550	7200		NA	NA	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA	NA	NA	NA
Zinc	SSDS	98	209	23000	100000		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE

	BTV			Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB04	020-SB04	020-SB04	020-SB04	020-SB04	020-SB05	020-SB05
						Field Sample ID:	020-SB04-SS0.0	020-SB04-SS2.5	020-SB04-SS5.0	020-SB99-SS5.0	020-SB04-SS10.0	020-SB05-SS0.0	020-SB05-SS2.5
						Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	0.0	2.5	5.0	5.0	9.5	0.0	2.5
Semivolatile Organic Compounds (mg/kg)													
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	<0.84	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	<0.84	NA
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		NA	NA	NA	NA	NA	0.0647 F	NA
Diethyl phthalate	--	--	--	49000	100000		NA	NA	NA	NA	NA	<0.84	NA
Phenol	--	--	--	37000	100000		NA	NA	NA	NA	NA	0.125 F	NA
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		6.5 F	1.2 F	3.5 F	7.7 F	4 F	33.6 F	2 F
Motor oils	--	--	--	100 (rwqcb)	--		13.8	<11	<11	<10	<11	383	<11
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	--	--	--	1200	1200		NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 7 of 20)

		BTV		Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB05	020-SB05	020-SB06	020-SB06	020-SB06	020-SB06	020-SB06
						Field Sample ID:	020-SB05-SS5.0	020-SB05-SS10.0	020-SB06-SS0.0	020-SB06-SS2.5	020-SB06-SS5.0	020-SB06-SS10.0	020-SB99-SS10.0
						Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	5.0	9.5	0.0	2.5	5.0	9.5	9.5
General Minerals													
pH	--	--	--	--	--		NA	NA	6.3	NA	NA	NA	NA
Total Metals (mg/kg)													
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Aluminum	SSDS	11200	19600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Beryllium	SSDS	0.8	0.8	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--		NA	NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Chromium	SSDS	108	221	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA	NA	NA	NA
Copper	SSDS	37	70	3100	41000		NA	NA	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA	NA	NA	NA
Iron	SSDS	14800	25800	23000	100000		NA	NA	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		NA	NA	NA	NA	NA	NA	NA
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--		NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA	NA	NA	NA
Manganese	SSDS	233	554	1800	19000		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SSDS	3	3	390	5100		NA	NA	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA	NA	NA	NA
Nickel	SSDS	10	17	1600	20000		NA	NA	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--		NA	NA	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100		NA	NA	NA	NA	NA	NA	NA
Silver	SSDS	2	2	390	5100		NA	NA	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--		NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA	NA	NA	NA
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA	NA	NA	NA
Vanadium	SSDS	35	61	550	7200		NA	NA	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA	NA	NA	NA
Zinc	SSDS	98	209	23000	100000		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 8 of 20)

	BTV			Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB05	020-SB05	020-SB06	020-SB06	020-SB06	020-SB06	020-SB06
						Field Sample ID:	020-SB05-SS5.0	020-SB05-SS10.0	020-SB06-SS0.0	020-SB06-SS2.5	020-SB06-SS5.0	020-SB06-SS10.0	020-SB99-SS10.0
						Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	5.0	9.5	0.0	2.5	5.0	9.5	9.5
Semivolatile Organic Compounds (mg/kg)													
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	<0.83	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	<0.83	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		NA	NA	<0.83	NA	NA	NA	NA
Diethyl phthalate	--	--	--	49000	100000		NA	NA	<0.83	NA	NA	NA	NA
Phenol	--	--	--	37000	100000		NA	NA	0.148 F	NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		16.9	5.8 F	12.7	12	11.5	2.9 F	6.9 F
Motor oils	--	--	--	100 (rwqcb)	--		3.6 F	<11	86.9	3.3 F	<10	<10	<10
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	--	--	--	1200	1200		NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 9 of 20)

		BTV		Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB07	020-SB07	020-SB07	020-SB07	020-SB07	020-SB07	020-SB07
						Field Sample ID:	020-SB07-SS0.0	020-SB07-SS2.5	020-SB07-SS5.0	020-SB07-SS10.0	020-SB07-SS20.0	020-SB07-SS30.0	020-SB07-SS60.0
						Sample Date:	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	1.0	3.5	6.0	11.0	21.0	31.0	61.0
General Minerals													
pH	--	--	--	--	--		7.1	6.7	NA	NA	NA	NA	NA
Total Metals (mg/kg)													
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Aluminum	SSDS	11200	19600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Beryllium	SSDS	0.8	0.8	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--		NA	NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Chromium	SSDS	108	221	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA	NA	NA	NA
Copper	SSDS	37	70	3100	41000		NA	NA	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA	NA	NA	NA
Iron	SSDS	14800	25800	23000	100000		NA	NA	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		NA	NA	NA	NA	NA	NA	NA
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--		NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA	NA	NA	NA
Manganese	SSDS	233	554	1800	19000		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SSDS	3	3	390	5100		NA	NA	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA	NA	NA	NA
Nickel	SSDS	10	17	1600	20000		NA	NA	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--		NA	NA	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100		NA	NA	NA	NA	NA	NA	NA
Silver	SSDS	2	2	390	5100		NA	NA	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--		NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA	NA	NA	NA
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA	NA	NA	NA
Vanadium	SSDS	35	61	550	7200		NA	NA	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA	NA	NA	NA
Zinc	SSDS	98	209	23000	100000		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 10 of 20)

	BTV			Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB07	020-SB07	020-SB07	020-SB07	020-SB07	020-SB07	020-SB07
						Field Sample ID:	020-SB07-SS0.0	020-SB07-SS2.5	020-SB07-SS5.0	020-SB07-SS10.0	020-SB07-SS20.0	020-SB07-SS30.0	020-SB07-SS60.0
						Sample Date:	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	1.0	3.5	6.0	11.0	21.0	31.0	61.0
Semivolatile Organic Compounds (mg/kg)													
1,2-Dichlorobenzene	--	--	--	370	370		<1.5	<0.74	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		<1.5	<0.74	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		<1.5	<0.74	NA	NA	NA	NA	NA
Diethyl phthalate	--	--	--	49000	100000		<1.5	<0.74	NA	NA	NA	NA	NA
Phenol	--	--	--	37000	100000		<0.65	<0.32	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		17.7 F	66.1 F	<11	<10	<11	<11	<11
Motor oils	--	--	--	100 (rwqcb)	--		242	760	<11	<10	<11	<11	<11
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	--	--	--	1200	1200		NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 11 of 20)

		BTV		Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB08	020-SB08	020-SB08	020-SB08	020-SB09	020-SB09	020-SB09
						Field Sample ID:	020-SB08-SS0.0	020-SB08-SS2.5	020-SB08-SS5.0	020-SB08-SS10.0	020-SB09-SS0.0	020-SB09-SS2.5	020-SB09-SS5.0
						Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	0.0	2.5	5.0	9.5	0.0	2.5	5.0
General Minerals													
pH	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)													
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Aluminum	SSDS	11200	19600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Beryllium	SSDS	0.8	0.8	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--		NA	NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Chromium	SSDS	108	221	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA	NA	NA	NA
Copper	SSDS	37	70	3100	41000		NA	NA	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA	NA	NA	NA
Iron	SSDS	14800	25800	23000	100000		NA	NA	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		NA	NA	NA	NA	NA	NA	NA
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--		NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA	NA	NA	NA
Manganese	SSDS	233	554	1800	19000		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SSDS	3	3	390	5100		NA	NA	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA	NA	NA	NA
Nickel	SSDS	10	17	1600	20000		NA	NA	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--		NA	NA	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100		NA	NA	NA	NA	NA	NA	NA
Silver	SSDS	2	2	390	5100		NA	NA	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--		NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA	NA	NA	NA
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA	NA	NA	NA
Vanadium	SSDS	35	61	550	7200		NA	NA	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA	NA	NA	NA
Zinc	SSDS	98	209	23000	100000		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE

	BTV			Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB08	020-SB08	020-SB08	020-SB08	020-SB09	020-SB09	020-SB09
						Field Sample ID:	020-SB08-SS0.0	020-SB08-SS2.5	020-SB08-SS5.0	020-SB08-SS10.0	020-SB09-SS0.0	020-SB09-SS2.5	020-SB09-SS5.0
						Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	0.0	2.5	5.0	9.5	0.0	2.5	5.0
Semivolatile Organic Compounds (mg/kg)													
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	--	--	--	49000	100000		NA	NA	NA	NA	NA	NA	NA
Phenol	--	--	--	37000	100000		NA	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		12.7	1.3 F	2.8 F	2.8 F	1.5 F	<11	10.9 F
Motor oils	--	--	--	100 (rwqcb)	--		42.1	<11	<11	<10	4.5 F	<11	<11
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	--	--	--	1200	1200		NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
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		BTV		Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB09	020-SB10	020-SB10	020-SB10	020-SB10	020-SB11	020-SB11
						Field Sample ID:	020-SB09-SS10.0	020-SB10-SS0.0	020-SB10-SS2.5	020-SB10-SS5.0	020-SB10-SS10.0	020-SB11-SS0.0	020-SB11-SS2.5
						Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/29/2003	1/29/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	9.5	0.0	2.5	5.0	9.5	1.0	3.5
General Minerals													
pH	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)													
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Aluminum	SSDS	11200	19600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Beryllium	SSDS	0.8	0.8	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--		NA	NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Chromium	SSDS	108	221	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA	NA	NA	NA
Copper	SSDS	37	70	3100	41000		NA	NA	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA	NA	NA	NA
Iron	SSDS	14800	25800	23000	100000		NA	NA	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		NA	NA	NA	NA	NA	NA	NA
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--		NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA	NA	NA	NA
Manganese	SSDS	233	554	1800	19000		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SSDS	3	3	390	5100		NA	NA	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA	NA	NA	NA
Nickel	SSDS	10	17	1600	20000		NA	NA	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--		NA	NA	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100		NA	NA	NA	NA	NA	NA	NA
Silver	SSDS	2	2	390	5100		NA	NA	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--		NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA	NA	NA	NA
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA	NA	NA	NA
Vanadium	SSDS	35	61	550	7200		NA	NA	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA	NA	NA	NA
Zinc	SSDS	98	209	23000	100000		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 14 of 20)

	BTV			Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB09	020-SB10	020-SB10	020-SB10	020-SB10	020-SB11	020-SB11
						Field Sample ID:	020-SB09-SS10.0	020-SB10-SS0.0	020-SB10-SS2.5	020-SB10-SS5.0	020-SB10-SS10.0	020-SB11-SS0.0	020-SB11-SS2.5
						Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/29/2003	1/29/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	9.5	0.0	2.5	5.0	9.5	1.0	3.5
Semivolatile Organic Compounds (mg/kg)													
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	--	--	--	49000	100000		NA	NA	NA	NA	NA	NA	NA
Phenol	--	--	--	37000	100000		NA	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		5.5 F	2.4 F	<11	3.4 F	1.9 F	2.5 F	<11
Motor oils	--	--	--	100 (rwqcb)	--		<10	<11	<11	<10	<10	4 F	<11
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	--	--	--	1200	1200		NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 15 of 20)

		BTV		Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB12
						Field Sample ID:	020-SB11-SS5.0	020-SB11-SS10.0	020-SB11-SS20.0	020-SB11-SS30.0	020-SB11-SS40.0	020-SB11-SS50.0	020-SB12-SS0.0
						Sample Date:	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	4/23/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	6.0	9.5	21.0	31.0	41.0	51.0	0.0
General Minerals													
pH	--	--	--	--	--		NA	NA	NA	NA	NA	NA	6.65
Total Metals (mg/kg)													
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Aluminum	SSDS	11200	19600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Beryllium	SSDS	0.8	0.8	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--		NA	NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Chromium	SSDS	108	221	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA	NA	NA	NA
Copper	SSDS	37	70	3100	41000		NA	NA	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA	NA	NA	NA
Iron	SSDS	14800	25800	23000	100000		NA	NA	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		NA	NA	NA	NA	NA	NA	NA
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--		NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA	NA	NA	NA
Manganese	SSDS	233	554	1800	19000		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SSDS	3	3	390	5100		NA	NA	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA	NA	NA	NA
Nickel	SSDS	10	17	1600	20000		NA	NA	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--		NA	NA	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100		NA	NA	NA	NA	NA	NA	NA
Silver	SSDS	2	2	390	5100		NA	NA	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--		NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA	NA	NA	NA
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA	NA	NA	NA
Vanadium	SSDS	35	61	550	7200		NA	NA	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA	NA	NA	NA
Zinc	SSDS	98	209	23000	100000		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE

	BTV			Soil PRG									
Reference:						3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:						020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB12
Field Sample ID:						020-SB11-SS5.0	020-SB11-SS10.0	020-SB11-SS20.0	020-SB11-SS30.0	020-SB11-SS40.0	020-SB11-SS50.0	020-SB12-SS0.0
Sample Date:						1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	4/23/2003
Sample Depth:	Type	95% UCL	99% UCL	Residential	Industrial	6.0	9.5	21.0	31.0	41.0	51.0	0.0
Semivolatile Organic Compounds (mg/kg)												
1,2-Dichlorobenzene	--	--	--	370	370	NA	NA	NA	NA	NA	NA	<1.6
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)	NA	NA	NA	NA	NA	NA	<1.6
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)	NA	NA	NA	NA	NA	NA	<1.6
Diethyl phthalate	--	--	--	49000	100000	NA	NA	NA	NA	NA	NA	<1.6
Phenol	--	--	--	37000	100000	NA	NA	NA	NA	NA	NA	<0.68 J
Total Petroleum Hydrocarbons (mg/kg)												
Diesel Range	--	--	--	100 (rwqcb)	--	<11	<11	<11	<11	<11	<11	53.5 F
Motor oils	--	--	--	100 (rwqcb)	--	<11	<11	<11	<11	<11	<11	230
Volatile Organic Compounds (mg/kg)												
1,1,1-Trichloroethane	--	--	--	1200	1200	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	--	--	--	370	370	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)	NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 17 of 20)

	BTV			Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB12	020-SB13	020-SB13	020-SB14	020-SB14	020-SB14	020-SB15
						Field Sample ID:	020-SB12-SS2.0	020-SB13-SS0.0	020-SB13-SS2.0	020-SB14-SS0.0	020-SB14-SS2.0	020-SB99-SS2.0	020-SB15-SS0.5
						Sample Date:	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	7/21/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	2.0	0.0	2.0	0.0	2.0	2.0	0.5
General Minerals													
pH	--	--	--	--	--		NA	7.35	NA	7.83	NA	NA	NA
Total Metals (mg/kg)													
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Aluminum	SSDS	11200	19600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Beryllium	SSDS	0.8	0.8	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--		NA	NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Chromium	SSDS	108	221	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA	NA	NA	NA
Copper	SSDS	37	70	3100	41000		NA	NA	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA	NA	NA	NA
Iron	SSDS	14800	25800	23000	100000		NA	NA	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		NA	NA	NA	NA	NA	NA	NA
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--		NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA	NA	NA	NA
Manganese	SSDS	233	554	1800	19000		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SSDS	3	3	390	5100		NA	NA	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA	NA	NA	NA
Nickel	SSDS	10	17	1600	20000		NA	NA	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--		NA	NA	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100		NA	NA	NA	NA	NA	NA	NA
Silver	SSDS	2	2	390	5100		NA	NA	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--		NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA	NA	NA	NA
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA	NA	NA	NA
Vanadium	SSDS	35	61	550	7200		NA	NA	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA	NA	NA	NA
Zinc	SSDS	98	209	23000	100000		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE

	BTV			Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB12	020-SB13	020-SB13	020-SB14	020-SB14	020-SB14	020-SB15
						Field Sample ID:	020-SB12-SS2.0	020-SB13-SS0.0	020-SB13-SS2.0	020-SB14-SS0.0	020-SB14-SS2.0	020-SB99-SS2.0	020-SB15-SS0.5
						Sample Date:	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	7/21/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	2.0	0.0	2.0	0.0	2.0	2.0	0.5
Semivolatile Organic Compounds (mg/kg)													
1,2-Dichlorobenzene	--	--	--	370	370		NA	<0.77	NA	<1.5	NA	NA	<0.79
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	<0.77	NA	<1.5	NA	NA	<0.79
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		NA	<0.77	NA	<1.5	NA	NA	0.0481 F
Diethyl phthalate	--	--	--	49000	100000		NA	<0.77	NA	<1.5	NA	NA	0.11 F
Phenol	--	--	--	37000	100000		NA	<0.33	NA	<0.66	NA	NA	<0.34
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		2.5 F	18.7	1.7 F	22	<11	2.2 F	31.7 F
Motor oils	--	--	--	100 (rwqcb)	--		26.6	85.7	10.6 F	94.5	8.5 F	8.9 F	257
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	--	--	--	1200	1200		NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE

		BTV		Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB15	020-SB16	020-SB17	020-SB18	020-SC01	020-SC02
						Field Sample ID:	020-SB15-SS1.5	020-SB16-SS0.5	020-SB17-SS0.5	020-SB18-SS0.5	020-SC01-SS2.0	020-SC02-SS2.0
						Sample Date:	7/21/2003	7/21/2003	7/21/2003	7/21/2003	1/29/2003	1/29/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	1.5	0.5	0.5	0.5	2.0	2.0
General Minerals												
pH	--	--	--	--	--		NA	NA	NA	NA	6.69	6.85
Total Metals (mg/kg)												
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA	NA	NA
Aluminum	SSDS	11200	19600	76000	100000		NA	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA	NA	NA
Beryllium	SSDS	0.8	0.8	150	1900 (ca)		NA	NA	NA	NA	NA	NA
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--		NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA
Chromium	SSDS	108	221	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA	NA	NA
Copper	SSDS	37	70	3100	41000		NA	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA	NA	NA
Iron	SSDS	14800	25800	23000	100000		NA	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		NA	NA	NA	NA	NA	NA
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--		NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA	NA	NA
Manganese	SSDS	233	554	1800	19000		NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA	NA	NA
Molybdenum	SSDS	3	3	390	5100		NA	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA	NA	NA
Nickel	SSDS	10	17	1600	20000		NA	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--		NA	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100		NA	NA	NA	NA	NA	NA
Silver	SSDS	2	2	390	5100		NA	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--		NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA	NA	NA
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA	NA	NA
Vanadium	SSDS	35	61	550	7200		NA	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA	NA	NA
Zinc	SSDS	98	209	23000	100000		NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 20 of 20)

	BTV			Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB15	020-SB16	020-SB17	020-SB18	020-SC01	020-SC02
						Field Sample ID:	020-SB15-SS1.5	020-SB16-SS0.5	020-SB17-SS0.5	020-SB18-SS0.5	020-SC01-SS2.0	020-SC02-SS2.0
						Sample Date:	7/21/2003	7/21/2003	7/21/2003	7/21/2003	1/29/2003	1/29/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	1.5	0.5	0.5	0.5	2.0	2.0
Semivolatile Organic Compounds (mg/kg)												
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	<3.1	<3
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	<3.1	<3
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		NA	NA	NA	NA	<3.1	<3
Diethyl phthalate	--	--	--	49000	100000		NA	NA	NA	NA	<3.1	<3
Phenol	--	--	--	37000	100000		NA	NA	NA	NA	<1.3	<1.3
Total Petroleum Hydrocarbons (mg/kg)												
Diesel Range	--	--	--	100 (rwqcb)	--		2.8 F	5.8 F	3.9 F	3.4 F	101 F	51.9 F
Motor oils	--	--	--	100 (rwqcb)	--		32.4	31.4	24	18.7	856	631
Volatile Organic Compounds (mg/kg)												
1,1,1-Trichloroethane	--	--	--	1200	1200		NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		NA	NA	NA	NA	NA	NA

NOTES

DETECTED CHEMICALS IN SOIL AND WATER
VANDENBERG AIR FORCE BASE

BTV Types:
BED = bedrock
GW = groundwater
SA = surface alluvium
SDS = surface dune sand
SSA = subsurface alluvium
SSDS = subsurface dune sand

Units:
mg/kg = milligrams per kilogram
µg/L = micrograms per liter

Abbreviations:
-- = not applicable or not established
AOC = Area of Concern
BTV = background threshold value (Jacobs Engineering Group, Inc., 1994)
(ca) = Cancerous
Cal = California Department of Health Services
MCL = U.S. Environmental Protection Agency (2002) Maximum Contaminant Level
NA = not applicable
ND = Not detected
PRG = U.S. Environmental Protection Agency (2002) Preliminary Remediation Goal
RWQCB = Regional Water Quality Control Board
(sw) = Surface Water
UCL = upper confidence limit

Formatted Chemical Concentrations:
Bold = Detected Result is above the Residential PRG
Underlined = Detected TPH Result is above the RWQCB Standard

Qualifiers:
B = The analyte was found in an associated blank, as well as in the sample.
F = The analyte was positively identified, but the quantitation is below the reporting limit.
J = The associated numerical value is an estimated quantity.
M = A matrix effect was present.
R = The data are unusable due to deficiencies in the ability to analyze the sample and meet quality control criteria.

References:
3PDO59 = Delivery Order 0059 (Montgomery Watson Harza, 2002-2003)
DO7 = Delivery Order 0007 (Montgomery Watson Harza, 1998-1999)
DO32 = Delivery Order 0032 (Montgomery Watson Harza, 1999-2000)
DO60 = Delivery Order 0060 (Montgomery Watson Harza, 2000)
WR09 = Work Request 09 (Tetra Tech, 1997)
WR10 = Work Request 10 (Tetra Tech, 1998)

For AOC-133 Tetra Tech WR09 Soil samples:
1. Tank bottom sample depths are assumed to be the tank burial depth plus 8 feet (diameter of a 10,000-gallon capacity UST).
2. The burial depth of Tanks 11, 13 and 14 is 5.5 feet bgs; Tank 12 was buried at a depth of 2.0 feet bgs
3. Sidewall sample depths are assumed to be collected at a depth of 9 feet bgs, roughly 1 foot above the base of the UST excavation.

AOC-055 EVALUATION SHEET

Final – July 2004

BACKGROUND/HISTORY

Building 1987 is located at the end of Brioso Road and is an operating Minuteman Missile Launch Control Facility.

AOC-055 had former 1,000- and 14,500-gallon diesel underground storage tanks (USTs). The 1,000-gallon UST was removed in 1998. Two samples from beneath the tank were analyzed for total recoverable petroleum hydrocarbons (TRPH), total petroleum hydrocarbons as diesel (TPH-d), and benzene, toluene, ethylbenzene, xylenes (BTEX). These analytes were not detected above their respective method detection limits (MDLs). While sample analytical results have been located (Appendix K) as indicated above, actual UST closure documentation has not been found. A conversation with the RWQCB confirmed that UST closure documentation for the 1,000-gallon UST could not be located.

The 14,500-gallon diesel UST was installed near the front gate in 1963. Tetra Tech's preliminary assessment stated that the 14,500-gallon UST was removed in 1992 from a depth of 40 feet below ground surface (bgs) (RCRA Corrective Action/RCRA Facility Investigation, Final Work Plan, dated July 1997). A cement-lined drainage has been added directly above the former 14,500-gallon UST. Santa Barbara County Environmental Health Services was present during UST removal, but no closure documentation has been found.

INVESTIGATIONS

Maness Corporation (1998). The 1,000-gallon UST was removed in 1998. Two samples from beneath the tank were analyzed for TRPH, TPH-d, and BTEX. There were no detections of these analytes above their respective MDLs.

Montgomery Watson (2001)–Delivery Order 0032. One hollow-stem auger boring was drilled to 52 feet bgs at the former 14,500-gallon UST on 12 November 1999. Soil samples were collected between 35 and 48 feet bgs. All samples were analyzed for TPH-d, semivolatile organic compounds (SVOCs), BTEX, and methyl tert-butyl ether. One sample was analyzed for polychlorinated biphenyls (PCBs). TPH-d was detected at 640 milligrams per kilogram (mg/kg) at 48 feet bgs. BTEX and SVOCs were not detected above their respective residential PRGs. PCBs were not detected above their respective MDLs. Further investigation to assess the lateral extent of TPH-d impacted soil was recommended.

Montgomery Watson (2001)–Delivery Order 0060. Three soil borings were advanced to depths of 45, 40, and 25 feet bgs to further assess the impacted soils and water on 13 December 2000. Water was encountered at depths ranging from 23 to 42 feet bgs. TPH-d was detected between 2 and 8 mg/kg in all five soil samples. SVOCs were detected at less than residential PRGs except for a benzo(a)pyrene detection of 0.064 mg/kg (residential PRG is 0.062 mg/kg).

Water samples were collected from all three borings and analyzed for TPH-d, SVOCs, and volatile organic compounds (VOCs). No SVOCs were detected. TPH-d was detected at a maximum of 200 micrograms per liter (μg/L) in water. Chloroform was detected at up to 6 μg/L, which is lower than the 100 μg/L Federal primary maximum contaminant level (MCL). Due to the possibility that the deeper contamination is confined to a narrow interval at the unsaturated-saturated zone interface, it was recommended that an additional boring be advanced to sample perched water adjacent to the former UST.

MWH (2003)–Delivery Order 0059. The objective of this investigation was to further evaluate water characteristics beneath AOC-055 in the immediate vicinity of the former 14,500-gallon diesel UST. A single boring (055-TW01) (Figure AOC-055) was advanced by hollow-stem auger to a depth of 81 feet bgs, approximately 4 feet below the depth at which water was encountered during drilling. Following

drilling, the static water level rose to a depth of 73 feet bgs A temporary well was installed to a depth of 80 feet and screened (0.020 slotted liner) from 70 to 80 feet bgs.

Soil samples were collected at 5-foot depth intervals starting from 25 feet to a depth of 50 feet bgs. Below 50 feet, soil samples were collected at 10-foot intervals In addition, a water sample was collected from the temporary well.

Soil samples were analyzed for TPH-d/mo, PAHs (EPA 8270 selected ion monitoring [SIM]), SVOCs and VOCs in accordance with the Work Plan Soil results are presented in table AOC-055-soil. TPH-d/mo concentrations were detected from 25 to 45 feet bgs and ranged between 17 and 49 mg/kg. No concentrations of TPH-d/mo were detected below 45 feet bgs. Methylene chloride, a common laboratory contaminant, was the only VOC detected in soil. Trace levels of several SVOCs were also detected from 25 to 45 feet bgs All detected SVOCs were below residential soil PRGs with the exception of benzo(a)pyrene, which reported a maximum concentration of 0.178 mg/kg at 41 feet, which exceeds the 0.062 mg/kg PRG.

Water samples collected from 055-TW01 were also analyzed for TPH-d/mo, PAHs (EPA 8270 SIM), SVOCs and VOCs Water results are presented in Table AOC-055-water. TPH-d/mo was detected at a concentration of 420 µg/L. The only other compound detected in water was bis(2-ethylhexyl)phthalate (0.8 µg/L).

Since December 2000, when the prior phase of investigation was conducted, the depth to water has decreased by more than 30 feet. At that time, the presence of trace concentrations of chloroform, a common byproduct of water chlorination, in the sampled water suggested that the source of the water could be from a leaking potable water line associated with the facility. In addition, static water levels in borings varied by nearly 20 feet within a 50-foot radius suggesting inconsistent recharge. According to the Facility Manager, in May 2002, water was found to be leaking into the bottom of the underground facility at a depth of 50 to 55 feet bgs. Because this facility is only intermittently occupied, the water leak was not immediately discovered, and it is not known how long the leak persisted before it was discovered. The water leak was subsequently repaired. Recent water level measurements collected in September 2003 (71.26 feet bgs) indicate the static water level has risen less than 2 feet since February 2003.

As recommended, an additional round of groundwater sampling was conducted at temporary well 055-TW01 in March 2004. Samples were analyzed for TPH-d/mo, VOCs, and PAHs. TPH-d/mo was detected at a concentration of 360 µg/L. Results are consistent with February 2003 results.

NATURE AND EXTENT OF CONTAMINATION

Soil has been impacted to a depth of 48 feet bgs, where TPH-d was detected at a concentration of 640 mg/kg, well above the 100 mg/kg Regional Water Quality Control Board action level. Soil beneath AOC-055 has been investigated to a depth of 81 feet bgs in the immediate vicinity of the former UST. No concentrations of TPH-d/mo have been detected in soil below a depth of 50 feet. Low concentrations of TPH-d and SVOCs have been detected in soil samples at depths ranging from 25 to 50 feet bgs less than 10 to 20 feet laterally from the former 14,500-gallon UST. This suggests that the lateral extent of TPH impact is limited.

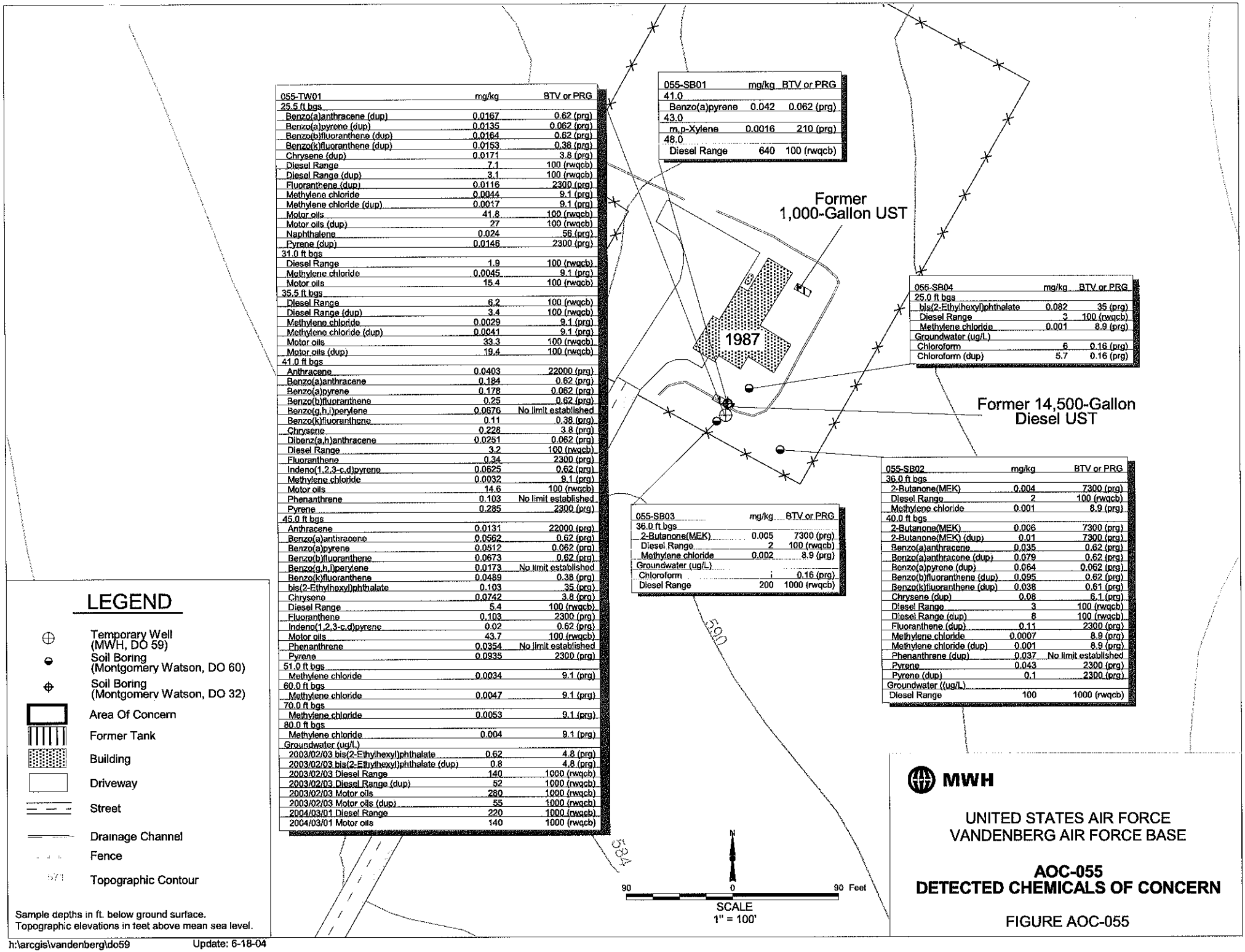
Low levels of TPH-d/mo and bis(2-ethylhexyl)phthalate were detected in the water sample collected from 055-TW01 located in the vicinity of the former 14,500-gallon UST. The past detection of chloroform and the extreme drop in static water level indicates that the source of the subsurface water may not be naturally occurring. The recent repair of the facility water leak should enable existing subsurface water to equilibrate to a natural piezometric elevation.

RECOMMENDATION

The data collected from various phases of investigation have been sufficient to delineate the extent of TPH impact. In addition, the source of water encountered in well 055-TW01 appears to be from a former water leak associated with Building 1987, which appears to have artificially raised water elevations by approximately 30 feet. An additional round of water sampling from temporary well 055-TW01 was conducted in March 2004. Results are consistent with previous findings. The Air Force recommends closure.

ATTACHMENTS

Figure AOC-055–Detected Chemicals of Concern
Table AOC-055-Soil
Table AOC-055-Water



055-TW01	mg/kg	BTV or PRG
25.5 ft bgs		
Benzo(a)anthracene (dup)	0.0167	0.62 (prg)
Benzo(a)pyrene (dup)	0.0135	0.062 (prg)
Benzo(b)fluoranthene (dup)	0.0164	0.62 (prg)
Benzo(k)fluoranthene (dup)	0.0153	0.38 (prg)
Chrysene (dup)	0.0171	3.8 (prg)
Diesel Range	7.1	100 (rwqcb)
Diesel Range (dup)	3.1	100 (rwqcb)
Fluoranthene (dup)	0.0116	2300 (prg)
Methylene chloride	0.0044	9.1 (prg)
Methylene chloride (dup)	0.0017	9.1 (prg)
Motor oils	41.8	100 (rwqcb)
Motor oils (dup)	27	100 (rwqcb)
Naphthalene	0.024	56 (prg)
Pyrene (dup)	0.0146	2300 (prg)
31.0 ft bgs		
Diesel Range	1.9	100 (rwqcb)
Methylene chloride	0.0045	9.1 (prg)
Motor oils	15.4	100 (rwqcb)
35.5 ft bgs		
Diesel Range	6.2	100 (rwqcb)
Diesel Range (dup)	3.4	100 (rwqcb)
Methylene chloride	0.0029	9.1 (prg)
Methylene chloride (dup)	0.0041	9.1 (prg)
Motor oils	33.3	100 (rwqcb)
Motor oils (dup)	19.4	100 (rwqcb)
41.0 ft bgs		
Anthracene	0.0403	22000 (prg)
Benzo(a)anthracene	0.184	0.62 (prg)
Benzo(a)pyrene	0.178	0.062 (prg)
Benzo(b)fluoranthene	0.25	0.62 (prg)
Benzo(g,h,i)perylene	0.0676	No limit established
Benzo(k)fluoranthene	0.11	0.38 (prg)
Chrysene	0.228	3.8 (prg)
Dibenz(a,h)anthracene	0.0251	0.062 (prg)
Diesel Range	3.2	100 (rwqcb)
Fluoranthene	0.34	2300 (prg)
Indeno(1,2,3-c,d)pyrene	0.0625	0.62 (prg)
Methylene chloride	0.0032	9.1 (prg)
Motor oils	14.6	100 (rwqcb)
Phenanthrene	0.103	No limit established
Pyrene	0.285	2300 (prg)
45.0 ft bgs		
Anthracene	0.0131	22000 (prg)
Benzo(a)anthracene	0.0562	0.62 (prg)
Benzo(a)pyrene	0.0512	0.062 (prg)
Benzo(b)fluoranthene	0.0673	0.62 (prg)
Benzo(g,h,i)perylene	0.0173	No limit established
Benzo(k)fluoranthene	0.0489	0.38 (prg)
bis(2-Ethylhexyl)phthalate	0.103	35 (prg)
Chrysene	0.0742	3.8 (prg)
Diesel Range	5.4	100 (rwqcb)
Fluoranthene	0.103	2300 (prg)
Indeno(1,2,3-c,d)pyrene	0.02	0.62 (prg)
Motor oils	43.7	100 (rwqcb)
Phenanthrene	0.0354	No limit established
Pyrene	0.0935	2300 (prg)
51.0 ft bgs		
Methylene chloride	0.0034	9.1 (prg)
60.0 ft bgs		
Methylene chloride	0.0047	9.1 (prg)
70.0 ft bgs		
Methylene chloride	0.0053	9.1 (prg)
80.0 ft bgs		
Methylene chloride	0.004	9.1 (prg)
Groundwater (ug/L)		
2003/02/03 bis(2-Ethylhexyl)phthalate	0.62	4.8 (prg)
2003/02/03 bis(2-Ethylhexyl)phthalate (dup)	0.8	4.8 (prg)
2003/02/03 Diesel Range	140	1000 (rwqcb)
2003/02/03 Diesel Range (dup)	52	1000 (rwqcb)
2003/02/03 Motor oils	280	1000 (rwqcb)
2003/02/03 Motor oils (dup)	55	1000 (rwqcb)
2004/03/01 Diesel Range	220	1000 (rwqcb)
2004/03/01 Motor oils	140	1000 (rwqcb)

055-SB01	mg/kg	BTV or PRG
41.0		
Benzo(a)pyrene	0.042	0.062 (prg)
43.0		
m,p-Xylene	0.0016	210 (prg)
48.0		
Diesel Range	640	100 (rwqcb)

055-SB04	mg/kg	BTV or PRG
25.0 ft bgs		
bis(2-Ethylhexyl)phthalate	0.082	35 (prg)
Diesel Range	3	100 (rwqcb)
Methylene chloride	0.001	8.9 (prg)
Groundwater (ug/L)		
Chloroform	6	0.16 (prg)
Chloroform (dup)	5.7	0.16 (prg)

055-SB03	mg/kg	BTV or PRG
36.0 ft bgs		
2-Butanone(MEK)	0.005	7300 (prg)
Diesel Range	2	100 (rwqcb)
Methylene chloride	0.002	8.9 (prg)
Groundwater (ug/L)		
Chloroform	;	0.16 (prg)
Diesel Range	200	1000 (rwqcb)

055-SB02	mg/kg	BTV or PRG
36.0 ft bgs		
2-Butanone(MEK)	0.004	7300 (prg)
Diesel Range	2	100 (rwqcb)
Methylene chloride	0.001	8.9 (prg)
40.0 ft bgs		
2-Butanone(MEK)	0.006	7300 (prg)
2-Butanone(MEK) (dup)	0.01	7300 (prg)
Benzo(a)anthracene	0.035	0.62 (prg)
Benzo(a)anthracene (dup)	0.079	0.62 (prg)
Benzo(a)pyrene (dup)	0.064	0.062 (prg)
Benzo(b)fluoranthene (dup)	0.095	0.62 (prg)
Benzo(k)fluoranthene (dup)	0.038	0.61 (prg)
Chrysene (dup)	0.08	6.1 (prg)
Diesel Range	3	100 (rwqcb)
Diesel Range (dup)	8	100 (rwqcb)
Fluoranthene (dup)	0.11	2300 (prg)
Methylene chloride	0.0007	8.9 (prg)
Methylene chloride (dup)	0.001	8.9 (prg)
Phenanthrene (dup)	0.037	No limit established
Pyrene	0.043	2300 (prg)
Pyrene (dup)	0.1	2300 (prg)
Groundwater ((ug/L)		
Diesel Range	100	1000 (rwqcb)

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TABLE AOC -055-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 1 of 4)

	BTV			Soil PRG		Reference:	DO32	DO32	DO32	DO32	DO32	DO60
						Location ID:	055-MW01	055-SB01	055-SB01	055-SB01	055-SB01	055-SB02
						Field Sample ID:	055-MW99-SS0.0	055-SB01-SS36.0	055-SB01-SS41.0	055-SB01-SS43.0	055-SB01-SS48.0	055-SB02-SS35.0
						Sample Date:	11/12/1999	11/12/1999	11/12/1999	11/12/1999	11/12/1999	12/13/2000
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	48.0	36.0	41.0	43.0	48.0	36.0
BTEX (mg/kg)												
Benzene	--	--	--	0.6 (ca)	1.3 (ca)		0.0026 F	<0.011	<0.011	<0.012	<0.011	NA
Ethylbenzene	--	--	--	8.9 (ca)	20 (ca)		0.0021 F	<0.011	<0.011	<0.012	<0.011	NA
m,p-Xylene	--	--	--	270	420		0.0068 F	<0.022	<0.022	0.0016 F	<0.023	NA
o-Xylene	--	--	--	270	420		0.0024 F	<0.011	<0.011	<0.012	<0.011	NA
Toluene	--	--	--	520	520		0.009 F	<0.011	<0.011	<0.012	<0.011	NA
General Minerals												
pH	--	--	--	--	--		NA	NA	NA	NA	NA	7.26
Polynuclear Aromatic Hydrocarbons (mg/kg)												
Anthracene	--	--	--	22000	100000		NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	--	--	--	0.62 (ca)	2.1 (ca)		NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	--	--	--	0.062 (ca)	0.21 (ca)		NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	--	--	--	0.62 (ca)	2.1 (ca)		NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	--	--	--	--	--		NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	--	--	--	0.38 (ca)	1.3 (ca)		NA	NA	NA	NA	NA	NA
Chrysene	--	--	--	3.8 (ca)	13 (ca)		NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	--	--	--	0.062 (ca)	0.21 (ca)		NA	NA	NA	NA	NA	NA
Fluoranthene	--	--	--	2300	22000		NA	NA	NA	NA	NA	NA
Indeno(1,2,3-c,d)pyrene	--	--	--	0.62 (ca)	2.1 (ca)		NA	NA	NA	NA	NA	NA
Naphthalene	--	--	--	56	190		NA	NA	NA	NA	NA	NA
Phenanthrene	--	--	--	--	--		NA	NA	NA	NA	NA	NA
Pyrene	--	--	--	2300	29000		NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (mg/kg)												
Anthracene	--	--	--	22000	100000		<0.37	<0.36	<0.37	<0.38	<0.38	<0.36
Benzo(a)anthracene	--	--	--	0.62 (ca)	2.1 (ca)		<0.37	<0.36	<0.37	<0.38	<0.38	<0.36
Benzo(a)pyrene	--	--	--	0.062 (ca)	0.21 (ca)		<0.37	<0.36	0.042 F	<0.38	<0.38	<0.36
Benzo(b)fluoranthene	--	--	--	0.62 (ca)	2.1 (ca)		<0.37	<0.36	<0.37	<0.38	<0.38	<0.36
Benzo(g,h,i)perylene	--	--	--	--	--		<0.37	<0.36	<0.37	<0.38	<0.38	<0.36
Benzo(k)fluoranthene	--	--	--	0.38 (ca)	1.3 (ca)		<0.37	<0.36	<0.37	<0.38	<0.38	<0.36
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		<0.37	<0.36	<0.37	<0.38	<0.38	<0.36
Chrysene	--	--	--	3.8 (ca)	13 (ca)		<0.37	<0.36	<0.37	<0.38	<0.38	<0.36
Dibenz(a,h)anthracene	--	--	--	0.062 (ca)	0.21 (ca)		<0.37	<0.36	<0.37	<0.38	<0.38	<0.36
Fluoranthene	--	--	--	2300	22000		<0.37	<0.36	<0.37	<0.38	<0.38	<0.36
Indeno(1,2,3-c,d)pyrene	--	--	--	0.62 (ca)	2.1 (ca)		<0.37	<0.36	<0.37	<0.38	<0.38	<0.36
Naphthalene	--	--	--	56	190		<0.37	<0.36	<0.37	<0.38	<0.38	<0.36
Phenanthrene	--	--	--	--	--		<0.37	<0.36	<0.37	<0.38	<0.38	<0.36
Pyrene	--	--	--	2300	29000		<0.37	<0.36	<0.37	<0.38	<0.38	<0.36
Total Petroleum Hydrocarbons (mg/kg)												
Diesel Range	--	--	--	100 (rwqcb)	--		28	<11	<11	<12	640 J	2 F
Motor oils	--	--	--	100 (rwqcb)	--		NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (mg/kg)												
2-Butanone(MEK)	--	--	--	7300	27000		NA	NA	NA	NA	NA	0.004 F
Benzene	--	--	--	0.6 (ca)	1.3 (ca)		NA	NA	NA	NA	NA	<0.0046
Ethylbenzene	--	--	--	8.9 (ca)	20 (ca)		NA	NA	NA	NA	NA	<0.0046
m,p-Xylene	--	--	--	270	420		NA	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		NA	NA	NA	NA	NA	0.001 F
Naphthalene	--	--	--	56	190		NA	NA	NA	NA	NA	NA
o-Xylene	--	--	--	270	420		NA	NA	NA	NA	NA	NA
Toluene	--	--	--	520	520		NA	NA	NA	NA	NA	<0.0046

TABLE AOC -055-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 2 of 4)

	BTV			Soil PRG		Reference:	DO60	DO60	DO60	DO60	3PDO59	3PDO59
						Location ID:	055-SB02	055-SB02	055-SB03	055-SB04	055-TW01	055-TW01
						Field Sample ID:	055-SB02-SS40.0	055-SB99-SS40.0	055-SB03-SS35.0	055-SB04-SS25.0	055-TW01-SS25.0	055-TW99-SS25.0
						Sample Date:	12/13/2000	12/13/2000	12/13/2000	12/13/2000	2/3/2003	2/3/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	40.0	40.0	36.0	25.0	25.5	25.5
BTEX (mg/kg)												
Benzene	--	--	--	0.6 (ca)	1.3 (ca)		NA	NA	NA	NA	NA	NA
Ethylbenzene	--	--	--	8.9 (ca)	20 (ca)		NA	NA	NA	NA	NA	NA
m,p-Xylene	--	--	--	270	420		NA	NA	NA	NA	NA	NA
o-Xylene	--	--	--	270	420		NA	NA	NA	NA	NA	NA
Toluene	--	--	--	520	520		NA	NA	NA	NA	NA	NA
General Minerals												
pH	--	--	--	--	--		7.98	7.51	7.03	7.46	8.39	8.55
Polynuclear Aromatic Hydrocarbons (mg/kg)												
Anthracene	--	--	--	22000	100000		NA	NA	NA	NA	<0.027	<0.027
Benzo(a)anthracene	--	--	--	0.62 (ca)	2.1 (ca)		NA	NA	NA	NA	<0.027	0.0167 F
Benzo(a)pyrene	--	--	--	0.062 (ca)	0.21 (ca)		NA	NA	NA	NA	<0.027	0.0135 F
Benzo(b)fluoranthene	--	--	--	0.62 (ca)	2.1 (ca)		NA	NA	NA	NA	<0.027	0.0164 F
Benzo(g,h,i)perylene	--	--	--	--	--		NA	NA	NA	NA	<0.027	<0.027
Benzo(k)fluoranthene	--	--	--	0.38 (ca)	1.3 (ca)		NA	NA	NA	NA	<0.027	0.0153 F
Chrysene	--	--	--	3.8 (ca)	13 (ca)		NA	NA	NA	NA	<0.027	0.0171 F
Dibenz(a,h)anthracene	--	--	--	0.062 (ca)	0.21 (ca)		NA	NA	NA	NA	<0.027	<0.027
Fluoranthene	--	--	--	2300	22000		NA	NA	NA	NA	<0.027	0.0116 F
Indeno(1,2,3-c,d)pyrene	--	--	--	0.62 (ca)	2.1 (ca)		NA	NA	NA	NA	<0.027	<0.027
Naphthalene	--	--	--	56	190		NA	NA	NA	NA	0.024 F	<0.027
Phenanthrene	--	--	--	--	--		NA	NA	NA	NA	<0.027	<0.027
Pyrene	--	--	--	2300	29000		NA	NA	NA	NA	<0.027	0.0146 F
Semivolatile Organic Compounds (mg/kg)												
Anthracene	--	--	--	22000	100000		<0.39	<0.38	<0.4	<0.39	NA	NA
Benzo(a)anthracene	--	--	--	0.62 (ca)	2.1 (ca)		0.035 F	0.079 F	<0.4	<0.39	NA	NA
Benzo(a)pyrene	--	--	--	0.062 (ca)	0.21 (ca)		<0.39	0.064 F	<0.4	<0.39	NA	NA
Benzo(b)fluoranthene	--	--	--	0.62 (ca)	2.1 (ca)		<0.39	0.095 F	<0.4	<0.39	NA	NA
Benzo(g,h,i)perylene	--	--	--	--	--		<0.39	<0.38	<0.4	<0.39	NA	NA
Benzo(k)fluoranthene	--	--	--	0.38 (ca)	1.3 (ca)		<0.39	0.038 F	<0.4	<0.39	NA	NA
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		<0.39	<0.38	<0.4	0.082 F	<0.76	<0.76
Chrysene	--	--	--	3.8 (ca)	13 (ca)		<0.39	0.08 F	<0.4	<0.39	NA	NA
Dibenz(a,h)anthracene	--	--	--	0.062 (ca)	0.21 (ca)		<0.39	<0.38	<0.4	<0.39	NA	NA
Fluoranthene	--	--	--	2300	22000		<0.39	0.11 F	<0.4	<0.39	NA	NA
Indeno(1,2,3-c,d)pyrene	--	--	--	0.62 (ca)	2.1 (ca)		<0.39	<0.38	<0.4	<0.39	NA	NA
Naphthalene	--	--	--	56	190		<0.39	<0.38	<0.4	<0.39	NA	NA
Phenanthrene	--	--	--	--	--		<0.39	0.037 F	<0.4	<0.39	NA	NA
Pyrene	--	--	--	2300	29000		0.043 F	0.1 F	<0.4	<0.39	NA	NA
Total Petroleum Hydrocarbons (mg/kg)												
Diesel Range	--	--	--	100 (rwqcb)	--		3 F	8 F	2 F	3 F	7.1 F	3.1 F
Motor oils	--	--	--	100 (rwqcb)	--		NA	NA	NA	NA	41.8 J	27 J
Volatile Organic Compounds (mg/kg)												
2-Butanone(MEK)	--	--	--	7300	27000		0.006 F	0.01 F	0.005 F	<0.011	<0.021	<0.02
Benzene	--	--	--	0.6 (ca)	1.3 (ca)		<0.0046	<0.0053	<0.0064	<0.0055	<0.0021	<0.002
Ethylbenzene	--	--	--	8.9 (ca)	20 (ca)		<0.0046	<0.0053	<0.0064	<0.0055	<0.0051	<0.0049
m,p-Xylene	--	--	--	270	420		NA	NA	NA	NA	<0.0051	<0.0049
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		0.0007 F	0.001 F	0.002 F	0.001 F	0.0044 F	0.0017 F
Naphthalene	--	--	--	56	190		NA	NA	NA	NA	<0.0051	<0.0049
o-Xylene	--	--	--	270	420		NA	NA	NA	NA	<0.0051	<0.0049
Toluene	--	--	--	520	520		<0.0046	<0.0053	<0.0064	<0.0055	<0.0051	<0.0049

TABLE AOC -055-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 3 of 4)

	BTV Type	BTV 95% UCL	BTV 99% UCL	Soil PRG Residential	Soil PRG Industrial	Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01
						Field Sample ID:	055-TW01-SS30.0	055-TW01-SS35.0	055-TW99-SS35.0	055-TW01-SS40.0	055-TW01-SS45.0	055-TW01-SS50.0
						Sample Date:	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003
						Sample Depth:	31.0	35.5	35.5	41.0	45.0	51.0
BTEX (mg/kg)												
Benzene	--	--	--	0.6 (ca)	1.3 (ca)		NA	NA	NA	NA	NA	NA
Ethylbenzene	--	--	--	8.9 (ca)	20 (ca)		NA	NA	NA	NA	NA	NA
m,p-Xylene	--	--	--	270	420		NA	NA	NA	NA	NA	NA
o-Xylene	--	--	--	270	420		NA	NA	NA	NA	NA	NA
Toluene	--	--	--	520	520		NA	NA	NA	NA	NA	NA
General Minerals												
pH	--	--	--	--	--		8.04	8.52	8.51	9.18	10.2	5.72
Polynuclear Aromatic Hydrocarbons (mg/kg)												
Anthracene	--	--	--	22000	100000		<0.028	<0.028	<0.028	0.0403	0.0131 F	<0.029
Benzo(a)anthracene	--	--	--	0.62 (ca)	2.1 (ca)		<0.028	<0.028	<0.028	0.184	0.0562	<0.029
Benzo(a)pyrene	--	--	--	0.062 (ca)	0.21 (ca)		<0.028	<0.028	<0.028	**0.178**	0.0512	<0.029
Benzo(b)fluoranthene	--	--	--	0.62 (ca)	2.1 (ca)		<0.028	<0.028	<0.028	0.25	0.0673	<0.029
Benzo(g,h,i)perylene	--	--	--	--	--		<0.028	<0.028	<0.028	0.0676	0.0173 F	<0.029
Benzo(k)fluoranthene	--	--	--	0.38 (ca)	1.3 (ca)		<0.028	<0.028	<0.028	0.11	0.0489	<0.029
Chrysene	--	--	--	3.8 (ca)	13 (ca)		<0.028	<0.028	<0.028	0.228	0.0742	<0.029
Dibenz(a,h)anthracene	--	--	--	0.062 (ca)	0.21 (ca)		<0.028	<0.028	<0.028	0.0251 F	<0.029	<0.029
Fluoranthene	--	--	--	2300	22000		<0.028	<0.028	<0.028	0.34	0.103	<0.029
Indeno(1,2,3-c,d)pyrene	--	--	--	0.62 (ca)	2.1 (ca)		<0.028	<0.028	<0.028	0.0625	0.02 F	<0.029
Naphthalene	--	--	--	56	190		<0.028	<0.028	<0.028	<0.027	<0.029	<0.029
Phenanthrene	--	--	--	--	--		<0.028	<0.028	<0.028	0.103	0.0354	<0.029
Pyrene	--	--	--	2300	29000		<0.028	<0.028	<0.028	0.285	0.0935	<0.029
Semivolatile Organic Compounds (mg/kg)												
Anthracene	--	--	--	22000	100000		NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	--	--	--	0.62 (ca)	2.1 (ca)		NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	--	--	--	0.062 (ca)	0.21 (ca)		NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	--	--	--	0.62 (ca)	2.1 (ca)		NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	--	--	--	--	--		NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	--	--	--	0.38 (ca)	1.3 (ca)		NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		<0.79	<0.78	<0.78	<0.76	0.103 J	<0.8
Chrysene	--	--	--	3.8 (ca)	13 (ca)		NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	--	--	--	0.062 (ca)	0.21 (ca)		NA	NA	NA	NA	NA	NA
Fluoranthene	--	--	--	2300	22000		NA	NA	NA	NA	NA	NA
Indeno(1,2,3-c,d)pyrene	--	--	--	0.62 (ca)	2.1 (ca)		NA	NA	NA	NA	NA	NA
Naphthalene	--	--	--	56	190		NA	NA	NA	NA	NA	NA
Phenanthrene	--	--	--	--	--		NA	NA	NA	NA	NA	NA
Pyrene	--	--	--	2300	29000		NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)												
Diesel Range	--	--	--	100 (rwqcb)	--		1.9 F	6.2 F	3.4 F	3.2 F	5.4 F	<11
Motor oils	--	--	--	100 (rwqcb)	--		15.4 J	33.3 J	19.4 J	14.6 J	43.7 J	<11 J
Volatile Organic Compounds (mg/kg)												
2-Butanone(MEK)	--	--	--	7300	27000		<0.019	<0.021	<0.021	<0.02	<0.021	<0.022
Benzene	--	--	--	0.6 (ca)	1.3 (ca)		<0.0019	<0.0021	<0.0021	<0.002	<0.0021	<0.0022
Ethylbenzene	--	--	--	8.9 (ca)	20 (ca)		<0.0049	<0.0052	<0.0053	<0.0051	<0.0054	<0.0055
m,p-Xylene	--	--	--	270	420		<0.0049	<0.0052	<0.0053	<0.0051	<0.0054	<0.0055
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		0.0045 F	0.0029 F	0.0041 F	0.0032 F	<0.0054	0.0034 F
Naphthalene	--	--	--	56	190		<0.0049	<0.0052	<0.0053	<0.0051	<0.0054	<0.0055
o-Xylene	--	--	--	270	420		<0.0049	<0.0052	<0.0053	<0.0051	<0.0054	<0.0055
Toluene	--	--	--	520	520		<0.0049	<0.0052	<0.0053	<0.0051	<0.0054	<0.0055

FINAL

TABLE AOC -055-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 4 of 4)

	BTV			Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	055-TW01	055-TW01	055-TW01	055-TW01
						Field Sample ID:	055-TW01-SS60.0	055-TW01-SS70.0	055-TW01-SS80.0	055-TW99-SS80.0
						Sample Date:	2/3/2003	2/3/2003	2/3/2003	2/3/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	60.0	70.0	80.0	80.0
BTEX (mg/kg)										
Benzene	--	--	--	0.6 (ca)	1.3 (ca)		NA	NA	NA	NA
Ethylbenzene	--	--	--	8.9 (ca)	20 (ca)		NA	NA	NA	NA
m,p-Xylene	--	--	--	270	420		NA	NA	NA	NA
o-Xylene	--	--	--	270	420		NA	NA	NA	NA
Toluene	--	--	--	520	520		NA	NA	NA	NA
General Minerals										
pH	--	--	--	--	--		7.41	7.09	7.01	7.54
Polynuclear Aromatic Hydrocarbons (mg/kg)										
Anthracene	--	--	--	22000	100000		<0.028	<0.029	<0.03	NA
Benzo(a)anthracene	--	--	--	0.62 (ca)	2.1 (ca)		<0.028	<0.029	<0.03	NA
Benzo(a)pyrene	--	--	--	0.062 (ca)	0.21 (ca)		<0.028	<0.029	<0.03	NA
Benzo(b)fluoranthene	--	--	--	0.62 (ca)	2.1 (ca)		<0.028	<0.029	<0.03	NA
Benzo(g,h,i)perylene	--	--	--	--	--		<0.028	<0.029	<0.03	NA
Benzo(k)fluoranthene	--	--	--	0.38 (ca)	1.3 (ca)		<0.028	<0.029	<0.03	NA
Chrysene	--	--	--	3.8 (ca)	13 (ca)		<0.028	<0.029	<0.03	NA
Dibenz(a,h)anthracene	--	--	--	0.062 (ca)	0.21 (ca)		<0.028	<0.029	<0.03	NA
Fluoranthene	--	--	--	2300	22000		<0.028	<0.029	<0.03	NA
Indeno(1,2,3-c,d)pyrene	--	--	--	0.62 (ca)	2.1 (ca)		<0.028	<0.029	<0.03	NA
Naphthalene	--	--	--	56	190		<0.028	<0.029	<0.03	NA
Phenanthrene	--	--	--	--	--		<0.028	<0.029	<0.03	NA
Pyrene	--	--	--	2300	29000		<0.028	<0.029	<0.03	NA
Semivolatile Organic Compounds (mg/kg)										
Anthracene	--	--	--	22000	100000		NA	NA	NA	NA
Benzo(a)anthracene	--	--	--	0.62 (ca)	2.1 (ca)		NA	NA	NA	NA
Benzo(a)pyrene	--	--	--	0.062 (ca)	0.21 (ca)		NA	NA	NA	NA
Benzo(b)fluoranthene	--	--	--	0.62 (ca)	2.1 (ca)		NA	NA	NA	NA
Benzo(g,h,i)perylene	--	--	--	--	--		NA	NA	NA	NA
Benzo(k)fluoranthene	--	--	--	0.38 (ca)	1.3 (ca)		NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		<0.79	<0.82	<0.83	NA
Chrysene	--	--	--	3.8 (ca)	13 (ca)		NA	NA	NA	NA
Dibenz(a,h)anthracene	--	--	--	0.062 (ca)	0.21 (ca)		NA	NA	NA	NA
Fluoranthene	--	--	--	2300	22000		NA	NA	NA	NA
Indeno(1,2,3-c,d)pyrene	--	--	--	0.62 (ca)	2.1 (ca)		NA	NA	NA	NA
Naphthalene	--	--	--	56	190		NA	NA	NA	NA
Phenanthrene	--	--	--	--	--		NA	NA	NA	NA
Pyrene	--	--	--	2300	29000		NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)										
Diesel Range	--	--	--	100 (rwqcb)	--		<11	<12	<12	<12
Motor oils	--	--	--	100 (rwqcb)	--		<11 J	<12 J	<12 J	<12 J
Volatile Organic Compounds (mg/kg)										
2-Butanone(MEK)	--	--	--	7300	27000		<0.021	<0.023	<0.022	NA
Benzene	--	--	--	0.6 (ca)	1.3 (ca)		<0.0021	<0.0023	<0.0022	NA
Ethylbenzene	--	--	--	8.9 (ca)	20 (ca)		<0.0053	<0.0057	<0.0054	NA
m,p-Xylene	--	--	--	270	420		<0.0053	<0.0057	<0.0054	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		0.0047 F	0.0053 F	0.004 F	NA
Naphthalene	--	--	--	56	190		<0.0053	<0.0057	<0.0054	NA
o-Xylene	--	--	--	270	420		<0.0053	<0.0057	<0.0054	NA
Toluene	--	--	--	520	520		<0.0053	<0.0057	<0.0054	NA

TABLE AOC -055-WATER

CHEMICALS DETECTED IN WATER
VANDENBERG AIR FORCE BASE
(Page 1 of 2)

	Grounwater BTV	TapWater PRG	Primary MCL	Secondary MCL	Cal Primary MCL	Cal Secondary MCL	Reference:	DO60	DO60	DO60	DO60	3PDO59	3PDO59
							Location ID:	055-SB02	055-SB03	055-SB04	055-SB04	055-TW01	055-TW01
							Field Sample ID:	055-SB02-GW01	055-SB03-GW01	055-SB04-GW01	055-SB99-GW01	055-TW01-GW01	055-TW99-GW01
							Sample Date:	12/13/2000	12/13/2000	12/14/2000	12/14/2000	2/3/2003	2/3/2003
							Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0
Semivolatile Organic Compounds (µg/L)													
bis(2-Ethylhexyl)phthalate	--	4.8 (ca)	6	--	4	--		<10	<10	<10	<10	0.62 F	0.8 F
Total Petroleum Hydrocarbons (µg/L)													
Diesel Range	--	1000 (rwqcb)	--	--	--	--		100 F	200 F	<500	<500	140 F	52 F
Motor oils	--	1000 (rwqcb)	--	--	--	--		NA	NA	NA	NA	280 F	55 F
Volatile Organic Compounds (µg/L)													
Chloroform	--	0.53 (ca)	100	--	100	--		<1	1	6	5.7	<0.3	<0.3

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TABLE AOC -055-WATER

CHEMICALS DETECTED IN WATER
VANDENBERG AIR FORCE BASE
(Page 2 of 2)

	Grounwater BTV	TapWater PRG	Primary MCL	Secondary MCL	Cal Primary MCL	Cal Secondary MCL	Reference:	3PDO59
							Location ID:	055-TW01
							Field Sample ID:	055-TW01-GW02
							Sample Date:	3/1/2004
							Sample Depth:	0.0
Semivolatile Organic Compounds (µg/L)								
bis(2-Ethylhexyl)phthalate	--	4.8 (ca)	6	--	4	--		NA
Total Petroleum Hydrocarbons (µg/L)								
Diesel Range	--	1000 (rwqcb)	--	--	--	--		220 F
Motor oils	--	1000 (rwqcb)	--	--	--	--		140 F
Volatile Organic Compounds (µg/L)								
Chloroform	--	0.53 (ca)	100	--	100	--		<0.3

NOTES

DETECTED CHEMICALS IN SOIL AND WATER
VANDENBERG AIR FORCE BASE

BTV Types:
BED = bedrock
GW = groundwater
SA = surface alluvium
SDS = surface dune sand
SSA = subsurface alluvium
SSDS = subsurface dune sand

Units:
mg/kg = milligrams per kilogram
μg/L = micrograms per liter

Abbreviations:
-- = not applicable or not established
AOC = Area of Concern
BTV = background threshold value (Jacobs Engineering Group, Inc., 1994)
(ca) = Cancerous
Cal = California Department of Health Services
MCL = U.S. Environmental Protection Agency (2002) Maximum Contaminant Level
NA = not applicable
ND = Not detected
PRG = U.S. Environmental Protection Agency (2002) Preliminary Remediation Goal
RWQCB = Regional Water Quality Control Board
(sw) = Surface Water
UCL = upper confidence limit

Formatted Chemical Concentrations:
Bold = Detected Result is above the Residential PRG
Underlined = Detected TPH Result is above the RWQCB Standard

Qualifiers:
B = The analyte was found in an associated blank, as well as in the sample.
F = The analyte was positively identified, but the quantitation is below the reporting limit.
J = The associated numerical value is an estimated quantity.
M = A matrix effect was present.
R = The data are unusable due to deficiencies in the ability to analyze the sample and meet quality control criteria.

References:
3PDO59 = Delivery Order 0059 (Montgomery Watson Harza, 2002-2003)
DO7 = Delivery Order 0007 (Montgomery Watson Harza, 1998-1999)
DO32 = Delivery Order 0032 (Montgomery Watson Harza, 1999-2000)
DO60 = Delivery Order 0060 (Montgomery Watson Harza, 2000)
WR09 = Work Request 09 (Tetra Tech, 1997)
WR10 = Work Request 10 (Tetra Tech, 1998)

For AOC-133 Tetra Tech WR09 Soil samples:
1. Tank bottom sample depths are assumed to be the tank burial depth plus 8 feet (diameter of a 10,000-gallon capacity UST).
2. The burial depth of Tanks 11, 13 and 14 is 5.5 feet bgs; Tank 12 was buried at a depth of 2.0 feet bgs
3. Sidewall sample depths are assumed to be collected at a depth of 9 feet bgs, roughly 1 foot above the base of the UST excavation.

AOC-061 EVALUATION SHEET

Final – July 2004

BACKGROUND/HISTORY

This AOC is located on the southeast corner of Arguello Road and Clark Street. According to engineering diagrams, a generator house was once present to provide emergency power. A photographic darkroom was added to the building in 1960. The darkroom is no longer present. The heating system was originally fueled by diesel and currently uses natural gas. Building 861 has been designated an AOC due to the former presence of a diesel underground storage tank (UST) that served the emergency generator and provided fuel for the building heating system.

There is a discrepancy in the reported size of the tank. Originally it was reported to be 1,000 gallons; however, at the time of removal it was documented as a 10,000-gallon UST (Converse Environmental West's Report of Underground Storage Tank Removals and Tank Abandonments, dated October 1995). A review of engineering documents and calculations of the UST excavation cavity dimensions indicate that the UST would be approximately 1,000 gallons.

It should be noted that Building 861 is attached to Building 860 and is often confused in reporting. The Converse report refers to the associated building as 860.

INVESTIGATIONS

Tetra Tech (1995)–WR09. Converse Environmental West, as a sub-consultant to and reported by Tetra Tech, removed the diesel UST in 1995 (Tetra Tech's Final Installation Restoration Program (IRP) Preliminary Assessment Report for the Supplemental Basewide Preliminary Assessment/Site Inspection (PA/SI), dated October 1995). Two confirmation samples were analyzed for total petroleum hydrocarbons as diesel (TPH-d). One, in the vicinity of the pipe trench, indicated a concentration of 22 milligrams per kilogram (mg/kg); the other, in the vicinity of the UST cavity, was non-detect.

MWH (2003)—Delivery Order 0059. The objective of this investigation was to assess whether soil or groundwater has been impacted by the operation of the former diesel UST. Five borings (061-SB01 through 061-SB05) were each advanced by hollow-stem auger to a depth of 16.5 feet bgs in accordance with the Work Plan (Figure AOC-061). Groundwater was encountered at a depth of 9 to 10 feet bgs in all borings. Soil samples were collected at approximate 5-foot depth intervals and a grab groundwater sample was also collected from each boring.

All soil samples were analyzed for diesel and motor oil range total petroleum hydrocarbons (TPH-d/mo) (Table AOC-061-Soil). Soil results are presented in Table AOC-061-soil. Analytical results of soil samples indicate concentrations of TPH-mo ranging from non-detect to a maximum of 18.6 mg/kg in 061-SB03. TPH-d was only detected in one sample (061-SB03 at 6 feet) at a concentration of 5 mg/kg. All detected concentrations of total TPH were less than the 100 mg/kg Regional Water Quality Control Board (RWQCB) action level.

Groundwater grab samples were also collected from each boring. No concentrations of TPH were detected in any of the groundwater grab samples. Groundwater results are presented in Appendix B.

NATURE AND EXTENT OF CONTAMINATION

The maximum concentration of total TPH (23.6 mg/kg) was detected in the 6-foot bgs sample collected from boring SB03. None of the soil samples collected during current or past investigations have detected TPH at concentrations greater than the 100 mg/kg RWQCB action level.

RECOMMENDATION

AOC-061 is recommended for closure under the AOC Program

ATTACHMENTS

Figure AOC-061
Table AOC-061-Soil

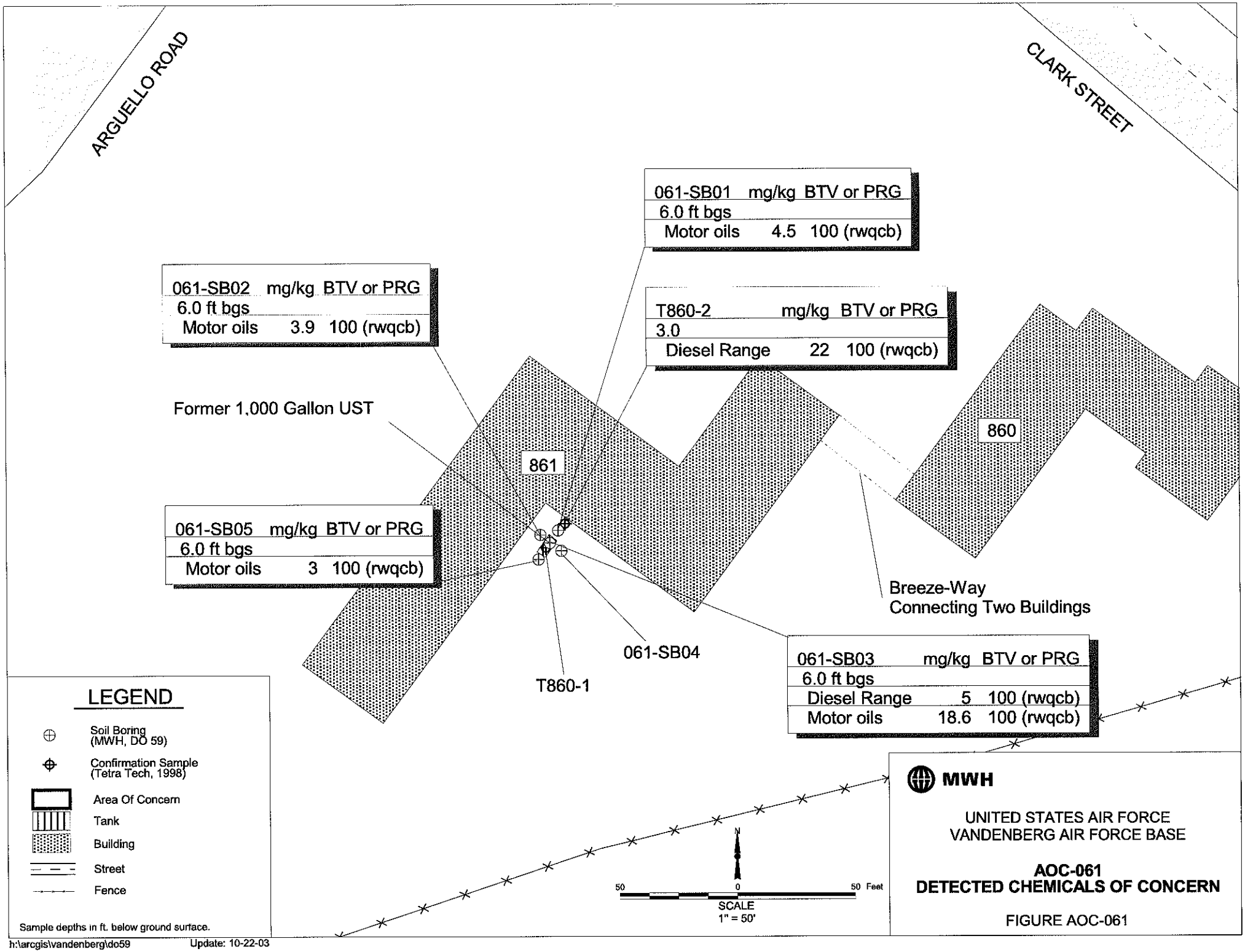
ARGUELLO ROAD
CLARK STREET
061-SB01 mg/kg BTV or PRG
6.0 ft bgs
Motor oils 4.5 100 (rwqcb)
061-SB02 mg/kg BTV or PRG
6.0 ft bgs
Motor oils 3.9 100 (rwqcb)
T860-2 mg/kg BTV or PRG
3.0
Diesel Range 22 100 (rwqcb)
Former 1,000 Gallon UST
861
860
061-SB05 mg/kg BTV or PRG
6.0 ft bgs
Motor oils 3 100 (rwqcb)
Breeze-Way
Connecting Two Buildings
061-SB04
T860-1
061-SB03 mg/kg BTV or PRG
6.0 ft bgs
Diesel Range 5 100 (rwqcb)
Motor oils 18.6 100 (rwqcb)
LEGEND
Soil Boring (MWH, DO 59)
Confirmation Sample (Tetra Tech, 1998)
Area Of Concern
Tank
Building
Street
Fence
Sample depths in ft. below ground surface.
N
50 0 50 Feet
SCALE
1" = 50'
MWH
UNITED STATES AIR FORCE
VANDENBERG AIR FORCE BASE
AOC-061
DETECTED CHEMICALS OF CONCERN
FIGURE AOC-061
h:\arcgis\vandenberg\do59
Update: 10-22-03

TABLE AOC -061-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 1 of 3)

	BTV			Soil PRG		Reference:	TetraTech WR09	TetraTech WR09	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	T860-1	T860-2	061-SB01	061-SB01	061-SB01	061-SB02	061-SB02	061-SB02
						Field Sample ID:	T860-1	T860-2	061-SB01-SS5.0	061-SB01-SS10.0	061-SB01-SS15.0	061-SB02-SS5.0	061-SB02-SS10.0	061-SB02-SS15.0
						Sample Date:	5/11/1995	5/11/1995	1/30/2003	1/30/2003	1/30/2003	1/30/2003	1/30/2003	1/30/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	10.0	3.0	6.0	11.0	16.0	6.0	9.5	16.0
Total Petroleum Hydrocarbons (mg/kg)														
Diesel Range	--	--	--	100 (rwqcb)	--		<10	22	<11	<12	<12	<11	<12	<13
Motor oils	--	--	--	100 (rwqcb)	--		NA	NA	4.5 F	<12	<12	3.9 F	<12	<13

TABLE AOC -061-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 2 of 3)

	BTV			Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	061-SB03	061-SB03	061-SB03	061-SB04	061-SB04	061-SB04	061-SB05	061-SB05
						Field Sample ID:	061-SB03-SS5.0	061-SB03-SS10.0	061-SB03-SS15.0	061-SB04-SS5.0	061-SB04-SS10.0	061-SB04-SS15.0	061-SB05-SS5.0	061-SB05-SS10.0
						Sample Date:	1/30/2003	1/30/2003	1/30/2003	1/30/2003	1/30/2003	1/30/2003	1/30/2003	1/30/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	6.0	11.0	16.0	6.0	9.5	16.0	6.0	9.5
Total Petroleum Hydrocarbons (mg/kg)														
Diesel Range	--	--	--	100 (rwqcb)	--		5 F	<11	<12	<12	<12	<12	<12	<12
Motor oils	--	--	--	100 (rwqcb)	--		18.6	<11	<12	<12	<12	<12	3 F	<12

TABLE AOC -061-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 3 of 3)

	BTV			Soil PRG		Reference:	3PDO59
						Location ID:	061-SB05
						Field Sample ID:	061-SB05-SS15.0
						Sample Date:	1/30/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	16.0
Total Petroleum Hydrocarbons (mg/kg)							
Diesel Range	--	--	--	100 (rwqcb)	--		<12
Motor oils	--	--	--	100 (rwqcb)	--		<12

NOTES

DETECTED CHEMICALS IN SOIL AND WATER
VANDENBERG AIR FORCE BASE

BTV Types:
BED = bedrock
GW = groundwater
SA = surface alluvium
SDS = surface dune sand
SSA = subsurface alluvium
SSDS = subsurface dune sand

Units:
mg/kg = milligrams per kilogram
μg/L = micrograms per liter

Abbreviations:
-- = not applicable or not established
AOC = Area of Concern
BTV = background threshold value (Jacobs Engineering Group, Inc., 1994)
(ca) = Cancerous
Cal = California Department of Health Services
MCL = U.S. Environmental Protection Agency (2002) Maximum Contaminant Level
NA = not applicable
ND = Not detected
PRG = U.S. Environmental Protection Agency (2002) Preliminary Remediation Goal
RWQCB = Regional Water Quality Control Board
(sw) = Surface Water
UCL = upper confidence limit

Formatted Chemical Concentrations:
Bold = Detected Result is above the Residential PRG
Underlined = Detected TPH Result is above the RWQCB Standard

Qualifiers:
B = The analyte was found in an associated blank, as well as in the sample.
F = The analyte was positively identified, but the quantitation is below the reporting limit.
J = The associated numerical value is an estimated quantity.
M = A matrix effect was present.
R = The data are unusable due to deficiencies in the ability to analyze the sample and meet quality control criteria.

References:
3PDO59 = Delivery Order 0059 (Montgomery Watson Harza, 2002-2003)
DO7 = Delivery Order 0007 (Montgomery Watson Harza, 1998-1999)
DO32 = Delivery Order 0032 (Montgomery Watson Harza, 1999-2000)
DO60 = Delivery Order 0060 (Montgomery Watson Harza, 2000)
WR09 = Work Request 09 (Tetra Tech, 1997)
WR10 = Work Request 10 (Tetra Tech, 1998)

For AOC-133 Tetra Tech WR09 Soil samples:
1. Tank bottom sample depths are assumed to be the tank burial depth plus 8 feet (diameter of a 10,000-gallon capacity UST).
2. The burial depth of Tanks 11, 13 and 14 is 5.5 feet bgs; Tank 12 was buried at a depth of 2.0 feet bgs
3. Sidewall sample depths are assumed to be collected at a depth of 9 feet bgs, roughly 1 foot above the base of the UST excavation.

AOC-099 EVALUATION SHEET

Final – July 2004

BACKGROUND/HISTORY

Building 8305, a technical support building, is located near Nevada Avenue and 8th Street in an area that is currently used for industrial activities. Building 8305 operations included photographic development and metal working, which requires the use of petroleum-based cutting fluids and solvents. Also associated with the AOC is a paint spray booth; a sandblast shed; a concrete Hazardous Waste Storage Facility containing cutting oils, solvents, and paints; and a former lead weight storage area. An unlined drainage ditch receives surface water runoff from the sandblast shed and the lead weight storage area.

INVESTIGATIONS

Tetra Tech (1998)—Supplemental Site Investigation Work Request 10. Tetra Tech collected eight surface soil samples (VN99S1 through VN99S8) in the vicinity of the lead-weight storage, sandblast shed, and unlined drainage ditch areas. Lead was detected above background threshold values (BTVs) in seven of eight samples. Five of the samples exceeded the 150 milligrams per kilogram (mg/kg) residential preliminary remediation goals (PRGs). The maximum lead concentration detected was 67,100 mg/kg. The second highest lead concentration was 646 mg/kg. Several other metals exceeded BTVs; however, of these only arsenic and cadmium exceeded residential PRGs. No volatile organic compounds (VOCs) other than common lab contaminants were detected.

Montgomery Watson (1999)—Delivery Order 0007. Ten hand auger borings were advanced to depths ranging between 2.5 and 5.0 feet below ground surface (bgs). Samples were collected at 0.0-, and 2.5- and 5-foot depths for metals analysis. Of the 24 samples analyzed, only lead (337 mg/kg) and cadmium (9.89 mg/kg) were detected at concentrations greater than their respective residential PRGs (150 mg/kg lead and 1.7 mg/kg cadmium) in the surface sample collected from 099-SB08. Samples were also analyzed for hexavalent chromium, which was not detected. No groundwater was encountered. Montgomery Watson recommended removal of lead hot spot reported earlier.

Montgomery Watson (2000)—Delivery Order 0032. Montgomery Watson advanced four hand auger borings (020-SB01 through 020-SB03 and 020-SB01A) to depths ranging from 0.5 to 5 feet bgs. Samples were collected at 0.0-, 2.5- and 5-foot depths and were analyzed for VOCs, SVOCs, and TPH-d. Surface samples were also analyzed for PCBs and metals. Concentrations of TPH-d that exceeded RWQCB action levels were encountered in all three borings. Only one surface sample (020-SB01) contained lead at levels (14 mg/kg) that were slightly greater than its BTV. No PCBs were detected and methylene chloride, a common laboratory contaminant was the only VOC detected. The SVOC diethyl phthalate was detected in all nine samples, with concentrations ranging from 0.096 to 1.0 mg/kg, well below its residential soil PRG (49,000 mg/kg). Further investigation to assess the lateral and vertical extent of TPH-d impact and limited remedial excavation were recommended.

Montgomery Watson (2001)—Delivery Order 0060. In May 2000, Montgomery Watson excavated approximately 0.3 cubic yards of soil containing elevated levels of lead (67,100 mg/kg) discovered during prior investigation by Tetra Tech. Confirmation sample results indicate that the elevated lead concentrations at this location were successfully removed. Montgomery Watson also conducted an evaluation of remedial alternatives for AOC-099. The objective of the analysis was to eliminate human exposure to lead concentrations greater than the 150 mg/kg residential soil PRG. An analysis of remedial alternatives was conducted for AOC-099. The alternatives considered included no further action with institutional controls, "hot-spot" excavation and disposal, and surface capping. Based on a review of these alternatives, hot-spot excavation and disposal was recommended. In addition, to enhance future facility surface operation, it was also recommended that a portion of the exposed soil area be graded to drain surface water to an existing storm drain system.

MWH (2003)—Delivery Order 0059. In accordance with the Work Plan, MWH conducted a remedial excavation of six previously defined hot spots (VN99S2, VN99S5, VN99S6, 099-SB04, 099-SB07 and 099-SB08) (Figure AOC-099) that contained either arsenic at levels greater than BTVs, and/or lead or cadmium above residential soil PRGs. Five of the six areas were excavated to a depth of 1 foot bgs and the sixth area to a depth of 2 feet bgs. Three confirmation samples were collected from the bottom of each remedial excavation (099-SC01 through 099-SC18) and analyzed for total metals. Of the 18 samples collected, only three confirmation samples (099-SC04, 099-SC05 and 099-SC12) collected from two separate areas contained concentrations of arsenic above BTVs (5.9 to 6.2 mg/kg) or cadmium (3.3 mg/kg) above residential soil PRGs. These areas were overexcavated to a depth of 3 feet bgs and resampled (099-SC19-SS3.0 and 099-SC20-SS3.0). Analytical results of these samples confirmed the successful removal of impacted soils.

Approximately 73 tons of impacted soils were excavated from the six hot spots. Two soil stockpile samples (099-SP01 and 099-SP02) were collected for waste disposal profiling purposes. The stockpile samples were analyzed for all total petroleum hydrocarbon fractions (gasoline, diesel, and motor oil), VOCs, SVOCs, and pH. Analytical results of one of the stockpile samples (099-SP01) contained an elevated concentration of lead (213 mg/kg). The sample was analyzed for the Toxicity Characteristic Leaching Procedure (TCLP) for lead to determine the appropriate waste classification. The analytical result of the TCLP was 0.339 milligrams per liter (mg/L), which is well below the 5-mg/L lead concentration used for characterizing a waste as being hazardous. The soil stockpile was transported and disposed of at the Chemical Waste Management Class II facility in Kettleman City, California.

In addition to the excavation and removal of impacted soils associated with the selected hot spots, the unpaved area was graded and later paved with asphalt. The unlined drainage ditch was excavated, graded, and lined with concrete to drain any future surface water to an existing storm drain system.

NATURE AND EXTENT OF CONTAMINATION

Lead and other metals were detected above background threshold values (BTVs) in the surface and near surface soil throughout AOC-099. Of these, only six locations indicated concentrations greater than residential PRGs (arsenic, cadmium and lead). The highest remaining concentrations were located in the sand blast area and the unlined drainage ditch to the south of the compound. Metals above residential PRGs have been detected in surface samples only. Remedial excavation of the six target areas was conducted. All soil containing metals concentrations greater than residential soil PRGs, or in the case of arsenic, all soil containing concentrations greater than BTVs, were removed. Confirmation sampling results indicate that there are no concentrations of metals in soil at AOC-099 that exceed residential soil PRGs or the arsenic BTV.

HUMAN HEALTH AND ECOLOGICAL RISK SCREENING

Human health and ecological risks were evaluated using organic and inorganic compounds (see Appendix A for tabulated results). Assuming a residential use scenario, the total excess cancer risk at AOC-099 prior to remedial excavation exceeded the acceptable threshold level of 1.0×10^{-6}, which was driven by arsenic and cadmium. Although the PRG for arsenic is 0.39 mg/kg, the BTV, or background level, for arsenic in subsurface alluvium is 5 mg/kg. By successfully removing soil containing arsenic levels greater than its BTV and cadmium at levels above residential soil PRGs, the resultant cancer risk has been reduced to 1.4×10^{-7}.

Assuming a residential use scenario, the total excess non-cancer risk, or hazard index (HI), at AOC-099 prior to remedial excavation was 450. This value was driven by the concentration of lead in soil, which accounted for 99.67 percent of the total HI. The successful removal of lead levels that exceeded

residential soil PRGs reduced the HI to 1.7, which is slightly greater than the acceptable threshold level of 1.0. The remaining HI value is principally driven by concentrations of iron (53.5% of HI) and residual lead (31.89% of HI), both of which are below their respective residential soil PRGs. These data suggest that the remaining concentrations of metals in soil at AOC-099 do not pose a significant hazard.

Ecological risk was screened for the area by evaluating the potential presence of habitat at the site and surface and subsurface soil. AOC-099 lies within the cantonment area and consists of paved and unpaved areas, a large building, and offers little undisturbed habitat. Therefore, no significant completed exposure pathway exists for chemicals in surface or shallow subsurface soil. Because there are no sources of naturally occurring groundwater beneath AOC-099, the groundwater pathway is incomplete. The immediate area of the contamination lacks significant habitat, and ecological receptors are unlikely to contact contaminants at the site. Therefore, ecological risks at AOC-099 are expected to be insignificant.

RECOMMENDATION

Remedial excavation of "hot spots" identified in the vicinity of the former lead alloy storage/sand blast area and the unlined drainage ditch has removed metal-impacted (arsenic, cadmium and lead) soil that exceeded residential soil PRGs, and in most cases, their BTVs. In addition, the unlined drainage ditch was graded and lined with concrete to divert any future stormwater runoff away from the site. Therefore, AOC-099 is recommended for closure under the AOC Program.

ATTACHMENTS

Figure AOC-099-Detected Chemicals of Concern
Table AOC-099-Soil
Appendix A: AOC-099 Cumulative Human Health Risk and Hazard Calculations

MWH

UNITED STATES AIR FORCE
VANDENBERG AIR FORCE BASE

AOC-099
DETECTED CHEMICALS OF CONCERN

FIGURE AOC-099

NEVADA AVENUE

8305

099-SB09

☆ 099-SC02

Lined Drainage Ditch

099-SB05

VN99S8

099-SB01

099-SB02

099-EX01

Outfall

Graded and Paved Area

099-SC01	mg/kg	BTV or PRG
1.0 ft bgs		
Antimony (Total)	0.56	31 (prg)

099-SB08	mg/kg	BTV or PRG
0.0 ft bgs EXCAVATED		
Antimony (Total)	0 961	31 (prg)
Barium (Total)	359	5400 (prg)
Cadmium (Total)	9 89	1.7 (prg)
Chromium (Total)	193	210 (prg)
Copper (Total)	57.1	3100 (prg)
Lead (Total)	337	150 (prg)
Nickel (Total)	18.1	1600 (prg)
Thallium (Total)	0 424	5.2 (prg)
Zinc (Total)	546	23000 (prg)

099-SC04	mg/kg	BTV or PRG
1.0 ft bgs EXCAVATED		
Cadmium (Total)	3 3	1.7 (prg)
Lead (Total)	10.5	150 (prg)

099-SC19	mg/kg	BTV or PRG
3.0 ft bgs		
Antimony (Total)	1.6	31 (prg)
Selenium (Total)	0.95	390 (prg)

099-SC06	mg/kg	BTV or PRG
1.0 ft bgs		
Antimony (Total)	0 78	31 (prg)
Lead (Total)	23	150 (prg)
Zinc (Total)	366	23000 (prg)

VN99S5	mg/kg	BTV or PRG
0.0 ft bgs EXCAVATED		
Cadmium (Total)	7.8	1.7 (prg)
Calcium (Total)	5120	No limit established
Chromium (Total)	78.4	210 (prg)
Lead (Total)	239	150 (prg)
Mercury (Total)	0 4	23 (prg)
Nickel (Total)	19.9	1600 (prg)
Zinc (Total)	571	23000 (prg)

099-SC09	mg/kg	BTV or PRG
1.0 ft bgs		
Antimony (Total)	0.77	31 (prg)

099-SC03	mg/kg	BTV or PRG
1.0 ft bgs		
Antimony (dup,Total)	0.6	31 (prg)
Antimony (Total)	0 67	31 (prg)
Lead (dup,Total)	26	150 (prg)

099-SB10	mg/kg	BTV or PRG
2 0 ft bgs		
Lead (Total)	82.2	150 (prg)

099-SC07	mg/kg	BTV or PRG
1.0 ft bgs		
Antimony (Total)	1.3	31 (prg)

099-SB03	mg/kg	BTV or PRG
2 0 ft bgs		
Lead (Total)	12 5	150 (prg)
5 0 ft bgs		
Lead (Total)	55.3	150 (prg)
Zinc (Total)	374	23000 (prg)

099-SC10	mg/kg	BTV or PRG
1.0 ft bgs		
Antimony (Total)	1.1	31 (prg)

VN99S6	mg/kg	BTV or PRG
0.0 ft bgs EXCAVATED		
Arsenic (Total)	2.4	2 (btv)
Cadmium (Total)	4	1.7 (prg)
Calcium (Total)	9310	No limit established
Chromium (Total)	53.2	210 (prg)
Cobalt (Total)	4.7	900 (prg)
Lead (Total)	190	150 (prg)
Magnesium (Total)	4150	No limit established
Nickel (Total)	20 3	1600 (prg)
Selenium (Total)	0 8	390 (prg)
Vanadium (Total)	27.1	550 (prg)
Zinc (Total)	675	23000 (prg)

099-SB07	mg/kg	BTV or PRG
0.0 ft bgs EXCAVATED		
Antimony (Total)	0.659	31 (prg)
Cadmium (Total)	3.75	1.7 (prg)
Chromium (Total)	57.1	210 (prg)
Lead (Total)	121	150 (prg)
Mercury (Total)	0 305	23 (prg)
Zinc (Total)	379	23000 (prg)
2.0 ft bgs		
Barium (Total)	266	5400 (prg)

099-SB06	mg/kg	BTV or PRG
5 0 ft bgs		
Lead (Total)	81.8	150 (prg)

099-SC16	mg/kg	BTV or PRG
2.0 ft bgs		
Antimony (Total)	0.68	31 (prg)

099-SC05	mg/kg	BTV or PRG
1.0 ft bgs EXCAVATED		
Arsenic (Total)	5 9	5 (btv)
Lead (Total)	10.6	150 (prg)

099-SC08	mg/kg	BTV or PRG
1.0 ft bgs		
Antimony (Total)	0.69	31 (prg)

099-SC11	mg/kg	BTV or PRG
1.0 ft bgs		
Antimony (dup,Total)	0.97	31 (prg)
Antimony (Total)	0.67	31 (prg)

099-SC13	mg/kg	BTV or PRG
1.0 ft bgs		
Antimony (Total)	0.6	31 (prg)

099-SC12	mg/kg	BTV or PRG
1.0 ft bgs EXCAVATED		
Antimony (Total)	0.98	31 (prg)
Arsenic (Total)	6.2	5 (btv)

099-SC20	mg/kg	BTV or PRG
3.0 ft bgs		
Antimony (Total)	1 4	31 (prg)
Lead (Total)	10.1	150 (prg)
Selenium (Total)	0.76	390 (prg)

099-SC14	mg/kg	BTV or PRG
1.0 ft bgs		
Antimony (Total)	1 2	31 (prg)
Lead (Total)	26.3	150 (prg)

099-SB04	mg/kg	BTV or PRG
0.0 ft bgs		
Arsenic (Total)	2 1	2 (btv)
Lead (Total)	22.5	150 (prg)
Zinc (Total)	428	23000 (prg)
2.0 ft bgs		
Antimony (Total)	0.748	31 (prg)

099-SC17	mg/kg	BTV or PRG
2.0 ft bgs		
Antimony (Total)	0.57	31 (prg)

VN99S2	mg/kg	BTV or PRG
0 0 ft bgs EXCAVATED		
Lead (Total)	285	150 (prg)

VN99S4	mg/kg	BTV or PRG
0 0 ft bgs EXCAVATED		
Lead (Total)	67100	150 (prg)

099-SC18	mg/kg	BTV or PRG
2.0 ft bgs		
Antimony (Total)	0.64	31 (prg)

VN99S3	mg/kg	BTV or PRG
0 0 ft bgs EXCAVATED		
Lead (Total)	646	150 (prg)

VN99S1	mg/kg	BTV or PRG
0 0 ft bgs EXCAVATED		
Lead (Total)	130	150 (prg)

099-SC15	mg/kg	BTV or PRG
1.0 ft bgs		
Antimony (Total)	1	31 (prg)
Lead (Total)	18.7	150 (prg)
Zinc (Total)	251	23000 (prg)

VN99S7	mg/kg	BTV or PRG
0.0 ft bgs		
Aluminum (Total)	9730	76000 (prg)
Chromium (Total)	28.8	210 (prg)
Iron (Total)	21200	23000 (prg)
Lead (Total)	6 9	150 (prg)
Vanadium (Total)	29.5	550 (prg)

LEGEND

- ☆ Soil or Excavation Confirmation Sample (MWH, DO 59)
- ⊛ Excavation Confirmation Sample (Montgomery Watson, DO 60)
- ⊕ Soil Boring (Montgomery Watson, DO 7)
- △ Surface Soil Sample (Tetra Tech, Work Request 10)
- Approximate Limits of Excavation
- Approximate Limits of Excavation (3 ft. Depth)
- Graded and Paved Area
- Lined Drainage Ditch
- Building
- Driveway
- Street
- Fence

Sample depths in ft. below ground surface

N

30 0 30 Feet

SCALE
1" = 30'

h:\arcgis\vandenberg\do59

Update: 10-23-03

TABLE AOC -099-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 1 of 7)

		BTV		Soil PRG		Reference:	TetraTech WR10	TetraTech WR10	TetraTech WR10	TetraTech WR10	TetraTech WR10	TetraTech WR10	TetraTech WR10
						Location ID:	VN99S1	VN99S2	VN99S3	VN99S4	VN99S5	VN99S6	VN99S7
						Field Sample ID:	VN99S1	VN99S2	VN99S3	VN99S4	VN99S5	VN99S6	VN99S7
						Sample Date:	3/12/1997	3/12/1997	3/12/1997	3/12/1997	3/12/1997	3/12/1997	3/12/1997
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Metals (mg/kg)													
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA	5170	6820	9730
Aluminum	SSA	24700	44300	76000	100000		NA	NA	NA	NA	NA	NA	NA
Antimony	SDS	0.3	0.3	31	410		NA	NA	NA	NA	<10	<10	<10
Antimony	SSA	0.4	0.4	31	410		NA	NA	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	**1.5 FJ**	**2.4 F**	**1.6 FJ**
Arsenic	SSA	5	5	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA	69.7	78.9	16.3 FJ
Barium	SSA	215	457	5400	67000		NA	NA	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA	<0.2	<0.2	0.3
Beryllium	SSA	0.8	0.8	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Boron	SSA	16	16	16000	100000		NA	NA	NA	NA	NA	NA	NA
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	**7.8**	**4**	<1
Cadmium	SSA	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	5120	9310	2460
Chromium, hexavalent	--	--	--	30 (ca)	64 (ca)		NA	NA	NA	NA	0.04 FJ	0.05 J	<0.2 J
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA	78.4	53.2	28.8
Chromium	SSA	63	110	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA	2.48 FJ	4.7 FJ	1.44 FJ
Cobalt	SSA	6	6	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA	37.2	36.6	5.5
Copper	SSA	127	298	3100	41000		NA	NA	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA	8960	10600	21200
Iron	SSA	35800	67600	23000	100000		NA	NA	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		130	**285**	**646**	**67100**	**239**	**190**	6.9
Lead	SSA	10	16	150	750		NA	NA	NA	NA	NA	NA	NA
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	2080	4150	1420
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA	88.1	205	56
Manganese	SSA	233	554	1800	19000		NA	NA	NA	NA	NA	NA	NA
Mercury	SDS	0.2	0.2	23	310		NA	NA	NA	NA	0.4	0.1	<0.1
Mercury	SSA	1	1	23	310		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA	3.25 FJ	2.4 FJ	<40
Molybdenum	SSA	3	3	390	5100		NA	NA	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA	19.9	20.3	6.41 FJ
Nickel	SSA	86	224	1600	20000		NA	NA	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	630 FJ	656 FJ	411 FJ
Selenium	SDS	0.1	0.1	390	5100		NA	NA	NA	NA	<1	0.8 FJ	<1
Selenium	SSA	0.5	0.5	390	5100		NA	NA	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	535 FBJ	502 FBJ	614 FBJ
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA	<2	<2	<2
Thallium	SSA	0.7	0.7	5.2	67		NA	NA	NA	NA	NA	NA	NA
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA	17.6	27.1	29.5
Vanadium	SSA	63	109	550	7200		NA	NA	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA	571	675	46.8
Zinc	SSA	221	488	23000	100000		NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (mg/kg)													
Acetone	--	--	--	1600	6000		NA	NA	NA	NA	0.018 FB	0.012 FB	0.01 FBJ

TABLE AOC -099-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
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		BTV		Soil PRG		Reference:	TetraTech WR10	DO7	DO7	DO7	DO7	DO7	DO7	DO7
						Location ID:	VN99S8	099-SB01	099-SB01	099-SB02	099-SB02	099-SB03	099-SB03	099-SB04
						Field Sample ID:	VN99S8	099-SB01-SS0.0	099-SB01-SS2	099-SB02-SS0	099-SB02-SS2	099-SB03-SS2	099-SB03-SS5	099-SB04-SS0
						Sample Date:	3/12/1997	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	0.0	0.0	2.0	0.0	2.0	2.0	5.0	0.0
Total Metals (mg/kg)														
Aluminum	SDS	7010	10600	76000	100000		4540	3230	NA	5060	NA	NA	NA	1880
Aluminum	SSA	24700	44300	76000	100000		NA	NA	7200	NA	4530	7860	15700	NA
Antimony	SDS	0.3	0.3	31	410		<10	<0.531	NA	<0.51	NA	NA	NA	<0.508
Antimony	SSA	0.4	0.4	31	410		NA	NA	<0.506	NA	<0.514	<0.606	<0.592	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		1.1 FJ	<1.06	NA	1.09	NA	NA	NA	2.1
Arsenic	SSA	5	5	0.39 (ca)	1.6 (ca)		NA	NA	2.2	NA	1.95	1.94	<1.18	NA
Barium	SDS	98	172	5400	67000		14.8 FJ	11.1	NA	19.5	NA	NA	NA	20.5
Barium	SSA	215	457	5400	67000		NA	NA	9.33	NA	9.83	6.33	22.2	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		<0.2	<1.06	NA	<1.02	NA	NA	NA	<1.02
Beryllium	SSA	0.8	0.8	150	1900 (ca)		NA	NA	<1.01	NA	<1.03	<1.21	<1.18	NA
Boron	SSA	16	16	16000	100000		NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		<1	<1.06	NA	<1.02	NA	NA	NA	<1.02
Cadmium	SSA	2	2	1.7 (ca)	7.4 (ca)		NA	NA	<1.01	NA	<1.03	<1.21	1.62	NA
Calcium	SDS	3350	6030	--	--		682 FJ	NA	NA	NA	NA	NA	NA	NA
Chromium, hexavalent	--	--	--	30 (ca)	64 (ca)		<0.2 J	<0.43	<0.4	<0.41	<0.41	<0.48	<0.47	<0.41
Chromium	SDS	28	47	210 (ca)	450 (ca)		8.98	7.03 J	NA	6.08 J	NA	NA	NA	10.4 J
Chromium	SSA	63	110	210 (ca)	450 (ca)		NA	NA	6.8 J	NA	8.58 J	16.7 J	25.9 J	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		1.27 FJ	<2.13	NA	<2.04	NA	NA	NA	<2.03
Cobalt	SSA	6	6	900 (ca)	1900 (ca)		NA	NA	<2.02	NA	<2.06	<2.42	<2.37	NA
Copper	SDS	46	92	3100	41000		2.9 FJ	4.1	NA	5.44	NA	NA	NA	5.41
Copper	SSA	127	298	3100	41000		NA	NA	4.14	NA	3.31	8.38	16.3	NA
Iron	SDS	13500	20700	23000	100000		4740	4190	NA	5500	NA	NA	NA	6090
Iron	SSA	35800	67600	23000	100000		NA	NA	8870	NA	6590	5440	12400	NA
Lead	SDS	4	6	150	750		3.2	<10.6	NA	<10.2	NA	NA	NA	22.5
Lead	SSA	10	16	150	750		NA	NA	<10.1	NA	<10.3	12.5	55.3	NA
Magnesium	SDS	3900	3900	--	--		543 FJ	NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		42.6	23	NA	28.1	NA	NA	NA	64.9
Manganese	SSA	233	554	1800	19000		NA	NA	5.39	NA	13	6.82	31.3	NA
Mercury	SDS	0.2	0.2	23	310		<0.1	<0.11	NA	<0.1	NA	NA	NA	<0.1
Mercury	SSA	1	1	23	310		NA	NA	<0.1	NA	<0.1	<0.12	<0.12	NA
Molybdenum	SDS	4	4	390	5100		<40	<10.6	NA	<10.2	NA	NA	NA	<10.2
Molybdenum	SSA	3	3	390	5100		NA	NA	<10.1	NA	<10.3	<12.1	<11.8	NA
Nickel	SDS	13	21	1600	20000		4.99 FJ	<5.31	NA	<5.1	NA	NA	NA	<5.08
Nickel	SSA	86	224	1600	20000		NA	NA	<5.06	NA	<5.14	<6.06	7.95	NA
Potassium	SDS	1010	1400	--	--		505 FJ	NA	NA	NA	NA	NA	NA	NA
Selenium	SDS	0.1	0.1	390	5100		<1	<1.06	NA	<1.02	NA	NA	NA	<1.02
Selenium	SSA	0.5	0.5	390	5100		NA	NA	<1.01	NA	<1.03	<1.21	<1.18	NA
Sodium	SDS	453	767	--	--		340 FBJ	NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		<2	<0.213	NA	<0.204	NA	NA	NA	0.274
Thallium	SSA	0.7	0.7	5.2	67		NA	NA	<0.202	NA	<0.206	0.291	0.343	NA
Vanadium	SDS	25	37	550	7200		11.9	10.3 J	NA	14.1 J	NA	NA	NA	8.81 J
Vanadium	SSA	63	109	550	7200		NA	NA	18.6 J	NA	17.1 J	11.2 J	24.3 J	NA
Zinc	SDS	107	214	23000	100000		7.7	8.83	NA	7.07	NA	NA	NA	428
Zinc	SSA	221	488	23000	100000		NA	NA	2.78	NA	4.62	33	374	NA
Volatile Organic Compounds (mg/kg)														
Acetone	--	--	--	1600	6000		0.01 FBJ	NA	NA	NA	NA	NA	NA	NA

FINAL

TABLE AOC -099-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
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	BTV			Soil PRG		Reference:	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7
						Location ID:	099-SB04	099-SB05	099-SB05	099-SB05	099-SB06	099-SB06	099-SB07	099-SB07
						Field Sample ID:	099-SB04-SS2	099-SB05-SS0	099-SB05-SS2	099-SB99-SS101	099-SB06-SS2	099-SB06-SS5	099-SB07-SS0	099-SB07-SS2
						Sample Date:	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	2.0	0.0	2.0	2.0	2.0	5.0	0.0	2.0
Total Metals (mg/kg)														
Aluminum	SDS	7010	10600	76000	100000		NA	2850	NA	NA	NA	NA	3250 J	NA
Aluminum	SSA	24700	44300	76000	100000		12700	NA	2360	3460	5050	6800	NA	6710
Antimony	SDS	0.3	0.3	31	410		NA	<0.524	NA	NA	NA	NA	0.659 J	NA
Antimony	SSA	0.4	0.4	31	410		0.748	NA	<0.509	<0.511	<0.552	<0.566	NA	<0.587
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	<1.05	NA	NA	NA	NA	<1.13	NA
Arsenic	SSA	5	5	0.39 (ca)	1.6 (ca)		<1.15	NA	1.1	<1.02	1.2	1.43	NA	3.05
Barium	SDS	98	172	5400	67000		NA	12.9	NA	NA	NA	NA	91.7	NA
Barium	SSA	215	457	5400	67000		6.16	NA	6.21	9.14	8.16	7.42	NA	266
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	<1.05	NA	NA	NA	NA	<1.13	NA
Beryllium	SSA	0.8	0.8	150	1900 (ca)		<1.15	NA	<1.02	<1.02	<1.1	<1.13	NA	<1.17
Boron	SSA	16	16	16000	100000		NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	SDS	-	-	1.7 (ca)	7.4 (ca)		NA	<1.05	NA	NA	NA	NA	3.75	NA
Cadmium	SSA	2	2	1.7 (ca)	7.4 (ca)		<1.15	NA	<1.02	<1.02	<1.1	<1.13	NA	<1.17
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Chromium, hexavalent	--	--	--	30 (ca)	64 (ca)		<0.46	<0.42	<0.41	<0.41	<0.44	<0.45	<0.45	<0.47
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	6.22 J	NA	NA	NA	NA	57.1 J	NA
Chromium	SSA	63	110	210 (ca)	450 (ca)		15 J	NA	4.69 J	6.05 J	8.27 J	17.3 J	NA	28 J
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	<2.1	NA	NA	NA	NA	<2.25	NA
Cobalt	SSA	6	6	900 (ca)	1900 (ca)		<2.3	NA	<2.04	<2.04	<2.21	<2.27	NA	<2.35
Copper	SDS	46	92	3100	41000		NA	3.56	NA	NA	NA	NA	25.1	NA
Copper	SSA	127	298	3100	41000		6.91	NA	<2.04	3.34	3.1	5.69	NA	5.79
Iron	SDS	13500	20700	23000	100000		NA	3530	NA	NA	NA	NA	5520	NA
Iron	SSA	35800	67600	23000	100000		6910	NA	3280	3820	4430	6180	NA	5920
Lead	SDS	4	6	150	750		NA	<10.5	NA	NA	NA	NA	121	NA
Lead	SSA	10	16	150	750		<11.5	NA	<10.2	<10.2	<11	81.8	NA	<11.7
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	35.9	NA	NA	NA	NA	109.J	NA
Manganese	SSA	233	554	1800	19000		7.29	NA	7.57	18.2	11.2	11	NA	3.13
Mercury	SDS	0.2	0.2	23	310		NA	<0.1	NA	NA	NA	NA	0.305	NA
Mercury	SSA	-	-	23	310		<0.12	NA	<0.1	<0.1	<0.11	<0.11	NA	<0.12
Molybdenum	SDS	4	4	390	5100		NA	<10.5	NA	NA	NA	NA	<11.3	NA
Molybdenum	SSA	3	3	390	5100		<11.5	NA	<10.2	<10.2	<11	<11.3	NA	<11.7
Nickel	SDS	13	21	1600	20000		NA	<5.24	NA	NA	NA	NA	9.61	NA
Nickel	SSA	86	224	1600	20000		<5.76	NA	<5.09	<5.11	<5.52	<5.66	NA	<5.87
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Selenium	SDS	0.1	0.1	390	5100		NA	<1.05	NA	NA	NA	NA	<1.13	NA
Selenium	SSA	0.5	0.5	390	5100		<1.15	NA	<1.02	<1.02	<1.1	<1.13	NA	<1.17
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	<0.21	NA	NA	NA	NA	<0.225	NA
Thallium	SSA	0.7	0.7	5.2	67		<0.23	NA	<0.204	<0.204	<0.221	<0.227	NA	0.434
Vanadium	SDS	25	37	550	7200		NA	10 J	NA	NA	NA	NA	12.1 J	NA
Vanadium	SSA	63	109	550	7200		14.6 J	NA	8.82 J	10.4 J	9.89 J	17.8 J	NA	17 J
Zinc	SDS	107	214	23000	100000		NA	84.9	NA	NA	NA	NA	379 J	NA
Zinc	SSA	221	488	23000	100000		4.57	NA	5.12	17.6	13	48.1	NA	3.59
Volatile Organic Compounds (mg/kg)														
Acetone	--	--	--	1600	6000		NA	NA	NA	NA	NA	NA	NA	NA

TABLE AOC -099-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
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		BTV		Soil PRG		Reference:	DO7	DO7	DO7	DO7	DO7	DO60	3PDO59	3PDO59
						Location ID:	099-SB08	099-SB08	099-SB09	099-SB09	099-SB10	099-EX01	099-SC01	099-SC02
						Field Sample ID:	099-SB08-SS0	099-SB08-SS2	099-SB09-0.5	099-SB09-2.0	099-SB10-SS2	099-EX01-SS2.0	099-SC01-SS1.0	099-SC02-SS1.0
						Sample Date:	11/21/1998	11/21/1998	2/18/1999	2/18/1999	11/21/1998	5/15/2000	8/4/2003	8/4/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	0.0	2.0	0.5	2.0	2.0	2.0	1.0	1.0
Total Metals (mg/kg)														
Aluminum	SDS	7010	10600	76000	100000		2490	NA	NA	NA	NA	NA	NA	NA
Aluminum	SSA	24700	44300	76000	100000		NA	10000	14300	9370	7450	2560	2010 J	1440 J
Antimony	SDS	0.3	0.3	31	410		0.961	NA	NA	NA	NA	NA	NA	NA
Antimony	SSA	0.4	0.4	31	410		NA	<0.591	<0.62	<0.602	<0.597	<0.542	0.56 F	<41
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		**1.85**	NA	NA	NA	NA	NA	NA	NA
Arsenic	SSA	5	5	0.39 (ca)	1.6 (ca)		NA	**2.06**	**2.99**	**1.92**	**1.73**	**1.07 FJ**	**1.3 F**	**0.99 F**
Barium	SDS	98	172	5400	67000		359	NA	NA	NA	NA	NA	NA	NA
Barium	SSA	215	457	5400	67000		NA	27.4	8.24	5.24	62.8	9.25	6.2 J	7 J
Beryllium	SDS	0.7	0.7	150	1900 (ca)		<1.12	NA	NA	NA	NA	NA	NA	NA
Beryllium	SSA	0.8	0.8	150	1900 (ca)		NA	<1.18	<1.24	<1.2	<1.19	0.106 FJ	0.025 F	<4.1
Boron	SSA	16	16	16000	100000		NA	NA	NA	NA	NA	NA	2.6 F	2.1 F
Cadmium	SDS	-	-	1.7 (ca)	7.4 (ca)		**9.89**	NA	NA	NA	NA	NA	NA	NA
Cadmium	SSA	2	2	1.7 (ca)	7.4 (ca)		NA	<1.18	<1.24	<1.2	<1.19	<1.08	<2	<2
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Chromium, hexavalent	--	--	--	30 (ca)	64 (ca)		<0.45	<0.47	<0.5	<0.48	<0.48	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		193 J	NA	NA	NA	NA	NA	NA	NA
Chromium	SSA	63	110	210 (ca)	450 (ca)		NA	17.1 J	19.8	23.9	24.6 J	4.34 J	4.3 J	3.3 J
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		<2.23	NA	NA	NA	NA	NA	NA	NA
Cobalt	SSA	6	6	900 (ca)	1900 (ca)		NA	<2.36	<2.48	<2.41	<2.39	1.04 FJ	1.8 F	0.55 F
Copper	SDS	46	92	3100	41000		57.1	NA	NA	NA	NA	NA	NA	NA
Copper	SSA	127	298	3100	41000		NA	8.51	12.2	11.2	10.7	2.91	0.92 F	0.51 F
Iron	SDS	13500	20700	23000	100000		9260	NA	NA	NA	NA	NA	NA	NA
Iron	SSA	35800	67600	23000	100000		NA	8750	12400	19300	6480	3600 J	4000 J	2910 J
Lead	SDS	4	6	150	750		**337**	NA	NA	NA	NA	NA	NA	NA
Lead	SSA	10	16	150	750		NA	<11.8	<12.4	<12	82.2	4.63 FJ	2.9 F	2.4 F
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		132	NA	NA	NA	NA	NA	NA	NA
Manganese	SSA	233	554	1800	19000		NA	5.88	7.84	3.74	19.7	11.2 J	18.8 J	4 J
Mercury	SDS	0.2	0.2	23	310		<0.11	NA	NA	NA	NA	NA	NA	NA
Mercury	SSA	-	-	23	310		NA	<0.12	<0.124	<0.12	<0.12	<0.108	NA	NA
Molybdenum	SDS	4	4	390	5100		<11.2	NA	NA	NA	NA	NA	NA	NA
Molybdenum	SSA	3	3	390	5100		NA	<11.8	<12.4	<12	<11.9	<0.964	0.34 F	0.24 F
Nickel	SDS	13	21	1600	20000		18.1	NA	NA	NA	NA	NA	NA	NA
Nickel	SSA	86	224	1600	20000		NA	<5.91	<6.2	<6.02	<5.97	1.07 FJ	1.8 F	1.1 F
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Selenium	SDS	0.1	0.1	390	5100		<1.12	NA	NA	NA	NA	NA	NA	NA
Selenium	SSA	0.5	0.5	390	5100		NA	<1.18	<0.671	<0.602	<1.19	<1.08	<12	<12
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		0.424	NA	NA	NA	NA	NA	NA	NA
Thallium	SSA	0.7	0.7	5.2	67		NA	0.461	<1.24	<1.2	0.311	0.207 FJ	<25	<24
Vanadium	SDS	25	37	550	7200		16.6 J	NA	NA	NA	NA	NA	NA	NA
Vanadium	SSA	63	109	550	7200		NA	21.8 J	27.2	16.4	14.5 J	10.3 J	10.6 J	8.9 J
Zinc	SDS	107	214	23000	100000		546	NA	NA	NA	NA	NA	NA	NA
Zinc	SSA	221	488	23000	100000		NA	51.4	42.1	5.3	88.2	4.41 J	2.7 M	2.8 M
Volatile Organic Compounds (mg/kg)														
Acetone	--	--	--	1600	6000		NA	NA	NA	NA	NA	NA	NA	NA

TABLE AOC -099-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 5 of 7)

		BTV		Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	099-SC03	099-SC03	099-SC04	099-SC05	099-SC06	099-SC07	099-SC08	099-SC09
						Field Sample ID:	099-SC03-SS1.0	099-SC97-SS1.0	099-SC04-SS1.0	099-SC05-SS1.0	099-SC06-SS1.0	099-SC07-SS1.0	099-SC08-SS1.0	099-SC09-SS1.0
						Sample Date:	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Metals (mg/kg)														
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	SSA	24700	44300	76000	100000		1480 J	7030 J	8360 J	10500 J	12800 J	4160 J	2940 J	3440 J
Antimony	SDS	0.3	0.3	31	410		NA	NA	NA	NA	NA	NA	NA	NA
Antimony	SSA	0.4	0.4	31	410		0.67 F	0.6 F	<45	<46	0.78 F	1.3 F	0.69 F	0.77 F
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	SSA	5	5	0.39 (ca)	1.6 (ca)		**1.1 F**	**2.5 F**	**0.71 F**	**5.9 F**	**2.1 F**	**2.4 F**	**1.1 F**	**0.7 F**
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA	NA	NA	NA	NA
Barium	SSA	215	457	5400	67000		5 J	14.1 J	8.5 J	9.8 J	13.2 J	15.4 J	9.4 J	13.1 J
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	SSA	0.8	0.8	150	1900 (ca)		<4.1	0.13 F	0.092 F	0.16 F	0.13 F	0.086 F	0.12 F	0.1 F
Boron	SSA	16	16	16000	100000		<5.1	2.8 F	2.9 F	3.1 F	3.5 F	3.7 F	<5.5	<5.3
Cadmium	SDS	-	-	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	SSA	2	2	1.7 (ca)	7.4 (ca)		<2	**1.8 F**	**3.3**	1.5 F	0.86 F	<2.2	0.11 F	<2.1
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Chromium, hexavalent	--	--	--	30 (ca)	64 (ca)		NA	NA	NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA	NA
Chromium	SSA	63	110	210 (ca)	450 (ca)		3.3 J	17.6 J	17.4 J	18.9 J	23.5 J	9.6 J	5.1 J	5.6 J
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	SSA	6	6	900 (ca)	1900 (ca)		2.2 F	1.1 F	0.81 F	1.3 F	1.4 F	1.8 F	1.4 F	1.1 F
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA	NA	NA	NA	NA
Copper	SSA	127	298	3100	41000		0.65 F	9.6	10.7	9.7	8.1 F	9.8	1.5 F	1.7 F
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA	NA	NA	NA	NA
Iron	SSA	35800	67600	23000	100000		3560 J	9000 J	8080 J	21900 J	17400 J	9100 J	3690 J	4340 J
Lead	SDS	4	6	150	750		NA	NA	NA	NA	NA	NA	NA	NA
Lead	SSA	10	16	150	750		2.3 F	26	10.5 F	10.6 F	23	7.2 F	9.1 F	4.8 F
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA	NA	NA	NA	NA
Manganese	SSA	233	554	1800	19000		43.5 J	8.3 J	6.4 J	6.1 J	20.7 J	33.9 J	10 J	28.9 J
Mercury	SDS	0.2	0.2	23	310		NA	NA	NA	NA	NA	NA	NA	NA
Mercury	SSA	-	-	23	310		NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum	SSA	3	3	390	5100		0.37 F	0.61 F	-	<0.93	0.71 F	0.81 F	0.28 F	0.22 F
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA	NA	NA	NA	NA
Nickel	SSA	86	224	1600	20000		1.3 F	4.5 F	3.4 F	4.6 F	5.3 F	7 F	2.3 F	3.7 F
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Selenium	SDS	0.1	0.1	390	5100		NA	NA	NA	NA	NA	NA	NA	NA
Selenium	SSA	0.5	0.5	390	5100		<12	<14	<13	<14	<14	<13	<13	<13
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA	NA	NA	NA	NA
Thallium	SSA	0.7	0.7	5.2	67		<24	<28	<27	<28	<28	<27	<26	<26
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	SSA	63	109	550	7200		9.9 J	18.1 J	18.7 J	33.5 J	26.8 J	13.5 J	9.9 J	10.4 J
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA	NA	NA	NA	NA
Zinc	SSA	221	488	23000	100000		2.3 M	130 M	101 M	134 M	366 M	26.9 M	23.8 M	18.7 M
Volatile Organic Compounds (mg/kg)														
Acetone	--	--	--	1600	6000		NA	NA	NA	NA	NA	NA	NA	NA

FINAL

TABLE AOC -099-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 6 of 7)

		BTV		Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	099-SC10	099-SC11	099-SC11	099-SC12	099-SC13	099-SC14	099-SC15	099-SC16
						Field Sample ID:	099-SC10-SS1.0	099-SC11-SS1.0	099-SC89-SS1.0	099-SC12-SS1.0	099-SC13-SS1.0	099-SC14-SS1.0	099-SC15-SS1.0	099-SC16-SS2.0
						Sample Date:	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0
Total Metals (mg/kg)														
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	SSA	24700	44300	76000	100000		7190 J	10100 J	4420 J	6890 J	3520 J	3870 J	2910 J	14900 J
Antimony	SDS	0.3	0.3	31	410		NA	NA	NA	NA	NA	NA	NA	NA
Antimony	SSA	0.4	0.4	31	410		1.1 F	0.67 F	0.97 F	0.98 F	0.6 F	1.2 F	1 F	0.68 F
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	SSA	5	5	0.39 (ca)	1.6 (ca)		1.7 F	1.1 F	<23	6.2 F	1.2 F	1.8 F	2.1 F	2.1 F
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA	NA	NA	NA	NA
Barium	SSA	215	457	5400	67000		35 J	10.6 J	22.7 J	39.2 J	12.6 J	18.9 J	17.9 J	10.5 J
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	SSA	0.8	0.8	150	1900 (ca)		0.075 F	0.1 F	0.056 F	0.097 F	<4.3	<4.2	<4.2	0.32 F
Boron	SSA	16	16	16000	100000		<5.5	2.2 F	<5.7	<5.9	<5.4	2.1 F	<5.3	<6
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	SSA	2	2	1.7 (ca)	7.4 (ca)		0.63 F	0.14 F	0.27 F	0.27 F	0.32 F	1.1 F	1.2 F	<2.4
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Chromium, hexavalent	--	--	--	30 (ca)	64 (ca)		NA	NA	NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA	NA
Chromium	SSA	63	110	210 (ca)	450 (ca)		13.1 J	14.8 J	9.7 J	14.4 J	8.2 J	13.7 J	10.4 J	21 J
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	SSA	6	6	900 (ca)	1900 (ca)		1.1 F	1.9 F	0.54 F	1.6 F	0.79 F	1.4 F	1.5 F	1.6 F
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA	NA	NA	NA	NA
Copper	SSA	127	298	3100	41000		5.7 F	6 F	7.7 F	8.4 F	2.5 F	4.6 F	5.7 F	4.4 F
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA	NA	NA	NA	NA
Iron	SSA	35800	67600	23000	100000		10700 J	8900 J	5820 J	18200 J	4650 J	7070 J	7600 J	18800 J
Lead	SDS	4	6	150	750		NA	NA	NA	NA	NA	NA	NA	NA
Lead	SSA	10	16	150	750		5.3 F	5.5 F	8.3 F	6.4 F	9.8 F	26.3	18.7	7.2 F
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA	NA	NA	NA	NA
Manganese	SSA	233	554	1800	19000		15.8 J	20.3 J	10.2 J	42.6 J	16.9 J	40.6 J	39.5 J	8.4 J
Mercury	SDS	0.2	0.2	23	310		NA	NA	NA	NA	NA	NA	NA	NA
Mercury	SSA	1	1	23	310		NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum	SSA	3	3	390	5100		0.31 F	0.23 F	<0.92	0.52 F	0.39 F	0.39 F	0.43 F	0.43 F
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA	NA	NA	NA	NA
Nickel	SSA	86	224	1600	20000		8 F	6 F	3.7 F	6.6 F	2.7 F	4.8 F	4.5 F	5.2 F
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Selenium	SDS	0.1	0.1	390	5100		NA	NA	NA	NA	NA	NA	NA	NA
Selenium	SSA	0.5	0.5	390	5100		<13	<14	<14	<14	<13	<13	<13	<14
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA	NA	NA	NA	NA
Thallium	SSA	0.7	0.7	5.2	67		<27	<28	<28	<28	<26	<25	<25	<29
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	SSA	63	109	550	7200		18.5 J	20.5 J	9.7 J	44.8 J	10.9 J	14.5 J	12.7 J	25.7 J
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA	NA	NA	NA	NA
Zinc	SSA	221	488	23000	100000		212 M	136 M	121 M	164 M	103 M	214 M	251 M	5.8 M
Volatile Organic Compounds (mg/kg)														
Acetone	--	--	--	1600	6000		NA	NA	NA	NA	NA	NA	NA	NA

TABLE AOC -099-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE

		BTV		Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	099-SC17	099-SC18	099-SC19	099-SC20
						Field Sample ID:	099-SC17-SS2.0	099-SC18-SS2.0	099-SC19-SS3.0	099-SC20-SS3.0
						Sample Date:	8/4/2003	8/4/2003	8/6/2003	8/6/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	2.0	2.0	3.0	3.0
Total Metals (mg/kg)										
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA
Aluminum	SSA	24700	44300	76000	100000		10100 J	6350 J	6550	3360
Antimony	SDS	0.3	0.3	31	410		NA	NA	NA	NA
Antimony	SSA	0.4	0.4	31	410		0.57 F	0.64 F	1.6 F	1.4 F
Arsenic	SDS	2	.4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA
Arsenic	SSA	5	5	0.39 (ca)	1.6 (ca)		<24	3.4 F	2.4 F	2 F
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA
Barium	SSA	215	457	5400	67000		7.9 J	7.2 J	5.7	12.3
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA
Beryllium	SSA	0.8	0.8	150	1900 (ca)		0.14 F	0.17 F	0.068 F	0.089 F
Boron	SSA	16	16	16000	100000		<5.9	<5.7	3.4 F	2.9 F
Cadmium	SDS	i	i	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA
Cadmium	SSA	2	2	1.7 (ca)	7.4 (ca)		<2.4	<2.3	0.21 F	0.47 F
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA
Chromium, hexavalent	--	--	--	30 (ca)	64 (ca)		NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA
Chromium	SSA	63	110	210 (ca)	450 (ca)		12.8 J	9.4 J	9.3	7.2
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA
Cobalt	SSA	6	6	900 (ca)	1900 (ca)		0.6 F	0.94 F	0.78 F	0.7 F
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA
Copper	SSA	127	298	3100	41000		3.8 F	1.7 F	2.8 F	4.8 F
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA
Iron	SSA	35800	67600	23000	100000		7650 J	9250 J	7530	4010
Lead	SDS	4	6	150	750		NA	NA	NA	NA
Lead	SSA	10	16	150	750		4.9 F	7 F	5.3 F	10.1 F
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA
Manganese	SSA	233	554	1800	19000		5.2 J	6.8 J	9.5	11.4
Mercury	SDS	0.2	0.2	23	310		NA	NA	NA	NA
Mercury	SSA	i	i	23	310		NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA
Molybdenum	SSA	3	3	390	5100		<0.94	0.37 F	0.46 F	0.32 F
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA
Nickel	SSA	86	224	1600	20000		5.3 F	4.2 F	2.2 F	1.6 F
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA
Selenium	SDS	0.1	0.1	390	5100		NA	NA	NA	NA
Selenium	SSA	0.5	0.5	390	5100		<14	<14	0.95 F	0.76 F
Sodium	SDS	453	767	--	--		NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA
Thallium	SSA	0.7	0.7	5.2	67		<28	<27	<27	<29
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA
Vanadium	SSA	63	109	550	7200		13 J	23 J	16.9	9.1
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA
Zinc	SSA	221	488	23000	100000		7.8 M	5.4 M	4.5 F	26.2
Volatile Organic Compounds (mg/kg)										
Acetone	--	--	--	1600	6000		NA	NA	NA	NA

NOTES

DETECTED CHEMICALS IN SOIL AND WATER
VANDENBERG AIR FORCE BASE

BTV Types:
BED = bedrock
GW = groundwater
SA = surface alluvium
SDS = surface dune sand
SSA = subsurface alluvium
SSDS = subsurface dune sand

Units:
mg/kg = milligrams per kilogram
µg/L = micrograms per liter

Abbreviations:
-- = not applicable or not established
AOC = Area of Concern
BTV = background threshold value (Jacobs Engineering Group, Inc., 1994)
(ca) = Cancerous
Cal = California Department of Health Services
MCL = U.S. Environmental Protection Agency (2002) Maximum Contaminant Level
NA = not applicable
ND = Not detected
PRG = U.S. Environmental Protection Agency (2002) Preliminary Remediation Goal
RWQCB = Regional Water Quality Control Board
(sw) = Surface Water
UCL = upper confidence limit

Formatted Chemical Concentrations:
Bold = Detected Result is above the Residential PRG
Underlined = Detected TPH Result is above the RWQCB Standard

Qualifiers:
B = The analyte was found in an associated blank, as well as in the sample.
F = The analyte was positively identified, but the quantitation is below the reporting limit.
J = The associated numerical value is an estimated quantity.
M = A matrix effect was present.
R = The data are unusable due to deficiencies in the ability to analyze the sample and meet quality control criteria.

References:
3PDO59 = Delivery Order 0059 (Montgomery Watson Harza, 2002-2003)
DO7 = Delivery Order 0007 (Montgomery Watson Harza, 1998-1999)
DO32 = Delivery Order 0032 (Montgomery Watson Harza, 1999-2000)
DO60 = Delivery Order 0060 (Montgomery Watson Harza, 2000)
WR09 = Work Request 09 (Tetra Tech, 1997)
WR10 = Work Request 10 (Tetra Tech, 1998)

For AOC-133 Tetra Tech WR09 Soil samples:
1. Tank bottom sample depths are assumed to be the tank burial depth plus 8 feet (diameter of a 10,000-gallon capacity UST).
2. The burial depth of Tanks 11, 13 and 14 is 5.5 feet bgs; Tank 12 was buried at a depth of 2.0 feet bgs
3. Sidewall sample depths are assumed to be collected at a depth of 9 feet bgs, roughly 1 foot above the base of the UST excavation.

APPENDIX A

AOC-099
CUMULATIVE HUMAN HEALTH RISK AND HAZARD CALCULATIONS
DELIVERY ORDER 0059 (3P+)
VANDENBERG AIR FORCE BASE

AOC	Risk Type	Medium	Units	Chemical	Qualifier	Exposure Point Concentration	95% UCL BTV	BTV Type	CORRESPONDING SAMPLE Identification	Depth (feet bgs)	Date	Reference	SCENARIO Residential PRG	Residential ILCR or HQ	Residential Percent of Risk	Industrial PRG	Industrial ILCR or HQ	Industrial Percent of Risk
099	CANCER	SOIL	mg/kg	Chromium	--	28.8	28.	SDS	VN99S7	0.0	03/12/97	TetraTech WR10	210.	1.4E-07	100.00	450.	6.4E-08	100.00
099	CANCER	SOIL											*Soil CILCR*	*1.4E-07*			*6.4E-08*	
099	CANCER	ALL											**TOTAL CILCR**	**1.4E-07**			**6.4E-08**	
099	NONCANCER	SOIL	mg/kg	Aluminum	--	9,730.	7,010.	SDS	VN99S7	0.0	03/12/97	TetraTech WR10	76,000.	1.3E-01	7.44	100,000.	9.7E-02	22.58
099	NONCANCER	SOIL	mg/kg	Antimony	F	1.6	0.4	SSA	099-SC19-SS3.0	3.0	08/06/03	3PDO59	31.	5.2E-02	3.00	410.	3.9E-03	0.91
099	NONCANCER	SOIL	mg/kg	Iron	--	21,200.	13,500.	SDS	VN99S7	0.0	03/12/97	TetraTech WR10	23,000.	9.2E-01	53.54	100,000.	2.1E-01	49.21
099	NONCANCER	SOIL	mg/kg	Lead	--	82.2	10.	SSA	099-SB10-SS2	2.0	11/21/98	DO7	150.	5.5E-01	31.83	750.	1.1E-01	25.44
099	NONCANCER	SOIL	mg/kg	Selenium	F	0.95	0.5	SSA	099-SC19-SS3.0	3.0	08/06/03	3PDO59	390.	2.4E-03	0.14	5,100.	1.9E-04	0.04
099	NONCANCER	SOIL	mg/kg	Vanadium	--	29.5	25.	SDS	VN99S7	0.0	03/12/97	TetraTech WR10	550.	5.4E-02	3.12	7,200.	4.1E-03	0.95
099	NONCANCER	SOIL	mg/kg	Zinc	--	374.	221.	SSA	099-SB03-SS5	5.0	11/21/98	DO7	23,000.	1.6E-02	0.94	100,000.	3.7E-03	0.87
099	NONCANCER	SOIL											*Soil HI*	*1.7E+00*			*4.3E-01*	
099	NONCANCER	ALL											**TOTAL HI**	**1.7E+00**			**4.3E-01**	

APPENDIX A - NOTES
CUMULATIVE HUMAN HEALTH RISK AND HAZARD CALCULATIONS
DELIVERY ORDER 0059 (3P+)
VANDENBERG AIR FORCE BASE

Media:
ALL = all applicable media
GW = groundwater
SW = surface water
SOIL = soil
SO/SED = soil and sediment

Units:
mg/kg = milligrams per kilogram
µg/L = micrograms per liter

Abbreviations:
-- = not applicable or not established
AOC = Area of Concern
bgs = below ground surface
BTV = background threshold value (Jacobs Engineering Group, Inc., 1994)
CILCR = cumulative incremental lifetime cancer risk
HI = hazard index
HQ = hazard quotient
ILCR = incremental lifetime cancer risk
insig = percent risk is less than 0.01%
** multiple ** = Maximum exposure-point concentration occurred at more than one location
nc = not calculated
PRG = U.S. Environmental Protection Agency (2002) Preliminary Remediation Goal
UCL = upper confidence limit

BTV Types:
BED = bedrock
GW = groundwater
SA = surface alluvium
SDS = surface dune sand
SSA = subsurface alluvium
SSDS = subsurface dune sand

Chemical Types:
BTEX = benzene, ethylbenzene, toluene, xylenes
METALS = metals
PAH = polynuclear aromatic hydrocarbon
PCB = polychlorinated biphenyls
PEST = pesticides
SVOC = semivolatile organic compound
VOC = volatile organic compound

Exposure-point concentrations:
Soil and sediment EPCs were selected from samples collected between 0 and 10 feet bgs (inclusive).

Qualifiers:
F = The analyte was positively identified, but the quantitation is below the reporting limit.
J = The associated numerical value is an estimated quantity.
M = A matrix effect was present.

References:
3PDO59 = Delivery Order 0059 (Montgomery Watson Harza, 2002-2003)
DO7 = Delivery Order 0007 (Montgomery Watson Harza, 1998-1999)
DO32 = Delivery Order 0032 (Montgomery Watson Harza, 1999-2000)
DO60 = Delivery Order 0060 (Montgomery Watson Harza, 2000)
WR09 = Work Request 09 (Tetra Tech, 1997)
WR10 = Work Request 10 (Tetra Tech, 1998)

For AOC-133 Tetra Tech WR09 Soil samples:
1. Tank bottom sample depths are assumed to be the tank burial depth plus 8 feet (diameter of a 10,000-gallon capacity UST).
2. The burial depth of Tanks 11, 13 and 14 is 5.5 feet bgs; Tank 12 was buried at a depth of 2.0 feet bgs
3. Sidewall sample depths are assumed to be collected at a depth of 9 feet bgs, roughly 1 foot above the base of the UST excavation.

AOC-133 EVALUATION SHEET

Final – July 2004

BACKGROUND/HISTORY

AOC-133 is located in the cantonment area on the southeast block of the intersection of Herado Avenue and California Boulevard (Figures AOC-133a through AOC-133c). AOC-133 is comprised of two areas: a former fueling facility (Building 10745); and a former maintenance shop, grease rack, and vehicle wash rack. The latter area was previously identified as AOC-148; however, the two AOCs were consolidated into a single study area.

Former Building 10745 was constructed in 1942 as a Camp Cooke fueling station and was remodeled several times during its operation. According to VAFB real estate records, the building was the main Government Services Administration fueling station for North Base from 1942 to June 1996. The fueling station was originally equipped with four underground storage tanks (USTs) and associated dispensers. According to research performed by Tetra Tech, Inc. (Tetra Tech, 1997), the USTs at AOC-133 had been removed and replaced several times during its operational history. Their findings indicate that the removal and disposal of ten USTs historically present at the facility "are not documented in [Base] real estate disposal vouchers." They further state that "these tanks may have been abandoned in place." The facility has been decommissioned and the most recent USTs were removed in July 1996.

The potential sources of contamination at AOC-133 include releases of gasoline and diesel fuel from former USTs and past spills associated with the dispensers. The chemicals of concern at the former maintenance shop, grease rack, and vehicle wash rack include heavy end petroleum hydrocarbons and diesel, all of which reportedly drained to grade. Presently, the area is partially paved and used as a parking lot.

INVESTIGATIONS

Jacobs Services Company (1995). Jacobs Service Company (JSC) conducted a preliminary site assessment in May 1995 to assess whether the former fueling facility had been impacted by fuel hydrocarbons. The assessment consisted of seven soil borings (B-1 through B-7) and two Hydropunch® groundwater samples (collected from B-3 and B-4). Elevated concentrations of benzene, toluene, ethylbenzene, and total xylenes (BTEX) and total petroleum hydrocarbons as gasoline (TPH-g) were detected in groundwater Hydropunch® samples in the vicinity of the former fueling station (benzene at 5,800 micrograms per liter [μg/L], toluene at 41,000 μg/L, ethylbenzene at 6,200 μg/L, total xylenes at 41,000 μg/L and TPH-g at 180,000 μg/L). Soil sampled beneath the former vehicle wash rack contained up to 8,400 milligrams per kilogram [mg/kg] of total recoverable petroleum hydrocarbons (TRPH). Perched water was encountered at a depth of 4.5 feet bgs during the investigation.

Tetra Tech (1997)—Work Request 9. Four 10,000-gallon fuel USTs (three unleaded gasoline and one diesel) were removed by Scales Construction (Bakersfield, Calif.) under the direction of ARSC Contracting, Inc., (ACCI) in April 1996. Although the information provided by ACCI does not specify the depth of the tank excavations, it is assumed that soil was removed to at least an approximate depth of 10 to 14 feet bgs, the estimated base of the former USTs. A total of 13 soil confirmation samples were collected along the base and side walls of the excavation. Confirmation samples were analyzed for TPH-g, total petroleum hydrocarbons as diesel (TPH-d), BTEX, and lead. Maximum concentrations detected in the samples included TPH-g at 3,900 mg/kg, TPH-d at 11,000 mg/kg, benzene at 6.1 mg/kg, toluene at 100 mg/kg, ethylbenzene at 55 mg/kg, total xylenes at 280 mg/kg, and lead at 45.9 mg/kg. These maximum detected concentrations were well above Santa Barbara County (local lead agency at the time of the tank removals) and Regional Water Quality Control Board (RWQCB) action levels for fuel hydrocarbon constituents. Elevated hydrocarbon concentrations were encountered in confirmation samples collected in the vicinity of dispenser product piping (10745-P11-1 and 10745-P12-1), the north dispenser island (10745-I2-D1) and along the north sidewall of Tank #14 (T14-SW-N). A groundwater grab sample collected from the Tank 14 excavation contained 5,000 µg/L total petroleum hydrocarbons

as gasoline (TPH-g), 45 µg/L benzene, 460 µg/L toluene, 84 µg/L ethylbenzene, 500 µg/L xylenes, 950 µg/L methyl tert-butyl ether (MTBE), and 300 µg/L lead. Tetra Tech recommended that additional investigation be conducted to further assess the extent of soil and groundwater contamination beneath the site.

Montgomery Watson (2000)—Delivery Order Preliminary Assessment/Remedial Design (PA/RD) 0007. A total of eight borings were advanced to depths ranging from 10 to 26 feet bgs to assess soil and groundwater impacts in the vicinity of the former fuel USTs/product dispensers and the former wash rack. Five of the borings were converted to monitoring wells (133-MW01 through 133-MW05) to further assess the lateral extent of groundwater impact at the site. Soil and one round of groundwater samples were analyzed for fuel components including MTBE. Of the soil samples analyzed, only the 6-foot bgs sample collected from 133-MW04 contained detectable hydrocarbons (323 mg/kg TPH-g and 157 mg/kg TPH-d). The highest concentrations of TPH-g, TPH-d, and benzene in groundwater were also encountered in 133-MW04. Maximum concentrations of TPH-d, TPH-g, and MTBE in groundwater were 19,300 µg/L, 64,700 µg/L (duplicate), and 607 µg/L (duplicate), respectively. Benzene was detected at a maximum concentration of 1,220 µg/L. Maximum concentrations of TPH-d and TPH-g in soil were detected in 148-SB-01 and 133-MW04 at 666 and 323 mg/kg, respectively. Based on the investigation results, Montgomery Watson recommended that a feasibility study be conducted at AOC-133 to evaluate remedial options including natural attenuation.

Montgomery Watson (2001)—Delivery Order PA/RD 0032. Groundwater sampling was conducted during three events (December 1999, April 2000, and July 2000). The objective was to evaluate chemical concentration trends in groundwater. Groundwater samples were collected from the five monitoring wells at AOC-133 and analyzed for BTEX, MTBE, TPH-g, and TPH-d. Dissolved BTEX, TPH-g, TPH-d, and MTBE were detected in groundwater above RWQCB action levels, applicable preliminary remediation goals (PRGs), or maximum contaminant levels (MCLs). The highest concentrations were encountered in 133-MW04, which contained 680 µg/L MTBE; 60,000 µg/L TPH-g; 650 µg/L benzene; and 23,000 µg/L TPH-d (December 1999 or July 2000 sampling events). No chemical concentrations were detected above applicable PRGs or MCLs in any of the remaining four wells. Montgomery Watson concluded that, based on laboratory results, there was a downward trend in contaminant concentrations and an alternatives analysis was recommended to determine an appropriate remedial approach.

Montgomery Watson (2001)—Delivery Order PA/RD 0060. An alternatives analysis was conducted to determine the best approach for remediating the impacted soils and groundwater. Based on past site investigation results, soil and groundwater impacts appear to be confined to a limited area surrounding 133-MW-04. Four alternatives were considered: 1) institutional controls, 2) excavation/disposal with monitored natural attenuation, 3) soil vapor extraction with air sparging, and 4) excavation/disposal with pump and treat. The results of the alternatives analysis recommended the removal of the TPH source followed by monitoring for natural attenuation.

MWH (2003)—Delivery Order 0059. The stated objective of the investigation was to monitor and sample six groundwater monitoring wells: 133-MW01 through 133-MW05 and 133-MW17. Well 133-MW17 was not monitored or sampled because these data had already been collected by Tetra Tech as part of their Basewide Groundwater Monitoring Program.

Sampling and monitoring activities were conducted in January 2003 and again in March 2003. Measured static water levels between sampling events varied by no more than 0.22 feet and ranged from 4.38 feet bgs to 6.27 feet bgs. Based on the Basewide Groundwater Monitoring Program, the hydraulic gradient is historically to the north-northwest at approximately 0.02 feet/foot (ft/ft). During the January 2003 event, wells were purged using a single-stage "whale" pump; however, the subsequent March 2003 sampling was conducted using the low flow-rate, micro-purge method.

Water samples were analyzed for TPH-g, TPH-d/mo, volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs). Water results are presented in Table AOC-133-Water. The following results are also presented in the Groundwater Monitoring Report (refer to Appendix H). In general, low levels of TPH were detected in water sampled from site wells, except for 133-MW04, which has consistently contained relatively high concentrations of TPH and other associated fuel compounds

TPH Compounds

With the exception of 133-MW04, which contained up to 7,700 μg/L (March event only), only trace concentrations of TPH-g (12 to 29 μg/L) were detected in the remaining wells. TPH-d concentrations ranged from 35 μg/L in 133-MW01 up to a maximum of 7,700 μg/L in 133-MW04, while TPH-mo concentrations ranged from non-detect in 133-MW04 to 440 μg/L in 133-MW02. TPH concentrations (for gasoline, diesel and motor oil ranges combined) ranged from 117 μg/L in 133-MW01 to 15,000 μg/L in 133-MW04. Site wells generally did not contain TPH concentrations greater than the 1,000 μg/L RWQCB action level. Exceptions include the January sampling event for 133-MW05 (1,295 μg/L) and both sampling events for 133-MW04 (15,000 μg/L in January and 11,000 μg/L in March).

VOCs

As expected, VOC concentrations in wells 133-MW01, -MW02, -MW03, and -MW05 were generally below their respective method detection limits (MDLs) and all detected concentrations were less than reporting limits. Common fuel VOC components, including benzene, ethylbenzene, total xylenes and fuel additives MTBE and 1,2-dichloroethane (1,2-DCA), were detected at concentrations exceeding their respective tap water PRGs in 133-MW04. In addition, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene were also detected above their tap water PRGs. VOCs that were detected at concentrations greater than their respective California Primary MCLs (MCLs) included benzene (57.1 and 36.5 μg/L), MTBE (166 and 293 μg/L), and 1,2-DCA (6 μg/L). Other VOCs were detected, but at concentrations that were less than their tap water PRGs or MCLs, and include 2-hexanone, 4-methyl-2-pentanone (MIBK), chloromethane, isopropylbenzene (cumene), n-propylbenzene, p-cymene (p-isopropyltoluene), and sec-butylbenzene. Acetone and methylene chloride, which are common laboratory contaminants, were also detected.

Additionally, VOC concentrations of benzene (1.11 μg/L) and MTBE (0.11 μg/L) were detected in water samples collected from well 133-MW17 during Tetra Tech's spring 2003 sampling event. The benzene concentration exceeds both the tap water PRG and the California primary MCL. These results are included in the Tetra Tech's Spring 2003 Basewide Groundwater Monitoring Report.

SVOCs

Similar to VOCs, SVOC concentrations in wells 133-MW01, -MW02, -MW03, and -MW05 were also generally below their respective method detection limits (MDLs) and all detected concentrations were less than reporting limits. A total of six SVOCs were detected in 133-MW04: 2,4-dimethylphenol (115 and 23.4 μg/L), 2-methylnaphthalene (58.4 and 40.9 μg/L), 2-methylphenol (o-cresol) (2.7 μg/L), 3,4-methylphenol (p-cresol) (7.5 μg/L), bis(2-ethylhexyl)phthalate (1.6 μg/L), and naphthalene (193 and 137 μg/L). Only naphthalene was detected at concentrations that exceeded its tap water PRG (6.2 μg/L).

NATURE AND EXTENT OF CONTAMINATION

Near surface soils have been impacted by diesel and gasoline compounds. The impacted area appears to be limited to the area of the former wash racks and maintenance buildings north of the former USTs and dispenser islands, a former dispenser island in the vicinity of 133-MW-04, and the northwest end of the former tank excavation near 133-MW-03. TPH-d and TPH-g concentrations are slightly above to well above RWQCB action levels.

Groundwater has also been impacted by gasoline and diesel compounds, including BTEX and MTBE, in four of the five wells within AOC-133. However, only monitoring well 133-MW04 contains

concentrations of TPH, benzene, MTBE and 1,2-DCA above RWQCB action levels. Based on the location of well 133-MW04, the likely predominant sources of groundwater contamination are the dispenser islands and associated product lines. Groundwater contamination appears to be migrating northward TPH-d concentrations consistently appear to be increasing north of the primary source area in a downgradient direction toward 133-MW05 (up to 980 μg/L) This is supported by the general absence of TPH-d in groundwater sampled in 133-MW05 prior to the current investigation.

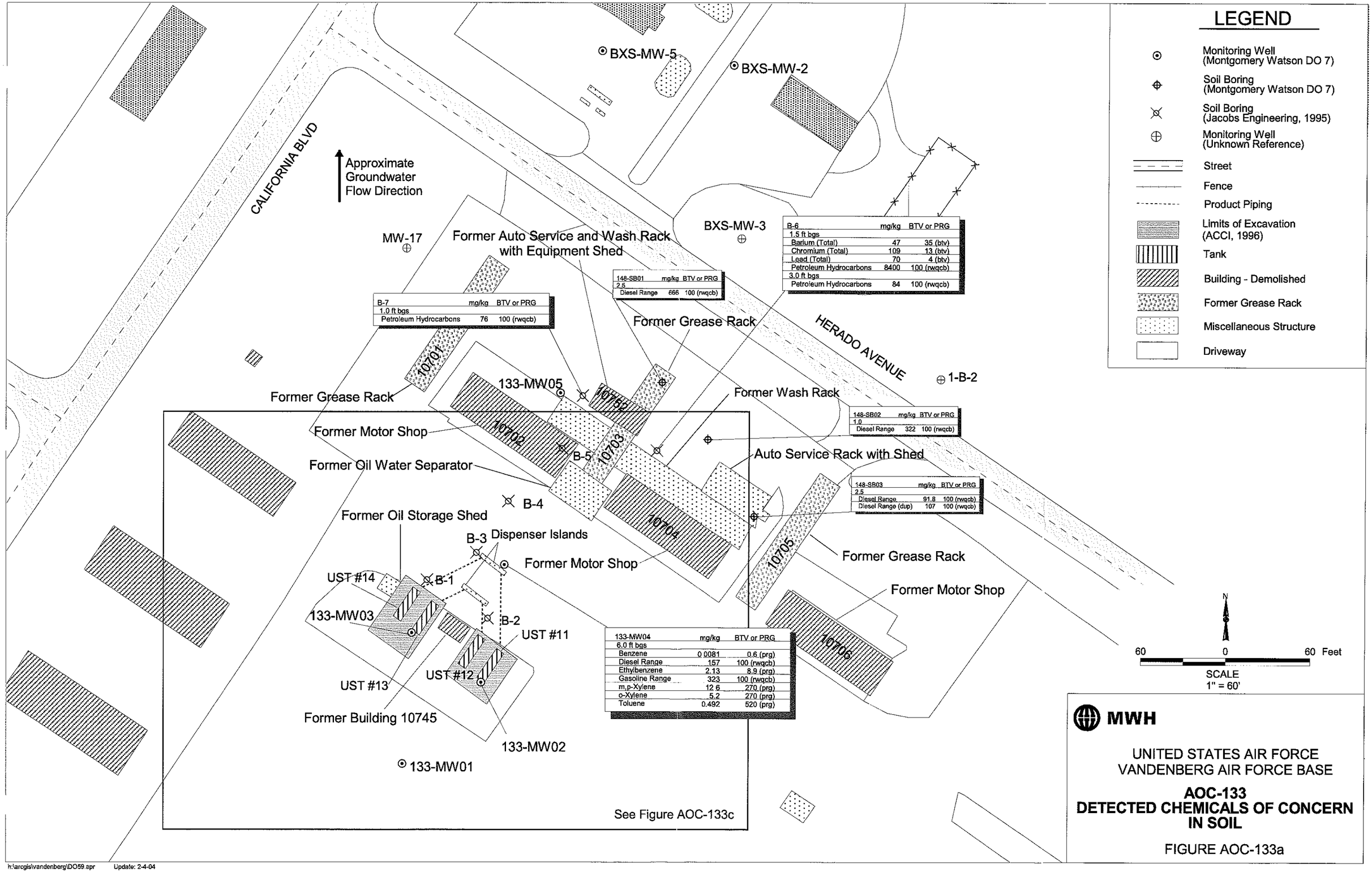
From February 1999 through March 2003, a total of six monitoring events have been conducted at AOC-133 Over this period of time, TPH-d concentrations in 133-MW01 and 133-MW04, and TPH-g concentrations in 133-MW04 have decreased. Historical results for well 133-MW17 indicate that prior to the Spring 2003 sampling event, benzene was last detected in 133-MW17 in October 1998 (0.23 μg/L). TPH-g has not been detected in 133-MW17 since October 1999 (59 μg/L). However, the spring 2003 sampling event indicated benzene and MTBE concentrations of 1.11 μg/L and 0 11 μg/L, respectively.

RECOMMENDATION

Implement the DO 60 recommendation for removal of the TPH source followed by monitoring for natural attenuation to facilitate the reduction of contaminant concentrations in groundwater beneath AOC-133.

ATTACHMENTS

Figure AOC-133a–Detected Chemicals of Concern in Soil
Figure AOC-133b–Detected Chemicals of Concern in Groundwater
Figure AOC-133c–Excavation Limits of Former UST Removal
Table AOC-133-Soil
Table AOC-133-Water



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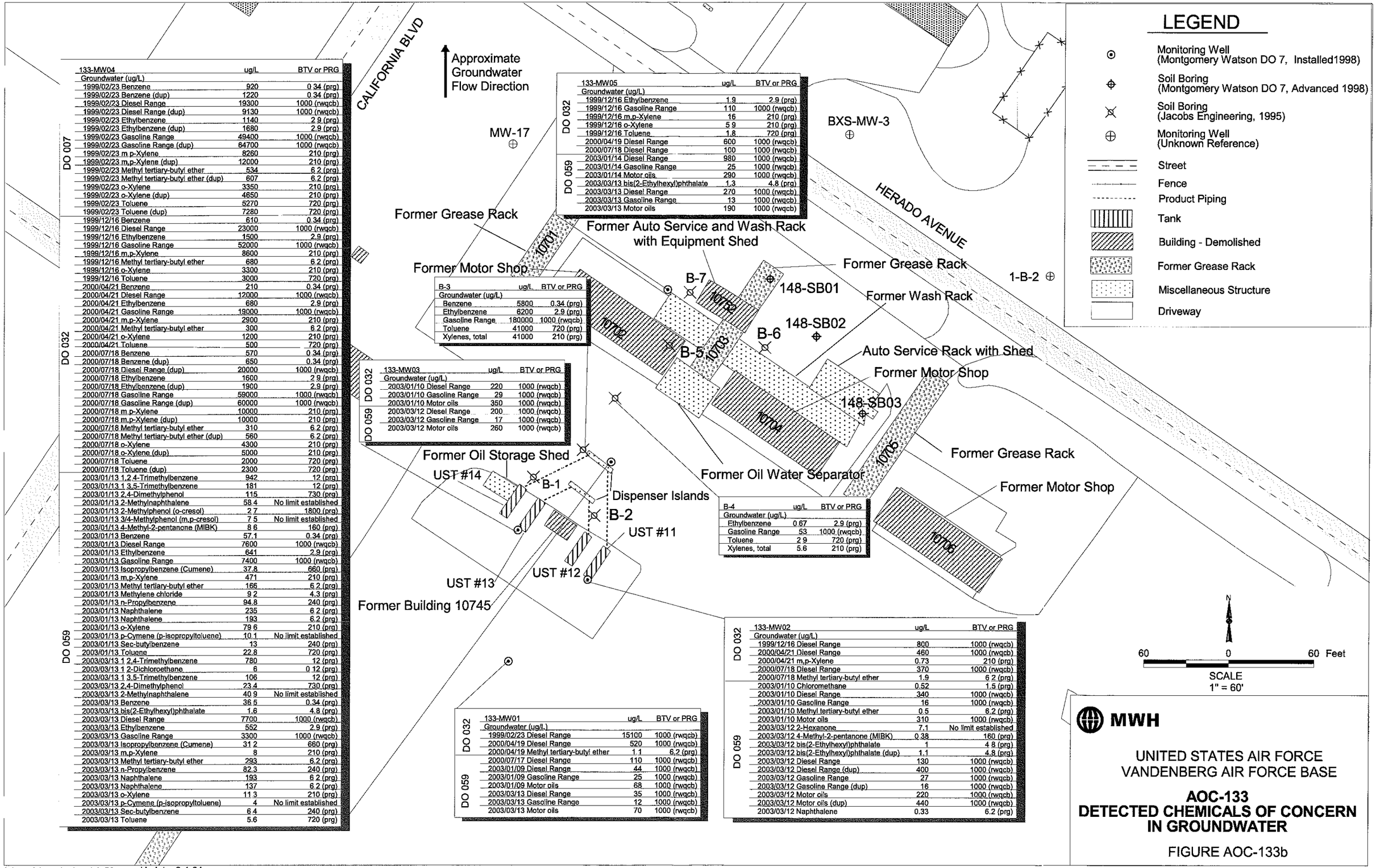

	133-MW04	ug/L	BTV or PRG
	Groundwater (ug/L)		
DO 007	1999/02/23 Benzene	920	0.34 (prg)
	1999/02/23 Benzene (dup)	1220	0.34 (prg)
	1999/02/23 Diesel Range	19300	1000 (rwqcb)
	1999/02/23 Diesel Range (dup)	9130	1000 (rwqcb)
	1999/02/23 Ethylbenzene	1140	2.9 (prg)
	1999/02/23 Ethylbenzene (dup)	1680	2.9 (prg)
	1999/02/23 Gasoline Range	49400	1000 (rwqcb)
	1999/02/23 Gasoline Range (dup)	64700	1000 (rwqcb)
	1999/02/23 m,p-Xylene	8260	210 (prg)
	1999/02/23 m,p-Xylene (dup)	12000	210 (prg)
	1999/02/23 Methyl tertiary-butyl ether	534	6.2 (prg)
	1999/02/23 Methyl tertiary-butyl ether (dup)	607	6.2 (prg)
	1999/02/23 o-Xylene	3350	210 (prg)
	1999/02/23 o-Xylene (dup)	4650	210 (prg)
	1999/02/23 Toluene	5270	720 (prg)
	1999/02/23 Toluene (dup)	7280	720 (prg)
DO 032	1999/12/16 Benzene	610	0.34 (prg)
	1999/12/16 Diesel Range	23000	1000 (rwqcb)
	1999/12/16 Ethylbenzene	1500	2.9 (prg)
	1999/12/16 Gasoline Range	52000	1000 (rwqcb)
	1999/12/16 m,p-Xylene	8600	210 (prg)
	1999/12/16 Methyl tertiary-butyl ether	680	6.2 (prg)
	1999/12/16 o-Xylene	3300	210 (prg)
	1999/12/16 Toluene	3000	720 (prg)
	2000/04/21 Benzene	210	0.34 (prg)
	2000/04/21 Diesel Range	12000	1000 (rwqcb)
	2000/04/21 Ethylbenzene	680	2.9 (prg)
	2000/04/21 Gasoline Range	19000	1000 (rwqcb)
	2000/04/21 m,p-Xylene	2900	210 (prg)
	2000/04/21 Methyl tertiary-butyl ether	300	6.2 (prg)
	2000/04/21 o-Xylene	1200	210 (prg)
	2000/04/21 Toluene	500	720 (prg)
	2000/07/18 Benzene	570	0.34 (prg)
	2000/07/18 Benzene (dup)	650	0.34 (prg)
	2000/07/18 Diesel Range (dup)	20000	1000 (rwqcb)
	2000/07/18 Ethylbenzene	1600	2.9 (prg)
	2000/07/18 Ethylbenzene (dup)	1900	2.9 (prg)
	2000/07/18 Gasoline Range	59000	1000 (rwqcb)
	2000/07/18 Gasoline Range (dup)	60000	1000 (rwqcb)
	2000/07/18 m,p-Xylene	10000	210 (prg)
	2000/07/18 m,p-Xylene (dup)	10000	210 (prg)
	2000/07/18 Methyl tertiary-butyl ether	310	6.2 (prg)
	2000/07/18 Methyl tertiary-butyl ether (dup)	560	6.2 (prg)
	2000/07/18 o-Xylene	4300	210 (prg)
	2000/07/18 o-Xylene (dup)	5000	210 (prg)
	2000/07/18 Toluene	2000	720 (prg)
	2000/07/18 Toluene (dup)	2300	720 (prg)
DO 059	2003/01/13 1,2,4-Trimethylbenzene	942	12 (prg)
	2003/01/13 1,3,5-Trimethylbenzene	181	12 (prg)
	2003/01/13 2,4-Dimethylphenol	115	730 (prg)
	2003/01/13 2-Methylnaphthalene	58.4	No limit established
	2003/01/13 2-Methylphenol (o-cresol)	2.7	1800 (prg)
	2003/01/13 3/4-Methylphenol (m,p-cresol)	7.5	No limit established
	2003/01/13 4-Methyl-2-pentanone (MIBK)	8.6	160 (prg)
	2003/01/13 Benzene	57.1	0.34 (prg)
	2003/01/13 Diesel Range	7600	1000 (rwqcb)
	2003/01/13 Ethylbenzene	641	2.9 (prg)
	2003/01/13 Gasoline Range	7400	1000 (rwqcb)
	2003/01/13 Isopropylbenzene (Cumene)	37.8	660 (prg)
	2003/01/13 m,p-Xylene	471	210 (prg)
	2003/01/13 Methyl tertiary-butyl ether	166	6.2 (prg)
	2003/01/13 Methylene chloride	9.2	4.3 (prg)
	2003/01/13 n-Propylbenzene	94.8	240 (prg)
	2003/01/13 Naphthalene	235	6.2 (prg)
	2003/01/13 Naphthalene	193	6.2 (prg)
	2003/01/13 o-Xylene	79.6	210 (prg)
	2003/01/13 p-Cymene (p-isopropyltoluene)	10.1	No limit established
	2003/01/13 Sec-butylbenzene	13	240 (prg)
	2003/01/13 Toluene	22.8	720 (prg)
	2003/03/13 1,2,4-Trimethylbenzene	780	12 (prg)
	2003/03/13 1,2-Dichloroethane	6	0.12 (prg)
	2003/03/13 1,3,5-Trimethylbenzene	106	12 (prg)
	2003/03/13 2,4-Dimethylphenol	23.4	730 (prg)
	2003/03/13 2-Methylnaphthalene	40.9	No limit established
	2003/03/13 Benzene	36.5	0.34 (prg)
	2003/03/13 bis(2-Ethylhexyl)phthalate	1.6	4.8 (prg)
	2003/03/13 Diesel Range	7700	1000 (rwqcb)
	2003/03/13 Ethylbenzene	552	2.9 (prg)
	2003/03/13 Gasoline Range	3300	1000 (rwqcb)
	2003/03/13 Isopropylbenzene (Cumene)	31.2	660 (prg)
	2003/03/13 m,p-Xylene	8	210 (prg)
	2003/03/13 Methyl tertiary-butyl ether	293	6.2 (prg)
	2003/03/13 n-Propylbenzene	82.3	240 (prg)
	2003/03/13 Naphthalene	193	6.2 (prg)
	2003/03/13 Naphthalene	137	6.2 (prg)
	2003/03/13 o-Xylene	11.3	210 (prg)
	2003/03/13 p-Cymene (p-isopropyltoluene)	4	No limit established
	2003/03/13 Sec-butylbenzene	6.4	240 (prg)
	2003/03/13 Toluene	5.6	720 (prg)

	133-MW05	ug/L	BTV or PRG
	Groundwater (ug/L)		
DO 032	1999/12/16 Ethylbenzene	1.9	2.9 (prg)
	1999/12/16 Gasoline Range	110	1000 (rwqcb)
	1999/12/16 m,p-Xylene	16	210 (prg)
	1999/12/16 o-Xylene	5.9	210 (prg)
	1999/12/16 Toluene	1.8	720 (prg)
	2000/04/19 Diesel Range	600	1000 (rwqcb)
	2000/07/18 Diesel Range	100	1000 (rwqcb)
DO 059	2003/01/14 Diesel Range	980	1000 (rwqcb)
	2003/01/14 Gasoline Range	25	1000 (rwqcb)
	2003/01/14 Motor oils	290	1000 (rwqcb)
	2003/03/13 bis(2-Ethylhexyl)phthalate	1.3	4.8 (prg)
	2003/03/13 Diesel Range	270	1000 (rwqcb)
	2003/03/13 Gasoline Range	13	1000 (rwqcb)
	2003/03/13 Motor oils	190	1000 (rwqcb)

B-3	ug/L	BTV or PRG
Groundwater (ug/L)		
Benzene	5800	0.34 (prg)
Ethylbenzene	6200	2.9 (prg)
Gasoline Range	180000	1000 (rwqcb)
Toluene	41000	720 (prg)
Xylenes, total	41000	210 (prg)

	133-MW03	ug/L	BTV or PRG
	Groundwater (ug/L)		
DO 032	2003/01/10 Diesel Range	220	1000 (rwqcb)
	2003/01/10 Gasoline Range	29	1000 (rwqcb)
	2003/01/10 Motor oils	350	1000 (rwqcb)
DO 059	2003/03/12 Diesel Range	200	1000 (rwqcb)
	2003/03/12 Gasoline Range	17	1000 (rwqcb)
	2003/03/12 Motor oils	260	1000 (rwqcb)

B-4	ug/L	BTV or PRG
Groundwater (ug/L)		
Ethylbenzene	0.67	2.9 (prg)
Gasoline Range	53	1000 (rwqcb)
Toluene	2.9	720 (prg)
Xylenes, total	5.6	210 (prg)

	133-MW02	ug/L	BTV or PRG
	Groundwater (ug/L)		
DO 032	1999/12/16 Diesel Range	800	1000 (rwqcb)
	2000/04/21 Diesel Range	460	1000 (rwqcb)
	2000/04/21 m,p-Xylene	0.73	210 (prg)
	2000/07/18 Diesel Range	370	1000 (rwqcb)
	2000/07/18 Methyl tertiary-butyl ether	1.9	6.2 (prg)
DO 059	2003/01/10 Chloromethane	0.52	1.5 (prg)
	2003/01/10 Diesel Range	340	1000 (rwqcb)
	2003/01/10 Gasoline Range	16	1000 (rwqcb)
	2003/01/10 Methyl tertiary-butyl ether	0.5	6.2 (prg)
	2003/01/10 Motor oils	310	1000 (rwqcb)
	2003/03/12 2-Hexanone	7.1	No limit established
	2003/03/12 4-Methyl-2-pentanone (MIBK)	0.38	160 (prg)
	2003/03/12 bis(2-Ethylhexyl)phthalate	1	4.8 (prg)
	2003/03/12 bis(2-Ethylhexyl)phthalate (dup)	1.1	4.8 (prg)
	2003/03/12 Diesel Range	130	1000 (rwqcb)
	2003/03/12 Diesel Range (dup)	400	1000 (rwqcb)
	2003/03/12 Gasoline Range	27	1000 (rwqcb)
	2003/03/12 Gasoline Range (dup)	16	1000 (rwqcb)
	2003/03/12 Motor oils	220	1000 (rwqcb)
	2003/03/12 Motor oils (dup)	440	1000 (rwqcb)
	2003/03/12 Naphthalene	0.33	6.2 (prg)

	133-MW01	ug/L	BTV or PRG
	Groundwater (ug/L)		
DO 032	1999/02/23 Diesel Range	15100	1000 (rwqcb)
	2000/04/19 Diesel Range	520	1000 (rwqcb)
	2000/04/19 Methyl tertiary-butyl ether	1.1	6.2 (prg)
DO 059	2000/07/17 Diesel Range	110	1000 (rwqcb)
	2003/01/09 Diesel Range	44	1000 (rwqcb)
	2003/01/09 Gasoline Range	25	1000 (rwqcb)
	2003/01/09 Motor oils	68	1000 (rwqcb)
	2003/03/13 Diesel Range	35	1000 (rwqcb)
	2003/03/13 Gasoline Range	12	1000 (rwqcb)
	2003/03/13 Motor oils	70	1000 (rwqcb)

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UNITED STATES AIR FORCE
VANDENBERG AIR FORCE BASE

AOC-133
DETECTED CHEMICALS OF CONCERN IN GROUNDWATER

FIGURE AOC-133b

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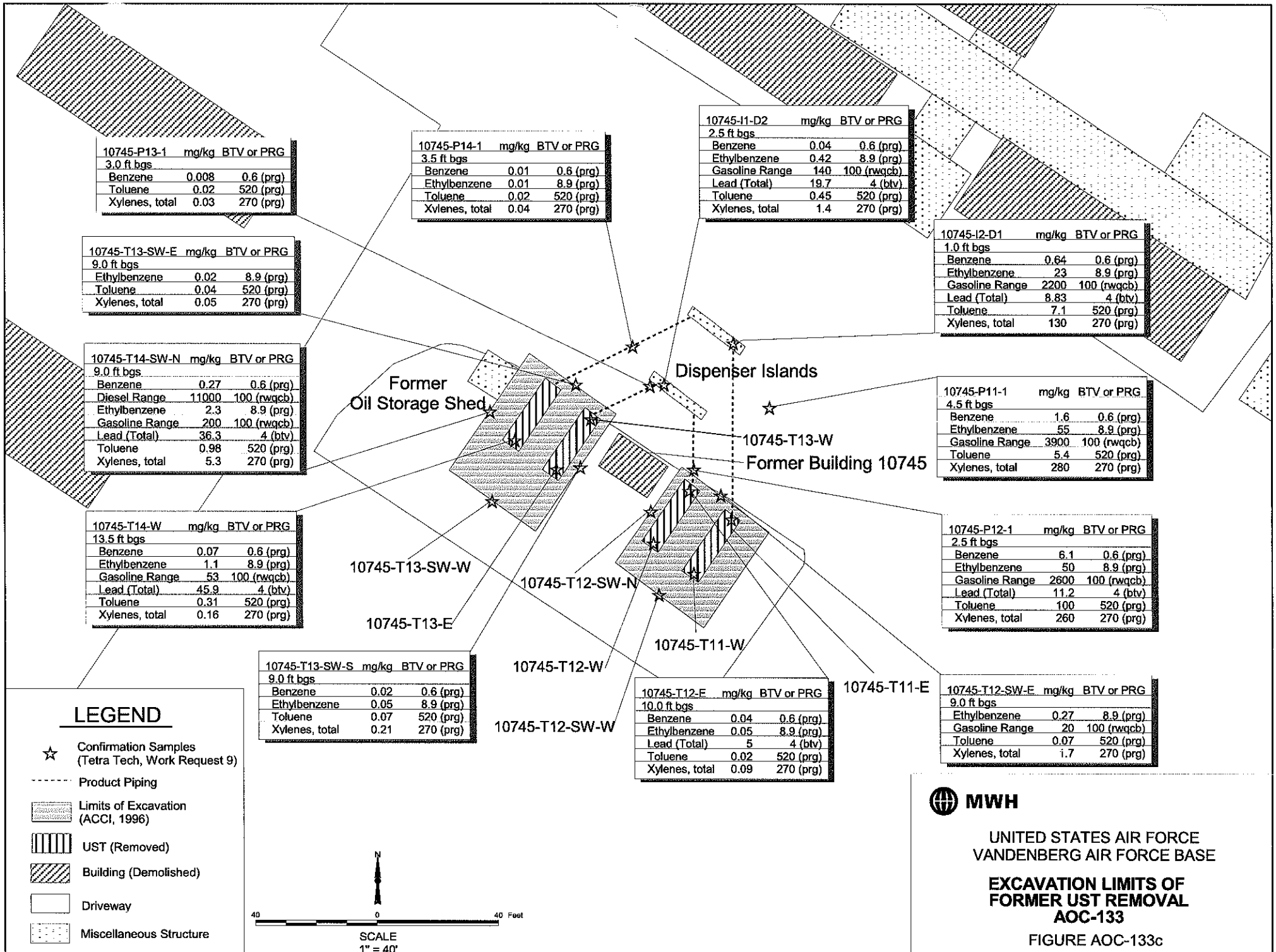

10745-P13-1 3.0 ft bgs	mg/kg	BTV or PRG
Benzene	0.008	0.6 (prg)
Toluene	0.02	520 (prg)
Xylenes, total	0.03	270 (prg)

10745-P14-1 3.5 ft bgs	mg/kg	BTV or PRG
Benzene	0.01	0.6 (prg)
Ethylbenzene	0.01	8.9 (prg)
Toluene	0.02	520 (prg)
Xylenes, total	0.04	270 (prg)

10745-I1-D2 2.5 ft bgs	mg/kg	BTV or PRG
Benzene	0.04	0.6 (prg)
Ethylbenzene	0.42	8.9 (prg)
Gasoline Range	140	100 (rwqcb)
Lead (Total)	19.7	4 (btv)
Toluene	0.45	520 (prg)
Xylenes, total	1.4	270 (prg)

10745-I2-D1 1.0 ft bgs	mg/kg	BTV or PRG
Benzene	0.64	0.6 (prg)
Ethylbenzene	23	8.9 (prg)
Gasoline Range	2200	100 (rwqcb)
Lead (Total)	8.83	4 (btv)
Toluene	7.1	520 (prg)
Xylenes, total	130	270 (prg)

10745-T13-SW-E 9.0 ft bgs	mg/kg	BTV or PRG
Ethylbenzene	0.02	8.9 (prg)
Toluene	0.04	520 (prg)
Xylenes, total	0.05	270 (prg)

10745-T14-SW-N 9.0 ft bgs	mg/kg	BTV or PRG
Benzene	0.27	0.6 (prg)
Diesel Range	11000	100 (rwqcb)
Ethylbenzene	2.3	8.9 (prg)
Gasoline Range	200	100 (rwqcb)
Lead (Total)	36.3	4 (btv)
Toluene	0.98	520 (prg)
Xylenes, total	5.3	270 (prg)

10745-P11-1 4.5 ft bgs	mg/kg	BTV or PRG
Benzene	1.6	0.6 (prg)
Ethylbenzene	55	8.9 (prg)
Gasoline Range	3900	100 (rwqcb)
Toluene	5.4	520 (prg)
Xylenes, total	280	270 (prg)

10745-T14-W 13.5 ft bgs	mg/kg	BTV or PRG
Benzene	0.07	0.6 (prg)
Ethylbenzene	1.1	8.9 (prg)
Gasoline Range	53	100 (rwqcb)
Lead (Total)	45.9	4 (btv)
Toluene	0.31	520 (prg)
Xylenes, total	0.16	270 (prg)

10745-P12-1 2.5 ft bgs	mg/kg	BTV or PRG
Benzene	6.1	0.6 (prg)
Ethylbenzene	50	8.9 (prg)
Gasoline Range	2600	100 (rwqcb)
Lead (Total)	11.2	4 (btv)
Toluene	100	520 (prg)
Xylenes, total	260	270 (prg)

10745-T13-SW-S 9.0 ft bgs	mg/kg	BTV or PRG
Benzene	0.02	0.6 (prg)
Ethylbenzene	0.05	8.9 (prg)
Toluene	0.07	520 (prg)
Xylenes, total	0.21	270 (prg)

10745-T12-E 10.0 ft bgs	mg/kg	BTV or PRG
Benzene	0.04	0.6 (prg)
Ethylbenzene	0.05	8.9 (prg)
Lead (Total)	5	4 (btv)
Toluene	0.02	520 (prg)
Xylenes, total	0.09	270 (prg)

10745-T12-SW-E 9.0 ft bgs	mg/kg	BTV or PRG
Ethylbenzene	0.27	8.9 (prg)
Gasoline Range	20	100 (rwqcb)
Toluene	0.07	520 (prg)
Xylenes, total	1.7	270 (prg)

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TABLE AOC -133-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 1 of 5)

	BTV			Soil PRG		Reference:	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09
						Location ID:	10745-I1-D2	10745-I2-D1	10745-P11-1	10745-P12-1	10745-P13-1	10745-P14-1	10745-T11-E
						Field Sample ID:	10745-I1-D2	10745-I2-D1	10745-P11-1	10745-P12-1	10745-P13-1	10745-P14-1	10745-T11-E
						Sample Date:	6/12/1996	6/12/1996	6/12/1996	6/12/1996	6/12/1996	6/12/1996	6/12/1996
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	2.5	1.0	4.5	2.5	3.0	3.5	13.5
BTEX (mg/kg)													
Benzene	--	--	--	0.6 (ca)	1.3 (ca)		0.04	0.64	1.6	6.1	0.008	0.01	<0.005
Ethylbenzene	--	--	--	8.9 (ca)	20 (ca)		0.42	23	55	50	<0.005	0.01	<0.005
m,p-Xylene	--	--	--	270	420		NA	NA	NA	NA	NA	NA	NA
o-Xylene	--	--	--	270	420		NA	NA	NA	NA	NA	NA	NA
Toluene	--	--	--	520	520		0.45	7.1	5.4	100	0.02	0.02	<0.005
Xylenes, total	--	--	--	270	420		1.4	130	280	260	0.03	0.04	<0.015
Total Metals (mg/kg)													
Arsenic	SSDS	5	5	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Chromium	SSDS	13	19	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Lead	SSDS	4	6	150	750		19.7	8.83	<5	11.2	<5	<5	<5
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		NA	NA	NA	NA	<10	NA	NA
Gasoline Range	--	--	--	100 (rwqcb)	--		140	2200	3900	2600	NA	<5	<5
Petroleum Hydrocarbons	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -133-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 2 of 5)

	BTV			Soil PRG		Reference:	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09
						Location ID:	10745-T11-W	10745-T12-E	10745-T12-SW-E	10745-T12-SW-W	10745-T12-W	10745-T13-E	10745-T13-SW-E
						Field Sample ID:	10745-T11-W	10745-T12-E	10745-T12-SW-E	10745-T12-SW-W	10745-T12-W	10745-T13-E	10745-T13-SW-E
						Sample Date:	6/12/1996	6/12/1996	6/12/1996	6/12/1996	6/12/1996	6/13/1996	6/13/1996
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	13.5	10.0	9.0	9.0	10.0	13.5	9.0
BTEX (mg/kg)													
Benzene	--	--	--	0.6 (ca)	1.3 (ca)		<0.005	0.04	<0.005	<0.005	<0.005	<0.005	<0.005
Ethylbenzene	--	--	--	8.9 (ca)	20 (ca)		<0.005	0.05	0.27	<0.005	<0.005	<0.005	0.02
m,p-Xylene	--	--	--	270	420		NA	NA	NA	NA	NA	NA	NA
o-Xylene	--	--	--	270	420		NA	NA	NA	NA	NA	NA	NA
Toluene	--	--	--	520	520		<0.005	0.02	0.07	<0.005	<0.005	<0.005	0.04
Xylenes, total	--	--	--	270	420		<0.015	0.09	1.7	<0.015	<0.015	<0.015	0.05
Total Metals (mg/kg)													
Arsenic	SSDS	5	5	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Chromium	SSDS	13	19	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Lead	SSDS	4	6	150	750		<5	5	<5	<5	<5	<5	<5
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		NA	NA	NA	NA	NA	<10	<10
Gasoline Range	--	--	--	100 (rwqcb)	--		<5	<5	20	<5	<5	<5	<5
Petroleum Hydrocarbons	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -133-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE

	BTV			Soil PRG		Reference:	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09
						Location ID:	10745-T13-SW-S	10745-T13-W	10745-T14-SW-N	10745-T14-SW-W	10745-T14-W	B-6	B-6
						Field Sample ID:	10745-T13-SW-S	10745-T13-W	10745-T14-SW-N	10745-T14-SW-W	10745-T14-W	10745-8	10745-9
						Sample Date:	6/13/1996	6/12/1996	6/12/1996	6/13/1996	6/12/1996	5/1/1995	5/1/1995
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	9.0	13.5	9.0	9.0	13.5	1.5	3.0
BTEX (mg/kg)													
Benzene	--	--	--	0.6 (ca)	1.3 (ca)		0.02	<0.005	0.27	<0.005	0.07	NA	NA
Ethylbenzene	--	--	--	8.9 (ca)	20 (ca)		0.05	<0.005	2.3	<0.005	1.1	NA	NA
m,p-Xylene	--	--	--	270	420		NA	NA	NA	NA	NA	NA	NA
o-Xylene	--	--	--	270	420		NA	NA	NA	NA	NA	NA	NA
Toluene	--	--	--	520	520		0.07	<0.005	0.98	<0.005	0.31	NA	NA
Xylenes, total	--	--	--	270	420		0.21	<0.015	5.3	<0.015	0.16	NA	NA
Total Metals (mg/kg)													
Arsenic	SSDS	5	5	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	1.4	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	47	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	0.75	NA
Chromium	SSDS	13	19	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	109	NA
Lead	SSDS	4	6	150	750		<5	<5	36.3	<5	45.9	70	NA
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		<10	<10	11000	<10	<10	NA	NA
Gasoline Range	--	--	--	100 (rwqcb)	--		<5	<5	200	<5	53	NA	NA
Petroleum Hydrocarbons	--	--	--	--	--		NA	NA	NA	NA	NA	8400	84

TABLE AOC -133-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 4 of 5)

	BTV			Soil PRG		Reference:	TetraTech WR09	TetraTech WR09	DO7	DO7	DO7	DO7	DO7	DO7
						Location ID:	B-7	B-7	133-MW01	133-MW01	133-MW02	133-MW03	133-MW04	133-MW05
						Field Sample ID:	10745-13	10745-15	133-MW01-SS5.5	133-MW99-SS100	133-MW02-SS6.0	133-MW03-SS6.0	133-MW04-SS6.0	133-MW05-SS6.0
						Sample Date:	5/1/1995	5/1/1995	11/30/1998	11/30/1998	11/24/1998	12/4/1998	11/24/1998	11/30/1998
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	1.0	3.0	5.5	5.5	6.0	6.0	6.0	6.0
BTEX (mg/kg)														
Benzene	--	--	--	0.6 (ca)	1.3 (ca)		NA	NA	<0.01	<0.01	<0.01	<0.01	0.0081 F	<0.01
Ethylbenzene	--	--	--	8.9 (ca)	20 (ca)		NA	NA	<0.01	<0.01	<0.01	<0.01	2.13	<0.01
m,p-Xylene	--	--	--	270	420		NA	NA	<0.02	<0.02	<0.02	<0.02	12.6	<0.02
o-Xylene	--	--	--	270	420		NA	NA	<0.01	<0.01	<0.01	<0.01	5.2	<0.01
Toluene	--	--	--	520	520		NA	NA	<0.01	<0.01	<0.01	<0.01	0.492	<0.01
Xylenes, total	--	--	--	270	420		NA	NA	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)														
Arsenic	SSDS	5	5	0.39 (ca)	1.6 (ca)		NA	<0.5	NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	13	NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	<0.5	NA	NA	NA	NA	NA	NA
Chromium	SSDS	13	19	210 (ca)	450 (ca)		NA	4.1	NA	NA	NA	NA	NA	NA
Lead	SSDS	4	6	150	750		NA	<2.5	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)														
Diesel Range	--	--	--	100 (rwqcb)	--		NA	NA	<11.3	<11.6	<11.2	<11.8	157	<10.9
Gasoline Range	--	--	--	100 (rwqcb)	--		NA	NA	<1.38	<1.38	<1.38	<1.38	323	<1.38
Petroleum Hydrocarbons	--	--	--	--	--		76	<20	NA	NA	NA	NA	NA	NA

TABLE AOC -133-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 5 of 5)

	BTV			Soil PRG		Reference:	DO7	DO7	DO7	DO7	DO7	DO7	DO7
						Location ID:	148-SB01	148-SB02	148-SB02	148-SB02	148-SB03	148-SB03	148-SB03
						Field Sample ID:	148-SB01-SS2.5	148-SB02-SS1.0	148-SB02-SS3.0	148-SB02-SS7.5	148-SB03-SS2.5	148-SB99-SS100	148-SB03-SS6.0
						Sample Date:	11/23/1998	11/23/1998	11/23/1998	11/23/1998	11/23/1998	11/23/1998	11/23/1998
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	2.5	1.0	3.0	7.5	2.5	2.5	6.0
BTEX (mg/kg)													
Benzene	--	--	--	0.6 (ca)	1.3 (ca)		NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	--	--	--	8.9 (ca)	20 (ca)		NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	--	--	--	270	420		NA	NA	NA	NA	NA	NA	NA
o-Xylene	--	--	--	270	420		NA	NA	NA	NA	NA	NA	NA
Toluene	--	--	--	520	520		NA	NA	NA	NA	NA	NA	NA
Xylenes, total	--	--	--	270	420		NA	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)													
Arsenic	SSDS	5	5	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Chromium	SSDS	13	19	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Lead	SSDS	4	6	150	750		NA	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		666	322 J	<12.2 R	<11.3 R	91.8	107	<11.3
Gasoline Range	--	--	--	100 (rwqcb)	--		NA	NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -133-WATER

CHEMICALS DETECTED IN WATER
VANDENBERG AIR FORCE BASE
(Page 1 of 7)

	Grounwater BTV	TapWater PRG	Primary MCL	Secondary MCL	Cal Primary MCL	Cal Secondary MCL	Reference:	TetraTech WR09	TetraTech WR09	DO7	DO7	DO7	DO7	DO7	DO7
							Location ID:	B-3	B-4	133-MW01	133-MW02	133-MW03	133-MW04	133-MW04	133-MW05
							Field Sample ID:	10745-1	10745-3	133-MW01	133-MW02	133-MW03	133-GW99-GW100	133-MW04	133-MW05
							Sample Date:	5/1/1995	5/1/1995	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999
							Sample Depth:	4.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (µg/L)															
Benzene	--	0.34 (ca)	5	--	1	--		5800	<0.5	<0.5	<0.5	<0.5	1220	920	<0.5
Ethylbenzene	--	2.9 (ca)	700	--	700	--		6200	0.67	<0.5	<0.5	<0.5	1680	1140	<0.5
m,p-Xylene	--	210	--	--	--	--		NA	NA	<1	<1	<1	12000	8260	<1
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		NA	NA	<0.5	<0.5	<0.5	607	534	<0.5
o-Xylene	--	210	--	--	--	--		NA	NA	<0.5	<0.5	<0.5	4650	3350 J	<0.5
Toluene	--	720	1000	40	150	--		41000	2.9	<0.5	<0.5	<0.5	7280	5270	<0.5
Xylenes, total	--	210	10000	--	1750	--		41000	5.6	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (µg/L)															
2,4-Dimethylphenol	--	730	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol (o-cresol)	--	1800	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
3/4-Methylphenol (m,p-cresol)	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	--	4.8 (ca)	6	--	4	--		NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	--	6.2	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (µg/L)															
Diesel Range	--	1000 (rwqcb)	--	--	--	--		NA	NA	15100 J	<500 J	<500 J	9130 J	19300 J	<500 J
Gasoline Range	--	1000 (rwqcb)	--	--	--	--		180000	53	<1000	<1000	<1000	64700 F	49400 F	<1000
Motor oils	--	1000 (rwqcb)	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (µg/L)															
1,2,4-Trimethylbenzene	--	12	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	--	0.12 (ca)	5	--	0.5	--		NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	--	12	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	--	160	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Acetone	--	610	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Benzene	--	0.34 (ca)	5	--	1	--		NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	--	1.5 (ca)	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	--	2.9 (ca)	700	--	700	--		NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	--	660	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	--	4.3 (ca)	5	--	5	--		NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	--	240	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	--	6.2	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
p-Cymene (p-isopropyltoluene)	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Sec-butylbenzene	--	240	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Toluene	--	720	1000	40	150	--		NA	NA	NA	NA	NA	NA	NA	NA

TABLE AOC -133-WATER

CHEMICALS DETECTED IN WATER
VANDENBERG AIR FORCE BASE
(Page 2 of 7)

	Grounwater BTV	TapWater PRG	Primary MCL	Secondary MCL	Cal Primary MCL	Cal Secondary MCL	Reference:	DO7	DO7	DO32	DO32	DO32	DO32
							Location ID:	148-SB01	148-SB01	133-MW01	133-MW01	133-MW01	133-MW01
							Field Sample ID:	148-SB01-GW01	148-SB99-GW100	133-MW01-GW02	133-MW99-GW102	133-MW01-GW01	133-MW01-GW01
							Sample Date:	11/23/1998	11/23/1998	12/15/1999	12/15/1999	4/19/2000	7/17/2000
							Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (µg/L)													
Benzene	--	0.34 (ca)	5	--	1	--		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	--	2.9 (ca)	700	--	700	--		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m,p-Xylene	--	210	--	--	--	--		<1	<1	<1	<1	<1	<1
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		<0.5	<0.5	<1	<1	1.1	<1
o-Xylene	--	210	--	--	--	--		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	--	720	1000	40	150	--		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenes, total	--	210	10000	--	1750	--		NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (µg/L)													
2,4-Dimethylphenol	--	730	--	--	--	--		NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
2-Methylphenol (o-cresol)	--	1800	--	--	--	--		NA	NA	NA	NA	NA	NA
3/4-Methylphenol (m,p-cresol)	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	--	4.8 (ca)	6	--	4	--		NA	NA	NA	NA	NA	NA
Naphthalene	--	6.2	--	--	--	--		NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (µg/L)													
Diesel Range	--	1000 (rwqcb)	--	--	--	--		<100	<100	<510	NA	520	110 F
Gasoline Range	--	1000 (rwqcb)	--	--	--	--		<1000	<1000	<1000	<1000	<100	<100
Motor oils	--	1000 (rwqcb)	--	--	--	--		NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (µg/L)													
1,2,4-Trimethylbenzene	--	12	--	--	--	--		NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	--	0.12 (ca)	5	--	0.5	--		NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	--	12	--	--	--	--		NA	NA	NA	NA	NA	NA
2-Hexanone	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	--	160	--	--	--	--		NA	NA	NA	NA	NA	NA
Acetone	--	610	--	--	--	--		NA	NA	NA	NA	NA	NA
Benzene	--	0.34 (ca)	5	--	1	--		NA	NA	NA	NA	NA	NA
Chloromethane	--	1.5 (ca)	--	--	--	--		NA	NA	NA	NA	NA	NA
Ethylbenzene	--	2.9 (ca)	700	--	700	--		NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	--	660	--	--	--	--		NA	NA	NA	NA	NA	NA
m,p-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		NA	NA	NA	NA	NA	NA
Methylene chloride	--	4.3 (ca)	5	--	5	--		NA	NA	NA	NA	NA	NA
n-Propylbenzene	--	240	--	--	--	--		NA	NA	NA	NA	NA	NA
Naphthalene	--	6.2	--	--	--	--		NA	NA	NA	NA	NA	NA
o-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA
p-Cymene (p-isopropyltoluene)	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
Sec-butylbenzene	--	240	--	--	--	--		NA	NA	NA	NA	NA	NA
Toluene	--	720	1000	40	150	--		NA	NA	NA	NA	NA	NA

TABLE AOC -133-WATER

CHEMICALS DETECTED IN WATER
VANDENBERG AIR FORCE BASE

	Grounwater BTV	TapWater PRG	Primary MCL	Secondary MCL	Cal Primary MCL	Cal Secondary MCL	Reference:	DO32	DO32	DO32	DO32	DO32	DO32
							Location ID:	133-MW02	133-MW02	133-MW02	133-MW02	133-MW03	133-MW03
							Field Sample ID:	133-MW02-GW02	133-MW02-GW01	133-MW99-GW01	133-MW02-GW01	133-MW03-GW02	133-MW03-GW02
							Sample Date:	12/16/1999	4/21/2000	4/21/2000	7/18/2000	12/15/1999	4/21/2000
							Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (µg/L)													
Benzene	--	0.34 (ca)	5	--	1	--		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	--	2.9 (ca)	700	--	700	--		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m,p-Xylene	--	210	--	--	--	--		<1	0.73 F	<1	<1	<1	<1
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		<1	<1	<1	1.9	<1	<1
o-Xylene	--	210	--	--	--	--		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	--	720	1000	40	150	--		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenes, total	--	210	10000	--	1750	--		NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (µg/L)													
2,4-Dimethylphenol	--	730	--	--	--	--		NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
2-Methylphenol (o-cresol)	--	1800	--	--	--	--		NA	NA	NA	NA	NA	NA
3/4-Methylphenol (m,p-cresol)	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	--	4.8 (ca)	6	--	4	--		NA	NA	NA	NA	NA	NA
Naphthalene	--	6.2	--	--	--	--		NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (µg/L)													
Diesel Range	--	1000 (rwqcb)	--	--	--	--		800	460 F	<480	370 F	<500	<490
Gasoline Range	--	1000 (rwqcb)	--	--	--	--		<1000	<100	<100	<100	<1000	<100
Motor oils	--	1000 (rwqcb)	--	--	--	--		NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (µg/L)													
1,2,4-Trimethylbenzene	--	12	--	--	--	--		NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	--	0.12 (ca)	5	--	0.5	--		NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	--	12	--	--	--	--		NA	NA	NA	NA	NA	NA
2-Hexanone	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	--	160	--	--	--	--		NA	NA	NA	NA	NA	NA
Acetone	--	610	--	--	--	--		NA	NA	NA	NA	NA	NA
Benzene	--	0.34 (ca)	5	--	1	--		NA	NA	NA	NA	NA	NA
Chloromethane	--	1.5 (ca)	--	--	--	--		NA	NA	NA	NA	NA	NA
Ethylbenzene	--	2.9 (ca)	700	--	700	--		NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	--	660	--	--	--	--		NA	NA	NA	NA	NA	NA
m,p-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		NA	NA	NA	NA	NA	NA
Methylene chloride	--	4.3 (ca)	5	--	5	--		NA	NA	NA	NA	NA	NA
n-Propylbenzene	--	240	--	--	--	--		NA	NA	NA	NA	NA	NA
Naphthalene	--	6.2	--	--	--	--		NA	NA	NA	NA	NA	NA
o-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA
p-Cymene (p-isopropyltoluene)	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
Sec-butylbenzene	--	240	--	--	--	--		NA	NA	NA	NA	NA	NA
Toluene	--	720	1000	40	150	--		NA	NA	NA	NA	NA	NA

TABLE AOC -133-WATER

CHEMICALS DETECTED IN WATER
VANDENBERG AIR FORCE BASE
(Page 4 of 7)

	Grounwater BTV	TapWater PRG	Primary MCL	Secondary MCL	Cal Primary MCL	Cal Secondary MCL	Reference:	DO32	DO32	DO32	DO32	DO32	DO32
							Location ID:	133-MW03	133-MW04	133-MW04	133-MW04	133-MW04	133-MW04
							Field Sample ID:	133-MW03-GW01	133-MW04-GW02	133-MW04-GW01	133-MW04-GW01	133-MW04-GW01	133-MW99-GW100
							Sample Date:	7/18/2000	12/16/1999	4/20/2000	4/21/2000	7/18/2000	7/18/2000
							Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (µg/L)													
Benzene	--	0.34 (ca)	5	--	1	--		<0.5	610	<0.5	210	570 J	650
Ethylbenzene	--	2.9 (ca)	700	--	700	--		<0.5	1500	<0.5	680	1600 J	1900
m,p-Xylene	--	210	--	--	--	--		<1	8600	<1	2900	10000	10000
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		<1	680	<1	300	310 J	560
o-Xylene	--	210	--	--	--	--		<0.5	3300	<0.5	1200	4300	5000
Toluene	--	720	1000	40	150	--		<0.5	3000	<0.5	500	2000	2300
Xylenes, total	--	210	10000	--	1750	--		NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (µg/L)													
2,4-Dimethylphenol	--	730	--	--	--	--		NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
2-Methylphenol (o-cresol)	--	1800	--	--	--	--		NA	NA	NA	NA	NA	NA
3/4-Methylphenol (m,p-cresol)	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	--	4.8 (ca)	6	--	4	--		NA	NA	NA	NA	NA	NA
Naphthalene	--	6.2	--	--	--	--		NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (µg/L)													
Diesel Range	--	1000 (rwqcb)	--	--	--	--		<465	23000	<505	12000	NA	20000
Gasoline Range	--	1000 (rwqcb)	--	--	--	--		<100	52000 F	<100	19000	59000	60000
Motor oils	--	1000 (rwqcb)	--	--	--	--		NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (µg/L)													
1,2,4-Trimethylbenzene	--	12	--	--	--	--		NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	--	0.12 (ca)	5	--	0.5	--		NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	--	12	--	--	--	--		NA	NA	NA	NA	NA	NA
2-Hexanone	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	--	160	--	--	--	--		NA	NA	NA	NA	NA	NA
Acetone	--	610	--	--	--	--		NA	NA	NA	NA	NA	NA
Benzene	--	0.34 (ca)	5	--	1	--		NA	NA	NA	NA	NA	NA
Chloromethane	--	1.5 (ca)	--	--	--	--		NA	NA	NA	NA	NA	NA
Ethylbenzene	--	2.9 (ca)	700	--	700	--		NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	--	660	--	--	--	--		NA	NA	NA	NA	NA	NA
m,p-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		NA	NA	NA	NA	NA	NA
Methylene chloride	--	4.3 (ca)	5	--	5	--		NA	NA	NA	NA	NA	NA
n-Propylbenzene	--	240	--	--	--	--		NA	NA	NA	NA	NA	NA
Naphthalene	--	6.2	--	--	--	--		NA	NA	NA	NA	NA	NA
o-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA
p-Cymene (p-isopropyltoluene)	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
Sec-butylbenzene	--	240	--	--	--	--		NA	NA	NA	NA	NA	NA
Toluene	--	720	1000	40	150	--		NA	NA	NA	NA	NA	NA

TABLE AOC -133-WATER

CHEMICALS DETECTED IN WATER
VANDENBERG AIR FORCE BASE

	Groumwater BTV	TapWater PRG	Primary MCL	Secondary MCL	Cal Primary MCL	Cal Secondary MCL	Reference:	DO32	DO32	DO32	3PDO59	3PDO59	3PDO59
							Location ID:	133-MW05	133-MW05	133-MW05	133-MW01	133-MW01	133-MW02
							Field Sample ID:	133-MW05-GW02	133-MW05-GW01	133-MW05-GW01	133-MW01-GW01	133-MW01-GW02	133-MW02-GW01
							Sample Date:	12/16/1999	4/19/2000	7/18/2000	1/9/2003	3/13/2003	1/10/2003
							Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (µg/L)													
Benzene	--	0.34 (ca)	5	--	1	--		<0.5	<0.5	<0.5	NA	NA	NA
Ethylbenzene	--	2.9 (ca)	700	--	700	--		1.9	<0.5	<0.5	NA	NA	NA
m,p-Xylene	--	210	--	--	--	--		16	<1	<1	NA	NA	NA
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		<1	<1	<1	NA	NA	NA
o-Xylene	--	210	--	--	--	--		5.9	<0.5	<0.5	NA	NA	NA
Toluene	--	720	1000	40	150	--		1.8	<0.5	<0.5	NA	NA	NA
Xylenes, total	--	210	10000	--	1750	--		NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (µg/L)													
2,4-Dimethylphenol	--	730	--	--	--	--		NA	NA	NA	<9.6	<9.6	<9.6
2-Methylnaphthalene	--	--	--	--	--	--		NA	NA	NA	<9.6	<9.6	<9.6
2-Methylphenol (o-cresol)	--	1800	--	--	--	--		NA	NA	NA	<9.6	<9.6	<9.6
3/4-Methylphenol (m,p-cresol)	--	--	--	--	--	--		NA	NA	NA	<48	<48	<48
bis(2-Ethylhexyl)phthalate	--	4.8 (ca)	6	--	4	--		NA	NA	NA	<9.6	<9.6	<9.6
Naphthalene	--	6.2	--	--	--	--		NA	NA	NA	<9.6	<9.6	<9.6
Total Petroleum Hydrocarbons (µg/L)													
Diesel Range	--	1000 (rwqcb)	--	--	--	--		<460	600	100 F	44 F	35 F	340 F
Gasoline Range	--	1000 (rwqcb)	--	--	--	--		110 F	<100	<100	25 F	12 F	16 F
Motor oils	--	1000 (rwqcb)	--	--	--	--		NA	NA	NA	68 F	70 F	310 F
Volatile Organic Compounds (µg/L)													
1,2,4-Trimethylbenzene	--	12	--	--	--	--		NA	NA	NA	<1	<1	<1
1,2-Dichloroethane	--	0.12 (ca)	5	--	0.5	--		NA	NA	NA	<0.5	<0.5	<0.5
1,3,5-Trimethylbenzene	--	12	--	--	--	--		NA	NA	NA	<1	<1	<1
2-Hexanone	--	--	--	--	--	--		NA	NA	NA	<10	<10	<10
4-Methyl-2-pentanone (MIBK)	--	160	--	--	--	--		NA	NA	NA	<10	<10	<10
Acetone	--	610	--	--	--	--		NA	NA	NA	<10 R	<10	<10 R
Benzene	--	0.34 (ca)	5	--	1	--		NA	NA	NA	<0.4	<0.4	<0.4
Chloromethane	--	1.5 (ca)	--	--	--	--		NA	NA	NA	<1	<1 J	0.52 F
Ethylbenzene	--	2.9 (ca)	700	--	700	--		NA	NA	NA	<1	<1	<1
Isopropylbenzene (Cumene)	--	660	--	--	--	--		NA	NA	NA	<1	<1	<1
m,p-Xylene	--	210	--	--	--	--		NA	NA	NA	<2	<2	<2
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		NA	NA	NA	<5	<5 R	0.5 F
Methylene chloride	--	4.3 (ca)	5	--	5	--		NA	NA	NA	<1	<1	<1
n-Propylbenzene	--	240	--	--	--	--		NA	NA	NA	<1	<1	<1
Naphthalene	--	6.2	--	--	--	--		NA	NA	NA	<1	<1	<1
o-Xylene	--	210	--	--	--	--		NA	NA	NA	<1	<1	<1
p-Cymene (p-isopropyltoluene)	--	--	--	--	--	--		NA	NA	NA	<1	<1	<1
Sec-butylbenzene	--	240	--	--	--	--		NA	NA	NA	<1	<1	<1
Toluene	--	720	1000	40	150	--		NA	NA	NA	<1	<1	<1

TABLE AOC -133-WATER

CHEMICALS DETECTED IN WATER
VANDENBERG AIR FORCE BASE
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	Grounwater BTV	TapWater PRG	Primary MCL	Secondary MCL	Cal Primary MCL	Cal Secondary MCL	Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
							Location ID:	133-MW02	133-MW02	133-MW03	133-MW03	133-MW04	133-MW04
							Field Sample ID:	133-MW02-GW02	133-MW99-GW02	133-MW03-GW01	133-MW03-GW02	133-MW04-GW01	133-MW04-GW02
							Sample Date:	3/12/2003	3/12/2003	1/10/2003	3/12/2003	1/13/2003	3/13/2003
							Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (µg/L)													
Benzene	--	0.34 (ca)	5	--	1	--		NA	NA	NA	NA	NA	NA
Ethylbenzene	--	2.9 (ca)	700	--	700	--		NA	NA	NA	NA	NA	NA
m,p-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		NA	NA	NA	NA	NA	NA
o-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA
Toluene	--	720	1000	40	150	--		NA	NA	NA	NA	NA	NA
Xylenes, total	--	210	10000	--	1750	--		NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (µg/L)													
2,4-Dimethylphenol	--	730	--	--	--	--		<9.6	<9.6	<9.6	<9.6	115	23.4
2-Methylnaphthalene	--	--	--	--	--	--		<9.6	<9.6	<9.6	<9.6	58.4	40.9
2-Methylphenol (o-cresol)	--	1800	--	--	--	--		<9.6	<9.6	<9.6	<9.6	2.7 F	<9.6
3/4-Methylphenol (m,p-cresol)	--	--	--	--	--	--		<48	<48	<48	<48	7.5 F	<48
bis(2-Ethylhexyl)phthalate	--	4.8 (ca)	6	--	4	--		1 F	1.1 F	<9.6	<9.6	<9.6	1.6 F
Naphthalene	--	6.2	--	--	--	--		<9.6	<9.6	<9.6	<9.6	**193**	**137**
Total Petroleum Hydrocarbons (µg/L)													
Diesel Range	--	1000 (rwqcb)	--	--	--	--		130 F	400 F	220 F	200 F	7600	7700
Gasoline Range	--	1000 (rwqcb)	--	--	--	--		27 F	16 F	29 F	17 F	7400	3300
Motor oils	--	1000 (rwqcb)	--	--	--	--		220 F	440 F	350 F	260 F	<4800	<2400
Volatile Organic Compounds (µg/L)													
1,2,4-Trimethylbenzene	--	12	--	--	--	--		<1	<1	<1	<1	**942**	**780**
1,2-Dichloroethane	--	0.12 (ca)	5	--	0.5	--		<0.5	<0.5	<0.5	<0.5	<5	**6**
1,3,5-Trimethylbenzene	--	12	--	--	--	--		<1	<1	<1	<1	**181**	**106**
2-Hexanone	--	--	--	--	--	--		7.1 F	<10	<10	<10	<100	<100
4-Methyl-2-pentanone (MIBK)	--	160	--	--	--	--		0.38 F	<10	<10	<10	8.6 F	<100
Acetone	--	610	--	--	--	--		<10 R	<10	<10 R	<10	41.7 R	<100
Benzene	--	0.34 (ca)	5	--	1	--		<0.4	<0.4	<0.4	<0.4	**57.1**	**36.5**
Chloromethane	--	1.5 (ca)	--	--	--	--		<1	<1 R	<1	<1 R	<10	<10 J
Ethylbenzene	--	2.9 (ca)	700	--	700	--		<1	<1	<1	<1	**641**	**552**
Isopropylbenzene (Cumene)	--	660	--	--	--	--		<1	<1	<1	<1	37.8	31.2
m,p-Xylene	--	210	--	--	--	--		<2	<2	<2	<2	**471**	8 F
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		<5	<5 R	<5	<5 R	**166**	**293**
Methylene chloride	--	4.3 (ca)	5	--	5	--		<1	<1	<1	<1	**9.2 F**	<10
n-Propylbenzene	--	240	--	--	--	--		<1	<1	<1	<1	94.8	82.3
Naphthalene	--	6.2	--	--	--	--		0.33 F	<1	<1	<1	**235**	**193**
o-Xylene	--	210	--	--	--	--		<1	<1	<1	<1	79.6	11.3
p-Cymene (p-isopropyltoluene)	--	--	--	--	--	--		<1	<1	<1	<1	10.1	4 F
Sec-butylbenzene	--	240	--	--	--	--		<1	<1	<1	<1	13	6.4 F
Toluene	--	720	1000	40	150	--		<1	<1	<1	<1	22.8	5.6 F

TABLE AOC -133-WATER

CHEMICALS DETECTED IN WATER
VANDENBERG AIR FORCE BASE
(Page 7 of 7)

	Grounwater BTV	TapWater PRG	Primary MCL	Secondary MCL	Cal Primary MCL	Cal Secondary MCL	Reference:	3PDO59	3PDO59
							Location ID:	133-MW05	133-MW05
							Field Sample ID:	133-MW05-GW01	133-MW05-GW02
							Sample Date:	1/14/2003	3/13/2003
							Sample Depth:	0.0	0.0
BTEX (µg/L)									
Benzene	--	0.34 (ca)	5	--	1	--		NA	NA
Ethylbenzene	--	2.9 (ca)	700	--	700	--		NA	NA
m,p-Xylene	--	210	--	--	--	--		NA	NA
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		NA	NA
o-Xylene	--	210	--	--	--	--		NA	NA
Toluene	--	720	1000	40	150	--		NA	NA
Xylenes, total	--	210	10000	--	1750	--		NA	NA
Semivolatile Organic Compounds (µg/L)									
2,4-Dimethylphenol	--	730	--	--	--	--		<9.6	<9.6
2-Methylnaphthalene	--	--	--	--	--	--		<9.6	<9.6
2-Methylphenol (o-cresol)	--	1800	--	--	--	--		<9.6	<9.6
3/4-Methylphenol (m,p-cresol)	--	--	--	--	--	--		<48	<48
bis(2-Ethylhexyl)phthalate	--	4.8 (ca)	6	--	4	--		<9.6	1.3 F
Naphthalene	--	6.2	--	--	--	--		<9.6	<9.6
Total Petroleum Hydrocarbons (µg/L)									
Diesel Range	--	1000 (rwqcb)	--	--	--	--		980	270 F
Gasoline Range	--	1000 (rwqcb)	--	--	--	--		25 F	13 F
Motor oils	--	1000 (rwqcb)	--	--	--	--		290 F	190 F
Volatile Organic Compounds (µg/L)									
1,2,4-Trimethylbenzene	--	12	--	--	--	--		<1	<1
1,2-Dichloroethane	--	0.12 (ca)	5	--	0.5	--		<0.5	<0.5
1,3,5-Trimethylbenzene	--	12	--	--	--	--		<1	<1
2-Hexanone	--	--	--	--	--	--		<10	<10
4-Methyl-2-pentanone (MIBK)	--	160	--	--	--	--		<10 R	<10
Acetone	--	610	--	--	--	--		<10 R	<10
Benzene	--	0.34 (ca)	5	--	1	--		<0.4	<0.4
Chloromethane	--	1.5 (ca)	--	--	--	--		<1 R	<1 J
Ethylbenzene	--	2.9 (ca)	700	--	700	--		<1	<1
Isopropylbenzene (Cumene)	--	660	--	--	--	--		<1	<1
m,p-Xylene	--	210	--	--	--	--		<2	<2
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		<5	<5 R
Methylene chloride	--	4.3 (ca)	5	--	5	--		<1	<1
n-Propylbenzene	--	240	--	--	--	--		<1	<1
Naphthalene	--	6.2	--	--	--	--		<1	<1
o-Xylene	--	210	--	--	--	--		<1	<1
p-Cymene (p-isopropyltoluene)	--	--	--	--	--	--		<1	<1
Sec-butylbenzene	--	240	--	--	--	--		<1	<1
Toluene	--	720	1000	40	150	--		<1	<1

NOTES

DETECTED CHEMICALS IN SOIL AND WATER
VANDENBERG AIR FORCE BASE

BTV Types:
BED = bedrock
GW = groundwater
SA = surface alluvium
SDS = surface dune sand
SSA = subsurface alluvium
SSDS = subsurface dune sand

Units:
mg/kg = milligrams per kilogram
µg/L = micrograms per liter

Abbreviations:
-- = not applicable or not established
AOC = Area of Concern
BTV = background threshold value (Jacobs Engineering Group, Inc., 1994)
(ca) = Cancerous
Cal = California Department of Health Services
MCL = U.S. Environmental Protection Agency (2002) Maximum Contaminant Level
NA = not applicable
ND = Not detected
PRG = U.S. Environmental Protection Agency (2002) Preliminary Remediation Goal
RWQCB = Regional Water Quality Control Board
(sw) = Surface Water
UCL = upper confidence limit

Formatted Chemical Concentrations:
Bold = Detected Result is above the Residential PRG
Underlined = Detected TPH Result is above the RWQCB Standard

Qualifiers:
B = The analyte was found in an associated blank, as well as in the sample.
F = The analyte was positively identified, but the quantitation is below the reporting limit.
J = The associated numerical value is an estimated quantity.
M = A matrix effect was present.
R = The data are unusable due to deficiencies in the ability to analyze the sample and meet quality control criteria.

References:
3PDO59 = Delivery Order 0059 (Montgomery Watson Harza, 2002-2003)
DO7 = Delivery Order 0007 (Montgomery Watson Harza, 1998-1999)
DO32 = Delivery Order 0032 (Montgomery Watson Harza, 1999-2000)
DO60 = Delivery Order 0060 (Montgomery Watson Harza, 2000)
WR09 = Work Request 09 (Tetra Tech, 1997)
WR10 = Work Request 10 (Tetra Tech, 1998)

For AOC-133 Tetra Tech WR09 Soil samples:
1. Tank bottom sample depths are assumed to be the tank burial depth plus 8 feet (diameter of a 10,000-gallon capacity UST).
2. The burial depth of Tanks 11, 13 and 14 is 5.5 feet bgs; Tank 12 was buried at a depth of 2.0 feet bgs
3. Sidewall sample depths are assumed to be collected at a depth of 9 feet bgs, roughly 1 foot above the base of the UST excavation.

APPENDIX A

AOC-099 CUMULATIVE HUMAN HEALTH RISK AND HAZARD CALCULATIONS

APPENDIX A

AOC-099
CUMULATIVE HUMAN HEALTH RISK AND HAZARD CALCULATIONS
DELIVERY ORDER 0059 (3P+)
VANDENBERG AIR FORCE BASE

AOC	Risk Type	Medium	Units	Chemical	Qualifier	Exposure Point Concentration	95% UCL BTV	BTV Type	CORRESPONDING SAMPLE				SCENARIO					
													Residential			Industrial		
									Identification	Depth (feet bgs)	Date	Reference	PRG	ILCR or HQ	Percent of Risk	PRG	ILCR or HQ	Percent of Risk
099	CANCER	SOIL	mg/kg	Chromium	--	28.8	28.	SDS	VN99S7	0.0	03/12/97	TetraTech WR10	210.	1.4E-07	100.00	450.	6.4E-08	100.00
099	CANCER	SOIL											*Soil CILCR*	*1.4E-07*			*6.4E-08*	
099	CANCER	ALL											**TOTAL CILCR**	**1.4E-07**			**6.4E-08**	
099	NONCANCER	SOIL	mg/kg	Aluminum	--	9,730.	7,010.	SDS	VN99S7	0.0	03/12/97	TetraTech WR10	76,000.	1.3E-01	7.44	100,000.	9.7E-02	22.58
099	NONCANCER	SOIL	mg/kg	Antimony	F	1.6	0.4	SSA	099-SC19-SS3.0	3.0	08/06/03	3PDO59	31.	5.2E-02	3.00	410.	3.9E-03	0.91
099	NONCANCER	SOIL	mg/kg	Iron	--	21,200.	13,500.	SDS	VN99S7	0.0	03/12/97	TetraTech WR10	23,000.	9.2E-01	53.54	100,000.	2.1E-01	49.21
099	NONCANCER	SOIL	mg/kg	Lead	--	82.2	10.	SSA	099-SB10-SS2	2.0	11/21/98	DO7	150.	5.5E-01	31.83	750.	1.1E-01	25.44
099	NONCANCER	SOIL	mg/kg	Selenium	F	0.95	0.5	SSA	099-SC19-SS3.0	3.0	08/06/03	3PDO59	390.	2.4E-03	0.14	5,100.	1.9E-04	0.04
099	NONCANCER	SOIL	mg/kg	Vanadium	--	29.5	25.	SDS	VN99S7	0.0	03/12/97	TetraTech WR10	550.	5.4E-02	3.12	7,200.	4.1E-03	0.95
099	NONCANCER	SOIL	mg/kg	Zinc	--	374.	221.	SSA	099-SB03-SS5	5.0	11/21/98	DO7	23,000.	1.6E-02	0.94	100,000.	3.7E-03	0.87
099	NONCANCER	SOIL											*Soil HI*	*1.7E+00*			*4.3E-01*	
099	NONCANCER	ALL											**TOTAL HI**	**1.7E+00**			**4.3E-01**	

APPENDIX A - NOTES
CUMULATIVE HUMAN HEALTH RISK AND HAZARD CALCULATIONS
DELIVERY ORDER 0059 (3P+)
VANDENBERG AIR FORCE BASE

Media:
ALL = all applicable media
GW = groundwater
SW = surface water
SOIL = soil
SO/SED = soil and sediment

Units:
mg/kg = milligrams per kilogram
µg/L = micrograms per liter

Abbreviations:
-- = not applicable or not established
AOC = Area of Concern
bgs = below ground surface
BTV = background threshold value (Jacobs Engineering Group, Inc., 1994)
CILCR = cumulative incremental lifetime cancer risk
HI = hazard index
HQ = hazard quotient
ILCR = incremental lifetime cancer risk
insig = percent risk is less than 0.01%
** multiple ** = Maximum exposure-point concentration occurred at more than one location
nc = not calculated
PRG = U.S. Environmental Protection Agency (2002) Preliminary Remediation Goal
UCL = upper confidence limit

BTV Types:
BED = bedrock
GW = groundwater
SA = surface alluvium
SDS = surface dune sand
SSA = subsurface alluvium
SSDS = subsurface dune sand

Chemical Types:
BTEX = benzene, ethylbenzene, toluene, xylenes
METALS = metals
PAH = polynuclear aromatic hydrocarbon
PCB = polychlorinated biphenyls
PEST = pesticides
SVOC = semivolatile organic compound
VOC = volatile organic compound

Exposure-point concentrations:
Soil and sediment EPCs were selected from samples collected between 0 and 10 feet bgs (inclusive).

Qualifiers:
F = The analyte was positively identified, but the quantitation is below the reporting limit.
J = The associated numerical value is an estimated quantity.
M = A matrix effect was present.

References:
3PDO59 = Delivery Order 0059 (Montgomery Watson Harza, 2002-2003)
DO7 = Delivery Order 0007 (Montgomery Watson Harza, 1998-1999)
DO32 = Delivery Order 0032 (Montgomery Watson Harza, 1999-2000)
DO60 = Delivery Order 0060 (Montgomery Watson Harza, 2000)
WR09 = Work Request 09 (Tetra Tech, 1997)
WR10 = Work Request 10 (Tetra Tech, 1998)

For AOC-133 Tetra Tech WR09 Soil samples:
1. Tank bottom sample depths are assumed to be the tank burial depth plus 8 feet (diameter of a 10,000-gallon capacity UST).
2. The burial depth of Tanks 11, 13 and 14 is 5.5 feet bgs; Tank 12 was buried at a depth of 2.0 feet bgs
3. Sidewall sample depths are assumed to be collected at a depth of 9 feet bgs, roughly 1 foot above the base of the UST excavation.

APPENDIX B

SUMMARY OF ANALYTICAL DATA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE
(Page 1 of 28)

Reference:	TetraTech WR10	TetraTech WR10	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32
Location ID:	VT20B1	VT20B1	020-SB01	020-SB01	020-SB01A	020-SB01A	020-SB02	020-SB02	020-SB02	020-SB02	020-SB03
Field Sample ID:	VT20B1-0	VT20B1-3	020-SB01-SS0.0	020-SB01-SS0.5	020-SB01A-SS2.5	020-SB01A-SS5.0	020-SB02-SS0.0	020-SB02-SS0.5	020-SB02-SS2.5	020-SB02-SS5.0	020-SB03-SS0.0
Sample Date:	2/9/1998	2/9/1998	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999
Sample Depth:	0.0	3.0	0.0	0.5	2.5	5.0	0.0	0.5	2.5	5.0	0.0
General Minerals											
pH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)											
Aluminum	3080	3550	3900 J	NA	NA	NA	3770 J	NA	NA	NA	4480 J
Antimony	NA	NA	<0.564	NA	NA	NA	<0.534	NA	NA	NA	<0.521
Arsenic	NA	NA	3.74 J	NA	NA	NA	0.886 FJ	NA	NA	NA	0.949 FJ
Barium	37.9	31.2	65.4 J	NA	NA	NA	41.1 J	NA	NA	NA	96 J
Beryllium	0.15 FJ	0.16 FJ	0.132 FJ	NA	NA	NA	0.136 FJ	NA	NA	NA	0.167 FJ
Cadmium	<1.1	<1.1	0.404 F	NA	NA	NA	0.379 F	NA	NA	NA	0.402 F
Calcium	1380	512 FJ	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	12.6	11.1	12.7 J	NA	NA	NA	12.5 J	NA	NA	NA	13.3 J
Cobalt	1.2 FJ	1.4 FJ	1.54 F	NA	NA	NA	1.28 F	NA	NA	NA	1.42 F
Copper	5.8	2.4 FJ	7.6 J	NA	NA	NA	3.72 J	NA	NA	NA	4.75 J
Iron	4570	4350	4590 J	NA	NA	NA	4110 J	NA	NA	NA	4780 J
Lead	NA	NA	14	NA	NA	NA	5.82 F	NA	NA	NA	6.94 F
Magnesium	701	333 FJ	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	57.7 J	72.8 J	60 J	NA	NA	NA	112 J	NA	NA	NA	126 J
Mercury	NA	NA	<0.113	NA	NA	NA	<0.107	NA	NA	NA	<0.104
Molybdenum	0.73 FJ	<4.3	<11.3	NA	NA	NA	<10.7	NA	NA	NA	<10.4
Nickel	5.7	4 FJ	12.1	NA	NA	NA	5.71	NA	NA	NA	5.18 F
Potassium	515 FJ	277 FJ	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	<1.13	NA	NA	NA	<1.07	NA	NA	NA	<1.04
Silver	<1.1	<1.1	0.515 F	NA	NA	NA	0.721 F	NA	NA	NA	0.57 F
Sodium	<571	60.2 FJ	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	NA	0.301	NA	NA	NA	0.264	NA	NA	NA	0.267
Vanadium	12	10.3	11.5 J	NA	NA	NA	8.82 J	NA	NA	NA	10.7 J
Zinc	32.3	3.2	97 J	NA	NA	NA	8.31 J	NA	NA	NA	12.1 J
Polychlorinated biphenols (mg/kg)											
PCB-1016 (Aroclor 1016)	NA	NA	<0.045	NA	NA	NA	<0.043	NA	NA	NA	<0.042
PCB-1221 (Aroclor 1221)	NA	NA	<0.09	NA	NA	NA	<0.085	NA	NA	NA	<0.083
PCB-1232 (Aroclor 1232)	NA	NA	<0.045	NA	NA	NA	<0.043	NA	NA	NA	<0.042
PCB-1242 (Aroclor 1242)	NA	NA	<0.09	NA	NA	NA	<0.085	NA	NA	NA	<0.083
PCB-1248 (Aroclor 1248)	NA	NA	<0.09	NA	NA	NA	<0.085	NA	NA	NA	<0.083
PCB-1254 (Aroclor 1254)	NA	NA	<0.045	NA	NA	NA	<0.043	NA	NA	NA	<0.042
PCB-1260 (Aroclor 1260)	NA	NA	<0.045	NA	NA	NA	<0.043	NA	NA	NA	<0.042
Semivolatile Organic Compounds (mg/kg)											
1,2,4-Trichlorobenzene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
1,2-Dichlorobenzene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
1,3-Dichlorobenzene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
1,4-Dichlorobenzene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
2,4,5-Trichlorophenol	<3.7	<3.4	NA	<18	<1.7	<1.6	NA	<1.7	<8.2	<3.3	NA
2,4,6-Trichlorophenol	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	TetraTech WR10	TetraTech WR10	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32
Location ID:	VT20B1	VT20B1	020-SB01	020-SB01	020-SB01A	020-SB01A	020-SB02	020-SB02	020-SB02	020-SB02	020-SB03
Field Sample ID:	VT20B1-0	VT20B1-3	020-SB01-SS0.0	020-SB01-SS0.5	020-SB01A-SS2.5	020-SB01A-SS5.0	020-SB02-SS0.0	020-SB02-SS0.5	020-SB02-SS2.5	020-SB02-SS5.0	020-SB03-SS0.0
Sample Date:	2/9/1998	2/9/1998	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999
Sample Depth:	0.0	3.0	0.0	0.5	2.5	5.0	0.0	0.5	2.5	5.0	0.0
2,4-Dichlorophenol	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
2,4-Dimethylphenol	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
2,4-Dinitrophenol	<3.7	<3.4	NA	<18 J	<1.7 J	<1.6 J	NA	<1.7 J	<8.2 J	<3.3 J	NA
2,4-Dinitrotoluene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
2,6-Dinitrotoluene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
2-Chloronaphthalene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
2-Chlorophenol	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
2-Methylnaphthalene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
2-Methylphenol (o-cresol)	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
2-Nitroaniline	<3.7	<3.4	NA	<18	<1.7	<1.6	NA	<1.7	<8.2	<3.3	NA
2-Nitrophenol	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
3,3'-Dichlorobenzidine	<3.7	<3.4	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
3-Nitroaniline	<3.7	<3.4	NA	<18	<1.7	<1.6	NA	<1.7	<8.2	<3.3	NA
3/4-Methylphenol (m,p-cresol)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	<3.7	<3.4	NA	<18	<1.7	<1.6	NA	<1.7	<8.2	<3.3	NA
4-Bromophenyl phenyl ether	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
4-Chloro-3-methylphenol	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
4-Chloroaniline	<0.75	<0.71	NA	<7.4	<0.68	<0.68	NA	<0.69	<3.4	<1.4	NA
4-Chlorophenyl phenyl ether	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
4-Methylphenol (p-cresol)	<0.75	<0.71	NA	<5.6	<0.52	<0.51	NA	<0.52	<2.6	<1	NA
4-Nitroaniline	<3.7	<3.4	NA	<18	<1.7	<1.6	NA	<1.7	<8.2	<3.3	NA
4-Nitrophenol	<3.7	<3.4	NA	<18	<1.7	<1.6	NA	<1.7	<8.2	<3.3	NA
Acenaphthene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Acenaphthylene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Anthracene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Benzo(a)anthracene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Benzo(a)pyrene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Benzo(b)fluoranthene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Benzo(g,h,i)perylene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Benzo(k)fluoranthene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Benzoic acid	<3.7	<3.4	NA	<18	<1.7	<1.6	NA	<1.7	<8.2	<3.3	NA
Benzyl alcohol	<0.75	<0.71	NA	<7.4	<0.68	<0.68	NA	<0.69	<3.4	<1.4	NA
Benzyl butyl phthalate	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
bis(2-Chloroethoxy)methane	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
bis(2-Chloroethyl)ether	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
bis(2-Chloroisopropyl)ether	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
bis(2-Ethylhexyl)phthalate	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Carbazole	<0.75	<0.71	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Di-n-butyl phthalate	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Di-n-octylphthalate	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Dibenz(a,h)anthracene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	TetraTech WR10	TetraTech WR10	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32
Location ID:	VT20B1	VT20B1	020-SB01	020-SB01	020-SB01A	020-SB01A	020-SB02	020-SB02	020-SB02	020-SB02	020-SB03
Field Sample ID:	VT20B1-0	VT20B1-3	020-SB01-SS0.0	020-SB01-SS0.5	020-SB01A-SS2.5	020-SB01A-SS5.0	020-SB02-SS0.0	020-SB02-SS0.5	020-SB02-SS2.5	020-SB02-SS5.0	020-SB03-SS0.0
Sample Date:	2/9/1998	2/9/1998	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999
Sample Depth:	0.0	3.0	0.0	0.5	2.5	5.0	0.0	0.5	2.5	5.0	0.0
Dibenzofuran	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Diethyl phthalate	<0.75	<0.71	NA	1 F	0.097 F	0.096 F	NA	0.11 F	0.49 F	0.24 F	NA
Dimethyl phthalate	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Fluoranthene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Fluorene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Hexachlorobenzene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Hexachlorobutadiene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Hexachlorocyclopentadiene	<3.7	<3.4	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Hexachloroethane	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Indeno(1,2,3-c,d)pyrene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Isophorone	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
n-Nitrosodi-n-propylamine	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
n-Nitrosodimethylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodiphenylamine	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Naphthalene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Nitrobenzene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Pentachlorophenol	<3.7	<3.4	NA	<18	<1.7	<1.6	NA	<1.7	<8.2	<3.3	NA
Phenanthrene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Phenol	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Pyrene	<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA	<0.35	<1.7	<0.69	NA
Total Petroleum Hydrocarbons (mg/kg)											
Diesel Range	130 J	220 J	NA	1500	380	760	NA	57	<10	<10	NA
Motor oils	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (mg/kg)											
1,1,1-Trichloroethane	0.0013 FJ	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
1,1,2,2-Tetrachloroethane	<0.0057 J	<0.0054 J	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
1,1,2-Trichloroethane	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
1,1-Dichloroethane	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
1,1-Dichloroethene	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
1,2-Dichlorobenzene	0.0015 FJ	<0.0054	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
1,2-Dichloropropane	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
1,3-Dichlorobenzene	<0.0057	<0.0054	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	0.0012 FJ	<0.0054	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone(MEK)	<0.0057	<0.0054	NA	<0.011	<0.01	<0.01	NA	<0.01	<0.01	<0.01	NA
2-Chloroethyl vinyl ether	<0.0057	<0.0054	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	<0.0057	<0.0054	NA	<0.011	<0.01	<0.01	NA	<0.01	<0.01	<0.01	NA
4-Methyl-2-pentanone (MIBK)	<0.0057	<0.0054	NA	<0.011	<0.01	<0.01	NA	<0.01	<0.01	<0.01	NA
Acetone	<0.011	<0.011	NA	<0.022	<0.021	<0.021	NA	<0.021	<0.021	<0.021	NA
Benzene	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
Bromodichloromethane	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
Bromoform	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE
(Page 4 of 28)

Reference:	TetraTech WR10	TetraTech WR10	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32
Location ID:	VT20B1	VT20B1	020-SB01	020-SB01	020-SB01A	020-SB01A	020-SB02	020-SB02	020-SB02	020-SB02	020-SB03
Field Sample ID:	VT20B1-0	VT20B1-3	020-SB01-SS0.0	020-SB01-SS0.5	020-SB01A-SS2.5	020-SB01A-SS5.0	020-SB02-SS0.0	020-SB02-SS0.5	020-SB02-SS2.5	020-SB02-SS5.0	020-SB03-SS0.0
Sample Date:	2/9/1998	2/9/1998	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999
Sample Depth:	0.0	3.0	0.0	0.5	2.5	5.0	0.0	0.5	2.5	5.0	0.0
Bromomethane	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
Carbon disulfide	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
Carbon tetrachloride	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
Chlorobenzene	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
Chloroethane	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
Chloroform	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
Chloromethane	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
cis-1,2-Dichloroethylene	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
cis-1,3-Dichloropropene	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
Dibromochloromethane	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
Ethylbenzene	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
m,p-Xylene	<0.0057	<0.0054	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	NA	NA	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
Methylene chloride	<0.0057	<0.0054	NA	<0.0056	0.012	0.013	NA	<0.0052	0.011	0.012	NA
o-Xylene	<0.0057	<0.0054	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
Tetrachloroethylene (PCE)	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
Toluene	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
trans-1,2-Dichloroethene	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
trans-1,3-Dichloropropene	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
Trichloroethylene (TCE)	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
Trichlorofluoromethane	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
Vinyl acetate	<0.0057	<0.0054	NA	<0.011	<0.01	<0.01	NA	<0.01	<0.01	<0.01	NA
Vinyl chloride	<0.0057	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA
Xylenes, total	NA	NA	NA	<0.0056	<0.0052	<0.0051	NA	<0.0052	<0.0051	<0.0052	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB03	020-SB03	020-SB03	020-SB04	020-SB04	020-SB04	020-SB04	020-SB04	020-SB05	020-SB05	020-SB05
Field Sample ID:	020-SB03-SS0.5	020-SB03-SS2.5	020-SB03-SS5.0	020-SB04-SS0.0	020-SB04-SS2.5	020-SB04-SS5.0	020-SB99-SS5.0	020-SB04-SS10.0	020-SB05-SS0.0	020-SB05-SS2.5	020-SB05-SS5.0
Sample Date:	12/2/1999	12/2/1999	12/2/1999	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
Sample Depth:	0.5	2.5	5.0	0.0	2.5	5.0	5.0	9.5	0.0	2.5	5.0
General Minerals											
pH	NA	NA	NA	NA	NA	NA	NA	NA	7	NA	NA
Total Metals (mg/kg)											
Aluminum	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenols (mg/kg)											
PCB-1016 (Aroclor 1016)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1221 (Aroclor 1221)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1232 (Aroclor 1232)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1242 (Aroclor 1242)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1248 (Aroclor 1248)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1254 (Aroclor 1254)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1260 (Aroclor 1260)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (mg/kg)											
1,2,4-Trichlorobenzene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
1,2-Dichlorobenzene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
1,3-Dichlorobenzene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
1,4-Dichlorobenzene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
2,4,5-Trichlorophenol	<7	<6.6	<1.7	NA	NA	NA	NA	NA	<3.9	NA	NA
2,4,6-Trichlorophenol	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.36	NA	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB03	020-SB03	020-SB03	020-SB04	020-SB04	020-SB04	020-SB04	020-SB04	020-SB05	020-SB05	020-SB05
Field Sample ID:	020-SB03-SS0.5	020-SB03-SS2.5	020-SB03-SS5.0	020-SB04-SS0.0	020-SB04-SS2.5	020-SB04-SS5.0	020-SB99-SS5.0	020-SB04-SS10.0	020-SB05-SS0.0	020-SB05-SS2.5	020-SB05-SS5.0
Sample Date:	12/2/1999	12/2/1999	12/2/1999	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
Sample Depth:	0.5	2.5	5.0	0.0	2.5	5.0	5.0	9.5	0.0	2.5	5.0
2,4-Dichlorophenol	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.36	NA	NA
2,4-Dimethylphenol	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.36	NA	NA
2,4-Dinitrophenol	<7 J	<6.6 J	<1.7 J	NA	NA	NA	NA	NA	<3.9 M	NA	NA
2,4-Dinitrotoluene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
2,6-Dinitrotoluene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
2-Chloronaphthalene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
2-Chlorophenol	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.36	NA	NA
2-Methylnaphthalene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
2-Methylphenol (o-cresol)	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.36	NA	NA
2-Nitroaniline	<7	<6.6	<1.7	NA	NA	NA	NA	NA	<3.9	NA	NA
2-Nitrophenol	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.36	NA	NA
3,3'-Dichlorobenzidine	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84 M	NA	NA
3-Nitroaniline	<7	<6.6	<1.7	NA	NA	NA	NA	NA	<3.9	NA	NA
3/4-Methylphenol (m,p-cresol)	NA	NA	NA	NA	NA	NA	NA	NA	<2.4	NA	NA
4,6-Dinitro-2-methylphenol	<7	<6.6	<1.7	NA	NA	NA	NA	NA	<3.9 M	NA	NA
4-Bromophenyl phenyl ether	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84 J	NA	NA
4-Chloro-3-methylphenol	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<1.6	NA	NA
4-Chloroaniline	<2.9	<2.7	<0.68	NA	NA	NA	NA	NA	<1.6	NA	NA
4-Chlorophenyl phenyl ether	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
4-Methylphenol (p-cresol)	<2.2	<2.1	<0.52	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	<7	<6.6	<1.7	NA	NA	NA	NA	NA	<3.9	NA	NA
4-Nitrophenol	<7	<6.6	<1.7	NA	NA	NA	NA	NA	<1.9 R	NA	NA
Acenaphthene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
Acenaphthylene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
Anthracene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
Benzo(a)anthracene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
Benzo(a)pyrene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84 M	NA	NA
Benzo(b)fluoranthene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84 M	NA	NA
Benzo(g,h,i)perylene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84 M	NA	NA
Benzo(k)fluoranthene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84 M	NA	NA
Benzoic acid	<7	<6.6	<1.7	NA	NA	NA	NA	NA	<6	NA	NA
Benzyl alcohol	<2.9	<2.7	<0.68	NA	NA	NA	NA	NA	<1.6	NA	NA
Benzyl butyl phthalate	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
bis(2-Chloroethoxy)methane	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
bis(2-Chloroethyl)ether	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
bis(2-Chloroisopropyl)ether	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
bis(2-Ethylhexyl)phthalate	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	0.0647 F	NA	NA
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
Di-n-butyl phthalate	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
Di-n-octylphthalate	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84 M	NA	NA
Dibenz(a,h)anthracene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84 M	NA	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB03	020-SB03	020-SB03	020-SB04	020-SB04	020-SB04	020-SB04	020-SB04	020-SB05	020-SB05	020-SB05
Field Sample ID:	020-SB03-SS0.5	020-SB03-SS2.5	020-SB03-SS5.0	020-SB04-SS0.0	020-SB04-SS2.5	020-SB04-SS5.0	020-SB99-SS5.0	020-SB04-SS10.0	020-SB05-SS0.0	020-SB05-SS2.5	020-SB05-SS5.0
Sample Date:	12/2/1999	12/2/1999	12/2/1999	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
Sample Depth:	0.5	2.5	5.0	0.0	2.5	5.0	5.0	9.5	0.0	2.5	5.0
Dibenzofuran	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84 R	NA	NA
Diethyl phthalate	0.55 F	0.5 F	0.12 F	NA	NA	NA	NA	NA	<0.84	NA	NA
Dimethyl phthalate	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
Fluoranthene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
Fluorene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
Hexachlorobenzene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
Hexachlorobutadiene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
Hexachlorocyclopentadiene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84 M	NA	NA
Hexachloroethane	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
Indeno(1,2,3-c,d)pyrene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84 M	NA	NA
Isophorone	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
n-Nitrosodi-n-propylamine	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
n-Nitrosodimethylamine	NA	NA	NA	NA	NA	NA	NA	NA	<0.84 R	NA	NA
n-Nitrosodiphenylamine	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
Naphthalene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
Nitrobenzene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
Pentachlorophenol	<7	<6.6	<1.7	NA	NA	NA	NA	NA	<3.9	NA	NA
Phenanthrene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
Phenol	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	0.125 F	NA	NA
Pyrene	<1.5	<1.4	<0.34	NA	NA	NA	NA	NA	<0.84	NA	NA
Total Petroleum Hydrocarbons (mg/kg)											
Diesel Range	<11	540	59	6.5 F	1.2 F	3.5 F	7.7 F	4 F	33.6 F	2 F	16.9
Motor oils	NA	NA	NA	13.8	<11	<11	<10	<11	383	<11	3.6 F
Volatile Organic Compounds (mg/kg)											
1,1,1-Trichloroethane	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone(MEK)	<0.011	<0.01	<0.01	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethyl vinyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	<0.011	<0.01	<0.01	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	<0.011	<0.01	<0.01	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	<0.022	<0.021	<0.021	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA

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TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB03	020-SB03	020-SB03	020-SB04	020-SB04	020-SB04	020-SB04	020-SB04	020-SB05	020-SB05	020-SB05
Field Sample ID:	020-SB03-SS0.5	020-SB03-SS2.5	020-SB03-SS5.0	020-SB04-SS0.0	020-SB04-SS2.5	020-SB04-SS5.0	020-SB99-SS5.0	020-SB04-SS10.0	020-SB05-SS0.0	020-SB05-SS2.5	020-SB05-SS5.0
Sample Date:	12/2/1999	12/2/1999	12/2/1999	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
Sample Depth:	0.5	2.5	5.0	0.0	2.5	5.0	5.0	9.5	0.0	2.5	5.0
Bromomethane	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethylene	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	<0.0055	<0.0052	0.011	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene (PCE)	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene (TCE)	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl acetate	<0.011	<0.01	<0.01	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, total	<0.0055	<0.0052	<0.0052	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB05	020-SB06	020-SB06	020-SB06	020-SB06	020-SB06	020-SB07	020-SB07	020-SB07	020-SB07	020-SB07
Field Sample ID:	020-SB05-SS10.0	020-SB06-SS0.0	020-SB06-SS2.5	020-SB06-SS5.0	020-SB06-SS10.0	020-SB99-SS10.0	020-SB07-SS0.0	020-SB07-SS2.5	020-SB07-SS5.0	020-SB07-SS10.0	020-SB07-SS20.0
Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003
Sample Depth:	9.5	0.0	2.5	5.0	9.5	9.5	1.0	3.5	6.0	11.0	21.0
General Minerals											
pH	NA	6.3	NA	NA	NA	NA	7.1	6.7	NA	NA	NA
Total Metals (mg/kg)											
Aluminum	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenols (mg/kg)											
PCB-1016 (Aroclor 1016)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1221 (Aroclor 1221)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1232 (Aroclor 1232)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1242 (Aroclor 1242)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1248 (Aroclor 1248)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1254 (Aroclor 1254)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1260 (Aroclor 1260)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (mg/kg)											
1,2,4-Trichlorobenzene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
1,2-Dichlorobenzene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
1,3-Dichlorobenzene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
1,4-Dichlorobenzene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
2,4,5-Trichlorophenol	NA	<3.9	NA	NA	NA	NA	<7.1	<3.5	NA	NA	NA
2,4,6-Trichlorophenol	NA	<0.36	NA	NA	NA	NA	<0.65	<0.32	NA	NA	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB05	020-SB06	020-SB06	020-SB06	020-SB06	020-SB06	020-SB07	020-SB07	020-SB07	020-SB07	020-SB07
Field Sample ID:	020-SB05-SS10.0	020-SB06-SS0.0	020-SB06-SS2.5	020-SB06-SS5.0	020-SB06-SS10.0	020-SB99-SS10.0	020-SB07-SS0.0	020-SB07-SS2.5	020-SB07-SS5.0	020-SB07-SS10.0	020-SB07-SS20.0
Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003
Sample Depth:	9.5	0.0	2.5	5.0	9.5	9.5	1.0	3.5	6.0	11.0	21.0
2,4-Dichlorophenol	NA	<0.36	NA	NA	NA	NA	<0.65	<0.32	NA	NA	NA
2,4-Dimethylphenol	NA	<0.36	NA	NA	NA	NA	<0.65	<0.32	NA	NA	NA
2,4-Dinitrophenol	NA	<3.9 M	NA	NA	NA	NA	<7.1 M	<3.5 M	NA	NA	NA
2,4-Dinitrotoluene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
2,6-Dinitrotoluene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
2-Chloronaphthalene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
2-Chlorophenol	NA	<0.36	NA	NA	NA	NA	<0.65	<0.32	NA	NA	NA
2-Methylnaphthalene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
2-Methylphenol (o-cresol)	NA	<0.36	NA	NA	NA	NA	<0.65	<0.32	NA	NA	NA
2-Nitroaniline	NA	<3.9	NA	NA	NA	NA	<7.1	<3.5	NA	NA	NA
2-Nitrophenol	NA	<0.36	NA	NA	NA	NA	<0.65	<0.32	NA	NA	NA
3,3'-Dichlorobenzidine	NA	<0.83 M	NA	NA	NA	NA	<1.5 M	<0.74 M	NA	NA	NA
3-Nitroaniline	NA	<3.9	NA	NA	NA	NA	<7.1	<3.5	NA	NA	NA
3/4-Methylphenol (m,p-cresol)	NA	<2.4	NA	NA	NA	NA	<4.3	<2.1	NA	NA	NA
4,6-Dinitro-2-methylphenol	NA	<3.9 M	NA	NA	NA	NA	<7.1 M	<3.5 M	NA	NA	NA
4-Bromophenyl phenyl ether	NA	<0.83 J	NA	NA	NA	NA	<1.5 J	<0.74 J	NA	NA	NA
4-Chloro-3-methylphenol	NA	<1.5	NA	NA	NA	NA	<2.8	<1.4	NA	NA	NA
4-Chloroaniline	NA	<1.5	NA	NA	NA	NA	<2.8	<1.4	NA	NA	NA
4-Chlorophenyl phenyl ether	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
4-Methylphenol (p-cresol)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	<3.9	NA	NA	NA	NA	<7.1	<3.5	NA	NA	NA
4-Nitrophenol	NA	<1.9 R	NA	NA	NA	NA	<3.5 R	<1.7 R	NA	NA	NA
Acenaphthene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
Acenaphthylene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
Anthracene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
Benzo(a)anthracene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
Benzo(a)pyrene	NA	<0.83 M	NA	NA	NA	NA	<1.5 M	<0.74 M	NA	NA	NA
Benzo(b)fluoranthene	NA	<0.83 M	NA	NA	NA	NA	<1.5 M	<0.74 M	NA	NA	NA
Benzo(g,h,i)perylene	NA	<0.83 M	NA	NA	NA	NA	<1.5 M	<0.74 M	NA	NA	NA
Benzo(k)fluoranthene	NA	<0.83 M	NA	NA	NA	NA	<1.5 M	<0.74 M	NA	NA	NA
Benzoic acid	NA	<5.9	NA	NA	NA	NA	<11	<5.3	NA	NA	NA
Benzyl alcohol	NA	<1.5	NA	NA	NA	NA	<2.8	<1.4	NA	NA	NA
Benzyl butyl phthalate	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
bis(2-Chloroethoxy)methane	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
bis(2-Chloroethyl)ether	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
bis(2-Chloroisopropyl)ether	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
Di-n-butyl phthalate	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
Di-n-octylphthalate	NA	<0.83 M	NA	NA	NA	NA	<1.5 M	<0.74 M	NA	NA	NA
Dibenz(a,h)anthracene	NA	<0.83 M	NA	NA	NA	NA	<1.5 M	<0.74 M	NA	NA	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB05	020-SB06	020-SB06	020-SB06	020-SB06	020-SB06	020-SB07	020-SB07	020-SB07	020-SB07	020-SB07
Field Sample ID:	020-SB05-SS10.0	020-SB06-SS0.0	020-SB06-SS2.5	020-SB06-SS5.0	020-SB06-SS10.0	020-SB99-SS10.0	020-SB07-SS0.0	020-SB07-SS2.5	020-SB07-SS5.0	020-SB07-SS10.0	020-SB07-SS20.0
Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003
Sample Depth:	9.5	0.0	2.5	5.0	9.5	9.5	1.0	3.5	6.0	11.0	21.0
Dibenzofuran	NA	<0.83 R	NA	NA	NA	NA	<1.5 R	<0.74 R	NA	NA	NA
Diethyl phthalate	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
Dimethyl phthalate	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
Fluoranthene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
Fluorene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
Hexachlorobenzene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
Hexachlorobutadiene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
Hexachlorocyclopentadiene	NA	<0.83 M	NA	NA	NA	NA	<1.5 M	<0.74 M	NA	NA	NA
Hexachloroethane	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
Indeno(1,2,3-c,d)pyrene	NA	<0.83 M	NA	NA	NA	NA	<1.5 M	<0.74 M	NA	NA	NA
Isophorone	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
n-Nitrosodi-n-propylamine	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
n-Nitrosodimethylamine	NA	<0.83 R	NA	NA	NA	NA	<1.5 J	<0.74 J	NA	NA	NA
n-Nitrosodiphenylamine	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
Naphthalene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
Nitrobenzene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
Pentachlorophenol	NA	<3.9	NA	NA	NA	NA	<7.1	<3.5	NA	NA	NA
Phenanthrene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
Phenol	NA	0.148 F	NA	NA	NA	NA	<0.65	<0.32	NA	NA	NA
Pyrene	NA	<0.83	NA	NA	NA	NA	<1.5	<0.74	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)											
Diesel Range	5.8 F	12.7	12	11.5	2.9 F	6.9 F	17.7 F	66.1 F	<11	<10	<11
Motor oils	<11	86.9	3.3 F	<10	<10	<10	242	760	<11	<10	<11
Volatile Organic Compounds (mg/kg)											
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone(MEK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethyl vinyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB05	020-SB06	020-SB06	020-SB06	020-SB06	020-SB06	020-SB07	020-SB07	020-SB07	020-SB07	020-SB07
Field Sample ID:	020-SB05-SS10.0	020-SB06-SS0.0	020-SB06-SS2.5	020-SB06-SS5.0	020-SB06-SS10.0	020-SB99-SS10.0	020-SB07-SS0.0	020-SB07-SS2.5	020-SB07-SS5.0	020-SB07-SS10.0	020-SB07-SS20.0
Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003
Sample Depth:	9.5	0.0	2.5	5.0	9.5	9.5	1.0	3.5	6.0	11.0	21.0
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene (PCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene (TCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB07	020-SB07	020-SB08	020-SB08	020-SB08	020-SB08	020-SB09	020-SB09	020-SB09	020-SB09	020-SB10
Field Sample ID:	020-SB07-SS30.0	020-SB07-SS60.0	020-SB08-SS0.0	020-SB08-SS2.5	020-SB08-SS5.0	020-SB08-SS10.0	020-SB09-SS0.0	020-SB09-SS2.5	020-SB09-SS5.0	020-SB09-SS10.0	020-SB10-SS0.0
Sample Date:	1/29/2003	1/29/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
Sample Depth:	31.0	61.0	0.0	2.5	5.0	9.5	0.0	2.5	5.0	9.5	0.0
General Minerals											
pH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)											
Aluminum	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenols (mg/kg)											
PCB-1016 (Aroclor 1016)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1221 (Aroclor 1221)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1232 (Aroclor 1232)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1242 (Aroclor 1242)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1248 (Aroclor 1248)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1254 (Aroclor 1254)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1260 (Aroclor 1260)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (mg/kg)											
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB07	020-SB07	020-SB08	020-SB08	020-SB08	020-SB08	020-SB09	020-SB09	020-SB09	020-SB09	020-SB10
Field Sample ID:	020-SB07-SS30.0	020-SB07-SS60.0	020-SB08-SS0.0	020-SB08-SS2.5	020-SB08-SS5.0	020-SB08-SS10.0	020-SB09-SS0.0	020-SB09-SS2.5	020-SB09-SS5.0	020-SB09-SS10.0	020-SB10-SS0.0
Sample Date:	1/29/2003	1/29/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
Sample Depth:	31.0	61.0	0.0	2.5	5.0	9.5	0.0	2.5	5.0	9.5	0.0
2,4-Dichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol (o-cresol)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/4-Methylphenol (m,p-cresol)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol (p-cresol)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzoic acid	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl butyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB07	020-SB07	020-SB08	020-SB08	020-SB08	020-SB08	020-SB09	020-SB09	020-SB09	020-SB09	020-SB10
Field Sample ID:	020-SB07-SS30.0	020-SB07-SS60.0	020-SB08-SS0.0	020-SB08-SS2.5	020-SB08-SS5.0	020-SB08-SS10.0	020-SB09-SS0.0	020-SB09-SS2.5	020-SB09-SS5.0	020-SB09-SS10.0	020-SB10-SS0.0
Sample Date:	1/29/2003	1/29/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
Sample Depth:	31.0	61.0	0.0	2.5	5.0	9.5	0.0	2.5	5.0	9.5	0.0
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-c,d)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodi-n-propylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodimethylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)											
Diesel Range	<11	<11	12.7	1.3 F	2.8 F	2.8 F	1.5 F	<11	10.9 F	5.5 F	2.4 F
Motor oils	<11	<11	42.1	<11	<11	<10	4.5 F	<11	<11	<10	<11
Volatile Organic Compounds (mg/kg)											
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone(MEK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethyl vinyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB07	020-SB07	020-SB08	020-SB08	020-SB08	020-SB08	020-SB09	020-SB09	020-SB09	020-SB09	020-SB10
Field Sample ID:	020-SB07-SS30.0	020-SB07-SS60.0	020-SB08-SS0.0	020-SB08-SS2.5	020-SB08-SS5.0	020-SB08-SS10.0	020-SB09-SS0.0	020-SB09-SS2.5	020-SB09-SS5.0	020-SB09-SS10.0	020-SB10-SS0.0
Sample Date:	1/29/2003	1/29/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
Sample Depth:	31.0	61.0	0.0	2.5	5.0	9.5	0.0	2.5	5.0	9.5	0.0
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene (PCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene (TCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB10	020-SB10	020-SB10	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11
Field Sample ID:	020-SB10-SS2.5	020-SB10-SS5.0	020-SB10-SS10.0	020-SB11-SS0.0	020-SB11-SS2.5	020-SB11-SS5.0	020-SB11-SS10.0	020-SB11-SS20.0	020-SB11-SS30.0	020-SB11-SS40.0	020-SB11-SS50.0
Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003
Sample Depth:	2.5	5.0	9.5	1.0	3.5	6.0	9.5	21.0	31.0	41.0	51.0
General Minerals											
pH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)											
Aluminum	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenols (mg/kg)											
PCB-1016 (Aroclor 1016)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1221 (Aroclor 1221)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1232 (Aroclor 1232)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1242 (Aroclor 1242)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1248 (Aroclor 1248)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1254 (Aroclor 1254)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1260 (Aroclor 1260)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (mg/kg)											
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB10	020-SB10	020-SB10	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11
Field Sample ID:	020-SB10-SS2.5	020-SB10-SS5.0	020-SB10-SS10.0	020-SB11-SS0.0	020-SB11-SS2.5	020-SB11-SS5.0	020-SB11-SS10.0	020-SB11-SS20.0	020-SB11-SS30.0	020-SB11-SS40.0	020-SB11-SS50.0
Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003
Sample Depth:	2.5	5.0	9.5	1.0	3.5	6.0	9.5	21.0	31.0	41.0	51.0
2,4-Dichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol (o-cresol)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/4-Methylphenol (m,p-cresol)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol (p-cresol)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzoic acid	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl butyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB10	020-SB10	020-SB10	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11
Field Sample ID:	020-SB10-SS2.5	020-SB10-SS5.0	020-SB10-SS10.0	020-SB11-SS0.0	020-SB11-SS2.5	020-SB11-SS5.0	020-SB11-SS10.0	020-SB11-SS20.0	020-SB11-SS30.0	020-SB11-SS40.0	020-SB11-SS50.0
Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003
Sample Depth:	2.5	5.0	9.5	1.0	3.5	6.0	9.5	21.0	31.0	41.0	51.0
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-c,d)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodi-n-propylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodimethylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)											
Diesel Range	<11	3.4 F	1.9 F	2.5 F	<11	<11	<11	<11	<11	<11	<11
Motor oils	<11	<10	<10	4 F	<11	<11	<11	<11	<11	<11	<11
Volatile Organic Compounds (mg/kg)											
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone(MEK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethyl vinyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB10	020-SB10	020-SB10	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11
Field Sample ID:	020-SB10-SS2.5	020-SB10-SS5.0	020-SB10-SS10.0	020-SB11-SS0.0	020-SB11-SS2.5	020-SB11-SS5.0	020-SB11-SS10.0	020-SB11-SS20.0	020-SB11-SS30.0	020-SB11-SS40.0	020-SB11-SS50.0
Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003
Sample Depth:	2.5	5.0	9.5	1.0	3.5	6.0	9.5	21.0	31.0	41.0	51.0
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene (PCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene (TCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB12	020-SB12	020-SB13	020-SB13	020-SB14	020-SB14	020-SB14	020-SB15	020-SB15	020-SB16	020-SB17
Field Sample ID:	020-SB12-SS0.0	020-SB12-SS2.0	020-SB13-SS0.0	020-SB13-SS2.0	020-SB14-SS0.0	020-SB14-SS2.0	020-SB99-SS2.0	020-SB15-SS0.5	020-SB15-SS1.5	020-SB16-SS0.5	020-SB17-SS0.5
Sample Date:	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	7/21/2003	7/21/2003	7/21/2003	7/21/2003
Sample Depth:	0.0	2.0	0.0	2.0	0.0	2.0	2.0	0.5	1.5	0.5	0.5
General Minerals											
pH	6.65	NA	7.35	NA	7.83	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)											
Aluminum	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated biphenols (mg/kg)											
PCB-1016 (Aroclor 1016)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1221 (Aroclor 1221)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1232 (Aroclor 1232)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1242 (Aroclor 1242)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1248 (Aroclor 1248)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1254 (Aroclor 1254)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1260 (Aroclor 1260)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (mg/kg)											
1,2,4-Trichlorobenzene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
1,2-Dichlorobenzene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
1,3-Dichlorobenzene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
1,4-Dichlorobenzene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
2,4,5-Trichlorophenol	<7.5 J	NA	<3.6	NA	<7.2	NA	NA	<3.7	NA	NA	NA
2,4,6-Trichlorophenol	<0.68 J	NA	<0.33	NA	<0.66	NA	NA	<0.34	NA	NA	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB12	020-SB12	020-SB13	020-SB13	020-SB14	020-SB14	020-SB14	020-SB15	020-SB15	020-SB16	020-SB17
Field Sample ID:	020-SB12-SS0.0	020-SB12-SS2.0	020-SB13-SS0.0	020-SB13-SS2.0	020-SB14-SS0.0	020-SB14-SS2.0	020-SB99-SS2.0	020-SB15-SS0.5	020-SB15-SS1.5	020-SB16-SS0.5	020-SB17-SS0.5
Sample Date:	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	7/21/2003	7/21/2003	7/21/2003	7/21/2003
Sample Depth:	0.0	2.0	0.0	2.0	0.0	2.0	2.0	0.5	1.5	0.5	0.5
2,4-Dichlorophenol	<0.68 J	NA	<0.33	NA	<0.66	NA	NA	<0.34	NA	NA	NA
2,4-Dimethylphenol	<0.68 J	NA	<0.33	NA	<0.66	NA	NA	<0.34	NA	NA	NA
2,4-Dinitrophenol	<7.5 J	NA	<3.6	NA	<7.2	NA	NA	<3.7	NA	NA	NA
2,4-Dinitrotoluene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
2,6-Dinitrotoluene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
2-Chloronaphthalene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
2-Chlorophenol	<0.68 J	NA	<0.33	NA	<0.66	NA	NA	<0.34	NA	NA	NA
2-Methylnaphthalene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
2-Methylphenol (o-cresol)	<0.68 J	NA	<0.33	NA	<0.66	NA	NA	<0.34	NA	NA	NA
2-Nitroaniline	<7.5	NA	<3.6	NA	<7.2	NA	NA	<3.7	NA	NA	NA
2-Nitrophenol	<0.68 J	NA	<0.33	NA	<0.66	NA	NA	<0.34	NA	NA	NA
3,3'-Dichlorobenzidine	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
3-Nitroaniline	<7.5	NA	<3.6	NA	<7.2	NA	NA	<3.7	NA	NA	NA
3/4-Methylphenol (m,p-cresol)	<4.5 J	NA	<2.2	NA	<4.4	NA	NA	<2.3	NA	NA	NA
4,6-Dinitro-2-methylphenol	<7.5 J	NA	<3.6	NA	<7.2	NA	NA	<3.7	NA	NA	NA
4-Bromophenyl phenyl ether	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
4-Chloro-3-methylphenol	<2.9 J	NA	<1.4	NA	<2.8	NA	NA	<1.5	NA	NA	NA
4-Chloroaniline	<2.9	NA	<1.4	NA	<2.8	NA	NA	<1.5	NA	NA	NA
4-Chlorophenyl phenyl ether	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
4-Methylphenol (p-cresol)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	<7.5 J	NA	<3.6 J	NA	<7.2 J	NA	NA	<3.7	NA	NA	NA
4-Nitrophenol	<3.6 J	NA	<1.7	NA	<3.5	NA	NA	<1.8	NA	NA	NA
Acenaphthene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Acenaphthylene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Anthracene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Benzo(a)anthracene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Benzo(a)pyrene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Benzo(b)fluoranthene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Benzo(g,h,i)perylene	<1.6 J	NA	<0.77 J	NA	<1.5 J	NA	NA	<0.79	NA	NA	NA
Benzo(k)fluoranthene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79 J	NA	NA	NA
Benzoic acid	<11	NA	<5.5	NA	<11	NA	NA	<5.6	NA	NA	NA
Benzyl alcohol	<2.9	NA	<1.4	NA	<2.8	NA	NA	<1.5	NA	NA	NA
Benzyl butyl phthalate	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
bis(2-Chloroethoxy)methane	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
bis(2-Chloroethyl)ether	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
bis(2-Chloroisopropyl)ether	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
bis(2-Ethylhexyl)phthalate	<1.6	NA	<0.77	NA	<1.5	NA	NA	0.0481 F	NA	NA	NA
Carbazole	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Di-n-butyl phthalate	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Di-n-octylphthalate	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79 M	NA	NA	NA
Dibenz(a,h)anthracene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB12	020-SB12	020-SB13	020-SB13	020-SB14	020-SB14	020-SB14	020-SB15	020-SB15	020-SB16	020-SB17
Field Sample ID:	020-SB12-SS0.0	020-SB12-SS2.0	020-SB13-SS0.0	020-SB13-SS2.0	020-SB14-SS0.0	020-SB14-SS2.0	020-SB99-SS2.0	020-SB15-SS0.5	020-SB15-SS1.5	020-SB16-SS0.5	020-SB17-SS0.5
Sample Date:	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	7/21/2003	7/21/2003	7/21/2003	7/21/2003
Sample Depth:	0.0	2.0	0.0	2.0	0.0	2.0	2.0	0.5	1.5	0.5	0.5
Dibenzofuran	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Diethyl phthalate	<1.6	NA	<0.77	NA	<1.5	NA	NA	0.11 F	NA	NA	NA
Dimethyl phthalate	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Fluoranthene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Fluorene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Hexachlorobenzene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Hexachlorobutadiene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Hexachlorocyclopentadiene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79 M	NA	NA	NA
Hexachloroethane	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Indeno(1,2,3-c,d)pyrene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Isophorone	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
n-Nitrosodi-n-propylamine	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
n-Nitrosodimethylamine	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
n-Nitrosodiphenylamine	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Naphthalene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Nitrobenzene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Pentachlorophenol	<7.5 J	NA	<3.6	NA	<7.2	NA	NA	<3.7	NA	NA	NA
Phenanthrene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Phenol	<0.68 J	NA	<0.33	NA	<0.66	NA	NA	<0.34	NA	NA	NA
Pyrene	<1.6	NA	<0.77	NA	<1.5	NA	NA	<0.79	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)											
Diesel Range	53.5 F	2.5 F	18.7	1.7 F	22	<11	2.2 F	31.7 F	2.8 F	5.8 F	3.9 F
Motor oils	230	26.6	85.7	10.6 F	94.5	8.5 F	8.9 F	257	32.4	31.4	24
Volatile Organic Compounds (mg/kg)											
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone(MEK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethyl vinyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	020-SB12	020-SB12	020-SB13	020-SB13	020-SB14	020-SB14	020-SB14	020-SB15	020-SB15	020-SB16	020-SB17
Field Sample ID:	020-SB12-SS0.0	020-SB12-SS2.0	020-SB13-SS0.0	020-SB13-SS2.0	020-SB14-SS0.0	020-SB14-SS2.0	020-SB99-SS2.0	020-SB15-SS0.5	020-SB15-SS1.5	020-SB16-SS0.5	020-SB17-SS0.5
Sample Date:	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	7/21/2003	7/21/2003	7/21/2003	7/21/2003
Sample Depth:	0.0	2.0	0.0	2.0	0.0	2.0	2.0	0.5	1.5	0.5	0.5
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene (PCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene (TCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59
Location ID:	020-SB18	020-SC01	020-SC02
Field Sample ID:	020-SB18-SS0.5	020-SC01-SS2.0	020-SC02-SS2.0
Sample Date:	7/21/2003	1/29/2003	1/29/2003
Sample Depth:	0.5	2.0	2.0
General Minerals			
pH	NA	6.69	6.85
Total Metals (mg/kg)			
Aluminum	NA	NA	NA
Antimony	NA	NA	NA
Arsenic	NA	NA	NA
Barium	NA	NA	NA
Beryllium	NA	NA	NA
Cadmium	NA	NA	NA
Calcium	NA	NA	NA
Chromium	NA	NA	NA
Cobalt	NA	NA	NA
Copper	NA	NA	NA
Iron	NA	NA	NA
Lead	NA	NA	NA
Magnesium	NA	NA	NA
Manganese	NA	NA	NA
Mercury	NA	NA	NA
Molybdenum	NA	NA	NA
Nickel	NA	NA	NA
Potassium	NA	NA	NA
Selenium	NA	NA	NA
Silver	NA	NA	NA
Sodium	NA	NA	NA
Thallium	NA	NA	NA
Vanadium	NA	NA	NA
Zinc	NA	NA	NA
Polychlorinated biphenols (mg/kg)			
PCB-1016 (Aroclor 1016)	NA	NA	NA
PCB-1221 (Aroclor 1221)	NA	NA	NA
PCB-1232 (Aroclor 1232)	NA	NA	NA
PCB-1242 (Aroclor 1242)	NA	NA	NA
PCB-1248 (Aroclor 1248)	NA	NA	NA
PCB-1254 (Aroclor 1254)	NA	NA	NA
PCB-1260 (Aroclor 1260)	NA	NA	NA
Semivolatile Organic Compounds (mg/kg)			
1,2,4-Trichlorobenzene	NA	<3.1	<3
1,2-Dichlorobenzene	NA	<3.1	<3
1,3-Dichlorobenzene	NA	<3.1	<3
1,4-Dichlorobenzene	NA	<3.1	<3
2,4,5-Trichlorophenol	NA	<15	<14
2,4,6-Trichlorophenol	NA	<1.3	<1.3

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59
Location ID:	020-SB18	020-SC01	020-SC02
Field Sample ID:	020-SB18-SS0.5	020-SC01-SS2.0	020-SC02-SS2.0
Sample Date:	7/21/2003	1/29/2003	1/29/2003
Sample Depth:	0.5	2.0	2.0
2,4-Dichlorophenol	NA	<1.3	<1.3
2,4-Dimethylphenol	NA	<1.3	<1.3
2,4-Dinitrophenol	NA	<15 M	<14 M
2,4-Dinitrotoluene	NA	<3.1	<3
2,6-Dinitrotoluene	NA	<3.1	<3
2-Chloronaphthalene	NA	<3.1	<3
2-Chlorophenol	NA	<1.3	<1.3
2-Methylnaphthalene	NA	<3.1	<3
2-Methylphenol (o-cresol)	NA	<1.3	<1.3
2-Nitroaniline	NA	<15	<14
2-Nitrophenol	NA	<1.3	<1.3
3,3'-Dichlorobenzidine	NA	<3.1 M	<3 M
3-Nitroaniline	NA	<15	<14
3/4-Methylphenol (m,p-cresol)	NA	<8.9	<8.6
4,6-Dinitro-2-methylphenol	NA	<15 M	<14 M
4-Bromophenyl phenyl ether	NA	<3.1 J	<3 J
4-Chloro-3-methylphenol	NA	<5.8	<5.6
4-Chloroaniline	NA	<5.8	<5.6
4-Chlorophenyl phenyl ether	NA	<3.1	<3
4-Methylphenol (p-cresol)	NA	NA	NA
4-Nitroaniline	NA	<15	<14
4-Nitrophenol	NA	<7.1 R	<6.9 R
Acenaphthene	NA	<3.1	<3
Acenaphthylene	NA	<3.1	<3
Anthracene	NA	<3.1	<3
Benzo(a)anthracene	NA	<3.1	<3
Benzo(a)pyrene	NA	<3.1 M	<3 M
Benzo(b)fluoranthene	NA	<3.1 M	<3 M
Benzo(g,h,i)perylene	NA	<3.1 M	<3 M
Benzo(k)fluoranthene	NA	<3.1 M	<3 M
Benzoic acid	NA	<22	<21
Benzyl alcohol	NA	<5.8	<5.6
Benzyl butyl phthalate	NA	<3.1	<3
bis(2-Chloroethoxy)methane	NA	<3.1	<3
bis(2-Chloroethyl)ether	NA	<3.1	<3
bis(2-Chloroisopropyl)ether	NA	<3.1	<3
bis(2-Ethylhexyl)phthalate	NA	<3.1	<3
Carbazole	NA	NA	NA
Chrysene	NA	<3.1	<3
Di-n-butyl phthalate	NA	<3.1	<3
Di-n-octylphthalate	NA	<3.1 M	<3 M
Dibenz(a,h)anthracene	NA	<3.1 M	<3 M

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59
Location ID:	020-SB18	020-SC01	020-SC02
Field Sample ID:	020-SB18-SS0.5	020-SC01-SS2.0	020-SC02-SS2.0
Sample Date:	7/21/2003	1/29/2003	1/29/2003
Sample Depth:	0.5	2.0	2.0
Dibenzofuran	NA	<3.1 R	<3 R
Diethyl phthalate	NA	<3.1	<3
Dimethyl phthalate	NA	<3.1	<3
Fluoranthene	NA	<3.1	<3
Fluorene	NA	<3.1	<3
Hexachlorobenzene	NA	<3.1	<3
Hexachlorobutadiene	NA	<3.1	<3
Hexachlorocyclopentadiene	NA	<3.1 M	<3 M
Hexachloroethane	NA	<3.1	<3
Indeno(1,2,3-c,d)pyrene	NA	<3.1 M	<3 M
Isophorone	NA	<3.1	<3
n-Nitrosodi-n-propylamine	NA	<3.1	<3
n-Nitrosodimethylamine	NA	<3.1 R	<3 R
n-Nitrosodiphenylamine	NA	<3.1	<3
Naphthalene	NA	<3.1	<3
Nitrobenzene	NA	<3.1	<3
Pentachlorophenol	NA	<15	<14
Phenanthrene	NA	<3.1	<3
Phenol	NA	<1.3	<1.3
Pyrene	NA	<3.1	<3
Total Petroleum Hydrocarbons (mg/kg)			
Diesel Range	3.4 F	101 F	51.9 F
Motor oils	18.7	856	631
Volatile Organic Compounds (mg/kg)			
1,1,1-Trichloroethane	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA
2-Butanone(MEK)	NA	NA	NA
2-Chloroethyl vinyl ether	NA	NA	NA
2-Hexanone	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA
Acetone	NA	NA	NA
Benzene	NA	NA	NA
Bromodichloromethane	NA	NA	NA
Bromoform	NA	NA	NA

APPENDIX B
TABLE AOC -020-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59
Location ID:	020-SB18	020-SC01	020-SC02
Field Sample ID:	020-SB18-SS0.5	020-SC01-SS2.0	020-SC02-SS2.0
Sample Date:	7/21/2003	1/29/2003	1/29/2003
Sample Depth:	0.5	2.0	2.0
Bromomethane	NA	NA	NA
Carbon disulfide	NA	NA	NA
Carbon tetrachloride	NA	NA	NA
Chlorobenzene	NA	NA	NA
Chloroethane	NA	NA	NA
Chloroform	NA	NA	NA
Chloromethane	NA	NA	NA
cis-1,2-Dichloroethylene	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA
Dibromochloromethane	NA	NA	NA
Ethylbenzene	NA	NA	NA
m,p-Xylene	NA	NA	NA
Methyl tertiary-butyl ether	NA	NA	NA
Methylene chloride	NA	NA	NA
o-Xylene	NA	NA	NA
Styrene	NA	NA	NA
Tetrachloroethylene (PCE)	NA	NA	NA
Toluene	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA
Trichloroethylene (TCE)	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA
Vinyl acetate	NA	NA	NA
Vinyl chloride	NA	NA	NA
Xylenes, total	NA	NA	NA

APPENDIX B
TABLE AOC -055-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO60	DO60	DO60
Location ID:	055-MW01	055-SB01	055-SB01	055-SB01	055-SB01	055-SB01	055-SB02	055-SB02	055-SB02
Field Sample ID:	055-MW99-SS0.0	055-SB01-SS36.0	055-SB01-SS41.0	055-SB01-SS43.0	055-SB01-SS43.5	055-SB01-SS48.0	055-SB02-SS35.0	055-SB02-SS40.0	055-SB99-SS40.0
Sample Date:	11/12/1999	11/12/1999	11/12/1999	11/12/1999	11/12/1999	11/12/1999	12/13/2000	12/13/2000	12/13/2000
Sample Depth:	48.0	36.0	41.0	43.0	43.5	48.0	36.0	40.0	40.0
BTEX (mg/kg)									
Benzene	0.0026 F	<0.011	<0.011	<0.012	NA	<0.011	NA	NA	NA
Ethylbenzene	0.0021 F	<0.011	<0.011	<0.012	NA	<0.011	NA	NA	NA
m,p-Xylene	0.0068 F	<0.022	<0.022	0.0016 F	NA	<0.023	NA	NA	NA
o-Xylene	0.0024 F	<0.011	<0.011	<0.012	NA	<0.011	NA	NA	NA
Toluene	0.009 F	<0.011	<0.011	<0.012	NA	<0.011	NA	NA	NA
General Minerals									
pH	NA	NA	NA	NA	NA	NA	7.26	7.98	7.51
Polychlorinated biphenols (mg/kg)									
PCB-1016 (Aroclor 1016)	NA	NA	NA	NA	<0.046	NA	NA	NA	NA
PCB-1221 (Aroclor 1221)	NA	NA	NA	NA	<0.092	NA	NA	NA	NA
PCB-1232 (Aroclor 1232)	NA	NA	NA	NA	<0.046	NA	NA	NA	NA
PCB-1242 (Aroclor 1242)	NA	NA	NA	NA	<0.092	NA	NA	NA	NA
PCB-1248 (Aroclor 1248)	NA	NA	NA	NA	<0.092	NA	NA	NA	NA
PCB-1254 (Aroclor 1254)	NA	NA	NA	NA	<0.046	NA	NA	NA	NA
PCB-1260 (Aroclor 1260)	NA	NA	NA	NA	<0.046	NA	NA	NA	NA
Polynuclear Aromatic Hydrocarbons (mg/kg)									
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-c,d)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (mg/kg)									
1,2,4-Trichlorobenzene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
1,2-Dichlorobenzene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
1,3-Dichlorobenzene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
1,4-Dichlorobenzene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
2,4,5-Trichlorophenol	<1.8	<1.8	<1.8	<1.9	NA	<1.8	<0.36	<0.39	<0.38
2,4,6-Trichlorophenol	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
2,4-Dichlorophenol	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38

APPENDIX B
TABLE AOC -055-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE
(Page 2 of 15)

Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO60	DO60	DO60
Location ID:	055-MW01	055-SB01	055-SB01	055-SB01	055-SB01	055-SB01	055-SB02	055-SB02	055-SB02
Field Sample ID:	055-MW99-SS0.0	055-SB01-SS36.0	055-SB01-SS41.0	055-SB01-SS43.0	055-SB01-SS43.5	055-SB01-SS48.0	055-SB02-SS35.0	055-SB02-SS40.0	055-SB99-SS40.0
Sample Date:	11/12/1999	11/12/1999	11/12/1999	11/12/1999	11/12/1999	11/12/1999	12/13/2000	12/13/2000	12/13/2000
Sample Depth:	48.0	36.0	41.0	43.0	43.5	48.0	36.0	40.0	40.0
2,4-Dimethylphenol	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
2,4-Dinitrophenol	<1.8	<1.8	<1.8	<1.9	NA	<1.8	<1.7	<1.9	<1.9
2,4-Dinitrotoluene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
2,6-Dinitrotoluene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
2-Chloronaphthalene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
2-Chlorophenol	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
2-Methylnaphthalene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
2-Methylphenol (o-cresol)	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
2-Nitroaniline	<1.8	<1.8	<1.8	<1.9	NA	<1.8	<1.7	<1.9	<1.9
2-Nitrophenol	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
3,3'-Dichlorobenzidine	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
3-Nitroaniline	<1.8	<1.8	<1.8	<1.9	NA	<1.8	<1.7	<1.9	<1.9
3/4-Methylphenol (m,p-cresol)	NA	NA	NA	NA	NA	NA	<0.36	<0.39	<0.38
4,6-Dinitro-2-methylphenol	<1.8	<1.8	<1.8	<1.9	NA	<1.8	<1.7	<1.9	<1.9
4-Bromophenyl phenyl ether	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
4-Chloro-3-methylphenol	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
4-Chloroaniline	<0.75	<0.73	<0.74	<0.77	NA	<0.76	<0.72 J	<0.78 J	<0.77 J
4-Chlorophenyl phenyl ether	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
4-Methylphenol (p-cresol)	<0.57	<0.55	<0.56	<0.58	NA	<0.57	NA	NA	NA
4-Nitroaniline	<1.8	<1.8	<1.8	<1.9	NA	<1.8	<1.7 J	<1.9 J	<1.9 J
4-Nitrophenol	<1.8	<1.8	<1.8	<1.9	NA	<1.8	<1.7	<1.9	<1.9
Acenaphthene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Acenaphthylene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Anthracene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Benzo(a)anthracene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	0.035 F	0.079 F
Benzo(a)pyrene	<0.37	<0.36	0.042 F	<0.38	NA	<0.38	<0.36	<0.39	0.064 F
Benzo(b)fluoranthene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	0.095 F
Benzo(g,h,i)perylene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Benzo(k)fluoranthene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	0.038 F
Benzoic acid	<1.8 J	<1.8 J	<1.8 J	<1.9 J	NA	<1.8 J	<1.9	<2	<2
Benzyl alcohol	<0.75	<0.73	<0.74	<0.77	NA	<0.76	<0.72	<0.78	<0.77
Benzyl butyl phthalate	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
bis(2-Chloroethoxy)methane	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
bis(2-Chloroethyl)ether	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
bis(2-Chloroisopropyl)ether	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
bis(2-Ethylhexyl)phthalate	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Chrysene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	0.08 F
Di-n-butyl phthalate	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Di-n-octylphthalate	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Dibenz(a,h)anthracene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Dibenzofuran	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Diethyl phthalate	<0.75	<0.73	<0.74	<0.77	NA	<0.76	<0.36	<0.39	<0.38

APPENDIX B
TABLE AOC -055-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO60	DO60	DO60
Location ID:	055-MW01	055-SB01	055-SB01	055-SB01	055-SB01	055-SB01	055-SB02	055-SB02	055-SB02
Field Sample ID:	055-MW99-SS0.0	055-SB01-SS36.0	055-SB01-SS41.0	055-SB01-SS43.0	055-SB01-SS43.5	055-SB01-SS48.0	055-SB02-SS35.0	055-SB02-SS40.0	055-SB99-SS40.0
Sample Date:	11/12/1999	11/12/1999	11/12/1999	11/12/1999	11/12/1999	11/12/1999	12/13/2000	12/13/2000	12/13/2000
Sample Depth:	48.0	36.0	41.0	43.0	43.5	48.0	36.0	40.0	40.0
Dimethyl phthalate	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Fluoranthene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	0.11 F
Fluorene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Hexachlorobenzene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Hexachlorobutadiene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Hexachlorocyclopentadiene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Hexachloroethane	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Indeno(1,2,3-c,d)pyrene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Isophorone	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
n-Nitrosodi-n-propylamine	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
n-Nitrosodimethylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodiphenylamine	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Naphthalene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Nitrobenzene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Pentachlorophenol	<1.8	<1.8	<1.8	<1.9	NA	<1.8	<1.7	<1.9	<1.9
Phenanthrene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	0.037 F
Phenol	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	<0.39	<0.38
Pyrene	<0.37	<0.36	<0.37	<0.38	NA	<0.38	<0.36	0.043 F	0.1 F
Total Petroleum Hydrocarbons (mg/kg)									
Diesel Range	28	<11	<11	<12	NA	640 J	2 F	3 F	8 F
Motor oils	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (mg/kg)									
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
1,1-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane (Ethylene Dibromide)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -055-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE
(Page 4 of 15)

Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO60	DO60	DO60
Location ID:	055-MW01	055-SB01	055-SB01	055-SB01	055-SB01	055-SB01	055-SB02	055-SB02	055-SB02
Field Sample ID:	055-MW99-SS0.0	055-SB01-SS36.0	055-SB01-SS41.0	055-SB01-SS43.0	055-SB01-SS43.5	055-SB01-SS48.0	055-SB02-SS35.0	055-SB02-SS40.0	055-SB99-SS40.0
Sample Date:	11/12/1999	11/12/1999	11/12/1999	11/12/1999	11/12/1999	11/12/1999	12/13/2000	12/13/2000	12/13/2000
Sample Depth:	48.0	36.0	41.0	43.0	43.5	48.0	36.0	40.0	40.0
1-chlorohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,2-dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone(MEK)	NA	NA	NA	NA	NA	NA	0.004 F	0.006 F	0.01 F
2-chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	<0.0092	<0.0093	<0.011
4-chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	<0.0092	<0.0093	<0.011
Acetone	NA	NA	NA	NA	NA	NA	<0.018	<0.019	<0.026
Benzene	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
Bromoform	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
Bromomethane	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
Carbon disulfide	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
Chlorobenzene	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
Chloroethane	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
Chloroform	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
Chloromethane	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
cis-1,2-Dichloroethylene	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
Dibromochloromethane	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
Methylene chloride	NA	NA	NA	NA	NA	NA	0.001 F	0.0007 F	0.001 F
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cymene (p-isopropyltoluene)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sec-butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
t-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene (PCE)	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
Toluene	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053

APPENDIX B
TABLE AOC -055-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO60	DO60	DO60
Location ID:	055-MW01	055-SB01	055-SB01	055-SB01	055-SB01	055-SB01	055-SB02	055-SB02	055-SB02
Field Sample ID:	055-MW99-SS0.0	055-SB01-SS36.0	055-SB01-SS41.0	055-SB01-SS43.0	055-SB01-SS43.5	055-SB01-SS48.0	055-SB02-SS35.0	055-SB02-SS40.0	055-SB99-SS40.0
Sample Date:	11/12/1999	11/12/1999	11/12/1999	11/12/1999	11/12/1999	11/12/1999	12/13/2000	12/13/2000	12/13/2000
Sample Depth:	48.0	36.0	41.0	43.0	43.5	48.0	36.0	40.0	40.0
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
Trichloroethylene (TCE)	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
Vinyl acetate	NA	NA	NA	NA	NA	NA	<0.0092	<0.0093	<0.011
Vinyl chloride	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053
Xylenes, total	NA	NA	NA	NA	NA	NA	<0.0046	<0.0046	<0.0053

APPENDIX B
TABLE AOC -055-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	DO60	DO60	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	055-SB03	055-SB04	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01
Field Sample ID:	055-SB03-SS35.0	055-SB04-SS25.0	055-TW01-SS25.0	055-TW99-SS25.0	055-TW01-SS30.0	055-TW01-SS35.0	055-TW99-SS35.0	055-TW01-SS40.0
Sample Date:	12/13/2000	12/13/2000	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003
Sample Depth:	36.0	25.0	25.5	25.5	31.0	35.5	35.5	41.0
BTEX (mg/kg)								
Benzene	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA
General Minerals								
pH	7.03	7.46	8.39	8.55	8.04	8.52	8.51	9.18
Polychlorinated biphenols (mg/kg)								
PCB-1016 (Aroclor 1016)	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1221 (Aroclor 1221)	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1232 (Aroclor 1232)	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1242 (Aroclor 1242)	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1248 (Aroclor 1248)	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1254 (Aroclor 1254)	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1260 (Aroclor 1260)	NA	NA	NA	NA	NA	NA	NA	NA
Polynuclear Aromatic Hydrocarbons (mg/kg)								
2-Methylnaphthalene	NA	NA	<0.027	<0.027	<0.028	<0.028	<0.028	<0.027
Acenaphthene	NA	NA	<0.027	<0.027	<0.028	<0.028	<0.028	<0.027
Acenaphthylene	NA	NA	<0.027	<0.027	<0.028	<0.028	<0.028	<0.027
Anthracene	NA	NA	<0.027	<0.027	<0.028	<0.028	<0.028	0.0403
Benzo(a)anthracene	NA	NA	<0.027	0.0167 F	<0.028	<0.028	<0.028	0.184
Benzo(a)pyrene	NA	NA	<0.027	0.0135 F	<0.028	<0.028	<0.028	0.178
Benzo(b)fluoranthene	NA	NA	<0.027	0.0164 F	<0.028	<0.028	<0.028	0.25
Benzo(g,h,i)perylene	NA	NA	<0.027	<0.027	<0.028	<0.028	<0.028	0.0676
Benzo(k)fluoranthene	NA	NA	<0.027	0.0153 F	<0.028	<0.028	<0.028	0.11
Chrysene	NA	NA	<0.027	0.0171 F	<0.028	<0.028	<0.028	0.228
Dibenz(a,h)anthracene	NA	NA	<0.027	<0.027	<0.028	<0.028	<0.028	0.0251 F
Fluoranthene	NA	NA	<0.027	0.0116 F	<0.028	<0.028	<0.028	0.34
Fluorene	NA	NA	<0.027	<0.027	<0.028	<0.028	<0.028	<0.027
Indeno(1,2,3-c,d)pyrene	NA	NA	<0.027	<0.027	<0.028	<0.028	<0.028	0.0625
Naphthalene	NA	NA	0.024 F	<0.027	<0.028	<0.028	<0.028	<0.027
Phenanthrene	NA	NA	<0.027	<0.027	<0.028	<0.028	<0.028	0.103
Pyrene	NA	NA	<0.027	0.0146 F	<0.028	<0.028	<0.028	0.285
Semivolatile Organic Compounds (mg/kg)								
1,2,4-Trichlorobenzene	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
1,2-Dichlorobenzene	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
1,3-Dichlorobenzene	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
1,4-Dichlorobenzene	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
2,4,5-Trichlorophenol	<0.4	<0.39	<3.6 M	<3.6 M	<3.7 M	<3.7 M	<3.7 M	<3.6 M
2,4,6-Trichlorophenol	<0.4	<0.39	<0.33 M	<0.33 M	<0.34 M	<0.33 M	<0.33 M	<0.33 M
2,4-Dichlorophenol	<0.4	<0.39	<0.33	<0.33	<0.34	<0.33	<0.33	<0.33

APPENDIX B
TABLE AOC -055-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE
(Page 7 of 15)

Reference:	DO60	DO60	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	055-SB03	055-SB04	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01
Field Sample ID:	055-SB03-SS35.0	055-SB04-SS25.0	055-TW01-SS25.0	055-TW99-SS25.0	055-TW01-SS30.0	055-TW01-SS35.0	055-TW99-SS35.0	055-TW01-SS40.0
Sample Date:	12/13/2000	12/13/2000	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003
Sample Depth:	36.0	25.0	25.5	25.5	31.0	35.5	35.5	41.0
2,4-Dimethylphenol	<0.4	<0.39	<0.33	<0.33	<0.34	<0.33	<0.33	<0.33
2,4-Dinitrophenol	<1.9	<1.9	<3.6 M	<3.6 M	<3.7 M	<3.7 M	<3.7 M	<3.6 M
2,4-Dinitrotoluene	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
2,6-Dinitrotoluene	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
2-Chloronaphthalene	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
2-Chlorophenol	<0.4	<0.39	<0.33	<0.33	<0.34	<0.33	<0.33	<0.33
2-Methylnaphthalene	<0.4	<0.39	NA	NA	NA	NA	NA	NA
2-Methylphenol (o-cresol)	<0.4	<0.39	<0.33	<0.33	<0.34	<0.33	<0.33	<0.33
2-Nitroaniline	<1.9	<1.9	<3.6	<3.6	<3.7	<3.7	<3.7	<3.6
2-Nitrophenol	<0.4	<0.39	<0.33	<0.33	<0.34	<0.33	<0.33	<0.33
3,3'-Dichlorobenzidine	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
3-Nitroaniline	<1.9	<1.9	<3.6	<3.6	<3.7	<3.7	<3.7	<3.6
3/4-Methylphenol (m,p-cresol)	<0.4	<0.39	<2.2	<2.2	<2.3	<2.2	<2.2	<2.2
4,6-Dinitro-2-methylphenol	<1.9	<1.9	<3.6 M	<3.6 M	<3.7 M	<3.7 M	<3.7 M	<3.6 M
4-Bromophenyl phenyl ether	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
4-Chloro-3-methylphenol	<0.4	<0.39	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
4-Chloroaniline	<0.8 J	<0.78 J	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
4-Chlorophenyl phenyl ether	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
4-Methylphenol (p-cresol)	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	<1.9 J	<1.9 J	<3.6	<3.6	<3.7	<3.7	<3.7	<3.6
4-Nitrophenol	<1.9	<1.9	<1.7	<1.7	<1.8	<1.8	<1.8	<1.7
Acenaphthene	<0.4	<0.39	NA	NA	NA	NA	NA	NA
Acenaphthylene	<0.4	<0.39	NA	NA	NA	NA	NA	NA
Anthracene	<0.4	<0.39	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	<0.4	<0.39	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	<0.4	<0.39	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	<0.4	<0.39	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	<0.4	<0.39	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	<0.4	<0.39	NA	NA	NA	NA	NA	NA
Benzoic acid	<2.1	<2	<5.5 M	<5.5 M	<5.6 M	<5.6 M	<5.6 M	<5.5 M
Benzyl alcohol	<0.8	<0.78	<1.4	<1.4	<1.5	<1.4	<1.4	<1.4
Benzyl butyl phthalate	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
bis(2-Chloroethoxy)methane	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
bis(2-Chloroethyl)ether	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
bis(2-Chloroisopropyl)ether	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
bis(2-Ethylhexyl)phthalate	<0.4	0.082 F	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
Chrysene	<0.4	<0.39	NA	NA	NA	NA	NA	NA
Di-n-butyl phthalate	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
Di-n-octylphthalate	<0.4	<0.39	<0.76	<0.76	<0.79 M	<0.78	<0.78	<0.76
Dibenz(a,h)anthracene	<0.4	<0.39	NA	NA	NA	NA	NA	NA
Dibenzofuran	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
Diethyl phthalate	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76

APPENDIX B
TABLE AOC -055-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	DO60	DO60	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	055-SB03	055-SB04	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01
Field Sample ID:	055-SB03-SS35.0	055-SB04-SS25.0	055-TW01-SS25.0	055-TW99-SS25.0	055-TW01-SS30.0	055-TW01-SS35.0	055-TW99-SS35.0	055-TW01-SS40.0
Sample Date:	12/13/2000	12/13/2000	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003
Sample Depth:	36.0	25.0	25.5	25.5	31.0	35.5	35.5	41.0
Dimethyl phthalate	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
Fluoranthene	<0.4	<0.39	NA	NA	NA	NA	NA	NA
Fluorene	<0.4	<0.39	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
Hexachlorobutadiene	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
Hexachlorocyclopentadiene	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
Hexachloroethane	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
Indeno(1,2,3-c,d)pyrene	<0.4	<0.39	NA	NA	NA	NA	NA	NA
Isophorone	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
n-Nitrosodi-n-propylamine	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
n-Nitrosodimethylamine	NA	NA	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
n-Nitrosodiphenylamine	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
Naphthalene	<0.4	<0.39	NA	NA	NA	NA	NA	NA
Nitrobenzene	<0.4	<0.39	<0.76	<0.76	<0.79	<0.78	<0.78	<0.76
Pentachlorophenol	<1.9	<1.9	<3.6 M	<3.6 M	<3.7 M	<3.7 M	<3.7 M	<3.6 M
Phenanthrene	<0.4	<0.39	NA	NA	NA	NA	NA	NA
Phenol	<0.4	<0.39	<0.33	<0.33	<0.34	<0.33	<0.33	<0.33
Pyrene	<0.4	<0.39	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)								
Diesel Range	2 F	3 F	7.1 F	3.1 F	1.9 F	6.2 F	3.4 F	3.2 F
Motor oils	NA	NA	41.8 J	27 J	15.4 J	33.3 J	19.4 J	14.6 J
Volatile Organic Compounds (mg/kg)								
1,1,1,2-Tetrachloroethane	NA	NA	<0.0031	<0.003	<0.0029	<0.0031	<0.0032	<0.003
1,1,1-Trichloroethane	<0.0064	<0.0055	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
1,1,2,2-Tetrachloroethane	<0.0064	<0.0055	<0.0031	<0.003	<0.0029	<0.0031	<0.0032	<0.003
1,1,2-Trichloroethane	<0.0064	<0.0055	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
1,1-Dichloroethane	<0.0064	<0.0055	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
1,1-Dichloroethene	<0.0064	<0.0055	<0.0062	<0.0059	<0.0058	<0.0062	<0.0064	<0.0061
1,1-Dichloropropene	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
1,2,3-Trichlorobenzene	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
1,2,3-Trichloropropane	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
1,2,4-Trichlorobenzene	NA	NA	<0.0051 R	<0.0049	<0.0049 R	<0.0052 R	<0.0053	<0.0051 R
1,2,4-Trimethylbenzene	NA	NA	<0.0062	<0.0059	<0.0058	<0.0062	<0.0064	<0.0061
1,2-Dibromo-3-chloropropane	NA	NA	<0.01	<0.0098	<0.0097	<0.01	<0.011	<0.01
1,2-Dibromoethane (Ethylene Dibromide)	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
1,2-Dichlorobenzene	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
1,2-Dichloroethane	<0.0064	<0.0055	<0.0031	<0.003	<0.0029	<0.0031	<0.0032	<0.003
1,2-Dichloropropane	<0.0064	<0.0055	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
1,3,5-Trimethylbenzene	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
1,3-Dichlorobenzene	NA	NA	<0.0062	<0.0059	<0.0058	<0.0062	<0.0064	<0.0061
1,3-Dichloropropane	NA	NA	<0.0021	<0.002	<0.0019	<0.0021	<0.0021	<0.002
1,4-Dichlorobenzene	NA	NA	<0.0021	<0.002	<0.0019	<0.0021	<0.0021	<0.002

APPENDIX B
TABLE AOC -055-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	DO60	DO60	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	055-SB03	055-SB04	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01
Field Sample ID:	055-SB03-SS35.0	055-SB04-SS25.0	055-TW01-SS25.0	055-TW99-SS25.0	055-TW01-SS30.0	055-TW01-SS35.0	055-TW99-SS35.0	055-TW01-SS40.0
Sample Date:	12/13/2000	12/13/2000	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003
Sample Depth:	36.0	25.0	25.5	25.5	31.0	35.5	35.5	41.0
1-chlorohexane	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
2,2-dichloropropane	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
2-Butanone(MEK)	0.005 F	<0.011	<0.021	<0.02	<0.019	<0.021	<0.021	<0.02
2-chlorotoluene	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
2-Hexanone	<0.013	<0.011	<0.01 J	<0.0098 J	<0.0097 J	<0.01 J	<0.011 J	<0.01 J
4-chlorotoluene	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
4-Methyl-2-pentanone (MIBK)	<0.013	<0.011	<0.021 J	<0.02 J	<0.019 J	<0.021 J	<0.021 J	<0.02 J
Acetone	<0.025	<0.022	<0.051	<0.049	<0.049	<0.052	<0.053	<0.051
Benzene	<0.0064	<0.0055	<0.0021	<0.002	<0.0019	<0.0021	<0.0021	<0.002
Bromobenzene	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
Bromochloromethane	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
Bromodichloromethane	<0.0064	<0.0055	<0.0021	<0.002	<0.0019	<0.0021	<0.0021	<0.002
Bromoform	<0.0064	<0.0055	<0.0062	<0.0059	<0.0058	<0.0062	<0.0064	<0.0061
Bromomethane	<0.0064	<0.0055	<0.01	<0.0098	<0.0097	<0.01	<0.011	<0.01
Carbon disulfide	<0.0064	<0.0055	<0.0051 R	<0.0049 R	<0.0049 R	<0.0052 R	<0.0053 R	<0.0051 R
Carbon tetrachloride	<0.0064	<0.0055	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
Chlorobenzene	<0.0064	<0.0055	<0.0021	<0.002	<0.0019	<0.0021	<0.0021	<0.002
Chloroethane	<0.0064	<0.0055	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
Chloroform	<0.0064	<0.0055	<0.0021	<0.002	<0.0019	<0.0021	<0.0021	<0.002
Chloromethane	<0.0064	<0.0055	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
cis-1,2-Dichloroethylene	<0.0064	<0.0055	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
cis-1,3-Dichloropropene	<0.0064	<0.0055	<0.0031	<0.003	<0.0029	<0.0031	<0.0032	<0.003
Dibromochloromethane	<0.0064	<0.0055	<0.0031	<0.003	<0.0029	<0.0031	<0.0032	<0.003
Dibromomethane	NA	NA	<0.0051 R	<0.0049 R	<0.0049 R	<0.0052 R	<0.0053 R	<0.0051 R
Dichlorodifluoromethane	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
Ethylbenzene	<0.0064	<0.0055	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
Hexachlorobutadiene	NA	NA	<0.0031	<0.003	<0.0029	<0.0031	<0.0032	<0.003
Isopropylbenzene (Cumene)	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
m,p-Xylene	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
Methyl tertiary-butyl ether	<0.0064	<0.0055	<0.021	<0.02	<0.019	<0.021	<0.021	<0.02
Methylene chloride	0.002 F	0.001 F	0.0044 F	0.0017 F	0.0045 F	0.0029 F	0.0041 F	0.0032 F
n-Butylbenzene	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
n-Propylbenzene	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
Naphthalene	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
o-Xylene	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
p-Cymene (p-isopropyltoluene)	NA	NA	<0.0062	<0.0059	<0.0058	<0.0062	<0.0064	<0.0061
Sec-butylbenzene	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
Styrene	<0.0064	<0.0055	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
t-Butylbenzene	NA	NA	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
Tetrachloroethylene (PCE)	<0.0064	<0.0055	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
Toluene	<0.0064	<0.0055	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
trans-1,2-Dichloroethene	<0.0064	<0.0055	<0.0051 R	<0.0049 R	<0.0049 R	<0.0052 R	<0.0053 R	<0.0051 R

APPENDIX B
TABLE AOC -055-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	DO60	DO60	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	055-SB03	055-SB04	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01
Field Sample ID:	055-SB03-SS35.0	055-SB04-SS25.0	055-TW01-SS25.0	055-TW99-SS25.0	055-TW01-SS30.0	055-TW01-SS35.0	055-TW99-SS35.0	055-TW01-SS40.0
Sample Date:	12/13/2000	12/13/2000	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003
Sample Depth:	36.0	25.0	25.5	25.5	31.0	35.5	35.5	41.0
trans-1,3-Dichloropropene	<0.0064	<0.0055	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
Trichloroethylene (TCE)	<0.0064	<0.0055	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
Trichlorofluoromethane	<0.0064	<0.0055	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
Vinyl acetate	<0.013	<0.011	<0.01 M	<0.0098 M	<0.0097 M	<0.01 M	<0.011 M	<0.01 M
Vinyl chloride	<0.0064	<0.0055	<0.0051	<0.0049	<0.0049	<0.0052	<0.0053	<0.0051
Xylenes, total	<0.0064	<0.0055	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -055-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01
Field Sample ID:	055-TW01-SS45.0	055-TW01-SS50.0	055-TW01-SS60.0	055-TW01-SS70.0	055-TW01-SS80.0	055-TW99-SS80.0
Sample Date:	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003
Sample Depth:	45.0	51.0	60.0	70.0	80.0	80.0
BTEX (mg/kg)						
Benzene	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA
General Minerals						
pH	10.2	5.72	7.41	7.09	7.01	7.54
Polychlorinated biphenols (mg/kg)						
PCB-1016 (Aroclor 1016)	NA	NA	NA	NA	NA	NA
PCB-1221 (Aroclor 1221)	NA	NA	NA	NA	NA	NA
PCB-1232 (Aroclor 1232)	NA	NA	NA	NA	NA	NA
PCB-1242 (Aroclor 1242)	NA	NA	NA	NA	NA	NA
PCB-1248 (Aroclor 1248)	NA	NA	NA	NA	NA	NA
PCB-1254 (Aroclor 1254)	NA	NA	NA	NA	NA	NA
PCB-1260 (Aroclor 1260)	NA	NA	NA	NA	NA	NA
Polynuclear Aromatic Hydrocarbons (mg/kg)						
2-Methylnaphthalene	<0.029	<0.029	<0.028	<0.029	<0.03	NA
Acenaphthene	<0.029	<0.029	<0.028	<0.029	<0.03	NA
Acenaphthylene	<0.029	<0.029	<0.028	<0.029	<0.03	NA
Anthracene	0.0131 F	<0.029	<0.028	<0.029	<0.03	NA
Benzo(a)anthracene	0.0562	<0.029	<0.028	<0.029	<0.03	NA
Benzo(a)pyrene	0.0512	<0.029	<0.028	<0.029	<0.03	NA
Benzo(b)fluoranthene	0.0673	<0.029	<0.028	<0.029	<0.03	NA
Benzo(g,h,i)perylene	0.0173 F	<0.029	<0.028	<0.029	<0.03	NA
Benzo(k)fluoranthene	0.0489	<0.029	<0.028	<0.029	<0.03	NA
Chrysene	0.0742	<0.029	<0.028	<0.029	<0.03	NA
Dibenz(a,h)anthracene	<0.029	<0.029	<0.028	<0.029	<0.03	NA
Fluoranthene	0.103	<0.029	<0.028	<0.029	<0.03	NA
Fluorene	<0.029	<0.029	<0.028	<0.029	<0.03	NA
Indeno(1,2,3-c,d)pyrene	0.02 F	<0.029	<0.028	<0.029	<0.03	NA
Naphthalene	<0.029	<0.029	<0.028	<0.029	<0.03	NA
Phenanthrene	0.0354	<0.029	<0.028	<0.029	<0.03	NA
Pyrene	0.0935	<0.029	<0.028	<0.029	<0.03	NA
Semivolatile Organic Compounds (mg/kg)						
1,2,4-Trichlorobenzene	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
1,2-Dichlorobenzene	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
1,3-Dichlorobenzene	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
1,4-Dichlorobenzene	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
2,4,5-Trichlorophenol	<3.8 R	<3.8 M	<3.7 M	<3.8 M	<3.9 M	NA
2,4,6-Trichlorophenol	<0.35 R	<0.34 M	<0.34 M	<0.35 M	<0.36 M	NA
2,4-Dichlorophenol	<0.35 R	<0.34	<0.34	<0.35	<0.36	NA

APPENDIX B
TABLE AOC -055-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01
Field Sample ID:	055-TW01-SS45.0	055-TW01-SS50.0	055-TW01-SS60.0	055-TW01-SS70.0	055-TW01-SS80.0	055-TW99-SS80.0
Sample Date:	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003
Sample Depth:	45.0	51.0	60.0	70.0	80.0	80.0
2,4-Dimethylphenol	<0.35 R	<0.34	<0.34	<0.35	<0.36	NA
2,4-Dinitrophenol	<3.8 R	<3.8 M	<3.7 M	<3.8 M	<3.9 M	NA
2,4-Dinitrotoluene	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
2,6-Dinitrotoluene	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
2-Chloronaphthalene	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
2-Chlorophenol	<0.35 R	<0.34	<0.34	<0.35	<0.36	NA
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA
2-Methylphenol (o-cresol)	<0.35 R	<0.34	<0.34	<0.35	<0.36	NA
2-Nitroaniline	<3.8 R	<3.8	<3.7	<3.8	<3.9	NA
2-Nitrophenol	<0.35 R	<0.34	<0.34	<0.35	<0.36	NA
3,3'-Dichlorobenzidine	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
3-Nitroaniline	<3.8 R	<3.8	<3.7	<3.8	<3.9	NA
3/4-Methylphenol (m,p-cresol)	<2.3 R	<2.3	<2.2	<2.3	<2.4	NA
4,6-Dinitro-2-methylphenol	<3.8 R	<3.8 M	<3.7 M	<3.8 M	<3.9 M	NA
4-Bromophenyl phenyl ether	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
4-Chloro-3-methylphenol	<1.5 R	<1.5	<1.5	<1.5	<1.5	NA
4-Chloroaniline	<1.5 R	<1.5	<1.5	<1.5	<1.5	NA
4-Chlorophenyl phenyl ether	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
4-Methylphenol (p-cresol)	NA	NA	NA	NA	NA	NA
4-Nitroaniline	<3.8 R	<3.8	<3.7	<3.8	<3.9	NA
4-Nitrophenol	<1.8 R	<1.8	<1.8	<1.9	<1.9	NA
Acenaphthene	NA	NA	NA	NA	NA	NA
Acenaphthylene	NA	NA	NA	NA	NA	NA
Anthracene	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA
Benzoic acid	<5.8 R	<5.7 M	<5.6 M	<5.8 M	<5.9 M	NA
Benzyl alcohol	<1.5 R	<1.5	<1.5	<1.5	<1.5	NA
Benzyl butyl phthalate	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
bis(2-Chloroethoxy)methane	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
bis(2-Chloroethyl)ether	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
bis(2-Chloroisopropyl)ether	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
bis(2-Ethylhexyl)phthalate	0.103 J	<0.8	<0.79	<0.82	<0.83	NA
Chrysene	NA	NA	NA	NA	NA	NA
Di-n-butyl phthalate	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
Di-n-octylphthalate	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA	NA	NA
Dibenzofuran	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
Diethyl phthalate	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA

APPENDIX B
TABLE AOC -055-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE
(Page 13 of 15)

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01
Field Sample ID:	055-TW01-SS45.0	055-TW01-SS50.0	055-TW01-SS60.0	055-TW01-SS70.0	055-TW01-SS80.0	055-TW99-SS80.0
Sample Date:	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003
Sample Depth:	45.0	51.0	60.0	70.0	80.0	80.0
Dimethyl phthalate	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
Fluoranthene	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
Hexachlorobutadiene	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
Hexachlorocyclopentadiene	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
Hexachloroethane	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
Indeno(1,2,3-c,d)pyrene	NA	NA	NA	NA	NA	NA
Isophorone	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
n-Nitrosodi-n-propylamine	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
n-Nitrosodimethylamine	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
n-Nitrosodiphenylamine	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
Naphthalene	NA	NA	NA	NA	NA	NA
Nitrobenzene	<0.81 R	<0.8	<0.79	<0.82	<0.83	NA
Pentachlorophenol	<3.8 R	<3.8 M	<3.7 M	<3.8 M	<3.9 M	NA
Phenanthrene	NA	NA	NA	NA	NA	NA
Phenol	<0.35 R	<0.34	<0.34	<0.35	<0.36	NA
Pyrene	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)						
Diesel Range	5.4 F	<11	<11	<12	<12	<12
Motor oils	43.7 J	<11 J	<11 J	<12 J	<12 J	<12 J
Volatile Organic Compounds (mg/kg)						
1,1,1,2-Tetrachloroethane	<0.0032	<0.0033	<0.0032	<0.0034	<0.0033	NA
1,1,1-Trichloroethane	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
1,1,2,2-Tetrachloroethane	<0.0032	<0.0033	<0.0032	<0.0034	<0.0033	NA
1,1,2-Trichloroethane	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
1,1-Dichloroethane	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
1,1-Dichloroethene	<0.0064	<0.0065	<0.0064	<0.0069	<0.0065	NA
1,1-Dichloropropene	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
1,2,3-Trichlorobenzene	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
1,2,3-Trichloropropane	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
1,2,4-Trichlorobenzene	<0.0054 R	<0.0055 R	<0.0053 R	<0.0057 R	<0.0054 R	NA
1,2,4-Trimethylbenzene	<0.0064	<0.0065	<0.0064	<0.0069	<0.0065	NA
1,2-Dibromo-3-chloropropane	<0.011	<0.011	<0.011	<0.011	<0.011	NA
1,2-Dibromoethane (Ethylene Dibromide)	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
1,2-Dichlorobenzene	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
1,2-Dichloroethane	<0.0032	<0.0033	<0.0032	<0.0034	<0.0033	NA
1,2-Dichloropropane	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
1,3,5-Trimethylbenzene	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
1,3-Dichlorobenzene	<0.0064	<0.0065	<0.0064	<0.0069	<0.0065	NA
1,3-Dichloropropane	<0.0021	<0.0022	<0.0021	<0.0023	<0.0022	NA
1,4-Dichlorobenzene	<0.0021	<0.0022	<0.0021	<0.0023	<0.0022	NA

APPENDIX B
TABLE AOC -055-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01
Field Sample ID:	055-TW01-SS45.0	055-TW01-SS50.0	055-TW01-SS60.0	055-TW01-SS70.0	055-TW01-SS80.0	055-TW99-SS80.0
Sample Date:	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003
Sample Depth:	45.0	51.0	60.0	70.0	80.0	80.0
1-chlorohexane	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
2,2-dichloropropane	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
2-Butanone(MEK)	<0.021	<0.022	<0.021	<0.023	<0.022	NA
2-chlorotoluene	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
2-Hexanone	<0.011 J	<0.011 J	<0.011 J	<0.011 J	<0.011 J	NA
4-chlorotoluene	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
4-Methyl-2-pentanone (MIBK)	<0.021 J	<0.022 J	<0.021 J	<0.023 J	<0.022 J	NA
Acetone	<0.054	<0.055	<0.053	<0.057	<0.054	NA
Benzene	<0.0021	<0.0022	<0.0021	<0.0023	<0.0022	NA
Bromobenzene	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
Bromochloromethane	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
Bromodichloromethane	<0.0021	<0.0022	<0.0021	<0.0023	<0.0022	NA
Bromoform	<0.0064	<0.0065	<0.0064	<0.0069	<0.0065	NA
Bromomethane	<0.011	<0.011	<0.011	<0.011	<0.011	NA
Carbon disulfide	<0.0054 R	<0.0055 R	<0.0053 R	<0.0057 R	<0.0054 R	NA
Carbon tetrachloride	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
Chlorobenzene	<0.0021	<0.0022	<0.0021	<0.0023	<0.0022	NA
Chloroethane	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
Chloroform	<0.0021	<0.0022	<0.0021	<0.0023	<0.0022	NA
Chloromethane	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
cis-1,2-Dichloroethylene	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
cis-1,3-Dichloropropene	<0.0032	<0.0033	<0.0032	<0.0034	<0.0033	NA
Dibromochloromethane	<0.0032	<0.0033	<0.0032	<0.0034	<0.0033	NA
Dibromomethane	<0.0054 R	<0.0055 R	<0.0053 R	<0.0057 R	<0.0054 R	NA
Dichlorodifluoromethane	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
Ethylbenzene	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
Hexachlorobutadiene	<0.0032	<0.0033	<0.0032	<0.0034	<0.0033	NA
Isopropylbenzene (Cumene)	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
m,p-Xylene	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
Methyl tertiary-butyl ether	<0.021	<0.022	<0.021	<0.023	<0.022	NA
Methylene chloride	<0.0054	0.0034 F	0.0047 F	0.0053 F	0.004 F	NA
n-Butylbenzene	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
n-Propylbenzene	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
Naphthalene	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
o-Xylene	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
p-Cymene (p-isopropyltoluene)	<0.0064	<0.0065	<0.0064	<0.0069	<0.0065	NA
Sec-butylbenzene	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
Styrene	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
t-Butylbenzene	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
Tetrachloroethylene (PCE)	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
Toluene	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
trans-1,2-Dichloroethene	<0.0054 R	<0.0055 R	<0.0053 R	<0.0057 R	<0.0054 R	NA

APPENDIX B
TABLE AOC -055-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01	055-TW01
Field Sample ID:	055-TW01-SS45.0	055-TW01-SS50.0	055-TW01-SS60.0	055-TW01-SS70.0	055-TW01-SS80.0	055-TW99-SS80.0
Sample Date:	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003	2/3/2003
Sample Depth:	45.0	51.0	60.0	70.0	80.0	80.0
trans-1,3-Dichloropropene	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
Trichloroethylene (TCE)	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
Trichlorofluoromethane	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
Vinyl acetate	<0.011 M	<0.011 M	<0.011 M	<0.011 M	<0.011 M	NA
Vinyl chloride	<0.0054	<0.0055	<0.0053	<0.0057	<0.0054	NA
Xylenes, total	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -055-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE
(Page 1 of 3)

Reference:	DO60	DO60	DO60	DO60	3PDO59	3PDO59
Location ID:	055-SB02	055-SB03	055-SB04	055-SB04	055-TW01	055-TW01
Field Sample ID:	055-SB02-GW01	055-SB03-GW01	055-SB04-GW01	055-SB99-GW01	055-TW01-GW01	055-TW99-GW01
Sample Date:	12/13/2000	12/13/2000	12/14/2000	12/14/2000	2/3/2003	2/3/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0
Polynuclear Aromatic Hydrocarbons (µg/L)						
2-Methylnaphthalene	NA	NA	NA	NA	<0.5	<0.5
Acenaphthene	NA	NA	NA	NA	<0.5	<0.5
Acenaphthylene	NA	NA	NA	NA	<0.5	<0.5
Anthracene	NA	NA	NA	NA	<0.5	<0.5
Benzo(a)anthracene	NA	NA	NA	NA	<0.5	<0.5
Benzo(a)pyrene	NA	NA	NA	NA	<0.5	<0.5
Benzo(b)fluoranthene	NA	NA	NA	NA	<0.5	<0.5
Benzo(g,h,i)perylene	NA	NA	NA	NA	<0.5	<0.5
Benzo(k)fluoranthene	NA	NA	NA	NA	<0.5	<0.5
Chrysene	NA	NA	NA	NA	<0.5	<0.5
Dibenz(a,h)anthracene	NA	NA	NA	NA	<0.5	<0.5
Fluoranthene	NA	NA	NA	NA	<0.5	<0.5
Fluorene	NA	NA	NA	NA	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	NA	NA	NA	NA	<0.5	<0.5
Naphthalene	NA	NA	NA	NA	<0.5	<0.5
Phenanthrene	NA	NA	NA	NA	<0.5	<0.5
Pyrene	NA	NA	NA	NA	<0.5	<0.5
Semivolatile Organic Compounds (µg/L)						
1,2,4-Trichlorobenzene	<10	<10	<10	<10	<10	<10
1,2-Dichlorobenzene	<10	<10	<10	<10	<10	<10
1,3-Dichlorobenzene	<10	<10	<10	<10	<10	<10
1,4-Dichlorobenzene	<10	<10	<10	<10	<10	<10
2,4,5-Trichlorophenol	<10	<10	<10	<10	<50	<50
2,4,6-Trichlorophenol	<10	<10	<10	<10	<10	<10
2,4-Dichlorophenol	<10	<10	<10	<10	<10	<10
2,4-Dimethylphenol	<10	<10	<10	<10	<10	<10
2,4-Dinitrophenol	<50	<50 J	<50 J	<50 J	<50	<50
2,4-Dinitrotoluene	<10	<10	<10	<10	<10	<10
2,6-Dinitrotoluene	<10	<10	<10	<10	<10	<10
2-Chloronaphthalene	<10	<10	<10	<10	<10	<10
2-Chlorophenol	<10	<10	<10	<10	<10	<10
2-Methylnaphthalene	<10	<10	<10	<10	NA	NA
2-Methylphenol (o-cresol)	<10	<10	<10	<10	<10	<10
2-Nitroaniline	<50	<50	<50	<50	<50 M	<50 M
2-Nitrophenol	<10	<10	<10	<10	<10	<10
3,3'-Dichlorobenzidine	<10	<10	<10	<10	<20 M	<20 M
3-Nitroaniline	<50	<50	<50	<50	<50	<50
3/4-Methylphenol (m,p-cresol)	<10	<10	<10	<10	<50	<50
4,6-Dinitro-2-methylphenol	<50	<50	<50	<50	<50	<50
4-Bromophenyl phenyl ether	<10	<10	<10	<10	<10	<10
4-Chloro-3-methylphenol	<10	<10	<10	<10	<20	<20
4-Chloroaniline	<20 J	<20	<20	<20	<20 M	<20 M
4-Chlorophenyl phenyl ether	<10	<10	<10	<10	<10	<10
4-Nitroaniline	<50	<50	<50	<50	<50 M	<50 M
4-Nitrophenol	<50	<50	<50	<50	<50	<50
Acenaphthene	<10	<10	<10	<10	NA	NA
Acenaphthylene	<10	<10	<10	<10	NA	NA
Anthracene	<10	<10	<10	<10	NA	NA
Benzo(a)anthracene	<10	<10	<10	<10	NA	NA
Benzo(a)pyrene	<10	<10	<10	<10	NA	NA
Benzo(b)fluoranthene	<10	<10	<10	<10	NA	NA
Benzo(g,h,i)perylene	<10	<10	<10	<10	NA	NA
Benzo(k)fluoranthene	<10	<10	<10	<10	NA	NA
Benzoic acid	<50 J	<50 J	<50 J	<50 J	<100 M	<100 M
Benzyl alcohol	<20	<20	<20	<20	<20	<20
Benzyl butyl phthalate	<10	<10	<10	<10	<10	<10
bis(2-Chloroethoxy)methane	<10	<10	<10	<10	<10	<10
bis(2-Chloroethyl)ether	<10 J	<10	<10	<10	<10	<10
bis(2-Chloroisopropyl)ether	<10	<10	<10	<10	<10	<10
bis(2-Ethylhexyl)phthalate	<10	<10	<10	<10	0.62 F	0.8 F
Chrysene	<10	<10	<10	<10	NA	NA
Di-n-butyl phthalate	<10	<10	<10	<10	<10	<10

APPENDIX B
TABLE AOC -055-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE
(Page 2 of 3)

Reference:	DO60	DO60	DO60	DO60	3PDO59	3PDO59
Location ID:	055-SB02	055-SB03	055-SB04	055-SB04	055-TW01	055-TW01
Field Sample ID:	055-SB02-GW01	055-SB03-GW01	055-SB04-GW01	055-SB99-GW01	055-TW01-GW01	055-TW99-GW01
Sample Date:	12/13/2000	12/13/2000	12/14/2000	12/14/2000	2/3/2003	2/3/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0
Di-n-octylphthalate	<10	<10	<10	<10	<10	<10
Dibenz(a h)anthracene	<10	<10	<10	<10	NA	NA
Dibenzofuran	<10	<10	<10	<10	<10	<10
Diethyl phthalate	<10	<10	<10	<10	<10	<10
Dimethyl phthalate	<10	<10	<10	<10	<10	<10
Fluoranthene	<10	<10	<10	<10	NA	NA
Fluorene	<10	<10	<10	<10	NA	NA
Hexachlorobenzene	<10	<10	<10	<10	<10	<10
Hexachlorobutadiene	<10	<10	<10	<10	<10	<10
Hexachlorocyclopentadiene	<10	<10	<10	<10	<10	<10
Hexachloroethane	<10	<10	<10	<10	<10	<10
Indeno(1 2 3-c,d)pyrene	<10	<10	<10	<10	NA	NA
Isophorone	<10	<10	<10	<10	<10	<10
n-Nitrosodi-n-propylamine	<10	<10	<10	<10	<10	<10
n-Nitrosodimethylamine	NA	NA	NA	NA	<10	<10
n-Nitrosodiphenylamine	<10	<10	<10	<10	<10	<10
Naphthalene	<10	<10	<10	<10	NA	NA
Nitrobenzene	<10	<10	<10	<10	<10	<10
Pentachlorophenol	<50	<50	<50	<50	<50	<50
Phenanthrene	<10	<10	<10	<10	NA	NA
Phenol	<10	<10	<10	<10	<10	<10
Pyrene	<10	<10	<10	<10	NA	NA
Total Petroleum Hydrocarbons (µg/L)						
Diesel Range	100 F	200 F	<500	<500	140 F	52 F
Motor oils	NA	NA	NA	NA	280 F	55 F
Volatile Organic Compounds (µg/L)						
1 1 1 2-Tetrachloroethane	NA	NA	NA	NA	<0.5	<0.5
1 1 1-Trichloroethane	<1	<1	<1	<1	<1	<1
1 1 2 2-Tetrachloroethane	<1	<1	<1	<1	<0.5	<0.5
1 1 2-Trichloroethane	<1	<1	<1	<1	<1	<1
1 1-Dichloroethane	<1	<1	<1	<1	<1	<1
1 1-Dichloroethene	<1	<1	<1	<1	<1	<1
1 1-Dichloropropene	NA	NA	NA	NA	<1	<1
1 2 3-Trichlorobenzene	NA	NA	NA	NA	<1	<1
1 2 3-Trichloropropane	NA	NA	NA	NA	<1	<1
1 2 4-Trichlorobenzene	NA	NA	NA	NA	<1	<1
1 2,4-Trimethylbenzene	NA	NA	NA	NA	<1	<1
1 2-Dibromo-3-chloropropane	NA	NA	NA	NA	<2	<2
1 2-Dibromoethane (Ethylene Dibromide)	NA	NA	NA	NA	<1	<1
1 2-Dichlorobenzene	NA	NA	NA	NA	<1	<1
1 2-Dichloroethane	<1	<1	<1	<1	<0.5	<0.5
1 2-Dichloropropane	<1	<1	<1	<1	<1	<1
1 3 5-Trimethylbenzene	NA	NA	NA	NA	<1	<1
1 3-Dichlorobenzene	NA	NA	NA	NA	<1	<1
1 3-Dichloropropane	NA	NA	NA	NA	<0.4	<0.4
1,4-Dichlorobenzene	NA	NA	NA	NA	<0.5	<0.5
1-chlorohexane	NA	NA	NA	NA	<1	<1
2 2-dichloropropane	NA	NA	NA	NA	<1	<1
2-Butanone(MEK)	<10	<10	<10	<10	<10	<10
2-chlorotoluene	NA	NA	NA	NA	<1	<1
2-Hexanone	<10	<10	<10	<10	<10	<10
4-chlorotoluene	NA	NA	NA	NA	<1	<1
4-Methyl-2-pentanone (MIBK)	<10	<10	<10	<10	<10	<10
Acetone	<23	<20	<33	<31	<10 R	<10 R
Benzene	<1	<1	<1	<1	<0.4	<0.4
Bromobenzene	NA	NA	NA	NA	<1	<1
Bromochloromethane	NA	NA	NA	NA	<1	<1
Bromodichloromethane	<1	<1	<1	<1	<0.5	<0.5
Bromoform	<1	<1	<1	<1	<1	<1
Bromomethane	<1	<1	<1	<1	<3	<3
Carbon disulfide	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1	<1	<1	<1
Chlorobenzene	<1	<1	<1	<1	<0.5	<0.5

APPENDIX B
TABLE AOC -055-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE
(Page 3 of 3)

Reference:	DO60	DO60	DO60	DO60	3PDO59	3PDO59
Location ID:	055-SB02	055-SB03	055-SB04	055-SB04	055-TW01	055-TW01
Field Sample ID:	055-SB02-GW01	055-SB03-GW01	055-SB04-GW01	055-SB99-GW01	055-TW01-GW01	055-TW99-GW01
Sample Date:	12/13/2000	12/13/2000	12/14/2000	12/14/2000	2/3/2003	2/3/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0
Chloroethane	<1	<1	<1	<1	<1	<1
Chloroform	<1	1	6	5.7	<0.3	<0.3
Chloromethane	<1	<1	<1	<1	<1	<1
cis-1 2-Dichloroethylene	<1	<1	<1	<1	<1	<1
cis-1 3-Dichloropropene	<1	<1	<1	<1	<0.5	<0.5
Dibromochloromethane	<1	<1	<1	<1	<0.5	<0.5
Dibromomethane	NA	NA	NA	NA	<1	<1
Dichlorodifluoromethane	NA	NA	NA	NA	<1 R	<1 R
Ethylbenzene	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	NA	NA	NA	NA	<0.6 R	<0.6 R
Isopropylbenzene (Cumene)	NA	NA	NA	NA	<1	<1
m,p-Xylene	NA	NA	NA	NA	<2	<2
Methyl tertiary-butyl ether	<1	<1	<1	<1	<5	<5
Methylene chloride	<7	<6	<7	<6	<1	<1
n-Butylbenzene	NA	NA	NA	NA	<1	<1
n-Propylbenzene	NA	NA	NA	NA	<1	<1
Naphthalene	NA	NA	NA	NA	<1	<1
o-Xylene	NA	NA	NA	NA	<1	<1
p-Cymene (p-isopropyltoluene)	NA	NA	NA	NA	<1	<1
Sec-butylbenzene	NA	NA	NA	NA	<1	<1
Styrene	<1	<1	<1	<1	<1	<1
t-Butylbenzene	NA	NA	NA	NA	<1	<1
Tetrachloroethylene (PCE)	<1	<1	<1	<1	<1	<1
Toluene	<1	<1	<1	<1	<1	<1
trans-1 2-Dichloroethene	<1	<1	<1	<1	<1	<1
trans-1 3-Dichloropropene	<1	<1	<1	<1	<1	<1
Trichloroethylene (TCE)	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1	<1	<1	<1	<1	<1
Vinyl acetate	<10	<10	<10	<10	<10	<10
Vinyl chloride	<1	<1	<1	<1	<1	<1
Xylenes, total	<1	<1	<1	<1	NA	NA

APPENDIX B
TABLE AOC -061-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE
(Page 1 of 2)

Reference:	TetraTech WR09	TetraTech WR09	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	T860-1	T860-2	061-SB01	061-SB01	061-SB01	061-SB02	061-SB02	061-SB02	061-SB03	061-SB03
Field Sample ID:	T860-1	T860-2	061-SB01-SS5.0	061-SB01-SS10.0	061-SB01-SS15.0	061-SB02-SS5.0	061-SB02-SS10.0	061-SB02-SS15.0	061-SB03-SS5.0	061-SB03-SS10.0
Sample Date:	5/11/1995	5/11/1995	1/30/2003	1/30/2003	1/30/2003	1/30/2003	1/30/2003	1/30/2003	1/30/2003	1/30/2003
Sample Depth:	10.0	3.0	6.0	11.0	16.0	6.0	9.5	16.0	6.0	11.0
BTEX (mg/kg)										
Benzene	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, total	<0.015	<0.015	NA	NA	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)										
Diesel Range	<10	22	<11	<12	<12	<11	<12	<13	5 F	<11
Motor oils	NA	NA	4.5 F	<12	<12	3.9 F	<12	<13	18.6	<11

APPENDIX B
TABLE AOC -061-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE
(Page 2 of 2)

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	061-SB03	061-SB04	061-SB04	061-SB04	061-SB05	061-SB05	061-SB05
Field Sample ID:	061-SB03-SS15.0	061-SB04-SS5.0	061-SB04-SS10.0	061-SB04-SS15.0	061-SB05-SS5.0	061-SB05-SS10.0	061-SB05-SS15.0
Sample Date:	1/30/2003	1/30/2003	1/30/2003	1/30/2003	1/30/2003	1/30/2003	1/30/2003
Sample Depth:	16.0	6.0	9.5	16.0	6.0	9.5	16.0
BTEX (mg/kg)							
Benzene	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA
Xylenes, total	NA	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)							
Diesel Range	<12	<12	<12	<12	<12	<12	<12
Motor oils	<12	<12	<12	<12	3 F	<12	<12

APPENDIX B
TABLE AOC -061-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	061-SB01	061-SB02	061-SB03	061-SB04	061-SB05
Field Sample ID:	061-SB01-GW01	061-SB02-GW01	061-SB03-GW01	061-SB04-GW01	061-SB05-GW01
Sample Date:	1/30/2003	1/30/2003	1/30/2003	1/30/2003	1/30/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0
Total Petroleum Hydrocarbons (μg/L)					
Diesel Range	<480	<480	<480	<480	<480
Motor oils	<480	<480	<480	<480	<480

APPENDIX B
TABLE AOC -099-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE
(Page 1 of 10)

Reference:	TetraTech WR10	TetraTech WR10	TetraTech WR10	TetraTech WR10	TetraTech WR10	TetraTech WR10	TetraTech WR10	TetraTech WR10	DO7	DO7	DO7
Location ID:	VN99S1	VN99S2	VN99S3	VN99S4	VN99S5	VN99S6	VN99S7	VN99S8	099-SB01	099-SB01	099-SB02
Field Sample ID:	VN99S1	VN99S2	VN99S3	VN99S4	VN99S5	VN99S6	VN99S7	VN99S8	099-SB01-SS0.0	099-SB01-SS2	099-SB02-SS0
Sample Date:	3/12/1997	3/12/1997	3/12/1997	3/12/1997	3/12/1997	3/12/1997	3/12/1997	3/12/1997	11/21/1998	11/21/1998	11/21/1998
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Total Metals (mg/kg)											
Aluminum	NA	NA	NA	NA	5170	6820	9730	4540	3230	7200	5060
Antimony	NA	NA	NA	NA	<10	<10	<10	<10	<0.531	<0.506	<0.51
Arsenic	NA	NA	NA	NA	1.5 FJ	2.4 F	1.6 FJ	1.1 FJ	<1.06	2.2	1.09
Barium	NA	NA	NA	NA	69.7	78.9	16.3 FJ	14.8 FJ	11.1	9.33	19.5
Beryllium	NA	NA	NA	NA	<0.2	<0.2	0.3	<0.2	<1.06	<1.01	<1.02
Boron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	7.8	4	<1	<1	<1.06	<1.01	<1.02
Calcium	NA	NA	NA	NA	5120	9310	2460	682 FJ	NA	NA	NA
Chromium	NA	NA	NA	NA	78.4	53.2	28.8	8.98	7.03 J	6.8 J	6.08 J
Chromium, hexavalent	NA	NA	NA	NA	0.04 FJ	0.05 J	<0.2 J	<0.2 J	<0.43	<0.4	<0.41
Cobalt	NA	NA	NA	NA	2.48 FJ	4.7 FJ	1.44 FJ	1.27 FJ	<2.13	<2.02	<2.04
Copper	NA	NA	NA	NA	37.2	36.6	5.5	2.9 FJ	4.1	4.14	5.44
Iron	NA	NA	NA	NA	8960	10600	21200	4740	4190	8870	5500
Lead	130	285	646	67100	239	190	6.9	3.2	<10.6	<10.1	<10.2
Magnesium	NA	NA	NA	NA	2080	4150	1420	543 FJ	NA	NA	NA
Manganese	NA	NA	NA	NA	88.1	205	56	42.6	23	5.39	28.1
Mercury	NA	NA	NA	NA	0.4	0.1	<0.1	<0.1	<0.11	<0.1	<0.1
Molybdenum	NA	NA	NA	NA	3.25 FJ	2.4 FJ	<40	<40	<10.6	<10.1	<10.2
Nickel	NA	NA	NA	NA	19.9	20.3	6.41 FJ	4.99 FJ	<5.31	<5.06	<5.1
Potassium	NA	NA	NA	NA	630 FJ	656 FJ	411 FJ	505 FJ	NA	NA	NA
Selenium	NA	NA	NA	NA	<1	0.8 FJ	<1	<1	<1.06	<1.01	<1.02
Silver	NA	NA	NA	NA	<2	<2	<2	<2	<2.13	<2.02	<2.04
Sodium	NA	NA	NA	NA	535 FBJ	502 FBJ	614 FBJ	340 FBJ	NA	NA	NA
Thallium	NA	NA	NA	NA	<2	<2	<2	<2	<0.213	<0.202	<0.204
Vanadium	NA	NA	NA	NA	17.6	27.1	29.5	11.9	10.3 J	18.6 J	14.1 J
Zinc	NA	NA	NA	NA	571	675	46.8	7.7	8.83	2.78	7.07
Volatile Organic Compounds (mg/kg)											
1,1,1-Trichloroethane	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
2-Butanone(MEK)	NA	NA	NA	NA	<0.011	<0.012	<0.011	<0.011	NA	NA	NA
2-Chloroethyl vinyl ether	NA	NA	NA	NA	<0.022	<0.024	<0.022	<0.021	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	<0.011	<0.012	<0.011	<0.011	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	<0.011	<0.012	<0.011	<0.011	NA	NA	NA

APPENDIX B
TABLE AOC -099-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	TetraTech WR10	TetraTech WR10	TetraTech WR10	TetraTech WR10	TetraTech WR10	TetraTech WR10	TetraTech WR10	TetraTech WR10	DO7	DO7	DO7
Location ID:	VN99S1	VN99S2	VN99S3	VN99S4	VN99S5	VN99S6	VN99S7	VN99S8	099-SB01	099-SB01	099-SB02
Field Sample ID:	VN99S1	VN99S2	VN99S3	VN99S4	VN99S5	VN99S6	VN99S7	VN99S8	099-SB01-SS0.0	099-SB01-SS2	099-SB02-SS0
Sample Date:	3/12/1997	3/12/1997	3/12/1997	3/12/1997	3/12/1997	3/12/1997	3/12/1997	3/12/1997	11/21/1998	11/21/1998	11/21/1998
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Acetone	NA	NA	NA	NA	0.018 FB	0.012 FB	0.01 FBJ	0.01 FBJ	NA	NA	NA
Benzene	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
Bromoform	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
Bromomethane	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
Chloroethane	NA	NA	NA	NA	<0.011	<0.012	<0.011	<0.011	NA	NA	NA
Chloroform	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
Chloromethane	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
cis-1,2-Dichloroethylene	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
o-Xylene	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
Styrene	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
Tetrachloroethylene (PCE)	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
Toluene	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
Trichloroethylene (TCE)	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA
Vinyl acetate	NA	NA	NA	NA	<0.011	<0.012	<0.011	<0.011	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	<0.0055	<0.006	<0.0055	<0.0054	NA	NA	NA

APPENDIX B
TABLE AOC -099-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7
Location ID:	099-SB02	099-SB03	099-SB03	099-SB04	099-SB04	099-SB05	099-SB05	099-SB05	099-SB06	099-SB06	099-SB07	099-SB07	099-SB08
Field Sample ID:	099-SB02-SS2	099-SB03-SS2	099-SB03-SS5	099-SB04-SS0	099-SB04-SS2	099-SB05-SS0	099-SB05-SS2	)99-SB99-SS101	099-SB06-SS2	099-SB06-SS5	099-SB07-SS0	099-SB07-SS2	099-SB08-SS0
Sample Date:	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998
Sample Depth:	2.0	2.0	5.0	0.0	2.0	0.0	2.0	2.0	2.0	5.0	0.0	2.0	0.0
Total Metals (mg/kg)													
Aluminum	4530	7860	15700	1880	12700	2850	2360	3460	5050	6800	3250 J	6710	2490
Antimony	<0.514	<0.606	<0.592	<0.508	0.748	<0.524	<0.509	<0.511	<0.552	<0.566	0.659 J	<0.587	0.961
Arsenic	1.95	1.94	<1.18	2.1	<1.15	<1.05	1.1	<1.02	1.2	1.43	<1.13	3.05	1.85
Barium	9.83	6.33	22.2	20.5	6.16	12.9	6.21	9.14	8.16	7.42	91.7	266	359
Beryllium	<1.03	<1.21	<1.18	<1.02	<1.15	<1.05	<1.02	<1.02	<1.1	<1.13	<1.13	<1.17	<1.12
Boron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	<1.03	<1.21	1.62	<1.02	<1.15	<1.05	<1.02	<1.02	<1.1	<1.13	3.75	<1.17	9.89
Calcium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	8.58 J	16.7 J	25.9 J	10.4 J	15 J	6.22 J	4.69 J	6.05 J	8.27 J	17.3 J	57.1 J	28 J	193 J
Chromium, hexavalent	<0.41	<0.48	<0.47	<0.41	<0.46	<0.42	<0.41	<0.41	<0.44	<0.45	<0.45	<0.47	<0.45
Cobalt	<2.06	<2.42	<2.37	<2.03	<2.3	<2.1	<2.04	<2.04	<2.21	<2.27	<2.25	<2.35	<2.23
Copper	3.31	8.38	16.3	5.41	6.91	3.56	<2.04	3.34	3.1	5.69	25.1	5.79	57.1
Iron	6590	5440	12400	6090	6910	3530	3280	3820	4430	6180	5520	5920	9260
Lead	<10.3	12.5	55.3	22.5	<11.5	<10.5	<10.2	<10.2	<11	81.8	121	<11.7	337
Magnesium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	13	6.82	31.3	64.9	7.29	35.9	7.57	18.2	11.2	11	109 J	3.13	132
Mercury	<0.1	<0.12	<0.12	<0.1	<0.12	<0.1	<0.1	<0.1	<0.11	<0.11	0.305	<0.12	<0.11
Molybdenum	<10.3	<12.1	<11.8	<10.2	<11.5	<10.5	<10.2	<10.2	<11	<11.3	<11.3	<11.7	<11.2
Nickel	<5.14	<6.06	7.95	<5.08	<5.76	<5.24	<5.09	<5.11	<5.52	<5.66	9.61	<5.87	18.1
Potassium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	<1.03	<1.21	<1.18	<1.02	<1.15	<1.05	<1.02	<1.02	<1.1	<1.13	<1.13	<1.17	<1.12
Silver	<2.06	<2.42	<2.37	<2.03	<2.3	<2.1	<2.04	<2.04	<2.21	<2.27	<2.25	<2.35	<2.23
Sodium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	<0.206	0.291	0.343	0.274	<0.23	<0.21	<0.204	<0.204	<0.221	<0.227	<0.225	0.434	0.424
Vanadium	17.1 J	11.2 J	24.3 J	8.81 J	14.6 J	10 J	8.82 J	10.4 J	9.89 J	17.8 J	12.1 J	17 J	16.6 J
Zinc	4.62	33	374	428	4.57	84.9	5.12	17.6	13	48.1	379 J	3.59	546
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone(MEK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethyl vinyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -099-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE
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Reference:	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7
Location ID:	099-SB02	099-SB03	099-SB03	099-SB04	099-SB04	099-SB05	099-SB05	099-SB05	099-SB06	099-SB06	099-SB07	099-SB07	099-SB08
Field Sample ID:	099-SB02-SS2	099-SB03-SS2	099-SB03-SS5	099-SB04-SS0	099-SB04-SS2	099-SB05-SS0	099-SB05-SS2	)99-SB99-SS10	099-SB06-SS2	099-SB06-SS5	099-SB07-SS0	099-SB07-SS2	099-SB08-SS0
Sample Date:	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998	11/21/1998
Sample Depth:	2.0	2.0	5.0	0.0	2.0	0.0	2.0	2.0	2.0	5.0	0.0	2.0	0.0
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene (PCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene (TCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -099-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE
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Reference:	DO7	DO7	DO7	DO7	DO60	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	099-SB08	099-SB09	099-SB09	099-SB10	099-EX01	099-SC01	099-SC02	099-SC03	099-SC03	099-SC04	099-SC05	099-SC06
Field Sample ID:	099-SB08-SS2	099-SB09-0.5	099-SB09-2.0	099-SB10-SS2	099-EX01-SS2.0	099-SC01-SS1.0	099-SC02-SS1.0	099-SC03-SS1.0	099-SC97-SS1.0	099-SC04-SS1.0	099-SC05-SS1.0	099-SC06-SS1.0
Sample Date:	11/21/1998	2/18/1999	2/18/1999	11/21/1998	5/15/2000	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003
Sample Depth:	2.0	0.5	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Metals (mg/kg)												
Aluminum	10000	14300	9370	7450	2560	2010 J	1440 J	1480 J	7030 J	8360 J	10500 J	12800 J
Antimony	<0.591	<0.62	<0.602	<0.597	<0.542	0.56 F	<41	0.67 F	0.6 F	<45	<46	0.78 F
Arsenic	2.06	2.99	1.92	1.73	1.07 FJ	1.3 F	0.99 F	1.1 F	2.5 F	0.71 F	5.9 F	2.1 F
Barium	27.4	8.24	5.24	62.8	9.25	6.2 J	7 J	5 J	14.1 J	8.5 J	9.8 J	13.2 J
Beryllium	<1.18	<1.24	<1.2	<1.19	0.106 FJ	0.025 F	<4.1	<4.1	0.13 F	0.092 F	0.16 F	0.13 F
Boron	NA	NA	NA	NA	NA	2.6 F	2.1 F	<5.1	2.8 F	2.9 F	3.1 F	3.5 F
Cadmium	<1.18	<1.24	<1.2	<1.19	<1.08	<2	<2	<2	1.8 F	3.3	1.5 F	0.86 F
Calcium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	17.1 J	19.8	17.9	24.6 J	4.34 J	4.3 J	3.3 J	3.3 J	17.6 J	17.4 J	18.9 J	23.5 J
Chromium, hexavalent	<0.47	<0.5	<0.48	<0.48	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	<2.36	<2.48	<2.41	<2.39	1.04 FJ	1.8 F	0.55 F	2.2 F	1.1 F	0.81 F	1.3 F	1.4 F
Copper	8.51	12.2	11.2	10.7	2.91	0.92 F	0.51 F	0.65 F	9.6	10.7	9.7	8.1 F
Iron	8750	12400	19300	6480	3600 J	4000 J	2910 J	3560 J	9000 J	8080 J	21900 J	17400 J
Lead	<11.8	<12.4	<12	82.2	4.63 FJ	2.9 F	2.4 F	2.3 F	26	10.5 F	10.6 F	23
Magnesium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	5.88	7.84	3.74	19.7	11.2 J	18.8 J	4 J	43.5 J	8.3 J	6.4 J	6.1 J	20.7 J
Mercury	<0.12	<0.124	<0.12	<0.12	<0.108	NA	NA	NA	NA	NA	NA	NA
Molybdenum	<11.8	<12.4	<12	<11.9	<0.964	0.34 F	0.24 F	0.37 F	0.61 F	[illegible]	<0.93	0.71 F
Nickel	<5.91	<6.2	<6.02	<5.97	1.07 FJ	1.8 F	1.1 F	1.3 F	4.5 F	3.4 F	4.6 F	5.3 F
Potassium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	<1.18	<0.671	<0.602	<1.19	<1.08	<12	<12	<12	<14	<13	<14	<14
Silver	<2.36	<2.48	<2.41	<2.39	<0.493	<4.1	<4.1	<4.1	<4.6	<4.5	<4.6	<4.7
Sodium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	0.461	<1.24	<1.2	0.311	0.207 FJ	<25	<24	<24	<28	<27	<28	<28
Vanadium	21.8 J	27.2	16.4	14.5 J	10.3 J	10.6 J	8.9 J	9.9 J	18.1 J	18.7 J	33.5 J	26.8 J
Zinc	51.4	42.1	5.3	88.2	4.41 J	2.7 M	2.8 M	2.3 M	130 M	101 M	134 M	366 M
Volatile Organic Compounds (mg/kg)												
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone(MEK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethyl vinyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -099-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	DO7	DO7	DO7	DO7	DO60	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	099-SB08	099-SB09	099-SB09	099-SB10	099-EX01	099-SC01	099-SC02	099-SC03	099-SC03	099-SC04	099-SC05	099-SC06
Field Sample ID:	099-SB08-SS2	099-SB09-0.5	099-SB09-2.0	099-SB10-SS2	099-EX01-SS2.0	099-SC01-SS1.0	099-SC02-SS1.0	099-SC03-SS1.0	099-SC97-SS1.0	099-SC04-SS1.0	099-SC05-SS1.0	099-SC06-SS1.0
Sample Date:	11/21/1998	2/18/1999	2/18/1999	11/21/1998	5/15/2000	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003
Sample Depth:	2.0	0.5	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene (PCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene (TCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -099-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE
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Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	099-SC07	099-SC08	099-SC09	099-SC10	099-SC11	099-SC11	099-SC12	099-SC13	099-SC14	099-SC15	099-SC16
Field Sample ID:	099-SC07-SS1.0	099-SC08-SS1.0	099-SC09-SS1.0	099-SC10-SS1.0	099-SC11-SS1.0	099-SC89-SS1.0	099-SC12-SS1.0	099-SC13-SS1.0	099-SC14-SS1.0	099-SC15-SS1.0	099-SC16-SS2.0
Sample Date:	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003
Sample Depth:	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0
Total Metals (mg/kg)											
Aluminum	4160 J	2940 J	3440 J	7190 J	10100 J	4420 J	6890 J	3520 J	3870 J	2910 J	14900 J
Antimony	1.3 F	0.69 F	0.77 F	1.1 F	0.67 F	0.97 F	0.98 F	0.6 F	1.2 F	1 F	0.68 F
Arsenic	2.4 F	1.1 F	0.7 F	1.7 F	1.1 F	<23	6.2 F	1.2 F	1.8 F	2.1 F	2.1 F
Barium	15.4 J	9.4 J	13.1 J	35 J	10.6 J	22.7 J	39.2 J	12.6 J	18.9 J	17.9 J	10.5 J
Beryllium	0.086 F	0.12 F	0.1 F	0.075 F	0.1 F	0.056 F	0.097 F	<4.3	<4.2	<4.2	0.32 F
Boron	3.7 F	<5.5	<5.3	<5.5	2.2 F	<5.7	<5.9	<5.4	2.1 F	<5.3	<6
Cadmium	<2.2	0.11 F	<2.1	0.63 F	0.14 F	0.27 F	0.27 F	0.32 F	1.1 F	1.2 F	<2.4
Calcium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	9.6 J	5.1 J	5.6 J	13.1 J	14.8 J	9.7 J	14.4 J	8.2 J	13.7 J	10.4 J	21 J
Chromium, hexavalent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	1.8 F	1.4 F	1.1 F	1.1 F	1.9 F	0.54 F	1.6 F	0.79 F	1.4 F	1.5 F	1.6 F
Copper	9.8	1.5 F	1.7 F	5.7 F	6 F	7.7 F	8.4 F	2.5 F	4.6 F	5.7 F	4.4 F
Iron	9100 J	3690 J	4340 J	10700 J	8900 J	5820 J	18200 J	4650 J	7070 J	7600 J	18800 J
Lead	7.2 F	9.1 F	4.8 F	5.3 F	5.5 F	8.3 F	6.4 F	9.8 F	26.3	18.7	7.2 F
Magnesium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	33.9 J	10 J	28.9 J	15.8 J	20.3 J	10.2 J	42.6 J	16.9 J	40.6 J	39.5 J	8.4 J
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum	0.81 F	0.28 F	0.22 F	0.31 F	0.23 F	<0.92	0.52 F	0.39 F	0.39 F	0.43 F	0.43 F
Nickel	7 F	2.3 F	3.7 F	8 F	6 F	3.7 F	6.6 F	2.7 F	4.8 F	4.5 F	5.2 F
Potassium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	<13	<13	<13	<13	<14	<14	<14	<13	<13	<13	<14
Silver	<4.5	<4.4	<4.3	<4.4	<4.7	<4.6	<4.7	<4.3	<4.2	<4.2	<4.8
Sodium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	<27	<26	<26	<27	<28	<28	<28	<26	<25	<25	<29
Vanadium	13.5 J	9.9 J	10.4 J	18.5 J	20.5 J	9.7 J	44.8 J	10.9 J	14.5 J	12.7 J	25.7 J
Zinc	26.9 M	23.8 M	18.7 M	212 M	136 M	121 M	164 M	103 M	214 M	251 M	5.8 M
Volatile Organic Compounds (mg/kg)											
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone(MEK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethyl vinyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -099-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE
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Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	099-SC07	099-SC08	099-SC09	099-SC10	099-SC11	099-SC11	099-SC12	099-SC13	099-SC14	099-SC15	099-SC16
Field Sample ID:	099-SC07-SS1.0	099-SC08-SS1.0	099-SC09-SS1.0	099-SC10-SS1.0	099-SC11-SS1.0	099-SC89-SS1.0	099-SC12-SS1.0	099-SC13-SS1.0	099-SC14-SS1.0	099-SC15-SS1.0	099-SC16-SS2.0
Sample Date:	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003	8/4/2003
Sample Depth:	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene (PCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene (TCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -099-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	099-SC17	099-SC18	099-SC19	099-SC20
Field Sample ID:	099-SC17-SS2.0	099-SC18-SS2.0	099-SC19-SS3.0	099-SC20-SS3.0
Sample Date:	8/4/2003	8/4/2003	8/6/2003	8/6/2003
Sample Depth:	2.0	2.0	3.0	3.0
Total Metals (mg/kg)				
Aluminum	10100 J	6350 J	6550	3360
Antimony	0.57 F	0.64 F	1.6 F	1.4 F
Arsenic	<24	3.4 F	2.4 F	2 F
Barium	7.9 J	7.2 J	5.7	12.3
Beryllium	0.14 F	0.17 F	0.068 F	0.089 F
Boron	<5.9	<5.7	3.4 F	2.9 F
Cadmium	<2.4	<2.3	0.21 F	0.47 F
Calcium	NA	NA	NA	NA
Chromium	12.8 J	9.4 J	9.3	7.2
Chromium, hexavalent	NA	NA	NA	NA
Cobalt	0.6 F	0.94 F	0.78 F	0.7 F
Copper	3.8 F	1.7 F	2.8 F	4.8 F
Iron	7650 J	9250 J	7530	4010
Lead	4.9 F	7 F	5.3 F	10.1 F
Magnesium	NA	NA	NA	NA
Manganese	5.2 J	6.8 J	9.5	11.4
Mercury	NA	NA	NA	NA
Molybdenum	<0.94	0.37 F	0.46 F	0.32 F
Nickel	5.3 F	4.2 F	2.2 F	1.6 F
Potassium	NA	NA	NA	NA
Selenium	<14	<14	0.95 F	0.76 F
Silver	<4.7	<4.6	<4.6	<4.9
Sodium	NA	NA	NA	NA
Thallium	<28	<27	<27	<29
Vanadium	13 J	23 J	16.9	9.1
Zinc	7.8 M	5.4 M	4.5 F	26.2
Volatile Organic Compounds (mg/kg)				
1,1,1-Trichloroethane	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA
2-Butanone(MEK)	NA	NA	NA	NA
2-Chloroethyl vinyl ether	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA

APPENDIX B
TABLE AOC -099-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	099-SC17	099-SC18	099-SC19	099-SC20
Field Sample ID:	099-SC17-SS2.0	099-SC18-SS2.0	099-SC19-SS3.0	099-SC20-SS3.0
Sample Date:	8/4/2003	8/4/2003	8/6/2003	8/6/2003
Sample Depth:	2.0	2.0	3.0	3.0
Acetone	NA	NA	NA	NA
Benzene	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA
cis-1,2-Dichloroethylene	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA
Styrene	NA	NA	NA	NA
Tetrachloroethylene (PCE)	NA	NA	NA	NA
Toluene	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA
Trichloroethylene (TCE)	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA
Vinyl acetate	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA

APPENDIX B
TABLE AOC -133-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE
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Reference:	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09
Location ID:	10745-I1-D2	10745-I2-D1	10745-P11-1	10745-P12-1	10745-P13-1	10745-P14-1	10745-T11-E	10745-T11-W	10745-T12-E	10745-T12-SW-E	10745-T12-SW-W
Field Sample ID:	10745-I1-D2	10745-I2-D1	10745-P11-1	10745-P12-1	10745-P13-1	10745-P14-1	10745-T11-E	10745-T11-W	10745-T12-E	10745-T12-SW-E	10745-T12-SW-W
Sample Date:	6/12/1996	6/12/1996	6/12/1996	6/12/1996	6/12/1996	6/12/1996	6/12/1996	6/12/1996	6/12/1996	6/12/1996	6/12/1996
Sample Depth:	2.5	1.0	4.5	2.5	3.0	3.5	13.5	13.5	10.0	9.0	9.0
BTEX (mg/kg)											
Benzene	0.04	0.64	1.6	6.1	0.008	0.01	<0.005	<0.005	0.04	<0.005	<0.005
Ethylbenzene	0.42	23	55	50	<0.005	0.01	<0.005	<0.005	0.05	0.27	<0.005
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	NA	NA	NA	NA	NA	NA	<0.05	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.45	7.1	5.4	100	0.02	0.02	<0.005	<0.005	0.02	0.07	<0.005
Xylenes, total	1.4	130	280	260	0.03	0.04	<0.015	<0.015	0.09	1.7	<0.015
Total Metals (mg/kg)											
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	19.7	8.83	<5	11.2	<5	<5	<5	<5	5	<5	<5
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)											
Diesel Range	NA	NA	NA	NA	<10	NA	NA	NA	NA	NA	NA
Gasoline Range	140	2200	3900	2600	NA	<5	<5	<5	<5	20	<5
Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -133-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE
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Reference:	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09	TetraTech WR09
Location ID:	10745-T12-W	10745-T13-E	10745-T13-SW-E	10745-T13-SW-S	10745-T13-W	10745-T14-SW-N	10745-T14-SW-W	10745-T14-W	B-6	B-6	B-7
Field Sample ID:	10745-T12-W	10745-T13-E	10745-T13-SW-E	10745-T13-SW-S	10745-T13-W	10745-T14-SW-N	10745-T14-SW-W	10745-T14-W	10745-8	10745-9	10745-13
Sample Date:	6/12/1996	6/13/1996	6/13/1996	6/13/1996	6/12/1996	6/12/1996	6/13/1996	6/12/1996	5/1/1995	5/1/1995	5/1/1995
Sample Depth:	10.0	13.5	9.0	9.0	13.5	9.0	9.0	13.5	1.5	3.0	1.0
BTEX (mg/kg)											
Benzene	<0.005	<0.005	<0.005	0.02	<0.005	0.27	<0.005	0.07	NA	NA	NA
Ethylbenzene	<0.005	<0.005	0.02	0.05	<0.005	2.3	<0.005	1.1	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	<0.005	<0.005	0.04	0.07	<0.005	0.98	<0.005	0.31	NA	NA	NA
Xylenes, total	<0.015	<0.015	0.05	0.21	<0.015	5.3	<0.015	0.16	NA	NA	NA
Total Metals (mg/kg)											
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	1.4	NA	NA
Barium	NA	NA	NA	NA	NA	NA	NA	NA	47	NA	NA
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA	0.75	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA	109	NA	NA
Lead	<5	<5	<5	<5	<5	36.3	<5	45.9	70	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	<0.2	NA	NA
Selenium	NA	NA	NA	NA	NA	NA	NA	NA	<0.5	NA	NA
Silver	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	NA
Total Petroleum Hydrocarbons (mg/kg)											
Diesel Range	NA	<10	<10	<10	<10	11000	<10	<10	NA	NA	NA
Gasoline Range	<5	<5	<5	<5	<5	200	<5	53	NA	NA	NA
Petroleum Hydrocarbons	NA	NA	NA	NA	NA	NA	NA	NA	8400	84	76

APPENDIX B
TABLE AOC -133-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE
(Page 3 of 4)

Reference:	TetraTech WR09	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7
Location ID:	B-7	133-MW01	133-MW01	133-MW02	133-MW03	133-MW04	133-MW05	148-SB01	148-SB02	148-SB02	148-SB02
Field Sample ID:	10745-15	133-MW01-SS5.5	133-MW99-SS100	133-MW02-SS6.0	133-MW03-SS6.0	133-MW04-SS6.0	133-MW05-SS6.0	148-SB01-SS2.5	148-SB02-SS1.0	148-SB02-SS3.0	148-SB02-SS7.5
Sample Date:	5/1/1995	11/30/1998	11/30/1998	11/24/1998	12/4/1998	11/24/1998	11/30/1998	11/23/1998	11/23/1998	11/23/1998	11/23/1998
Sample Depth:	3.0	5.5	5.5	6.0	6.0	6.0	6.0	2.5	1.0	3.0	7.5
BTEX (mg/kg)											
Benzene	NA	<0.01	<0.01	<0.01	<0.01	0.0081 F	<0.01	NA	NA	NA	NA
Ethylbenzene	NA	<0.01	<0.01	<0.01	<0.01	2.13	<0.01	NA	NA	NA	NA
m,p-Xylene	NA	<0.02	<0.02	<0.02	<0.02	12.6	<0.02	NA	NA	NA	NA
Methyl tertiary-butyl ether	NA	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA	NA
o-Xylene	NA	<0.01	<0.01	<0.01	<0.01	5.2	<0.01	NA	NA	NA	NA
Toluene	NA	<0.01	<0.01	<0.01	<0.01	0.492	<0.01	NA	NA	NA	NA
Xylenes, total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)											
Arsenic	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	4.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	<2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	<0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)											
Diesel Range	NA	<11.3	<11.6	<11.2	<11.8	157	<10.9	666	322 J	<12.2 R	<11.3 R
Gasoline Range	NA	<1.38	<1.38	<1.38	<1.38	323	<1.38	NA	NA	NA	NA
Petroleum Hydrocarbons	<20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -133-SOIL

SUMMARY OF ANALYTICAL DATA IN SOIL
VANDENBERG AIR FORCE BASE
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Reference:	DO7	DO7	DO7
Location ID:	148-SB03	148-SB03	148-SB03
Field Sample ID:	148-SB03-SS2.5	148-SB99-SS100	148-SB03-SS6.0
Sample Date:	11/23/1998	11/23/1998	11/23/1998
Sample Depth:	2.5	2.5	6.0
BTEX (mg/kg)			
Benzene	NA	NA	NA
Ethylbenzene	NA	NA	NA
m,p-Xylene	NA	NA	NA
Methyl tertiary-butyl ether	NA	NA	NA
o-Xylene	NA	NA	NA
Toluene	NA	NA	NA
Xylenes, total	NA	NA	NA
Total Metals (mg/kg)			
Arsenic	NA	NA	NA
Barium	NA	NA	NA
Cadmium	NA	NA	NA
Chromium	NA	NA	NA
Lead	NA	NA	NA
Mercury	NA	NA	NA
Selenium	NA	NA	NA
Silver	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)			
Diesel Range	91.8	107	<11.3
Gasoline Range	NA	NA	NA
Petroleum Hydrocarbons	NA	NA	NA

APPENDIX B
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE
(Page 1 of 16)

Reference:	TetraTech WR09	TetraTech WR09	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO32	DO32
Location ID:	B-3	B-4	133-MW01	133-MW02	133-MW03	133-MW04	133-MW04	133-MW05	148-SB01	148-SB01	133-MW01	133-MW01
Field Sample ID:	10745-1	10745-3	133-MW01	133-MW02	133-MW03	133-GW99-GW100	133-MW04	133-MW05	148-SB01-GW01	148-SB99-GW100	133-MW01-GW02	133-MW99-GW102
Sample Date:	5/1/1995	5/1/1995	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999	11/23/1998	11/23/1998	12/15/1999	12/15/1999
Sample Depth:	4.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (μg/L)												
1,2-Dichlorobenzene	<1000	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	<1000	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	5800	<0.5	<0.5	<0.5	<0.5	1220	920	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	<1000	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	6200	0.67	<0.5	<0.5	<0.5	1680	1140	<0.5	<0.5	<0.5	<0.5	<0.5
m,p-Xylene	NA	NA	<1	<1	<1	12000	8260	<1	<1	<1	<1	<1
Methyl tertiary-butyl ether	NA	NA	<0.5	<0.5	<0.5	607	534	<0.5	<0.5	<0.5	<1	<1
o-Xylene	NA	NA	<0.5	<0.5	<0.5	4650	3350 J	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	41000	2.9	<0.5	<0.5	<0.5	7280	5270	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenes, total	41000	5.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (μg/L)												
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol (o-cresol)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/4-Methylphenol (m,p-cresol)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	TetraTech WR09	TetraTech WR09	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO32	DO32
Location ID:	B-3	B-4	133-MW01	133-MW02	133-MW03	133-MW04	133-MW04	133-MW05	148-SB01	148-SB01	133-MW01	133-MW01
Field Sample ID:	10745-1	10745-3	133-MW01	133-MW02	133-MW03	133-GW99-GW100	133-MW04	133-MW05	148-SB01-GW01	148-SB99-GW100	133-MW01-GW02	133-MW99-GW102
Sample Date:	5/1/1995	5/1/1995	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999	11/23/1998	11/23/1998	12/15/1999	12/15/1999
Sample Depth:	4.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzoic acid	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl butyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-c,d)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodi-n-propylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodimethylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (µg/L)												
Diesel Range	NA	NA	15100 J	<500 J	<500 J	9130 J	19300 J	<500 J	<100	<100	<510	NA
Gasoline Range	180000	53	<1000	<1000	<1000	64700 F	49400 F	<1000	<1000	<1000	<1000	<1000
Motor oils	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (µg/L)												
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	TetraTech WR09	TetraTech WR09	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO32	DO32
Location ID:	B-3	B-4	133-MW01	133-MW02	133-MW03	133-MW04	133-MW04	133-MW05	148-SB01	148-SB01	133-MW01	133-MW01
Field Sample ID:	10745-1	10745-3	133-MW01	133-MW02	133-MW03	133-GW99-GW100	133-MW04	133-MW05	148-SB01-GW01	148-SB99-GW100	133-MW01-GW02	133-MW99-GW102
Sample Date:	5/1/1995	5/1/1995	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999	11/23/1998	11/23/1998	12/15/1999	12/15/1999
Sample Depth:	4.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane (Ethylene Dibromide)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-chlorohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,2-dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone(MEK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE
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Reference:	TetraTech WR09	TetraTech WR09	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO32	DO32
Location ID:	B-3	B-4	133-MW01	133-MW02	133-MW03	133-MW04	133-MW04	133-MW05	148-SB01	148-SB01	133-MW01	133-MW01
Field Sample ID:	10745-1	10745-3	133-MW01	133-MW02	133-MW03	133-GW99-GW100	133-MW04	133-MW05	148-SB01-GW01	148-SB99-GW100	133-MW01-GW02	133-MW99-GW102
Sample Date:	5/1/1995	5/1/1995	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999	11/23/1998	11/23/1998	12/15/1999	12/15/1999
Sample Depth:	4.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cymene (p-isopropyltoluene)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sec-butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
t-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene (PCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene (TCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE
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Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32
Location ID:	133-MW01	133-MW01	133-MW02	133-MW02	133-MW02	133-MW02	133-MW03	133-MW03	133-MW03	133-MW04
Field Sample ID:	133-MW01-GW01	133-MW01-GW01	133-MW02-GW02	133-MW02-GW01	133-MW99-GW01	133-MW02-GW01	133-MW03-GW02	133-MW03-GW02	133-MW03-GW01	133-MW04-GW02
Sample Date:	4/19/2000	7/17/2000	12/16/1999	4/21/2000	4/21/2000	7/18/2000	12/15/1999	4/21/2000	7/18/2000	12/16/1999
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (µg/L)										
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	610
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1500
m,p-Xylene	<1	<1	<1	0.73 F	<1	<1	<1	<1	<1	8600
Methyl tertiary-butyl ether	1.1	<1	<1	<1	<1	1.9	<1	<1	<1	680
o-Xylene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3300
Toluene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3000
Xylenes, total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (µg/L)										
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol (o-cresol)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/4-Methylphenol (m,p-cresol)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32
Location ID:	133-MW01	133-MW01	133-MW02	133-MW02	133-MW02	133-MW02	133-MW03	133-MW03	133-MW03	133-MW04
Field Sample ID:	133-MW01-GW01	133-MW01-GW01	133-MW02-GW02	133-MW02-GW01	133-MW99-GW01	133-MW02-GW01	133-MW03-GW02	133-MW03-GW02	133-MW03-GW01	133-MW04-GW02
Sample Date:	4/19/2000	7/17/2000	12/16/1999	4/21/2000	4/21/2000	7/18/2000	12/15/1999	4/21/2000	7/18/2000	12/16/1999
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzoic acid	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl butyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-c,d)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodi-n-propylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodimethylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (μg/L)										
Diesel Range	520	110 F	800	460 F	<480	370 F	<500	<490	<465	23000
Gasoline Range	<100	<100	<1000	<100	<100	<100	<1000	<100	<100	52000 F
Motor oils	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (μg/L)										
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32
Location ID:	133-MW01	133-MW01	133-MW02	133-MW02	133-MW02	133-MW02	133-MW03	133-MW03	133-MW03	133-MW04
Field Sample ID:	133-MW01-GW01	133-MW01-GW01	133-MW02-GW02	133-MW02-GW01	133-MW99-GW01	133-MW02-GW01	133-MW03-GW02	133-MW03-GW02	133-MW03-GW01	133-MW04-GW02
Sample Date:	4/19/2000	7/17/2000	12/16/1999	4/21/2000	4/21/2000	7/18/2000	12/15/1999	4/21/2000	7/18/2000	12/16/1999
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane (Ethylene Dibromide)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-chlorohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,2-dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone(MEK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32
Location ID:	133-MW01	133-MW01	133-MW02	133-MW02	133-MW02	133-MW02	133-MW03	133-MW03	133-MW03	133-MW04
Field Sample ID:	133-MW01-GW01	133-MW01-GW01	133-MW02-GW02	133-MW02-GW01	133-MW99-GW01	133-MW02-GW01	133-MW03-GW02	133-MW03-GW02	133-MW03-GW01	133-MW04-GW02
Sample Date:	4/19/2000	7/17/2000	12/16/1999	4/21/2000	4/21/2000	7/18/2000	12/15/1999	4/21/2000	7/18/2000	12/16/1999
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cymene (p-isopropyltoluene)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sec-butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
t-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene (PCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene (TCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

APPENDIX B
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE
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Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO32	3PDO59	3PDO59	3PDO59
Location ID:	133-MW04	133-MW04	133-MW04	133-MW04	133-MW05	133-MW05	133-MW05	133-MW01	133-MW01	133-MW02
Field Sample ID:	133-MW04-GW01	133-MW04-GW01	133-MW04-GW01	133-MW99-GW100	133-MW05-GW02	133-MW05-GW01	133-MW05-GW01	133-MW01-GW01	133-MW01-GW02	133-MW02-GW01
Sample Date:	4/20/2000	4/21/2000	7/18/2000	7/18/2000	12/16/1999	4/19/2000	7/18/2000	1/9/2003	3/13/2003	1/10/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (μg/L)										
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	<0.5	210	570 J	650	<0.5	<0.5	<0.5	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	<0.5	680	1600 J	1900	1.9	<0.5	<0.5	NA	NA	NA
m,p-Xylene	<1	2900	10000	10000	16	<1	<1	NA	NA	NA
Methyl tertiary-butyl ether	<1	300	310 J	560	<1	<1	<1	NA	NA	NA
o-Xylene	<0.5	1200	4300	5000	5.9	<0.5	<0.5	NA	NA	NA
Toluene	<0.5	500	2000	2300	1.8	<0.5	<0.5	NA	NA	NA
Xylenes, total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (μg/L)										
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
2,4,5-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	<48	<48	<48
2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
2,4-Dichlorophenol	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
2,4-Dinitrophenol	NA	NA	NA	NA	NA	NA	NA	<48	<48	<48
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
2-Chloronaphthalene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
2-Chlorophenol	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
2-Methylphenol (o-cresol)	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
2-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	<48	<48	<48
2-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
3,3'-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	<19	<19	<19
3-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	<48	<48	<48
3/4-Methylphenol (m,p-cresol)	NA	NA	NA	NA	NA	NA	NA	<48	<48	<48
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA	NA	NA	NA	<48	<48	<48
4-Bromophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6 J
4-Chloro-3-methylphenol	NA	NA	NA	NA	NA	NA	NA	<19	<19	<19
4-Chloroaniline	NA	NA	NA	NA	NA	NA	NA	<19	<19	<19
4-Chlorophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
4-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	<48	<48	<48
4-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	<48	<48	<48
Acenaphthene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Acenaphthylene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Anthracene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6

APPENDIX B
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO32	3PDO59	3PDO59	3PDO59
Location ID:	133-MW04	133-MW04	133-MW04	133-MW04	133-MW05	133-MW05	133-MW05	133-MW01	133-MW01	133-MW02
Field Sample ID:	133-MW04-GW01	133-MW04-GW01	133-MW04-GW01	133-MW99-GW100	133-MW05-GW02	133-MW05-GW01	133-MW05-GW01	133-MW01-GW01	133-MW01-GW02	133-MW02-GW01
Sample Date:	4/20/2000	4/21/2000	7/18/2000	7/18/2000	12/16/1999	4/19/2000	7/18/2000	1/9/2003	3/13/2003	1/10/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Benzoic acid	NA	NA	NA	NA	NA	NA	NA	<96	<96	<96
Benzyl alcohol	NA	NA	NA	NA	NA	NA	NA	<19	<19	<19
Benzyl butyl phthalate	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
bis(2-Chloroethoxy)methane	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
bis(2-Chloroethyl)ether	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
bis(2-Chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Chrysene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Di-n-butyl phthalate	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Dibenz(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA	<9.6 R	<9.6	<9.6 R
Diethyl phthalate	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Dimethyl phthalate	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Fluorene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Hexachlorobenzene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6 J
Hexachloroethane	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Indeno(1,2,3-c,d)pyrene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Isophorone	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
n-Nitrosodi-n-propylamine	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
n-Nitrosodimethylamine	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6 R
n-Nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Naphthalene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	<48	<48	<48
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Phenol	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Pyrene	NA	NA	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6
Total Petroleum Hydrocarbons (μg/L)										
Diesel Range	<505	12000	NA	20000	<460	600	100 F	44 F	35 F	340 F
Gasoline Range	<100	19000	59000	60000	110 F	<100	<100	25 F	12 F	16 F
Motor oils	NA	NA	NA	NA	NA	NA	NA	68 F	70 F	310 F
Volatile Organic Compounds (μg/L)										
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5

APPENDIX B
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO32	3PDO59	3PDO59	3PDO59
Location ID:	133-MW04	133-MW04	133-MW04	133-MW04	133-MW05	133-MW05	133-MW05	133-MW01	133-MW01	133-MW02
Field Sample ID:	133-MW04-GW01	133-MW04-GW01	133-MW04-GW01	133-MW99-GW100	133-MW05-GW02	133-MW05-GW01	133-MW05-GW01	133-MW01-GW01	133-MW01-GW02	133-MW02-GW01
Sample Date:	4/20/2000	4/21/2000	7/18/2000	7/18/2000	12/16/1999	4/19/2000	7/18/2000	1/9/2003	3/13/2003	1/10/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
1,1-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	<1	<1 R	<1
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA	<2	<2 R	<2
1,2-Dibromoethane (Ethylene Dibromide)	NA	NA	NA	NA	NA	NA	NA	<1	<1 M	<1
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
1,3-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5
1-chlorohexane	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
2,2-dichloropropane	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
2-Butanone(MEK)	NA	NA	NA	NA	NA	NA	NA	<10	<10	<10
2-chlorotoluene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	<10	<10	<10
4-chlorotoluene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	<10	<10	<10
Acetone	NA	NA	NA	NA	NA	NA	NA	<10 R	<10	<10 R
Benzene	NA	NA	NA	NA	NA	NA	NA	<0.4	<0.4	<0.4
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
Bromochloromethane	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5
Bromoform	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
Bromomethane	NA	NA	NA	NA	NA	NA	NA	<3	<3	<3
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5
Chloroethane	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
Chloroform	NA	NA	NA	NA	NA	NA	NA	<0.3	<0.3	<0.3
Chloromethane	NA	NA	NA	NA	NA	NA	NA	<1	<1 J	0.52 F
cis-1,2-Dichloroethylene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5

APPENDIX B
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO32	3PDO59	3PDO59	3PDO59
Location ID:	133-MW04	133-MW04	133-MW04	133-MW04	133-MW05	133-MW05	133-MW05	133-MW01	133-MW01	133-MW02
Field Sample ID:	133-MW04-GW01	133-MW04-GW01	133-MW04-GW01	133-MW99-GW100	133-MW05-GW02	133-MW05-GW01	133-MW05-GW01	133-MW01-GW01	133-MW01-GW02	133-MW02-GW01
Sample Date:	4/20/2000	4/21/2000	7/18/2000	7/18/2000	12/16/1999	4/19/2000	7/18/2000	1/9/2003	3/13/2003	1/10/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
Dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	<0.6	<0.6	<0.6
Isopropylbenzene (Cumene)	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	<2	<2	<2
Methyl tertiary-butyl ether	NA	NA	NA	NA	NA	NA	NA	<5	<5 R	0.5 F
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
Naphthalene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
o-Xylene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
p-Cymene (p-isopropyltoluene)	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
Sec-butylbenzene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
Styrene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
t-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
Tetrachloroethylene (PCE)	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
Toluene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
Trichloroethylene (TCE)	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1
Vinyl acetate	NA	NA	NA	NA	NA	NA	NA	<10	<10	<10
Vinyl chloride	NA	NA	NA	NA	NA	NA	NA	<1	<1	<1

APPENDIX B
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE
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Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	133-MW02	133-MW02	133-MW03	133-MW03	133-MW04	133-MW04	133-MW05	133-MW05
Field Sample ID:	133-MW02-GW02	133-MW99-GW02	133-MW03-GW01	133-MW03-GW02	133-MW04-GW01	133-MW04-GW02	133-MW05-GW01	133-MW05-GW02
Sample Date:	3/12/2003	3/12/2003	1/10/2003	3/12/2003	1/13/2003	3/13/2003	1/14/2003	3/13/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (μg/L)								
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, total	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (μg/L)								
1,2,4-Trichlorobenzene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
1,2-Dichlorobenzene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
1,3-Dichlorobenzene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
1,4-Dichlorobenzene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
2,4,5-Trichlorophenol	<48	<48	<48	<48	<48	<48	<48	<48
2,4,6-Trichlorophenol	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
2,4-Dichlorophenol	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
2,4-Dimethylphenol	<9.6	<9.6	<9.6	<9.6	115	23.4	<9.6	<9.6
2,4-Dinitrophenol	<48	<48	<48	<48	<48	<48	<48	<48
2,4-Dinitrotoluene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
2,6-Dinitrotoluene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
2-Chloronaphthalene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
2-Chlorophenol	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
2-Methylnaphthalene	<9.6	<9.6	<9.6	<9.6	58.4	40.9	<9.6	<9.6
2-Methylphenol (o-cresol)	<9.6	<9.6	<9.6	<9.6	2.7 F	<9.6	<9.6	<9.6
2-Nitroaniline	<48	<48	<48	<48	<48	<48	<48	<48
2-Nitrophenol	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
3,3'-Dichlorobenzidine	<19	<19	<19	<19	<19	<19	<19	<19
3-Nitroaniline	<48	<48	<48	<48	<48	<48	<48	<48
3/4-Methylphenol (m,p-cresol)	<48	<48	<48	<48	7.5 F	<48	<48	<48
4,6-Dinitro-2-methylphenol	<48	<48	<48	<48	<48	<48	<48	<48
4-Bromophenyl phenyl ether	<9.6	<9.6	<9.6 J	<9.6	<9.6 J	<9.6	<9.6 J	<9.6
4-Chloro-3-methylphenol	<19	<19	<19	<19	<19	<19	<19	<19
4-Chloroaniline	<19	<19	<19	<19	<19	<19	<19	<19
4-Chlorophenyl phenyl ether	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
4-Nitroaniline	<48 R	<48 R	<48	<48 R	<48	<48	<48	<48
4-Nitrophenol	<48	<48	<48	<48	<48	<48	<48	<48
Acenaphthene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Acenaphthylene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Anthracene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6

APPENDIX B
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	133-MW02	133-MW02	133-MW03	133-MW03	133-MW04	133-MW04	133-MW05	133-MW05
Field Sample ID:	133-MW02-GW02	133-MW99-GW02	133-MW03-GW01	133-MW03-GW02	133-MW04-GW01	133-MW04-GW02	133-MW05-GW01	133-MW05-GW02
Sample Date:	3/12/2003	3/12/2003	1/10/2003	3/12/2003	1/13/2003	3/13/2003	1/14/2003	3/13/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Benzo(a)anthracene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Benzo(a)pyrene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Benzo(b)fluoranthene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Benzo(g,h,i)perylene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Benzo(k)fluoranthene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Benzoic acid	<96	<96	<96	<96	<96	<96	<96	<96
Benzyl alcohol	<19	<19	<19	<19	<19	<19	<19	<19
Benzyl butyl phthalate	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
bis(2-Chloroethoxy)methane	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
bis(2-Chloroethyl)ether	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
bis(2-Chloroisopropyl)ether	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
bis(2-Ethylhexyl)phthalate	1 F	1.1 F	<9.6	<9.6	<9.6	1.6 F	<9.6	1.3 F
Chrysene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Di-n-butyl phthalate	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Di-n-octylphthalate	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Dibenz(a,h)anthracene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Dibenzofuran	<9.6	<9.6	<9.6 R	<9.6	<9.6 R	<9.6	<9.6 R	<9.6
Diethyl phthalate	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Dimethyl phthalate	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Fluoranthene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Fluorene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Hexachlorobenzene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Hexachlorobutadiene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Hexachlorocyclopentadiene	<9.6	<9.6	<9.6 J	<9.6	<9.6 J	<9.6	<9.6 J	<9.6
Hexachloroethane	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Indeno(1,2,3-c,d)pyrene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Isophorone	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
n-Nitrosodi-n-propylamine	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
n-Nitrosodimethylamine	<9.6	<9.6	<9.6 R	<9.6	<9.6 R	<9.6	<9.6 R	<9.6
n-Nitrosodiphenylamine	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Naphthalene	<9.6	<9.6	<9.6	<9.6	193	137	<9.6	<9.6
Nitrobenzene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Pentachlorophenol	<48	<48	<48	<48	<48	<48	<48	<48
Phenanthrene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Phenol	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Pyrene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Total Petroleum Hydrocarbons (μg/L)								
Diesel Range	130 F	400 F	220 F	200 F	7600	7700	980	270 F
Gasoline Range	27 F	16 F	29 F	17 F	7400	3300	25 F	13 F
Motor oils	220 F	440 F	350 F	260 F	<4800	<2400	290 F	190 F
Volatile Organic Compounds (μg/L)								
1,1,1,2-Tetrachloroethane	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<0.5

APPENDIX B
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	133-MW02	133-MW02	133-MW03	133-MW03	133-MW04	133-MW04	133-MW05	133-MW05
Field Sample ID:	133-MW02-GW02	133-MW99-GW02	133-MW03-GW01	133-MW03-GW02	133-MW04-GW01	133-MW04-GW02	133-MW05-GW01	133-MW05-GW02
Sample Date:	3/12/2003	3/12/2003	1/10/2003	3/12/2003	1/13/2003	3/13/2003	1/14/2003	3/13/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,1,1-Trichloroethane	<1	<1	<1	<1	<10	<10	<1	<1
1,1,2,2-Tetrachloroethane	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<0.5
1,1,2-Trichloroethane	<1	<1	<1	<1	<10	<10	<1	<1
1,1-Dichloroethane	<1	<1	<1	<1	<10	<10	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1	<10	<10	<1	<1
1,1-Dichloropropene	<1	<1	<1	<1	<10	<10	<1	<1
1,2,3-Trichlorobenzene	<1	<1	<1	<1	<10	<10	<1	<1
1,2,3-Trichloropropane	<1	<1 R	<1	<1 R	<10	<50	<1	<1 R
1,2,4-Trichlorobenzene	<1	<1	<1	<1	<10	<10	<1	<1
1,2,4-Trimethylbenzene	<1	<1	<1	<1	942	780	<1	<1
1,2-Dibromo-3-chloropropane	<2	<2 R	<2	<2 R	<20	<100	<2	<2 R
1,2-Dibromoethane (Ethylene Dibromide)	<1 M	<1 M	<1	<1 M	<10	<10 M	<1	<1 M
1,2-Dichlorobenzene	<1	<1	<1	<1	<10	<10	<1	<1
1,2-Dichloroethane	<0.5	<0.5	<0.5	<0.5	<5	6	<0.5	<0.5
1,2-Dichloropropane	<1	<1	<1	<1	<10	<10	<1	<1
1,3,5-Trimethylbenzene	<1	<1	<1	<1	181	106	<1	<1
1,3-Dichlorobenzene	<1	<1	<1	<1	<10	<10	<1	<1
1,3-Dichloropropane	<0.4	<0.4	<0.4	<0.4	<4	<4	<0.4	<0.4
1,4-Dichlorobenzene	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<0.5
1-chlorohexane	<1	<1	<1	<1	<10	<10	<1	<1
2,2-dichloropropane	<1	<1	<1	<1	<10	<10	<1	<1
2-Butanone(MEK)	<10	<10	<10	<10	<100	<100	<10	<10
2-chlorotoluene	<1	<1	<1	<1	<10	<10	<1	<1
2-Hexanone	7.1 F	<10	<10	<10	<100	<100	<10	<10
4-chlorotoluene	<1	<1	<1	<1	<10	<10	<1	<1
4-Methyl-2-pentanone (MIBK)	0.38 F	<10	<10	<10	8.6 F	<100	<10 R	<10
Acetone	<10 R	<10	<10 R	<10	41.7 R	<100	<10 R	<10
Benzene	<0.4	<0.4	<0.4	<0.4	57.1	36.5	<0.4	<0.4
Bromobenzene	<1	<1	<1	<1	<10	<10	<1	<1
Bromochloromethane	<1	<1	<1	<1	<10	<10	<1	<1
Bromodichloromethane	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<0.5
Bromoform	<1	<1	<1	<1	<10	<10	<1	<1
Bromomethane	<3	<3	<3	<3	<30	<30	<3	<3
Carbon disulfide	<1	<1	<1	<1	<10	<10	<1 R	<1
Carbon tetrachloride	<1	<1	<1	<1	<10	<10	<1	<1
Chlorobenzene	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<0.5
Chloroethane	<1	<1	<1	<1	<10	<10	<1 R	<1
Chloroform	<0.3	<0.3	<0.3	<0.3	<3	<3	<0.3	<0.3
Chloromethane	<1	<1 R	<1	<1 R	<10	<10 J	<1 R	<1 J
cis-1,2-Dichloroethylene	<1	<1	<1	<1	<10	<10	<1	<1
cis-1,3-Dichloropropene	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<0.5
Dibromochloromethane	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.5	<0.5

APPENDIX B
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	133-MW02	133-MW02	133-MW03	133-MW03	133-MW04	133-MW04	133-MW05	133-MW05
Field Sample ID:	133-MW02-GW02	133-MW99-GW02	133-MW03-GW01	133-MW03-GW02	133-MW04-GW01	133-MW04-GW02	133-MW05-GW01	133-MW05-GW02
Sample Date:	3/12/2003	3/12/2003	1/10/2003	3/12/2003	1/13/2003	3/13/2003	1/14/2003	3/13/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dibromomethane	<1	<1	<1	<1	<10	<10	<1	<1
Dichlorodifluoromethane	<1	<1	<1	<1	<10	<10	<1 R	<1
Ethylbenzene	<1	<1	<1	<1	641	552	<1	<1
Hexachlorobutadiene	<0.6	<0.6	<0.6	<0.6	<6	<6	<0.6	<0.6
Isopropylbenzene (Cumene)	<1	<1	<1	<1	37.8	31.2	<1	<1
m,p-Xylene	<2	<2	<2	<2	471	8 F	<2	<2
Methyl tertiary-butyl ether	<5	<5 R	<5	<5 R	166	293	<5	<5 R
Methylene chloride	<1	<1	<1	<1	9.2 F	<10	<1	<1
n-Butylbenzene	<1	<1	<1	<1	<10	<10	<1	<1
n-Propylbenzene	<1	<1	<1	<1	94.8	82.3	<1	<1
Naphthalene	0.33 F	<1	<1	<1	235	193	<1	<1
o-Xylene	<1	<1	<1	<1	79.6	11.3	<1	<1
p-Cymene (p-isopropyltoluene)	<1	<1	<1	<1	10.1	4 F	<1	<1
Sec-butylbenzene	<1	<1	<1	<1	13	6.4 F	<1	<1
Styrene	<1	<1	<1	<1	<10	<10	<1	<1
t-Butylbenzene	<1	<1	<1	<1	<10	<10	<1	<1
Tetrachloroethylene (PCE)	<1	<1	<1	<1	<10	<10	<1	<1
Toluene	<1	<1	<1	<1	22.8	5.6 F	<1	<1
trans-1,2-Dichloroethene	<1	<1	<1	<1	<10	<10	<1	<1
trans-1,3-Dichloropropene	<1	<1	<1	<1	<10	<10	<1	<1
Trichloroethylene (TCE)	<1	<1	<1	<1	<10	<10	<1	<1
Trichlorofluoromethane	<1	<1	<1	<1	<10	<10	<1	<1
Vinyl acetate	<10	<10	<10	<10	<100	<100	<10	<10
Vinyl chloride	<1	<1	<1	<1	<10	<10	<1	<1

NOTES

SUMMARY OF CHEMICALS IN SOIL AND WATER
VANDENBERG AIR FORCE BASE

Units:
mg/kg = milligrams per kilogram
μg/L = micrograms per liter

Abbreviations:
AOC = Area of Concern
NA = not applicable

Qualifiers:
B = The analyte was found in an associated blank, as well as in the sample.
F = The analyte was positively identified, but the quantitation is below the reporting limit.
J = The associated numerical value is an estimated quantity.
M = A matrix effect was present.
R = The data are unusable due to deficiencies in the ability to analyze the sample and meet quality control criteria.

References:
3PDO59 = Delivery Order 0059 (Montgomery Watson Harza, 2002-2003)
DO7 = Delivery Order 0007 (Montgomery Watson Harza, 1998-1999)
DO32 = Delivery Order 0032 (Montgomery Watson Harza, 1999-2000)
DO60 = Delivery Order 0060 (Montgomery Watson Harza, 2000)
WR09 = Work Request 09 (Tetra Tech, 1997)
WR10 = Work Request 10 (Tetra Tech, 1998)

For AOC-133 Tetra Tech WR09 Soil samples:
1. Tank bottom sample depths are assumed to be the tank burial depth plus 8 feet (diameter of a 10,000-gallon capacity UST).
2. The burial depth of Tanks 11, 13 and 14 is 5.5 feet bgs; Tank 12 was buried at a depth of 2.0 feet bgs
3. Sidewall sample depths are assumed to be collected at a depth of 9 feet bgs, roughly 1 foot above the base of the UST excavation.

APPENDIX C
CHAIN OF CUSTODY RECORDS

MONTGOMERY WATSON HARZA

CHAIN-OF-CUSTODY RECORD

MW CONTACT PERSON: Ruth Siegmund (925) 975-3566

FED-EX-#: 536 036 373 COOLER #: 001 COC ID: DO70-3PD059-01 LOGCODE: MW-WCK LAB: APCL, Chino, CA (909) 590-1828

SAMPLER(S) PRINTED NAME AND SIGNATURE

Michael Schulman [signature]

PROJECT NAME: DO 0070 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 195900-70010801 DO59 3P GROUNDWATER MONITORING

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	MTBE Only (SW8260B)	VOCs/MTBE (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C)	TVPH (Mod SW8015B)	TEPH (Mod SW8015B)	OCPs (SW8081A)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals (SW6010B/SW7470A)		BTV Type *	24-Hour Turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
133-MW01-GW01	133-MW01	—	—	01/09/03	1505	N	1	B	WG	9/10	A	C		X	X		X	X									
~~133-MW02-GW02~~	~~133-MW02~~	~~—~~	~~—~~	~~01/09/03~~		~~N~~	~~1~~	~~B~~	~~WG~~	~~9/10~~	~~A~~	~~C~~		~~X~~	~~X~~		~~X~~	~~X~~									VOID
TB010903-01	133-MW01	—	—	01/09/03	0800	N	1	WG	WQ	3	A	C		X													

Comments/Instructions:

Turn-around time for hard copy data package and EDD is 15 business days from laboratory receipt of samples unless otherwise specified.
Consult Subcontract Agreement and QAPP for project-specific requirements.
Level III data package unless otherwise specified.

temp Blank in cooler

* SDS (surface dune sand), SSDS (subsurface dune sand), SA (surface alluvium), SSA (subsurface alluvium), BED (bedrock), GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:	[signature]	Michael Schulman	MWH	01/09/03	1800
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

(For Lab Use Only) Sample Condition and Temperature Upon Receipt:

SBD: Sample Beginning Depth
SED: Sample Ending Depth
Sample Type Code (SA): N

Sample Number (SN): 1
Sampling Method (SM): CS (composite), DT (driven tube), G (grab), H (hollow stem auger), HA (hand auger)
Sampling Matrix (MC): SO (soil), WG (groundwater), WS (surface water) B - Bailer

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S (sleeve), A (amber glass), G (clear glass), P (poly), E (EnCore)
Preservative (PR): NA (none), A (HNO_3), B (H_2SO_4), C (HCl), D (NaOH)

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MONTGOMERY WATSON HARZA

CHAIN-OF-CUSTODY RECORD

MW CONTACT PERSON: Ruth Siegmund (925) 975-3566

~~FED-EX #:~~ 536 035 572 COOLER #: 002 COC ID: ~~DO70~~ 3Pt DO56-02 LOGCODE: MW-WCK LAB: APCL, Chino, CA (909) 590-1828

SAMPLER(S) PRINTED NAME AND SIGNATURE

Michael Schulman - [signature]

PROJECT NAME: DO0070 at Vandenberg AFB, California 3Pt DO59

AIR FORCE ID: VAFB

PROJECT NUMBER: 195900.70010801 - 423006.59010605

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	MTBE Only (SW8260B)	VOCs/MTBE (SW8260B) 3,3	SVOCs (SW8270C) 2,2	PAHs (SW8270C)	TVPH (Mod SW8015B) 3,3	TEPH (Mod SW8015B) 2,1	OCPs (SW8081A)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals (SW6010B/SW7470A)		BTV Type[a]	24-Hour Turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
133-MW02-GW01	133-MW02	—	—	01/10/03	0850	N	1	WG	WG	10	A	C/NA		X	X		X	X									
133-MW03-GW01	133-MW03	—	—	01/10/03	1225	N	1	G	WG	9	A	C/NA		X	X		X	X								X	SM=6
TB011003-01	133-MW03	—	—	01/10/03	0700	N	1	G	WQ	3	A	C		X													

Comments/Instructions:

Turn-around time for hard copy data package and EDD is 15 business days from laboratory receipt of samples unless otherwise specified.

Consult Subcontract Agreement and QAPP for project-specific requirements.

Level III data package unless otherwise specified.

temp Blank in cooler

[a] SDS (surface dune sand), SSDS (subsurface dune sand), SA (surface alluvium), SSA (subsurface alluvium), BED (bedrock), GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:	[signature]	Michael Schulman	MWH	01/10/03	1430
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

(For Lab Use Only) Sample Condition and Temperature Upon Receipt:

SBD: Sample Beginning Depth
SED: Sample Ending Depth
Sample Type Code (SA): N

Sample Number (SN): 1
Sampling Method (SM): CS (composite), DT (driven tube), G (grab), H (hollow stem auger), HA (hand auger)
Sampling Matrix (MC): SO (soil), WG (groundwater), WS (surface water)

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S (sleeve), A (amber glass), G (clear glass), P (poly), E (EnCore)
Preservative (PR): NA (none), A (HNO_3), B (H_2SO_4), C (HCl), D (NaOH)

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MONTGOMERY WATSON HARZA

CHAIN-OF-CUSTODY RECORD

59-03

MW CONTACT PERSON: Ruth Siegmund (925) 975-3566

FED-EX #: 536 036 256 COOLER #: 003 COC ID: DO70- LOGCODE: MW-WCK LAB: APCL, Chino, CA (909) 590-1828

SAMPLER(S) PRINTED NAME AND SIGNATURE

Matthew Ringler
Michael McDonald

PROJECT NAME: DO 0070 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 195900-70010801 3P DO 59
GROUNDWATER MONITORING

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	MTBE Only (SW8260B)	VOCs/MTBE (SW8260B)/BTEX	SVOCs (SW8270C)	PAHs (SW8270C)	TVPH (Mod SW8015B)	TEPH (Mod SW8015B)	OCPs (SW8081A)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals (SW6010B/SW7470A)		BTV Type *	24-Hour Turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
TB-011303-02	133-MW04	—	—	1/13/03	0900	TB	1	G	WG	3	A	C		X												X	
133-MW04-GW01-	133-MW04	—	—	1/13/03	1210	N	1	G	WG	9	A	C/NA		X	X		X	X								X	

Comments/Instructions:

Turn-around time for hard copy data package and EDD is 15 business days from laboratory receipt of samples unless otherwise specified.
Consult Subcontract Agreement and QAPP for project-specific requirements.
Level III data package unless otherwise specified.

* SDS (surface dune sand), SSDS (subsurface dune sand), SA (surface alluvium), SSA (subsurface alluvium), BED (bedrock), GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:					
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

(For Lab Use Only) Sample Condition and Temperature Upon Receipt:

SBD: Sample Beginning Depth
SED: Sample Ending Depth
Sample Type Code (SA): N

Sample Number (SN): 1
Sampling Method (SM): CS (composite), DT (driven tube), G (grab), H (hollow stem auger), HA (hand auger)
Sampling Matrix (MC): SO (soil), WG (groundwater), WS (surface water)

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S (sleeve), A (amber glass), G (clear glass), P (poly), E (EnCore)
Preservative (PR): NA (none), A (HNO_3), B (H_2SO_4), C (HCl), D (NaOH)

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MONTGOMERY WATSON HARZA

CHAIN-OF-CUSTODY RECORD

MW CONTACT PERSON: Ruth Siegmund (925) 975-3566

FED EX #: 536 036 139 COOLER #: B COC ID: DO70-59 LOGCODE: MW-WCK LAB: APCL, Chino, CA (909) 590-1828

SAMPLER(S) PRINTED NAME AND SIGNATURE

Thomas Smith

Thomas Smith

PROJECT NAME: DO 0070 at Vandenberg AFB, California

AIR FORCE ID: VAFB 31

PROJECT NUMBER: ~~195900.70010801~~ 42300006.59010603

DO 59

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	MtBE Only (SW8260B) TPH-Gas	VOCs/MTBE (SW8260B)	SVOCs (SW8270C) TPH-diesel/oil	PAHs (SW8270C) TPH-diesel/oil	TVPH (Mod SW8015B)	TEPH (Mod SW8015B)	OCPs (SW8081A)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals (SW6010B/SW7470A)		BTV Type *	24-Hour Turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
133-MW05-GW01	133-MW05	Ø	Ø	01/14/03	1700	N	1	G	WG	3	A	C	X														
133-MW05-GW01	133-MW05	Ø	Ø		1700	N	1	G	WG	3	A	C		X													
133-MW05-GW01	133-MW05	Ø	Ø		1700	N	1	G	WG	2	A	NA			X												
133-MW05-GW01	133-MW05	Ø	Ø	↓	1700	N	1	G	WG	2	A	NA				X											

Comments/Instructions:

Turn-around time for hard copy data package and EDD is 15 business days from laboratory receipt of samples unless otherwise specified.

Consult Subcontract Agreement and QAPP for project-specific requirements.

Level III data package unless otherwise specified.

* SDS (surface dune sand), SSDS (subsurface dune sand), SA (surface alluvium), SSA (subsurface alluvium), BED (bedrock), GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:	Thomas Smith	Thomas Smith	MWH	01/14/03	1700
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

(For Lab Use Only) Sample Condition and Temperature Upon Receipt:

SBD: Sample Beginning Depth
SED: Sample Ending Depth
Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method (SM): CS (composite), DT (driven tube), G (grab), H (hollow stem auger), HA (hand auger)
Sampling Matrix (MC): SO (soil), WG (groundwater), WS (surface water)
Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S (sleeve), A (amber glass), G (clear glass), P (poly), E (EnCore)
Preservative (PR): NA (none), A (HNO_3), B (H_2SO_4), C (HCl), D (NaOH)

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MWH
CAL OVERNIGHT

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED-EX #: 669882348 COOLER #: 05 COC ID: DO59- 05 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE

Michael McDonald

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type *	48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
020-SB04-SS0.0	020-SB04	0	0.5	01/28/03	1215	N	1	DT	SO	1	S	NA					X							X			HOLD FOR SVOCS
020-SB04-SS2.5	↓	2.5	3.0	↓	1218	N	1	DT	SO	1	S	NA					X							X			
020-SB04-SS5.0	↓	5.0	5.5	↓	1220	N	1	DT	SO	1	S	NA					X							X			
020-SB04-SS10.0	↓	9.5	10.0	↓	1230	N	1	DT	SO	1	S	NA					X							X			
020-SB05-SS0.0	020-SB05	0	0.5	↓	1238	N	1	DT	SO	1	S	NA					X							X			
020-SB05-SS2.5	↓	2.5	3.0	↓	1240	N	1	DT	SO	1	S	NA					X							X			
020-SB05-SS5.0	↓	5.0	5.5	↓	1250	N	1	DT	SO	1	S	NA					X							X			
020-SB05-SS10.0	↓	9.5	10.0	↓	1300	N	1	DT	SO	1	S	NA					X							X			
020-SB06-SS0.0	020-SB06	0	0.5	↓	1320	N	1	DT	SO	1	S	NA					X							X			
020-SB06-SS2.5	↓	2.5	3.0	↓	1323	N	1	DT	SO	1	S	NA					X							X			
020-SB06-SS5.0	↓	5.0	5.5	↓	1335	N	1	DT	SO	1	S	NA					X							X			
020-SB06-SS5.0MS	↓	5.5	6.0	↓	1335	N	1	DT	SO	1	S	NA					X							X			

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
* SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:	[signature]	Michael McDonald	MWH	1-28-03	18:00
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

POISON OAK AREA

MWH
CAL OVERNIGHT

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED EX #: 669882 3458 COOLER #: 05 COC ID: DO59- 06 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE

Michael McDonald

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type *		48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
020-SB06-SS5.0 MSD	020-SB06	6	6½	01/28/03	1335	N	1	DT	SO	1	S	NA				✓	X								X			
020-SB06-SS10.0	↓	9½	10		1345	N	1	DT	SO	1	S	NA					X								X			
020-SB08-SS0.0	020-SB08	0	0½		1412	N	1	DT	SO	1	S	NA					X								X			
020-SB08-SS2.5		2½	3		1415	N	1	DT	SO	1	S	NA					X								X			
020-SB08-SS5.0		5	5½		1422	N	1	DT	SO	1	S	NA					X								X			
020-SB08-SS10.0	↓	9½	10		1430	N	1	DT	SO	1	S	NA					X								X			
020-SB09-SS0.0	020-SB09	0	0½		1440	N	1	DT	SO	1	S	NA					X								X			
020-SB09-SS2.5		2.5	3		1445	N	1	DT	SO	1	S	NA					X								X			
020-SB09-SS5.0	↓	5	5½		1450	N	1	DT	SO	1	S	NA					X								X			
020-SB09-SS10.0	020-SB09	9½	10		1455	N	1	DT	SO	1	S	NA					X								X			
020-SB99-SS10.0	020-SB99	10	10½		0800	N	1	DT	SO	1	S	NA					X								X			
020-SB99-SS5.0	020-SB99	6	6½	↓	0800	N	1	DT	SO	1	S	NA					X								X			

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
* SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

TEMP BLANK IN COOLER.

Duplicates: ~~020-SB99-SS10.0 → 020-SB04-SS5.0~~
020-SB99-SS5.0 → 020-SB04-SS5.0
020-SB99-SS10.0 → 020-SB06-SS10.0

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:	[signature]	Michael McDonald	MWH	1-28-03	1:15:00
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL - Send with sample (sign only in blue or black ink)
COPIES: Retained by Sampler, Sent to Office

* POISON OAK AREA *

MWH
CAL OVERNIGHT

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED-EX #: 669882348 COOLER #: 5 COC ID: DO59- 07 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE

Michael McDonald

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type [a]		48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
60ER-012803-01	DOL-020	—	—	01/28/03	1525	N	1	G	WQ	1	A	NA					X										X	
020-SB10-SS0.0	020-SB10	0	0.5	↓	1500	N	1	DT	SO	1	S	NA					X								X			HOLD
020-SB10-SS2.5	↓	2.5	3.0		1505	N	1	DT	SO	1	S	NA					X								X			FOR
020-SB10-SS5.0		5.0	5.5		1510	N	1	DT	SO	1	S	NA					X								X			SVOCs
020-SB10-SS10.0	↓	9.5	10.0	↓	1520	N	1	DT	SO	1	S	NA					X								X			

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
[a] SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:		Michael McDonald	MWH	1-28-03	18:00
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

POISON OAK AREA

MWH

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED EX #: 6198922[illegible] COOLER #: 06 COC ID: DO59-02 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE

Michael McDonald

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type [a]	48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
020-SB11 SS 0	020-SB11	1.0	1.5	1-29-03	9:20	N	1	DT	SO	1	S	NA		X			X							X			Hold for SVOC
2.5		3.0	4.0		9:28	N	1			1	S			X			X							X			
5.0		6.0	6.5		9:35	N	1			1	S			X			X							X			
10.0		9.5	10.0		9:40	N	1			1	S			X			X							X			
20.0		21.0	21.5		9:55	N	1			1	S			X			X							X			
30.0		31.0	31.5		10:09	N	1			1	S			X			X							X			
40.0		41.0	41.5		10:35	N	1			1	S			X			X							X			Hold All
50.0		51.0	51.5		10:55	N	1			1	S			X			X							X			Hold All

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
[a] SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:	[signature]	Michael McDonald	MWH	1-30-03	18:00
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MWH

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED EX #: 6698823854 COOLER #: 06 COC ID: DO59-09 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE: MICHAEL McDONALD

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type *	48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15 Day Turn Around	REMARKS:
020-SB07 SS 0.0	020-SB07	1	1	1-29-03		N	1	DT	SO	1	S	NA		X			X							X			HOLD FOR SVOC
020-SB07 2.5		2.5	4				1			1				X			X							X			
-SB07 5.0		6	6.5				1			1				X			X							X			
-SB07 10.0		11	11.5				1			1				X			X							X			
-SB07 20.0		21	21.5				1			1				X			X							X			
-SB07 30.0		31	31.5				1			1				X			X							X			
020-SB07 SS 60.0		61	61.5				1			1				X			X							X			HOLD
020-SC01 SS 2.0	020-SC01	1.5	2	1-29-03	14:20		1			1				X			X							X			
020-SB02 SS 2.0	020-SB02	1.5	2	1-29-03	14:25		1			1				X			X							X			

ERPIMS CODES

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
* SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:	[signature]	MICHAEL McDONALD	MWH	1-30-03	16:00
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MWH
Coolers

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED-EX #: 669882275 COOLER #: 67 COC ID: DO59-10 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE: Michael Schulman

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type *		48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
061-SB05-SS5.0	061-SB05	6.0	6.5	01-30-03	1610	N	1	SS	SO	1	S	NA		X			X								X			Hold SVOCs
061-SB05-SS10.0	↓	9.5	10.0	↓	1615	N	1	SS	SO	1	S	NA		X			X								X			↓
061-SB05-SS15.0	↓	16.0	16.5	↓	1624	N	1	SS	SO	1	S	NA		X			X								X			↓
061-SB05-GW01	061-SB05	—	—	01-30-03	1630	N	1	G	WG	3	A	NA		X			X								X			↓
061-SB04-GW01	061-SB04	—	—	↓	1540	N	1	G	WG	3	A	NA		X			X								X			↓
061-SB04-SS5.0	↓	6.0	6.5	↓	1522	N	1	SS	SO	1	S	NA		X			X								X			↓
061-SB04-SS10.0	↓	9.5	10.0	↓	1530	N	1	SS	SO	1	S	NA		X			X								X			↓
061-SB04-SS15.0	↓	16.0	16.5	↓	1535	N	1	SS	SO	1	S	NA		X			X								X			↓
061-SB03-GW01	061-SB03	—	—	↓	1430	N	1	G	WG	3	A	NA		X			X								X			↓

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
* SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

Hold SVOC analysis - Do Not Analyze
48-hour TAT
Temp Blank in Cooler

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:		Michael Schulman	MWH	01/30/03	
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL - Send with sample (sign only in blue or black ink)
COPIES: Retained by Sampler, Sent to Office

MWH

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED EX #: 669882393 COOLER #: 06 COC ID: DO59- 11 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE

MICHAEL MCDONALD

PROJECT NAME: DO0059 at Vandenberg AFB, California

AIR FORCE ID: VAFB

PROJECT NUMBER: 4230006.59010801

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type *	48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
061-SB01-SS 5.0	061-SB01	6	6	1-30-03	12:25	N	1	DT	SO	1	S	NA		X			X							X			HOLD FOR SVOC
10.0		11	11		12:30		1			1				X			X							X			
15.0		16	16		12:38		1			1				X			X							X			
061-SB02-SS 5.0	061-SB02	6	6		13:20		1			1				X			X							X			
10.0		~~11~~ 7			13:30		1			1				X			X							X			7.5, 10 - SBD
15.0		16	16		13:40		1			1				X			X							X			
061-SB03-SS 5.0	061-SB03	6	6		14:13		1			1				X			X							X			
10.0		11	11		14:19		1			1				X			X							X			
15.0		16	16		14:25		1			1				X			X							X			
~~061-SB04-SS 5.0~~	~~061-SB04~~																X										
~~10.0~~																	X										
~~15.0~~																	X										

ANALYSIS REQUEST

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
* SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

TEMP BLANK IN COOLER

HOLD SVOCs FOR DIESEL RESULTS

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:		MICHAEL MCDONALD	MWH	1-30-03	18:00
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MWH

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED EX #: 669882393 COOLER #: 08 COC ID: DO59- 12 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE

MICHAEL MCDONALD

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type *	48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
061-SB01-GW01	061-SB01	—	—	01/30/02	1310	N	1	G	WG	3	A	NA		X			X							X			[HOLD
061-SB02-GW01	061-SB02	—	—	01/30/02	1345	N	1	G	WG	3	A	NA		X			X							X			SVOCS]
ER012903	AOC-20	—	—	01/30/02	0840	N	1	G	WQ	1	A	NA					X									X	
ER013003	AOC-061	—	—	01/30/02	1640	N	1	G	WQ	1	A	NA					X									X	

Comments/Instructions: HOLD SVOCS FOR DIESEL RESULTS

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
* SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:		MICHAEL MCDONALD	MWH	1-30-03	18:00
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL [illegible]nd with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MWH
CALONGENIGHT

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED-EX-#: 6698826402 COOLER #: 9 COC ID: DO59-13 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type [a]	48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
055-TW01-SS25.0	055-TW01	26.0	26.5	02/03/03	10:10	N	1	SS	SO	4	S/E	NA	X	X	X		X									X	
055-TW01-SS30.0		31.0	31.5		10:25	N	1	SS	SO	4	S/E		X	X	X		X									X	
055-TW01-SS30.0 MS		30.5	31.0		10:25	N	1	SS	SO	4	S/E		X	X	X		X									X	
055-TW01-SS30.0 MSD		30.0	30.5		10:25	N	1	SS	SO	4	S/E		X	X	X		X									X	
055-TW01-SS36.0		36.0	36.5		10:35	N	1	SS	SO	4	S/E		X	X	X		X									X	
055-TW01-SS40.0		41.0	41.5		10:50	N	1	SS	SO	4	S/E		X	X	X		X									X	
055-TW01-SS45.0		45.5	46.0		11:05	N	1	SS	SO	3	S/E		X	X	X		X									X	
055-TW01-SS45.0 MS		45.0	45.5		11:05	N	1	SS	SO	4	S/E		X	X	X		X									X	(1 sleeve)
055-TW01-SS45.0 MSD		45.0	45.5		11:05	N	1	SS	SO	1	S/E		X	X	X		X									X	(4 encores)
055-TW01-SS50.0		51.0	51.5		11:20	N	1	SS	SO	4	S/E		X	X	X		X									X	
055-TW01-SS60.0		60.0	60.5		12:12	N	1	SS	SO	3	S/E		X	X	X		X									X	
055-TW01-SS70.0	↓	70.0	70.5	↓	12:40	N	1	SS	SO	3	S/E	↓	X	X	X		X									X	

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
[a] SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

TEMP BLANK IN COOLER

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:	[signature]	MICHAEL MCDONALD	MWH	2-3-03	18:00
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MWH
NAT OVERNIGHT

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED EX #: 669982402 COOLER #: 9 COC ID: DO59- 14 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE
MICHAEL McDONALD

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME (1340)	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type *		48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
055-TW01-SS80.0	055-TW01	80.5	81.0	02/07/03	0900	N	1	SS	SO	3	5/E	NA	X	X	X		X										X	Time - 1340
055-TW99-SS25.0	055-TW99	25.5	26.0		0900	N	1	SS	SO	4	5/E	NA	X	X	X		X										X	
055-TW99-SS35.0		35.5	36.0		0900	N	1	SS	SO	4	5/E	NA	X	X	X		X										X	
055-TW99-SS80.0		80.0	80.5		0900	N	1	SS	SO	3	5/E	NA	X	X	X		X										X	
059TB-020303-01	ADC-055	-	-		0800	N	1	G	WQ	3	A	C	X														X	

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
* SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

DUPLICATES: 055-TW99-SS25.0 → 055-TW01-SS25.0
055-TW99-SS35.0 → 055-TW01-SS35.0
055-TW99-SS80.0 → 055-TW01-SS80.0

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:		Michael McDonald	MWH	2-3-03	18:05
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)
COPIES: Retained by Sampler, Sent to Office

MWH
CAL OVERNIGHT

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED EX #: 669882411 COOLER #: 10 COC ID: DO59- 15 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE

Michael McDonald

PROJECT NAME: DO0059 at Vandenberg AFB, California.
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type [a]	48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
055-TW01-GW01	055-TW01	—	—	02/03/03	1430	N	1	G	WG	6	A	C	X	X	X		X									X	
055-TW01-GW01MS	055-TW01	—	—		1430	N	1	G	WG	6	A	C	X	X	X		X									X	
055-TW99-GW01	055-TW99	—	—		0900	N	1	G	WG	6	A	C	X	X	X		X									X	
~~59TB-020303-01~~	~~AOC-055~~				~~0800~~	~~N~~	~~1~~	~~G~~	~~WQ~~	~~6~~																X	MC = WG
~~59TB-020303-02~~																											
59TB-020303-01	~~055~~ AOC-055	—	—	02/02/03	0800	N	1	G	WQ	3	A	C	X													X	

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
[a] SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

TEMP BLANK IN COOLER

DUPLICATE: 055-TW99-GW01 -> 055-TW01-GW01

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:	[signature]	Michael McDonald	MWH	2-3-03	1800
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for GW)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MWH
CAL OVER

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED EX #: 669882429 COOLER #: 11 COC ID: DO59- 16 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE

Michael McDonald

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type *	48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
055-TN01-GW01MSD	055-TN01	—	—	02/03/03	1430	N	1	G	WG	6	A	C	X	X	X		X									X	
59ER-020303-01	ADC-055	—	—		1530	N	1	G	WQ	6	A	C	X	X	X		X									X	
59TB-020303-03	ADC-055	—	—	↓	0800	N	1	G	WQ	3	A	C	X													X	

Comments/Instructions:

TEMP BLANK IN COOLER.

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
* SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:	[signature]	Michael McDonald	MWH	2-3-03	18:00
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MWH
CALOVER

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED.EX#: 669882501 COOLER #: 12 COC ID: DO59- 17 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE: Michael Schulman

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801 DO59

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)	OCPs/PCBs		BTV Type *		48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
B3-IDW-031203	Bin#3	—	—	03/12/03	1350	N	1	G	SO	3	S	—	X	X		X	X	X			X					X		

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
* SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

IDW Samples. NOT For ERPIMS.
Please Composit 3 Sleeves prior to sampling.
5 DAY TAT

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:		Michael Schulman	MWH	03/12/03	1800
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)
COPIES: Retained by Sampler, Sent to Office

MWH

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED EX #: 669882492 COOLER #: 13 COC ID: DO59- 18 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE: Matthew Ringier [signature]

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

59MR SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type[a]	48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
68FB-031203-03	AOC 133	—	—	03/12/03	0705	TS	1	G	WQ	3	A	C	X												X		
133-MW99-GW02	133-MW99	—	—	3/12/03	1000	N	1	G	WG	9	A	C/NA	X	X		X	X								X		
133-MW03-GW02	133-MW03	—	—	3/12/03	1602	N	1	G	WG	9	A	C/NA	X	X		X	X								X		
~~133-MW03-GW02~~	~~133-MW03~~	~~—~~	~~—~~	~~3/12/03~~	~~1717~~	~~N~~	~~1~~	~~G~~	~~WG~~	~~9~~	~~A~~	~~C/NA~~	~~X~~	~~X~~		~~X~~	~~X~~										

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
[a] SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:	[signature]	[signature]	MWH	3/12/03	1910
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MWH

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED EX #: 669882483 COOLER #: 14 COC ID: DO59- 19 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE

Matthew Ringer / Matt Ringer

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type *	48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
133-MW03-GW02	133-MW03	—	—	3/12/03	1717	N	1	G	WG	9	A	C/NA	X	X		X	X									X	
IB#																											
59EB-031203-01	133-MW	—	—	3/12/03	0710	EB	1	G	WQ	3	A	C	X													X	

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
* SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:	Matt Ringer	Matt Ringer	MWH	3/12/03	1710
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MWH

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED EX #: 8359 1335 4124 COOLER #: 15 COC ID: DO59- 20 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE

PAULA BUTCHER

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type *		48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
133-MW01-GW02	133-MW01	—	—	03/13/03	0905	N	1	G	WG	9	A	C	X	X		X	X									X		
133-MW04-GW02	133-MW04	—	—	03/13/03	0900	N	1	G	WG	9	A	C	X	X		X	X									X		
STB-03/13/03-01	ADC-133	—	-	03/13/03	0700	N	1	G	WQ	3	A	C	X															

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
* SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

TEMP BLANK IN COOLER.

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:					
RECEIVED BY:		PAULA BUTCHER	MWH	03/14/03	1500
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G=.Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MWH

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED EX #: 8358 1335 4901 COOLER #: 16 COC ID: DO59- 28 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE

PAULA BUTCHER

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type *		48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
133-MW05-GW02	133-MW05	–	–	03/13/03	1005	N	1	G	WG	9	A	C	X	X		X	X									X		
133-MW05-GW02MS	133-MW05	–	–	03/13/03	1005	N	1	G	WG	9	A	C	X	X		X	X									X		
60TB-031303-02	ADC-133	–	–	03/13/03	0705	N	1	G	WQ	3	A	C	X													X		

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
* SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

TEMP BLANK IN COOLER

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:		PAULA BUTCHER	MWH	03/16/03	1500
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MWH

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED EX #: 8358 1335 4912 COOLER #: 17 COC ID: DO59- 22 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE

PAULA BUTCHER

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type [a]		48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
132-MW05-GW02MSD	132-MW05	–	–	03/12/03	1005	N	1	G	WG	9	A	C	X	X		X	X										X	
59TR-031203-01	ADC-132	–	–	03/13/03	0730	N	1	G	WG	9	A	C	X	X		X	X										X	
~~59TR-031303-01~~	~~595~~			~~03/13/03~~	~~0730~~	~~N~~	~~1~~	~~G~~	~~WG~~	~~3~~	~~A~~	~~C~~	~~X~~													~~X~~	
59TR-031403-01	ADC-133	–	–	03/13/03	0900	N	1	G	WG	3	A	C	X														X	

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
[a] SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:	PAULA BUTCHER		MWH	03/14/03	1500
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MWH

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 9 12 (F)

FED EX #: _____ COOLER #: _____ LOGCODE: MW-WCK LAB: APCL, Chino, CA (909) 590-1828, Eric Wendland

SAMPLER(S) PRINTED NAME AND SIGNATURE: Michael McDonald

PROJECT NAME: Vandenberg AFB, California AIR FORCE ID: VAFB

DELIVERY ORDER: 3P DO 59

PROJECT NUMBER:

ANALYSIS REQUEST / RUSH TAT (check if req.)

	SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TPH - gasoline (SW8015B mod.)	TPH - diesel/motor oil (SW8015B mod.)	PCBs (SW8082)	Total Metals (SW6010B/SW7471A/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type	24-Hr Rush turn Around (Faxed Results)	48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	REMARKS:
1	099-SC01-SS1.0	099-SC01	1.0	1.5	8-4-03	15:19	N	1	G	SO	1	A	NA							X					X			No Hg
1	-SC02-SS1.0	-SC02	1.0	1.5				1			1	A								X					X			
1	-SC03-SS1.0	-SC03	1.0	1.5		↓		1			1	A								X					X			TESTING
2	-SC04-SS1.0	-SC04	1.0	1.5		15:22		1			1									X					X			
2	SC05-SS1.0	-SC05	1.0	1.5		15:22		1			1									X					X			
2	SC06-SS1.0	SC06		1.5		15:22		1			1									X					X			
2	SC07-SS1.0MS	SC07		1.5		15:25		1			1									X					X			
1	SC97-SS1.0	SC97		1.5		15:25		1			1									X					X			
3	SC07-SS1.0	SC07		1.5		15:25		1			1									X					X			
3	SC08-SS1.0	SC08		1.5		15:25		1			1									X					X			
3	SC09-SS1.0	SC09		1.5		15:25		1			1									X					X			
3	SC07-SS1.0MSD	SC07	↓	1.5		15:25	↓	1	↓	↓	1	↓	↓							X					X			

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.

Consult Subcontract Agreement for project-specific requirements.

Level III data package unless otherwise specified.

* SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

Metals list: Al, Sb, B, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn

24-TAT

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:	[signature]	Michael McDonald	MWH	8-4-03	17:03
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink) **COPIES: Retained by Sampler, Sent to Office**

MWH

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED EX #: _____ COOLER #: _____ LOGCODE: MW-WCK LAB: APCL, Chino, CA (909) 590-1828, Eric Wendland

SAMPLER(S) PRINTED NAME AND SIGNATURE: MICHAEL McDONALD

PROJECT NAME: Vandenberg AFB, California AIR FORCE ID: VAFB

DELIVERY ORDER: 3P 00591

PROJECT NUMBER: 4230006

ANALYSIS REQUEST / RUSH TAT (check if req.)

	SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TPH - gasoline (SW8015B mod.)	TPH - diesel/motor oil (SW8015B mod.)	PCBs (SW8082)	Total Metals (SW6010B/SW7471A/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type *	24-Hr Rush turn Around (Faxed Results)	48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	REMARKS:
(4)	099-SC10-SS1.0	099-SC10	1.0	1.5	8-4-03	15:30	N	1	G	SO	1	A	NA							X					X			NO Hg
(4)	099-SC11-SS1.0	-SC11	1.0	1.5	8/4/03	15:30														X								TEST
(4)	-SC12-SS1.0	-SC12	1.0	1.5	8/4/03	15:30														X								
(4)	-SC89-SS1.0	-SC89	1.0	1.5	8/4/03	15:30														X								
(5)	SC13-SS1.0	-SC13	1.0	1.5	8/4/03	15:35														X								
(5)	SC14-SS1.0	-SC14	1.0	1.5	8/4/03	15:35														X								
(5)	SC15-SS1.0	-SC15	1.0	1.5	8/4/03	15:35														X								
(6)	SC16-SS2.0	-SC16	2.0	2.5	8/4/03	15:40														X								
(6)	SC17-SS2.0	-SC17	2.0	2.5	8/4/03	15:40														X								
(6)	SC18-SS2.0	-SC18	2.0	2.5	8/4/03	15:40														X								
																				X								
																				X								

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.

Consult Subcontract Agreement for project-specific requirements.

Level III data package unless otherwise specified.

* SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

Metals list: Al, Sb, B, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:		MICHAEL McDONALD	MWH	8-4-03	17:00
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A=HNO3, B=H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MWH

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) ,412 (F)

FED EX #: 8291 3813 1684 COOLER #: 02 LOGCODE: MW-WCK LAB: APCL, Chino, CA (909) 590-1828, Eric Wendland

SAMPLER(S) PRINTED NAME AND SIGNATURE

MICHAEL McDONALD

PROJECT NAME: Vandenberg AFB, California AIR FORCE ID: VAFB

DELIVERY ORDER: 2P M059

PROJECT NUMBER: 4230006

ANALYSIS REQUEST / RUSH TAT (check if req.)

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TPH - gasoline (SW8015B mod.)	TPH - diesel/motor oil (SW8015B mod.)	PCBs (SW8082)	Total Metals (SW6010B/SW7471A/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type [a]	24-Hr Rush turn Around (Faxed Results)	48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	REMARKS:
~~099-SC19-SS3.0~~	099-SC19	3.0	3.5	8-6-03	15:30	N	1	G	SO	1	A	NA	X	X		X	X		X				SSA		X		(METALS ONLY)
~~099-SC20-SS3.0~~	099-SC20	3.0	3.5	8-6-03	15:25	N	1	G	SO	1	A	NA	X	X		X	X		X				SSA		X		(SEE BELOW)
~~099-SP01-SSD.5~~	099-SP01	0.5	~~0.5~~ 1.0	8-7-03	~~14:30~~	N	1	G	SO	1	S		X	X		X	X		X				SSA		X		
~~099-SP02-SSD.5~~	↓ SP02	0.5	1.0	8-7-03	14:35	N	1	G	SO	1	S	N	X	X		X	X		X				SSA		X		

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.

Consult Subcontract Agreement for project-specific requirements.

Level III data package unless otherwise specified.

[a] SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

Metals list: Al, Sb, B, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, ~~Hg~~, Mo, Ni, Se, Ag, Tl, V, Zn, As

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:					
RECEIVED BY:		MICHAEL McDONALD	MWH	8-7-03	15:00
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

APPENDIX D
BORING LOGS

MWH

Boring ID: **020-SB-04**

Borehole Diam. (in.): 1.5	Total Depth (ft): 10.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-020
Drill Start Date: 01-28-2003	Start Time: 12:10	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-28-2003	Finish Time: 12:30	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Geoprobe	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	

Comments:	Well Comp. Date: N/A	Completion Time: N/A
Samplers: Macrocore	Soil Backfill Date: N/A	Backfill Time: N/A

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0			Surface: Shrubs and heavy vegetation					
	A	100		0.0				SM	Silty Sand, dark reddish brown (5YR 3/4) loose moist no odor medium to fine grain organics			60	20	20
						2			BZ=0 0ppm					
	A	100		0.0				SP	Poorly Graded Sand yellowish brown (10YR 5/4) loose moist no odor medium grain			95	5	
						4								
	A	100		0.0				SP	Poorly Graded Sand yellowish red (5YR 5/6) loose moist no odor medium grain sand			85	15	
	A	100				6								
						8								
		100							Same as above			85	15	
		100		0.0										
	A	100				10			Total depth of boring 10' No groundwater encountered No odor					
						12								
						14								
						16								
						18								
						20								

LOG OF BORIN DO59.GPJ MWH WC.GDT 5/22/03

MWH

Boring ID: **020-SB-05**

Borehole Diam. (in.): 1.5	Total Depth (ft): 10.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-020
Drill Start Date: 01-28-2003	Start Time: 12:35	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-28-2003	Finish Time: 13:00	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Geoprobe	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	

Comments:	Well Comp. Date: N/A	Completion Time: N/A
Samplers: Macro-Probe	Soil Backfill Date: N/A	Backfill Time: N/A

Sample Interval Retained Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
								Surface: Shrubs and heavy vegetation					
A	100		0 0		0–2		SM	Silty Sand, dark reddish brown (5YR 3/4) loose moist no odor medium fine sand organics			60	20	20
A	100		0 0		2–4		SP	Poorly Graded Sand yellowish brown (10YR 5/4) loose moist no odor trace silt medium grain			75	20	5
A	100		0 0		4–6		SP	Poorly Graded Sand yellowish red (5YR 5/6) loose moist no odor medium grain BZ=0 1ppm			85	15	
A	100		0 0		6–8		SP	Poorly Graded Sand, yellowish red (5YR 5/6) loose, moist no odor trace clay medium grain			80	15	5
					8–10			Total depth of boring 10 No groundwater encountered No odor					

Depth (feet): 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

LOG OF BORING VAFB_DO59.GPJ MWH WC.GDT 5/22/03

MWH

Boring ID: **020-SB-06**

Borehole Diam. (in.): 1.5	Total Depth (ft): 10.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-061
Drill Start Date: 01-28-2003	Start Time: 13:20	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-28-2003	Finish Time: 13:45	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Geoprobe	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	
Comments:		Well Comp. Date: N/A	Completion Time: N/A
Samplers: Macro-Probe		Soil Backfill Date: 01-28-2003	Backfill Time:

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0			Surface: Shrubs and heavy vegetation					
	A	100						SM	Silty Sand, dark reddish brown (5YR 3/4), loose moist no odor medium-fine sand organics			60	20	20
						2								
	A	100		0.0				SP	Poorly Graded Sand dark reddish brown (5YR 3/4), loose moist no odor trace clay occasional sub-rounded gravel up to 1/4' diameter	5		70	20	5
						4								
	A								Same as above			70	20	5
	A	100		0 0		6								
	A													
									BZ=0 0ppm					
						8								
								SP	Poorly Graded Sand very pale brown (10YR 7/4) loose damp to moist no odor clean sand			100		
	A	100		0 0		10								
									Total depth of boring 10 No groundwater encountered No odor					
						12								
						14								
						16								
						18								
						20								

MWH

Boring ID: **020-SB-07**

Borehole Diam. (in.): 7.25	Total Depth (ft): 61.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-061
Drill Start Date: 01-29-2003	Start Time: 15:50	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-30-2003	Finish Time: 09:25	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	
Comments:		Well Comp. Date: N/A	Completion Time: N/A
Samplers: Split Spoon		Soil Backfill Date: 01-30-2003	Backfill Time: 09:35

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0			Surface: Shrubs and vegetation					
	A		1 2 3	0 0				SM	Silty Sand dark reddish brown (5YR 3/4) loose moist no odor			60	20	20
	A		5 4 3	0 0				SP-SM	Poorly Graded Sand With Silt dark grayish brown (10YR 4/2) loose damp to moist no odor			65	20	15
	A		5 11 10	0 0		5		SP-SM	BZ=0.1ppm Poorly Graded Sand With Silt yellowish brown (10YR 5/4) loose moist no odor medium grain			70	20	10
	A		10 16 18	0.0		10		SP	Poorly Graded Sand yellowish red (5YR 5/6) damp to moist no odor medium grain trace silt Drilling becoming difficult			95		5
						15								
	A		20 32 47	0 0		20		SP-SC	Poorly Graded Sand With Clay, yellowish red (5YR 5/6) very dense moist no odor medium grain sand homogeneous			75	10	15
						25								
	A		21 37 45	0 0		30		SP-SC	Poorly Graded Sand With Clay yellowish red (5YR 5/6) very dense moist medium grain sand 1-30-03 Continued drilling			75	10	15
						35			Auger cuttings at 35					
								SP	Poorly Graded Sand light brown (7 5YR 6/3) moist with some clay			75	10	15
						40								

Log Continued on Next Page

LOG OF BORING DO59.GPJ MWH WC.GDT 5/23/03

MWH

Boring ID: **020-SB-07**

Borehole Diam. (in.): 7.25	Total Depth (ft): 61.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-020
Drill Start Date: 01-29-2003	Start Time: 15:50	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-30-2003	Finish Time: 09:25	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	
Comments:		Well Comp. Date: N/A	Completion Time: N/A
Samplers: Split Spoon		Soil Backfill Date: 01-30-2003	Backfill Time: 09:35

Sample Interval Retained Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
					40			No sample collected					
					45								
					50			No sample collected					
					55								
					60								
▨	50 100	36				▨	SP	Poorly Graded Sand very dense moist no odor medium grain sugar- like sand clean			100		
								Total depth of boring 61' No groundwater encountered No odors					
					65								
					70								
					75								
					80								

LOG OF BORING VAFB_DO59.GPJ MWH WC.GDT 5/22/03

MWH

Boring ID: **020-SB-08**

Borehole Diam. (in.): 1.5	Total Depth (ft): 10.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-020
Drill Start Date: 01-28-2003	Start Time: 14:10	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-28-2003	Finish Time: 14:30	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Geoprobe	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	
Comments:		Well Comp. Date: N/A	Completion Time: N/A
Samplers: Macro-Probe		Soil Backfill Date: 01-28-2003	Backfill Time:

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0			Surface: Shrubs and heavy vegetation					
	A	100						SM	Silty Sand dark reddish brown (5YR 3/4) loose damp to moist no odor			60	20	20
						2								
	A	100		0 0				SP	Poorly Graded Sand yellowish brown (10YR 5/4) loose damp no odor medium grain trace silt BZ=0 0			75	20	5
						4								
	A	100		0 0				SP	Poorly Graded Sand, yellowish red (5YR 5/6) loose, damp to moist no odor clean sand, medium grain			100		
						6								
						8			Same as above			100		
	A	100		0 0		10			Total depth of boring 10' No groundwate encountered No odors					
						12								
						14								
						16								
						18								
						20								

LOG OF BORING DO59.GPJ MWH WC.GDT 5/22/03

MWH

Boring ID: **020-SB-09**

Borehole Diam. (in.): 1.5	Total Depth (ft): 10.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-020
Drill Start Date: 01-28-2003	Start Time: 14:40	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-28-2003	Finish Time: 14:55	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	
Comments:		Well Comp. Date: N/A	Completion Time: N/A
Samplers: Split Spoon		Soil Backfill Date: 01-28-2003	Backfill Time:

Sample Interval	Retained Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
									Surface: Shrubs and heavy vegetation					
	A	100				0		SM	Silty Sand dark reddish brown (5YR 3/4) loose moist no odor organics			60	20	20
	A	100		0 0		2		SP	Poorly Graded Sand yellowish brown (10YR 5/4), loose moist no odor medium grain sand trace silt			75	20	5
	A	100		0 1		4		SC-SM	Silty Clayey Sand moist no odor medium grain			70	10	20
						6			BZ=0 1ppm					
	A					8								
	A	100		0 0		10		SP	Poorly Graded Sand, yellowish red (5YR 5/6) medium dense moist no odor medium grain, trace of clay			85	10	5
									Total depth of boring 10' No groundwater encountered No odors					
						12								
						14								
						16								
						18								
						20								

LOG OF BORING VAFB_DO59.GPJ MWH WC.GDT 5/22/03

MWH

Boring ID: **020-SB-10**

Borehole Diam. (in.): 1.5	Total Depth (ft): 10.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-020
Drill Start Date: 01-28-2003	Start Time: 15:00	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-28-2003	Finish Time: 15:20	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	
Comments:		Well Comp. Date: N/A	Completion Time: N/A
Samplers: Macro-Probe		Soil Backfill Date: 01-28-2003	Backfill Time:

Sample Interval Retained Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
								Surface: Shrubs and heavy vegetation					
A	100				0		SM	Silty Sand dark reddish brown (5YR 3/4) loose moist no odor organics			60	20	20
A	100		0 0		2		SP	Poorly Graded Sand yellowish brown (10YR 5/4) loose moist no odor medium grain sand trace silt			85	10	5
A	100		0 0		4		SP	Poorly Graded Sand yellowish red (5YR 5/6) loose damp to moist no odor medium grain sand			90	10	
					6			BZ=0 1ppm					
A	100		0 0		8		SP	Poorly Graded Sand yellowish brown (10YR 5/4) loose moist no odor medium grain sand			90	10	
					10			Total depth of boring 10' No groundwater encountered No odors					
					12								
					14								
					16								
					18								
					20								

LOG OF BORING DO59.GPJ MWH WC.GDT 5/22/03

MWH

Boring ID: **020-SB-11**

Borehole Diam. (in.): 7.25	Total Depth (ft): 60.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-020
Drill Start Date: 01-29-2003	Start Time: 09:20	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-29-2003	Finish Time: 11:35	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	
Comments: 1/29/03		Well Comp. Date: N/A	Completion Time: N/A
Samplers: Split Spoon		Soil Backfill Date: 01-29-2003	Backfill Time:

Sample Interval Retained Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
								Surface: Shrubs, organics					
A	30 100 100	1 1 2	0 0		0		SM	Silty Sand dark reddish brown (5YR 3/4) very loose moist no odor medium grain sand organics			60	20	20
A	0 100 100	2 2 1	0 0				SP	BZ=0 0ppm Poorly Graded Sand, yellowish brown (10YR 5/4), very loose moist no odor medium grain sand, trace silt			98		2
A	50 100 100	5 8 8			5		SP	Poorly Graded Sand, yellowish red (5YR 5/6), loose, moist orange color iron staining throughout fine to medium sand with trace silt			70	25	5
A	100 100 100	9 11 17	0 0		10		SP	Poorly Graded Sand, yellowish red (5YR 5/6) medium dense damp to moist no odor medium grain sand			100		
					15			BZ=0 0ppm					
A	100 100 100	16 24 27	0 0		20		SP	Poorly Graded Sand yellowish red (5YR 5/6), dense damp no odor medium grain sand trace silt			80	15	5
					25			Drilling becoming more difficult at 28'					
A	100 100 100	19 31 42	0 0		30		SP	Poorly Graded Sand, yellowish red (5YR 5/6) dense, moist no odor fine to medium grain trace of clay			75	20	5
					35		SP	Poorly Graded Sand Auger cuttings at 34'?; similar to last sample					
					40								

Log Continued on Next Page

LOG OF BORIN _DO59.GPJ MWH WC.GDT 5/22/03

MWH

Boring ID: **020-SB-11**

Borehole Diam. (in.): 7.25	Total Depth (ft): 60.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-020
Drill Start Date: 01-29-2003	Start Time: 09:20	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-29-2003	Finish Time: 11:35	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	
Comments: 1/29/03		Well Comp. Date: N/A	Completion Time: N/A
Samplers: Split Spoon		Soil Backfill Date: 01-29-2003	Backfill Time:

Sample Interval / Retained / Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
	80 100	23 50/6	0 0		40		SP	Poorly Graded Sand, yellowish red (5YR 5/6) very dense moist no odor fine to medium grain sand			70	20	10
					45								
	50 100 100	31 42			50		SP	Poorly Graded Sand, yellowish brown (10YR 5/4) very dense moist no odor medium grain sand (clean)			100		
					55								
					60		SP	No sample collected Poorly Graded Sand, yellowish brown (10YR 5/4), moist, medium grain sand Total depth of boring 60' No groundwater encountered No odors			90	10	
					65								
					70								
					75								
					80								

LOG OF BORING VAFB_DO59.GPJ MWH WC.GDT 5/22/03

MWH

Boring ID: **055-TW-01**

Borehole Diam. (in.): 7.25	Total Depth (ft): 81.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-055
Drill Start Date: 02-03-2003	Start Time: 09:45	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 02-03-2003	Finish Time: 13:40	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): 77.5 ▽	Date / Time: 02-03-2003 13:46	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): 73.15 ▼	Date / Time: 02-03-2003 14:20	Driller's Name: Bill/Frank	
Comments:		Well Comp. Date: N/A	Completion Time: N/A
Samplers: Split Spoon		Soil Backfill Date: N/A	Backfill Time: N/A

Sample Interval Retained Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
					0		SP	Poorly Graded Sand dark reddish brown (5YR 3/4) moist no odor with Silt medium grain sand			70	15	15
					2								
					4								
								BZ=0 0ppm					
					6								
					8								
					10								
					12		SP-SM	Poorly Graded Sand With Silt dark reddish brown (5YR 3/4) moist no odor medium grain sand			65	15	20
					14								
					16								
					18								
					20								

Log Continued on Next Page

LOG OF BORIN 1_DO59.GPJ MWH WC.GDT 5/22/03

MWH

Boring ID: **055-TW-01**

Borehole Diam. (in.): 7.25	Total Depth (ft): 81.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-055
Drill Start Date: 02-03-2003	Start Time: 09:45	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 02-03-2003	Finish Time: 13:40	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): 77.5 ▽	Date / Time: 02-03-2003 13:46	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): 73.15 ▼	Date / Time: 02-03-2003 14:20	Driller's Name: Bill/Frank	
Comments:		Well Comp. Date: N/A	Completion Time: N/A
Samplers: Split Spoon		Soil Backfill Date: N/A	Backfill Time: N/A

Sample Interval / Retained / Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
					20								
					22			BZ=0 1ppm					
					24								
	30	16					SM	Silty Sand, dark reddish brown (5YR 3/4) moist no dense occasional gravel up to 1/4" diamiter sub angular	5		50	15	30
A	100	23	0.3		26								
A	100	28											
					28								
A	50	15			30		SP	Poorly Graded Sand, yellowish brown (10YR 5/4), moist, no odor, with silt medium grain sand with occasional gravel to 1/4' diameter sub-rounded	5		65	15	15
A	100	29	0.1										
A	100	31											
					32								
					34								
	70	20					SP-SM	Poorly Graded Sand With Silt, yellowish brown (10YR 5/4) dense moist to very moist, slight odor medium grain sand			70	15	15
A	100	35	0.7		36								
A	100	33											
								BZ=0.1ppm					
					38								
					40								

Log Continued on Next Page

LOG OF BORING VAFB_DO59.GPJ MWH WC.GDT 5/23/03

MWH

Boring ID: **055-TW-01**

Borehole Diam. (in.): 7.25	Total Depth (ft): 81.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-055
Drill Start Date: 02-03-2003	Start Time: 09:45	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 02-03-2003	Finish Time: 13:40	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): 77.5 ▽	Date / Time: 02-03-2003 13:46	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): 73.15 ▼	Date / Time: 02-03-2003 14:20	Driller's Name: Bill/Frank	

Comments: | Well Comp. Date: N/A | Completion Time: N/A

Samplers: Split Spoon | Soil Backfill Date: N/A | Backfill Time: N/A

Sample interval	Retained Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
		50	13			40		SP-SM	Poorly Graded Sand With Silt, yellowish brown (10YR 5/4), medium dense, moist to very moist, no odor, medium grain sand			65	15	20
		100	11	0.4										
	A	100	16											
						42								
						44								
	A	50	32	0.2				SP	Poorly Graded Sand, yellowish brown (10YR 5/4), very dense, moist to very moist, no odor, medium grain sand, oxidation prevalent, no dilatancy			85	10	5
	A	100	50			46								
						48								
			38			50		SP	Poorly Graded Sand, olive (5Y 5/6), dense, moist to very moist, no odor, oxidation, no dilatancy			90	10	
			16											
	A		23	0.0										
						52								
						54								
						56								
						58								
						60								

Log Continued on Next Page

LOG OF BORING DO59.GPJ MWH WC.GDT 5/22/03

MWH

Boring ID: **055-TW-01**

Borehole Diam. (in.): 7.25	Total Depth (ft): 81.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-055
Drill Start Date: 02-03-2003	Start Time: 09:45	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 02-03-2003	Finish Time: 13:40	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): 77.5 ▽	Date / Time: 02-03-2003 13:46	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): 73.15 ▼	Date / Time: 02-03-2003 14:20	Driller's Name: Bill/Frank	
Comments:		Well Comp. Date: N/A	Completion Time: N/A
Samplers: Split Spoon		Soil Backfill Date: N/A	Backfill Time: N/A

Sample Interval	Retained Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
	A	100	50/6	0 0		60		SP	Poorly Graded Sand, olive (5Y 5/6) very dense moist to very moist no odor, oxidation no dilatancy					
						62								
						64								
						66								
						68								
	A	100	50/6			70			Same as above					
						72								
					▼	74								
						76								
					▽	78								
						80								

Log Continued on Next Page

LOG OF BORING VAFB_DO59.GPJ MWH WC.GDT 5/22/03

MWH

Boring ID: **055-TW-01**

Borehole Diam. (in.): 7.25	Total Depth (ft): 81.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-055
Drill Start Date: 02-03-2003	Start Time: 09:45	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 02-03-2003	Finish Time: 13:40	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): 77.5 ▽	Date / Time: 02-03-2003 13:46	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): 73.15 ▼	Date / Time: 02-03-2003 14:20	Driller's Name: Bill/Frank	
Comments:		Well Comp. Date: N/A	Completion Time: N/A
Samplers: Split Spoon		Soil Backfill Date: N/A	Backfill Time: N/A

Sample Interval	Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
				38			80		SP	Poorly Graded Sand, pale olive (5Y 6/3) wet medium grain clean sand					
		A		50/6					SW	Well Graded Sand With Gravel, olive (5Y 5/6) very dense, no odor with some clay, sand and gravels sub-angular to sub-rounded, oxidation	10	60	20		10
							82								
							84								
							86								
							88								
							90								
							92								
							94								
							96								
							98								
							100								

Total depth of boring 81
Groundwater encountered at 73'
Slight odor at 35'

Following completion of the boring, a temporary well was constructed to a depth of 80 feet Well screen consisting of 0.020-inch slotted liner was placed from 70 to 80 feet with a filter pack consisting of #2/12 Monterey Sand placed from 67 to 80 feet. Bentonite grout was placed above the sand filter pack from 67 feet to 18 inches from surface and a traffic-rated well box was installed to surface.

LOG OF BORING DO59.GPJ MWH WC.GDT 5/22/03

MWH

Boring ID: **061-SB-01**

Borehole Diam. (in.): 7.25	Total Depth (ft): 16.5	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-061
Drill Start Date: 01-30-2003	Start Time: 12:15	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-30-2003	Finish Time: 12:38	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): 9.5 ∇	Date / Time: 01-30-2003 12:30	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	
Comments:		Well Comp. Date: N/A	Completion Time: N/A
Samplers: Split Spoon		Soil Backfill Date: 01-30-2003	Backfill Time:

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
									Surface: Grass, landscape					
						0		SM	Silty Sand dark reddish brown (5YR 3/2). moist. organic odor			10	70	20
						2			BZ=0 1ppm					
						4								
		0	4					SM	Silty Sand, dark reddish brown (5YR 3/2) loose moist. no odor organic micaceous fine sand				65	35
		80	3	0.1										
	A	100	3			6								
						8								
					∇									
		30	5			10		SM	Silty Sand, dark reddish brown (5YR 3/2) loose. wet. no odor. moderate dilatancy medium to coarse grain sand		10	70		20
	A	100	5											
		100	5											
						12								
						14								
		0	0					SM	Silty Sand, dark reddish brown (5YR 3/2) loose wet no odor high dilatancy medium to coarse sand		10	60	10	20
		100	2			16								
		100	5											
									Total depth of boring 16 5 Groundwater at 10' No odors Following completion of drilling a grab water sample was collected through the hollow stem auger					
						18								
						20								

MWH

Boring ID: **061-SB-02**

Borehole Diam. (in.): 7.25	Total Depth (ft): 16.5	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-061
Drill Start Date: 01-30-2003	Start Time: 13:00	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-30-2003	Finish Time: 13:40	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): 9 ▽	Date / Time: 01-30-2003 13:30	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	
Comments:		Well Comp. Date: N/A	Completion Time: N/A
Samplers: Split Spoon		Soil Backfill Date: 01-30-2003	Backfill Time:

Sample Interval Retained Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
					0			Surface: Grass					
							SM	Silty Sand dark reddish brown (5YR 3/2) moist organic odor					
					2								
					4		SP	At 4' Poorly Graded Sand very pale brown (10YR 7/4) damp clean (possible UST backfill ?)					
	10	4					SM	Silty Sand dark reddish brown (5YR 3/2) moist, no odor, fine sand, occasional gravel	2			63	35
	10	4											
A	100	3			6								
								BZ=0.2ppm					
					8								
		3		▽			SM	Silty Sand dark reddish brown (5YR 3/2) loose, wet, no odor occasional 1/4' diameter sub-angular gravels	5		65	15	15
		4											
A		3			10								
					12								
					14								
	0	3					SM	Silty Sand With Gravel, dark reddish brown (5YR 3/2), loose, wet, no odor, medium grain sand gravel of maximum diameter of 1/2" angular to sub-angular	10		50	10	30
	100	4											
A	100	2			16								
								Total depth of boring 16.5' Groundwater encountered at 9'-10' No odors Following completion of drilling a grab water sample was collected through the hollow stem auger					
					18								
					20								

LOG OF BORING VAFB_DO59.GPJ MWH WC.GDT 5/21/03

MWH

Boring ID: **061-SB-03**

Borehole Diam. (in.): 7.25	Total Depth (ft): 16.5	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-061
Drill Start Date: 01-30-2003	Start Time:	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-30-2003	Finish Time:	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): 9 ▽	Date / Time: 01-30-2003 14:25	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	

Comments: | Well Comp. Date: N/A | Completion Time: N/A

Samplers: Split Spoon | Soil Backfill Date: 01-30-2003 | Backfill Time:

Sample Interval	Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
							0			Surface: Grass					
									SM	Artificial fill (tank cavity) Silty Sand dark reddish brown (5YR 3/2) moist organic odor fine grain sand				65	35
							2								
							4								
			20	4					SP	Poorly Graded Sand very pale brown (10YR 7/4) damp no odor medium grain sand					
			100	4	0 0										
		A	100	6			6		SM	Silty Sand dark reddish brown (5YR 3/2) loose damp to moist no odor fine sand				80	20
							8			BZ=0 2ppm					
						▽									
			0	4			10		SP	Poorly Graded Sand, dark reddish brown (5YR 3/4) moist to wet no odor medium grain sand moderate dilatancy trace silt			95		5
			100	5											
		A	100	5											
							12								
							14								
			10	1					SP	Poorly Graded Sand, dark reddish brown (5YR 3/2), loose, wet no odor medium to fine sand with occasional gravel up to 1" diameter angular			60	25	15
			100	2											
		A	100	2			16								
										Total depth of boring 16.5 Groundwater encountered at 9'-10' No odors Following completion of drilling a grab water sample was collected through the hollow stem auger					
							18								
							20								

DO59.GPJ MWH WC.GDT 5/23/03

LOG OF BORING

MWH

Boring ID: **061-SB-04**

Borehole Diam. (in.): 7.25	Total Depth (ft): 16.5	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-061
Drill Start Date: 01-30-2003	Start Time:	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-30-2003	Finish Time:	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): 9 ▽	Date / Time: 01-30-2003 15:30	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	
Comments:		Well Comp. Date: N/A	Completion Time: N/A
Samplers: Split Spoon		Soil Backfill Date: 01-30-2003	Backfill Time:

Sample Interval / Retained Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
					0								
					2								
					4								
	100	3					SM	Silty Sand dark reddish brown (5YR 3/2) loose moist no odor fine sand organics			5	65	30
	100	5	0 0		6								
A	100	5											
					8								
	10	7		▽			SW-SM	Well Graded Sand With Silt And Gravel, dark reddish brown (5YR 3/4), medium dense, wet no odor, medium grain sand gravel up to 1/2" diameter rounded to angular	30	10	40	10	10
	100	12											
A	100	10			10								
					12								
					14								
	20	4					GP-GM	Poorly Graded Gravel With Silt And Sand, dark reddish brown (5YR 3/4) wet no odor, gravel ranged from 1/4" to 2" angular to sub-angular	55		35		10
	50	5											
A	100	4			16								
								Total depth of boring 16.5' Groundwater encountered at 9-10' No odors Following completion of drilling, a grab water sample was collected through the hollow stem auger					
					18								
					20								

LOG OF BORING VAFB_DO59.GPJ MWH WC.GDT 5/23/03

MWH

Boring ID: **061-SB-05**

Borehole Diam. (in.): 7.25	Total Depth (ft): 16.5	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-061
Drill Start Date: 01-30-2003	Start Time: 16:00	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-30-2003	Finish Time:	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): 9 ▽	Date / Time: 01-30-2003 16:15	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	
Comments:		Well Comp. Date: N/A	Completion Time: N/A
Samplers: Split Spoon		Soil Backfill Date: 01-30-2003	Backfill Time:

Sample Interval	Retained Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0								
						2								
						4								
		0	2					SM	Silty Sand loose, no odor fine grain sand slightly plastic			10	85	5
		50	3	0 0										
	A	100	3			6								
						8								
		0	3		▽			SP	Poorly Graded Sand, dark reddish brown (5YR 3/4), loose moist to wet no odor medium grain sand trace silt			95		5
		100	5											
	A	100	5			10								
						12								
						14								
		0	2					SP	Poorly Graded Sand dark reddish brown (5YR 3/4), loose, wet no odor clean			100		
		30	2			16								
	A	100	2											
									Total depth of boring 16.5' Groundwater encountered at 9 -10 No odors Following completion of drilling, a grab water sample was collected through the hollow stem auger					
						18								
						20								

LOG OF BORING DO59.GPJ MWH WC.GDT 5/21/03

APPENDIX E
WASTE MANIFESTS

RISC MANAGEMENT JOINT VENTURE

BUILDING 9505
VANDENBERG A.F.B. CA 93437
(805) 606-7571 (805) 734-2237 FAX
7:30 AM - 3:30 PM Mon. - Fri.
8:30 AM - 10:00 AM Sat.

Bill Acct: MONT
Montgomery Watson
Haul Acct: PACPET
Pacific petroleum

Ticket#: 11321

Vehicle#: 8442
MT = 20 - NO-CHARGE
MT = 14 - CLEAN SOIL
DT = 8 - DAILY COVER AREA

Tlr/Cont#:
PT = 4 - No Charge
OR = 8 CONTR. OTH

Date 03/12/03
Time 13:24

Contract Number

	LBS	Tons
Gross	41880	20.94
Tare	26100	13.05
NET->	15780	7.89

Street / Bldg Number

Signature: Alfonso Glez I.

Print Name Alfonso Gonzalez

RISC MANAGEMENT JOINT VENTURE

BUILDING 9505
VANDENBERG A.F.B. CA 93437
(805) 606-7571 (805) 734-2237 FAX
7:30 AM - 3:30 PM Mon. - Fri.
8:30 AM - 10:00 AM Sat.

Bill Acct: MONT
Haul Acct: PACPET
Pacific petroleum

Ticket#: 11322

Vehicle#: 8[illegible]
MT = 20 - NO CHARGE
MT = 14 - [illegible]
DT = 8 - DAILY COVER AREA

Tlr/Cont#:
PT = 4 - No Charge
OR = 8 - CONTR. OTH

Date 03/12/03
Time 14:14

Contract Number

	LBS	Tons
Gross	42380	21.19
Tare	[illegible]	[illegible]
NET->	16287	8.14

Street / Bldg Number

Signature: Alfonso Glez I

Print Name Alfonso Gonzalez

RISC MANAGEMENT JOINT VENTURE

BUILDING 9505
VANDENBERG A.F.B. CA 93437
(805) 606-7571 (805) 734-2237 FAX
7:30 AM - 3:30 PM Mon. - Fri.
8:30 AM 10:00 AM Sat.

Bill Acct: MONT
montgomery watson
Haul Acct: PACPET
Pacific petroleum

Ticket#: 11323 Scl hand: [illegible]

Vehicle#: 8442
TT = 20 - NO-CHARGE
MT = 14 - CLEAN SOIL
DT = 8 - DAILY COVER AREA

Tlr/Cont#:
PT = 4 - No Charge
OR = 8 - CONTR. OTH

	In	Out
Date	03/12/03	[illegible]
Time	15:05	[illegible]

	Lbs	Tons
Gross	47360	23.68
Tare	26100	13.05
NET	21260	10.63

Contract Number

Street / Bldg Number

Signature: Alfonso Glez I

Print Name Alfonso Gonzalez

RISC MANAGEMENT JOINT VENTURE

BUILDING 9505
VANDENBERG A.F.B. CA 93437
(805) 606-7571 (805) 734-2237 FAX
7:30 AM - 3:30 PM Mon. - Fri.
8:30 AM - 10:00 AM Sat.

Bill Acct: MONT
montgomery watson
Haul Acct: PACPET
Pacific petroleum

Ticket#: 359

Sol'hand: [illegible]

Vehicle#: 8442
TT = 20 - NO-CHARGE
MT = 14 - CLEAN SOIL
DT = 8 - DAILY COVER AREA

Tlr/Cont#:
PT = 4 - No Charge
OR = 8 - CONTR. OTH

	In	Out
Date	[illegible]/08/03	[illegible]
Time	13:17	[illegible]

	Lbs	Tons
Gross	50100	25.05
Tare	26100	13.05
NET-)	24000	12.00

Contract Number

Street / Bldg Number

Signature: Abel Martinez

Print Name ABEL Martinez

Tetra Tech, Inc.

Wastewater Control #: #1080

Date: 13 MAY 03

REQUEST FOR PROCESSING NON-HAZARDOUS WASTEWATERS AT THE VANDENBERG AFB INDUSTRIAL WASTEWATER TREATMENT PLANT (IWTP)

Wastewater Originator Identification

Facility: ADC/UST SITES

Shop Code: NA 449ET

Wastewater Holding Location: Agena Tank Farm

Wastewater Originating Location: Multiple AOCs - BPA DD 18, 59, and 60

Method of Cost Reimbursement:

Container Number(s) #8022-001 (2,500 gallon Black Poly Tank)

Process Description

Source of Water: IDW Decon and Well Purge H2O

Description of Process Generating Wastewater: Decontamination Water & Well Purge H2O

Area of Concern: 003, 020, 033, 055, 058, 061, 072, 077, 130, 132, 133, 134, 135 PLUS UNDERGROUND STORAGE TANK SITES 966, 10723, 13607, 21180 and 23241. Per telecon MS/PAC

Approximate Quantity of Wastewater: 2,200 gallons

Expected Recurring Frequency of Wastewater Generation: one time

Likely Contaminants and Contaminant Sources* (Attach MSDS(s) when applicable): TPH, VOCs, & SVOCs

Other Contributing Processes/Wastewaters:

* Wastewaters containing hydrazine residual as a byproduct of the industrial process may require bioassay study IAW CCR Title 22 requirements.

Wastewater Characterization

Wastewater Analytical Results Attached? (Y) N

If No, Explain

If Yes, Date of Analytical Results (Must be less than 1 year old): 04/09/03

EPA Methods Conducted and Sample Number(s): Sample IDW-040903, pH (9040H), metals (6010B/7470A), TPH-g/D/mo (8015B); VOCs (8260B), SVOCs (8270C)

Sampling Conducted By: MWH

Analyses Conducted By (Laboratory): APCL

Process Change Since Last Characterization? Y (N)

If Yes, Description of Change:

Wastewater pH: 7.60

Sampled By: MWH

Method of pH Analysis: Meter / Paper (Other) Method 9040

Date: 04/09/03

1. Does this Wastewater contain a chemical constituent identified in CCR Title 22, Div 4.5, Ch 11, Art 5, App X? (Y) ~~N~~ Per telecon MS/PAC
2. Does Wastewater Exhibit a Hazardous Characteristic as defined in CCR Title 22, Div 4.5, Ch 11, Art 3 (Corrosivity/Ignitability/Reactivity/Toxicity)? Y (N)
3. Does this Wastewater meet the definition of a Listed Waste as defined in CCR Title 22, Div 4.5, Ch 11, Art 4? Y (N)
4. Was this Wastewater mixed with or derived from any other Hazardous Waste? Y (N)
5. Does Wastewater contain Volatile Organic Compounds or Other Organic Solvents? Y (N)

Management Practices

Best Management Practices in Place (if no, attach explanation) (Housekeeping/Inspections/Documentation/Waste Minimization Efforts)? (Y) N

Request Date for Removal Services Needed: 04/28/03

Pick up Point of Contact: Michael Schulman

Phone Number: 805-560-7214

cell (805) 895-9558

FAX 805 560 9805

Special Requests:

Originator Certification

I certify that the information provided above is complete and accurate to the best of my knowledge. Based upon my knowledge of the process and inquiry of qualified personnel, this wastewater does not meet state or federal hazardous waste classification criteria and I know of no special wastestream constituent that would impact wastewater processing at the IWTP. To the best of my knowledge, samples and analytical results submitted in coordination with this request are representative of this Wastewater.

Printed Name: Michael Schulman

Title: Environmental Scientist

Company/Organization: MWH

Signature:

Date: 04/18/03

Phone #: 805-560-7214

Military Certification (*Military representative responsible for oversight, if applicable*)

I certify under penalty of law that this document and all attachments were prepared under my direction and/or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based upon my inquiry of the person or persons who managed the system or those persons directly responsible for gathering the information, it is, to the best of my knowledge, complete and accurate. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine and imprisonment for knowingly violating associated regulatory requirements.

Printed Name: Amena Atta

Title: Environmental Engr

Company/Organization: 30 CES/CEVR

Signature: Amena Atta

Date: 4/21/03

Phone #: 805-605-7249

Form Tt-O-032 (11/99)

TETRA TECH, INC

Tt # # 1080

Request Received: BLDG.980 / IWTP / BLDG. 7015 / Tt-SMA / Tt-SBA (circle one)

Date: 5/13/03 Name: Tony Rojas TC# 99007-98

WASTEWATER DISPOSAL RECORD

TRANSPORT TO:

✓ Evaporation Pond A or B (circle one)

___ Tank 501 502 503 505 (circle one)

___ UV Ozone Skid

___ Other (specify)___

Post-it® Fax Note 7671	Date 20 May	# of pages ▸ 2
To Mike Schedlman	From Peter Cole	
Co./Dept. MWH	Co. Tetratech	
Phone # 895-9558	Phone # 805-605-1223	
Fax # 560-9905	Fax # 805-734-8814	

APPROVED BY:

IWTP Operations: Peter Q. Cole Date: 15 May 03

Tt Management: Tony Rojas Date: 5/13/03

Tt Safety (for hydrazine wastewaters):___ Date:___

Comments: ON HOLD FOR QC REPORT - Rec'd 5/13/03 TR

Container ID #'s:___

ONE EVENT TASK ✓ LEAVE OPEN UNTIL: Date:___

TRANSPORTED / COMPLETED BY:

T__ T&C ✓ Name (Print): BRIAN SIGNORELLI Name (Print)___

Signature: Brian Signorelli Signature:___

Quantity (estimate in gal.): 2000 Date: 19 MAY 03

*Comments:*___

Form Tt-O-036 (02/03)

FOLLOWING WASTEWATER DISPOSAL OPERATION, PROVIDE THIS COMPLETED FORM TO IWTP OPERATIONS

State of California—Environmental Protection Agency
Form Approved OMB No. 2050-0039 (Expires 9-30-96)
Please print or type. *Form designed for use on elite (12-pitch) typewriter.*

See Instructions on back of page 6.

Department of Toxic Substances Control
Sacramento, California

95941124

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CA9570025149 — Manifest Document No.: 03126
2. Page 1 of 1

Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address
Vandenberg AFB AOC-99
P.O. Box 5512
Vandenberg AFB, Ca. 93437

4. Generator's Phone (805) 734-0726

A. State Manifest Document Number: 959411
B. State Generator's ID:

5. Transporter 1 Company Name: PACIFIC PETROLEUM 93457
P.O. BOX 2297 ORCUTT CA
6. US EPA ID Number: CAD020168563

C. State Transporter's ID: 805 925 1947
D. Transporter's Phone:

7. Transporter 2 Company Name:
8. US EPA ID Number:

E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address
Chemical Waste Management
35251 Old Skyline Rd
Kettleman City, Ca. 93239

10. US EPA ID Number: CAT000646117

G. State Facility's ID: CAT000646117
H. Facility's Phone: 559-386-9711

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	15. Waste Number
a. Non-RCRA Hazardous Waste Solid	001	DT	47300 ~~00018~~	P ~~Y~~	State 611 EPA/Other Non-RCRA
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above: Profile # EB3607

K. Handling Codes for Wastes Listed Above: 03

15. Special Handling Instructions and Additional Information
Emergency Contact - 925-299-9225
Site: Bldg 8305

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
Mark Duncan for V.A.F.B.	[signature] for V.A.F.B.	09	11	03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Jim Cole	[signature]	09	11	03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day
Vicky Schwendt	[signature]	09	11 03

AC# 9A80981 #376

DO NOT WRITE BELOW THIS LINE

DTSC 8022A (1/95)
EPA 8700—22

White: TSDF SENDS THIS COPY TO DTSC WITHIN 30 DAYS.
To: P.O. Box 3000, Sacramento, CA 95812

WEIGHT (LB)	TIME	DATE	COMMODITY: HAZARDOUS WASTE

DEPUTY WEIGHMASTER

GROSS:

TARE: 12:19 9-11-03 80380 lb 40.19 ton

NET: 13:03 03/11/03 33220 lb 16.61 ton

YARDAGE: 18 47160

GENERATOR	MANIFEST	PROFILE NO.
VB AFB	95541124	FB 3607
TRACTOR LICENSE NO.	BIN #	RECEIPT #
9A 80981		15[illegible]

CHEMICAL WASTE MANAGEMENT, INC.
WEIGHMASTER weighed at
35251 Old Skyline Road
Kettleman City, CA

NO: 184951

WEIGHMASTER CERTIFICATE

This is to certify that the following described commodity was weighed, measured, or counted by a WEIGHMASTER, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by CHAPTER 7 (commencing with § 12700) of Division 5 of the California Business & Professions Code, administered by the Division of Measurement Standards of California Department of Food and Agriculture.

0

9/04
2 BK
1240

BRA Soil 80 Kl

State of California—Environmental Protection Agency
Form Approved OMB No. 2050-0039 (Expires 9-30-96)
Please print or type. Form designed for use on elite (12-pitch) typewriter.

See Instructions on back of page 6.

Department of Toxic Substances Control
Sacramento, California

95941125

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CA 9 5 7 0 0 2 5 1 4 9
Manifest Document No.: 0 3 1 2 8
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Vandenberg AFB AOC-99
P.O. Box 5512
Vandenberg AFB, Ca. 93437

4. Generator's Phone (805 734-0726

A. State Manifest Document Number: 959411
B. State Generator's ID:
C. State Transporter's ID:
D. Transporter's Phone: (805) 680-3181
E. State Transporter's ID:
F. Transporter's Phone:
G. State Facility's ID: CAT000646117
H. Facility's Phone: 559-386-9711

5. Transporter 1 Company Name: BAYVIEW
6. US EPA ID Number: CAD982519709

7. Transporter 2 Company Name:
8. US EPA ID Number:

9. Designated Facility Name and Site Address
Chemical Waste Management
35251 Old Skyline Rd
Kettleman City, Ca. 93239

10. US EPA ID Number: CAT000646117

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. NON-RCRA Hazardous Waste Solid	001	DT	49,160 ~~00018~~	P ~~Y~~ M	State / EPA/Other
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above: Profile # EB3607

K. Handling Codes for Wastes Listed Above: 03

15. Special Handling Instructions and Additional Information
Emergency Contact # 925-299-9225 Site: Bldg 8305

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Mark Duncan for V.A.F.B.
Signature: [signature]
Month Day Year: 09 11 03

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Jorge A. Perez
Signature: Jorge A. Perez
Month Day Year: 09 11 03

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Vicki Schwindt
Signature: [signature]
Month Day: 09 11 03

GENERATOR / TRANSPORTER / FACILITY

DO NOT WRITE BELOW THIS LINE

White: TSDF SENDS THIS COPY TO DTSC WITHIN 30 DAYS.
To: P.O. Box 3000, Sacramento, CA 95812

DTSC 8022A (1/95)
EPA 8700-22

WEIGHT (LB)	TIME	DATE	COMMODITY: HAZARDOUS WASTE

DEPUTY WEIGHMASTER

GROSS:

TARE: 12:22 9-11-03 80560 lb 40.28 ton

NET: ~~13:27 09/11/03~~ 31160 lb 15.58 ton

YARDAGE: 49400

GENERATOR	MANIFEST	PROFILE NO.
VB-AFB	959 41125	EB 3607
TRACTOR LICENSE NO.	BIN #	RECEIPT #
UP 08461		454722

CHEMICAL WASTE MANAGEMENT, INC.
WEIGHMASTER weighed at
35251 Old Skyline Road
Kettleman City, CA

NO: 184954

WEIGHMASTER CERTIFICATE

This is to certify that the following described commodity was weighed, measured, or counted by a WEIGHMASTER, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by CHAPTER 7 (commencing with § 12700) of Division 5 of the California Business & Professions Code, administered by the Division of Measurement Standards of California Department of Food and Agriculture.

9/14
38.78
12.42

Ben Jon Cooks

State of California—Environmental Protection Agency
Form Approved OMB No. 2050-0039 (Expires 9-30-96)
Please print or type. *Form designed for use on elite (12-pitch) typewriter.*

28,140

See Instructions on back of page 6.

Department of Toxic Substances Control
Sacramento, California

95941126

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CA9570025149
Manifest Document No.: 0312 7
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Vandenberg AFB AOC-99
P.O. Box 5512
Vandenberg AFB, Ca. 93437

4. Generator's Phone (805) 734-0726

A. State Manifest Document Number: 959411
B. State Generator's ID:
C. State Transporter's ID:
D. Transporter's Phone: 805-938-7976
E. State Transporter's ID:
F. Transporter's Phone:
G. State Facility's ID: CAT000646117
H. Facility's Phone: 559-386-9711

5. Transporter 1 Company Name: Jervicon Inc
6. US EPA ID Number: CAD982519709
7. Transporter 2 Company Name:
8. US EPA ID Number:

9. Designated Facility Name and Site Address
Chemical Waste Management
35251 Old Skyline Rd
Kettleman City, Ca. 93239

10. US EPA ID Number: CAT000646117

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. NON-RCRA Hazardoud Waste Solid	001	DT	51600 ~~00018~~	P ~~Y~~	State: 011 EPA/Other:
b.					State: EPA/Other:
c.					State: EPA/Other:
d.					State: EPA/Other:

J. Additional Descriptions for Materials Listed Above: Profile # EB3607
K. Handling Codes for Wastes Listed Above: 03

15. Special Handling Instructions and Additional Information
Emergency Contact 925-299-9225 Site: Bldg8305

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
Mark Duncan for V.A.F.B	[signature] for V.A.F.B	09	11	03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Lance Minetti	[signature]	09	11	03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
Vicki Schwindt	[signature]	09	11	03

DO NOT WRITE BELOW THIS LINE.

White: TSDF SENDS THIS COPY TO DTSC WITHIN 30 DAYS.
To: P.O. Box 3000, Sacramento, CA 95812

DTSC 8022A (1/95)
EPA 8700—22

WEIGHT (LB)	TIME	DATE	COMMODITY: HAZARDOUS WASTE

DEPUTY WEIGHMASTER

GROSS:

TARE: 12:23 9-11-03 79320 lb 39.66 ton

NET:

YARDAGE: 13:28 09/11/03 27860 lb 13.93 ton

51460

GENERATOR	MANIFEST	PROFILE NO.
VB-AFB	95941126	EB3607
TRACTOR LICENSE NO.	BIN #	RECEIPT #
9B89870		452234

CHEMICAL WASTE MANAGEMENT, INC.
WEIGHMASTER weighed at
35251 Old Skyline Road
Kettleman City, CA

NO: 184955

WEIGHMASTER CERTIFICATE

This is to certify that the following described commodity was weighed, measured, or counted by a WEIGHMASTER, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by CHAPTER 7 (commencing with § 12700) of Division 5 of the California Business & Professions Code, administered by the Division of Measurement Standards of California Department of Food and Agriculture.

9/01
3C B18
B42

Ben Scin Book 1

State of California—Environmental Protection Agency
Form Approved OMB No. 2050-0039 (Expires 9-30-96)
Please print or type. *Form designed for use on elite (12-pitch) typewriter.*

See Instructions on back of page 6.

Department of Toxic Substances Control
Sacramento, California

95941127

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CA9570025149 — Manifest Document No.: 03129
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Vandenberg AFB AOC-99, P.O. Box 5512, Vandenberg AFB, Ca. 93437

4. Generator's Phone: (805) 734-0726

A. State Manifest Document Number: 959411

B. State Generator's ID:

5. Transporter 1 Company Name: PACIFIC PETROLEUM

6. US EPA ID Number: CAD020168563

C. State Transporter's ID:

D. Transporter's Phone: 805 925-1947

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. State Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address: Chemical Waste Management, 35251 Old Skyline Rd, Kettleman City, Ca. 93239

10. US EPA ID Number: CAT000646117

G. State Facility's ID: CATEX0040117

H. Facility's Phone: 559-386-9711

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. NON-RCRA Hazardous Waste Solid	001	DT	46,160 ~~000~~	P ~~Y~~	State 611 EPA/Other
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above: Profile # EB3607

K. Handling Codes for Wastes Listed Above: (F) 2

15. Special Handling Instructions and Additional Information

Emergency Contact 925-299-9225 Site: Bldg 8305

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month	Day	Year
Mark Duncan for V.A.F.B	[signature] for V.A.F.B.	09	11	03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
BRIAN MAA	[signature]	09	11	03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day
Vicki Schwendt	[signature]	09	11 03

DO NOT WRITE BELOW THIS LINE.

White: TSDF SENDS THIS COPY TO DTSC WITHIN 30 DAYS
To: P.O. Box 3000, Sacramento, CA 95812

DTSC 8022A (1/95)
EPA 8700—22

WEIGHT (LB)	TIME	DATE	COMMODITY: HAZARDOUS WASTE

DEPUTY WEIGHMASTER

GROSS:

TARE: 15:11 9-11-03 75140 lb 37.57 ton

NET: 16:12 09/11/03 29100 lb 14.55 ton

YARDAGE: 46040 lbs

CHEMICAL WASTE MANAGEMENT, INC.
WEIGHMASTER weighed at
35251 Old Skyline Road
Kettleman City, CA

NO: 185056

WEIGHMASTER CERTIFICATE

This is to certify that the following described commodity was weighed, measured, or counted by a WEIGHMASTER, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by CHAPTER 7 (commencing with § 12700) of Division 5 of the California Business & Professions Code, administered by the Division of Measurement Standards of California Department of Food and Agriculture.

GENERATOR	MANIFEST	PROFILE NO.
VB-AFB	95541127	FB3607
TRACTOR LICENSE NO.	BIN #	RECEIPT #
9B20574		452360

Brian
Pacific Petro

9/04
30 BR
15:38
W

Benton Cook

State of California—Environmental Protection Agency
Form Approved OMB No. 2050-0039 (Expires 9-30-96)
Please print or type. *Form designed for use on elite (12-pitch) typewriter.*

See Instructions on back of page 6.

Department of Toxic Substances Control
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CA 9 5 7 0 0 2 5 1 4 9
Manifest Document No. 0 3 1 1 3 0
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Vandenberg AFB AOC-99
P.O. Box 5512
Vandenberg AFB, Ca. 93237

4. Generator's Phone (805) 734-0726

5. Transporter 1 Company Name
PACIFIC PETROLEUM

6. US EPA ID Number
CAD024116563

7. Transporter 2 Company Name

8. US EPA ID Number

9. Designated Facility Name and Site Address
Chemical Waste Management
35251 Old Skyline Rd
Kettleman City, Ca. 93239

10. US EPA ID Number
CAT000646117

A. State Manifest Document Number 959411
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone 559-925-3414
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID CAT000646117
H. Facility's Phone 559-386-9711

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. NON-RCRA Hazardous Waste Solid	001	DT	17,300	P Y	State 211 EPA/Other
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
PO 4500078867

K. Handling Codes for Wastes Listed Above
03

15. Special Handling Instructions and Additional Information
Emergency Contact 925-299-9225 Site: Bldg 8503

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month	Day	Year
Mark Duncan for V. A. F. B.	for V. A. F. B.	09	11	03

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
TONY MYERS		09	11	03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
Vicki Schwundt		09	11	03

DO NOT WRITE BELOW THIS LINE.

GENERATOR

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

959411 28

White: TSDF SENDS THIS COPY TO DTSC WITHIN 30 DAYS
To: P.O. Box 3000, Sacramento, CA 95812

DTSC 8022A (1/95)
EPA 8700—22

WEIGHT (LB)	TIME	DATE	COMMODITY: HAZARDOUS WASTE

GROSS:

DEPUTY WEIGHMASTER

TARE: 15:13 9-11-03 41100 lb 20.55 ton

NET: 16:08 09/11/03 23780 lb 11.89 ton

YARDAGE: 17320 Gyd

CHEMICAL WASTE MANAGEMENT, INC.
WEIGHMASTER weighed at
35251 Old Skyline Road
Kettleman City, CA

NO: 185057

WEIGHMASTER CERTIFICATE

This is to certify that the following described commodity was weighed, measured, or counted by a WEIGHMASTER, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by CHAPTER 7 (commencing with § 12700) of Division 5 of the California Business & Professions Code, administered by the Division of Measurement Standards of California Department of Food and Agriculture.

GENERATOR	MANIFEST	PROFILE NO.
VB-AFB	95941128	FB3607
TRACTOR LICENSE NO.	BIN #	RECEIPT #
5261432		4572561

TONY #364
Pacific Petro

9/11
3C B18
1529

Ben Sandoval

APPENDIX F
PHOTO DOCUMENTATION

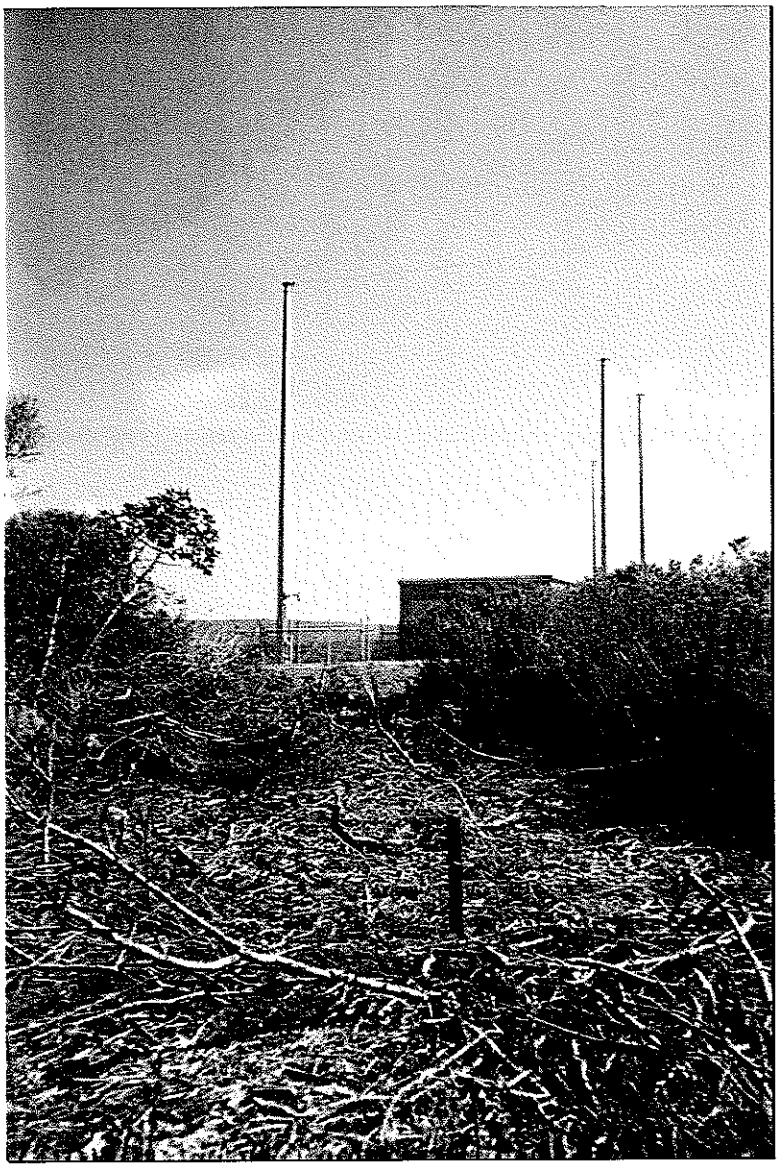


Photo No. 1 AOC 020 - View of Power Substation (Bldg 676)

MWH

DO 59 AOCS
VANDENBERG AIR FORCE BASE, CALIFORNIA

VAFB 10-03

Photo No. 2 AOC 020-SB01 View toward the Road

MWH

DO 59 AOCS
VANDENBERG AIR FORCE BASE, CALIFORNIA

VAFB 10-03

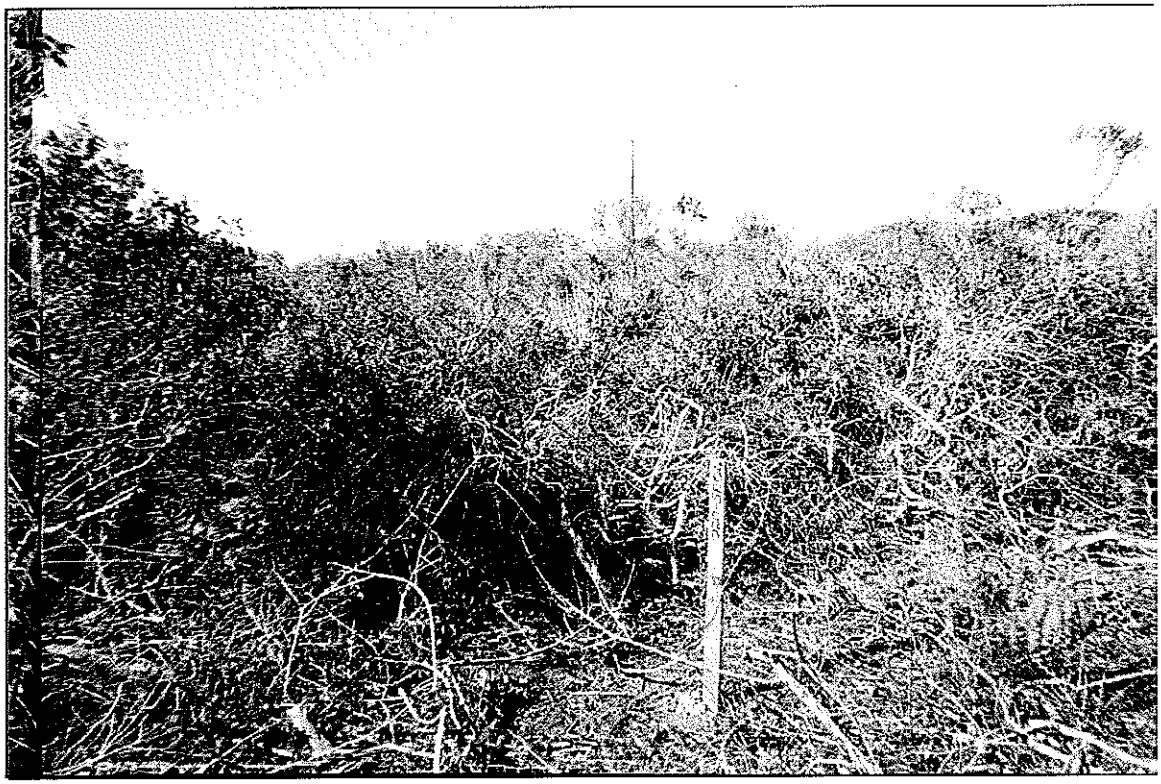


Photo No. 3 AOC 020-SB04

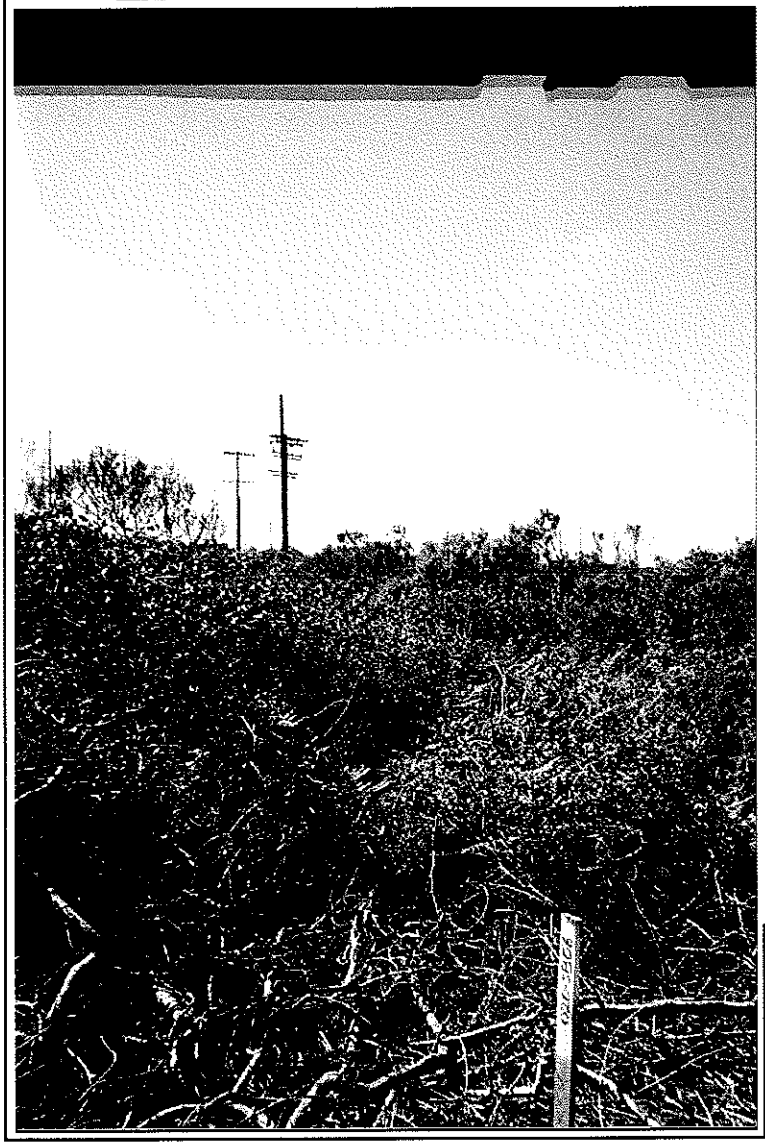


Photo No. 4 AOC 020-SB06

MWH

DO 59 AOCS
VANDENBERG AIR FORCE BASE, CALIFORNIA

Photo No. 5 AOC 020-SB08

MWH

DO 59 AOCS
VANDENBERG AIR FORCE BASE, CALIFORNIA

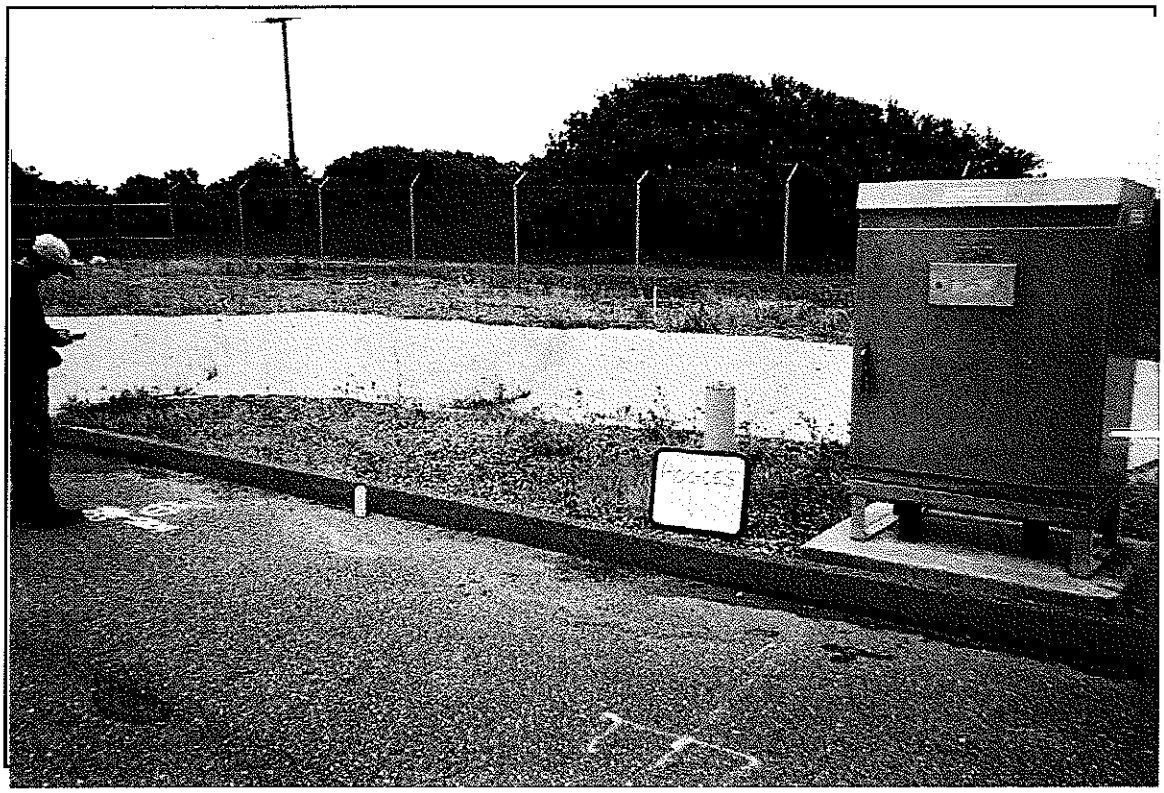
VAFB 10-03

Photo No 6 AOC 020-SB09

Photo No. 7 AOC 020-SB10

MWH

DO 59 AOCS
VANDENBERG AIR FORCE BASE, CALIFORNIA



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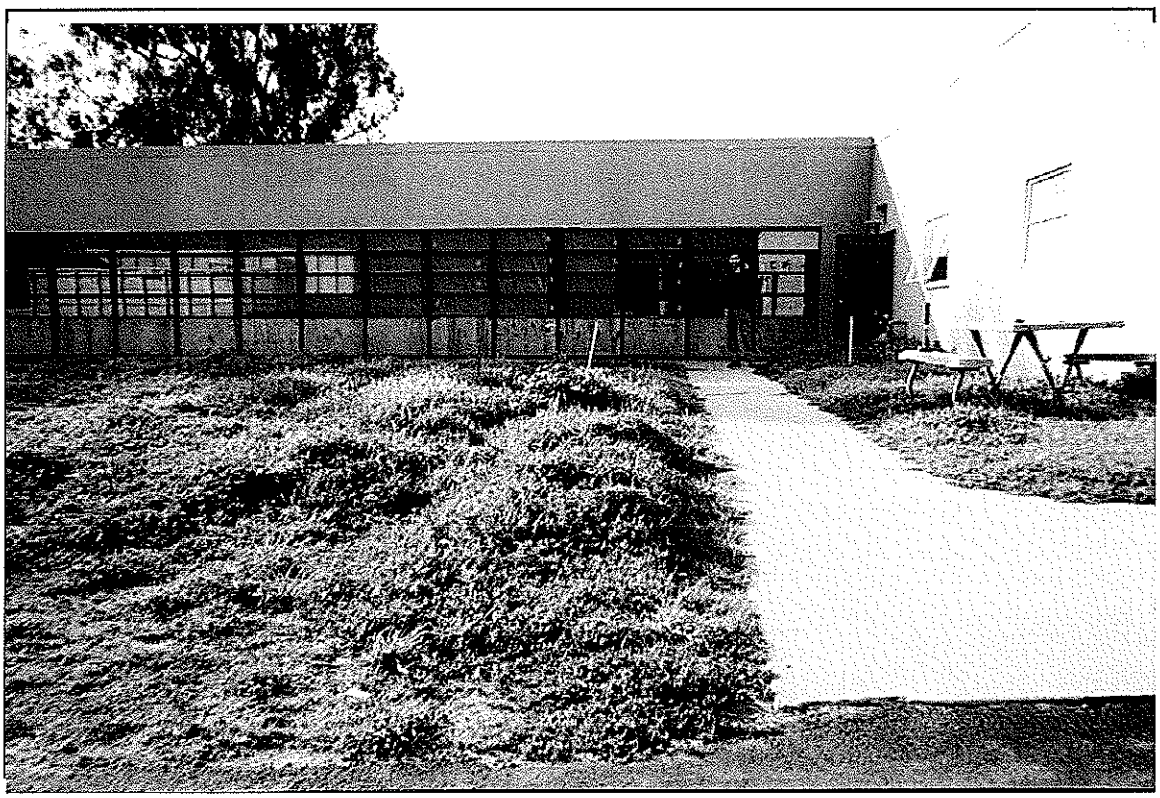

Photo No. 9 AOC 061 - View from Road

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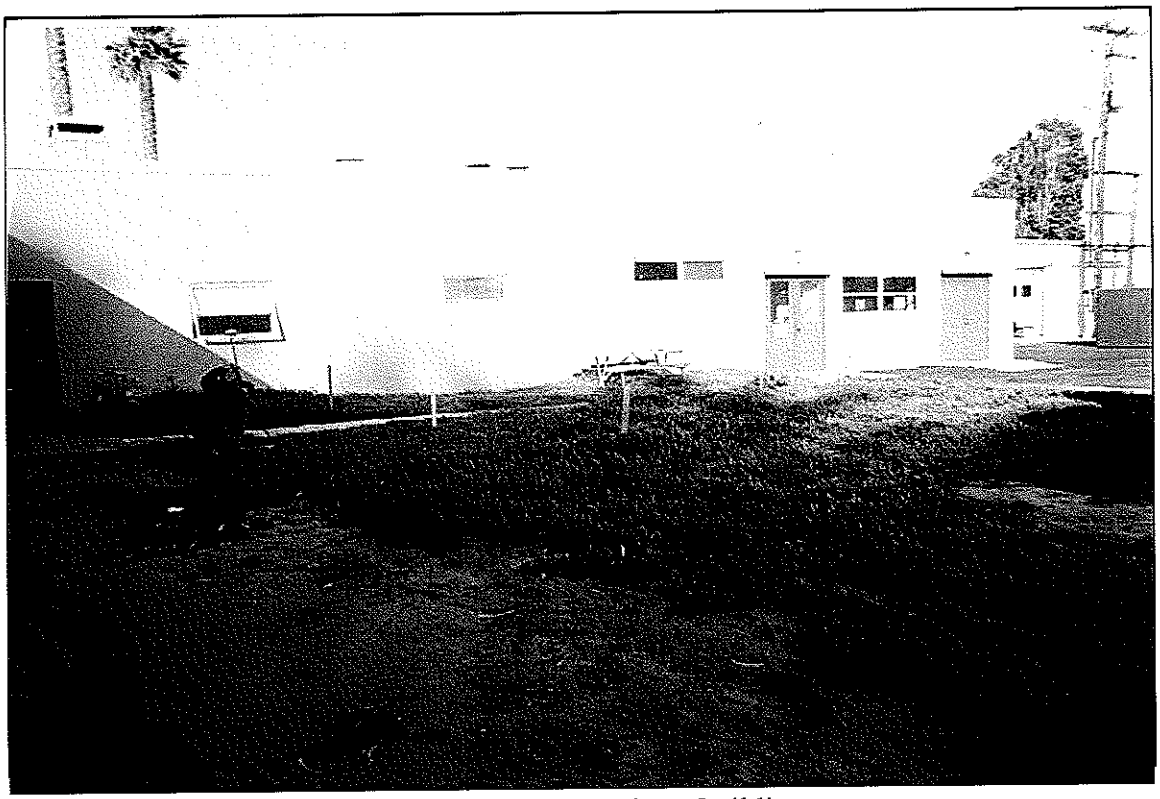

Photo No 11 AOC 061 View toward the Hot Shots Building

Photo No 12 Completed Paving of Graded Area

MWH

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Photo No. 13 Completed Paving of Graded Area-2

Photo No. 14 Completed Paving of Graded Area-3.jpg

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DO 59 AOCS
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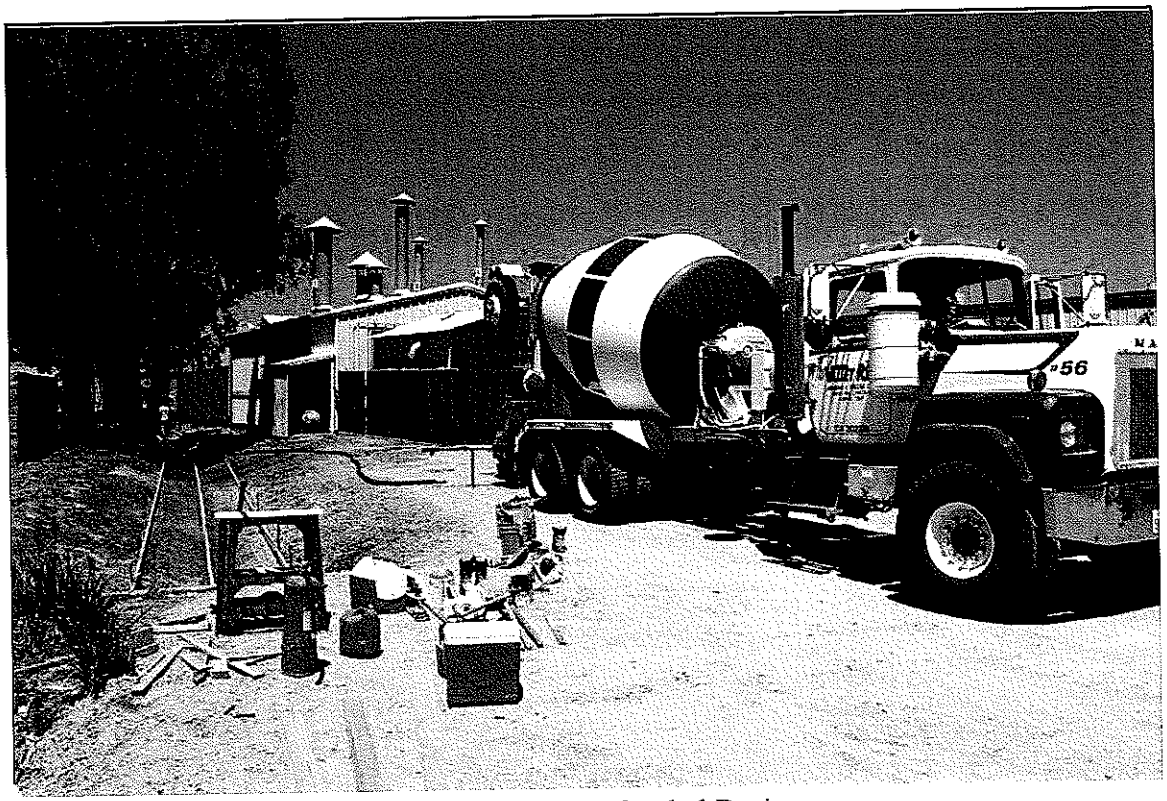

Photo No. 15 Concrete Mixer Prior to Lining Graded Drainage

Photo No. 16 Constructing Concrete Drainage

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VANDENBERG AIR FORCE BASE, CALIFORNIA

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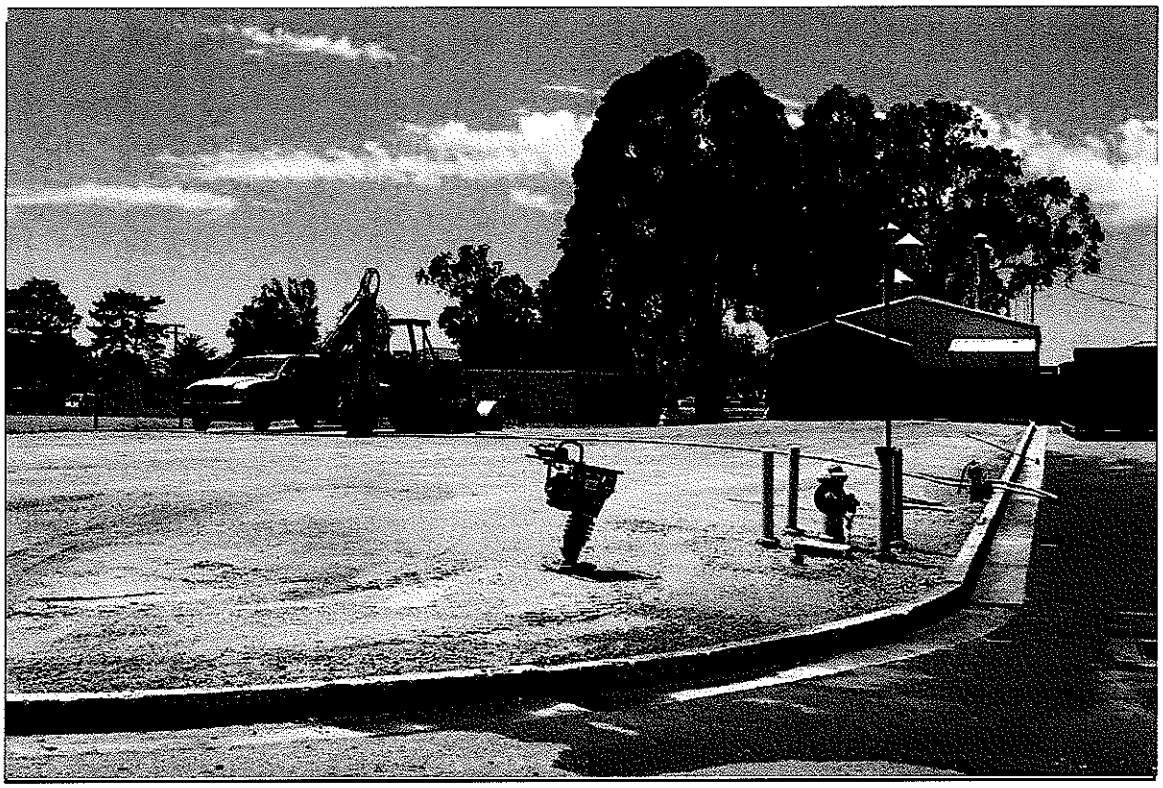

Photo No. 17 Curb Limit to Paved Area

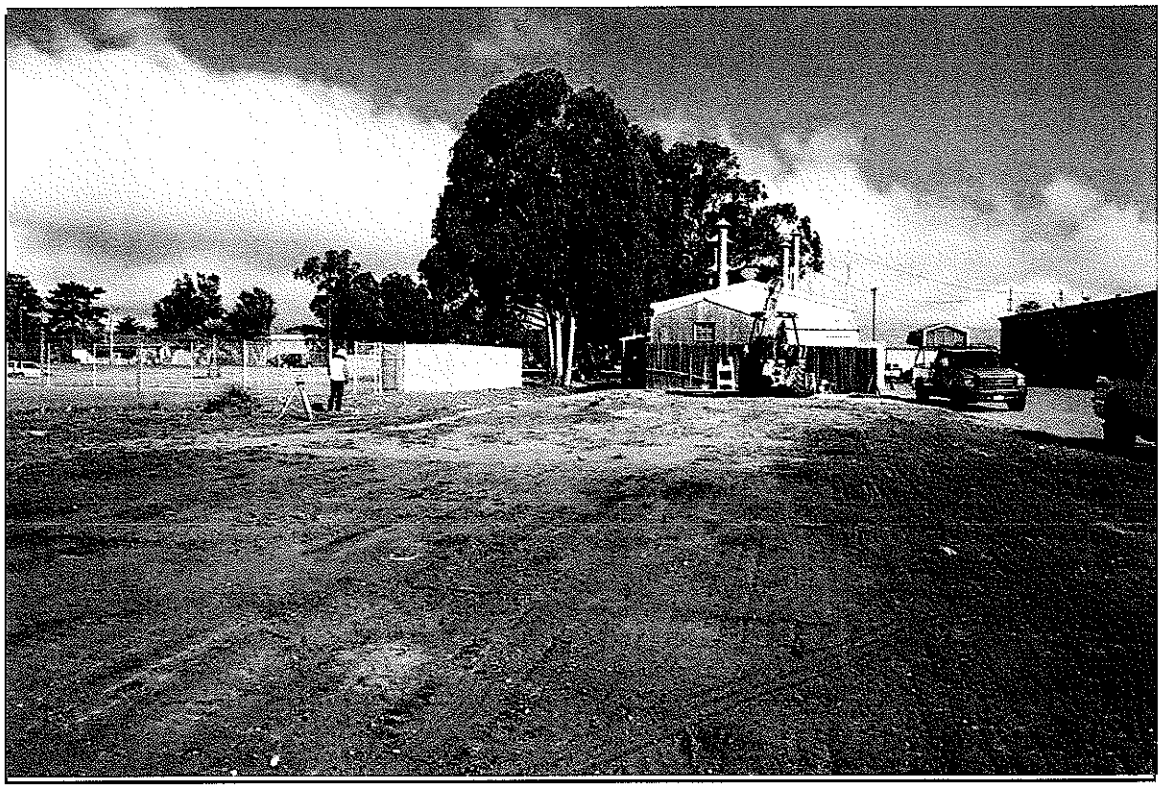

Photo No. 18 Graded Area Prior to Paving

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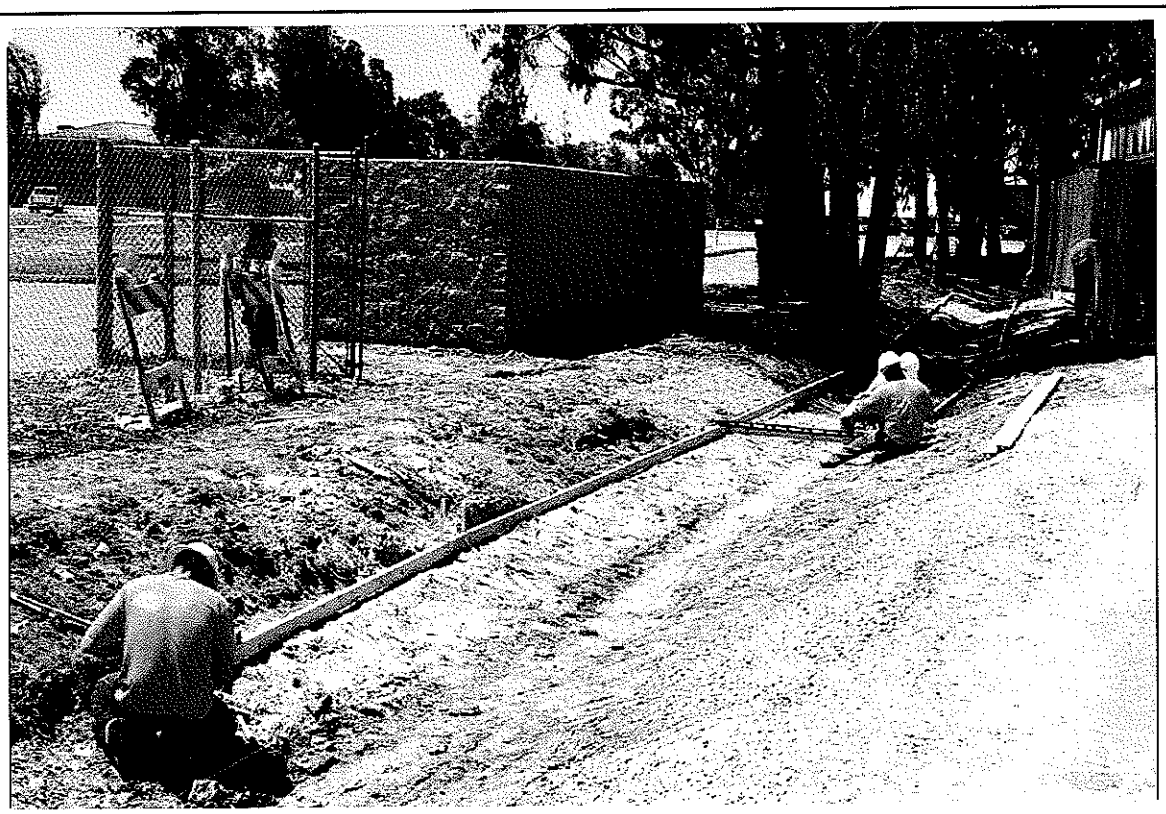

Photo No. 19 Graded Unlined Drainage-1

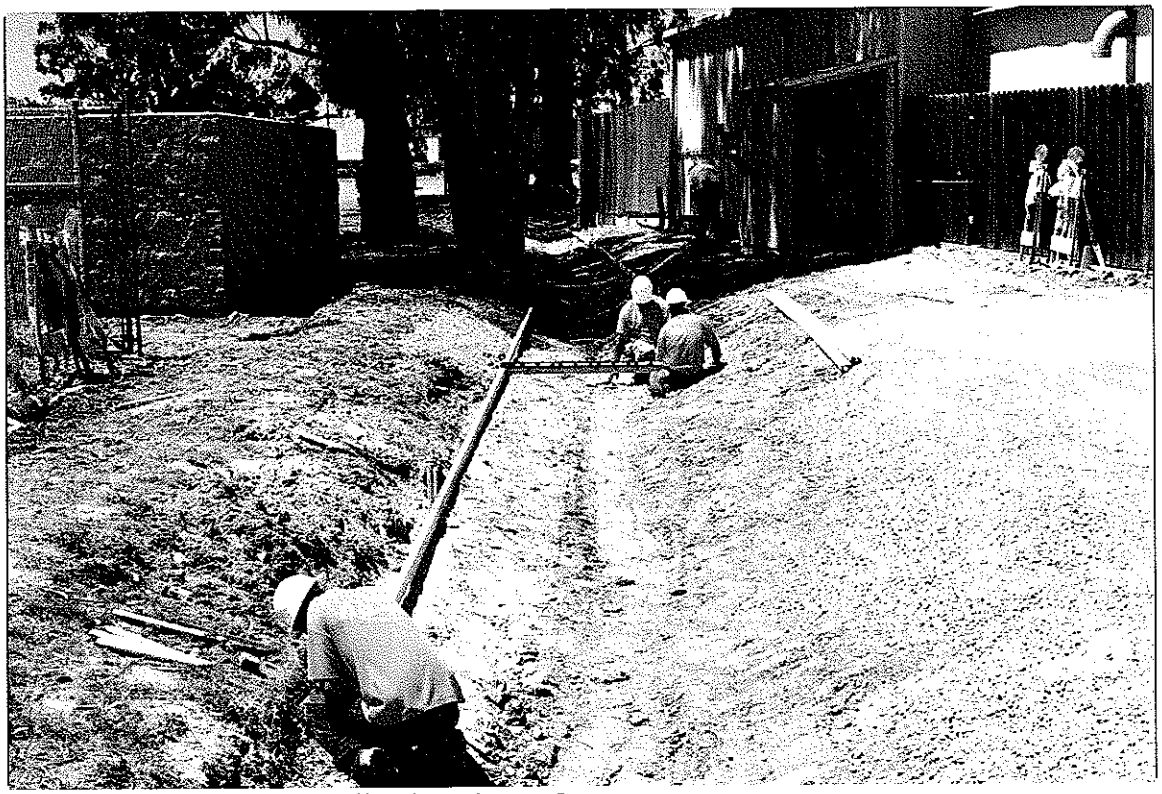

Photo No. 20 Graded Unlined Drainage-2

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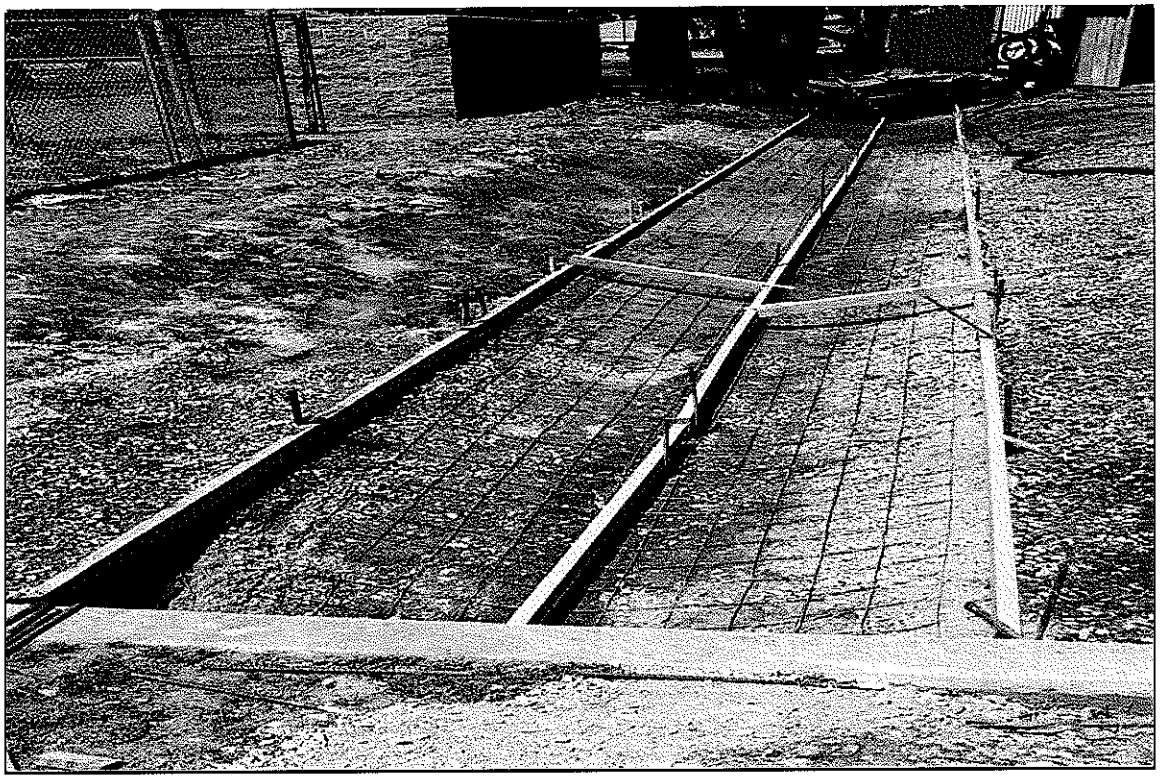

Photo No. 21 Graded Unlined Drainage-3

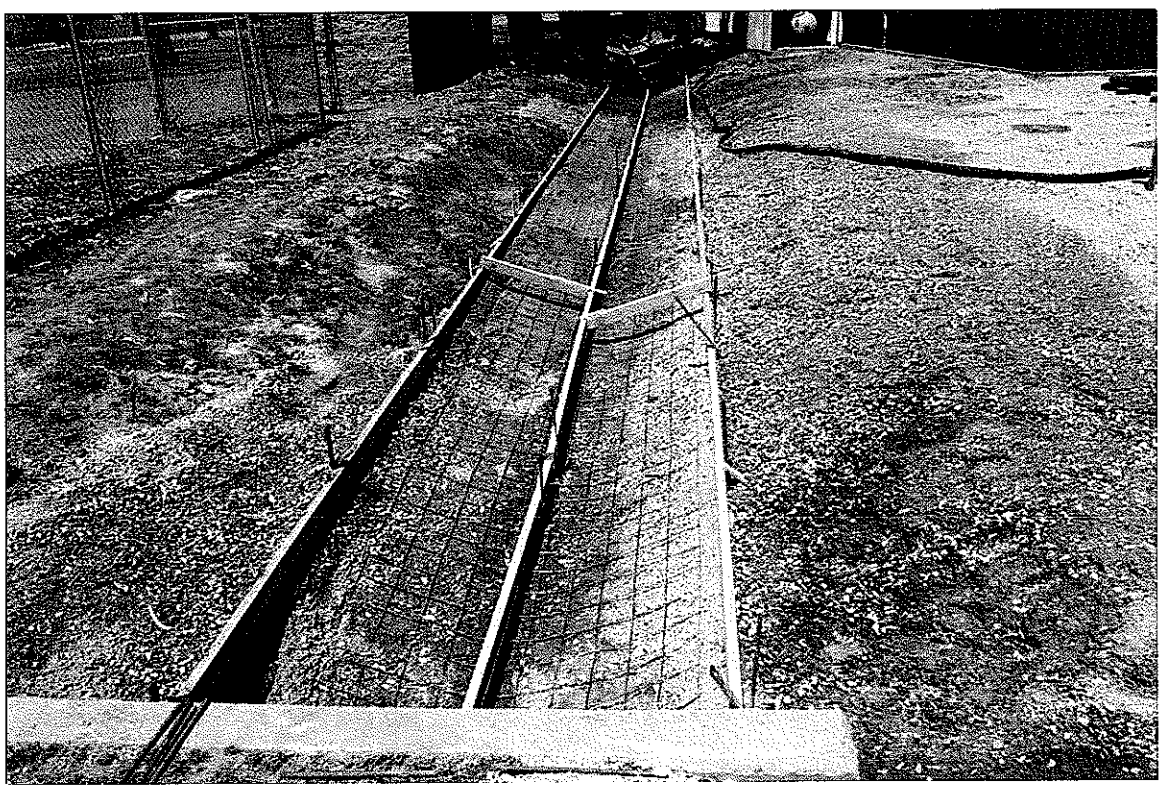

Photo No. 22 Graded Unlined Drainage-4

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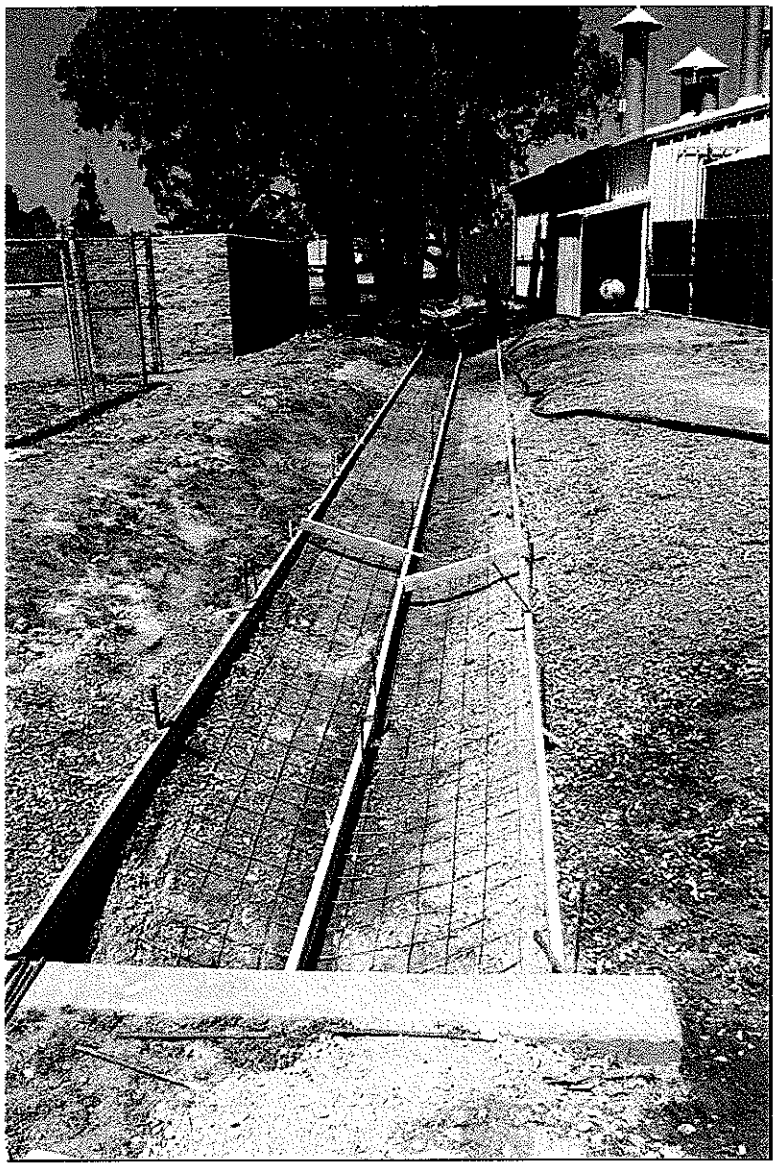

Photo No. 23 Graded Unlined Drainage-5

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Photo No. 24 Manhole Cover within Freshly Paved Area

Photo No. 25 NW View of Graded Area After Paving

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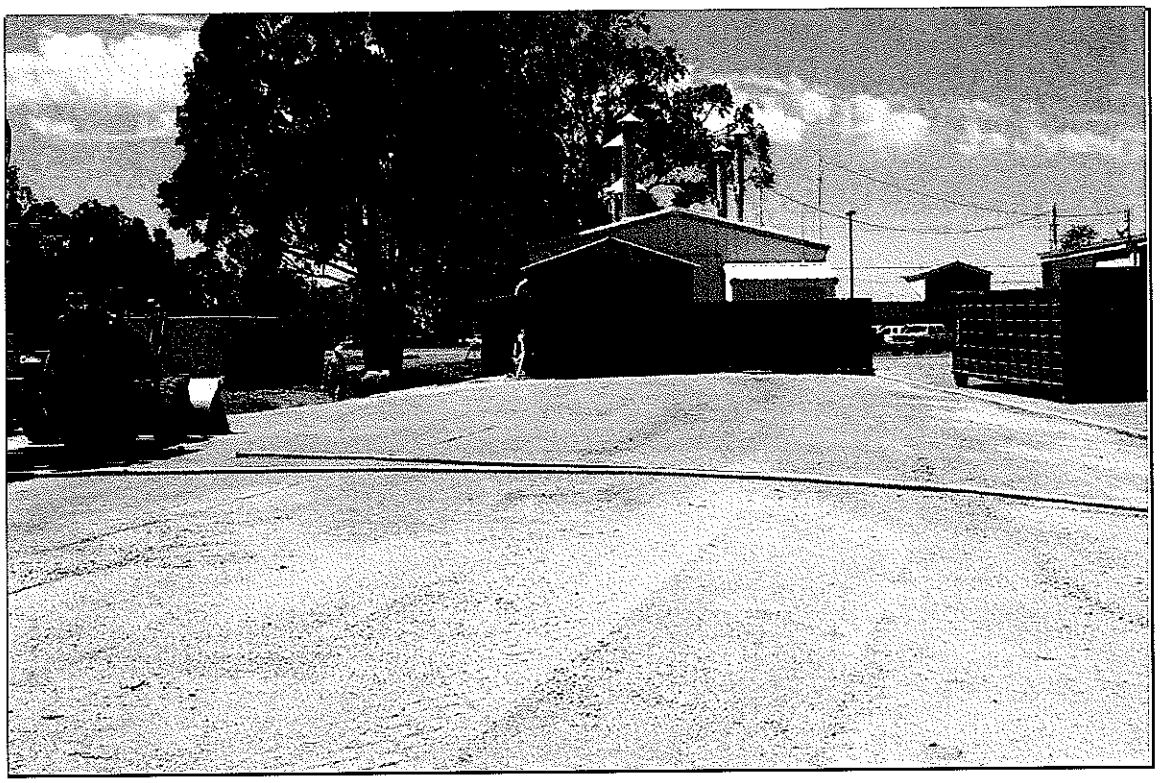

Photo No. 26 NW View of Graded Area Prior to Paving.jpg

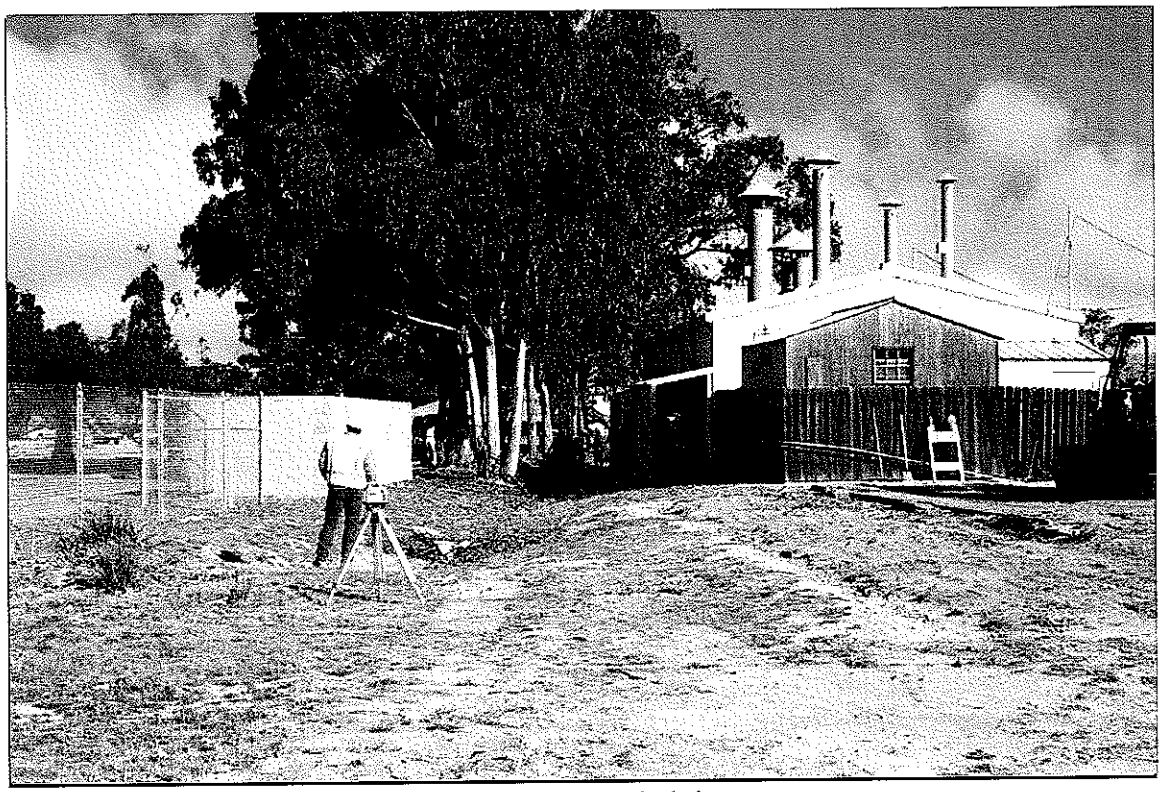

Photo No. 27 NW View of Unlined Drainage Ditch.jpg

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Photo No. 28 Paved Graded Area

Photo No. 29 Paving of Graded Area-2

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Photo No. 30 Placement of Asphalt Over Graded Area.jpg

Photo No. 31 Pouring Concrete to Line Graded Drainage.jpg

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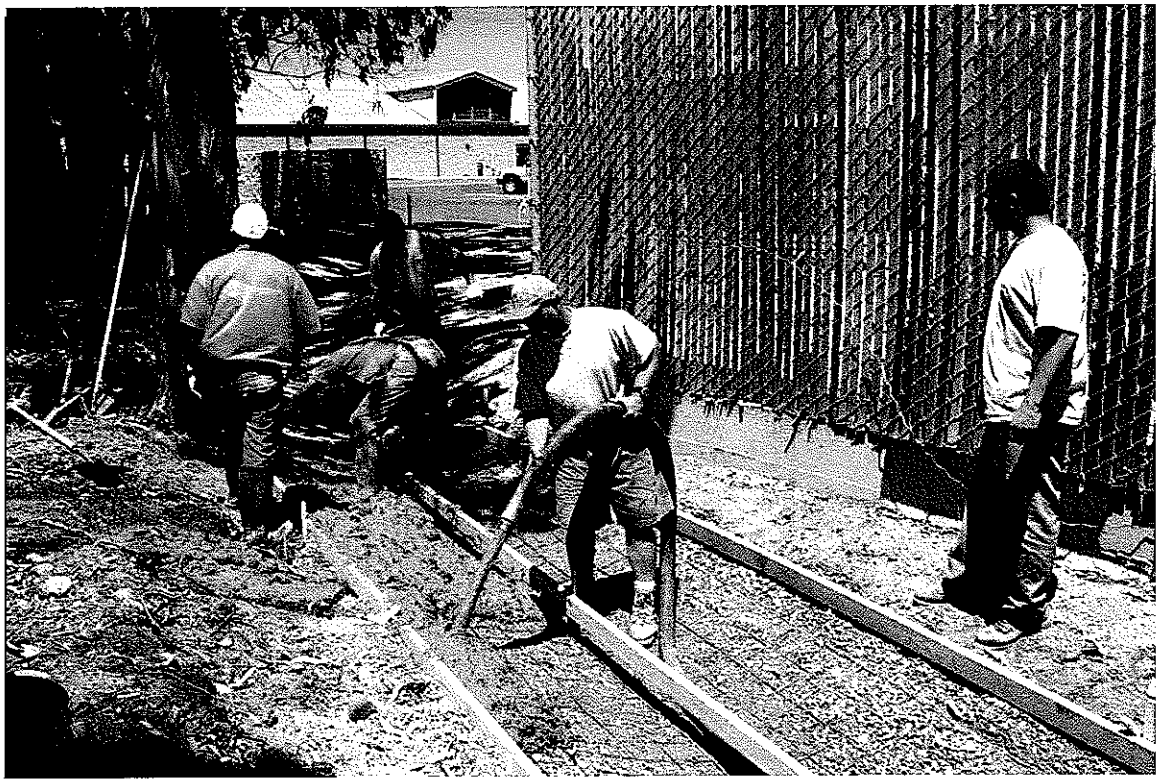

Photo No. 32 Pouring Concrete to Line Graded Drainage-2.jpg

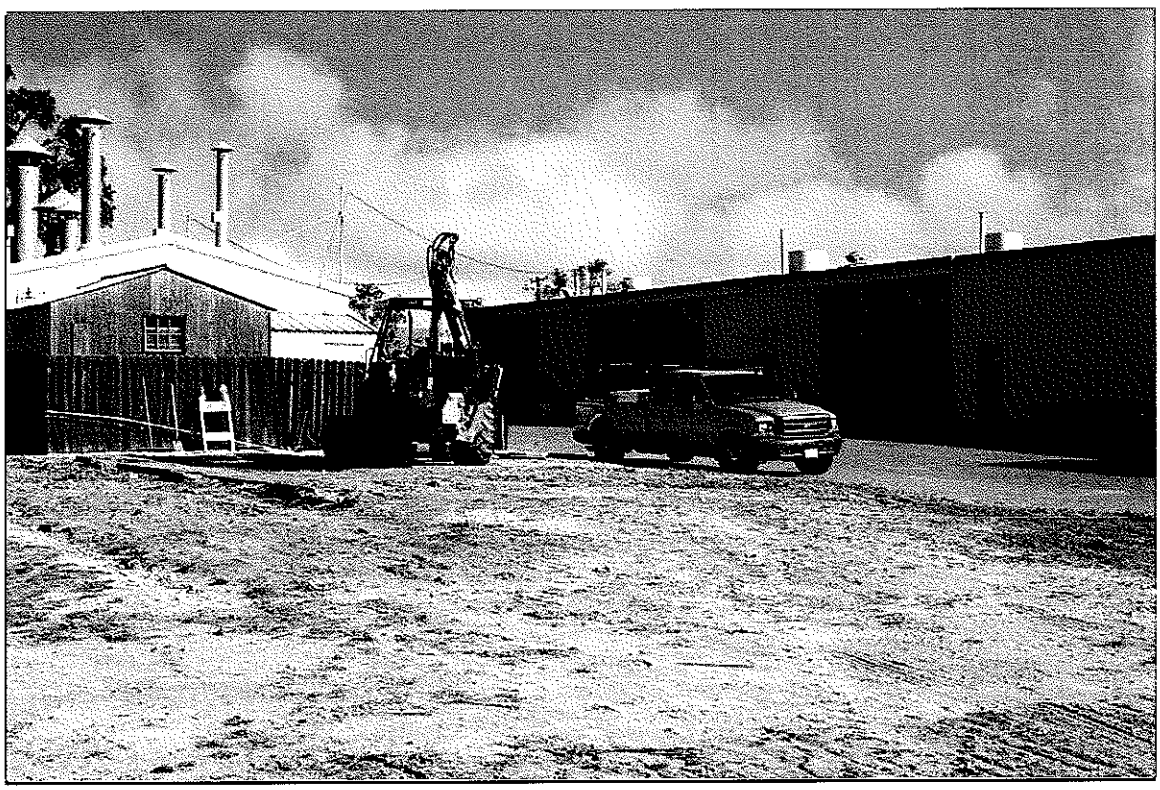

Photo No. 33 View of 099-SB06 Area Prior to Excavation.jpg

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Photo No. 34 AOC-133 - DO 07 - Closing monitoring well casing_2

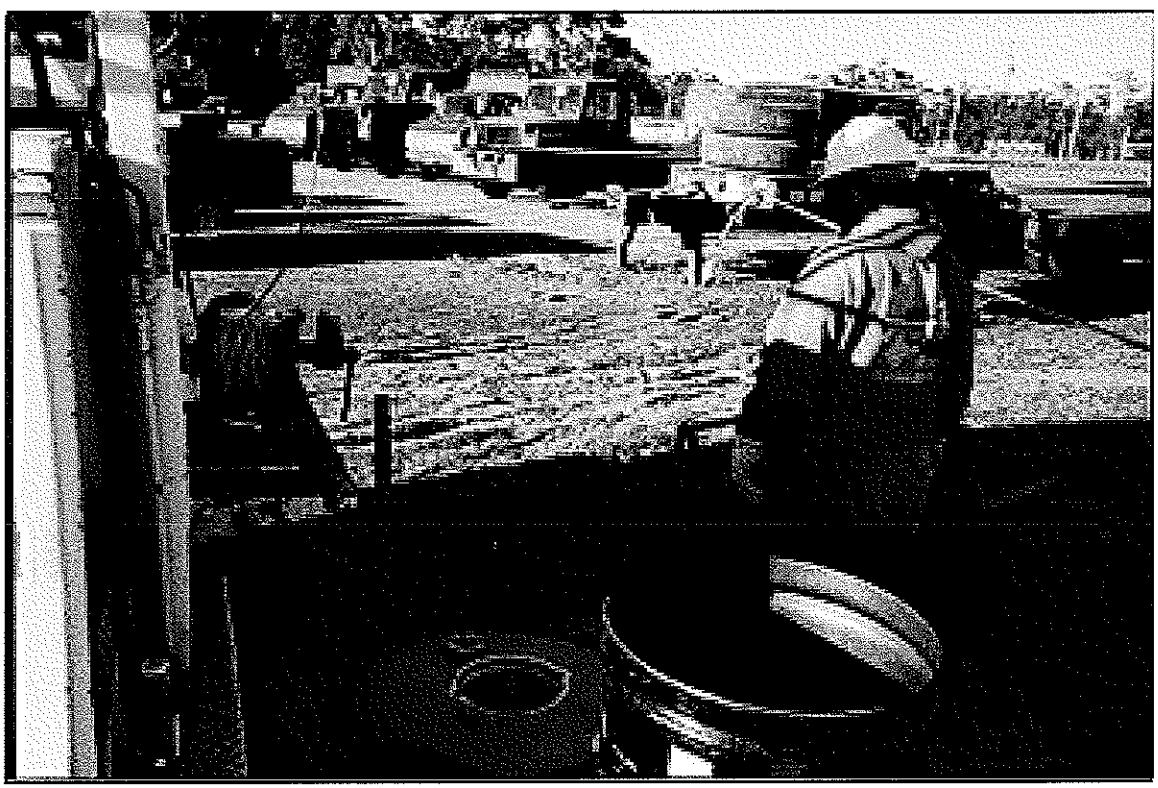

Photo No. 35 AOC-133 - DO 07 - Finished monitoring well

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Photo No. 36 AOC-133 - DO 32- looking at Heraldo St

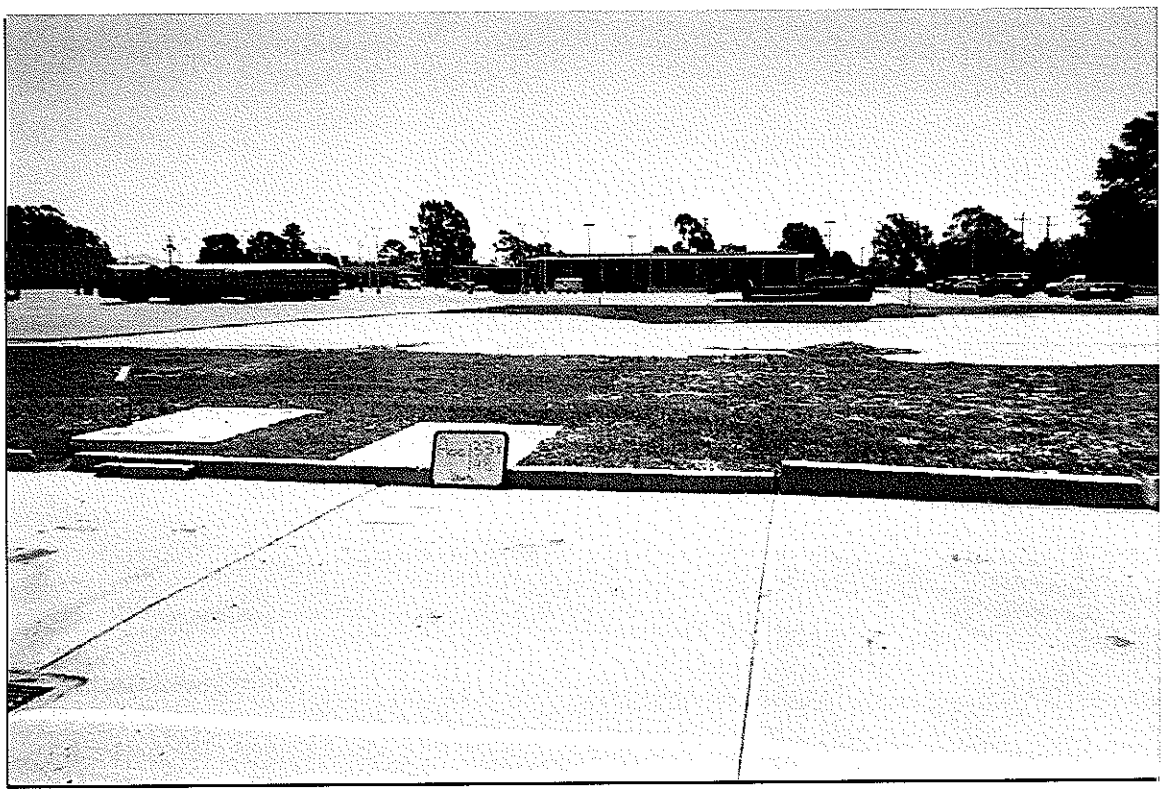

Photo No. 37 AOC-133 - DO 32

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DO 59 AOCS
VANDENBERG AIR FORCE BASE, CALIFORNIA

VAFB 10-03

APPENDIX G

RISK-BASED ANALYSIS AND CLOSURE REPORT FOR AOC-020

APPENDIX G

IRP AREAS OF CONCERN

FINAL REPORT
RISK-BASED ANALYSIS AND CLOSURE REPORT FOR AOC-020

VANDENBERG AIR FORCE BASE, CALIFORNIA

Contract No. F41624-00-D-8022
Delivery Order 0059

Prepared for:

Air Force Center for Environmental Excellence
Brooks City-Base, Texas

Prepared by:

MWH
1340 Treat Boulevard, Suite 300
Walnut Creek, CA 94597

June 2004

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LIST OF ATTACHMENTS

Attachment 1 Boring Logs (Borings 020-SB01 through 020-SB11)

LIST OF ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
BTVs	background threshold values
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mg/m^3	milligrams per cubic meter
OWS	oil-water separator
PRGs	preliminary remediation goals
RWQCB	Regional Water Quality Control Board
SVOCs	semivolatile organic compounds
TPH	total petroleum hydrocarbons
TPH-d	total petroleum hydrocarbons as diesel
TPH-mo	total petroleum hydrocarbons as motor oil
USBR	United States Bureau of Reclamation
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VAFB	Vandenberg Air Force Base
VOCs	volatile organic compounds

1.0 INTRODUCTION/PURPOSE

This report has been prepared by MWH to support investigation activities of the former culvert and outfall structures connected to a former oil/water separator (OWS) and drain discharge system that supported operations at former Building 676 (designated as AOC-020) at Vandenberg Air Force Base (VAFB). The work was performed under the Installation Restoration Program with regulatory oversight from the State of California's Central Coast Regional Water Quality Control Board (RWQCB).

The purpose of this work was to complete the delineation of total petroleum hydrocarbons (TPH) above action levels at AOC-020. This included testing for volatile organic compounds (VOCs), total petroleum hydrocarbons as diesel and motor oil (TPH-d and TPH-mo), and semivolatile Organic Compounds (SVOCs). The activities conducted at AOC-020 included the following:

- Drilling and sampling to further investigate the lateral and vertical extent of petroleum fuel contamination in soil
- Hand excavation of soil containing TPH-d concentrations exceeding 1,000 milligrams per kilogram (mg/kg)
- Reporting of investigation findings and preparation of recommendations related to requirements for closing the underground storage tank (UST) location

1.1 BACKGROUND AND SETTING

Building 676, located south of the cantonment area along Bear Creek Road, was constructed in 1961 to provide backup power for launch operations and was removed in 1994. An electrical substation was constructed in the vicinity of the former location shortly after the removal of the power plant. Figure DO 59 AOCs shows the approximate location of AOC-020.

United States Bureau of Reclamation (USBR) (1993) documented the presence of one 14,000-gallon UST at the site. It has since been removed by USBR and was closed by the RWQCB in a letter dated July 22, 1997.

An OWS was installed in 1985 to intercept material from all floor drains in Building 676, which historically had discharged to grade via a single outlet. Bioenvironmental Engineering Services collected sludge and water samples from the OWS, and soil samples from the drainage ditch and the area north of the building. Analytical results indicated relatively high concentrations of TPH in all samples. The contaminated materials were removed during demolition of the facility. Additional study of the as-built engineering diagrams by Tetra Tech (1998) indicates that the OWS was added to the existing drain discharge system. The outlet for the original system was in the same approximate location as that noted when the facility was demolished.

Both the OWS outlet and the original drain outlet discharged into an engineered depression that acted as an evaporation and percolation pond for the discharged wastes. This depression had an overflow that ran under Bear Creek Road to the slope on the north (Tetra Tech, 1998).

The locations of the former OWS and engineered depression were completely obscured during grading for the construction of the electrical substation (Tetra Tech, 1998). The overflow that ran under Bear Creek Road no longer exists; however, there is a patch where it appears that a culvert may have been removed. During the field reconnaissance conducted by Montgomery Watson in the summer of 1999, overgrown brush was observed where the culvert outflow previously existed.

1.2 PREVIOUS WORK PERFORMED

1.2.1 Tetra Tech, Inc. (1998)

One surface and one subsurface soil sample were collected by hand auger in the vicinity of the mouth of the north outfall. The samples were analyzed for metals, TPH-d, VOCs, and SVOCs. No metals were detected above their respective background threshold values (BTVs). TPH-d was detected at 220 mg/kg at a depth of 3 feet below ground surface (bgs). SVOCs were below their respective method detection limits. Three VOCs (1,2-dichlorobenzene, 1,4-dichlorobenzene, and

1,1,1-trichloroethane) were present in the surface samples. Tetra Tech recommended no further action for the VOCs and additional investigation of shallow soil TPH-d impacts.

1.2.2 Montgomery Watson (2001)

Elevated concentrations of TPH-d (up to 1,500 mg/kg) were detected above the 100 mg/kg RWQCB action level in three hand auger borings near the former culvert's outlet (020-SB01 through 020-SB03), located north of Bear Creek Road and west of the former outfall structure. Lead and silver were slightly above BTVs, but below their respective residential soil preliminary remediation goals (PRGs). Arsenic exceeded both its BTV and residential soil PRG; however, the detected concentrations were below its 99% UCL BTV and are considered to be naturally occurring. Consequently, metals were not considered to be a site-related issue.

Diethyl phthalate and/or methylene chloride were detected in nine samples at concentrations well below residential soil PRGs. Montgomery Watson recommended additional delineation of TPH impacts and a removal action.

2.0 FIELD ACTIVITIES

Eight borings (020-SB04 through 020-SB11) were advanced to depths ranging from 10 to 61 feet bgs in accordance with the May 2003 Final Work Plan (MWH, 2003). With the exception of borings 020-SB07 and 020-SB11, which were advanced via hollow stem auger, the remaining borings were advanced via direct push. Each shallow boring was advanced to a depth of 10 feet bgs, while the two hollow stem auger borings were each advanced to an approximate depth of 60 feet bgs. Groundwater was not encountered during the investigation. Groundwater information reviewed for VAFB Site 5 Cluster, Operable Unit 5 (Tetra Tech, 2002) located 0.65 miles west-northwest of AOC-020, indicated that the estimated depth to groundwater beneath AOC-020 is greater than 300 feet bgs. Although the Work Plan indicated that deep borings would be advanced to bedrock or groundwater, they were terminated at 60 feet bgs based on the historical extent of vertical impact and the absence of contaminant indicators during drilling. The minor change in scope was subsequently approved by the RWQCB (Carol Kolb, personal communication, dated 29 January 2003).

Borings 020-SB04 through 020-SB07 were located to assess the extent of TPH impact in the vicinity of the former culvert structure, while borings 020-SB08 through 020-SB11 were placed to assess the extent of TPH impact associated with the former outfall structure. Because the lateral extent of TPH impact associated with the former culvert structure was not fully delineated in the vicinity of 020-SB05, three additional step-out borings (020-SB12 through 020-SB14) were added. Each of these borings was hand shoveled to a depth of 2 feet bgs, and sampled at the 0.5- to 1-foot and 1.5- to 2-foot intervals.

Soil samples collected from the surface up to a depth of 30 feet (deeper borings only) were submitted for laboratory analysis. In addition, the 60-foot sample collected from 020-SB07 and the 40- and 50-foot samples collected from 020-SB11 were also submitted for analysis.

Analytical results of soil samples collected from step-out borings 020-SB12 through 020-SB14 failed to fully delineate the lateral extent of TPH impact associated with the former culvert structure. Consequently, four additional step-out borings (020-SB15 through 020-SB18) were advanced to establish the lateral limit of the shallow TPH plume. As with the previous step-out borings, each boring was hand shoveled to a depth of 2 feet bgs and sampled at the 0.5- to 1-foot and 1.5- to 2-foot intervals. The deeper samples were analyzed only if the shallow samples contained concentrations of TPH greater than RWQCB action levels.

In an effort to remove soil containing TPH-d concentrations greater than 1,000 mg/kg, hand excavation was conducted to an approximate depth of 2 feet bgs in the vicinity of borings 020-SB01 and 020-SB01A. Excavated soils were placed in a 55-gallon drum for disposal. Confirmation sample results from 020-SC01 and 020-SC02 indicated TPH-d concentrations ranging from 51.9 to 101 mg/kg and TPH-mo concentrations ranging from 631 to 850 mg/kg.

3.0 FINDINGS

The findings at AOC-020 are presented below.

3.1 LITHOLOGY

The subsurface lithology observed within the soil borings consisted of poorly graded, fine- to medium-grained sand to 61 feet bgs, the maximum depth of investigation. Between 20 and 30 feet bgs, small amounts of clay (up to 15 percent) were encountered. Bedrock was not encountered during any phase of site investigation.

3.2 LABORATORY RESULTS

All shallow soil samples were analyzed for TPH-d/mo. Samples that contained TPH concentrations greater than the 100 mg/kg RWQCB action level were also analyzed for SVOCs in accordance with the Work Plan. Soil results are presented in Table AOC-020-Soil and detected chemicals of concern are presented in Figure AOC-020.

3.2.1 Former Outfall Area

During Tetra Tech's 1998 site investigation, concentrations of TPH-d greater than the RWQCB action level were encountered in the surface and 3-foot bgs samples collected from boring VT20B1, located near the center of the former outfall structure. In addition to TPH-d, trace levels of 1,1,1-trichloroethane, 1,2-dichlorobenzene and 1,4-dichlorobenzene were also detected, but at concentrations that are well below residential soil PRGs.

Delineation borings advanced by MWH (020-SB08 through 020-SB11), within 20 to 30 feet of boring VT20B1, detected only trace levels of TPH within the upper 10 feet of soil. The highest TPH concentration (combined diesel and motor oil fractions) was encountered in the surface

sample collected from 020-SB08 (54.8 mg/kg) and all detected TPH-d/mo concentrations were below RWQCB action levels

3.2.2 Former Culvert Area

Low to trace levels of SVOCs (diethyl phthalate and/or phenol) were detected below reporting limits in only three surface soil samples (020-SB05, 020-SB06, and 020-SB15). TPH-d/mo was detected at concentrations greater than RWQCB action levels in several borings adjacent to the former culvert. The highest TPH-d and TPH-mo concentrations was encountered in boring 020-SB01 (1,500 mg/kg TPH-d) and confirmation sample 020-SC01 (856 mg/kg TPH-mo), respectively. As noted earlier, soil containing TPH-d concentrations greater than 1,000 mg/kg in the vicinity of boring 020-SB01 and 020-SB01A were removed by hand excavation to an approximate depth of 2 feet bgs.

4.0 RISK-BASED ANALYSIS

A risk-based analysis was conducted to determine the threat to human health and the environment posed by the site The following categories were addressed:

- Extent of contamination
- Product characteristics
  - Chemical characteristics
  - Toxicity
  - Mobility
- Pathways and receptors
  - Airborne vapors and particles
  - Dermal contact and oral ingestion of soil
  - Ground and surface water
  - Receptors
- Product degradation potential

4.1 EXTENT OF IMPACT

TPH-d/mo concentrations greater than the RWQCB action level of 100 mg/kg have been detected in two separate areas: the area of the former culvert and the area of a drainage outfall. These areas are located north of Building No. 676 and across Bear Creek Road.

4.1.1 Former Outfall Area

Based on delineation borings 020-SB08 through 020-SB11, the lateral extent of TPH impact associated with the former outfall has been fully delineated and is limited to the immediate vicinity of hand auger boring VT20B1. Due to the general absence of TPH in samples collected below the surface, it is assumed that the vertical extent of TPH impact at location VT20B1 does not extend much below a depth of 3 feet. Assuming an average depth of impact of 3 feet, the estimated volume of soil impacted by this feature is approximately 100 cubic yards.

4.1.2 Former Culvert Area

In contrast to the former outfall area, the extent of TPH impact associated with the former culvert structure is somewhat deeper and covers a much larger area. Based on delineation borings 020-SB12 through 020-SB18, the lateral extent of TPH impact is adequately delineated and covers an area that is less than 50 feet wide and extends approximately 100 feet north of Bear Creek Road. With respect to characterizing the vertical extent of TPH impact associated with the former culvert structure, samples collected from borings located within the center of this feature (020-SB01 through 020-SB03 and 020-SB07) suggest a maximum depth of 5 feet. However, the average depth of impact is roughly 2.5 feet. Using these plume dimensions, the estimated quantity of TPH-impacted soil is slightly less than 500 cubic yards.

4.2 PRODUCT CHARACTERISTICS

Chemical Characteristics—Diesel, the principal component of TPH impacts at AOC-020, includes a range of hydrocarbon fractions of crude oil distillates but is largely a mixture of C-12 to C-20 hydrocarbons. Diesel also contains greater amounts of polycyclic aromatic hydrocarbons (anthracene, methylnaphthalene, chrysene, pyrene, benzo[a]pyrene, benzo[k]fluoranthene, benzo[b]fluoranthene) than gasoline and is low in BTEX. Additionally, samples analyzed from AOC-020 did not detect the presence of BTEX (Table AOC-020-Soil). Trace levels of the SVOCs, phenol and diethyl phthalate, were detected above practical quantitation limits in several of the samples. However, the reported concentrations are well below their respective PRGs for residential soil.

In general, most of the diesel components have boiling points greater than 200 degrees Celsius and solubility in water ranging from about 30 milligrams per liter (mg/L) to about 2.6×10^{-4} mg/L, with the majority of the components having a solubility in water less than 1 mg/L. Most of the diesel components have molecular weights greater than 20 and are more dense than water. In general, heavy petroleum molecules are less volatile, less soluble, and have a lower mobility and higher adsorptive capacity than light petroleum molecules.

Toxicity—The U.S. Environmental Protection Agency does not list diesel as a substance toxic to humans. In the 1991 Guide to Occupational Exposure Values compiled by the American Council of Government Industrial Hygienists, OSHA defines a time-weighted average of 1,600 milligrams per cubic meter (mg/m^3) and National Institute for Occupational Safety and Health defines a recommended exposure limit of 1,800 mg/m^3 for undifferentiated petroleum distillates; neither guide lists diesel-specific values. California defines a toxicity reference dose of 0.008 mg/kg per day (Arulanantham and Malhotra).

Mobility - Because of the generally low volatility, high molecular weight, and low solubility in water of its components, diesel tends to have a very low mobility in subsurface soil. Initial movement from the release point tends to be liquid mass flow from the saturated soil matrix to unsaturated areas. When the source is removed, the mass flow ceases.

4.3 PRODUCT DEGRADATION POTENTIAL

Hydrocarbon contaminant concentrations have an effect on the biodegradation of the hydrocarbons of concern. At low levels, there may not be a sufficient amount of contaminant to support an active population of microbes. At very high levels, the contaminant may be toxic to the microbe population (Hillel, 1989; Eastcott, et. al, 1989). This indicates that the biodegradation of hydrocarbon contamination is not strictly linear; however, over time degradation of hydrocarbons may display a linear relationship due to natural chemical instability, chemical reaction with the environment, and biological activity.

The half-life of an organic compound is determined by its vapor pressure, its potential for chemical reaction with the environment, its natural chemical instability, and its susceptibility to biological processes. The natural half-lives of various diesel compounds range from about 50 days for naphthalene to about 480 days for benzo[a]pyrene (Ibbotson, et al., 1989). Hinchee, et. al. (1991) reported the degradation rate of TPH-d as 2 to 20 mg/kg/day.

4.4 PATHWAYS AND RECEPTORS

Airborne Vapor and Particulates—The subject AOC is located adjacent to Bear Creek Road more than four miles south of the cantonment area. The area is exposed to prevailing winds from the west-northwest. The site location is a relatively inactive area with few human receptors. In the down wind direction, there are no structures containing human receptors within 2 miles of the site.

During investigative activities at AOC-020, ambient air was monitored with a photoionization detector prior to investigation and during drilling. No volatile organic vapors were detected during air monitoring of the breathing zone, as indicated by zero readings before and during drilling operations.

To accept airborne vapor and particulate pathway as incomplete, it is necessary to eliminate either the source of the contaminant, the pathway, or the receptor. The source (former OWS and associated structures) has been removed; however, some impacted soils remain. At AOC-020, soil containing TPH, the chemical of concern, is covered by extensive brush and vegetation, which significantly limits airborne exposures.

Direct Contact/Oral Ingestion—The highest concentration of TPH-d in the upper 10 feet is 760 mg/kg at 5 feet bgs (SB01A) within the center of the former culvert. Unless construction activities occur, the direct dermal contact and oral soil ingestion pathway is incomplete.

Ground and Surface Water—Borings advanced to a maximum of 61 feet bgs during the site investigation failed to detect the presence of groundwater beneath AOC-020. Bedrock was not encountered at AOC-020 during the site investigation. The subject site is situated on the Lompoc Terrace that is bounded by the drainage divide between Canada Honda Creek to the south, the Santa Ynez River to the north and La Salle Canyon to the east. AOC-020 lies outside of and southwest of the Lompoc subbasin of the Santa Ynez River basin, the principal groundwater

source in this area. The nearest groundwater monitoring wells to AOC-020 are located within VAFB Site 5 Cluster, Operable Unit 5 (OU 5). Groundwater measured in April 2002 in monitoring well 5-MW-8, located 0.65 miles west-northwest of AOC-020, was encountered at more than 300 feet bgs (312.74 feet) (Tetra Tech, 2002). The groundwater gradient is 0.03 feet per foot to the northeast across Bear Creek Road and tends to follow local topography. Based on groundwater contours of OU 5, the estimated depth to groundwater beneath AOC-020 is greater than 300 feet bgs. Due to the adsorptive characteristics of diesel, as well as its limited vertical extent in soil beneath AOC-020, it is highly unlikely that the residual diesel contamination will make direct contact with any potential groundwater.

The nearest surface waters are associated with Lompoc Canyon and Bear Creek, which are ephemeral creeks that contain water following exceptionally heavy rains. Lompoc Canyon is located 1,200 feet east of AOC-020, while Bear Creek lies 2,400 feet to the west.

The subject AOC surface consists of soil and appears to be the topographic low point across Bear Creek Road, affording little opportunity to provide surface water pathways. Given the relatively low TPH concentrations (typically < 500 mg/kg), the low solubility of TPH-d and TPH-mo, and the large distance from the two nearby ephemeral drainages, the potential for subsequent contamination of the surface water is very low.

Water from the site must travel through the subsurface to reach either surface or groundwater. Assuming some attenuation, it is unlikely that either watercourse will be affected by contamination at the site. Due to the depth to ground water, the location and distance to residential/commercial water wells, the distance to surface water, the limited solubility, and high attenuation characteristics of diesel, the ground water/surface water pathway is incomplete.

Receptors—The nearest commercial or residential structure is the SLC-3 compound, which is located upwind of the site and less than one mile away on Bear Creek Road. Workers occupy the

site on a daily basis; however, they work upwind and are therefore not at risk. The site is slated for continued industrial use, per base planning.

5.0 SUMMARY/ RECOMMENDATIONS

The vertical and lateral extent of soil impacted by TPH-d is adequately defined and consists of a thin veneer of soil covering an approximate 50-foot by 100-foot area north of the former culvert. Assuming an average depth of soil impact to be 2.5 feet, the total quantity of diesel-contaminated soil containing TPH-d concentrations greater than the RWQCB action level is slightly less than 500 cubic yards The estimated volume of soil impacted by the former outfall structure is approximately 100 cubic yards. Remedial excavation of the contaminated soil is not feasible due to ecological concerns related to the removal and destruction of habitat. Based on a review of the various routes of exposure, all receptor pathways associated with AOC-020 appear to be incomplete. The depth to groundwater beneath AOC-020 is estimated to be greater than 300 feet bgs and would not be impacted by this small quantity of residual soil contamination. Additionally, the compounds comprising diesel have very low mobility in soil and current land use at AOC-020 is anticipated to remain industrial for the foreseeable future. Therefore, AOC-020 is recommended for closure with site conditions to be annotated in the Base GIS.

6.0 REFERENCES

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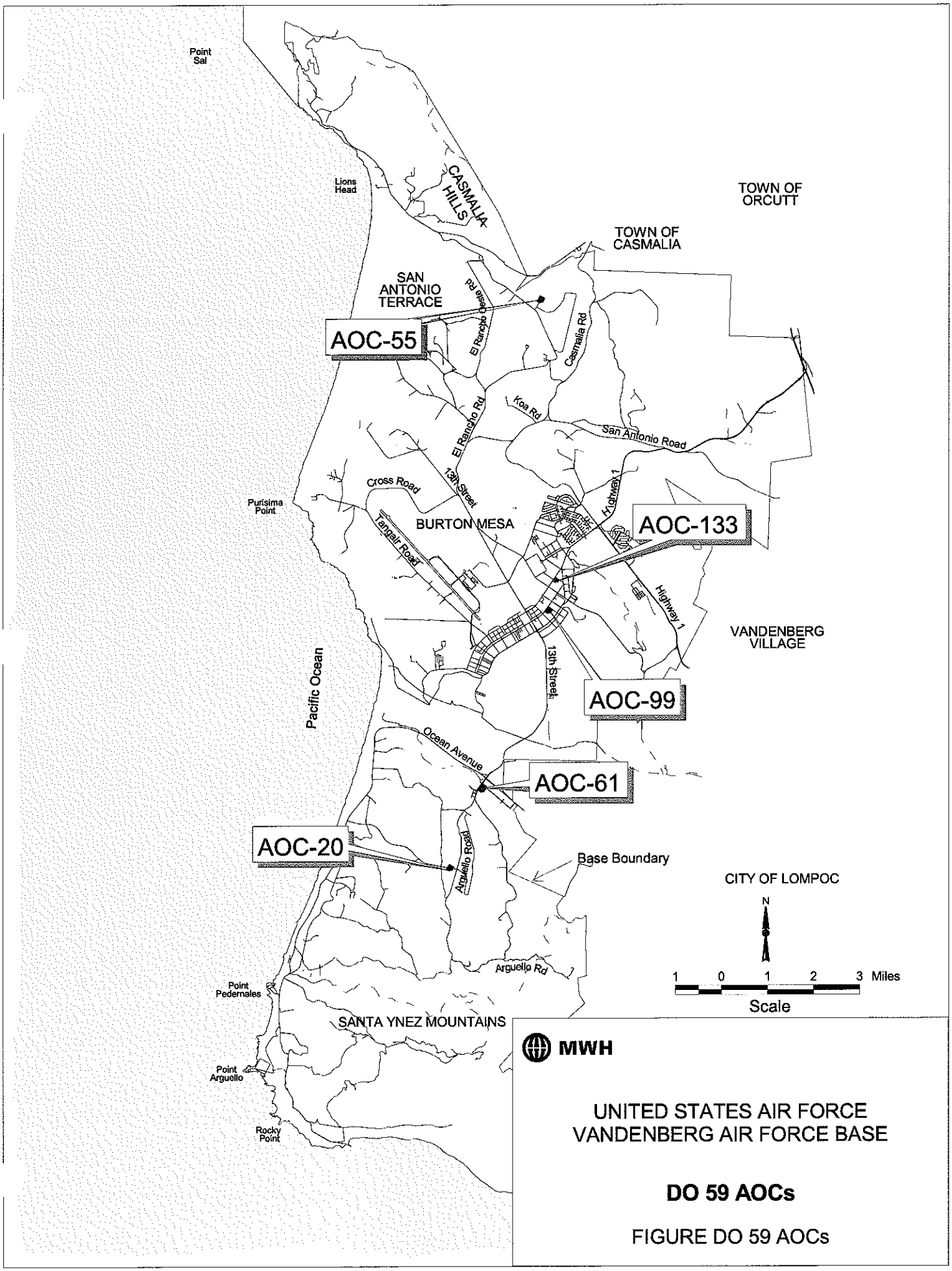
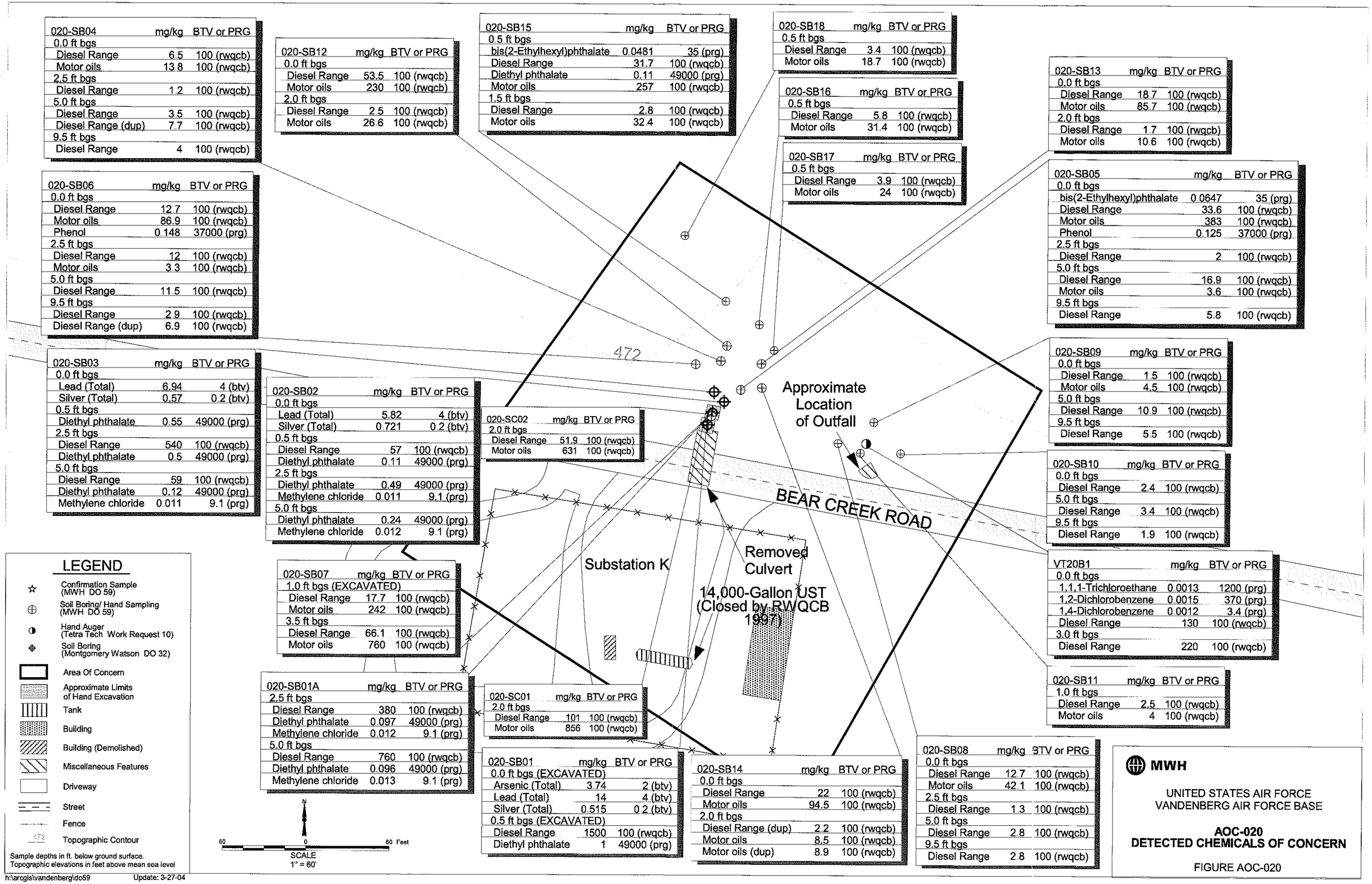
FIGURES


Point Sal
Lions Head
CASMALIA HILLS
TOWN OF ORCUTT
TOWN OF CASMALIA
SAN ANTONIO TERRACE
AOC-55
El Rancho Rd
Casmalia Rd
Koa Rd
San Antonio Road
13th Street
Cross Road
Purisima Point
BURTON MESA
Tangair Road
Highway 1
AOC-133
VANDENBERG VILLAGE
Pacific Ocean
AOC-99
Ocean Avenue
AOC-61
AOC-20
Arguello Road
Base Boundary
CITY OF LOMPOC
N
1 0 1 2 3 Miles
Scale
Point Pedernales
SANTA YNEZ MOUNTAINS
Point Arguello
Rocky Point
MWH
UNITED STATES AIR FORCE
VANDENBERG AIR FORCE BASE
DO 59 AOCs
FIGURE DO 59 AOCs



020-SB04	mg/kg	BTV or PRG
0.0 ft bgs		
Diesel Range	6.5	100 (rwqcb)
Motor oils	13.8	100 (rwqcb)
2.5 ft bgs		
Diesel Range	1.2	100 (rwqcb)
5.0 ft bgs		
Diesel Range	3.5	100 (rwqcb)
Diesel Range (dup)	7.7	100 (rwqcb)
9.5 ft bgs		
Diesel Range	4	100 (rwqcb)

020-SB12	mg/kg	BTV or PRG
0.0 ft bgs		
Diesel Range	53.5	100 (rwqcb)
Motor oils	230	100 (rwqcb)
2.0 ft bgs		
Diesel Range	2.5	100 (rwqcb)
Motor oils	26.6	100 (rwqcb)

020-SB15	mg/kg	BTV or PRG
0.5 ft bgs		
bis(2-Ethylhexyl)phthalate	0.0481	35 (prg)
Diesel Range	31.7	100 (rwqcb)
Diethyl phthalate	0.11	49000 (prg)
Motor oils	257	100 (rwqcb)
1.5 ft bgs		
Diesel Range	2.8	100 (rwqcb)
Motor oils	32.4	100 (rwqcb)

020-SB18	mg/kg	BTV or PRG
0.5 ft bgs		
Diesel Range	3.4	100 (rwqcb)
Motor oils	18.7	100 (rwqcb)

020-SB16	mg/kg	BTV or PRG
0.5 ft bgs		
Diesel Range	5.8	100 (rwqcb)
Motor oils	31.4	100 (rwqcb)

020-SB17	mg/kg	BTV or PRG
0.5 ft bgs		
Diesel Range	3.9	100 (rwqcb)
Motor oils	24	100 (rwqcb)

020-SB13	mg/kg	BTV or PRG
0.0 ft bgs		
Diesel Range	18.7	100 (rwqcb)
Motor oils	85.7	100 (rwqcb)
2.0 ft bgs		
Diesel Range	1.7	100 (rwqcb)
Motor oils	10.6	100 (rwqcb)

020-SB05	mg/kg	BTV or PRG
0.0 ft bgs		
bis(2-Ethylhexyl)phthalate	0.0647	35 (prg)
Diesel Range	33.6	100 (rwqcb)
Motor oils	383	100 (rwqcb)
Phenol	0.125	37000 (prg)
2.5 ft bgs		
Diesel Range	2	100 (rwqcb)
5.0 ft bgs		
Diesel Range	16.9	100 (rwqcb)
Motor oils	3.6	100 (rwqcb)
9.5 ft bgs		
Diesel Range	5.8	100 (rwqcb)

020-SB06	mg/kg	BTV or PRG
0.0 ft bgs		
Diesel Range	12.7	100 (rwqcb)
Motor oils	86.9	100 (rwqcb)
Phenol	0.148	37000 (prg)
2.5 ft bgs		
Diesel Range	12	100 (rwqcb)
Motor oils	3.3	100 (rwqcb)
5.0 ft bgs		
Diesel Range	11.5	100 (rwqcb)
9.5 ft bgs		
Diesel Range	2.9	100 (rwqcb)
Diesel Range (dup)	6.9	100 (rwqcb)

020-SB03	mg/kg	BTV or PRG
0.0 ft bgs		
Lead (Total)	6.94	4 (btv)
Silver (Total)	0.57	0.2 (btv)
0.5 ft bgs		
Diethyl phthalate	0.55	49000 (prg)
2.5 ft bgs		
Diesel Range	540	100 (rwqcb)
Diethyl phthalate	0.5	49000 (prg)
5.0 ft bgs		
Diesel Range	59	100 (rwqcb)
Diethyl phthalate	0.12	49000 (prg)
Methylene chloride	0.011	9.1 (prg)

020-SB02	mg/kg	BTV or PRG
0.0 ft bgs		
Lead (Total)	5.82	4 (btv)
Silver (Total)	0.721	0.2 (btv)
0.5 ft bgs		
Diesel Range	57	100 (rwqcb)
Diethyl phthalate	0.11	49000 (prg)
2.5 ft bgs		
Diethyl phthalate	0.49	49000 (prg)
Methylene chloride	0.011	9.1 (prg)
5.0 ft bgs		
Diethyl phthalate	0.24	49000 (prg)
Methylene chloride	0.012	9.1 (prg)

020-SC02	mg/kg	BTV or PRG
2.0 ft bgs		
Diesel Range	51.9	100 (rwqcb)
Motor oils	631	100 (rwqcb)

020-SB09	mg/kg	BTV or PRG
0.0 ft bgs		
Diesel Range	1.5	100 (rwqcb)
Motor oils	4.5	100 (rwqcb)
5.0 ft bgs		
Diesel Range	10.9	100 (rwqcb)
9.5 ft bgs		
Diesel Range	5.5	100 (rwqcb)

020-SB10	mg/kg	BTV or PRG
0.0 ft bgs		
Diesel Range	2.4	100 (rwqcb)
5.0 ft bgs		
Diesel Range	3.4	100 (rwqcb)
9.5 ft bgs		
Diesel Range	1.9	100 (rwqcb)

VT20B1	mg/kg	BTV or PRG
0.0 ft bgs		
1,1,1-Trichloroethane	0.0013	1200 (prg)
1,2-Dichlorobenzene	0.0015	370 (prg)
1,4-Dichlorobenzene	0.0012	3.4 (prg)
Diesel Range	130	100 (rwqcb)
3.0 ft bgs		
Diesel Range	220	100 (rwqcb)

020-SB07	mg/kg	BTV or PRG
1.0 ft bgs (EXCAVATED)		
Diesel Range	17.7	100 (rwqcb)
Motor oils	242	100 (rwqcb)
3.5 ft bgs		
Diesel Range	66.1	100 (rwqcb)
Motor oils	760	100 (rwqcb)

020-SB11	mg/kg	BTV or PRG
1.0 ft bgs		
Diesel Range	2.5	100 (rwqcb)
Motor oils	4	100 (rwqcb)

020-SB01A	mg/kg	BTV or PRG
2.5 ft bgs		
Diesel Range	380	100 (rwqcb)
Diethyl phthalate	0.097	49000 (prg)
Methylene chloride	0.012	9.1 (prg)
5.0 ft bgs		
Diesel Range	760	100 (rwqcb)
Diethyl phthalate	0.096	49000 (prg)
Methylene chloride	0.013	9.1 (prg)

020-SC01	mg/kg	BTV or PRG
2.0 ft bgs		
Diesel Range	101	100 (rwqcb)
Motor oils	856	100 (rwqcb)

020-SB01	mg/kg	BTV or PRG
0.0 ft bgs (EXCAVATED)		
Arsenic (Total)	3.74	2 (btv)
Lead (Total)	14	4 (btv)
Silver (Total)	0.515	0.2 (btv)
0.5 ft bgs (EXCAVATED)		
Diesel Range	1500	100 (rwqcb)
Diethyl phthalate	1	49000 (prg)

020-SB14	mg/kg	BTV or PRG
0.0 ft bgs		
Diesel Range	22	100 (rwqcb)
Motor oils	94.5	100 (rwqcb)
2.0 ft bgs		
Diesel Range (dup)	2.2	100 (rwqcb)
Motor oils	8.5	100 (rwqcb)
Motor oils (dup)	8.9	100 (rwqcb)

020-SB08	mg/kg	BTV or PRG
0.0 ft bgs		
Diesel Range	12.7	100 (rwqcb)
Motor oils	42.1	100 (rwqcb)
2.5 ft bgs		
Diesel Range	1.3	100 (rwqcb)
5.0 ft bgs		
Diesel Range	2.8	100 (rwqcb)
9.5 ft bgs		
Diesel Range	2.8	100 (rwqcb)

TABLE

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 1 of 20)

	BTV			Soil PRG		Reference:	TetraTech WR10	TetraTech WR10	DO32	DO32	DO32	DO32	DO32
						Location ID:	VT20B1	VT20B1	020-SB01	020-SB01	020-SB01A	020-SB01A	020-SB02
						Field Sample ID:	VT20B1-0	VT20B1-3	020-SB01-SS0.0	020-SB01-SS0.5	020-SB01A-SS2.5	020-SB01A-SS5.0	020-SB02-SS0.0
						Sample Date:	2/9/1998	2/9/1998	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	0.0	3.0	0.0	0.5	2.5	5.0	0.0
General Minerals													
pH	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)													
Aluminum	SDS	7010	10600	76000	100000		3080	NA	3900 J	NA	NA	NA	3770 J
Aluminum	SSDS	11200	19600	76000	100000		NA	3550	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	**3.74 J**	NA	NA	NA	**0.886 FJ**
Barium	SDS	98	172	5400	67000		37.9	NA	65.4 J	NA	NA	NA	41.1 J
Barium	SSDS	35	52	5400	67000		NA	31.2	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		0.15 FJ	NA	0.132 FJ	NA	NA	NA	0.136 FJ
Beryllium	SSDS	0.8	0.8	150	1900 (ca)		NA	0.16 FJ	NA	NA	NA	NA	NA
Cadmium	SDS	'	'	1.7 (ca)	7.4 (ca)		<1.1	NA	0.404 F	NA	NA	NA	0.379 F
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	<1.1	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		1380	NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--		NA	512 FJ	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		12.6	NA	12.7 J	NA	NA	NA	12.5 J
Chromium	SSDS	108	221	210 (ca)	450 (ca)		NA	11.1	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		1.2 FJ	NA	1.54 F	NA	NA	NA	1.28 F
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)		NA	1.4 FJ	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		5.8	NA	7.6 J	NA	NA	NA	3.72 J
Copper	SSDS	37	70	3100	41000		NA	2.4 FJ	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		4570	NA	4590 J	NA	NA	NA	4110 J
Iron	SSDS	14800	25800	23000	100000		NA	4350	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		NA	NA	14	NA	NA	NA	5.82 F
Magnesium	SDS	3900	3900	--	--		701	NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--		NA	333 FJ	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		57.7 J	NA	60 J	NA	NA	NA	112 J
Manganese	SSDS	233	554	1800	19000		NA	72.8 J	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		0.73 FJ	NA	<11.3	NA	NA	NA	<10.7
Molybdenum	SSDS	3	3	390	5100		NA	<4.3	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		5.7	NA	12.1	NA	NA	NA	5.71
Nickel	SSDS	10	17	1600	20000		NA	4 FJ	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		515 FJ	NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--		NA	277 FJ	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100		<1.1	NA	0.515 F	NA	NA	NA	0.721 F
Silver	SSDS	2	2	390	5100		NA	<1.1	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		<571	NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--		NA	60.2 FJ	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	0.301	NA	NA	NA	0.264
Vanadium	SDS	25	37	550	7200		12	NA	11.5 J	NA	NA	NA	8.82 J
Vanadium	SSDS	35	61	550	7200		NA	10.3	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		32.3	NA	97 J	NA	NA	NA	8.31 J
Zinc	SSDS	98	209	23000	100000		NA	3.2	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 2 of 20)

	BTV			Soil PRG		Reference:	TetraTech WR10	TetraTech WR10	DO32	DO32	DO32	DO32	DO32
						Location ID:	VT20B1	VT20B1	020-SB01	020-SB01	020-SB01A	020-SB01A	020-SB02
						Field Sample ID:	VT20B1-0	VT20B1-3	020-SB01-SS0.0	020-SB01-SS0.5	020-SB01A-SS2.5	020-SB01A-SS5.0	020-SB02-SS0.0
						Sample Date:	2/9/1998	2/9/1998	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	0.0	3.0	0.0	0.5	2.5	5.0	0.0
Semivolatile Organic Compounds (mg/kg)													
1,2-Dichlorobenzene	--	--	--	370	370		<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA
Diethyl phthalate	--	--	--	49000	100000		<0.75	<0.71	NA	1 F	0.097 F	0.096 F	NA
Phenol	--	--	--	37000	100000		<0.75	<0.71	NA	<3.7	<0.34	<0.34	NA
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		130 J	220 J	NA	1500	380	760	NA
Motor oils	--	--	--	100 (rwqcb)	--		NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	--	--	--	1200	1200		0.0013 FJ	<0.0054	NA	<0.0056	<0.0052	<0.0051	NA
1,2-Dichlorobenzene	--	--	--	370	370		0.0015 FJ	<0.0054	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		0.0012 FJ	<0.0054	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		<0.0057	<0.0054	NA	<0.0056	0.012	0.013	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE

		BTV		Soil PRG		Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO32
						Location ID:	020-SB02	020-SB02	020-SB02	020-SB03	020-SB03	020-SB03	020-SB03
						Field Sample ID:	020-SB02-SS0.5	020-SB02-SS2.5	020-SB02-SS5.0	020-SB03-SS0.0	020-SB03-SS0.5	020-SB03-SS2.5	020-SB03-SS5.0
						Sample Date:	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	0.5	2.5	5.0	0.0	0.5	2.5	5.0
General Minerals													
pH	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)													
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	4480 J	NA	NA	NA
Aluminum	SSDS	11200	19600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	0.949 FJ	NA	NA	NA
Barium	SDS	98	172	5400	67000		NA	NA	NA	96 J	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	0.167 FJ	NA	NA	NA
Beryllium	SSDS	0.8	0.8	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SDS	'	'	1.7 (ca)	7.4 (ca)		NA	NA	NA	0.402 F	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--		NA	NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	13.3 J	NA	NA	NA
Chromium	SSDS	108	221	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	1.42 F	NA	NA	NA
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		NA	NA	NA	4.75 J	NA	NA	NA
Copper	SSDS	37	70	3100	41000		NA	NA	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	4780 J	NA	NA	NA
Iron	SSDS	14800	25800	23000	100000		NA	NA	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		NA	NA	NA	6.94 F	NA	NA	NA
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--		NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	126 J	NA	NA	NA
Manganese	SSDS	233	554	1800	19000		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	<10.4	NA	NA	NA
Molybdenum	SSDS	3	3	390	5100		NA	NA	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		NA	NA	NA	5.18 F	NA	NA	NA
Nickel	SSDS	10	17	1600	20000		NA	NA	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--		NA	NA	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100		NA	NA	NA	0.57 F	NA	NA	NA
Silver	SSDS	2	2	390	5100		NA	NA	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--		NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	0.267	NA	NA	NA
Vanadium	SDS	25	37	550	7200		NA	NA	NA	10.7 J	NA	NA	NA
Vanadium	SSDS	35	61	550	7200		NA	NA	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		NA	NA	NA	12.1 J	NA	NA	NA
Zinc	SSDS	98	209	23000	100000		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
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	BTV			Soil PRG		Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO32
						Location ID:	020-SB02	020-SB02	020-SB02	020-SB03	020-SB03	020-SB03	020-SB03
						Field Sample ID:	020-SB02-SS0.5	020-SB02-SS2.5	020-SB02-SS5.0	020-SB03-SS0.0	020-SB03-SS0.5	020-SB03-SS2.5	020-SB03-SS5.0
						Sample Date:	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999	12/2/1999
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	0.5	2.5	5.0	0.0	0.5	2.5	5.0
Semivolatile Organic Compounds (mg/kg)													
1,2-Dichlorobenzene	--	--	--	370	370		<0.35	<1.7	<0.69	NA	<1.5	<1.4	<0.34
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		<0.35	<1.7	<0.69	NA	<1.5	<1.4	<0.34
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		<0.35	<1.7	<0.69	NA	<1.5	<1.4	<0.34
Diethyl phthalate	--	--	--	49000	100000		0.11 F	0.49 F	0.24 F	NA	0.55 F	0.5 F	0.12 F
Phenol	--	--	--	37000	100000		<0.35	<1.7	<0.69	NA	<1.5	<1.4	<0.34
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		57	<10	<10	NA	<11	540	59
Motor oils	--	--	--	100 (rwqcb)	--		NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	--	--	--	1200	1200		<0.0052	<0.0051	<0.0052	NA	<0.0055	<0.0052	<0.0052
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		<0.0052	0.011	0.012	NA	<0.0055	<0.0052	0.011

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 5 of 20)

		BTV		Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB04	020-SB04	020-SB04	020-SB04	020-SB04	020-SB05	020-SB05
						Field Sample ID:	020-SB04-SS0.0	020-SB04-SS2.5	020-SB04-SS5.0	020-SB99-SS5.0	020-SB04-SS10.0	020-SB05-SS0.0	020-SB05-SS2.5
						Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	0.0	2.5	5.0	5.0	9.5	0.0	2.5
General Minerals													
pH	--	--	--	--	--		NA	NA	NA	NA	NA	7	NA
Total Metals (mg/kg)													
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Aluminum	SSDS	11200	19600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Beryllium	SSDS	0.8	0.8	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--		NA	NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Chromium	SSDS	108	221	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA	NA	NA	NA
Copper	SSDS	37	70	3100	41000		NA	NA	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA	NA	NA	NA
Iron	SSDS	14800	25800	23000	100000		NA	NA	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		NA	NA	NA	NA	NA	NA	NA
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--		NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA	NA	NA	NA
Manganese	SSDS	233	554	1800	19000		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SSDS	3	3	390	5100		NA	NA	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA	NA	NA	NA
Nickel	SSDS	10	17	1600	20000		NA	NA	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--		NA	NA	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100		NA	NA	NA	NA	NA	NA	NA
Silver	SSDS	2	2	390	5100		NA	NA	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--		NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA	NA	NA	NA
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA	NA	NA	NA
Vanadium	SSDS	35	61	550	7200		NA	NA	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA	NA	NA	NA
Zinc	SSDS	98	209	23000	100000		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
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	BTV			Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB04	020-SB04	020-SB04	020-SB04	020-SB04	020-SB05	020-SB05
						Field Sample ID:	020-SB04-SS0.0	020-SB04-SS2.5	020-SB04-SS5.0	020-SB99-SS5.0	020-SB04-SS10.0	020-SB05-SS0.0	020-SB05-SS2.5
						Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	0.0	2.5	5.0	5.0	9.5	0.0	2.5
Semivolatile Organic Compounds (mg/kg)													
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	<0.84	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	<0.84	NA
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		NA	NA	NA	NA	NA	0.0647 F	NA
Diethyl phthalate	--	--	--	49000	100000		NA	NA	NA	NA	NA	<0.84	NA
Phenol	--	--	--	37000	100000		NA	NA	NA	NA	NA	0.125 F	NA
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		6.5 F	1.2 F	3.5 F	7.7 F	4 F	33.6 F	2 F
Motor oils	--	--	--	100 (rwqcb)	--		13.8	<11	<11	<10	<11	383	<11
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	--	--	--	1200	1200		NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 7 of 20)

		BTV		Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB05	020-SB05	020-SB06	020-SB06	020-SB06	020-SB06	020-SB06
						Field Sample ID:	020-SB05-SS5.0	020-SB05-SS10.0	020-SB06-SS0.0	020-SB06-SS2.5	020-SB06-SS5.0	020-SB06-SS10.0	020-SB99-SS10.0
						Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	5.0	9.5	0.0	2.5	5.0	9.5	9.5
General Minerals													
pH	--	--	--	--	--		NA	NA	6.3	NA	NA	NA	NA
Total Metals (mg/kg)													
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Aluminum	SSDS	11200	19600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Beryllium	SSDS	0.8	0.8	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--		NA	NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Chromium	SSDS	108	221	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA	NA	NA	NA
Copper	SSDS	37	70	3100	41000		NA	NA	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA	NA	NA	NA
Iron	SSDS	14800	25800	23000	100000		NA	NA	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		NA	NA	NA	NA	NA	NA	NA
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--		NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA	NA	NA	NA
Manganese	SSDS	233	554	1800	19000		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SSDS	3	3	390	5100		NA	NA	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA	NA	NA	NA
Nickel	SSDS	10	17	1600	20000		NA	NA	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--		NA	NA	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100		NA	NA	NA	NA	NA	NA	NA
Silver	SSDS	2	2	390	5100		NA	NA	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--		NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA	NA	NA	NA
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA	NA	NA	NA
Vanadium	SSDS	35	61	550	7200		NA	NA	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA	NA	NA	NA
Zinc	SSDS	98	209	23000	100000		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 8 of 20)

	BTV			Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB05	020-SB05	020-SB06	020-SB06	020-SB06	020-SB06	020-SB06
						Field Sample ID:	020-SB05-SS5.0	020-SB05-SS10.0	020-SB06-SS0.0	020-SB06-SS2.5	020-SB06-SS5.0	020-SB06-SS10.0	020-SB99-SS10.0
						Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	5.0	9.5	0.0	2.5	5.0	9.5	9.5
Semivolatile Organic Compounds (mg/kg)													
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	<0.83	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	<0.83	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		NA	NA	<0.83	NA	NA	NA	NA
Diethyl phthalate	--	--	--	49000	100000		NA	NA	<0.83	NA	NA	NA	NA
Phenol	--	--	--	37000	100000		NA	NA	0.148 F	NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		16.9	5.8 F	12.7	12	11.5	2.9 F	6.9 F
Motor oils	--	--	--	100 (rwqcb)	--		3.6 F	<11	86.9	3.3 F	<10	<10	<10
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	--	--	--	1200	1200		NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
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		BTV		Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB07	020-SB07	020-SB07	020-SB07	020-SB07	020-SB07	020-SB07
						Field Sample ID:	020-SB07-SS0.0	020-SB07-SS2.5	020-SB07-SS5.0	020-SB07-SS10.0	020-SB07-SS20.0	020-SB07-SS30.0	020-SB07-SS60.0
						Sample Date:	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	1.0	3.5	6.0	11.0	21.0	31.0	61.0
General Minerals													
pH	--	--	--	--	--		7.1	6.7	NA	NA	NA	NA	NA
Total Metals (mg/kg)													
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Aluminum	SSDS	11200	19600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Beryllium	SSDS	0.8	0.8	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--		NA	NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Chromium	SSDS	108	221	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA	NA	NA	NA
Copper	SSDS	37	70	3100	41000		NA	NA	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA	NA	NA	NA
Iron	SSDS	14800	25800	23000	100000		NA	NA	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		NA	NA	NA	NA	NA	NA	NA
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--		NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA	NA	NA	NA
Manganese	SSDS	233	554	1800	19000		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SSDS	3	3	390	5100		NA	NA	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA	NA	NA	NA
Nickel	SSDS	10	17	1600	20000		NA	NA	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--		NA	NA	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100		NA	NA	NA	NA	NA	NA	NA
Silver	SSDS	2	2	390	5100		NA	NA	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--		NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA	NA	NA	NA
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA	NA	NA	NA
Vanadium	SSDS	35	61	550	7200		NA	NA	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA	NA	NA	NA
Zinc	SSDS	98	209	23000	100000		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 10 of 20)

	BTV			Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB07	020-SB07	020-SB07	020-SB07	020-SB07	020-SB07	020-SB07
						Field Sample ID:	020-SB07-SS0.0	020-SB07-SS2.5	020-SB07-SS5.0	020-SB07-SS10.0	020-SB07-SS20.0	020-SB07-SS30.0	020-SB07-SS60.0
						Sample Date:	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	1.0	3.5	6.0	11.0	21.0	31.0	61.0
Semivolatile Organic Compounds (mg/kg)													
1,2-Dichlorobenzene	--	--	--	370	370		<1.5	<0.74	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		<1.5	<0.74	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		<1.5	<0.74	NA	NA	NA	NA	NA
Diethyl phthalate	--	--	--	49000	100000		<1.5	<0.74	NA	NA	NA	NA	NA
Phenol	--	--	--	37000	100000		<0.65	<0.32	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		17.7 F	66.1 F	<11	<10	<11	<11	<11
Motor oils	--	--	--	100 (rwqcb)	--		242	760	<11	<10	<11	<11	<11
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	--	--	--	1200	1200		NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE

		BTV		Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB08	020-SB08	020-SB08	020-SB08	020-SB09	020-SB09	020-SB09
						Field Sample ID:	020-SB08-SS0.0	020-SB08-SS2.5	020-SB08-SS5.0	020-SB08-SS10.0	020-SB09-SS0.0	020-SB09-SS2.5	020-SB09-SS5.0
						Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	0.0	2.5	5.0	9.5	0.0	2.5	5.0
General Minerals													
pH	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)													
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Aluminum	SSDS	11200	19600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Beryllium	SSDS	0.8	0.8	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--		NA	NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Chromium	SSDS	108	221	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA	NA	NA	NA
Copper	SSDS	37	70	3100	41000		NA	NA	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA	NA	NA	NA
Iron	SSDS	14800	25800	23000	100000		NA	NA	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		NA	NA	NA	NA	NA	NA	NA
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--		NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA	NA	NA	NA
Manganese	SSDS	233	554	1800	19000		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SSDS	3	3	390	5100		NA	NA	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA	NA	NA	NA
Nickel	SSDS	10	17	1600	20000		NA	NA	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--		NA	NA	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100		NA	NA	NA	NA	NA	NA	NA
Silver	SSDS	2	2	390	5100		NA	NA	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--		NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA	NA	NA	NA
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA	NA	NA	NA
Vanadium	SSDS	35	61	550	7200		NA	NA	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA	NA	NA	NA
Zinc	SSDS	98	209	23000	100000		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE

	BTV			Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB08	020-SB08	020-SB08	020-SB08	020-SB09	020-SB09	020-SB09
						Field Sample ID:	020-SB08-SS0.0	020-SB08-SS2.5	020-SB08-SS5.0	020-SB08-SS10.0	020-SB09-SS0.0	020-SB09-SS2.5	020-SB09-SS5.0
						Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	0.0	2.5	5.0	9.5	0.0	2.5	5.0
Semivolatile Organic Compounds (mg/kg)													
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	--	--	--	49000	100000		NA	NA	NA	NA	NA	NA	NA
Phenol	--	--	--	37000	100000		NA	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		12.7	1.3 F	2.8 F	2.8 F	1.5 F	<11	10.9 F
Motor oils	--	--	--	100 (rwqcb)	--		42.1	<11	<11	<10	4.5 F	<11	<11
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	--	--	--	1200	1200		NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
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		BTV		Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB09	020-SB10	020-SB10	020-SB10	020-SB10	020-SB11	020-SB11
						Field Sample ID:	020-SB09-SS10.0	020-SB10-SS0.0	020-SB10-SS2.5	020-SB10-SS5.0	020-SB10-SS10.0	020-SB11-SS0.0	020-SB11-SS2.5
						Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/29/2003	1/29/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	9.5	0.0	2.5	5.0	9.5	1.0	3.5
General Minerals													
pH	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)													
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Aluminum	SSDS	11200	19600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Beryllium	SSDS	0.8	0.8	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--		NA	NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Chromium	SSDS	108	221	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA	NA	NA	NA
Copper	SSDS	37	70	3100	41000		NA	NA	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA	NA	NA	NA
Iron	SSDS	14800	25800	23000	100000		NA	NA	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		NA	NA	NA	NA	NA	NA	NA
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--		NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA	NA	NA	NA
Manganese	SSDS	233	554	1800	19000		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SSDS	3	3	390	5100		NA	NA	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA	NA	NA	NA
Nickel	SSDS	10	17	1600	20000		NA	NA	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--		NA	NA	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100		NA	NA	NA	NA	NA	NA	NA
Silver	SSDS	2	2	390	5100		NA	NA	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--		NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA	NA	NA	NA
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA	NA	NA	NA
Vanadium	SSDS	35	61	550	7200		NA	NA	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA	NA	NA	NA
Zinc	SSDS	98	209	23000	100000		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 14 of 20)

	BTV			Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB09	020-SB10	020-SB10	020-SB10	020-SB10	020-SB11	020-SB11
						Field Sample ID:	020-SB09-SS10.0	020-SB10-SS0.0	020-SB10-SS2.5	020-SB10-SS5.0	020-SB10-SS10.0	020-SB11-SS0.0	020-SB11-SS2.5
						Sample Date:	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/28/2003	1/29/2003	1/29/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	9.5	0.0	2.5	5.0	9.5	1.0	3.5
Semivolatile Organic Compounds (mg/kg)													
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	--	--	--	49000	100000		NA	NA	NA	NA	NA	NA	NA
Phenol	--	--	--	37000	100000		NA	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		5.5 F	2.4 F	<11	3.4 F	1.9 F	2.5 F	<11
Motor oils	--	--	--	100 (rwqcb)	--		<10	<11	<11	<10	<10	4 F	<11
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	--	--	--	1200	1200		NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE

		BTV		Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB12
						Field Sample ID:	020-SB11-SS5.0	020-SB11-SS10.0	020-SB11-SS20.0	020-SB11-SS30.0	020-SB11-SS40.0	020-SB11-SS50.0	020-SB12-SS0.0
						Sample Date:	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	4/23/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	6.0	9.5	21.0	31.0	41.0	51.0	0.0
General Minerals													
pH	--	--	--	--	--		NA	NA	NA	NA	NA	NA	6.65
Total Metals (mg/kg)													
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Aluminum	SSDS	11200	19600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Beryllium	SSDS	0.8	0.8	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--		NA	NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Chromium	SSDS	108	221	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA	NA	NA	NA
Copper	SSDS	37	70	3100	41000		NA	NA	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA	NA	NA	NA
Iron	SSDS	14800	25800	23000	100000		NA	NA	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		NA	NA	NA	NA	NA	NA	NA
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--		NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA	NA	NA	NA
Manganese	SSDS	233	554	1800	19000		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SSDS	3	3	390	5100		NA	NA	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA	NA	NA	NA
Nickel	SSDS	10	17	1600	20000		NA	NA	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--		NA	NA	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100		NA	NA	NA	NA	NA	NA	NA
Silver	SSDS	2	2	390	5100		NA	NA	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--		NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA	NA	NA	NA
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA	NA	NA	NA
Vanadium	SSDS	35	61	550	7200		NA	NA	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA	NA	NA	NA
Zinc	SSDS	98	209	23000	100000		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
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	BTV			Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB11	020-SB12
						Field Sample ID:	020-SB11-SS5.0	020-SB11-SS10.0	020-SB11-SS20.0	020-SB11-SS30.0	020-SB11-SS40.0	020-SB11-SS50.0	020-SB12-SS0.0
						Sample Date:	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	1/29/2003	4/23/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	6.0	9.5	21.0	31.0	41.0	51.0	0.0
Semivolatile Organic Compounds (mg/kg)													
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	<1.6
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	<1.6
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		NA	NA	NA	NA	NA	NA	<1.6
Diethyl phthalate	--	--	--	49000	100000		NA	NA	NA	NA	NA	NA	<1.6
Phenol	--	--	--	37000	100000		NA	NA	NA	NA	NA	NA	<0.68 J
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		<11	<11	<11	<11	<11	<11	53.5 F
Motor oils	--	--	--	100 (rwqcb)	--		<11	<11	<11	<11	<11	<11	230
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	--	--	--	1200	1200		NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE

		BTV		Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB12	020-SB13	020-SB13	020-SB14	020-SB14	020-SB14	020-SB15
						Field Sample ID:	020-SB12-SS2.0	020-SB13-SS0.0	020-SB13-SS2.0	020-SB14-SS0.0	020-SB14-SS2.0	020-SB99-SS2.0	020-SB15-SS0.5
						Sample Date:	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	7/21/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	2.0	0.0	2.0	0.0	2.0	2.0	0.5
General Minerals													
pH	--	--	--	--	--		NA	7.35	NA	7.83	NA	NA	NA
Total Metals (mg/kg)													
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Aluminum	SSDS	11200	19600	76000	100000		NA	NA	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA	NA
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Beryllium	SSDS	0.8	0.8	150	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--		NA	NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Chromium	SSDS	108	221	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA	NA	NA	NA
Copper	SSDS	37	70	3100	41000		NA	NA	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA	NA	NA	NA
Iron	SSDS	14800	25800	23000	100000		NA	NA	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		NA	NA	NA	NA	NA	NA	NA
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--		NA	NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA	NA	NA	NA
Manganese	SSDS	233	554	1800	19000		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA	NA	NA	NA
Molybdenum	SSDS	3	3	390	5100		NA	NA	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA	NA	NA	NA
Nickel	SSDS	10	17	1600	20000		NA	NA	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--		NA	NA	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100		NA	NA	NA	NA	NA	NA	NA
Silver	SSDS	2	2	390	5100		NA	NA	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--		NA	NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA	NA	NA	NA
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA	NA	NA	NA
Vanadium	SSDS	35	61	550	7200		NA	NA	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA	NA	NA	NA
Zinc	SSDS	98	209	23000	100000		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE
(Page 18 of 20)

	BTV			Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB12	020-SB13	020-SB13	020-SB14	020-SB14	020-SB14	020-SB15
						Field Sample ID:	020-SB12-SS2.0	020-SB13-SS0.0	020-SB13-SS2.0	020-SB14-SS0.0	020-SB14-SS2.0	020-SB99-SS2.0	020-SB15-SS0.5
						Sample Date:	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	4/23/2003	7/21/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	2.0	0.0	2.0	0.0	2.0	2.0	0.5
Semivolatile Organic Compounds (mg/kg)													
1,2-Dichlorobenzene	--	--	--	370	370		NA	<0.77	NA	<1.5	NA	NA	<0.79
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	<0.77	NA	<1.5	NA	NA	<0.79
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		NA	<0.77	NA	<1.5	NA	NA	0.0481 F
Diethyl phthalate	--	--	--	49000	100000		NA	<0.77	NA	<1.5	NA	NA	0.11 F
Phenol	--	--	--	37000	100000		NA	<0.33	NA	<0.66	NA	NA	<0.34
Total Petroleum Hydrocarbons (mg/kg)													
Diesel Range	--	--	--	100 (rwqcb)	--		2.5 F	18.7	1.7 F	22	<11	2.2 F	31.7 F
Motor oils	--	--	--	100 (rwqcb)	--		26.6	85.7	10.6 F	94.5	8.5 F	8.9 F	257
Volatile Organic Compounds (mg/kg)													
1,1,1-Trichloroethane	--	--	--	1200	1200		NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		NA	NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE

		BTV		Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB15	020-SB16	020-SB17	020-SB18	020-SC01	020-SC02
						Field Sample ID:	020-SB15-SS1.5	020-SB16-SS0.5	020-SB17-SS0.5	020-SB18-SS0.5	020-SC01-SS2.0	020-SC02-SS2.0
						Sample Date:	7/21/2003	7/21/2003	7/21/2003	7/21/2003	1/29/2003	1/29/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	1.5	0.5	0.5	0.5	2.0	2.0
General Minerals												
pH	--	--	--	--	--		NA	NA	NA	NA	6.69	6.85
Total Metals (mg/kg)												
Aluminum	SDS	7010	10600	76000	100000		NA	NA	NA	NA	NA	NA
Aluminum	SSDS	11200	19600	76000	100000		NA	NA	NA	NA	NA	NA
Arsenic	SDS	2	4	0.39 (ca)	1.6 (ca)		NA	NA	NA	NA	NA	NA
Barium	SDS	98	172	5400	67000		NA	NA	NA	NA	NA	NA
Barium	SSDS	35	52	5400	67000		NA	NA	NA	NA	NA	NA
Beryllium	SDS	0.7	0.7	150	1900 (ca)		NA	NA	NA	NA	NA	NA
Beryllium	SSDS	0.8	0.8	150	1900 (ca)		NA	NA	NA	NA	NA	NA
Cadmium	SDS	1	1	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA
Cadmium	SSDS	2	2	1.7 (ca)	7.4 (ca)		NA	NA	NA	NA	NA	NA
Calcium	SDS	3350	6030	--	--		NA	NA	NA	NA	NA	NA
Calcium	SSDS	1230	1230	--	--		NA	NA	NA	NA	NA	NA
Chromium	SDS	28	47	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA
Chromium	SSDS	108	221	210 (ca)	450 (ca)		NA	NA	NA	NA	NA	NA
Cobalt	SDS	4	7	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA
Cobalt	SSDS	6	6	900 (ca)	1900 (ca)		NA	NA	NA	NA	NA	NA
Copper	SDS	46	92	3100	41000		NA	NA	NA	NA	NA	NA
Copper	SSDS	37	70	3100	41000		NA	NA	NA	NA	NA	NA
Iron	SDS	13500	20700	23000	100000		NA	NA	NA	NA	NA	NA
Iron	SSDS	14800	25800	23000	100000		NA	NA	NA	NA	NA	NA
Lead	SDS	4	6	150	750		NA	NA	NA	NA	NA	NA
Magnesium	SDS	3900	3900	--	--		NA	NA	NA	NA	NA	NA
Magnesium	SSDS	924	1320	--	--		NA	NA	NA	NA	NA	NA
Manganese	SDS	523	1100	1800	19000		NA	NA	NA	NA	NA	NA
Manganese	SSDS	233	554	1800	19000		NA	NA	NA	NA	NA	NA
Molybdenum	SDS	4	4	390	5100		NA	NA	NA	NA	NA	NA
Molybdenum	SSDS	3	3	390	5100		NA	NA	NA	NA	NA	NA
Nickel	SDS	13	21	1600	20000		NA	NA	NA	NA	NA	NA
Nickel	SSDS	10	17	1600	20000		NA	NA	NA	NA	NA	NA
Potassium	SDS	1010	1400	--	--		NA	NA	NA	NA	NA	NA
Potassium	SSDS	745	1030	--	--		NA	NA	NA	NA	NA	NA
Silver	SDS	0.2	0.3	390	5100		NA	NA	NA	NA	NA	NA
Silver	SSDS	2	2	390	5100		NA	NA	NA	NA	NA	NA
Sodium	SDS	453	767	--	--		NA	NA	NA	NA	NA	NA
Sodium	SSDS	363	363	--	--		NA	NA	NA	NA	NA	NA
Thallium	SDS	0.4	0.6	5.2	67		NA	NA	NA	NA	NA	NA
Vanadium	SDS	25	37	550	7200		NA	NA	NA	NA	NA	NA
Vanadium	SSDS	35	61	550	7200		NA	NA	NA	NA	NA	NA
Zinc	SDS	107	214	23000	100000		NA	NA	NA	NA	NA	NA
Zinc	SSDS	98	209	23000	100000		NA	NA	NA	NA	NA	NA

TABLE AOC -020-SOIL

CHEMICALS DETECTED IN SOIL
VANDENBERG AIR FORCE BASE

	BTV			Soil PRG		Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
						Location ID:	020-SB15	020-SB16	020-SB17	020-SB18	020-SC01	020-SC02
						Field Sample ID:	020-SB15-SS1.5	020-SB16-SS0.5	020-SB17-SS0.5	020-SB18-SS0.5	020-SC01-SS2.0	020-SC02-SS2.0
						Sample Date:	7/21/2003	7/21/2003	7/21/2003	7/21/2003	1/29/2003	1/29/2003
	Type	95% UCL	99% UCL	Residential	Industrial	Sample Depth:	1.5	0.5	0.5	0.5	2.0	2.0
Semivolatile Organic Compounds (mg/kg)												
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	<3.1	<3
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	<3.1	<3
bis(2-Ethylhexyl)phthalate	--	--	--	35 (ca)	120 (ca)		NA	NA	NA	NA	<3.1	<3
Diethyl phthalate	--	--	--	49000	100000		NA	NA	NA	NA	<3.1	<3
Phenol	--	--	--	37000	100000		NA	NA	NA	NA	<1.3	<1.3
Total Petroleum Hydrocarbons (mg/kg)												
Diesel Range	--	--	--	100 (rwqcb)	--		2.8 F	5.8 F	3.9 F	3.4 F	101 F	51.9 F
Motor oils	--	--	--	100 (rwqcb)	--		32.4	31.4	24	18.7	856	631
Volatile Organic Compounds (mg/kg)												
1,1,1-Trichloroethane	--	--	--	1200	1200		NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	--	--	--	370	370		NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	--	--	--	3.4 (ca)	7.9 (ca)		NA	NA	NA	NA	NA	NA
Methylene chloride	--	--	--	9.1 (ca)	21 (ca)		NA	NA	NA	NA	NA	NA

NOTES

DETECTED CHEMICALS IN SOIL AND WATER
VANDENBERG AIR FORCE BASE

BTV Types:
BED = bedrock
GW = groundwater
SA = surface alluvium
SDS = surface dune sand
SSA = subsurface alluvium
SSDS = subsurface dune sand

Units:
mg/kg = milligrams per kilogram
μg/L = micrograms per liter

Abbreviations:
-- = not applicable or not established
AOC = Area of Concern
BTV = background threshold value (Jacobs Engineering Group, Inc., 1994)
(ca) = Cancerous
Cal = California Department of Health Services
MCL = U.S. Environmental Protection Agency (2002) Maximum Contaminant Level
NA = not applicable
ND = Not detected
PRG = U.S. Environmental Protection Agency (2002) Preliminary Remediation Goal
RWQCB = Regional Water Quality Control Board
(sw) = Surface Water
UCL = upper confidence limit

Formatted Chemical Concentrations:
Bold = Detected Result is above the Residential PRG
Underlined = Detected TPH Result is above the RWQCB Standard

Qualifiers:
B = The analyte was found in an associated blank, as well as in the sample.
F = The analyte was positively identified, but the quantitation is below the reporting limit.
J = The associated numerical value is an estimated quantity.
M = A matrix effect was present.
R = The data are unusable due to deficiencies in the ability to analyze the sample and meet quality control criteria.

References:
3PDO59 = Delivery Order 0059 (Montgomery Watson Harza, 2002-2003)
DO7 = Delivery Order 0007 (Montgomery Watson Harza, 1998-1999)
DO32 = Delivery Order 0032 (Montgomery Watson Harza, 1999-2000)
DO60 = Delivery Order 0060 (Montgomery Watson Harza, 2000)
WR09 = Work Request 09 (Tetra Tech, 1997)
WR10 = Work Request 10 (Tetra Tech, 1998)

For AOC-133 Tetra Tech WR09 Soil samples:
1. Tank bottom sample depths are assumed to be the tank burial depth plus 8 feet (diameter of a 10,000-gallon capacity UST).
2. The burial depth of Tanks 11, 13 and 14 is 5.5 feet bgs; Tank 12 was buried at a depth of 2.0 feet bgs
3. Sidewall sample depths are assumed to be collected at a depth of 9 feet bgs, roughly 1 foot above the base of the UST excavation.

ATTACHMENT 1

BORING LOGS

(BORINGS 020-SB01 THROUGH 020-SB11)

MONTGOMERY WATSON

Boring ID: 020-SB01		Well ID:	
Borehole Diam.(in): 4.00	Drill Bit Diam.(in): 4.00	Project: Vandenberg DO32	
Total Depth(ft): 5.50	Grnd Surf Elev..	Job #:	Site: AOC-020
Well Comp. Date:	Comp. Time:	Logged By: Steve Silva	Reviewed By: Terry Winsor
Soil Backfill Date:	Backfill Time:	Drilling Contractor:	Field Instrumentation:
Depth to 1st H2O:	Date/Time:	Drill Rig Type/Method: Hand Auger	
Depth to H2O After Drilling:	Date/Time:	Driller's Name: Steve Silva	
Depth to other Water Bearing Zones:		Drill Start Date:	Start Time:
Samplers for Soil:	Vapor: Water:	Drill Finish Date:	Finish Time:

Sample Interval	Recovered (%)	Blow Count 1	Blow Count 2	Blow Count 3	Soil Sample	Water Sample	Vapor Sample	PID/OVA (ppm)	Initial/Static Water Level	Depth (ft.)	USCS/ASTM Soil Classification	Soil Description	Color (Munsell)	% Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Silt/Clay
											SP	Poorly graded fine Sand, dark brown, loose to medium dense, dry, no odor, no staining, contains rootlets					100	
	100									1								
										2								
	100									3								
										4								
										5		Becomes 90% fine sand, 10% silt.						
	100																	
										6		Total depth of boring 5 5'						
										7								
										8								
										9								
										10								
										11								
										12								
										13								
										14								
										15								

MONTGOMERY WATSON

Boring ID: 020-SB02		Well ID:	
Borehole Diam.(in): 4.00	Drill Bit Diam.(in): 4.00	Project: Vandenberg DO32	
Total Depth(ft): 5.50	Grnd Surf Elev..	Job #:	Site: AOC-020
Well Comp. Date:	Comp. Time:	Logged By: Steve Silva	Reviewed By: Terry Winsor
Soil Backfill Date:	Backfill Time:	Drilling Contractor:	Field Instrumentation:
Depth to 1st H2O:	Date/Time:	Drill Rig Type/Method: Hand Auger	
Depth to H2O After Drilling:	Date/Time:	Driller's Name: Steve Silva	
Depth to other Water Bearing Zones:		Drill Start Date:	Start Time:
Samplers for Soil:	Vapor: Water:	Drill Finish Date:	Finish Time:

Sample Interval	Recovered (%)	Blow Count 1	Blow Count 2	Blow Count 3	Soil Sample	Water Sample	Vapor Sample	PID/OVA (ppm)	Initial/Static Water Level	Depth (ft.)	USCS/ASTM Soil Classification	Soil Description	Color (Munsell)	% Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Silt/Clay
	100				S					1	SP	Poorly graded fine Sand, dark brown, loose, dry, no odor, no staining, contains rootlets.					85	15
										2								
	100				S					3		Becomes light brown, 100% fine sand.						
										4								
	100				S					5		Becomes light orange-tan, medium dense.						
										6		Total depth of boring 5.5'.						
										7								
										8								
										9								
										10								
										11								
										12								
										13								
										14								
										15								

MONTGOMERY WATSON

		Boring ID: 020-SB03	Well ID:
Borehole Diam.(in):	Drill Bit Diam.(in):	Project: Vandenberg DO32	
Total Depth(ft): 5.50	Grnd Surf Elev.:	Job #:	Site: AOC-020
Well Comp. Date:	Comp. Time:	Logged By:	Reviewed By: Terry Winsor
Soil Backfill Date:	Backfill Time:	Drilling Contractor:	Field Instrumentation:
Depth to 1st H2O:	Date/Time:	Drill Rig Type/Method:	
Depth to H2O After Drilling:	Date/Time:	Driller's Name:	
Depth to other Water Bearing Zones:		Drill Start Date:	Start Time:
Samplers for Soil:	Vapor:	Drill Finish Date:	Finish Time:
	Water:		

Sample Interval	Recovered (%)	Blow Count 1	Blow Count 2	Blow Count 3	Soil Sample	Water Sample	Vapor Sample	PID/OVA (ppm)	Initial/Static Water Level	Depth (ft.)	USCS/ASTM Soil Classification	Soil Description	Color (Munsell)	% Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Silt/Clay
											SM	Silty fine Sand, grey-brown, loose, dry, no odor, no staining, contains rootlets.					80	20
	100				S					1								
										2								
	100				S					3								
											SP	Poorly graded Sand, brown, medium dense, dry, trace rounded gravel up to 0.8", no odor, no staining.					90	10
										4								
										5		Becomes light brown, medium dense to dense, moist, 100% fine sand.						
	100				S					6		Total depth of boring 5.5'.						
										7								
										8								
										9								
										10								
										11								
										12								
										13								
										14								
										15								

MWH

Boring ID: **020-SB-04**

Borehole Diam. (in.): 1.5	Total Depth (ft): 10.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-020
Drill Start Date: 01-28-2003	Start Time: 12:10	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-28-2003	Finish Time: 12:30	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Geoprobe	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	

Comments:	Well Comp. Date: N/A	Completion Time: N/A
Samplers: Macrocore	Soil Backfill Date: N/A	Backfill Time: N/A

Sample Interval Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
									Surface: Shrubs and heavy vegetation					
	A	100		0 0		0		SM	Silty Sand, dark reddish brown (5YR 3/4) loose moist no odor medium to fine grain organics			60	20	20
						2			BZ=0 0ppm					
	A	100		0 0				SP	Poorly Graded Sand yellowish brown (10YR 5/4) loose moist no odor medium grain			95	5	
						4								
	A	100		0 0				SP	Poorly Graded Sand yellowish red (5YR 5/6) loose moist no odor medium grain sand			85	15	
	A	100				6								
						8								
		100							Same as above			85	15	
		100		0 0										
	A	100				10			Total depth of boring 10' No groundwater encountered No odor					
						12								
						14								
						16								
						18								
						20								

LOG OF BORING VAFB_DO59.GPJ MWH WC.GDT 5/22/03

MWH

Boring ID: **020-SB-05**

Borehole Diam. (in.): 1.5	Total Depth (ft): 10.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-020
Drill Start Date: 01-28-2003	Start Time: 12:35	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-28-2003	Finish Time: 13:00	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Geoprobe	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	

Comments:	Well Comp. Date: N/A	Completion Time: N/A
Samplers: Macro-Probe	Soil Backfill Date: N/A	Backfill Time: N/A

Sample Interval	Retained Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
									Surface: Shrubs and heavy vegetation					
	A	100		0 0		0–2		SM	Silty Sand, dark reddish brown (5YR 3/4) loose moist no odor, medium fine sand organics			60	20	20
	A	100		0 0		2–4		SP	Poorly Graded Sand yellowish brown (10YR 5/4) loose moist no odor trace silt medium grain			75	20	5
	A	100		0 0		4–6		SP	Poorly Graded Sand, yellowish red (5YR 5/6) loose moist no odor medium grain BZ=0 1ppm			85	15	
	A	100		0 0		6–8								
						8–10		SP	Poorly Graded Sand yellowish red (5YR 5/6) loose moist no odor trace clay, medium grain			80	15	5
						10–20			Total depth of boring 10 No groundwater encountered No odor					

LOG (ING VAFB_DO59.GPJ MWH WC.GDT 5/22/03

MWH

Boring ID: **020-SB-06**

Borehole Diam. (in.): 1.5	Total Depth (ft): 10.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-061
Drill Start Date: 01-28-2003	Start Time: 13:20	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-28-2003	Finish Time: 13:45	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Geoprobe	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	

Comments:	Well Comp. Date: N/A	Completion Time: N/A
Samplers: Macro-Probe	Soil Backfill Date: 01-28-2003	Backfill Time:

Sample Interval	Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
										Surface: Shrubs and heavy vegetation					
		A	100				0		SM	Silty Sand, dark reddish brown (5YR 3/4), loose, moist, no odor, medium-fine sand, organics			60	20	20
		A	100		0 0		2		SP	Poorly Graded Sand, dark reddish brown (5YR 3/4), loose, moist, no odor, trace clay, occasional sub-rounded gravel up to 1/4" diameter	5		70	20	5
		A					4			Same as above			70	20	5
		A	100		0 0										
		A					6			BZ=0 0ppm					
							8		SP	Poorly Graded Sand, very pale brown (10YR 7/4), loose, damp to moist, no odor, clean sand			100		
		A	100		0 0		10			Total depth of boring 10' No groundwater encountered No odor					
							12								
							14								
							16								
							18								
							20								

LOG OF BORING VAFB_DO59.GPJ MWH WC.GDT 5/23/03

MWH

Boring ID: **020-SB-07**

Borehole Diam. (in.): 7.25	Total Depth (ft): 61.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-061
Drill Start Date: 01-29-2003	Start Time: 15:50	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-30-2003	Finish Time: 09:25	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	

Comments:	Well Comp. Date: N/A	Completion Time: N/A
Samplers: Split Spoon	Soil Backfill Date: 01-30-2003	Backfill Time: 09:35

Sample Interval / Retained / Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
					0			Surface: Shrubs and vegetation					
A		1 2 3	0 0				SM	Silty Sand dark reddish brown (5YR 3/4) loose moist no odor			60	20	20
A		5 4 3	0 0				SP-SM	Poorly Graded Sand With Silt dark grayish brown (10YR 4/2) loose damp to moist no odor			65	20	15
A		5 11 10	0 0		5		SP-SM	BZ=0.1ppm Poorly Graded Sand With Silt yellowish brown (10YR 5/4) loose moist no odor medium grain			70	20	10
A		10 16 18	0 0		10		SP	Poorly Graded Sand yellowish red (5YR 5/6) damp to moist no odor medium grain trace silt Drilling becoming difficult			95		5
					15								
A		20 32 47	0 0		20		SP-SC	Poorly Graded Sand With Clay, yellowish red (5YR 5/6) very dense moist no odor medium grain sand homogeneous			75	10	15
					25								
A		21 37 45	0 0		30		SP-SC	Poorly Graded Sand With Clay yellowish red (5YR 5/6) very dense moist medium grain sand 1-30-03 Continued drilling			75	10	15
					35			Auger cuttings at 35					
							SP	Poorly Graded Sand light brown (7.5YR 6/3) moist with some clay			75	10	15
					40								

Log Continued on Next Page

LOG (ING VAFB_DO59.GPJ MWH WC.GDT 5/23/03

MWH

Boring ID: **020-SB-07**

Borehole Diam. (in.): 7.25	Total Depth (ft): 61.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-020
Drill Start Date: 01-29-2003	Start Time: 15:50	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-30-2003	Finish Time: 09:25	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	
Comments:		Well Comp. Date: N/A	Completion Time: N/A
Samplers: Split Spoon		Soil Backfill Date: 01-30-2003	Backfill Time: 09:35

Sample Interval Retained Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
					40			No sample collected					
					45								
					50			No sample collected					
					55								
▩	50 100	36			60		SP	Poorly Graded Sand, very dense, moist no odor medium grain sugar- like sand clean			100		
								Total depth of boring 61' No groundwater encountered No odors					
					65								
					70								
					75								
					80								

LOG OF BORING VAFB_DO59.GPJ MWH WC.GDT 5/22/03

MWH

Boring ID: **020-SB-08**

Borehole Diam. (in.): 1.5	Total Depth (ft): 10.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-020
Drill Start Date: 01-28-2003	Start Time: 14:10	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-28-2003	Finish Time: 14:30	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Geoprobe	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	

Comments:	Well Comp. Date: N/A	Completion Time: N/A
Samplers: Macro-Probe	Soil Backfill Date: 01-28-2003	Backfill Time:

Sample Interval	Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
										Surface: Shrubs and heavy vegetation					
		A	100				0		SM	Silty Sand, dark reddish brown (5YR 3/4) loose damp to moist no odor			60	20	20
		A	100		0 0		2		SP	Poorly Graded Sand, yellowish brown (10YR 5/4) loose, damp no odor medium grain trace silt BZ=0 0			75	20	5
		A	100		0 0		4		SP	Poorly Graded Sand, yellowish red (5YR 5/6), loose, damp to moist no odor clean sand, medium grain			100		
							6								
							8			Same as above			100		
		A	100		0 0		10			Total depth of boring 10' No groundwate encountered No odors					
							12								
							14								
							16								
							18								
							20								

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MWH

Boring ID: **020-SB-09**

Borehole Diam. (in.): 1.5	Total Depth (ft): 10.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-020
Drill Start Date: 01-28-2003	Start Time: 14:40	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-28-2003	Finish Time: 14:55	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	
Comments:		Well Comp. Date: N/A	Completion Time: N/A
Samplers: Split Spoon		Soil Backfill Date: 01-28-2003	Backfill Time:

Sample Interval	Retained	Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
							0			Surface: Shrubs and heavy vegetation					
		A	100						SM	Silty Sand dark reddish brown (5YR 3/4), loose moist no odor organics			60	20	20
							2								
		A	100		0 0				SP	Poorly Graded Sand yellowish brown (10YR 5/4) loose moist, no odor medium grain sand trace silt			75	20	5
							4								
		A	100		0 1				SC-SM	Silty, Clayey Sand moist no odor, medium grain			70	10	20
							6								
										BZ=0 1ppm					
							8								
		A													
		A	100		0 0				SP	Poorly Graded Sand, yellowish red (5YR 5/6) medium dense moist no odor medium grain, trace of clay			85	10	5
							10			Total depth of boring 10' No groundwater encountered No odors					
							12								
							14								
							16								
							18								
							20								

LOG OF BORING VAFB_DO59.GPJ MWH WC.GDT 5/22/03

MWH

Boring ID: **020-SB-10**

Borehole Diam. (in.): 1.5	Total Depth (ft): 10.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-020
Drill Start Date: 01-28-2003	Start Time: 15:00	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-28-2003	Finish Time: 15:20	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	

Comments:	Well Comp. Date: N/A	Completion Time: N/A
Samplers: Macro-Probe	Soil Backfill Date: 01-28-2003	Backfill Time:

Sample Interval	Retained Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
						0			Surface: Shrubs and heavy vegetation					
	A	100						SM	Silty Sand dark reddish brown (5YR 3/4) loose moist no odor organics			60	20	20
						2								
	A	100		0 0				SP	Poorly Graded Sand yellowish brown (10YR 5/4) loose, moist no odor medium grain sand, trace silt			85	10	5
						4								
	A	100		0 0				SP	Poorly Graded Sand yellowish red (5YR 5/6) loose damp to moist no odor medium grain sand			90	10	
						6								
									BZ=0 1ppm					
						8								
	A	100		0 0				SP	Poorly Graded Sand, yellowish brown (10YR 5/4) loose, moist, no odor medium grain sand			90	10	
						10			Total depth of boring 10' No groundwater encountered No odors					
						12								
						14								
						16								
						18								
						20								

LOG C ...G VAFB_DO59.GPJ MWH WC.GDT 5/22/03

MWH

Boring ID: **020-SB-11**

Borehole Diam. (in.): 7.25	Total Depth (ft): 60.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-020
Drill Start Date: 01-29-2003	Start Time: 09:20	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-29-2003	Finish Time: 11:35	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	

Comments: 1/29/03	Well Comp. Date: N/A	Completion Time: N/A
Samplers: Split Spoon	Soil Backfill Date: 01-29-2003	Backfill Time:

Sample Interval Retained Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
								Surface: Shrubs, organics					
A	30 100 100	1 1 2	0 0		0		SM	Silty Sand, dark reddish brown (5YR 3/4) very loose moist no odor medium grain sand organics			60	20	20
A	0 100 100	2 2 1	0 0				SP	BZ=0 0ppm Poorly Graded Sand, yellowish brown (10YR 5/4) very loose moist no odor medium grain sand trace silt			98		2
A	50 100 100	5 8 8			5		SP	Poorly Graded Sand, yellowish red (5YR 5/6), loose, moist orange color iron staining throughout, fine to medium sand with trace silt			70	25	5
A	100 100 100	9 11 17	0 0		10		SP	Poorly Graded Sand, yellowish red (5YR 5/6) medium dense damp to moist no odor medium grain sand			100		
					15			BZ=0 0ppm					
A	100 100 100	16 24 27	0 0		20		SP	Poorly Graded Sand yellowish red (5YR 5/6) dense damp no odor medium grain sand trace silt			80	15	5
					25			Drilling becoming more difficult at 28'					
A	100 100 100	19 31 42	0 0		30		SP	Poorly Graded Sand, yellowish red (5YR 5/6) dense moist no odor fine to medium grain, trace of clay			75	20	5
					35		SP	Poorly Graded Sand Auger cuttings at 34'?; similar to last sample					
					40								

Log Continued on Next Page

LOG C NG VAFB_DO59.GPJ MWH WC.GDT 5/22/03

MWH

Boring ID: **020-SB-11**

Borehole Diam. (in.): 7.25	Total Depth (ft): 60.0	Project: VAFB DO 59	
Northing (ft):	Easting (ft):	Job Number: 4230006.59010602	Site: AOC-020
Drill Start Date: 01-29-2003	Start Time: 09:20	Logged By: MWM	Reviewed By: GMB
Drill Finish Date: 01-29-2003	Finish Time: 11:35	Drilling Contractor: TriCounty Drilling	Field Instrumentation:
Depth 1st H_2O (ft): N/A	Date / Time: N/A	Drill Rig Type/Method: Hollow Stem Auger	
Depth H_2O After Drilling (ft): N/A	Date / Time: N/A	Driller's Name: Bill/Frank	
Comments: 1/29/03		Well Comp. Date: N/A	Completion Time: N/A
Samplers: Split Spoon		Soil Backfill Date: 01-29-2003	Backfill Time:

Sample Interval	Retained Sample Type	Recovery (%)	Blow Count/6"	PID (ppm)	Water Level	Depth (feet)	Graphic Log	USCS Soil Classification	Description	Est. % of Soil: Gravel	Coarse Sand	Med. Sand	Fine Sand	Silt/Clay
		80 100	23 50/6	0 0		40		SP	Poorly Graded Sand yellowish red (5YR 5/6) very dense moist no odor fine to medium grain sand			70	20	10
						45								
		50 100 100	31 42			50		SP	Poorly Graded Sand, yellowish brown (10YR 5/4) very dense moist no odor medium grain sand (clean)			100		
						55								
						60		SP	No sample collected Poorly Graded Sand, yellowish brown (10YR 5/4), moist, medium grain sand Total depth of boring 60' No groundwater encountered No odors			90	10	
						65								
						70								
						75								
						80								

LOG OF BORING VAFB_DO59.GPJ MWH WC.GDT 5/22/03

APPENDIX H

AOC-133 GROUNDWATER MONITORING REPORT

APPENDIX H

FINAL
AOC-133 GROUNDWATER MONITORING REPORT

VANDENBERG AIR FORCE BASE, CALIFORNIA

Contract No. F41624-00-D-8022
Delivery Order 0059

Prepared for:

Air Force Center for Environmental Excellence
Brooks City-Base, Texas

Prepared by:

MWH
1340 Treat Boulevard, Suite 300
Walnut Creek, CA 94597

June 2004

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ACRONYMS AND ABBREVIATIONS

ACCI	ARSC Contracting, Inc.
AOC	Areas of Concern
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
1,2-DCA	1,2-dichloroethane
DO	delivery order
IT	International Technology Corporation
Jacobs	Jacobs Engineering Group
MCL	maximum contaminant levels
MDL	method detection limit
µg/L	micrograms per liter
mg/kg	milligrams per kilogram
MTBE	methyl tert-butyl ether
PRG	preliminary remediation goals
RWQCB	Regional Water Quality Control Board
SVOC	semivolatile organic compound
TPH	total petroleum hydrocarbons
TPH-d	total petroleum hydrocarbons as diesel
TPH-d/mo	total petroleum hydrocarbons as diesel and motor oil
TPH-g	total petroleum hydrocarbons as gasoline
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VAFB	Vandenberg Air Force Base
VOC	volatile organic compound

1.0 INTRODUCTION

MWH has prepared this report to document the activities and results of the groundwater monitoring at Area of Concern (AOC) 133 at Vandenberg Air Force Base (VAFB). The location of AOC-133 is shown on Figure 1-2. These activities were performed under Delivery Order (DO) 0059 of Contract F41624-00-D-8022.

The scope of work performed for the groundwater sampling at AOC-133 included groundwater level measurements, groundwater sampling, field and laboratory analyses, and report preparation.

In 1998, five groundwater monitoring wells were installed and groundwater was sampled under DO 07 for the purpose of characterizing water quality beneath the AOC. Five additional sampling events were conducted under DO 32 and DO 59 covering the period from December 1999 to March 2003. The results of these sampling events are presented in this document.

This report is organized as follows: Section 2.0 includes a discussion of the site description, previous investigations, current groundwater sampling results, and recommendations for future activities at AOC-133. Well sampling logs and chain-of-custody records are presented in Attachment 1 and Attachment 3, respectively. Laboratory analytical results are tabulated in Attachment 3.

1.1 QUALITY ASSURANCE/QUALITY CONTROL

All of the analytical data presented in this report have been validated according to the National Functional Guidelines (U.S. Environmental Protection Agency, 1994 and 1999), the method requirements, and requirements specified in the VAFB Revision 2, Background and Standard Approach Quality Assurance Project Plan for Investigation of Areas of Concern Revision 2 (MWH, 2002) developed by MWH. The data validation process includes review of sample

2.0 AOC-133

This section describes the history, hydrogeology, monitoring activities, analytical results and VAFB recommendations for AOC-133.

2.1 SITE DESCRIPTION

AOC-133, originally consisting of AOCs 133 and 148, is located in the cantonment area on the southeast block of the intersection of Herado Avenue and California Boulevard (Figure AOC-133). The former AOC-133 was a former fueling station (Building 10745), while the former AOC-148 was formerly used as a maintenance shop, grease rack, and vehicle wash rack. The two AOCs were consolidated into a single study area because it was impractical to separate environmental issues.

Former Building 10745 was constructed in 1942 as a Camp Cooke fueling station and was remodeled several times during its operation. According VAFB real estate records, the building was the main Government Services Administration fueling station for North Base from 1942 until June 1996. Prior to decommissioning the fueling station in July 1996, the facility contained four underground storage tanks (USTs) and associated product dispensers. According to research performed by Tetra Tech (1997), the USTs at AOC-133 had been removed and replaced several times during its operational history. Their findings indicate that the removal and disposal of 10 USTs historically present at the facility "are not documented in [Base] real estate disposal vouchers." They further state that "these tanks may have been abandoned in place."

Former Building 10745 has been identified as an AOC because of documented soil and groundwater contamination resulting from operation as a fueling facility for more than 50 years. The potential sources of contamination at this site include releases of gasoline and diesel from former USTs and past spills associated with the dispensers. Former AOC-148 was used in the

excavations, it is assumed that soil was removed to at least an approximate depth of 10 to 14 feet bgs, the estimated base of the former USTs. A total of 13 soil confirmation samples were collected along the base and side walls of the excavation. Confirmation samples were analyzed for total petroleum hydrocarbons as gasoline (TPH-g), total petroleum hydrocarbons as diesel (TPH-d), benzene, toluene, ethylbenzene, xylenes (BTEX), and lead. Maximum concentrations detected in the samples included TPH-g at 3,900 milligrams per kilogram (mg/kg), TPH-d at 11,200 mg/kg, benzene at 6.1 mg/kg, toluene at 100 mg/kg, ethylbenzene at 55 mg/kg, total xylenes at 280 mg/kg, and lead at 45.9 mg/kg. These maximum detected concentrations were well above Santa Barbara County (local lead agency at the time of the tank removals) and Regional Water Quality Control Board (RWQCB) action levels for fuel hydrocarbon constituents. Elevated hydrocarbon concentrations were encountered in confirmation samples collected in the vicinity of dispenser product piping (10745-P11-1 and 10745-P12-1), the north dispenser island (10745-I2-D1) and along the north sidewall of Tank #14 (T14-SW-N). A groundwater grab sample collected from the Tank 14 excavation contained 5,000 micrograms per liter (µg/L) TPH-g, 45 µg/L benzene, 460 µg/L toluene, 84 µg/L ethylbenzene, 500 µg/L xylenes, 950 µg/L methyl tert-butyl ether (MTBE), and 300 µg/L lead. Tetra Tech recommended that additional investigation be conducted to further assess the extent of soil and groundwater contamination beneath the site.

2.3.2 Delivery Order 0007 (Montgomery Watson, 1999)

Five monitoring wells (133-MW01 through 133-MW05) were installed to further assess the extent of groundwater impact at the site. Groundwater was analyzed for fuel components including MTBE. Maximum concentrations of TPH-d and TPH-g in groundwater were 19,300 µg/L and 64,700 µg/L, respectively. Benzene was detected at a concentration of 1,220 µg/L. The highest concentrations of TPH-g, TPH-d, and benzene were encountered in 133-MW04. Maximum concentrations of TPH-d and TPH-g in soil were detected in 148-SB01 and 133-MW04 at 666 and 323 mg/kg, respectively. Concentrations of BTEX detected in soil were less than their respective residential soil preliminary remediation goals (PRGs). Based on the

During the January 2003 sampling event, site monitoring wells were purged using a single-stage "whale" pump. Unless wells were particularly slow to recharge, a minimum of three well volumes was removed from each monitoring well. Purging continued until general water quality parameters (temperature, specific conductivity, turbidity and pH) had stabilized. During the March 2003 sampling event, groundwater was purged with a Grundfos pump that facilitated low-flow, micro-purging of site wells. The wells were purged at low flow rates until water level and general water quality parameters had stabilized. General water quality measurements are presented in Table 2-2. All field parameter measurements included in the monitoring well sampling logs are presented in Attachment 1.

Samples were collected using single-use polyethylene bailers. The individual samples were decanted into laboratory-supplied containers. Groundwater samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), total petroleum hydrocarbons as diesel/motor oil (TPH-d/mo) and TPH-g. Chain-of-custody forms are included as Attachment 2.

2.5 RESULTS

This section presents analytical results for groundwater samples collected during the two sampling events conducted in January 2003 and March 2003. Figure AOC-133 presents both historic and recent groundwater analytical results.

Depth to groundwater in each well was measured before purging and sampling. These results are presented in Table 2-1. During field sampling, 133-MW01 was observed to recharge fairly rapidly, while the remaining monitoring wells (133-MW02 through MW05) were slow to recharge. Measured static water levels between sampling events varied by no more than 0.22 feet and ranged from 4.38 feet bgs to 6.27 feet bgs.

(193 and 137 μg/L). Only naphthalene was detected at concentrations that exceeded its tap water PRG (6.2 μg/L).

2.5.3 Total Petroleum Hydrocarbons

With the exception of 133-MW04, which contained up to 7,400 μg/L (January event only), only trace concentrations of TPH-g (12 to 29 μg/L) were detected in the remaining wells. TPH-d concentrations ranged from 35 μg/L in 133-MW01 up to a maximum of 7,700 μg/L in 133-MW04, while TPH-mo concentrations ranged from non-detect in 133-MW04 to 440 μg/L in 133-MW02. TPH concentrations (for gasoline, diesel and motor oil ranges combined) ranged from 117 μg/L in 133-MW01 to 15,000 μg/L in 133-MW04. Site wells generally did not contain TPH concentrations greater than the 1,000 μg/L RWQCB action level. Exceptions include the January sampling event for 133-MW05 (1,295 μg/L) and both sampling events for 133-MW04 (15,000 μg/L in January and 11,000 μg/L in March).

2.6 DISCUSSION/RECOMMENDATION

Groundwater has been impacted with gasoline and diesel compounds, including BTEX and MTBE, in four of the five wells within AOC-133. However, only monitoring well 133-MW04 contains concentrations of benzene, MTBE and 1,2-DCA above MCLs and TPH above the RWQCB action level. TPH-d concentrations appear to be increasing to the north, or downgradient of the source area, in well 133-MW05 (up to 980 μg/L).

A total of six monitoring events were conducted at AOC-133 from February 1999 through March 2003. Over this period, TPH-d concentrations in 133-MW01 and TPH-g concentrations in 133-MW04 have exponentially decreased, which suggests that the TPH groundwater plume is undergoing natural attenuation (Figures 2-1 through 2-3 depicting TPH-g, TPH-d, and Total TPH Concentrations in Well MW04 from 2/99 through 2/03). This trend is also supported by a notable decrease in benzene and MTBE concentrations over the 4-year period (Figures 2-4 and 2-5).

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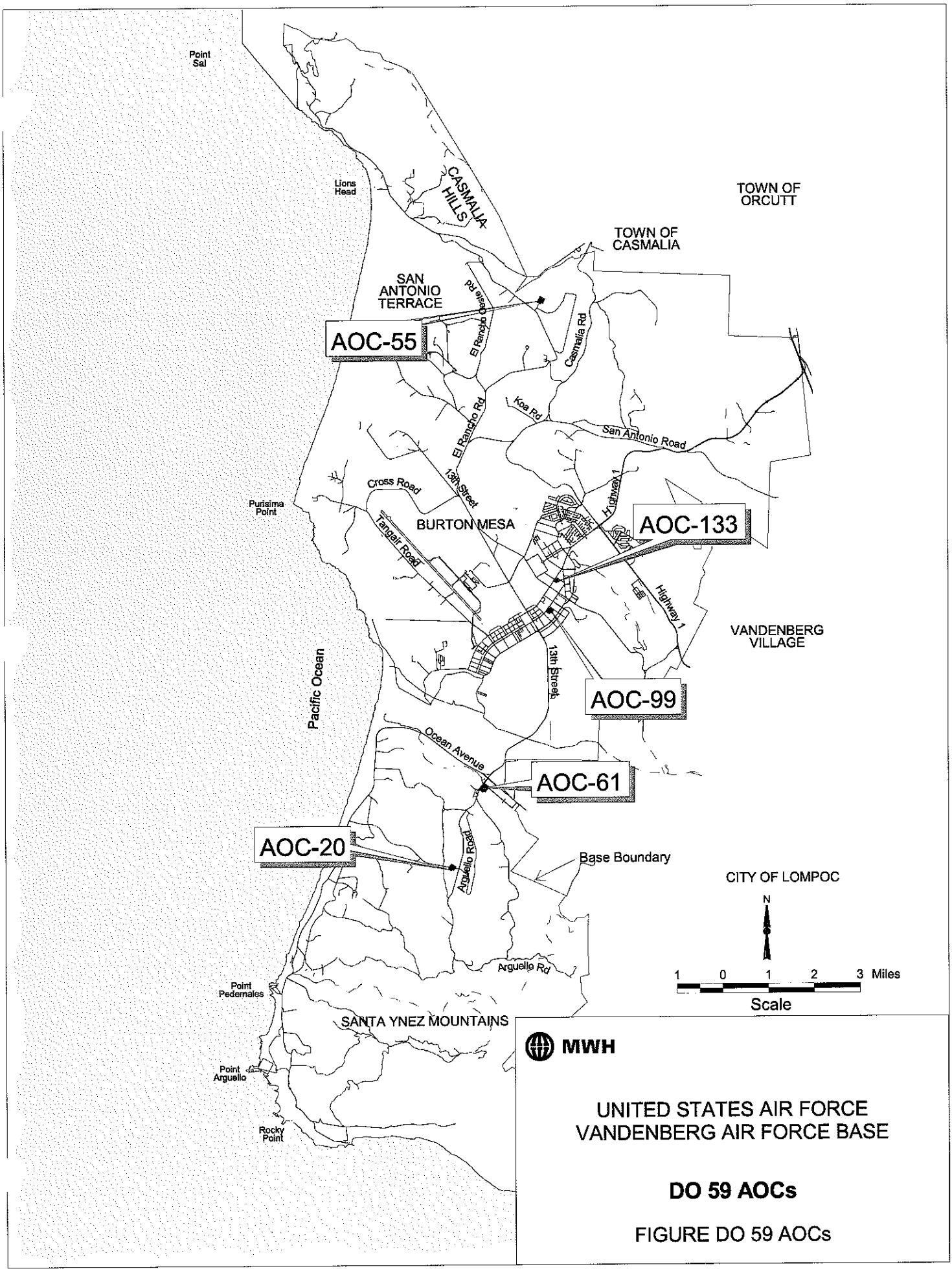
FIGURES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Lions Head
CASMALIA HILLS
TOWN OF ORCUTT
TOWN OF CASMALIA
SAN ANTONIO TERRACE
Glesse Rd
AOC-55
El Rancho Rd
Casmalia Rd
Koa Rd
San Antonio Road
El Rancho Rd
13th Street
Cross Road
Purisima Point
BURTON MESA
Tangair Road
Highway 1
AOC-133
Highway 1
VANDENBERG VILLAGE
Pacific Ocean
13th Street
AOC-99
Ocean Avenue
AOC-61
AOC-20
Arguello Road
Base Boundary
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Point Pedernales
SANTA YNEZ MOUNTAINS
Point Arguello
Rocky Point
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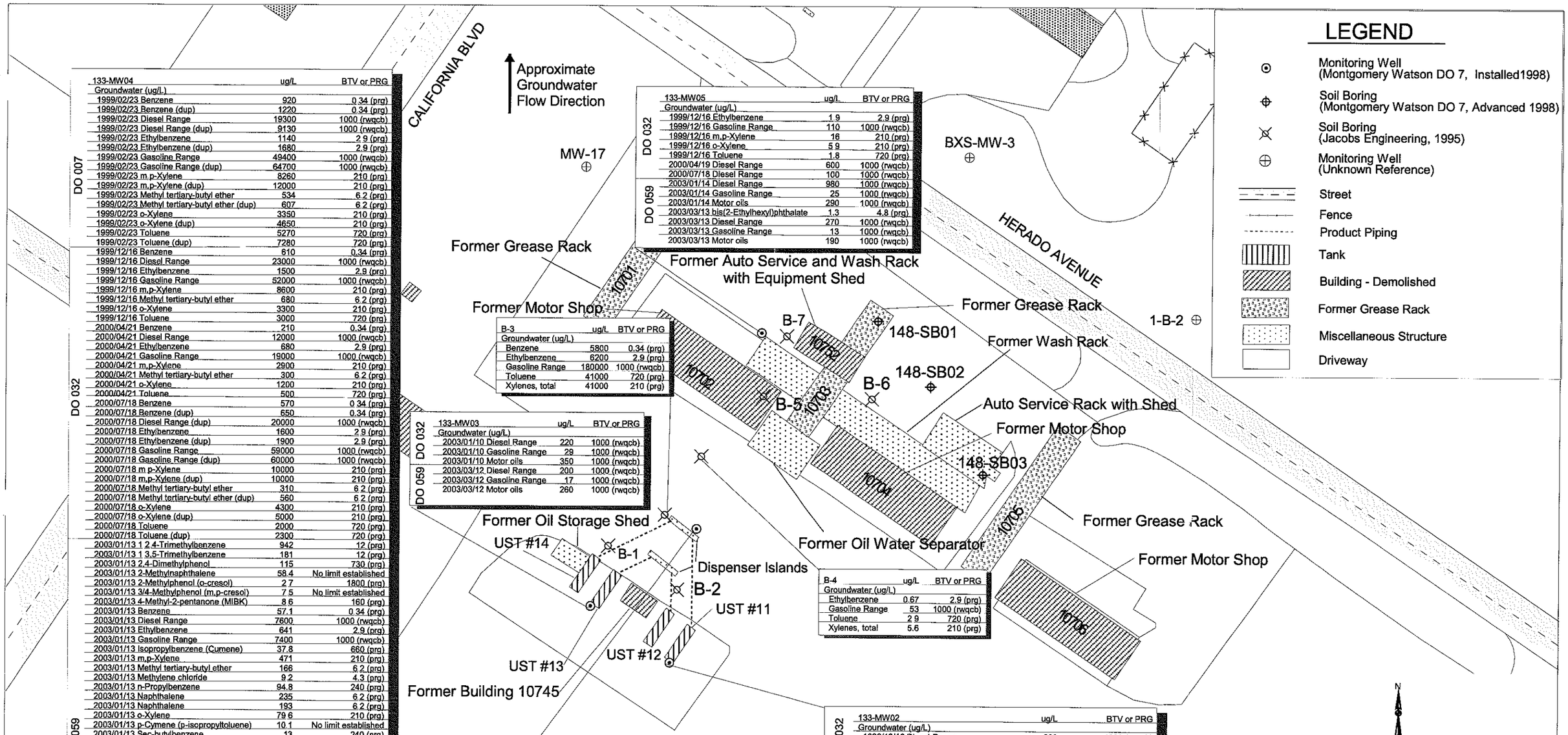
UNITED STATES AIR FORCE
VANDENBERG AIR FORCE BASE
DO 59 AOCs
FIGURE DO 59 AOCs



	133-MW04	ug/L	BTV or PRG
	Groundwater (ug/L)		
DO 007	1999/02/23 Benzene	920	0.34 (prg)
	1999/02/23 Benzene (dup)	1220	0.34 (prg)
	1999/02/23 Diesel Range	19300	1000 (rwqcb)
	1999/02/23 Diesel Range (dup)	9130	1000 (rwqcb)
	1999/02/23 Ethylbenzene	1140	2.9 (prg)
	1999/02/23 Ethylbenzene (dup)	1680	2.9 (prg)
	1999/02/23 Gasoline Range	49400	1000 (rwqcb)
	1999/02/23 Gasoline Range (dup)	64700	1000 (rwqcb)
	1999/02/23 m,p-Xylene	8260	210 (prg)
	1999/02/23 m,p-Xylene (dup)	12000	210 (prg)
	1999/02/23 Methyl tertiary-butyl ether	534	6.2 (prg)
	1999/02/23 Methyl tertiary-butyl ether (dup)	607	6.2 (prg)
	1999/02/23 o-Xylene	3350	210 (prg)
	1999/02/23 o-Xylene (dup)	4650	210 (prg)
	1999/02/23 Toluene	5270	720 (prg)
	1999/02/23 Toluene (dup)	7280	720 (prg)
DO 032	1999/12/16 Benzene	610	0.34 (prg)
	1999/12/16 Diesel Range	23000	1000 (rwqcb)
	1999/12/16 Ethylbenzene	1500	2.9 (prg)
	1999/12/16 Gasoline Range	52000	1000 (rwqcb)
	1999/12/16 m,p-Xylene	8600	210 (prg)
	1999/12/16 Methyl tertiary-butyl ether	680	6.2 (prg)
	1999/12/16 o-Xylene	3300	210 (prg)
	1999/12/16 Toluene	3000	720 (prg)
	2000/04/21 Benzene	210	0.34 (prg)
	2000/04/21 Diesel Range	12000	1000 (rwqcb)
	2000/04/21 Ethylbenzene	680	2.9 (prg)
	2000/04/21 Gasoline Range	19000	1000 (rwqcb)
	2000/04/21 m,p-Xylene	2900	210 (prg)
	2000/04/21 Methyl tertiary-butyl ether	300	6.2 (prg)
	2000/04/21 o-Xylene	1200	210 (prg)
	2000/04/21 Toluene	500	720 (prg)
	2000/07/18 Benzene	570	0.34 (prg)
	2000/07/18 Benzene (dup)	650	0.34 (prg)
	2000/07/18 Diesel Range (dup)	20000	1000 (rwqcb)
	2000/07/18 Ethylbenzene	1600	2.9 (prg)
	2000/07/18 Ethylbenzene (dup)	1900	2.9 (prg)
	2000/07/18 Gasoline Range	59000	1000 (rwqcb)
	2000/07/18 Gasoline Range (dup)	60000	1000 (rwqcb)
	2000/07/18 m p-Xylene	10000	210 (prg)
	2000/07/18 m,p-Xylene (dup)	10000	210 (prg)
	2000/07/18 Methyl tertiary-butyl ether	310	6.2 (prg)
	2000/07/18 Methyl tertiary-butyl ether (dup)	560	6.2 (prg)
	2000/07/18 o-Xylene	4300	210 (prg)
	2000/07/18 o-Xylene (dup)	5000	210 (prg)
	2000/07/18 Toluene	2000	720 (prg)
	2000/07/18 Toluene (dup)	2300	720 (prg)
DO 059	2003/01/13 1,2,4-Trimethylbenzene	942	12 (prg)
	2003/01/13 1,3,5-Trimethylbenzene	181	12 (prg)
	2003/01/13 2,4-Dimethylphenol	115	730 (prg)
	2003/01/13 2-Methylnaphthalene	58.4	No limit established
	2003/01/13 2-Methylphenol (o-cresol)	2.7	1800 (prg)
	2003/01/13 3/4-Methylphenol (m,p-cresol)	7.5	No limit established
	2003/01/13 4-Methyl-2-pentanone (MIBK)	8.6	160 (prg)
	2003/01/13 Benzene	57.1	0.34 (prg)
	2003/01/13 Diesel Range	7600	1000 (rwqcb)
	2003/01/13 Ethylbenzene	641	2.9 (prg)
	2003/01/13 Gasoline Range	7400	1000 (rwqcb)
	2003/01/13 Isopropylbenzene (Cumene)	37.8	660 (prg)
	2003/01/13 m,p-Xylene	471	210 (prg)
	2003/01/13 Methyl tertiary-butyl ether	166	6.2 (prg)
	2003/01/13 Methylene chloride	9.2	4.3 (prg)
	2003/01/13 n-Propylbenzene	94.8	240 (prg)
	2003/01/13 Naphthalene	235	6.2 (prg)
	2003/01/13 Naphthalene	193	6.2 (prg)
	2003/01/13 o-Xylene	79.6	210 (prg)
	2003/01/13 p-Cymene (p-isopropyltoluene)	10.1	No limit established
	2003/01/13 Sec-butylbenzene	13	240 (prg)
	2003/01/13 Toluene	22.8	720 (prg)
	2003/03/13 1,2,4-Trimethylbenzene	780	12 (prg)
	2003/03/13 1,2-Dichloroethane	6	0.12 (prg)
	2003/03/13 1,3,5-Trimethylbenzene	106	12 (prg)
	2003/03/13 2,4-Dimethylphenol	23.4	730 (prg)
	2003/03/13 2-Methylnaphthalene	40.9	No limit established
	2003/03/13 Benzene	36.5	0.34 (prg)
	2003/03/13 bis(2-Ethylhexyl)phthalate	1.6	4.8 (prg)
	2003/03/13 Diesel Range	7700	1000 (rwqcb)
	2003/03/13 Ethylbenzene	552	2.9 (prg)
	2003/03/13 Gasoline Range	3300	1000 (rwqcb)
	2003/03/13 Isopropylbenzene (Cumene)	31.2	660 (prg)
	2003/03/13 m,p-Xylene	8	210 (prg)
	2003/03/13 Methyl tertiary-butyl ether	293	6.2 (prg)
	2003/03/13 n-Propylbenzene	82.3	240 (prg)
	2003/03/13 Naphthalene	193	6.2 (prg)
	2003/03/13 Naphthalene	137	6.2 (prg)
	2003/03/13 o-Xylene	11.3	210 (prg)
	2003/03/13 p-Cymene (p-isopropyltoluene)	4	No limit established
	2003/03/13 Sec-butylbenzene	6.4	240 (prg)
	2003/03/13 Toluene	5.6	720 (prg)

	133-MW05	ug/L	BTV or PRG
	Groundwater (ug/L)		
DO 032	1999/12/16 Ethylbenzene	1.9	2.9 (prg)
	1999/12/16 Gasoline Range	110	1000 (rwqcb)
	1999/12/16 m,p-Xylene	16	210 (prg)
	1999/12/16 o-Xylene	5.9	210 (prg)
	1999/12/16 Toluene	1.8	720 (prg)
DO 059	2000/04/19 Diesel Range	600	1000 (rwqcb)
	2000/07/18 Diesel Range	100	1000 (rwqcb)
	2003/01/14 Diesel Range	980	1000 (rwqcb)
	2003/01/14 Gasoline Range	25	1000 (rwqcb)
	2003/01/14 Motor oils	290	1000 (rwqcb)
	2003/03/13 bis(2-Ethylhexyl)phthalate	1.3	4.8 (prg)
	2003/03/13 Diesel Range	270	1000 (rwqcb)
	2003/03/13 Gasoline Range	13	1000 (rwqcb)
	2003/03/13 Motor oils	190	1000 (rwqcb)

B-3	ug/L	BTV or PRG
Groundwater (ug/L)		
Benzene	5800	0.34 (prg)
Ethylbenzene	6200	2.9 (prg)
Gasoline Range	180000	1000 (rwqcb)
Toluene	41000	720 (prg)
Xylenes, total	41000	210 (prg)

	133-MW03	ug/L	BTV or PRG
	Groundwater (ug/L)		
DO 032	2003/01/10 Diesel Range	220	1000 (rwqcb)
	2003/01/10 Gasoline Range	29	1000 (rwqcb)
	2003/01/10 Motor oils	350	1000 (rwqcb)
DO 059	2003/03/12 Diesel Range	200	1000 (rwqcb)
	2003/03/12 Gasoline Range	17	1000 (rwqcb)
	2003/03/12 Motor oils	260	1000 (rwqcb)

B-4	ug/L	BTV or PRG
Groundwater (ug/L)		
Ethylbenzene	0.67	2.9 (prg)
Gasoline Range	53	1000 (rwqcb)
Toluene	2.9	720 (prg)
Xylenes, total	5.6	210 (prg)

	133-MW02	ug/L	BTV or PRG
	Groundwater (ug/L)		
DO 032	1999/12/16 Diesel Range	800	1000 (rwqcb)
	2000/04/21 Diesel Range	460	1000 (rwqcb)
	2000/04/21 m,p-Xylene	0.73	210 (prg)
	2000/07/18 Diesel Range	370	1000 (rwqcb)
	2000/07/18 Methyl tertiary-butyl ether	1.9	6.2 (prg)
DO 059	2003/01/10 Chloromethane	0.52	1.5 (prg)
	2003/01/10 Diesel Range	340	1000 (rwqcb)
	2003/01/10 Gasoline Range	16	1000 (rwqcb)
	2003/01/10 Methyl tertiary-butyl ether	0.5	6.2 (prg)
	2003/01/10 Motor oils	310	1000 (rwqcb)
	2003/03/12 2-Hexanone	7.1	No limit established
	2003/03/12 4-Methyl-2-pentanone (MIBK)	0.38	160 (prg)
	2003/03/12 bis(2-Ethylhexyl)phthalate	1	4.8 (prg)
	2003/03/12 bis(2-Ethylhexyl)phthalate (dup)	1.1	4.8 (prg)
	2003/03/12 Diesel Range	130	1000 (rwqcb)
	2003/03/12 Diesel Range (dup)	400	1000 (rwqcb)
	2003/03/12 Gasoline Range	27	1000 (rwqcb)
	2003/03/12 Gasoline Range (dup)	16	1000 (rwqcb)
	2003/03/12 Motor oils	220	1000 (rwqcb)
	2003/03/12 Motor oils (dup)	440	1000 (rwqcb)
	2003/03/12 Naphthalene	0.33	6.2 (prg)

	133-MW01	ug/L	BTV or PRG
	Groundwater (ug/L)		
DO 032	1999/02/23 Diesel Range	15100	1000 (rwqcb)
	2000/04/19 Diesel Range	520	1000 (rwqcb)
	2000/04/19 Methyl tertiary-butyl ether	1.1	6.2 (prg)
DO 059	2000/07/17 Diesel Range	110	1000 (rwqcb)
	2003/01/09 Diesel Range	44	1000 (rwqcb)
	2003/01/09 Gasoline Range	25	1000 (rwqcb)
	2003/01/09 Motor oils	68	1000 (rwqcb)
	2003/03/13 Diesel Range	35	1000 (rwqcb)
	2003/03/13 Gasoline Range	12	1000 (rwqcb)
	2003/03/13 Motor oils	70	1000 (rwqcb)

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AOC-133
DETECTED CHEMICALS OF CONCERN IN GROUNDWATER

FIGURE AOC-133

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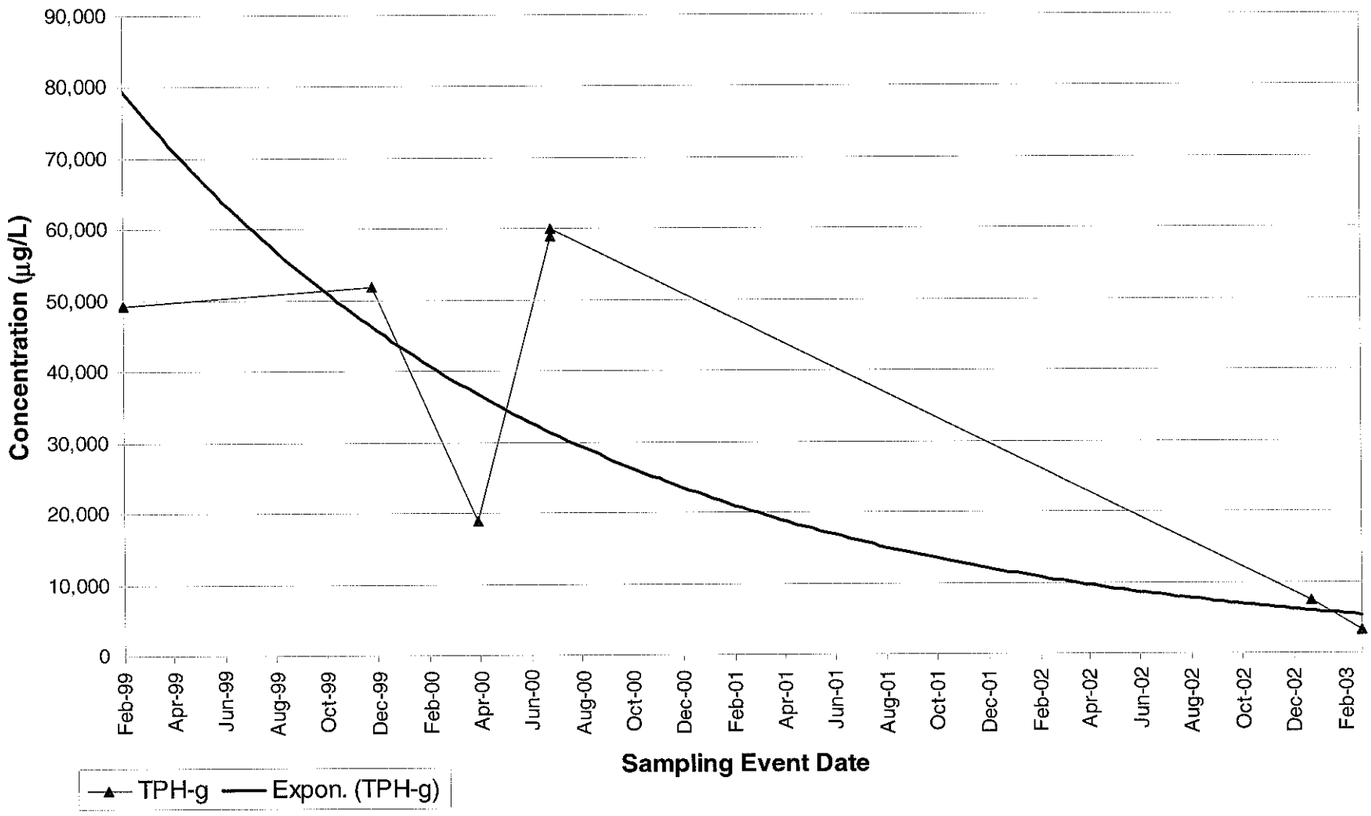

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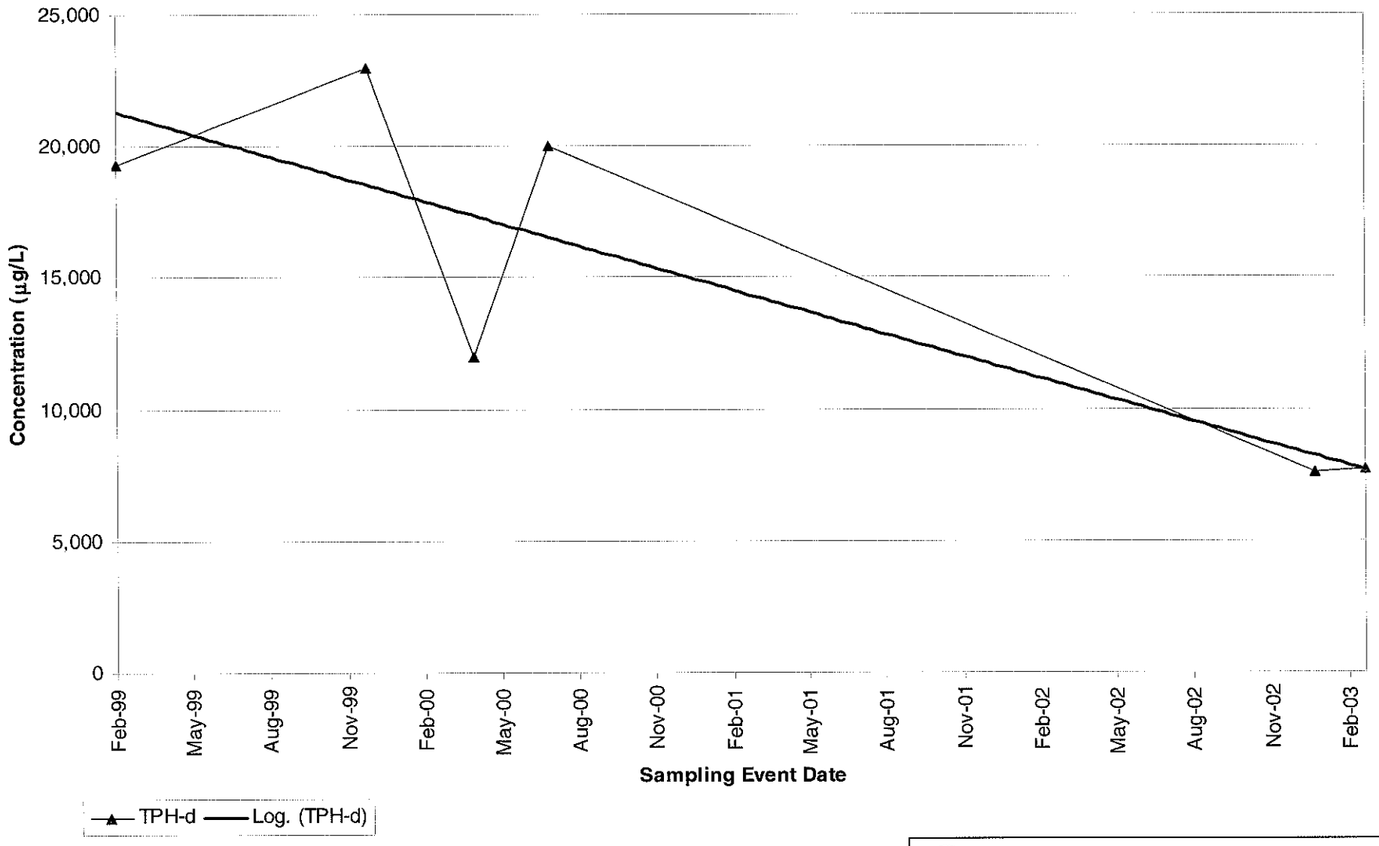
133-MW04
TPH-g CONCENTRATIONS IN GROUNDWATER

FIGURE 2-1

10-03



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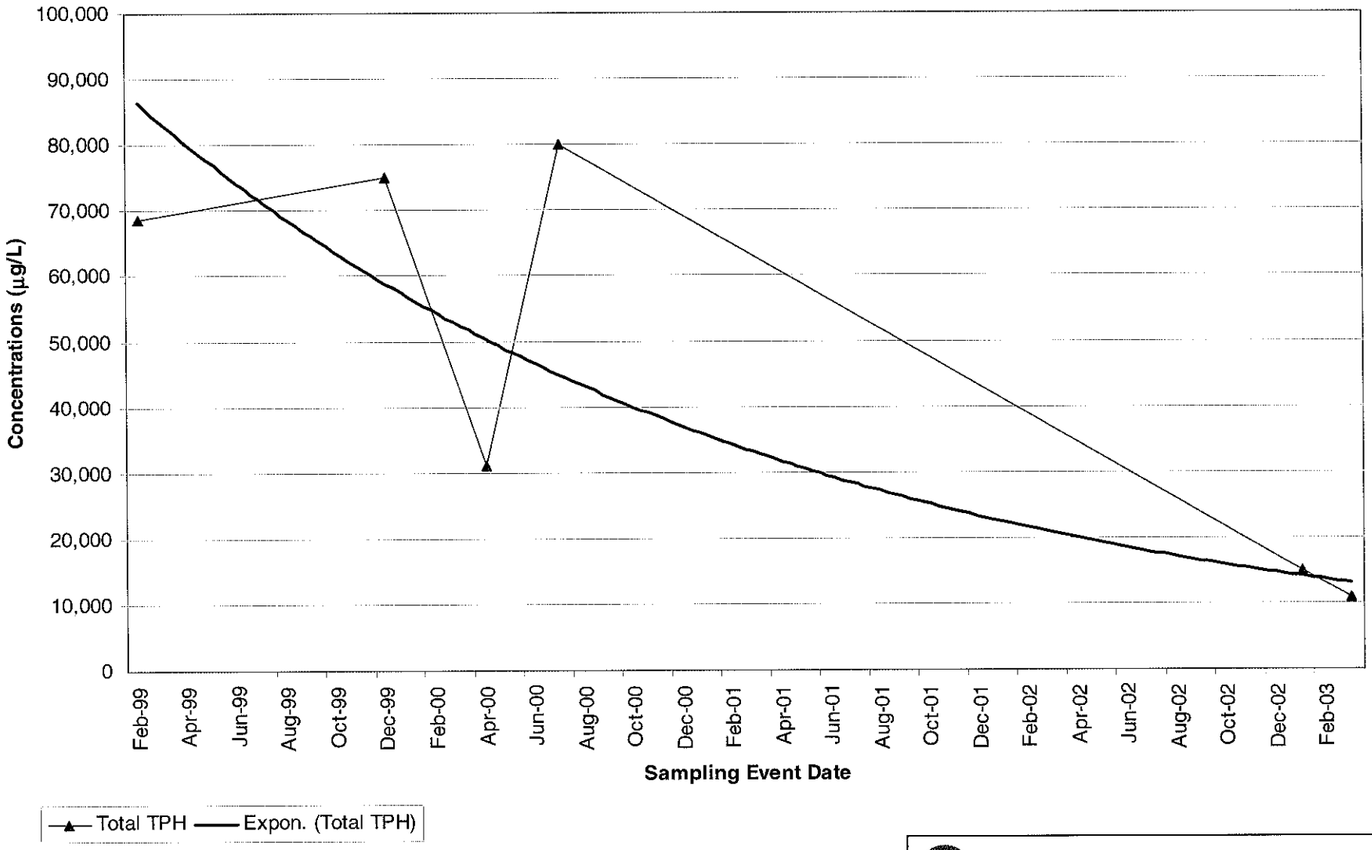
133-MW04
TPH-d CONCENTRATIONS IN GROUNDWATER

FIGURE 2-2

10-03



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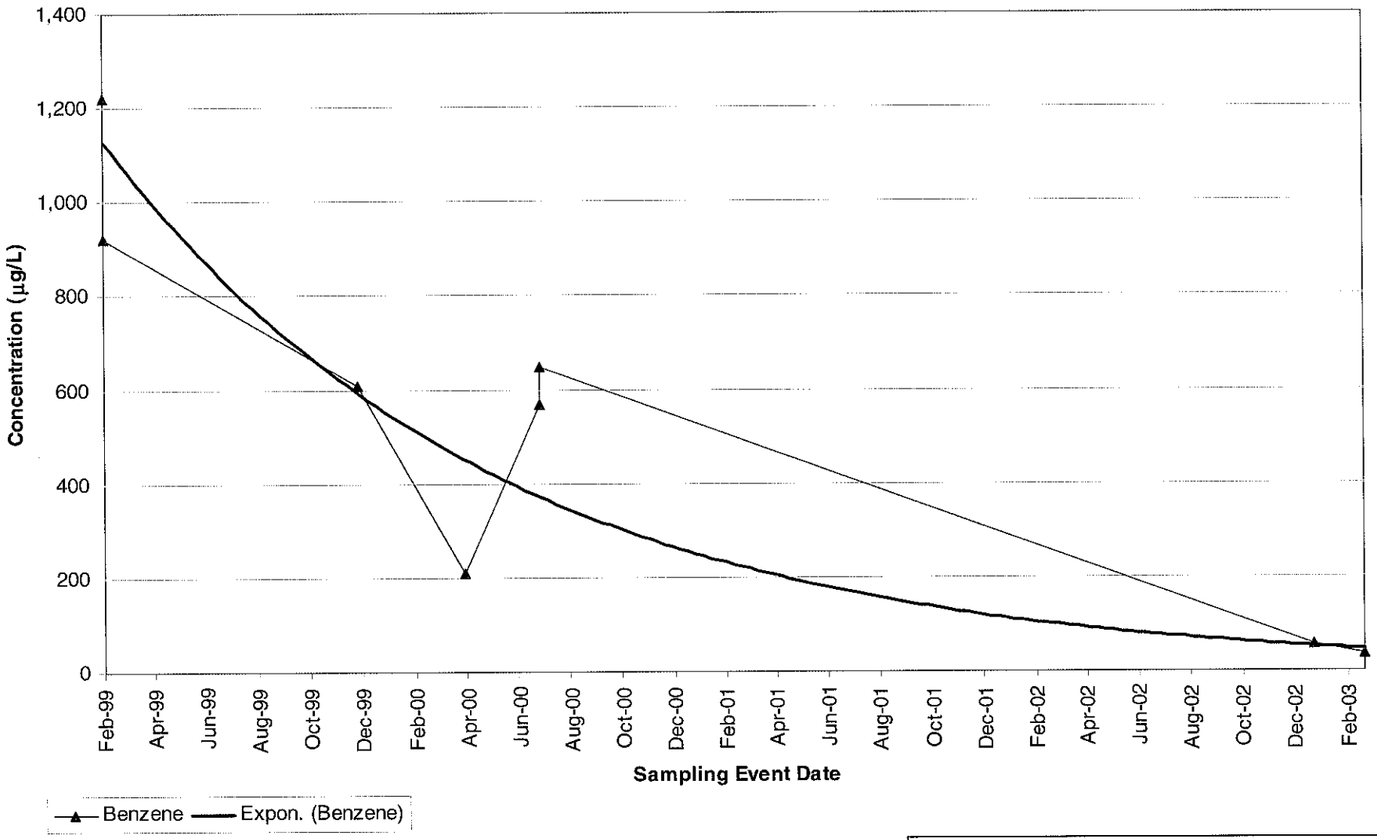
133-MW04
TOTAL TPH CONCENTRATIONS IN GROUNDWATER

FIGURE 2-3

10-03



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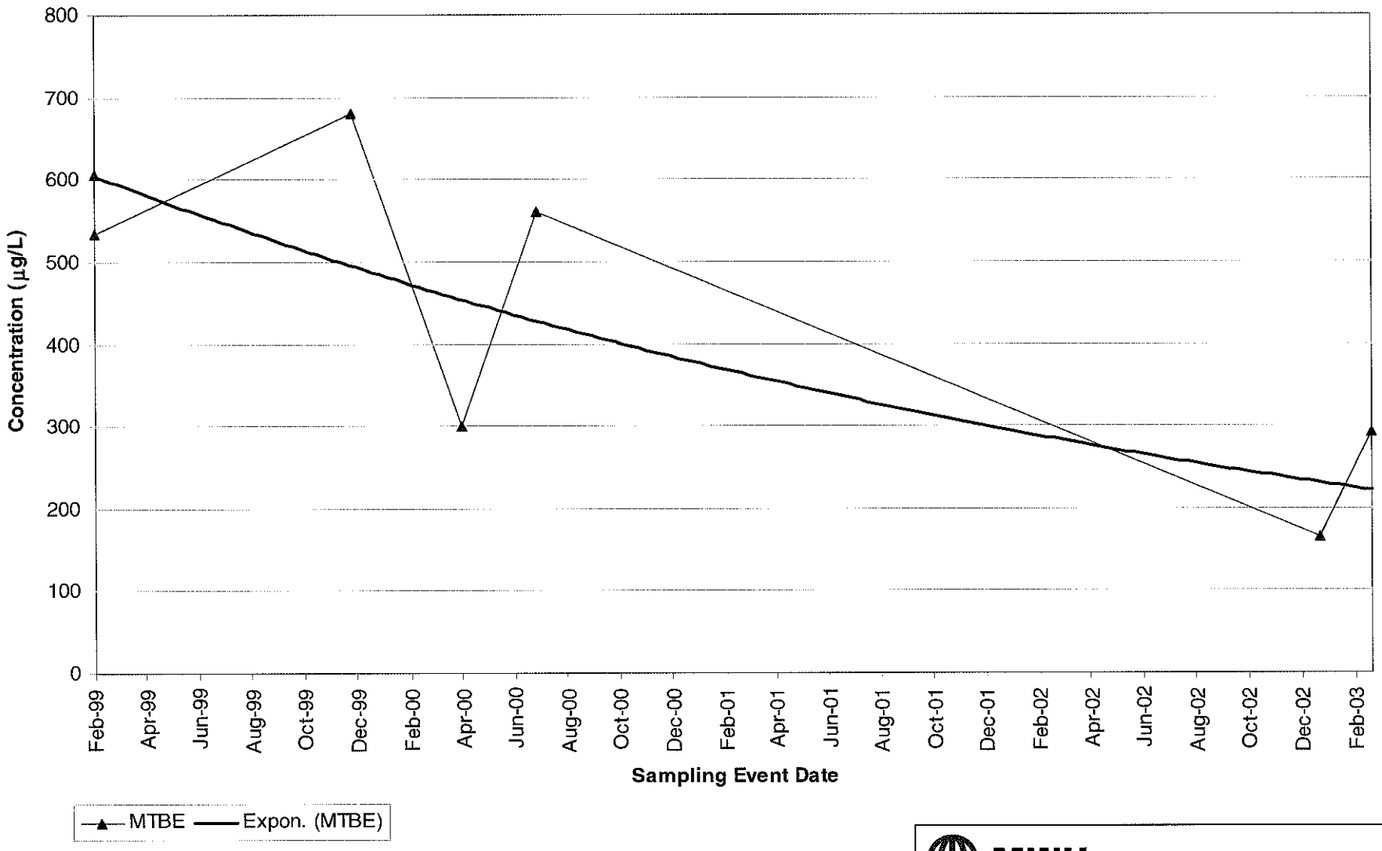
133-MW04
BENZENE CONCENTRATIONS IN GROUNDWATER

FIGURE 2-4

10-03



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133-MW04
MTBE CONCENTRATIONS IN GROUNDWATER

FIGURE 2-5

10-03

TABLES

TABLE 2-1

GROUNDWATER ELEVATIONS
AOC-133
VANDENBERG AFB, CALIFORNIA

Date	Well Number	TOC Elevation (ft msl)	Depth to Water (ft)	Groundwater Elevation (ft msl)
1/9/03	133-MW01	457.23	5.73	451.50
1/9/03	133-MW02	456.65	4.72	451.93
1/9/03	133-MW03	456.39	4.56	451.83
1/9/03	133-MW04	456.10	5.79	451.31
1/9/03	133-MW05	456.60	6.27	451.33
3/13/03	133-MW01	457.23	5.66	451.57
3/12/03	133-MW02	456.65	4.56	452.09
3/12/03	133-MW03	456.39	4.38	452.01
3/13/03	133-MW04	456.10	5.60	451.50
3/13/03	133-MW05	456.60	6.14	451.46

TOC - top of casing
ft msl - feet above mean sea level

TABLE 2-2

WATER QUALITY PARAMETERS
AOC-133
VANDENBERG AFB, CALIFORNIA

Sampling Location:	**133-MW01**	**133-MW02**	**133-MW03**	**133-MW04**	**133-MW05**
Sample Collection Date:	**1/9/03**	**1/9/03**	**1/9/03**	**1/9/03**	**1/9/03**
Field Parameters					
Temperature (degrees Celsius)	19.0	19.0	19.0	19.0	18.9
Conductivity (mS/cm)	0.80	0.54	1.00	1.40	1.13
pH	6.30	6.90	7.00	6.60	6.38
Turbidity (NTUs)	<10	<10	<10	10	12

mS/cm - milisiemens per centimeter
NTU - Nephelometric turbidity unit

Sampling Location:	**133-MW01**	**133-MW02**	**133-MW03**	**133-MW04**	**133-MW05**
Sample Collection Date:	**3/13/03**	**3/12/03**	**3/12/03**	**3/13/03**	**3/13/03**
Field Parameters					
Temperature (degrees Celsius)	20.1	17.6	18.1	20.9	19.4
Conductivity (mS/cm)	1.09	1.12	1.11	1.42	1.02
pH	6.18	6.82	7.07	6.50	6.39
Turbidity (NTUs)	<10	<10	<10	<10	<10

mS/cm - milisiemens per centimeter
NTU - Nephelometric turbidity unit

TABLE AOC -133-WATER

CHEMICALS DETECTED IN WATER
VANDENBERG AIR FORCE BASE
(Page 1 of 6)

	Grounwater BTV	TapWater PRG	Primary MCL	Secondary MCL	Cal Primary MCL	Cal Secondary MCL	Reference:	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7
							Location ID:	133-MW01	133-MW02	133-MW03	133-MW04	133-MW04	133-MW05	148-SB01	148-SB01
							Field Sample ID:	133-MW01	133-MW02	133-MW03	133-GW99-GW100	133-MW04	133-MW05	148-SB01-GW01	148-SB99-GW100
							Sample Date:	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999	11/23/1998	11/23/1998
							Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (µg/L)															
Benzene	--	0.34 (ca)	5	--	1	--		<0.5	<0.5	<0.5	1220	920	<0.5	<0.5	<0.5
Ethylbenzene	--	2.9 (ca)	700	--	700	--		<0.5	<0.5	<0.5	1680	1140	<0.5	<0.5	<0.5
m,p-Xylene	--	210	--	--	--	--		<1	<1	<1	12000	8260	<1	<1	<1
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		<0.5	<0.5	<0.5	607	534	<0.5	<0.5	<0.5
o-Xylene	--	210	--	--	--	--		<0.5	<0.5	<0.5	4650	3350 J	<0.5	<0.5	<0.5
Toluene	--	720	1000	40	150	--		<0.5	<0.5	<0.5	7280	5270	<0.5	<0.5	<0.5
Xylenes, total	--	210	10000	--	1750	--		NA	NA	NA	NA	NA	NA	NA	NA
Total Metals (µg/L)															
Lead	--	--	15	--	15	--		NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (µg/L)															
2,4-Dimethylphenol	--	730	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol (o-cresol)	--	1800	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
3/4-Methylphenol (m,p-cresol)	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	--	4.8 (ca)	6	--	4	--		NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	--	6.2	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (µg/L)															
Diesel Range	--	1000 (rwqcb)	--	--	--	--		15100 J	<500 J	<500 J	9130 J	19300 J	<500 J	<100	<100
Gasoline Range	--	1000 (rwqcb)	--	--	--	--		<1000	<1000	<1000	64700 F	49400 F	<1000	<1000	<1000
Motor oils	--	1000 (rwqcb)	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (µg/L)															
1,2,4-Trimethylbenzene	--	12	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	--	0.12 (ca)	5	--	0.5	--		NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	--	12	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	--	160	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Acetone	--	610	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Benzene	--	0.34 (ca)	5	--	1	--		NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	--	1.5 (ca)	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	--	2.9 (ca)	700	--	700	--		NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	--	660	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	--	4.3 (ca)	5	--	5	--		NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	--	240	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	--	6.2	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
p-Cymene (p-isopropyltoluene)	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Sec-butylbenzene	--	240	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA
Toluene	--	720	1000	40	150	--		NA	NA	NA	NA	NA	NA	NA	NA

FINAL

TABLE AOC -133-WATER

CHEMICALS DETECTED IN WATER
VANDENBERG AIR FORCE BASE

	Grounwater BTV	TapWater PRG	Primary MCL	Secondary MCL	Cal Primary MCL	Cal Secondary MCL	Reference:	DO32	DO32	DO32	DO32	DO32	DO32
							Location ID:	133-MW01	133-MW01	133-MW01	133-MW01	133-MW02	133-MW02
							Field Sample ID:	133-MW01-GW02	133-MW99-GW102	133-MW01-GW01	133-MW01-GW01	133-MW02-GW02	133-MW02-GW01
							Sample Date:	12/15/1999	12/15/1999	4/19/2000	7/17/2000	12/16/1999	4/21/2000
							Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (µg/L)													
Benzene	--	0.34 (ca)	5	--	1	--		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	--	2.9 (ca)	700	--	700	--		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m,p-Xylene	--	210	--	--	--	--		<1	<1	<1	<1	<1	0.73 F
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		<1	<1	1.1	<1	<1	<1
o-Xylene	--	210	--	--	--	--		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	--	720	1000	40	150	--		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenes, total	--	210	10000	--	1750	--		NA	NA	NA	NA	NA	NA
Total Metals (µg/L)													
Lead	--	--	15	--	15	--		NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (µg/L)													
2,4-Dimethylphenol	--	730	--	--	--	--		NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
2-Methylphenol (o-cresol)	--	1800	--	--	--	--		NA	NA	NA	NA	NA	NA
3/4-Methylphenol (m,p-cresol)	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	--	4.8 (ca)	6	--	4	--		NA	NA	NA	NA	NA	NA
Naphthalene	--	6.2	--	--	--	--		NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (µg/L)													
Diesel Range	--	1000 (rwqcb)	--	--	--	--		<510	NA	520	110 F	800	460 F
Gasoline Range	--	1000 (rwqcb)	--	--	--	--		<1000	<1000	<100	<100	<1000	<100
Motor oils	--	1000 (rwqcb)	--	--	--	--		NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (µg/L)													
1,2,4-Trimethylbenzene	--	12	--	--	--	--		NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	--	0.12 (ca)	5	--	0.5	--		NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	--	12	--	--	--	--		NA	NA	NA	NA	NA	NA
2-Hexanone	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	--	160	--	--	--	--		NA	NA	NA	NA	NA	NA
Acetone	--	610	--	--	--	--		NA	NA	NA	NA	NA	NA
Benzene	--	0.34 (ca)	5	--	1	--		NA	NA	NA	NA	NA	NA
Chloromethane	--	1.5 (ca)	--	--	--	--		NA	NA	NA	NA	NA	NA
Ethylbenzene	--	2.9 (ca)	700	--	700	--		NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	--	660	--	--	--	--		NA	NA	NA	NA	NA	NA
m,p-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		NA	NA	NA	NA	NA	NA
Methylene chloride	--	4.3 (ca)	5	--	5	--		NA	NA	NA	NA	NA	NA
n-Propylbenzene	--	240	--	--	--	--		NA	NA	NA	NA	NA	NA
Naphthalene	--	6.2	--	--	--	--		NA	NA	NA	NA	NA	NA
o-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA
p-Cymene (p-isopropyltoluene)	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
Sec-butylbenzene	--	240	--	--	--	--		NA	NA	NA	NA	NA	NA
Toluene	--	720	1000	40	150	--		NA	NA	NA	NA	NA	NA

TABLE AOC -133-WATER

CHEMICALS DETECTED IN WATER
VANDENBERG AIR FORCE BASE
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	Grounwater BTV	TapWater PRG	Primary MCL	Secondary MCL	Cal Primary MCL	Cal Secondary MCL	Reference:	DO32	DO32	DO32	DO32	DO32	DO32
							Location ID:	133-MW02	133-MW02	133-MW03	133-MW03	133-MW03	133-MW04
							Field Sample ID:	133-MW99-GW01	133-MW02-GW01	133-MW03-GW02	133-MW03-GW02	133-MW03-GW01	133-MW04-GW02
							Sample Date:	4/21/2000	7/18/2000	12/15/1999	4/21/2000	7/18/2000	12/16/1999
							Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (µg/L)													
Benzene	--	0.34 (ca)	5	--	1	--		<0.5	<0.5	<0.5	<0.5	<0.5	610
Ethylbenzene	--	2.9 (ca)	700	--	700	--		<0.5	<0.5	<0.5	<0.5	<0.5	1500
m,p-Xylene	--	210	--	--	--	--		<1	<1	<1	<1	<1	8600
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		<1	1.9	<1	<1	<1	680
o-Xylene	--	210	--	--	--	--		<0.5	<0.5	<0.5	<0.5	<0.5	3300
Toluene	--	720	1000	40	150	--		<0.5	<0.5	<0.5	<0.5	<0.5	3000
Xylenes, total	--	210	10000	--	1750	--		NA	NA	NA	NA	NA	NA
Total Metals (µg/L)													
Lead	--	--	15	--	15	--		NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (µg/L)													
2,4-Dimethylphenol	--	730	--	--	--	--		NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
2-Methylphenol (o-cresol)	--	1800	--	--	--	--		NA	NA	NA	NA	NA	NA
3/4-Methylphenol (m,p-cresol)	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	--	4.8 (ca)	6	--	4	--		NA	NA	NA	NA	NA	NA
Naphthalene	--	6.2	--	--	--	--		NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (µg/L)													
Diesel Range	--	1000 (rwqcb)	--	--	--	--		<480	370 F	<500	<490	<465	23000
Gasoline Range	--	1000 (rwqcb)	--	--	--	--		<100	<100	<1000	<100	<100	52000 F
Motor oils	--	1000 (rwqcb)	--	--	--	--		NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (µg/L)													
1,2,4-Trimethylbenzene	--	12	--	--	--	--		NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	--	0.12 (ca)	5	--	0.5	--		NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	--	12	--	--	--	--		NA	NA	NA	NA	NA	NA
2-Hexanone	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	--	160	--	--	--	--		NA	NA	NA	NA	NA	NA
Acetone	--	610	--	--	--	--		NA	NA	NA	NA	NA	NA
Benzene	--	0.34 (ca)	5	--	1	--		NA	NA	NA	NA	NA	NA
Chloromethane	--	1.5 (ca)	--	--	--	--		NA	NA	NA	NA	NA	NA
Ethylbenzene	--	2.9 (ca)	700	--	700	--		NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	--	660	--	--	--	--		NA	NA	NA	NA	NA	NA
m,p-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		NA	NA	NA	NA	NA	NA
Methylene chloride	--	4.3 (ca)	5	--	5	--		NA	NA	NA	NA	NA	NA
n-Propylbenzene	--	240	--	--	--	--		NA	NA	NA	NA	NA	NA
Naphthalene	--	6.2	--	--	--	--		NA	NA	NA	NA	NA	NA
o-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA
p-Cymene (p-isopropyltoluene)	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
Sec-butylbenzene	--	240	--	--	--	--		NA	NA	NA	NA	NA	NA
Toluene	--	720	1000	40	150	--		NA	NA	NA	NA	NA	NA

TABLE AOC -133-WATER

CHEMICALS DETECTED IN WATER
VANDENBERG AIR FORCE BASE
(Page 4 of 6)

	Grounwater BTV	TapWater PRG	Primary MCL	Secondary MCL	Cal Primary MCL	Cal Secondary MCL	Reference:	DO32	DO32	DO32	DO32	DO32	DO32
							Location ID:	133-MW04	133-MW04	133-MW04	133-MW04	133-MW05	133-MW05
							Field Sample ID:	133-MW04-GW01	133-MW04-GW01	133-MW04-GW01	133-MW99-GW100	133-MW05-GW02	133-MW05-GW01
							Sample Date:	4/20/2000	4/21/2000	7/18/2000	7/18/2000	12/16/1999	4/19/2000
							Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (µg/L)													
Benzene	--	0.34 (ca)	5	--	1	--		<0.5	210	570 J	650	<0.5	<0.5
Ethylbenzene	--	2.9 (ca)	700	--	700	--		<0.5	680	1600 J	1900	1.9	<0.5
m,p-Xylene	--	210	--	--	--	--		<1	2900	10000	10000	16	<1
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		<1	300	310 J	560	<1	<1
o-Xylene	--	210	--	--	--	--		<0.5	1200	4300	5000	5.9	<0.5
Toluene	--	720	1000	40	150	--		<0.5	500	2000	2300	1.8	<0.5
Xylenes, total	--	210	10000	--	1750	--		NA	NA	NA	NA	NA	NA
Total Metals (µg/L)													
Lead	--	--	15	--	15	--		NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (µg/L)													
2,4-Dimethylphenol	--	730	--	--	--	--		NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
2-Methylphenol (o-cresol)	--	1800	--	--	--	--		NA	NA	NA	NA	NA	NA
3/4-Methylphenol (m,p-cresol)	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	--	4.8 (ca)	6	--	4	--		NA	NA	NA	NA	NA	NA
Naphthalene	--	6.2	--	--	--	--		NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (µg/L)													
Diesel Range	--	1000 (rwqcb)	--	--	--	--		<505	12000	NA	20000	<460	600
Gasoline Range	--	1000 (rwqcb)	--	--	--	--		<100	19000	59000	60000	110 F	<100
Motor oils	--	1000 (rwqcb)	--	--	--	--		NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (µg/L)													
1,2,4-Trimethylbenzene	--	12	--	--	--	--		NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	--	0.12 (ca)	5	--	0.5	--		NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	--	12	--	--	--	--		NA	NA	NA	NA	NA	NA
2-Hexanone	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	--	160	--	--	--	--		NA	NA	NA	NA	NA	NA
Acetone	--	610	--	--	--	--		NA	NA	NA	NA	NA	NA
Benzene	--	0.34 (ca)	5	--	1	--		NA	NA	NA	NA	NA	NA
Chloromethane	--	1.5 (ca)	--	--	--	--		NA	NA	NA	NA	NA	NA
Ethylbenzene	--	2.9 (ca)	700	--	700	--		NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	--	660	--	--	--	--		NA	NA	NA	NA	NA	NA
m,p-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		NA	NA	NA	NA	NA	NA
Methylene chloride	--	4.3 (ca)	5	--	5	--		NA	NA	NA	NA	NA	NA
n-Propylbenzene	--	240	--	--	--	--		NA	NA	NA	NA	NA	NA
Naphthalene	--	6.2	--	--	--	--		NA	NA	NA	NA	NA	NA
o-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA
p-Cymene (p-isopropyltoluene)	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA
Sec-butylbenzene	--	240	--	--	--	--		NA	NA	NA	NA	NA	NA
Toluene	--	720	1000	40	150	--		NA	NA	NA	NA	NA	NA

TABLE AOC -133-WATER

CHEMICALS DETECTED IN WATER
VANDENBERG AIR FORCE BASE
(Page 5 of 6)

	Grounwater BTV	TapWater PRG	Primary MCL	Secondary MCL	Cal Primary MCL	Cal Secondary MCL	Reference:	DO32	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
							Location ID:	133-MW05	133-MW01	133-MW01	133-MW02	133-MW02	133-MW02
							Field Sample ID:	133-MW05-GW01	133-MW01-GW01	133-MW01-GW02	133-MW02-GW01	133-MW02-GW02	133-MW99-GW02
							Sample Date:	7/18/2000	1/9/2003	3/13/2003	1/10/2003	3/12/2003	3/12/2003
							Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (µg/L)													
Benzene	--	0.34 (ca)	5	--	1	--		<0.5	NA	NA	NA	NA	NA
Ethylbenzene	--	2.9 (ca)	700	--	700	--		<0.5	NA	NA	NA	NA	NA
m,p-Xylene	--	210	--	--	--	--		<1	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		<1	NA	NA	NA	NA	NA
o-Xylene	--	210	--	--	--	--		<0.5	NA	NA	NA	NA	NA
Toluene	--	720	1000	40	150	--		<0.5	NA	NA	NA	NA	NA
Xylenes, total	--	210	10000	--	1750	--		NA	NA	NA	NA	NA	NA
Total Metals (µg/L)													
Lead	--	--	15	--	15	--		NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (µg/L)													
2,4-Dimethylphenol	--	730	--	--	--	--		NA	<9.6	<9.6	<9.6	<9.6	<9.6
2-Methylnaphthalene	--	--	--	--	--	--		NA	<9.6	<9.6	<9.6	<9.6	<9.6
2-Methylphenol (o-cresol)	--	1800	--	--	--	--		NA	<9.6	<9.6	<9.6	<9.6	<9.6
3/4-Methylphenol (m,p-cresol)	--	--	--	--	--	--		NA	<48	<48	<48	<48	<48
bis(2-Ethylhexyl)phthalate	--	4.8 (ca)	6	--	4	--		NA	<9.6	<9.6	<9.6	1 F	1.1 F
Naphthalene	--	6.2	--	--	--	--		NA	<9.6	<9.6	<9.6	<9.6	<9.6
Total Petroleum Hydrocarbons (µg/L)													
Diesel Range	--	1000 (rwqcb)	--	--	--	--		100 F	44 F	35 F	340 F	130 F	400 F
Gasoline Range	--	1000 (rwqcb)	--	--	--	--		<100	25 F	12 F	16 F	27 F	16 F
Motor oils	--	1000 (rwqcb)	--	--	--	--		NA	68 F	70 F	310 F	220 F	440 F
Volatile Organic Compounds (µg/L)													
1,2,4-Trimethylbenzene	--	12	--	--	--	--		NA	<1	<1	<1	<1	<1
1,2-Dichloroethane	--	0.12 (ca)	5	--	0.5	--		NA	<0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-Trimethylbenzene	--	12	--	--	--	--		NA	<1	<1	<1	<1	<1
2-Hexanone	--	--	--	--	--	--		NA	<10	<10	<10	7.1 F	<10
4-Methyl-2-pentanone (MIBK)	--	160	--	--	--	--		NA	<10	<10	<10	0.38 F	<10
Acetone	--	610	--	--	--	--		NA	<10 R	<10	<10 R	<10 R	<10
Benzene	--	0.34 (ca)	5	--	1	--		NA	<0.4	<0.4	<0.4	<0.4	<0.4
Chloromethane	--	1.5 (ca)	--	--	--	--		NA	<1	<1 J	0.52 F	<1	<1 R
Ethylbenzene	--	2.9 (ca)	700	--	700	--		NA	<1	<1	<1	<1	<1
Isopropylbenzene (Cumene)	--	660	--	--	--	--		NA	<1	<1	<1	<1	<1
m,p-Xylene	--	210	--	--	--	--		NA	<2	<2	<2	<2	<2
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		NA	<5	<5 R	0.5 F	<5	<5 R
Methylene chloride	--	4.3 (ca)	5	--	5	--		NA	<1	<1	<1	<1	<1
n-Propylbenzene	--	240	--	--	--	--		NA	<1	<1	<1	<1	<1
Naphthalene	--	6.2	--	--	--	--		NA	<1	<1	<1	0.33 F	<1
o-Xylene	--	210	--	--	--	--		NA	<1	<1	<1	<1	<1
p-Cymene (p-isopropyltoluene)	--	--	--	--	--	--		NA	<1	<1	<1	<1	<1
Sec-butylbenzene	--	240	--	--	--	--		NA	<1	<1	<1	<1	<1
Toluene	--	720	1000	40	150	--		NA	<1	<1	<1	<1	<1

TABLE AOC -133-WATER

CHEMICALS DETECTED IN WATER
VANDENBERG AIR FORCE BASE

	Grounwater BTV	TapWater PRG	Primary MCL	Secondary MCL	Cal Primary MCL	Cal Secondary MCL	Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
							Location ID:	133-MW03	133-MW03	133-MW04	133-MW04	133-MW05	133-MW05
							Field Sample ID:	133-MW03-GW01	133-MW03-GW02	133-MW04-GW01	133-MW04-GW02	133-MW05-GW01	133-MW05-GW02
							Sample Date:	1/10/2003	3/12/2003	1/13/2003	3/13/2003	1/14/2003	3/13/2003
							Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (µg/L)													
Benzene	--	0.34 (ca)	5	--	1	--		NA	NA	NA	NA	NA	NA
Ethylbenzene	--	2.9 (ca)	700	--	700	--		NA	NA	NA	NA	NA	NA
m,p-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		NA	NA	NA	NA	NA	NA
o-Xylene	--	210	--	--	--	--		NA	NA	NA	NA	NA	NA
Toluene	--	720	1000	40	150	--		NA	NA	NA	NA	NA	NA
Xylenes, total	--	210	10000	--	1750	--		NA	NA	NA	NA	NA	NA
Total Metals (µg/L)													
Lead	--	--	15	--	15	--		NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (µg/L)													
2,4-Dimethylphenol	--	730	--	--	--	--		<9.6	<9.6	115	23.4	<9.6	<9.6
2-Methylnaphthalene	--	--	--	--	--	--		<9.6	<9.6	58.4	40.9	<9.6	<9.6
2-Methylphenol (o-cresol)	--	1800	--	--	--	--		<9.6	<9.6	2.7 F	<9.6	<9.6	<9.6
3/4-Methylphenol (m,p-cresol)	--	--	--	--	--	--		<48	<48	7.5 F	<48	<48	<48
bis(2-Ethylhexyl)phthalate	--	4.8 (ca)	6	--	4	--		<9.6	<9.6	<9.6	1.6 F	<9.6	1.3 F
Naphthatene	--	6.2	--	--	--	--		<9.6	<9.6	193	137	<9.6	<9.6
Total Petroleum Hydrocarbons (µg/L)													
Diesel Range	--	1000 (rwqcb)	--	--	--	--		220 F	200 F	7600	7700	980	270 F
Gasoline Range	--	1000 (rwqcb)	--	--	--	--		29 F	17 F	7400	3300	25 F	13 F
Motor oils	--	1000 (rwqcb)	--	--	--	--		350 F	260 F	<4800	<2400	290 F	190 F
Volatile Organic Compounds (µg/L)													
1,2,4-Trimethylbenzene	--	12	--	--	--	--		<1	<1	942	780	<1	<1
1,2-Dichloroethane	--	0.12 (ca)	5	--	0.5	--		<0.5	<0.5	<5	6	<0.5	<0.5
1,3,5-Trimethylbenzene	--	12	--	--	--	--		<1	<1	181	106	<1	<1
2-Hexanone	--	--	--	--	--	--		<10	<10	<100	<100	<10	<10
4-Methyl-2-pentanone (MIBK)	--	160	--	--	--	--		<10	<10	8.6 F	<100	<10 R	<10
Acetone	--	610	--	--	--	--		<10 R	<10	41.7 R	<100	<10 R	<10
Benzene	--	0.34 (ca)	5	--	1	--		<0.4	<0.4	57.1	36.5	<0.4	<0.4
Chloromethane	--	1.5 (ca)	--	--	--	--		<1	<1 R	<10	<10 J	<1 R	<1 J
Ethylbenzene	--	2.9 (ca)	700	--	700	--		<1	<1	641	552	<1	<1
Isopropylbenzene (Cumene)	--	660	--	--	--	--		<1	<1	37.8	31.2	<1	<1
m,p-Xylene	--	210	--	--	--	--		<2	<2	471	8 F	<2	<2
Methyl tertiary-butyl ether	--	6.2 (ca)	--	--	13	5		<5	<5 R	166	293	<5	<5 R
Methylene chloride	--	4.3 (ca)	5	--	5	--		<1	<1	9.2 F	<10	<1	<1
n-Propylbenzene	--	240	--	--	--	--		<1	<1	94.8	82.3	<1	<1
Naphthalene	--	6.2	--	--	--	--		<1	<1	235	193	<1	<1
o-Xylene	--	210	--	--	--	--		<1	<1	79.6	11.3	<1	<1
p-Cymene (p-isopropyltoluene)	--	--	--	--	--	--		<1	<1	10.1	4 F	<1	<1
Sec-butylbenzene	--	240	--	--	--	--		<1	<1	13	6.4 F	<1	<1
Toluene	--	720	1000	40	150	--		<1	<1	22.8	5.6 F	<1	<1

NOTES

DETECTED CHEMICALS IN SOIL AND WATER
VANDENBERG AIR FORCE BASE

BTV Types:
BED = bedrock
GW = groundwater
SA = surface alluvium
SDS = surface dune sand
SSA = subsurface alluvium
SSDS = subsurface dune sand

Units:
mg/kg = milligrams per kilogram
μg/L = micrograms per liter

Abbreviations:
-- = not applicable or not established
AOC = Area of Concern
BTV = background threshold value (Jacobs Engineering Group, Inc., 1994)
(ca) = Cancerous
Cal = California Department of Health Services
MCL = U.S. Environmental Protection Agency (2001) Maximum Contaminant Level
NA = not applicable
ND = Not detected
PRG = U.S. Environmental Protection Agency (2001) Preliminary Remediation Goal
rwqcb = Regional Water Quality Control Board
(sw) = Surface Water
UCL = upper confidence limit

Formatted Chemical Concentrations:
Bold = Detected Result is above the Residential PRG
Underlined = Detected TPH Result is above the RWQCB Standard

* October 2001 TCE PRG used. The October 2002 TCE PRG is not used as it was calculated based on the EPA's Draft Health Risk Assessment for TCE, which has not been finalized.

Qualifiers:
B = The analyte was found in an associated blank, as well as in the sample.
F = The analyte was positively identified, but the quantitation is below the reporting limit.
J = The associated numerical value is an estimated quantity.
M = A matrix effect was present.
R = The data are unusable due to deficiencies in the ability to analyze the sample and meet quality control criteria.

References:
3PDO59 = Delivery Order 0059 (Montgomery Watson Harza, 2002-2003)
DO7 = Delivery Order 0007 (Montgomery Watson Harza, 1998-1999)
DO32 = Delivery Order 0032 (Montgomery Watson Harza, 1999-2000)
DO60 = Delivery Order 0060 (Montgomery Watson Harza, 2000)
WR09 = Work Request 09 (Tetra Tech, 1997)
WR10 = Work Request 10 (Tetra Tech, 1998)

ATTACHMENT 1

MONITORING WELL SAMPLING LOGS

MWH
MONTGOMERY WATSON HARZA

WELL DEVELOPMENT LOG
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Date:	01/09/03				
Time:	10:10	Water Level Instrument:	SOLINST	Well Diameter (in)	4
Well ID:	133-MW01	Water Quality Meter(s):	Horiba-U-10	Depth of Well (ft):	25.31
Sample ID:	133-MW01-GW01	PID Reading at TOC:	0.0	Depth to Water (ft bgs):	5.73
Technician:	M. Schwimam	PID Reading in BZ:	0.0	Standing Water (ft):	19.58
Method:	TPH-d/mo, TPH-g, VOCs, SVOCs	Pump Depth (ft):	19.00	One Well Volume (gal):	12.73
Purging Device:	1-Stage purge pump	Screened Interval (ft):		3 Well Volumes (gal):	38.2

LOC ID: 133-MW01

Final Field Parameter Measurements

Time	Volume Purged (gal)	Flow Rate (gpm)	Water Level (feet - TOC) ± 0.1 ft	Conductivity (~~µS~~ mS/cm) ±10 percent	pH ± 0.2 units	Temp ± 1 °C	DO (~~ppt~~ mg/L) ± 5%	Turbidity (NTU) <10 NTU, ±10%	Other	Comments
11:51	0		5.71							
12:10	0		5.71	1.24	5.94	20.3	8.85	~~10~~ 17 N/A		Water is turbid (light brown)
12:14	5		~~7~~ 13	1.2	6.2	20	9.0	~~10~~ N/A		water is clearer
12:16	10		8.47	1.1	6.2	20	9.0	~~10~~ N/A		
12:19	15		9.80	1.14	6.23	19.6	8.99	~~10~~ N/A		
12:22	20		10.80	1.14	6.2	19.7	8.94	~~10~~ N/A		
12:25	25		12.50	1.13	6.21	19.5	8.93	~~10~~ N/A		
12:30	30		14.33	1.12	6.21	19.9	8.84	~~10~~ N/A		
12:33	35		15.86	0.64	6.26	17.1	9.78	19		
12:36	40		17.19	0.79	6.3	20	8.5	13		
12:40	45		18.6	0.79	6.3	20	8.4	14		
12:42				0.79	6.3					

Comments: Apparent oily film on water (Thin). Water is turbid

TOC = Top of Casing; BZ = Breathing Zone; SC=Specific Conductivity;

Volume per linear ft => 2" diameter=0.16 gal; 4" diameter=0.65 gal; 6" diameter=1.47 gal; 10" diameter=4.08

MWH
MONTGOMERY WATSON HARZA

WELL DEVELOPMENT LOG

Page 2/2

Date: 01/09/03
Time: ~~13:37~~ 10:10
Well ID: 133-MW01
Sample ID: 133-MW01-GW01
Technician: M. Schuerman
Method: THH-d/mo, TPH-g, VOC, SVOC
Purging Device: 1-Stage pump
LOC ID: 133-MW01

Water Level Instrument: SOLINST
Water Quality Meter(s): HORIBA U-10
PID Reading at TOC: 0.0
PID Reading in BZ: 0.0
Pump Depth (ft):
Screened Interval (ft):

Well Diameter (in): 4
Depth of Well (ft): 25.31
Depth to Water (ft bgs): 6.48
Standing Water (ft): 19.58
One Well Volume (gal): 12.73
3 Well Volumes (gal): 38.2

Final Field Parameter Measurements

Time	Volume Purged (gal)	Flow Rate (gpm)	Water Level (feet - TOC) ± 0.1 ft	Conductivity (µS/cm) ±10 percent	pH ± 0.2 units	Temp ± 1 °C	DO (ppt) ± 5%	Turbidity (NTU) <10 NTU, ±10%	Other	Comments
13:37	50		6.6	1.1	6.5	19.0	9.2	99		Water is turbid
13:42	55		8.4	1.1	6.3	19.0	8.9	20		
13:46	60		9.4	1.1	6.3	19.0	9.1	93		
13:50	65		10.6	1.1	6.3	19.0	9.3	9		
14:04	80		14.4	0.79	6.2	19.0	8.8	9		
14:07	85		15.3	0.80	6.4	19.0	8.6	7		
14:10	90		16.6	0.80	6.3	19.0	8.5	5		

Comments:

TOC = Top of Casing; BZ = Breathing Zone; SC=Specific Conductivity;

Volume per linear ft => 2" diameter=0.16 gal; 4" diameter=0.65 gal; 6" diameter=1.47 gal; 10" diameter=4.08

MWH
MONTGOMERY WATSON HARZA

WELL DEVELOPMENT LOG

Date: 01/09/03
Time: ~~133-MW02~~ 10:17
Well ID: 133-MW02-~~GW01~~
Sample ID: 133-MW02-GW01
Technician: M. Schulman
Method: TEPH, TVPH, VOC, SVOC
Purging Device: 1 stage Pump
LOC ID: 133-MW01

Water Level Instrument: SOLINST
Water Quality Meter(s): Horiba U-10
PID Reading at TOC: 0.0
PID Reading in BZ: 0.0
Pump Depth (ft): ~23.0 ft
Screened Interval (ft): 20.0

Well Diameter (in): 4
Depth of Well (ft): 26.4
Depth to Water (ft bgs): 4.72
Standing Water (ft): 21.68
One Well Volume (gal): 14.09
3 Well Volumes (gal): 42.3

Final Field Parameter Measurements

Time	Volume Purged (gal)	Flow Rate (gpm)	Water Level (feet - TOC) ± 0.1 ft	Conductivity (mS/cm) ±10 percent	pH ± 0.2 units	Temp ± 1 °C	DO (ppt) ± 5%	Turbidity (NTU) <10 NTU, ±10%	Other	Comments
~~1547~~	~~0~~		~~4.50~~							~~VOID~~
1553		1.5	4.50	0.54	6.9	19	9	9.		Purged 1/09/03
1603	10	0.5	13.08	0.55	6.9	19	8.5	10.0		Sampled 1/10/03
1615	18	0.5	13.71	0.55	7.0	19	8.6	3.0		
1623	22	0.5	15.12	0.55	7.0	18.3	8.5	11.0		
1636	27	0.5	17.18	0.54	7.0	19	8.1	8.0		
1703	33	0.5	20.20	0.54	7.0	19	8.1	7.0		
1721	38		25.00	0.54	6.9	19	8.0	7.0		

Comments: No apparent film on water. Well Purged dry. We will sample tommorow.

TOC = Top of Casing; BZ = Breathing Zone; SC=Specific Conductivity;

Volume per linear ft => 2" diameter=0.16 gal; 4" diameter=0.65 gal; 6" diameter=1.47 gal; 10" diameter=4.08

MWH
MONTGOMERY WATSON HARZA

WELL DEVELOPMENT LOG

Date: 01/09/03
Time: 10:25
Well ID: 133-MW03
Sample ID: 133-MW03-GW01
Technician: M. Schulman
Method: TPH-d/mo, TVPH, VOC, SVOC
Purging Device: 1-Stage pump.
LOC-ID: 133-MW07

Water Level Instrument: SOLINST
Water Quality Meter(s): HORIBA U-10
PID Reading at TOC: 0.0
PID Reading in BZ: 0.0
Pump Depth (ft): ~24.0' bgs
Screened Interval (ft): 20 feet

Well Diameter (in): 4.0
Depth of Well (ft): 25.29
Depth to Water (ft bgs): 4.56
Standing Water (ft): 20.73
One Well Volume (gal): 13.47
3 Well Volumes (gal): 40.42

Final Field Parameter Measurements

Time	Volume Purged (gal)	Flow Rate (gpm)	Water Level (feet - TOC) ± 0.1 ft	Conductivity (µS/cm) ±10 percent	pH ± 0.2 units	Temp ± 1 °C	DO (ppt) ± 5%	Turbidity (NTU) <10 NTU, ±10%	Other	Comments
0946	1		4.61	1.2	6.9	18	8.6	58		Initial
1005	8		7.83	1.1	7.0	18	8.8	25		purged 1/10/03
1030	16		9.13	1.1	7.1	18	9.0	15		
1050	20		10.21	0.77	7.1	18	8.9	8		
1110	23		13.00	1.0	7.0	18	8.8	3		
1130	30		15.01	1.0	7.0	18	8.9	3		
1156	37		17.46	1.0	7.0	19	9.0	7		
1206	40		18.23	1.0	7.0	19	9.1	6		

Comments: No apparent film on water

TOC = Top of Casing; BZ = Breathing Zone; SC=Specific Conductivity;

Volume per linear ft => 2" diameter=0.16 gal; 4" diameter=0.65 gal; 6" diameter=1.47 gal; 10" diameter=4.08

MWH
MONTGOMERY WATSON HARZA

WELL DEVELOPMENT LOG

Date: 01/~~13~~ 09/03
Time:
Well ID: 133-MW04
Sample ID: 133-MW04-GW01
Technician: Matt R / Paula Butcher
Method: TPH-d/mo, TPH-g, VOC, SVOC
Purging Device: 1-Stage pump
LOC-ID: 133-MW04

Water Level Instrument: SOLINST
Water Quality Meter(s): Horiba-U-10
PID Reading at TOC: 0.4
PID Reading in BZ: 0.1
Pump Depth (ft): 24
Screened Interval (ft): 20

Well Diameter (in): 4.0
Depth of Well (ft): 25.35
Depth to Water (ft bgs): 5.79
Standing Water (ft): 19.56
One Well Volume (gal): 12.71
3 Well Volumes (gal): 38.1

Final Field Parameter Measurements

Time	Volume Purged (gal)	Flow Rate (gpm)	Water Level (feet - TOC) ± 0.1 ft	Conductivity (µS/cm) ±10 percent	pH ± 0.2 units	Temp ± 1 °C	DO (ppt) ± 5%	Turbidity (NTU) <10 NTU, ±10%	Other	Comments
944		1gpm		1.4	6.5	19	8.3	260		Purged 1/13/03
955	6 ~~11~~	1gpm	7.8							
1010	11 ~~16~~	0.5gpm	8.18	1.4	6.5	19	8.4	78		
1020	16 ~~21~~	0.5	8.15	1.4	6.7	19	8.5	88		
1030	20 ~~26~~	0.4	8.64	1.3	6.6	19	8.6	11		
1038	25	0.4	10.52	1.4	6.6	19	8.5	25		
1018	32	0.4	12.30	1.4	6.6	19	8.9	12		
1030	38	0.4	13.73	1.4	6.6	19	9.0	9.0		
1036		0.4	14.30	1.4	6.6	19	9.1	10.0		

Comments: At begining of purge water is black with a fuel-like odor. Did not take parameter reading until water cleared. Sheen on water surface in IDW drum. Head space reading = 63 ppm. Large

TOC = Top of Casing; BZ = Breathing Zone; SC=Specific Conductivity;

Volume per linear ft => 2" diameter=0.16 gal; 4" diameter=0.65 gal; 6" diameter=1.47 gal; 10" diameter=4.08

MWH
MONTGOMERY WATSON HARZA

WELL DEVELOPMENT LOG

Date: 01/~~04~~ 09/03
Time:
Well ID: 133-MW05
Sample ID: 133-MW05-GW01
Technician: T. J. Smith
Method: Pumping
Purging Device: 1-Stage Pump

Water Level Instrument: Solinst 100 ft.
Water Quality Meter(s): Horiba U-10
PID Reading at TOC: 0.0
PID Reading in BZ: 0.0
Pump Depth (ft): 24.50
Screened Interval (ft): ~~20~~ 15.0 - 25.5

Well Diameter (in): 4"
Depth of Well (ft): 25.11
Depth to Water (ft bgs): 6.27
Standing Water (ft): 18.84
One Well Volume (gal): 12.24
3 Well Volumes (gal): 36.74

Final Field Parameter Measurements

Time	Volume Purged (gal)	Flow Rate (gpm)	Water Level (feet - TOC) ± 0.1 ft	Conductivity (µS/cm) ±10 percent	pH ± 0.2 units	Temp ± 1 °C	DO (ppt) ± 5%	Turbidity (NTU) <10 NTU, ±10%	Other	Comments
1330	Initial	1 GPM	7.04	1.50	6.01	19.6		187		Purged 1/14/03
1337	5 gals	" "	9.10	1.16	6.30	19.4		255		Orange in color
1350	10 gals	1/2 GPM	11.73	1.02	6.43	18.7		337		No hydrocarbon odor
1404	15 gals	" "	13.26	1.07	6.35	18.7		520		
1416	20 gals	" "	15.67	1.09	6.38	18.7		121		
1434	25 gals	" "	17.32	1.10	6.38	18.7		60		
1450	30 gals	1/4 GPM	19.01	1.12	6.37	18.8		22		
1516	37 gals	" "	20.50	1.13	6.38	18.9		12		

Comments: DTW = 8.08 @ 1700 before sampling Collected. Samples collected 01/14/03

TOC = Top of Casing; BZ = Breathing Zone; SC=Specific Conductivity;

Volume per linear ft => 2" diameter=0.16 gal; 4" diameter=0.65 gal; 6" diameter=1.47 gal; 10" diameter=4.08

MWH
MONTGOMERY WATSON HARZA

WELL DEVELOPMENT LOG

Date: 03/13/03
Time: 08:40
Well ID: 133-MW01
Sample ID: 133-MW01-GW02
Technician: MRR, PNB
Method: TEPH, DVPH, VOC, SVOC
Purging Device: Grundfos

Water Level Instrument: Solinst
Water Quality Meter(s): Horiba U-22
PID Reading at TOC: 0
PID Reading in BZ: 0
Pump Depth (ft): 15.0
Screened Interval (ft):

Well Diameter (in): 4"
Depth of Well (ft): 25.32
Depth to Water (ft bgs): 5.66
Standing Water (ft):
One Well Volume (gal):
___ Well Volumes (gal):

Final Field Parameter Measurements

Time	Volume Purged (gal)	Flow Rate Lpm ~~(gpm)~~	Water Level (feet - TOC) ± 0.1 ft	Conductivity (µS/cm) ±10 percent	pH ± 0.2 units	Temp ± 1 °C	DO (ppt) ± 5%	Turbidity (NTU) <10 NTU, ±10%	Other	Comments
08:43		0.5	5.76	1.10	6.01	18.01	9.41			
08:46		0.5	5.78	1.10	6.08	19.13	6.20			Water is Clear
08:49		0.5	5.79	1.09	6.13	19.62	3.75			
08:52		0.5	5.80	1.09	6.15	19.88	3.34			
08:55		0.5	5.80	1.09	6.17	20.02	3.23			
08:58		0.5	5.80	1.09	6.18	20.05	3.16			

Comments: Micropurging was accomplished using a 1.5" OD Grundfos pump placed ~10 ft above the bottom of the well screen

TOC = Top of Casing; BZ = Breathing Zone; SC=Specific Conductivity;

Volume per linear ft => 2" diameter=0.16 gal; 4" diameter=0.65 gal; 6" diameter=1.47 gal; 10" diameter=4.08

MWH
MONTGOMERY WATSON HARZA

WELL DEVELOPMENT LOG

Date: 03/12/03
Time: 16:55
Well ID: 133-MW02
Sample ID: 133-MW02-GW02
Technician: MRR, PNB
Method: TEPH, TVPH, VOC, SVOC
Purging Device: GRUNDFOS

Water Level Instrument: SOLINST
Water Quality Meter(s): HORIBA U-22
PID Reading at TOC: 0
PID Reading in BZ: 0
Pump Depth (ft): 15
Screened Interval (ft):

Well Diameter (in): 4
Depth of Well (ft): 26.01
Depth to Water (ft bgs): 4.56
Standing Water (ft):
One Well Volume (gal):
____ Well Volumes (gal):

Final Field Parameter Measurements

Time	Volume Purged (gal)	Flow Rate ~~(gpm)~~ LPM	Water Level (feet - TOC) ± 0.1 ft	Conductivity (µS/cm) ±10 percent	pH ± 0.2 units	Temp ± 1 °C	DO (ppt) ± 5%	Turbidity (NTU) <10 NTU, ±10%	Other	Comments
16:58		0.4	4.91	1.11	6.83	17.6	3.26			
17:02		0.4	5.15	1.11	6.83	17.88	2.72			
17:06		0.4	5.28	1.12	6.83	17.71	2.36			
17:10		0.4	5.40	1.12	6.83	17.68	2.46			
17:13		0.4	5.52	1.12	6.83	17.66	2.43			
17:15		0.4	5.6	1.12	6.82	17.57	2.30			

Comments: Micropurging was accomplished using a 1.5 inch OD Grundfost pump placed ~10 ft above the bottom of the well screen

TOC = Top of Casing; BZ = Breathing Zone; SC=Specific Conductivity;

Volume per linear ft => 2" diameter=0.16 gal; 4" diameter=0.65 gal; 6" diameter=1.47 gal; 10" diameter=4.08

MWH
MONTGOMERY WATSON HARZA

WELL DEVELOPMENT LOG

Date: 03/12/03
Time: 15:42
Well ID: 133-MW03
Sample ID: 133-MW03-GW02
Technician: MPR, PNB
Method: TPH-d, TPH-g, VOC, SVOC
Purging Device: Grundfos

Water Level Instrument: Solinst
Water Quality Meter(s): Horiba U-22
PID Reading at TOC: 0
PID Reading in BZ: 0
Pump Depth (ft): 15
Screened Interval (ft):

Well Diameter (in): 4
Depth of Well (ft): 25.3
Depth to Water (ft bgs): 4.38
Standing Water (ft):
One Well Volume (gal):
___ Well Volumes (gal):

Final Field Parameter Measurements

Time	Volume Purged (gal)	Flow Rate ~~(gpm)~~ lpm	Water Level (feet - TOC) ± 0.1 ft	Conductivity (µS/cm) ±10 percent	pH ± 0.2 units	Temp ± 1 °C	DO (ppt) ± 5%	Turbidity (NTU) <10 NTU, ±10%	Other	Comments
15:45	~~0.4~~	0.4	4.95	1.11	6.92	18.2	2.71			Water is clear
15:48		0.4	5.0	1.10	6.98	18.49	1.85			
15:51		0.4	4.94	1.11	7.04	18.23	1.47			
15:54		0.4	4.94	1.11	7.05	18.03	1.26			
15:57		0.4	4.95	1.11	7.06	17.99	1.28			
16:00		0.4	4.95	1.11	7.07	18.13	1.28			
16:02	Sample									

Comments: Micropurging was accomplished using a 1.5 inch OD Grundfost pump placed ~10 ft above the bottom of the well

TOC = Top of Casing; BZ = Breathing Zone; SC=Specific Conductivity;

Volume per linear ft => 2" diameter=0.16 gal; 4" diameter=0.65 gal; 6" diameter=1.47 gal; 10" diameter=4.08

MWH
MONTGOMERY WATSON HARZA

WELL DEVELOPMENT LOG

Date: D2/13/03
Time: 11:20
Well ID: 133-MW04
Sample ID: 133-MW04-GW02
Technician: MRR, PNB
Method: TEPH, TVPH, SVOC, VOC
Purging Device: Grundfos

Water Level Instrument: Solinst
Water Quality Meter(s): Horiba, U-22
PID Reading at TOC: 1.4
PID Reading in BZ: 0.2
Pump Depth (ft): 15.0
Screened Interval (ft):

Well Diameter (in): 4
Depth of Well (ft): 26.42
Depth to Water (ft bgs): 5.60
Standing Water (ft):
One Well Volume (gal):
___ Well Volumes (gal):

Final Field Parameter Measurements

Time	Volume Purged (gal)	Flow Rate (gpm)	Water Level (feet - TOC) ± 0.1 ft	Conductivity (µS/cm) ±10 percent	pH ± 0.2 units	Temp ± 1 °C	DO (ppt) ± 5%	Turbidity (NTU) <10 NTU, ±10%	Other	Comments
1124		0.4	5.84	1.42	6.44	19.80	8.53			
1127		0.4	5.88	1.42	6.46	20.18	3.42			Water has greyish tint and strong odor
1130		0.4	5.91	1.42	6.47	20.22	3.88			
1133		0.4	5.92	1.42	6.48	20.54	2.97			
1136		0.4	5.93	1.42	6.48	20.63	2.19			
1139		0.4	5.94	1.42	6.49	20.62	1.75			
1142		0.4	5.94	1.42	6.49	20.69	1.46			
1145		0.4	5.94	1.42	6.49	20.86	1.39			
1148		0.4	5.95	1.42	6.49	20.88	1.33			
1151		0.4	5.95	1.42	6.49	20.90	1.21			
1154		0.4	5.96	1.42	6.50	20.94	0.94			
1156		0.4	5.96	1.42	6.50	20.94	0.81			
1200	sample		Well							

Comments: Micropurging was accomplished using a 1.5" DD Grundfos Pump, placed approx 2/3 of the way above the bottom of the well screen.

TOC = Top of Casing; BZ = Breathing Zone; SC=Specific Conductivity;

Volume per linear ft => 2" diameter=0.16 gal; 4" diameter

MWH
MONTGOMERY WATSON HARZA

WELL DEVELOPMENT LOG

Date: 03/13/03
Time: 09:45
Well ID: 133-MW05
Sample ID: 133-MW05-GW02
Technician: MRR, PNB
Method: TPH-d, TPH-g, SVOC, VOC
Purging Device: GRUNDFOS

Water Level Instrument: SOLINST
Water Quality Meter(s): HORIBA U-22
PID Reading at TOC: 0
PID Reading in BZ: 0
Pump Depth (ft): 15
Screened Interval (ft):

Well Diameter (in): 4.
Depth of Well (ft): ~~0.14~~ 25.3
Depth to Water (ft bgs): 6.14
Standing Water (ft):
One Well Volume (gal):
____ Well Volumes (gal):

Final Field Parameter Measurements

Time	Volume Purged (gal)	Flow Rate LPM (~~gpm~~)	Water Level (feet - TOC) ± 0.1 ft	Conductivity (~~µS~~/cm) ±10 percent	pH ± 0.2 units	Temp ± 1 °C	DO mg/L (~~ppt~~) ± 5%	Turbidity (NTU) <10 NTU, ±10%	Other	Comments
0950	6	0.4	6.36	0.99	6.33	19.09	3.07			
0953		0.4	6.45	1.01	6.36	19.31	2.64			
0956		0.4	6.50	1.01	6.38	19.45	2.51			
0959		0.4	6.55	1.02	6.39	19.40	2.64			
1002		0.4	6.60	1.02	6.39	19.41	2.49			
~~10~~										
1005		Collect Samples.								

Comments: Micropurging was accomplished using a 1.5" OD Grundfos pump placed about 10 ft above the bottom of the well.

TOC = Top of Casing; BZ = Breathing Zone; SC=Specific Conductivity;

Volume per linear ft => 2" diameter=0.16 gal; 4" diameter

ATTACHMENT 2
CHAIN OF CUSTODY RECORDS

MONTGOMERY WATSON HARZA

CHAIN-OF-CUSTODY RECORD

MW CONTACT PERSON: Ruth Siegmund (925) 975-3566

FED-EX #: 536 036 373 COOLER #: 001 COC ID: DO70-3PDO59-01 LOGCODE: MW-WCK LAB: APCL, Chino, CA (909) 590-1828

SAMPLER(S) PRINTED NAME AND SIGNATURE: Michael Schulman

PROJECT NAME: DO 0070 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: ~~195900.70010801~~ DO59 3P GROUNDWATER MONITORING

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	SA	SN	SM	MC	BC	CT	PR	MTBE Only (SW8260B)	VOCs/MTBE (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C)	TVPH (Mod SW8015B)	TEPH (Mod SW8015B)	OCPs (SW8081A)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals (SW6010B/SW7470A)		BTV Type*	24-Hour Turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
133-MW01-GW01	133-MW01	–	–	01/09/03	1505	N	1	B	WG	3	A	C		X	X		X	X									
~~133-MW02-GW02~~	~~133-MW02~~	~~–~~	~~–~~	~~01/09/03~~		~~N~~	~~1~~	~~B~~	~~WG~~	~~3~~	~~A~~	~~C~~		~~X~~	~~X~~		~~X~~	~~X~~									
TB010903-01	133-MW01	–	–	01/09/03	0800	N	1		WQ	3	A	C		X													VOID

ERPIMS CODES

Comments/Instructions:

Turn-around time for hard copy data package and EDD is 15 business days from laboratory receipt of samples unless otherwise specified.
Consult Subcontract Agreement and QAPP for project-specific requirements.
Level III data package unless otherwise specified.

Temp Blank in Cooler

* SDS (surface dune sand), SSDS (subsurface dune sand), SA (surface alluvium), SSA (subsurface alluvium), BED (bedrock), GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:		Michael Schulman	MWH	01/09/03	1800
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

(For Lab Use Only) Sample Condition and Temperature Upon Receipt:

SBD: Sample Beginning Depth
SED: Sample Ending Depth
Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method (SM): CS (composite), DT (driven tube), G (grab), H (hollow stem auger), HA (hand auger)
Sampling Matrix (MC): SO (soil), WG (groundwater), WS (surface water)
B - Bailer
Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S (sleeve), A (amber glass), G (clear glass), P (poly), E (EnCore)
Preservative (PR): NA (none), A (HNO_3), B (H_2SO_4), C (HCl), D (NaOH)

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MONTGOMERY WATSON HARZA

CHAIN-OF-CUSTODY RECORD

MW CONTACT PERSON: Ruth Siegmund (925) 975-3566

FED-EX #: 536 035 572 (Cal overnight) COOLER #: 002 COC ID: ~~DO70~~ 3P4 D056-02 LOGCODE: MW-WCK LAB: APCL, Chino, CA (909) 590-1828

SAMPLER(S) PRINTED NAME AND SIGNATURE

Michael Schulman - [signature]

PROJECT NAME: DO0070 at Vandenberg AFB, California 3P4 D059

AIR FORCE ID: VAFB

PROJECT NUMBER: 195900-70010801 — 423006.59010605

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	MTBE Only (SW8260B)	VOCs/MTBE (SW8260B) 3 3	SVOCs (SW8270C) 2 2	PAHs (SW8270C)	TVPH (Mod SW8015B) 3 3	TEPH (Mod SW8015B) 2 1	OCPs (SW8081A)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals (SW6010B/SW7470A)		BTV Type.*	24-Hour Turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
133-MW02-GW01	133-MW02	—	—	01/10/03	0850	N	1	G	WG	10	A	C/NA		X	X		X	X								X	SM=6
133-MW03-GW01	133-MW03	—	—	01/10/03	1225	N	1	G	WG	9	A	C/NA		X	X		X	X									
TB011003-01	133-MW03	—	—	01/10/03	0700	N	1	G	WQ	3	A	C		X													

Comments/Instructions:

Turn-around time for hard copy data package and EDD is 15 business days from laboratory receipt of samples unless otherwise specified. temp Blank in cooler

Consult Subcontract Agreement and QAPP for project-specific requirements.

Level III data package unless otherwise specified.

* SDS (surface dune sand), SSDS (subsurface dune sand), SA (surface alluvium), SSA (subsurface alluvium), BED (bedrock), GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:	[signature]	Michael Schulman	MWH	01/10/03	1430
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

(For Lab Use Only) Sample Condition and Temperature Upon Receipt:

SBD: Sample Beginning Depth
SED: Sample Ending Depth
Sample Type Code (SA): N

Sample Number (SN): 1
Sampling Method (SM): CS (composite), DT (driven tube), G (grab), H (hollow stem auger), HA (hand auger)
Sampling Matrix (MC): SO (soil), WG (groundwater), WS (surface water)

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S (sleeve), A (amber glass), G (clear glass), P (poly), E (EnCore)
Preservative (PR): NA (none), A (HNO_3), B (H_2SO_4), C (HCl), D (NaOH)

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MONTGOMERY WATSON HARZA

CAL OVERNIGHT

CHAIN-OF-CUSTODY RECORD

59-03

MW CONTACT PERSON: Ruth Siegmund (925) 975-3566

FED EX #: 536 036 256 COOLER #: 003 COC ID: DO70- LOGCODE: MW-WCK LAB: APCL, Chino, CA (909) 590-1828

SAMPLER(S) PRINTED NAME AND SIGNATURE

Matthew Ringier / [signature]
Michael McDonald [signature]

PROJECT NAME: DO 0070 at Vandenberg AFB, California

AIR FORCE ID: VAFB

PROJECT NUMBER: 195900-70010801 3P DO 59

GROUNDWATER MONITORING

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	MTBE Only (SW8260B)	VOCs/MTBE (SW8260B)/BTEX	SVOCs (SW8270C)	PAHs (SW8270C)	TVPH (Mod SW8015B)	TEPH (Mod SW8015B)	OCPs (SW8081A)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals (SW6010B/SW7470A)		BTV Type *	24-Hour Turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
TB-011203-02	133-MW04	—	—	1/13/03	0900	TB	1	G	WQ	3	A	C		X												X	
133-MW04-GW01-	133-MW04	—	—	1/13/03	1210	N	1	G	WG	9	A	C/NA		X	X		X	X								X	

Comments/Instructions:

Turn-around time for hard copy data package and EDD is 15 business days from laboratory receipt of samples unless otherwise specified.

Consult Subcontract Agreement and QAPP for project-specific requirements.

Level III data package unless otherwise specified.

* SDS (surface dune sand), SSDS (subsurface dune sand), SA (surface alluvium), SSA (subsurface alluvium), BED (bedrock), GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:					
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

(For Lab Use Only) Sample Condition and Temperature Upon Receipt:

SBD: Sample Beginning Depth
SED: Sample Ending Depth
Sample Type Code (SA): N

Sample Number (SN): 1
Sampling Method (SM): CS (composite), DT (driven tube), G (grab), H (hollow stem auger), HA (hand auger)
Sampling Matrix (MC): SO (soil), WG (groundwater), WS (surface water)

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S (sleeve), A (amber glass), G (clear glass), P (poly), E (EnCore)
Preservative (PR): NA (none), A (HNO_3), B (H_2SO_4), C (HCl), D (NaOH)

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MONTGOMERY WATSON HARZA

CHAIN-OF-CUSTODY RECORD

MW CONTACT PERSON: Ruth Siegmund (925) 975-3566

FED EX #: 536 036 139 COOLER #: B COC ID: DO70 59 LOGCODE: MW-WCK LAB: APCL, Chino, CA (909) 590-1828

SAMPLER(S) PRINTED NAME AND SIGNATURE

Thomas Smith

Thomas Smith

PROJECT NAME: DO 0070 at Vandenberg AFB, California

AIR FORCE ID: VAFB 51

PROJECT NUMBER: 195900.70010801 4230006.59010605

DO 59

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	SA	SN	SM	MC	BC	CT	PR	MTBE Only (SW8260B) TPH-Gas	VOCs/MTBE (SW8260B)	SVOCs (SW8270C) TPH-diesel/svoc	PAHs (SW8270C) TPH-diesel/tmo	TVPH (Mod SW8015B)	TEPH (Mod SW8015B)	OCPs (SW8081A)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals (SW6010B/SW7470A)		BTV Type *	24-Hour Turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
133-MW05-GW01	133-MW05	Ø	Ø	01/14/03	1700	N	1	G	WG	3	A	C	X														
133-MW05-GW01	133-MW05	Ø	Ø	↓	1700	N	1	G	WG	3	A	C		X													
133-MW05-GW01	133-MW05	Ø	Ø	↓	1700	N	1	G	WG	2	A	NA			X												
133-MW05-GW01	133-MW05	Ø	Ø	↓	1700	N	1	G	WG	2	A	NA				X											

Comments/Instructions:

Turn-around time for hard copy data package and EDD is 15 business days from laboratory receipt of samples unless otherwise specified.

Consult Subcontract Agreement and QAPP for project-specific requirements.

Level III data package unless otherwise specified.

* SDS (surface dune sand), SSDS (subsurface dune sand), SA (surface alluvium), SSA (subsurface alluvium), BED (bedrock), GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:	Thomas Smith	Thomas Smith	MWH	01/14/03	1700
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

(For Lab Use Only) Sample Condition and Temperature Upon Receipt:

SBD: Sample Beginning Depth
SED: Sample Ending Depth
Sample Type Code (SA): N

Sample Number (SN): 1
Sampling Method (SM): CS (composite), DT (driven tube), G (grab), H (hollow stem auger), HA (hand auger)
Sampling Matrix (MC): SO (soil), WG (groundwater), WS (surface water)

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S (sleeve), A (amber glass), G (clear glass), P (poly), E (EnCore)
Preservative (PR): NA (none), A (HNO_3), B (H_2SO_4), C (HCl), D (NaOH)

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MWH

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925 3412 (F)

FED EX #: 669882492 COOLER #: 13 COC ID: DO59- 18 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE

Matthew Ringier [signature]

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type [a]	48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
59ml ~~60PB~~-031203-03	A06 133	—	—	03/12/03	0725	PB	1	G	WQ	3	A	C	X												X		
133-MW99-GW02	133-MW99	—	—	3/12/03	1000	N	1	G	WG	9	A	C/NA	X	X		X	X								X		
133-MW03-GW02	133-MW03	—	—	3/12/03	1602	N	1	G	WG	9	A	C/NA	X	X		X	X								X		
~~133-MW03-GW02~~	~~133-MW03~~	~~—~~	~~—~~	~~3/12/03~~	~~1217~~	~~N~~	~~1~~	~~G~~	~~WG~~	~~9~~	~~A~~	~~C/NA~~	~~X~~	~~X~~		~~X~~	~~X~~										

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
[a] SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:	[signature]	[signature]	MWH	3/12/03	1910
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MWH

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED EX #: 669882483 COOLER #: 14 COC ID: DO59- 19 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE

Matthew Ringer / [signature]

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type [a]	48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
133-MW03-GW02	133-MW03	—	—	3/12/03	1717	N	1	G	WG	9	A	C/NA	X	X		X	X								X		
IBM																											
57IB-031203-01	133-MW	—	—	3/12/03	0710	IB	1	G	WQ	3	A	C	X												X		

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
[a] SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:	[signature]	Matt Ringer	MWH	3/12/03	1910
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MWH

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925)412 (F)

FED EX #: 8358 B35 4A24 COOLER #: 15 COC ID: DO59- 20 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE

PAULA BUTCHER

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type *	48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
133-MW01-GW02	133-MW01	—	—	03/13/03	0905	N	1	G	WG	9	A	C	X	X		X	X								X		
133-MW04-GW02	133-MW04	—	—	03/13/03	0900	N	1	G	WG	9	A	C	X	X		X	X								X		
SPTB-031303-01	ADC-133	—	—	03/13/03	0700	N	1	G	WQ	3	A	C	X														

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.

TEMP BLANK IN COOLER.

* SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:		PAULA BUTCHER	MWH	03/14/03	1500
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G=Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MWH

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 975-3412 (F)

FED EX #: 8358 1335 4901 COOLER #: #6 COC ID: DO59- 2# LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE

PAULA BUTCHER

PROJECT NAME: DO0059 at Vandenberg AFB, California
AIR FORCE ID: VAFB
PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type a	48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
133-MW05-GW02	133-MW05	–	–	03/13/03	1005	N	1	G	WG	9	A	C	X	X		X	X									X	
133-MW05-GW02MS	133-MW05	–	–	03/13/03	1005	N	1	G	WG	9	A	C	X	X		X	X									X	
BOTB-031303-02	ADC-133	–	–	03/13/03	0705	N	1	G	WQ	3	A	C	X													X	

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.
Consult Subcontract Agreement for project-specific requirements.
Level III data package unless otherwise specified.
[a] SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

TEMP BLANK IN COOLER

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:		PAULA BUTCHER	MWH	03/14/03	1500
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend
SBD: Sample Beginning Depth
SED: Sample Ending Depth (0 for gw)
LOC ID: Unique XY locator

Sample Type Code (SA): N
Sample Number (SN): 1
Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer
Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.
Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container
Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

MWH

CHAIN OF CUSTODY RECORD

MWH CONTACT PERSON: Kristin Norberg (925) 975-3459 (O) & (925) 412 (F)

FED EX #: 8358 1335 4912 COOLER #: 17 COC ID: DO59-28 LOGCODE: MW-WCK LAB: APCL (909) 590-1828, (909) 590-1498 (Fax)

SAMPLER(S) PRINTED NAME AND SIGNATURE

PAULA BUTCHER

PROJECT NAME: DO0059 at Vandenberg AFB, California

AIR FORCE ID: VAFB

PROJECT NUMBER: 4230006.59010801

ANALYSIS REQUEST

SAMPLE ID	LOC ID	SBD	SED	DATE	TIME	ERPIMS CODES SA	SN	SM	MC	BC	CT	PR	VOCs (SW8260B)	SVOCs (SW8270C)	PAHs (SW8270C-SIM)	TVPH (Mod SW8015B)	TEPH - Diesel and Motor Oil (Mod SW8015B)	Total Metals Soil (SW6010B/SW7471A)	Total Metals Water (SW6010B/SW7470A)	Dissolved Metals Water (SW6010B/SW7470A)			BTV Type [a]		48-Hr Rush turn Around (Faxed Results)	5-Day Rush turn Around (Faxed Results)	Standard 15-Day Turn Around	REMARKS:
132-MW05-GW02MSD	132-MW05	-	-	03/12/03	1005	N	1	G	WG	9	A	C	X	X		X	X										X	
59FB-031203-01	ADC-132	-	-	03/12/03	0730	N	1	G	WG	9	A	C	X	X		X	X										X	
~~[illegible]~~	~~585~~			~~03/12/03~~	~~0730~~	~~N~~	~~1~~	~~G~~	~~WG~~	~~3~~	~~A~~	~~C~~	~~X~~													~~X~~	
59TB-031203-01	ADC-133	-	-	03/12/03	0900	N	1	G	WG	3	A	C	X														X	

Comments/Instructions:

Turn-around time is 15 business days unless otherwise specified.

Consult Subcontract Agreement for project-specific requirements.

Level III data package unless otherwise specified.

[a] SDS (surface dune sand); SSDS (subsurface dune sand); SA (surface alluvium); SSA (subsurface alluvium); BED (bedrock); GW (groundwater)

	Signature:	Print Name:	Company Name/Title:	Date:	Time:
RELINQUISHED BY:	PAULA BUTCHER				
RECEIVED BY:			MWH	03/14/03	1500
RELINQUISHED BY:					
RECEIVED BY:					

For Lab Use Only: Sample Condition Upon Receipt:

Legend

SBD: Sample Beginning Depth

SED: Sample Ending Depth (0 for gw)

LOC ID: Unique XY locator

Sample Type Code (SA): N

Sample Number (SN): 1

Sampling Method Code (SM): EC=Encore, G=grab, DT=driven tube, SS=split spoon, CS=composite, B=bailer

Sampling Matrix Code (MC): SO=soil, WG=gw, WS=surface water, WQ=water QC

Bottle Count (BC): 1,2,3, etc.

Container Type (CT): S= Sleeve, A= Amber Glass, G= Clear Glass, P = Plastic, E = Encore sample container

Preservative (PR): NA= None, A= HNO3, B= H2SO4, C= HCl, D= NaOH

ORIGINAL: Send with sample (sign only in blue or black ink)

COPIES: Retained by Sampler, Sent to Office

ATTACHMENT 3

SUMMARY OF ANALYTICAL DATA IN WATER

ATTACHMENT 3
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO32	DO32	DO32	DO32
Location ID:	133-MW01	133-MW02	133-MW03	133-MW04	133-MW04	133-MW05	148-SB01	148-SB01	133-MW01	133-MW01	133-MW01	133-MW01
Field Sample ID:	133-MW01	133-MW02	133-MW03	133-GW99-GW100	133-MW04	133-MW05	148-SB01-GW01	148-SB99-GW100	133-MW01-GW02	133-MW99-GW102	133-MW01-GW01	133-MW01-GW01
Sample Date:	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999	11/23/1998	11/23/1998	12/15/1999	12/15/1999	4/19/2000	7/17/2000
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (μg/L)												
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	<0.5	<0.5	<0.5	1220	920	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	<0.5	<0.5	<0.5	1680	1140	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m,p-Xylene	<1	<1	<1	12000	8260	<1	<1	<1	<1	<1	<1	<1
Methyl tertiary-butyl ether	<0.5	<0.5	<0.5	607	534	<0.5	<0.5	<0.5	<1	<1	1.1	<1
o-Xylene	<0.5	<0.5	<0.5	4650	3350 J	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	<0.5	<0.5	<0.5	7280	5270	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenes, total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Metals (μg/L)												
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (μg/L)												
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol (o-cresol)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/4-Methylphenol (m,p-cresol)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

ATTACHMENT 3
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE
(Page 2 of 16)

Reference:	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO32	DO32	DO32	DO32
Location ID:	133-MW01	133-MW02	133-MW03	133-MW04	133-MW04	133-MW05	148-SB01	148-SB01	133-MW01	133-MW01	133-MW01	133-MW01
Field Sample ID:	133-MW01	133-MW02	133-MW03	133-GW99-GW100	133-MW04	133-MW05	148-SB01-GW01	148-SB99-GW100	133-MW01-GW02	133-MW99-GW102	133-MW01-GW01	133-MW01-GW01
Sample Date:	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999	11/23/1998	11/23/1998	12/15/1999	12/15/1999	4/19/2000	7/17/2000
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acenaphthylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzoic acid	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl butyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-c,d)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodi-n-propylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodimethylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (µg/L)												
Diesel Range	15100 J	<500 J	<500 J	9130 J	19300 J	<500 J	<100	<100	<510	NA	520	110 F
Gasoline Range	<1000	<1000	<1000	64700 F	49400 F	<1000	<1000	<1000	<1000	<1000	<100	<100
Motor oils	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

ATTACHMENT 3
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO32	DO32	DO32	DO32
Location ID:	133-MW01	133-MW02	133-MW03	133-MW04	133-MW04	133-MW05	148-SB01	148-SB01	133-MW01	133-MW01	133-MW01	133-MW01
Field Sample ID:	133-MW01	133-MW02	133-MW03	133-GW99-GW100	133-MW04	133-MW05	148-SB01-GW01	148-SB99-GW100	133-MW01-GW02	133-MW99-GW102	133-MW01-GW01	133-MW01-GW01
Sample Date:	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999	11/23/1998	11/23/1998	12/15/1999	12/15/1999	4/19/2000	7/17/2000
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Volatile Organic Compounds (µg/L)												
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane (Ethylene Dibromide)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-chlorohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,2-dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone(MEK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

ATTACHMENT 3
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO7	DO32	DO32	DO32	DO32
Location ID:	133-MW01	133-MW02	133-MW03	133-MW04	133-MW04	133-MW05	148-SB01	148-SB01	133-MW01	133-MW01	133-MW01	133-MW01
Field Sample ID:	133-MW01	133-MW02	133-MW03	133-GW99-GW100	133-MW04	133-MW05	148-SB01-GW01	148-SB99-GW100	133-MW01-GW02	133-MW99-GW102	133-MW01-GW01	133-MW01-GW01
Sample Date:	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999	2/23/1999	11/23/1998	11/23/1998	12/15/1999	12/15/1999	4/19/2000	7/17/2000
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cymene (p-isopropyltoluene)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sec-butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
t-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene (PCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene (TCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32
Location ID:	133-MW02	133-MW02	133-MW02	133-MW02	133-MW03	133-MW03	133-MW03	133-MW04	133-MW04	133-MW04
Field Sample ID:	133-MW02-GW02	133-MW02-GW01	133-MW99-GW01	133-MW02-GW01	133-MW03-GW02	133-MW03-GW02	133-MW03-GW01	133-MW04-GW02	133-MW04-GW01	133-MW04-GW01
Sample Date:	12/16/1999	4/21/2000	4/21/2000	7/18/2000	12/15/1999	4/21/2000	7/18/2000	12/16/1999	4/20/2000	4/21/2000
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (µg/L)										
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	610	<0.5	210
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1500	<0.5	680
m,p-Xylene	<1	0.73 F	<1	<1	<1	<1	<1	8600	<1	2900
Methyl tertiary-butyl ether	<1	<1	<1	1.9	<1	<1	<1	680	<1	300
o-Xylene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3300	<0.5	1200
Toluene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3000	<0.5	500
Xylenes, total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Metals (µg/L)										
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (µg/L)										
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol (o-cresol)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/4-Methylphenol (m,p-cresol)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32
Location ID:	133-MW02	133-MW02	133-MW02	133-MW02	133-MW03	133-MW03	133-MW03	133-MW04	133-MW04	133-MW04
Field Sample ID:	133-MW02-GW02	133-MW02-GW01	133-MW99-GW01	133-MW02-GW01	133-MW03-GW02	133-MW03-GW02	133-MW03-GW01	133-MW04-GW02	133-MW04-GW01	133-MW04-GW01
Sample Date:	12/16/1999	4/21/2000	4/21/2000	7/18/2000	12/15/1999	4/21/2000	7/18/2000	12/16/1999	4/20/2000	4/21/2000
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acenaphthylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzoic acid	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl butyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroisopropyl)ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-c,d)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodi-n-propylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodimethylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodiphenylamine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Petroleum Hydrocarbons (μg/L)										
Diesel Range	800	460 F	<480	370 F	<500	<490	<465	23000	<505	12000
Gasoline Range	<1000	<100	<100	<100	<1000	<100	<100	52000 F	<100	19000
Motor oils	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32
Location ID:	133-MW02	133-MW02	133-MW02	133-MW02	133-MW03	133-MW03	133-MW03	133-MW04	133-MW04	133-MW04
Field Sample ID:	133-MW02-GW02	133-MW02-GW01	133-MW99-GW01	133-MW02-GW01	133-MW03-GW02	133-MW03-GW02	133-MW03-GW01	133-MW04-GW02	133-MW04-GW01	133-MW04-GW01
Sample Date:	12/16/1999	4/21/2000	4/21/2000	7/18/2000	12/15/1999	4/21/2000	7/18/2000	12/16/1999	4/20/2000	4/21/2000
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Volatile Organic Compounds (µg/L)										
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane (Ethylene Dibromide)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-chlorohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,2-dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone(MEK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32	DO32
Location ID:	133-MW02	133-MW02	133-MW02	133-MW02	133-MW03	133-MW03	133-MW03	133-MW04	133-MW04	133-MW04
Field Sample ID:	133-MW02-GW02	133-MW02-GW01	133-MW99-GW01	133-MW02-GW01	133-MW03-GW02	133-MW03-GW02	133-MW03-GW01	133-MW04-GW02	133-MW04-GW01	133-MW04-GW01
Sample Date:	12/16/1999	4/21/2000	4/21/2000	7/18/2000	12/15/1999	4/21/2000	7/18/2000	12/16/1999	4/20/2000	4/21/2000
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cymene (p-isopropyltoluene)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sec-butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
t-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene (PCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene (TCE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	DO32	DO32	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	133-MW04	133-MW04	133-MW05	133-MW05	133-MW05	133-MW01	133-MW01	133-MW02	133-MW02	133-MW02
Field Sample ID:	133-MW04-GW01	133-MW99-GW100	133-MW05-GW02	133-MW05-GW01	133-MW05-GW01	133-MW01-GW01	133-MW01-GW02	133-MW02-GW01	133-MW02-GW02	133-MW99-GW02
Sample Date:	7/18/2000	7/18/2000	12/16/1999	4/19/2000	7/18/2000	1/9/2003	3/13/2003	1/10/2003	3/12/2003	3/12/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (µg/L)										
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	570 J	650	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1600 J	1900	1.9	<0.5	<0.5	NA	NA	NA	NA	NA
m,p-Xylene	10000	10000	16	<1	<1	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	310 J	560	<1	<1	<1	NA	NA	NA	NA	NA
o-Xylene	4300	5000	5.9	<0.5	<0.5	NA	NA	NA	NA	NA
Toluene	2000	2300	1.8	<0.5	<0.5	NA	NA	NA	NA	NA
Xylenes, total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Metals (µg/L)										
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (µg/L)										
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
2,4,5-Trichlorophenol	NA	NA	NA	NA	NA	<48	<48	<48	<48	<48
2,4,6-Trichlorophenol	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
2,4-Dichlorophenol	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
2,4-Dimethylphenol	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
2,4-Dinitrophenol	NA	NA	NA	NA	NA	<48	<48	<48	<48	<48
2,4-Dinitrotoluene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
2,6-Dinitrotoluene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
2-Chloronaphthalene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
2-Chlorophenol	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
2-Methylnaphthalene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
2-Methylphenol (o-cresol)	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
2-Nitroaniline	NA	NA	NA	NA	NA	<48	<48	<48	<48	<48
2-Nitrophenol	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
3,3'-Dichlorobenzidine	NA	NA	NA	NA	NA	<19	<19	<19	<19	<19
3-Nitroaniline	NA	NA	NA	NA	NA	<48	<48	<48	<48	<48
3/4-Methylphenol (m,p-cresol)	NA	NA	NA	NA	NA	<48	<48	<48	<48	<48
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA	NA	<48	<48	<48	<48	<48
4-Bromophenyl phenyl ether	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6 J	<9.6	<9.6
4-Chloro-3-methylphenol	NA	NA	NA	NA	NA	<19	<19	<19	<19	<19
4-Chloroaniline	NA	NA	NA	NA	NA	<19	<19	<19	<19	<19
4-Chlorophenyl phenyl ether	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
4-Nitroaniline	NA	NA	NA	NA	NA	<48	<48	<48	<48 R	<48 R
4-Nitrophenol	NA	NA	NA	NA	NA	<48	<48	<48	<48	<48
Acenaphthene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6

ATTACHMENT 3
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	DO32	DO32	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	133-MW04	133-MW04	133-MW05	133-MW05	133-MW05	133-MW01	133-MW01	133-MW02	133-MW02	133-MW02
Field Sample ID:	133-MW04-GW01	133-MW99-GW100	133-MW05-GW02	133-MW05-GW01	133-MW05-GW01	133-MW01-GW01	133-MW01-GW02	133-MW02-GW01	133-MW02-GW02	133-MW99-GW02
Sample Date:	7/18/2000	7/18/2000	12/16/1999	4/19/2000	7/18/2000	1/9/2003	3/13/2003	1/10/2003	3/12/2003	3/12/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acenaphthylene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Anthracene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Benzo(a)anthracene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Benzo(a)pyrene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Benzoic acid	NA	NA	NA	NA	NA	<96	<96	<96	<96	<96
Benzyl alcohol	NA	NA	NA	NA	NA	<19	<19	<19	<19	<19
Benzyl butyl phthalate	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
bis(2-Chloroethoxy)methane	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
bis(2-Chloroethyl)ether	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
bis(2-Chloroisopropyl)ether	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	1 F	1.1 F
Chrysene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Di-n-butyl phthalate	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Di-n-octylphthalate	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Dibenz(a,h)anthracene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Dibenzofuran	NA	NA	NA	NA	NA	<9.6 R	<9.6	<9.6 R	<9.6	<9.6
Diethyl phthalate	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Dimethyl phthalate	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Fluoranthene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Fluorene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Hexachlorobenzene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Hexachlorobutadiene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6 J	<9.6	<9.6
Hexachloroethane	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Indeno(1,2,3-c,d)pyrene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Isophorone	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
n-Nitrosodi-n-propylamine	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
n-Nitrosodimethylamine	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6 R	<9.6	<9.6
n-Nitrosodiphenylamine	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Naphthalene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Nitrobenzene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Pentachlorophenol	NA	NA	NA	NA	NA	<48	<48	<48	<48	<48
Phenanthrene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Phenol	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Pyrene	NA	NA	NA	NA	NA	<9.6	<9.6	<9.6	<9.6	<9.6
Total Petroleum Hydrocarbons (µg/L)										
Diesel Range	NA	20000	<460	600	100 F	44 F	35 F	340 F	130 F	400 F
Gasoline Range	59000	60000	110 F	<100	<100	25 F	12 F	16 F	27 F	16 F
Motor oils	NA	NA	NA	NA	NA	68 F	70 F	310 F	220 F	440 F

ATTACHMENT 3
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	DO32	DO32	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	133-MW04	133-MW04	133-MW05	133-MW05	133-MW05	133-MW01	133-MW01	133-MW02	133-MW02	133-MW02
Field Sample ID:	133-MW04-GW01	133-MW99-GW100	133-MW05-GW02	133-MW05-GW01	133-MW05-GW01	133-MW01-GW01	133-MW01-GW02	133-MW02-GW01	133-MW02-GW02	133-MW99-GW02
Sample Date:	7/18/2000	7/18/2000	12/16/1999	4/19/2000	7/18/2000	1/9/2003	3/13/2003	1/10/2003	3/12/2003	3/12/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Volatile Organic Compounds (µg/L)										
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
1,1-Dichloroethane	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
1,1-Dichloroethene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
1,1-Dichloropropene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	<1	<1 R	<1	<1	<1 R
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	<2	<2 R	<2	<2	<2 R
1,2-Dibromoethane (Ethylene Dibromide)	NA	NA	NA	NA	NA	<1	<1 M	<1	<1 M	<1 M
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
1,2-Dichloroethane	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
1,3-Dichloropropane	NA	NA	NA	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5
1-chlorohexane	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
2,2-dichloropropane	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
2-Butanone(MEK)	NA	NA	NA	NA	NA	<10	<10	<10	<10	<10
2-chlorotoluene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
2-Hexanone	NA	NA	NA	NA	NA	<10	<10	<10	7.1 F	<10
4-chlorotoluene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	NA	NA	NA	NA	NA	<10	<10	<10	0.38 F	<10
Acetone	NA	NA	NA	NA	NA	<10 R	<10	<10 R	<10 R	<10
Benzene	NA	NA	NA	NA	NA	<0.4	<0.4	<0.4	<0.4	<0.4
Bromobenzene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
Bromochloromethane	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
Bromodichloromethane	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
Bromomethane	NA	NA	NA	NA	NA	<3	<3	<3	<3	<3
Carbon disulfide	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
Carbon tetrachloride	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
Chlorobenzene	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
Chloroform	NA	NA	NA	NA	NA	<0.3	<0.3	<0.3	<0.3	<0.3
Chloromethane	NA	NA	NA	NA	NA	<1	<1 J	0.52 F	<1	<1 R
cis-1,2-Dichloroethylene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1

ATTACHMENT 3
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	DO32	DO32	DO32	DO32	DO32	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	133-MW04	133-MW04	133-MW05	133-MW05	133-MW05	133-MW01	133-MW01	133-MW02	133-MW02	133-MW02
Field Sample ID:	133-MW04-GW01	133-MW99-GW100	133-MW05-GW02	133-MW05-GW01	133-MW05-GW01	133-MW01-GW01	133-MW01-GW02	133-MW02-GW01	133-MW02-GW02	133-MW99-GW02
Sample Date:	7/18/2000	7/18/2000	12/16/1999	4/19/2000	7/18/2000	1/9/2003	3/13/2003	1/10/2003	3/12/2003	3/12/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
Dichlorodifluoromethane	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
Ethylbenzene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
Hexachlorobutadiene	NA	NA	NA	NA	NA	<0.6	<0.6	<0.6	<0.6	<0.6
Isopropylbenzene (Cumene)	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
m,p-Xylene	NA	NA	NA	NA	NA	<2	<2	<2	<2	<2
Methyl tertiary-butyl ether	NA	NA	NA	NA	NA	<5	<5 R	0.5 F	<5	<5 R
Methylene chloride	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
n-Butylbenzene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
n-Propylbenzene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
Naphthalene	NA	NA	NA	NA	NA	<1	<1	<1	0.33 F	<1
o-Xylene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
p-Cymene (p-isopropyltoluene)	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
Sec-butylbenzene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
Styrene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
t-Butylbenzene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
Tetrachloroethylene (PCE)	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
Toluene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
Trichloroethylene (TCE)	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
Trichlorofluoromethane	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1
Vinyl acetate	NA	NA	NA	NA	NA	<10	<10	<10	<10	<10
Vinyl chloride	NA	NA	NA	NA	NA	<1	<1	<1	<1	<1

ATTACHMENT 3
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	133-MW03	133-MW03	133-MW04	133-MW04	133-MW05	133-MW05
Field Sample ID:	133-MW03-GW01	133-MW03-GW02	133-MW04-GW01	133-MW04-GW02	133-MW05-GW01	133-MW05-GW02
Sample Date:	1/10/2003	3/12/2003	1/13/2003	3/13/2003	1/14/2003	3/13/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0
BTEX (µg/L)						
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA	NA
Methyl tertiary-butyl ether	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA
Xylenes, total	NA	NA	NA	NA	NA	NA
Total Metals (µg/L)						
Lead	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (µg/L)						
1,2,4-Trichlorobenzene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
1,2-Dichlorobenzene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
1,3-Dichlorobenzene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
1,4-Dichlorobenzene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
2,4,5-Trichlorophenol	<48	<48	<48	<48	<48	<48
2,4,6-Trichlorophenol	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
2,4-Dichlorophenol	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
2,4-Dimethylphenol	<9.6	<9.6	115	23.4	<9.6	<9.6
2,4-Dinitrophenol	<48	<48	<48	<48	<48	<48
2,4-Dinitrotoluene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
2,6-Dinitrotoluene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
2-Chloronaphthalene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
2-Chlorophenol	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
2-Methylnaphthalene	<9.6	<9.6	58.4	40.9	<9.6	<9.6
2-Methylphenol (o-cresol)	<9.6	<9.6	2.7 F	<9.6	<9.6	<9.6
2-Nitroaniline	<48	<48	<48	<48	<48	<48
2-Nitrophenol	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
3,3'-Dichlorobenzidine	<19	<19	<19	<19	<19	<19
3-Nitroaniline	<48	<48	<48	<48	<48	<48
3/4-Methylphenol (m,p-cresol)	<48	<48	7.5 F	<48	<48	<48
4,6-Dinitro-2-methylphenol	<48	<48	<48	<48	<48	<48
4-Bromophenyl phenyl ether	<9.6 J	<9.6	<9.6 J	<9.6	<9.6 J	<9.6
4-Chloro-3-methylphenol	<19	<19	<19	<19	<19	<19
4-Chloroaniline	<19	<19	<19	<19	<19	<19
4-Chlorophenyl phenyl ether	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
4-Nitroaniline	<48	<48 R	<48	<48	<48	<48
4-Nitrophenol	<48	<48	<48	<48	<48	<48
Acenaphthene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6

ATTACHMENT 3
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	133-MW03	133-MW03	133-MW04	133-MW04	133-MW05	133-MW05
Field Sample ID:	133-MW03-GW01	133-MW03-GW02	133-MW04-GW01	133-MW04-GW02	133-MW05-GW01	133-MW05-GW02
Sample Date:	1/10/2003	3/12/2003	1/13/2003	3/13/2003	1/14/2003	3/13/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0
Acenaphthylene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Anthracene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Benzo(a)anthracene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Benzo(a)pyrene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Benzo(b)fluoranthene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Benzo(g,h,i)perylene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Benzo(k)fluoranthene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Benzoic acid	<96	<96	<96	<96	<96	<96
Benzyl alcohol	<19	<19	<19	<19	<19	<19
Benzyl butyl phthalate	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
bis(2-Chloroethoxy)methane	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
bis(2-Chloroethyl)ether	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
bis(2-Chloroisopropyl)ether	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
bis(2-Ethylhexyl)phthalate	<9.6	<9.6	<9.6	1.6 F	<9.6	1.3 F
Chrysene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Di-n-butyl phthalate	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Di-n-octylphthalate	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Dibenz(a,h)anthracene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Dibenzofuran	<9.6 R	<9.6	<9.6 R	<9.6	<9.6 R	<9.6
Diethyl phthalate	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Dimethyl phthalate	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Fluoranthene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Fluorene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Hexachlorobenzene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Hexachlorobutadiene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Hexachlorocyclopentadiene	<9.6 J	<9.6	<9.6 J	<9.6	<9.6 J	<9.6
Hexachloroethane	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Indeno(1,2,3-c,d)pyrene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Isophorone	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
n-Nitrosodi-n-propylamine	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
n-Nitrosodimethylamine	<9.6 R	<9.6	<9.6 R	<9.6	<9.6 R	<9.6
n-Nitrosodiphenylamine	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Naphthalene	<9.6	<9.6	193	137	<9.6	<9.6
Nitrobenzene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Pentachlorophenol	<48	<48	<48	<48	<48	<48
Phenanthrene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Phenol	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Pyrene	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
Total Petroleum Hydrocarbons (μg/L)						
Diesel Range	220 F	200 F	7600	7700	980	270 F
Gasoline Range	29 F	17 F	7400	3300	25 F	13 F
Motor oils	350 F	260 F	<4800	<2400	290 F	190 F

ATTACHMENT 3
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	133-MW03	133-MW03	133-MW04	133-MW04	133-MW05	133-MW05
Field Sample ID:	133-MW03-GW01	133-MW03-GW02	133-MW04-GW01	133-MW04-GW02	133-MW05-GW01	133-MW05-GW02
Sample Date:	1/10/2003	3/12/2003	1/13/2003	3/13/2003	1/14/2003	3/13/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0
Volatile Organic Compounds (µg/L)						
1,1,1,2-Tetrachloroethane	<0.5	<0.5	<5	<5	<0.5	<0.5
1,1,1-Trichloroethane	<1	<1	<10	<10	<1	<1
1,1,2,2-Tetrachloroethane	<0.5	<0.5	<5	<5	<0.5	<0.5
1,1,2-Trichloroethane	<1	<1	<10	<10	<1	<1
1,1-Dichloroethane	<1	<1	<10	<10	<1	<1
1,1-Dichloroethene	<1	<1	<10	<10	<1	<1
1,1-Dichloropropene	<1	<1	<10	<10	<1	<1
1,2,3-Trichlorobenzene	<1	<1	<10	<10	<1	<1
1,2,3-Trichloropropane	<1	<1 R	<10	<50	<1	<1 R
1,2,4-Trichlorobenzene	<1	<1	<10	<10	<1	<1
1,2,4-Trimethylbenzene	<1	<1	942	780	<1	<1
1,2-Dibromo-3-chloropropane	<2	<2 R	<20	<100	<2	<2 R
1,2-Dibromoethane (Ethylene Dibromide)	<1	<1 M	<10	<10 M	<1	<1 M
1,2-Dichlorobenzene	<1	<1	<10	<10	<1	<1
1,2-Dichloroethane	<0.5	<0.5	<5	6	<0.5	<0.5
1,2-Dichloropropane	<1	<1	<10	<10	<1	<1
1,3,5-Trimethylbenzene	<1	<1	181	106	<1	<1
1,3-Dichlorobenzene	<1	<1	<10	<10	<1	<1
1,3-Dichloropropane	<0.4	<0.4	<4	<4	<0.4	<0.4
1,4-Dichlorobenzene	<0.5	<0.5	<5	<5	<0.5	<0.5
1-chlorohexane	<1	<1	<10	<10	<1	<1
2,2-dichloropropane	<1	<1	<10	<10	<1	<1
2-Butanone(MEK)	<10	<10	<100	<100	<10	<10
2-chlorotoluene	<1	<1	<10	<10	<1	<1
2-Hexanone	<10	<10	<100	<100	<10	<10
4-chlorotoluene	<1	<1	<10	<10	<1	<1
4-Methyl-2-pentanone (MIBK)	<10	<10	8.6 F	<100	<10 R	<10
Acetone	<10 R	<10	41.7 R	<100	<10 R	<10
Benzene	<0.4	<0.4	57.1	36.5	<0.4	<0.4
Bromobenzene	<1	<1	<10	<10	<1	<1
Bromochloromethane	<1	<1	<10	<10	<1	<1
Bromodichloromethane	<0.5	<0.5	<5	<5	<0.5	<0.5
Bromoform	<1	<1	<10	<10	<1	<1
Bromomethane	<3	<3	<30	<30	<3	<3
Carbon disulfide	<1	<1	<10	<10	<1 R	<1
Carbon tetrachloride	<1	<1	<10	<10	<1	<1
Chlorobenzene	<0.5	<0.5	<5	<5	<0.5	<0.5
Chloroethane	<1	<1	<10	<10	<1 R	<1
Chloroform	<0.3	<0.3	<3	<3	<0.3	<0.3
Chloromethane	<1	<1 R	<10	<10 J	<1 R	<1 J
cis-1,2-Dichloroethylene	<1	<1	<10	<10	<1	<1

ATTACHMENT 3
TABLE AOC -133-WATER

SUMMARY OF ANALYTICAL DATA IN WATER
VANDENBERG AIR FORCE BASE
(Page 16 of 16)

Reference:	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59	3PDO59
Location ID:	133-MW03	133-MW03	133-MW04	133-MW04	133-MW05	133-MW05
Field Sample ID:	133-MW03-GW01	133-MW03-GW02	133-MW04-GW01	133-MW04-GW02	133-MW05-GW01	133-MW05-GW02
Sample Date:	1/10/2003	3/12/2003	1/13/2003	3/13/2003	1/14/2003	3/13/2003
Sample Depth:	0.0	0.0	0.0	0.0	0.0	0.0
cis-1,3-Dichloropropene	<0.5	<0.5	<5	<5	<0.5	<0.5
Dibromochloromethane	<0.5	<0.5	<5	<5	<0.5	<0.5
Dibromomethane	<1	<1	<10	<10	<1	<1
Dichlorodifluoromethane	<1	<1	<10	<10	<1 R	<1
Ethylbenzene	<1	<1	641	552	<1	<1
Hexachlorobutadiene	<0.6	<0.6	<6	<6	<0.6	<0.6
Isopropylbenzene (Cumene)	<1	<1	37.8	31.2	<1	<1
m,p-Xylene	<2	<2	471	8 F	<2	<2
Methyl tertiary-butyl ether	<5	<5 R	166	293	<5	<5 R
Methylene chloride	<1	<1	9.2 F	<10	<1	<1
n-Butylbenzene	<1	<1	<10	<10	<1	<1
n-Propylbenzene	<1	<1	94.8	82.3	<1	<1
Naphthalene	<1	<1	235	193	<1	<1
o-Xylene	<1	<1	79.6	11.3	<1	<1
p-Cymene (p-isopropyltoluene)	<1	<1	10.1	4 F	<1	<1
Sec-butylbenzene	<1	<1	13	6.4 F	<1	<1
Styrene	<1	<1	<10	<10	<1	<1
t-Butylbenzene	<1	<1	<10	<10	<1	<1
Tetrachloroethylene (PCE)	<1	<1	<10	<10	<1	<1
Toluene	<1	<1	22.8	5.6 F	<1	<1
trans-1,2-Dichloroethene	<1	<1	<10	<10	<1	<1
trans-1,3-Dichloropropene	<1	<1	<10	<10	<1	<1
Trichloroethylene (TCE)	<1	<1	<10	<10	<1	<1
Trichlorofluoromethane	<1	<1	<10	<10	<1	<1
Vinyl acetate	<10	<10	<100	<100	<10	<10
Vinyl chloride	<1	<1	<10	<10	<1	<1

NOTES

SUMMARY OF CHEMICALS IN SOIL AND WATER
VANDENBERG AIR FORCE BASE

Units:
mg/kg = milligrams per kilogram
μg/L = micrograms per liter

Abbreviations:
AOC = Area of Concern
NA = not applicable

Qualifiers:
B = The analyte was found in an associated blank, as well as in the sample.
F = The analyte was positively identified, but the quantitation is below the reporting limit.
J = The associated numerical value is an estimated quantity.
M = A matrix effect was present.
R = The data are unusable due to deficiencies in the ability to analyze the sample and meet quality control criteria.

References:
3PDO59 = Delivery Order 0059 (Montgomery Watson Harza, 2002-2003)
DO7 = Delivery Order 0007 (Montgomery Watson Harza, 1998-1999)
DO32 = Delivery Order 0032 (Montgomery Watson Harza, 1999-2000)
DO60 = Delivery Order 0060 (Montgomery Watson Harza, 2000)
WR09 = Work Request 09 (Tetra Tech, 1997)
WR10 = Work Request 10 (Tetra Tech, 1998)

APPENDIX I

ANALYTICAL DATA REPORT

APPENDIX I

FINAL
AREAS OF CONCERN
ANALYTICAL DATA REPORT
VANDENBERG AIR FORCE BASE, CALIFORNIA

Contract No. F41624-00-D-8022
Delivery Order 0059

Prepared for:

Air Force Center for Environmental Excellence
Brooks City-Base, Texas

Prepared by:

MWH
1340 Treat Boulevard, Suite 300
Walnut Creek, CA 94597

June 2004

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LIST OF ATTACHMENTS

Attachment 1 Full Results Summary

LIST OF ACRONYMS

%R	percent recovery
µg/kg	micrograms per kilogram
ADR	analytical data report
AFCEE	Air Force Center for Environmental Excellence
AOC	area of concern
APCL	Applied Physics and Chemistry Laboratory
CCV	continuing calibration verifications
DO	delivery order
DQO	data quality objective
EDD	Electronic Data Deliverable
LCS/LSCD	laboratory control samples/laboratory control sample duplicates
LDC	Laboratory Data Consultants, Inc.
MS/MSD	matrix spikes/matrix spikes duplicates
PAH	polycyclic aromatic hydrocarbons
QAPP	Quality Assurance Project Plan
QC	quality control
RPD	relative percent difference
RSD	relative standard deviations
SIM	selected ion monitoring
SVOC	semivolatile organic compound
TPH-d/mo	total petroleum hydrocarbons as diesel/motor oil
VOC	volatile organic compound

1.0 INTRODUCTION

This analytical data report (ADR) has been prepared as part of the deliverable requirements specified in Contract Number F41624-00-D-8022, Delivery Order (DO) 0059 for collecting environmental samples at areas of concern (AOCs) at Vandenberg Air Force Base, California. The purpose of this ADR is to present the analytical results of the soil and groundwater samples (and associated field quality control [QC] samples) collected during the sampling activities under DO 59. Soil and groundwater samples were collected and analyzed according to the procedures and methods specified in the Revision 3 of the Quality Assurance Project Plan (QAPP) of Areas of Concern, presented in Revision 2 of the *Background and Standard Approach for Investigation of Areas of Concern at Vandenberg Air Force Base, California* (MWH, 2002). The QAPP is based on the Air Force Center for Environmental Excellence (AFCEE) QAPP Version 3.1 (AFCEE, 2001). A summary of the data management review process and analytical and data verification procedures is also presented in this ADR.

2.0 ANALYTICAL RESULTS

The scope of work completed for sampling under DO 59 included the collection of environmental samples, laboratory analysis, verification and validation of analytical results, and compilation of the field sample and laboratory QC data into summary tables. The analytical results for the field and field QC samples are presented in Attachment 1 of this ADR.

3.0 SUMMARY OF FIELD ACTIVITIES

Soil samples, groundwater samples, and associated water-matrix QC samples were collected during sampling activities under DO 59. The total number of samples collected during these sampling events was as follows:

- 96 soil samples and 17 groundwater samples
- 8 soil field duplicate samples and 2 groundwater field duplicates
- 11 soil matrix spike/matrix spike duplicates (MS/MSDs) and 2 groundwater MS/MSDs
- 12 trip blanks
- 5 equipment rinsate blanks

Table I-1 summarizes the field sample identifications, sample types, and collection dates, and provides a cross-reference with laboratory identifications for samples collected under DO 59.

Table I-2 provides a summary of the laboratory batching information for samples collected under DO 59. Soil samples, groundwater samples, and water-matrix field blank samples were analyzed for one or more of the following parameters:

- Volatile organic compounds (VOCs) by Method SW8260B
- Semivolatile organic compounds (SVOCs) by Method SW8270C
- Polycyclic aromatic hydrocarbons (PAHs) by Method SW8270C—selected ion monitoring (SIM)
- Total petroleum hydrocarbons referenced to gasoline by Method SW8015B modified
- Total petroleum hydrocarbons referenced to diesel and motor oil (TPH-d/mo) by Method SW8015 modified, samples were silica gel cleaned prior to analysis
- Metals by Method SW6010B

Applied Chemistry & Physics Laboratory (APCL), located in Chino, California, performed all analyses on all samples. APCL is certified by the California Environmental Protection Agency Department of Health Services through the Environmental Laboratory Accreditation Program to perform hazardous waste analyses.

4.0 DATA MANAGEMENT REVIEW PROCESS AND DATA VERIFICATION

APCL provided two copies of data reporting packages and an electronic data deliverable (EDD) to MWH. Upon receipt of these results, an MWH chemist initially reviewed the data by checking for completeness, including sample identifications, collection and analysis dates, analysis methods, reporting units and limits, consistency between hard and electronic copies, and QC results. The initial data review also included an evaluation of compliance with analytical protocols and contract requirements.

MWH forwarded the EDD and one copy of the data package to Laboratory Data Consultants, Inc. (LDC) of Carlsbad, California who verified all sample results according to AOC QAPP, presented in the *Background and Standard Approach for Investigation of Areas of Concern at Vandenberg Air Force Base, California* (MWH, 2002). LDC provided a Level III data verification of 90 percent of the data. This encompassed an evaluation of sample collection procedures, holding times, and summary information for instrument calibrations (to assess system performance), blanks (to assess contamination), sample duplicates (to assess precision), laboratory control samples (to assess accuracy), and matrix spike and surrogate recoveries (to assess accuracy and matrix effects). LDC also provided a comprehensive Level IV data verification of 10 percent of the data, which included a complete review of compound identification and quantitation in addition to the Level III items. Upon completion of the data review, LDC provided a comprehensive data verification report for each data package. MWH retains copies of all original data packages, EDDs, and LDC data verification reports.

5.0 QUALITY CONTROL RESULTS AND DATA VALIDATION

MWH reviewed LDC's data verification reports and assessed the qualified data against the data quality objectives (DQOs) for the project. The following sections summarize the review process and results in terms of precision, accuracy, representativeness, completeness, and comparability. A summary of data qualified as a result of the verification process is presented in Table I-3. Verified data that have been changed as a result of the validation process are discussed in the proceeding sections and are presented in Table I-4.

5.1 PRECISION

Precision is the degree of agreement among repeated measurements of the same characteristic under the same or similar conditions. Data precision indicates how consistent and reproducible the field sampling or analytical procedures have been. Overall precision is measured by collecting data from replicate field samples. Precision was evaluated based on the results of QC samples collected in the field and created in the laboratory. The calculated relative percent difference (RPD) for MS/MSD pairs, laboratory control sample/laboratory control sample duplicate (LCS/LCSD) pairs, and field duplicate pairs provided information on precision of sampling and analytical procedures. The percent differences calculated from continuing calibration verification standards (CCVs) provided information on precision of the analytical system.

The following VOCs were initially rejected in several samples collected under DO 59: 2-hexanone, 4-methyl-2-pentanone (MIBK), and chloromethane. The following SVOCs were initially rejected in several samples collected under DO 59: 4-bromophenyl phenyl ether; 4-nitroaniline; benzo(g,h,i)perylene; benzo(k)fluoranthene; hexachlorocyclopentadiene; and n-nitrosodimethylamine. The percent differences for the compounds exceeded the required control limit (high bias) in the associated CCVs. The associated sample results would be expected to also be biased high; however, the compounds were not detected in the associated samples. Therefore,

the results were unrejected requalified "J" to denote the QC nonconformance. Table I-4 presents the original verification qualifier and the revised qualifier for these results.

Field duplicates were collected at a rate of at least 10 percent for all matrices and analyses. RPDs were calculated when an analyte was detected in either the field sample or its duplicate above the reporting limit. The field duplicate sample results are summarized on Table I-5 for the samples that had analytes detected in the field sample and/or its duplicate. Field sample results were qualified if field duplicate pairs collected on the same day had RPDs that exceeded the required control limits. The RPD for motor oils exceeded the control limit in the field duplicate pairs collected for 055-TW01-SS35.0. Non-detected results associated with this field duplicate pair were initially rejected. The field duplicate results were used to assess primarily the precision of sampling technique and soil matrix conditions (i.e., the extent of heterogeneity) and not analytical precision, since other control elements are established in the laboratory to measure analytical precision. Non-detect results for motor oils were requalified "J" as estimated in five soil samples collected at AOC-055 for field duplicate precision. The requalified data are presented on Table I-4.

The RPD for aluminum, barium, iron, manganese, vanadium, and zinc exceeded the control limit in field duplicate pairs 099-SC03-SS1.0 and 099-SC97-SS1.0. The RPD for aluminum, barium, chromium, iron, manganese, vanadium, and zinc exceeded the control limit in field duplicate pair 099-SC11-SS1.0 and 099-SC89-SS1.0. Since both sets of field duplicate pairs were collected on the same day of sampling, all field samples associated with that date of sampling were qualified "J" for the metals that exceeded the RPD control limit.

Site-specific MS/MSDs were collected at a frequency of approximately 5 percent. The samples in the associated analytical batch were qualified in cases when the MS and/or MSD percent recovery (%R) or RPD was outside the acceptance limits. The MS/MSD results are summarized on Table I-6. Aluminum and iron were outside the acceptance limits in the MS and MSD prepared from field sample 099-SC07-SS1.0. LDC qualified the associated samples with an "M" to denote the AFCEE nonconformance. However, the concentrations of these metals in the

parent samples were over an order of magnitude greater than the concentrations in the spike used to prepare the MS/MSDs. In these cases, it is unlikely that a matrix effect caused the MS/MSDs to be outside the required control limits. It is more likely that the spike amount was negligible compared to the native concentration, and was not accurately recovered. The "M" flags were therefore removed from the results in all samples associated with these MS/MSDs. The samples had already been qualified "J" as estimated for field duplicate precision, therefore the removal of the "M" flags does not affect the final data qualifier for these samples (the "J" was retained because it is a more severe qualifier flag than "M"). The requalified data are presented on Table I-4.

An LCS was analyzed with each analytical batch of samples. An LCSD was analyzed with each analytical batch of samples except for Method SW8260B. Field sample results were qualified per the AOC QAPP for RPDs (and %Rs per "Accuracy" section below) outside the acceptance limits. Field sample results associated with percent differences outside the acceptance limits in CCVs were qualified per the AOC QAPP. The LCS/LCSD results are summarized on Table I-7a through Table I-7d.

5.2 ACCURACY

Accuracy is defined as the closeness of agreement between an observed value and an accepted reference value. Accuracy was evaluated based on surrogate spike, MS/MSD, and LCS/LCSD percent recoveries. The relative standard deviations (RSDs) generated from initial calibrations were evaluated. Surrogate recovery results are summarized on Table I-8a through Table I-8e. Field sample results associated with recoveries and RSDs outside the acceptance limits were qualified per the AOC QAPP, and the flagged data are summarized on Table I-3.

The %R of the SVOC surrogate 2,4,6-tribromophenol was 15% in the soil sample 055-TW01-SS45.0, which is below the required lower control limit of 36%. The sample was re-analyzed and the recovery of the surrogate was the same. The %Rs of several acidic compounds (phenol

derivatives) were also recovered below the lower control limit in the MS/MSD prepared with this sample. The measured pH of the samples was 10.17, and it is likely that the acidic compounds were lost during the extraction process due to the alkaline nature of the soil sample. The target analytes were rejected in this sample during data verification. Only polycyclic aromatic hydrocarbons were detected in the sample, with the exception of bis(2-ethylhexyl) phthalate. The rejected data from the SVOC analysis is not expected to be a data gap for the site because the sample was also analyzed for PAHs by Method SW8270C-SIM, and those data are acceptable. Bis(2)-ethylhexyl phthalate was detected at 103 micrograms per kilogram (µg/kg), which is below the reporting limit of 810 µg/kg in sample. The compound is not acidic in nature, and most likely would not have been affected by the pH of the soil. Therefore, the compound was requalified "J" as estimated. Other SVOCs have not been detected at the site during previous investigations, and are not contaminants of concern; therefore, this data gap does not impact the DQOs for this AOC.

The %R of the SVOC surrogate phenol-d5 was 1 percent lower than the acceptable lower control limit in sample 020-SB12-SS0.0. The acidic compounds 2,4,5-trichlorophenol, 2,4,6-trichlorophenol, 2,4-dichlorophenol, 2,4-dimethylphenol, 2,4-dinitrophenol, 2-chlorophenol, 2-methylphenol; 2-nitrophenol, 3/4-methylphenol, 4,6-dinitro-2-methylphenol, 4-chloro-3-methylphenol, 4-nitrophenol, and phenol were rejected during data verification. All other surrogates (including the two other acid fraction surrogates) were within the required criteria and none of the rejected compounds were detected in the sample. With the exception of pentachlorophenol, all of the action levels for the rejected compounds are over an order of magnitude higher than the reporting limits. Therefore, a slight bias would not cause false negative data to be reported for the compounds that were nondetected in the sample and rejected for the surrogate recovery. The data for the acidic compounds with the exception of pentachloropenol were requalified "J."

The internal standard, perylene-d12, had area counts below the required control limits in several soil samples collected at AOC-020: 020-SB07-SS0.0, 020-SB07-SS2.5, 020-SC01-SS2.0, and 020-SC02-SS2.0. The samples were reanalyzed and the area counts for the internal standard

were still low The internal standard area counts were also below the required control limits in the MS/MSD prepared from sample 020-SB07-SS2.5. The internal standard recoveries were within the required criteria for all the method blank and LCS/LCSD, which indicates a matrix effect was likely present in the samples. Therefore, these samples were requalified "M" for matrix effect. No SVOCs were detected in these samples; however, TPH-d/mo was detected in the samples above the action level. The data flagged "M" is not expected to impact decisions made with respect to this site because the TPH results will be driving the remediation decisions.

Perylene-d12 also had a low area counts in three samples collected at AOC-055: 055-TW01-SS25.0, 055-TW01-SS30.0, and 055-TW01-SS45.0. The samples were reanalyzed and the internal standard in samples 055-TW01-SS30.0 and 055-TW01-SS45.0 had similar low area counts. Two additional internal standards were below area counts in the re-analysis of sample 055-TW01-SS45.0. The data was evaluated as in the case of the samples collected at AOC-020, to determine whether a matrix effect was present or whether the internal standard recoveries were caused by analytical performance. An MS/MSD was performed on sample 055-TW01-SS45.0 and several compounds were below the lower control limits. The internal standards were acceptable in the method blank and LCS/LCSD, and it is likely that the low internal standards were caused by a matrix effect. The associated results in samples 055-TW01-SS30.0 were requalified "M." The data flagged "M" will not effect decisions made at the site because the samples collected at AOC-055 were also analyzed for PAHs by Method SW8270C-SIM, and those data are acceptable. Results for SVOCs in sample 055-TW01-SS45.0 were not requalified because of the surrogate failure discussed at the beginning of this section.

5.3 REPRESENTATIVENESS

Representativeness is defined as the degree to which measurements represent actual conditions. Representativeness was evaluated through the analysis of laboratory method blank, trip blank, and equipment-rinsate blank samples, as well as on the condition and proper preservation of samples as reviewed upon receipt at the laboratory.

No target analytes were detected in any method or field blanks above the reporting limit with the exception of methylene chloride, which was detected in one method blank above the reporting limit. Methylene chloride was not detected in an associated field sample. Results for samples collected under DO 59 did not require qualification because of method or field blank contamination.

All samples were received in good condition and were preserved properly. All holding times were within the method-specified holding time criteria.

5.4 COMPLETENESS

Completeness is defined as the number of valid results (i.e., those not rejected) divided by the total number reported. Completeness was calculated for each method per matrix. The completeness goals are 90 percent for soil matrix and 95 percent for groundwater matrix. All methods met the completeness goals.

Ninety-four percent and 97 percent completeness was achieved for VOCs in soil and groundwater samples, respectively. In soil samples, all results for 1,2,4-trichlorobenzene; carbon disulfide; dibromomethane; and trans-1,2-dichloroethene were rejected. All of the soil samples analyzed for VOCs were collected at AOC-055. These compounds have not been detected during previous investigations at the site, and are not considered contaminants of concern. The individual percent completeness did not achieve the completeness goal for those VOCs listed in Table I-9 in groundwater samples due to calibration deficiencies in the analysis.

Ninety-three and 98 percent completeness was achieved for SVOCs in soil and groundwater samples, respectively. The individual SVOC analyte completeness did not achieve the completeness goal for those compounds listed in Table I-9 due to calibration deficiencies in the analysis

The overall completeness for each matrix and method, as well as the individual analytes that were not 100% complete, are presented on Table I-9.

5.5 COMPARABILITY

Comparability is defined as the confidence with which one data set can be evaluated against another. On this project, comparability was assured by analyzing all samples according to the specified United States Environmental Protection Agency analytical method. Each method was reported in standard units of measurement.

6.0 SUMMARY OF DATA QUALIFIERS

The following is a summary of the data verification/validation qualifiers and reason codes used in the review:

Qualifier	Description
F	The analyte was positively identified, but the associated numerical value is less than the reporting limit.
J	The result is estimated.
M	A matrix effect was present.
R	The result is unusable because of deficiencies in the ability to meet QC criteria.
Reason Code	**Description**
5	Instrument calibration outside control limits.
8	MS recovery outside control limits.
9	MSD recovery outside control limits.
10	LCS recovery outside control limits.
13	Surrogate spike recovery outside control limits.
14	Field duplicate RPD was outside control limit.
19	Internal standards.
23	The result is greater than the method detection limit but less than the reporting limit.

7.0 SUMMARY

Analytical data generated under DO 59 were validated according to the AOC QAPP. All data that have not been qualified as rejected ("R" flagged) are usable as qualified.

8.0 REFERENCES

Air Force Center for Environmental Excellence, 2001. AFCEE Quality Assurance Project Plan Version 3.1. August.

MWH, 2002. Background and Standard Approach for Investigation of Areas of Concern Revision 2, Delivery Order 0056, Vandenberg Air Force Base, California. November.

TABLES

TABLE I-1

SAMPLES COLLECTED
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 1 of 5)

AOC	Field Sample Identification	Sample Type	Matrix	Location	Collection Depth (ft. bgs)	Collection Date	Laboratory	Laboratory Sample ID	VOCs	SVOCs	PAHs	TPH-g	TPH-d/mo	Metals
133	133-MW01-GW01	Normal Field Sample	Water	133-MW01	NA	01/09/03	APCL	03-1094-1	X	X		X	X	
NA	TB010903-01 (TB)	Trip Blank	Water	FIELD QC	NA	01/09/03	APCL	03-1094-2	X					
133	133-MW02-GW01	Normal Field Sample	Water	133-MW02	NA	01/10/03	APCL	03-1118-1	X	X		X	X	
133	133-MW03-GW01	Normal Field Sample	Water	133-MW03	NA	01/10/03	APCL	03-1118-2	X	X		X	X	
NA	TB011003-01 (TB)	Trip Blank	Water	FIELD QC	NA	01/10/03	APCL	03-1118-3	X					
133	133-MW04-GW01	Normal Field Sample	Water	133-MW04	NA	01/13/03	APCL	03-1165-1	X	X		X	X	
133	133-MW04-GW01	Normal Field Sample	Water	133-MW04	NA	01/13/03	APCL	03-1165-1DL	X	X				
NA	TB-011303-02 (TB)	Trip Blank	Water	FIELD QC	NA	01/13/03	APCL	03-1165-2	X					
133	133-MW05-GW01	Normal Field Sample	Water	133-MW05	NA	01/14/03	APCL	03-1161-1	X	X		X	X	
NA	59TB0114200B (TB)	Trip Blank	Water	FIELD QC	NA	01/14/03	APCL	03-1161-2	X					
020	020-SB04-SS0.0	Normal Field Sample	Soil	020-SB04	NA	01/28/03	APCL	03-1359-1					X	
020	020-SB04-SS10.0	Normal Field Sample	Soil	020-SB04	9.5	01/28/03	APCL	03-1359-4					X	
020	020-SB04-SS2.5	Normal Field Sample	Soil	020-SB04	2.5	01/28/03	APCL	03-1359-2					X	
020	020-SB04-SS5.0	Normal Field Sample	Soil	020-SB04	5	01/28/03	APCL	03-1359-3					X	
020	020-SB05-SS0.0	Normal Field Sample	Soil	020-SB05	NA	01/28/03	APCL	03-1359-5		X			X	
020	020-SB05-SS0.0	Normal Field Sample	Soil	020-SB05	NA	01/28/03	APCL	03-1359-5RE		X				
020	020-SB05-SS10.0	Normal Field Sample	Soil	020-SB05	9.5	01/28/03	APCL	03-1359-8					X	
020	020-SB05-SS2.5	Normal Field Sample	Soil	020-SB05	2.5	01/28/03	APCL	03-1359-6					X	
020	020-SB05-SS5.0	Normal Field Sample	Soil	020-SB05	5	01/28/03	APCL	03-1359-7					X	
020	020-SB06-SS0.0	Normal Field Sample	Soil	020-SB06	NA	01/28/03	APCL	03-1359-9					X	
020	020-SB06-SS0.0	Normal Field Sample	Soil	020-SB06	NA	01/28/03	APCL	03-1359-9		X				
020	020-SB06-SS0.0	Normal Field Sample	Soil	020-SB06	NA	01/28/03	APCL	03-1359-9RE		X				
020	020-SB06-SS10.0	Normal Field Sample	Soil	020-SB06	9.5	01/28/03	APCL	03-1359-12					X	
020	020-SB06-SS2.5	Normal Field Sample	Soil	020-SB06	2.5	01/28/03	APCL	03-1359-10					X	
020	020-SB06-SS5.0	Normal Field Sample	Soil	020-SB06	5	01/28/03	APCL	03-1359-11					X	
020	020-SB06-SS5.0 (MS)	Matrix Spike	Soil	020-SB06	5	01/28/03	APCL	03-1359-11MS					X	
020	020-SB06-SS5.0 (MSD)	Matrix Spike Duplicate	Soil	020-SB06	5	01/28/03	APCL	03-1359-11MS					X	
020	020-SB08-SS0.0	Normal Field Sample	Soil	020-SB08	NA	01/28/03	APCL	03-1359-13					X	
020	020-SB08-SS10.0	Normal Field Sample	Soil	020-SB08	9.5	01/28/03	APCL	03-1359-16					X	
020	020-SB08-SS2.5	Normal Field Sample	Soil	020-SB08	2.5	01/28/03	APCL	03-1359-14					X	
020	020-SB08-SS5.0	Normal Field Sample	Soil	020-SB08	5	01/28/03	APCL	03-1359-15					X	
020	020-SB09-SS0.0	Normal Field Sample	Soil	020-SB09	NA	01/28/03	APCL	03-1359-17					X	
020	020-SB09-SS10.0	Normal Field Sample	Soil	020-SB09	9.5	01/28/03	APCL	03-1359-20					X	
020	020-SB09-SS2.5	Normal Field Sample	Soil	020-SB09	2.5	01/28/03	APCL	03-1359-18					X	
020	020-SB09-SS2.5 (MS)	Matrix Spike	Soil	020-SB09	2.5	01/28/03	APCL	03-1359-18MS					X	
020	020-SB09-SS2.5 (MSD)	Matrix Spike Duplicate	Soil	020-SB09	2.5	01/28/03	APCL	03-1359-18MS					X	
020	020-SB09-SS5.0	Normal Field Sample	Soil	020-SB09	5	01/28/03	APCL	03-1359-19					X	
020	020-SB10-SS0.0	Normal Field Sample	Soil	020-SB10	NA	01/28/03	APCL	03-1359-21					X	

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SAMPLES COLLECTED
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

AOC	Field Sample Identification	Sample Type	Matrix	Location	Collection Depth (ft. bgs)	Collection Date	Laboratory	Laboratory Sample ID	VOCs	SVOCs	PAHs	TPH-g	TPH-d/mo	Metals
020	020-SB10-SS10.0	Normal Field Sample	Soil	020-SB10	9.5	01/28/03	APCL	03-1359-24					X	
020	020-SB10-SS2.5	Normal Field Sample	Soil	020-SB10	2.5	01/28/03	APCL	03-1359-22					X	
020	020-SB10-SS5.0	Normal Field Sample	Soil	020-SB10	5	01/28/03	APCL	03-1359-23					X	
020	020-SB99-SS10.0 (FD)	Field Duplicate	Soil	020-SB06	9.5	01/28/03	APCL	03-1359-26					X	
020	020-SB99-SS5.0 (FD)	Field Duplicate	Soil	020-SB04	5	01/28/03	APCL	03-1359-25					X	
NA	60ER-012803-01 (EB)	Equipment Rinsate Blank	Water	FIELDQC	NA	01/28/03	APCL	03-1359-27					X	
020	020-SB07-SS0.0	Normal Field Sample	Soil	020-SB07	1	01/29/03	APCL	03-1396-1					X	
020	020-SB07-SS0.0	Normal Field Sample	Soil	020-SB07	1	01/29/03	APCL	03-1396-1		X				
020	020-SB07-SS10.0	Normal Field Sample	Soil	020-SB07	11	01/29/03	APCL	03-1396-4					X	
020	020-SB07-SS2.5	Normal Field Sample	Soil	020-SB07	3.5	01/29/03	APCL	03-1396-2		X			X	
020	020-SB07-SS2.5 (MS)	Matrix Spike	Soil	020-SB07	3.5	01/29/03	APCL	03-1396-2MS		X				
020	020-SB07-SS2.5 (MSD)	Matrix Spike Duplicate	Soil	020-SB07	3.5	01/29/03	APCL	03-1396-2MSD		X				
020	020-SB07-SS20.0	Normal Field Sample	Soil	020-SB07	21	01/29/03	APCL	03-1396-5					X	
020	020-SB07-SS30.0	Normal Field Sample	Soil	020-SB07	31	01/29/03	APCL	03-1396-6					X	
020	020-SB07-SS5.0	Normal Field Sample	Soil	020-SB07	6	01/29/03	APCL	03-1396-3					X	
020	020-SB07-SS60.0	Normal Field Sample	Soil	020-SB07	61	01/29/03	APCL	03-1396-7					X	
020	020-SB07-SS60.0 (MS)	Matrix Spike	Soil	020-SB07	61	01/29/03	APCL	03-1396-7MS					X	
020	020-SB07-SS60.0 (MSD)	Matrix Spike Duplicate	Soil	020-SB07	61	01/29/03	APCL	03-1396-7MSD					X	
020	020-SB11-SS0.0	Normal Field Sample	Soil	020-SB11	1	01/29/03	APCL	03-1396-8					X	
020	020-SB11-SS10.0	Normal Field Sample	Soil	020-SB11	9.5	01/29/03	APCL	03-1396-11					X	
020	020-SB11-SS2.5	Normal Field Sample	Soil	020-SB11	3.5	01/29/03	APCL	03-1396-9					X	
020	020-SB11-SS20.0	Normal Field Sample	Soil	020-SB11	21	01/29/03	APCL	03-1396-12					X	
020	020-SB11-SS30.0	Normal Field Sample	Soil	020-SB11	31	01/29/03	APCL	03-1396-13					X	
020	020-SB11-SS40.0	Normal Field Sample	Soil	020-SB11	41	01/29/03	APCL	03-1396-14					X	
020	020-SB11-SS5.0	Normal Field Sample	Soil	020-SB11	6	01/29/03	APCL	03-1396-10					X	
020	020-SB11-SS50.0	Normal Field Sample	Soil	020-SB11	51	01/29/03	APCL	03-1396-15					X	
020	020-SC01-SS2.0	Normal Field Sample	Soil	020-SC01	1.5	01/29/03	APCL	03-1396-16		X			X	
020	020-SC01-SS2.0	Normal Field Sample	Soil	020-SC01	1.5	01/29/03	APCL	03-1396-16RE		X				
020	020-SC02-SS2.0	Normal Field Sample	Soil	020-SC02	1.5	01/29/03	APCL	03-1396-17		X			X	
020	020-SC02-SS2.0	Normal Field Sample	Soil	020-SC02	1.5	01/29/03	APCL	03-1396-17RE		X				
061	061-SB01-GW01	Normal Field Sample	Water	061-SB01	NA	01/30/03	APCL	03-1398-1					X	
061	061-SB01-SS10.0	Normal Field Sample	Soil	061-SB01	11	01/30/03	APCL	03-1398-3					X	
061	061-SB01-SS15.0	Normal Field Sample	Soil	061-SB01	16	01/30/03	APCL	03-1398-4					X	
061	061-SB01-SS5.0	Normal Field Sample	Soil	061-SB01	6	01/30/03	APCL	03-1398-2					X	
061	061-SB02-GW01	Normal Field Sample	Water	061-SB02	NA	01/30/03	APCL	03-1398-5					X	
061	061-SB02-SS10.0	Normal Field Sample	Soil	061-SB02	9.5	01/30/03	APCL	03-1398-7					X	
061	061-SB02-SS15.0	Normal Field Sample	Soil	061-SB02	16	01/30/03	APCL	03-1398-8					X	
061	061-SB02-SS5.0	Normal Field Sample	Soil	061-SB02	6	01/30/03	APCL	03-1398-6					X	

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SAMPLES COLLECTED
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VANDENBERG AIR FORCE BASE, CALIFORNIA
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AOC	Field Sample Identification	Sample Type	Matrix	Location	Collection Depth (ft. bgs)	Collection Date	Laboratory	Laboratory Sample ID	VOCs	SVOCs	PAHs	TPH-g	TPH-d/mo	Metals
061	061-SB03-GW01	Normal Field Sample	Water	061-SB03	NA	01/30/03	APCL	03-1398-9					X	
061	061-SB03-SS10.0	Normal Field Sample	Soil	061-SB03	11	01/30/03	APCL	03-1398-11					X	
061	061-SB03-SS10.0 (MS)	Matrix Spike	Soil	061-SB03	11	01/30/03	APCL	03-1398-11MS					X	
061	061-SB03-SS10.0 (MSD)	Matrix Spike Duplicate	Soil	061-SB03	11	01/30/03	APCL	03-1398-11MSD					X	
061	061-SB03-SS15.0	Normal Field Sample	Soil	061-SB03	16	01/30/03	APCL	03-1398-12					X	
061	061-SB03-SS5.0	Normal Field Sample	Soil	061-SB03	6	01/30/03	APCL	03-1398-10					X	
061	061-SB04-GW01	Normal Field Sample	Water	061-SB04	NA	01/30/03	APCL	03-1398-13					X	
061	061-SB04-SS10.0	Normal Field Sample	Soil	061-SB04	9.5	01/30/03	APCL	03-1398-15					X	
061	061-SB04-SS15.0	Normal Field Sample	Soil	061-SB04	16	01/30/03	APCL	03-1398-16					X	
061	061-SB04-SS5.0	Normal Field Sample	Soil	061-SB04	6	01/30/03	APCL	03-1398-14					X	
061	061-SB05-GW01	Normal Field Sample	Water	061-SB05	NA	01/30/03	APCL	03-1398-17					X	
061	061-SB05-SS10.0	Normal Field Sample	Soil	061-SB05	9.5	01/30/03	APCL	03-1398-19					X	
061	061-SB05-SS15.0	Normal Field Sample	Soil	061-SB05	16	01/30/03	APCL	03-1398-20					X	
061	061-SB05-SS5.0	Normal Field Sample	Soil	061-SB05	6	01/30/03	APCL	03-1398-18					X	
NA	ER012903 (EB)	Equipment Rinsate Blank	Water	FIELD QC	NA	01/30/03	APCL	03-1398-21					X	
NA	ER013003 (EB)	Equipment Rinsate Blank	Water	FIELD QC	NA	01/30/03	APCL	03-1398-22					X	
055	055-TW01-GW01	Normal Field Sample	Water	055-TW01	NA	02/03/03	APCL	03-1434-1	X	X	X		X	
055	055-TW01-GW01 (MS)	Matrix Spike	Water	055-TW01	NA	02/03/03	APCL	03-1434-1MS	X	X	X		X	
055	055-TW01-GW01 (MSD)	Matrix Spike Duplicate	Water	055-TW01	NA	02/03/03	APCL	03-1434-1MSD	X	X	X		X	
055	055-TW01-SS25.0	Normal Field Sample	Soil	055-TW01	25.5	02/03/03	APCL	03-1434-2	X	X	X		X	
055	055-TW01-SS25.0	Normal Field Sample	Soil	055-TW01	25.5	02/03/03	APCL	03-1434-2RE		X				
055	055-TW01-SS30.0	Normal Field Sample	Soil	055-TW01	31	02/03/03	APCL	03-1434-3	X	X	X		X	
055	055-TW01-SS30.0	Normal Field Sample	Soil	055-TW01	31	02/03/03	APCL	03-1434-3RE		X				
055	055-TW01-SS30.0 (MS)	Matrix Spike	Soil	055-TW01	31	02/03/03	APCL	03-1434-3MS	X	X	X		X	
055	055-TW01-SS30.0 (MSD)	Matrix Spike Duplicate	Soil	055-TW01	31	02/03/03	APCL	03-1434-3MSD	X	X	X		X	
055	055-TW01-SS35.0	Normal Field Sample	Soil	055-TW01	35.5	02/03/03	APCL	03-1434-4	X	X	X		X	
055	055-TW01-SS40.0	Normal Field Sample	Soil	055-TW01	41	02/03/03	APCL	03-1434-5	X	X	X		X	
055	055-TW01-SS45.0	Normal Field Sample	Soil	055-TW01	45	02/03/03	APCL	03-1434-6	X	X	X		X	
055	055-TW01-SS45.0	Normal Field Sample	Soil	055-TW01	45	02/03/03	APCL	03-1434-6RE		X				
055	055-TW01-SS45.0 (MS)	Matrix Spike	Soil	055-TW01	45	02/03/03	APCL	03-1434-6MS	X	X	X		X	
055	055-TW01-SS45.0 (MSD)	Matrix Spike Duplicate	Soil	055-TW01	45	02/03/03	APCL	03-1434-6MSD	X	X	X		X	
055	055-TW01-SS50.0	Normal Field Sample	Soil	055-TW01	51	02/03/03	APCL	03-1434-7	X	X	X		X	
055	055-TW01-SS60.0	Normal Field Sample	Soil	055-TW01	60	02/03/03	APCL	03-1434-8	X	X	X		X	
055	055-TW01-SS70.0	Normal Field Sample	Soil	055-TW01	70	02/03/03	APCL	03-1434-9	X	X	X		X	
055	055-TW01-SS80.0	Normal Field Sample	Soil	055-TW01	80	02/03/03	APCL	03-1434-10	X	X	X		X	
055	055-TW99-GW01 (FD)	Field Duplicate	Water	055-TW01	NA	02/03/03	APCL	03-1434-11	X	X	X		X	
055	055-TW99-SS25.0 (FD)	Field Duplicate	Soil	055-TW01	25.5	02/03/03	APCL	03-1434-12	X	X	X		X	
055	055-TW99-SS35.0 (FD)	Field Duplicate	Soil	055-TW01	35.5	02/03/03	APCL	03-1434-13	X	X	X		X	

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SAMPLES COLLECTED
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

AOC	Field Sample Identification	Sample Type	Matrix	Location	Collection Depth (ft. bgs)	Collection Date	Laboratory	Laboratory Sample ID	VOCs	SVOCs	PAHs	TPH-g	TPH-d/mo	Metals
055	055-TW99-SS80.0 (FD)	Field Duplicate	Soil	055-TW01	80	02/03/03	APCL	03-1434-14					X	
055	055-TW01-GW02	Normal Field Sample	Water	055-TW01	NA	3/1/2004	APCL	04-1885-1	X		X		X	
NA	59ER-020303-01 (EB)	Equipment Rinsate Blank	Water	FIELD QC	NA	02/03/03	APCL	03-1434-15	X	X	X		X	
NA	59TB-020303-01 (TB)	Trip Blank	Water	FIELD QC	NA	02/03/03	APCL	03-1434-18	X					
NA	59TB-020303-02 (TB)	Trip Blank	Water	FIELD QC	NA	02/03/03	APCL	03-1434-16	X					
NA	59TB-020303-03 (TB)	Trip Blank	Water	FIELD QC	NA	02/03/03	APCL	03-1434-17	X					
133	133-MW02-GW02	Normal Field Sample	Water	133-MW02	NA	03/12/03	APCL	03-2192-3	X	X		X	X	
133	133-MW03-GW02	Normal Field Sample	Water	133-MW03	NA	03/12/03	APCL	03-2192-4	X	X		X	X	
133	133-MW99-GW02 (FD)	Field Duplicate	Water	133-MW02	NA	03/12/03	APCL	03-2192-5	X	X		X	X	
NA	59TB-031203-01 (TB)	Trip Blank	Water	FIELD QC	NA	03/12/03	APCL	03-2192-1	X					
NA	59TB-031203-03 (TB)	Trip Blank	Water	FIELD QC	NA	03/12/03	APCL	03-2192-2	X					
133	133-MW01-GW02	Normal Field Sample	Water	133-MW01	NA	03/13/03	APCL	03-2225-5	X	X		X	X	
133	133-MW04-GW02	Normal Field Sample	Water	133-MW04	NA	03/13/03	APCL	03-2225-6	X	X		X	X	
133	133-MW04-GW02	Normal Field Sample	Water	133-MW04	NA	03/13/03	APCL	03-2225-6DL	X	X				
133	133-MW05-GW02	Normal Field Sample	Water	133-MW05	NA	03/13/03	APCL	03-2225-7	X	X		X	X	
133	133-MW05-GW02 (MS)	Matrix Spike	Water	133-MW05	NA	03/13/03	APCL	03-2225-7MS	X	X		X	X	
133	133-MW05-GW02 (MSD)	Matrix Spike Duplicate	Water	133-MW05	NA	03/13/03	APCL	03-2225-7MSD	X	X		X	X	
NA	59ER-031203-01 (EB)	Equipment Rinsate Blank	Water	FIELD QC	NA	03/13/03	APCL	03-2225-1	X	X		X	X	
NA	59TB-031303-01 (TB)	Trip Blank	Water	FIELD QC	NA	03/13/03	APCL	03-2225-2	X					
NA	59TB-031303-02 (TB)	Trip Blank	Water	FIELD QC	NA	03/13/03	APCL	03-2225-3	X					
NA	59TB-031403-01 (TB)	Trip Blank	Water	FIELD QC	NA	03/13/03	APCL	03-2225-4	X					
020	020-SB12-SS0.0	Normal Field Sample	Soil	020-SB12	NA	04/23/03	APCL	03-2855-1		X			X	
020	020-SB12-SS2.0	Normal Field Sample	Soil	020-SB12	2	04/23/03	APCL	03-2855-2					X	
020	020-SB13-SS0.0	Normal Field Sample	Soil	020-SB13	NA	04/23/03	APCL	03-2855-3		X			X	
020	020-SB13-SS2.0	Normal Field Sample	Soil	020-SB13	2	04/23/03	APCL	03-2855-4					X	
020	020-SB14-SS0.0	Normal Field Sample	Soil	020-SB14	NA	04/23/03	APCL	03-2855-5		X			X	
020	020-SB14-SS2.0	Normal Field Sample	Soil	020-SB14	2	04/23/03	APCL	03-2855-6					X	
020	020-SB14-SS2.0 (MS)	Matrix Spike	Soil	020-SB14	2	04/23/03	APCL	03-2855-6MS					X	
020	020-SB14-SS2.0 (MSD)	Matrix Spike Duplicate	Soil	020-SB14	2	04/23/03	APCL	03-2855-6MSD					X	
020	020-SB99-SS2.0 (FD)	Field Duplicate	Soil	020-SB14	2	04/23/03	APCL	03-2855-7					X	
020	020-SB15-SS0.5	Normal Field Sample	Soil	020-SB15	0.5	07/21/03	APCL	03-4269-1		X			X	
020	020-SB15-SS0.5 (MS)	Matrix Spike	Soil	020-SB15	0.5	07/21/03	APCL	03-4269-1MS		X				
020	020-SB15-SS0.5 (MSD)	Matrix Spike Duplicate	Soil	020-SB15	0.5	07/21/03	APCL	03-4269-1MSD		X				
020	020-SB15-SS1.5	Normal Field Sample	Soil	020-SB15	1.5	07/21/03	APCL	03-4269-2					X	
020	020-SB16-SS0.5	Normal Field Sample	Soil	020-SB16	0.5	07/21/03	APCL	03-4269-3					X	
020	020-SB17-SS0.5	Normal Field Sample	Soil	020-SB17	0.5	07/21/03	APCL	03-4269-5					X	
020	020-SB18-SS0.5	Normal Field Sample	Soil	020-SB18	0.5	07/21/03	APCL	03-4269-7					X	
099	099-SC01-SS1.0	Normal Field Sample	Soil	099-SC01	1	08/04/03	APCL	03-4460-1						X

TABLE I-1

SAMPLES COLLECTED
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VANDENBERG AIR FORCE BASE, CALIFORNIA
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AOC	Field Sample Identification	Sample Type	Matrix	Location	Collection Depth (ft. bgs)	Collection Date	Laboratory	Laboratory Sample ID	VOCs	SVOCs	PAHs	TPH-g	TPH-d/mo	Metals
099	099-SC02-SS1.0	Normal Field Sample	Soil	099-SC02	1	08/04/03	APCL	03-4460-2						X
099	099-SC03-SS1.0	Normal Field Sample	Soil	099-SC03	1	08/04/03	APCL	03-4460-3						X
099	099-SC04-SS1.0	Normal Field Sample	Soil	099-SC04	1	08/04/03	APCL	03-4460-4						X
099	099-SC05-SS1.0	Normal Field Sample	Soil	099-SC05	1	08/04/03	APCL	03-4460-5						X
099	099-SC06-SS1.0	Normal Field Sample	Soil	099-SC06	1	08/04/03	APCL	03-4460-6						X
099	099-SC07-SS1.0	Normal Field Sample	Soil	099-SC07	1	08/04/03	APCL	03-4460-7						X
099	099-SC07-SS1.0 (MS)	Matrix Spike	Soil	099-SC07	1	08/04/03	APCL	03-4460-7MS						X
099	099-SC07-SS1.0 (MSD)	Matrix Spike Duplicate	Soil	099-SC07	1	08/04/03	APCL	03-4460-7MSD						X
099	099-SC08-SS1.0	Normal Field Sample	Soil	099-SC08	1	08/04/03	APCL	03-4460-8						X
099	099-SC09-SS1.0	Normal Field Sample	Soil	099-SC09	1	08/04/03	APCL	03-4460-9						X
099	099-SC10-SS1.0	Normal Field Sample	Soil	099-SC10	1	08/04/03	APCL	03-4460-10						X
099	099-SC11-SS1.0	Normal Field Sample	Soil	099-SC11	1	08/04/03	APCL	03-4460-11						X
099	099-SC12-SS1.0	Normal Field Sample	Soil	099-SC12	1	08/04/03	APCL	03-4460-12						X
099	099-SC13-SS1.0	Normal Field Sample	Soil	099-SC13	1	08/04/03	APCL	03-4460-13						X
099	099-SC14-SS1.0	Normal Field Sample	Soil	099-SC14	1	08/04/03	APCL	03-4460-14						X
099	099-SC15-SS1.0	Normal Field Sample	Soil	099-SC15	1	08/04/03	APCL	03-4460-15						X
099	099-SC16-SS2.0	Normal Field Sample	Soil	099-SC16	2	08/04/03	APCL	03-4460-16						X
099	099-SC17-SS2.0	Normal Field Sample	Soil	099-SC17	2	08/04/03	APCL	03-4460-17						X
099	099-SC18-SS2.0	Normal Field Sample	Soil	099-SC18	2	08/04/03	APCL	03-4460-18						X
099	099-SC19-SS3.0	Normal Field Sample	Soil	099-SC19	3	08/06/03	APCL	03-4551-1						X
099	099-SC19-SS3.0 (MS)	Matrix Spike	Soil	099-SC19	3	08/06/03	APCL	03-4551-1MS						X
099	099-SC19-SS3.0 (MSD)	Matrix Spike Duplicate	Soil	099-SC19	3	08/06/03	APCL	03-4551-1MSD						X
099	099-SC20-SS3.0	Normal Field Sample	Soil	099-SC20	3	08/06/03	APCL	03-4551-2						X
099	099-SC89-SS1.0 (FD)	Field Duplicate	Soil	099-SC11	1	08/04/03	APCL	03-4460-19						X
099	099-SC97-SS1.0 (FD)	Field Duplicate	Soil	099-SC03	1	08/04/03	APCL	03-4460-20						X

AOC - Area of Concern
APCL - Applied Physics & Chemistry Laboratory, Chino, California
bgs - below ground surface
EB - equipment rinsate blank
DL - diluted sample
FD - field duplicate
ft - feet
GW - groundwater
ID - identification
MS - matrix spike sample
MSD - matrix spike duplicate
NA - not applicable
PAHs - polycyclic aromatic hydrocarbons by SW8270C-selected ion monitoring (SIM)
QC - quality control
RE - sample was re-analyzed
SVOCs - semivolatile organic compounds by SW8270C
TB - trip blank
TPH-d/mo - total petroleum hydrocarbons as diesel and motor oil by SW8015B
TPH-g - total petroleum hydrocarbons as gasoline by SW8015B
VOCs - volatile organic compounds by SW8260B

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ANALYTICAL BATCH SUMMARY
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VANDENBERG AIR FORCE BASE, CALIFORNIA
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Analytical Method	Batch Identification	Matrix	Date Prepared	Date Analyzed	Associated Field Samples
VOCs by SW8260B	03G1056	Water	01/13/03	01/13/03	TB010903-01 (TB)
		Water	01/14/03	01/14/03	133-MW01-GW01
	03G1086	Water	01/14/03	01/14/03	TB011003-01 (TB)
		Water	01/15/03	01/15/03	133-MW02-GW01
		Water	01/15/03	01/15/03	133-MW03-GW01
	03G1113	Water	01/16/03	01/16/03	TB-011303-02 (TB)
	03G1115	Water	01/17/03	01/17/03	133-MW05-GW01
	03G1138	Water	01/17/03	01/17/03	59TB0114200B (TB)
		Water	01/18/03	01/18/03	133-MW04-GW01
	03G1163	Water	01/21/03	01/21/03	133-MW04-GW01
	03G1316	Soil	02/05/03	02/05/03	055-TW01-SS25 0
		Soil	02/05/03	02/05/03	055-TW01-SS30 0
		Soil	02/05/03	02/05/03	055-TW01-SS30.0 (MS)
		Soil	02/05/03	02/05/03	055-TW01-SS30.0 (MSD)
		Soil	02/05/03	02/05/03	055-TW01-SS35.0
		Soil	02/05/03	02/05/03	055-TW01-SS40.0
		Soil	02/05/03	02/05/03	055-TW01-SS45 0
		Soil	02/05/03	02/05/03	055-TW01-SS45.0 (MS)
		Soil	02/05/03	02/05/03	055-TW01-SS45.0 (MSD)
		Soil	02/05/03	02/05/03	055-TW01-SS50 0
		Soil	02/05/03	02/05/03	055-TW01-SS60.0
		Soil	02/05/03	02/05/03	055-TW01-SS70.0
		Soil	02/05/03	02/05/03	055-TW01-SS80 0
	03G1330	Soil	02/06/03	02/06/03	055-TW99-SS25 0 (FD)
		Soil	02/06/03	02/06/03	055-TW99-SS35 0 (FD)
	03G1340	Water	02/06/03	02/06/03	055-TW01-GW01 (MS)
		Water	02/06/03	02/06/03	055-TW01-GW01 (MSD)
		Water	02/06/03	02/06/03	055-TW99-GW01 (FD)
		Water	02/06/03	02/06/03	59ER-020303-01 (EB)
		Water	02/06/03	02/06/03	59TB-020303-01 (TB)
		Water	02/06/03	02/06/03	59TB-020303-02 (TB)
		Water	02/06/03	02/06/03	59TB-020303-03 (TB)
		Water	02/07/03	02/07/03	055-TW01-GW01
	03G1761	Water	03/19/03	03/19/03	133-MW02-GW02
		Water	03/19/03	03/19/03	59TB-031203-01 (TB)
		Water	03/19/03	03/19/03	59TB-031203-03 (TB)
	03G1774	Water	03/20/03	03/20/03	133-MW01-GW02
		Water	03/20/03	03/20/03	133-MW03-GW02
		Water	03/20/03	03/20/03	133-MW04-GW02
		Water	03/20/03	03/20/03	133-MW05-GW02
		Water	03/20/03	03/20/03	133-MW05-GW02 (MS)
		Water	03/20/03	03/20/03	133-MW05-GW02 (MSD)
		Water	03/20/03	03/20/03	133-MW99-GW02 (FD)
		Water	03/20/03	03/20/03	59ER-031203-01 (EB)
		Water	03/20/03	03/20/03	59TB-031303-01 (TB)
		Water	03/20/03	03/20/03	59TB-031303-02 (TB)
		Water	03/20/03	03/20/03	59TB-031403-01 (TB)
	03G1803	Water	03/24/03	03/24/03	133-MW04-GW02
	04G1585	Water	3/2/2004	3/2/2004	055-TW01-GW02
SVOCs by SW8270C	03G1057	Water	01/10/03	01/13/03	133-MW01-GW01
	03G1119	Water	01/17/03	01/17/03	133-MW02-GW01
		Water	01/17/03	01/17/03	133-MW03-GW01
		Water	01/17/03	01/18/03	133-MW04-GW01
		Water	01/17/03	01/20/03	133-MW04-GW01
		Water	01/17/03	01/17/03	133-MW05-GW01

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ANALYTICAL BATCH SUMMARY
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VANDENBERG AIR FORCE BASE, CALIFORNIA

Analytical Method	Batch Identification	Matrix	Date Prepared	Date Analyzed	Associated Field Samples
	03G1272	Soil	01/31/03	02/04/03	020-SC01-SS2.0
		Soil	01/31/03	02/05/03	020-SC01-SS2.0
		Soil	01/31/03	02/04/03	020-SC02-SS2.0
		Soil	01/31/03	02/05/03	020-SC02-SS2.0
	03G1320	Soil	02/05/03	02/07/03	055-IW01-SS25.0
		Soil	02/05/03	02/07/03	055-IW01-SS30.0
		Soil	02/05/03	02/07/03	055-IW01-SS30.0 (MS)
		Soil	02/05/03	02/07/03	055-IW01-SS30.0 (MSD)
		Soil	02/05/03	02/06/03	055-IW01-SS35.0
		Soil	02/05/03	02/06/03	055-IW01-SS40.0
		Soil	02/05/03	02/07/03	055-IW01-SS45.0
		Soil	02/05/03	02/08/03	055-IW01-SS45.0
		Soil	02/05/03	02/08/03	055-IW01-SS45.0 (MS)
		Soil	02/05/03	02/08/03	055-IW01-SS45.0 (MSD)
		Soil	02/05/03	02/07/03	055-IW01-SS50.0
		Soil	02/05/03	02/06/03	055-IW01-SS60.0
		Soil	02/05/03	02/06/03	055-IW01-SS70.0
		Soil	02/05/03	02/06/03	055-IW01-SS80.0
		Soil	02/05/03	02/06/03	055-IW99-SS25.0 (FD)
		Soil	02/05/03	02/06/03	055-IW99-SS35.0 (FD)
	03G1323	Water	02/05/03	02/05/03	055-IW01-GW01
		Water	02/05/03	02/05/03	055-IW01-GW01 (MS)
		Water	02/05/03	02/05/03	055-IW01-GW01 (MSD)
		Water	02/05/03	02/05/03	055-IW99-GW01 (FD)
		Water	02/05/03	02/06/03	59ER-020303-01 (EB)
	03G1339	Soil	02/06/03	02/07/03	020-SB05-SS0.0
		Soil	02/06/03	02/08/03	020-SB05-SS0.0
		Soil	02/06/03	02/07/03	020-SB06-SS0.0
		Soil	02/06/03	02/10/03	020-SB06-SS0.0
		Soil	02/06/03	02/07/03	020-SB07-SS0.0
		Soil	02/06/03	02/07/03	020-SB07-SS2.5
		Soil	02/06/03	02/08/03	020-SB07-SS2.5 (MS)
		Soil	02/06/03	02/08/03	020-SB07-SS2.5 (MSD)
	03G1733	Water	03/17/03	03/18/03	133-MW02-GW02
		Water	03/17/03	03/18/03	133-MW03-GW02
		Water	03/17/03	03/18/03	133-MW99-GW02 (FD)
	03G1779	Water	03/20/03	03/20/03	133-MW01-GW02
		Water	03/20/03	03/20/03	133-MW04-GW02
		Water	03/20/03	03/21/03	133-MW04-GW02
		Water	03/20/03	03/20/03	133-MW05-GW02
		Water	03/20/03	03/20/03	133-MW05-GW02 (MS)
		Water	03/20/03	03/20/03	133-MW05-GW02 (MSD)
		Water	03/20/03	03/20/03	59ER-031203-01 (EB)
	03G2214	Soil	04/26/03	05/01/03	020-SB12-SS0.0
		Soil	04/26/03	05/01/03	020-SB13-SS0.0
		Soil	04/26/03	05/01/03	020-SB14-SS0.0
	03G3478	Soil	07/26/03	07/28/03	020-SB15-SS0.5
		Soil	07/26/03	07/28/03	020-SB15-SS0.5 (MS)
		Soil	07/26/03	07/28/03	020-SB15-SS0.5 (MSD)
PAHs by SW8270C-SIM	03G1321	Soil	02/05/03	02/07/03	055-IW01-SS25.0
		Soil	02/05/03	02/07/03	055-IW01-SS30.0
		Soil	02/05/03	02/07/03	055-IW01-SS30.0 (MS)
		Soil	02/05/03	02/07/03	055-IW01-SS30.0 (MSD)
		Soil	02/05/03	02/05/03	055-IW01-SS35.0
		Soil	02/05/03	02/05/03	055-IW01-SS40.0
		Soil	02/05/03	02/05/03	055-IW01-SS45.0

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ANALYTICAL BATCH SUMMARY
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VANDENBERG AIR FORCE BASE, CALIFORNIA

Analytical Method	Batch Identification	Matrix	Date Prepared	Date Analyzed	Associated Field Samples
		Soil	02/05/03	02/07/03	055-TW01-SS45 0 (MS)
		Soil	02/05/03	02/07/03	055-TW01-SS45 0 (MSD)
		Soil	02/05/03	02/06/03	055-TW01-SS50 0
		Soil	02/05/03	02/06/03	055-TW01-SS60 0
		Soil	02/05/03	02/06/03	055-TW01-SS70 0
		Soil	02/05/03	02/06/03	055-TW01-SS80 0
		Soil	02/05/03	02/06/03	055-TW99-SS25 0 (FD)
		Soil	02/05/03	02/06/03	055-TW99-SS35 0 (FD)
	03G1328	Water	02/06/03	02/06/03	055-TW01-GW01
		Water	02/06/03	02/06/03	055-TW01-GW01 (MS)
		Water	02/06/03	02/06/03	055-TW01-GW01 (MSD)
		Water	02/06/03	02/06/03	055-TW99-GW01 (FD)
		Water	02/06/03	02/06/03	59ER-020303-01 (EB)
	04G1583	Water	3/2/2004	3/3/2004	055-TW01-GW02
TPH-gasoline	03G1099	Water	01/16/03	01/16/03	133-MW01-GW01
by SW8015 Modified	03G1099	Water	01/16/03	01/16/03	133-MW02-GW01
		Water	01/16/03	01/16/03	133-MW03-GW01
	03G1139	Water	01/18/03	01/18/03	133-MW04-GW01
		Water	01/18/03	01/18/03	133-MW05-GW01
	03G1730	Water	03/17/03	03/17/03	133-MW02-GW02
		Water	03/17/03	03/17/03	133-MW03-GW02
		Water	03/17/03	03/17/03	133-MW99-GW02 (FD)
	03G1752	Water	03/18/03	03/18/03	133-MW01-GW02
		Water	03/18/03	03/18/03	133-MW04-GW02
		Water	03/18/03	03/18/03	133-MW05-GW02
		Water	03/18/03	03/18/03	133-MW05-GW02 (MS)
		Water	03/18/03	03/18/03	133-MW05-GW02 (MSD)
		Water	03/18/03	03/18/03	59ER-031203-01 (EB)
TPH-diesel/motor oil	03G1063	Water	01/13/03	01/14/03	133-MW01-GW01
by SW8015 Modified		Water	01/15/03	01/15/03	133-MW02-GW01
	03G1089	Water	01/15/03	01/15/03	133-MW03-GW01
	03G1118	Water	01/17/03	01/17/03	133-MW04-GW01
		Water	01/17/03	01/17/03	133-MW05-GW01
	03G1241	Water	01/29/03	01/29/03	60ER-012803-01 (EB)
	03G1239	Soil	01/29/03	01/29/03	020-SB04-SS0 0
		Soil	01/29/03	01/29/03	020-SB04-SS10 0
		Soil	01/29/03	01/29/03	020-SB04-SS2 5
		Soil	01/29/03	01/29/03	020-SB04-SS5 0
		Soil	01/29/03	01/29/03	020-SB05-SS0 0
		Soil	01/29/03	01/29/03	020-SB05-SS10 0
		Soil	01/29/03	01/29/03	020-SB05-SS2 5
		Soil	01/29/03	01/29/03	020-SB05-SS5 0
		Soil	01/29/03	01/29/03	020-SB06-SS0 0
		Soil	01/29/03	01/30/03	020-SB06-SS10 0
		Soil	01/29/03	01/29/03	020-SB06-SS2 5
		Soil	01/29/03	01/30/03	020-SB06-SS5 0
		Soil	01/29/03	01/29/03	020-SB06-SS5 0 (MS)
		Soil	01/29/03	01/31/03	020-SB06-SS5 0 (MSD)
		Soil	01/29/03	01/30/03	020-SB08-SS0 0
		Soil	01/29/03	01/30/03	020-SB08-SS10 0
		Soil	01/29/03	01/30/03	020-SB08-SS2 5
		Soil	01/29/03	01/30/03	020-SB08-SS5 0
		Soil	01/29/03	01/30/03	020-SB09-SS0 0
		Soil	01/29/03	01/30/03	020-SB09-SS10 0
		Soil	01/29/03	01/30/03	020-SB09-SS5 0
		Soil	01/29/03	01/30/03	020-SB10-SS0 0

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ANALYTICAL BATCH SUMMARY
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Analytical Method	Batch Identification	Matrix	Date Prepared	Date Analyzed	Associated Field Samples
	03G1240	Soil	01/29/03	01/30/03	020-SB09-SS2.5
		Soil	01/29/03	01/30/03	020-SB09-SS2.5 (MS)
		Soil	01/29/03	01/30/03	020-SB09-SS2.5 (MSD)
		Soil	01/29/03	01/30/03	020-SB10-SS10.0
		Soil	01/29/03	01/30/03	020-SB10-SS2.5
		Soil	01/29/03	01/30/03	020-SB10-SS5.0
		Soil	01/29/03	01/30/03	020-SB99-SS10.0 (FD)
		Soil	01/29/03	01/30/03	020-SB99-SS5.0 (FD)
	03G1278	Water	02/01/03	02/03/03	061-SB01-GW01
		Water	02/01/03	02/03/03	061-SB02-GW01
		Water	02/01/03	02/03/03	061-SB03-GW01
		Water	02/01/03	02/03/03	061-SB04-GW01
		Water	02/01/03	02/03/03	061-SB05-GW01
		Water	02/01/03	02/04/03	ER012903 (EB)
		Water	02/01/03	02/04/03	ER013003 (EB)
	03G1277	Soil	02/01/03	02/03/03	061-SB01-SS10.0
		Soil	02/01/03	02/03/03	061-SB01-SS15.0
		Soil	02/01/03	02/03/03	061-SB01-SS5.0
		Soil	02/01/03	02/03/03	061-SB02-SS10.0
		Soil	02/01/03	02/03/03	061-SB02-SS15.0
		Soil	02/01/03	02/03/03	061-SB02-SS5.0
		Soil	02/01/03	02/03/03	061-SB03-SS10.0
		Soil	02/01/03	02/03/03	061-SB03-SS10.0 (MS)
		Soil	02/01/03	02/03/03	061-SB03-SS10.0 (MSD)
		Soil	02/01/03	02/03/03	061-SB03-SS15.0
		Soil	02/01/03	02/03/03	061-SB03-SS5.0
		Soil	02/01/03	02/04/03	061-SB04-SS10.0
		Soil	02/01/03	02/04/03	061-SB04-SS15.0
		Soil	02/01/03	02/03/03	061-SB04-SS5.0
		Soil	02/01/03	02/04/03	061-SB05-SS10.0
		Soil	02/01/03	02/04/03	061-SB05-SS15.0
		Soil	02/01/03	02/04/03	061-SB05-SS5.0
	03G1280	Soil	02/01/03	02/04/03	020-SB07-SS0.0
		Soil	02/01/03	02/04/03	020-SB07-SS10.0
		Soil	02/01/03	02/04/03	020-SB07-SS2.5
		Soil	02/01/03	02/04/03	020-SB07-SS20.0
		Soil	02/01/03	02/04/03	020-SB07-SS30.0
		Soil	02/01/03	02/04/03	020-SB07-SS5.0
		Soil	02/01/03	02/04/03	020-SB07-SS60.0
		Soil	02/01/03	02/04/03	020-SB07-SS60.0 (MS)
		Soil	02/01/03	02/04/03	020-SB07-SS60.0 (MSD)
		Soil	02/01/03	02/04/03	020-SB11-SS0.0
		Soil	02/01/03	02/04/03	020-SB11-SS10.0
		Soil	02/01/03	02/04/03	020-SB11-SS2.5
		Soil	02/01/03	02/04/03	020-SB11-SS20.0
		Soil	02/01/03	02/04/03	020-SB11-SS30.0
		Soil	02/01/03	02/04/03	020-SB11-SS40.0
		Soil	02/01/03	02/04/03	020-SB11-SS5.0
		Soil	02/01/03	02/04/03	020-SB11-SS50.0
		Soil	02/01/03	02/04/03	020-SC01-SS2.0
		Soil	02/01/03	02/04/03	020-SC02-SS2.0
	03G1307	Water	02/04/03	02/06/03	055-TW01-GW01
		Water	02/04/03	02/06/03	055-TW01-GW01 (MS)
		Water	02/04/03	02/07/03	055-TW01-GW01 (MSD)
		Water	02/04/03	02/06/03	055-TW99-GW01 (FD)
		Water	02/04/03	02/06/03	59ER-020303-01 (EB)

TABLE I-2

ANALYTICAL BATCH SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Analytical Method	Batch Identification	Matrix	Date Prepared	Date Analyzed	Associated Field Samples
	03G1313	Soil	02/05/03	02/07/03	055-TW01-SS25.0
		Soil	02/05/03	02/07/03	055-TW01-SS30.0
		Soil	02/05/03	02/07/03	055-TW01-SS30.0 (MS)
		Soil	02/05/03	02/07/03	055-TW01-SS30.0 (MSD)
		Soil	02/05/03	02/07/03	055-TW01-SS35.0
		Soil	02/05/03	02/07/03	055-TW01-SS40.0
		Soil	02/05/03	02/07/03	055-TW01-SS45.0
		Soil	02/05/03	02/07/03	055-TW01-SS45.0 (MS)
		Soil	02/05/03	02/07/03	055-TW01-SS45.0 (MSD)
		Soil	02/05/03	02/07/03	055-TW01-SS50.0
		Soil	02/05/03	02/07/03	055-TW01-SS60.0
		Soil	02/05/03	02/07/03	055-TW01-SS70.0
		Soil	02/05/03	02/07/03	055-TW01-SS80.0
		Soil	02/05/03	02/07/03	055-TW99-SS25.0 (FD)
		Soil	02/05/03	02/07/03	055-TW99-SS35.0 (FD)
		Soil	02/05/03	02/07/03	055-TW99-SS80.0 (FD)
	03G1728	Water	03/15/03	03/20/03	133-MW02-GW02
		Water	03/15/03	03/20/03	133-MW03-GW02
		Water	03/15/03	03/20/03	133-MW99-GW02 (FD)
	03G1748	Water	03/18/03	03/19/03	133-MW01-GW02
		Water	03/18/03	03/26/03	133-MW04-GW02
		Water	03/18/03	03/19/03	133-MW05-GW02
		Water	03/18/03	03/19/03	133-MW05-GW02 (MS)
		Water	03/18/03	03/19/03	133-MW05-GW02 (MSD)
		Water	03/18/03	03/19/03	59ER-031203-01 (EB)
	03G2180	Soil	04/24/03	04/25/03	020-SB12-SS0.0
		Soil	04/24/03	04/25/03	020-SB12-SS2.0
		Soil	04/24/03	04/25/03	020-SB13-SS0.0
		Soil	04/24/03	04/25/03	020-SB13-SS2.0
		Soil	04/24/03	04/25/03	020-SB14-SS0.0
		Soil	04/24/03	04/25/03	020-SB14-SS2.0
		Soil	04/24/03	04/24/03	020-SB14-SS2.0 (MS)
		Soil	04/24/03	04/24/03	020-SB14-SS2.0 (MSD)
		Soil	04/24/03	04/25/03	020-SB99-SS2.0 (FD)
	03G3427	Soil	07/22/03	07/24/03	020-SB15-SS0.5
		Soil	07/22/03	07/24/03	020-SB16-SS0.5
		Soil	07/22/03	07/24/03	020-SB17-SS0.5
		Soil	07/22/03	07/24/03	020-SB18-SS0.5
	03G3467	Soil	07/25/03	07/26/03	020-SB15-SS1.5
	04G1579	Water	3/2/2004	3/2/2004	055-TW01-GW02
Metals by SW6010B	03M1768M	Soil	08/05/03	08/05/03	099-SC01-SS1.0
		Soil	08/05/03	08/06/03	099-SC01-SS1.0
		Soil	08/05/03	08/05/03	099-SC02-SS1.0
		Soil	08/05/03	08/06/03	099-SC02-SS1.0
		Soil	08/05/03	08/05/03	099-SC03-SS1.0
		Soil	08/05/03	08/06/03	099-SC03-SS1.0
		Soil	08/05/03	08/05/03	099-SC04-SS1.0
		Soil	08/05/03	08/06/03	099-SC04-SS1.0
		Soil	08/05/03	08/05/03	099-SC05-SS1.0
		Soil	08/05/03	08/06/03	099-SC05-SS1.0
		Soil	08/05/03	08/05/03	099-SC06-SS1.0
		Soil	08/05/03	08/06/03	099-SC06-SS1.0
		Soil	08/05/03	08/05/03	099-SC07-SS1.0
		Soil	08/05/03	08/06/03	099-SC07-SS1.0
		Soil	08/05/03	08/05/03	099-SC07-SS1.0 (MS)
		Soil	08/05/03	08/05/03	099-SC07-SS1.0 (MSD)

TABLE I-2

ANALYTICAL BATCH SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Analytical Method	Batch Identification	Matrix	Date Prepared	Date Analyzed	Associated Field Samples
		Soil	08/05/03	08/05/03	099-SC08-SS1.0
		Soil	08/05/03	08/06/03	099-SC08-SS1.0
		Soil	08/05/03	08/05/03	099-SC09-SS1 0
		Soil	08/05/03	08/06/03	099-SC09-SS1 0
		Soil	08/05/03	08/05/03	099-SC10-SS1.0
		Soil	08/05/03	08/06/03	099-SC10-SS1 0
		Soil	08/05/03	08/05/03	099-SC11-SS1.0
		Soil	08/05/03	08/06/03	099-SC11-SS1 0
		Soil	08/05/03	08/05/03	099-SC12-SS1 0
		Soil	08/05/03	08/06/03	099-SC12-SS1.0
		Soil	08/05/03	08/05/03	099-SC13-SS1.0
		Soil	08/05/03	08/06/03	099-SC13-SS1 0
		Soil	08/05/03	08/05/03	099-SC14-SS1 0
		Soil	08/05/03	08/06/03	099-SC14-SS1.0
		Soil	08/05/03	08/05/03	099-SC15-SS1.0
		Soil	08/05/03	08/06/03	099-SC15-SS1.0
		Soil	08/05/03	08/05/03	099-SC16-SS2 0
		Soil	08/05/03	08/06/03	099-SC16-SS2 0
		Soil	08/05/03	08/05/03	099-SC17-SS2.0
		Soil	08/05/03	08/06/03	099-SC17-SS2.0
		Soil	08/05/03	08/05/03	099-SC18-SS2.0
		Soil	08/05/03	08/06/03	099-SC18-SS2 0
		Soil	08/05/03	08/05/03	099-SC89-SS1.0 (FD)
		Soil	08/05/03	08/06/03	099-SC89-SS1.0 (FD)
		Soil	08/05/03	08/05/03	099-SC97-SS1 0 (FD)
		Soil	08/05/03	08/06/03	099-SC97-SS1 0 (FD)
	03M1802M	Soil	08/11/03	08/11/03	099-SC19-SS3 0
		Soil	08/11/03	08/11/03	099-SC19-SS3.0 (MS)
		Soil	08/11/03	08/11/03	099-SC19-SS3 0 (MSD)
		Soil	08/11/03	08/11/03	099-SC20-SS3.0
	03M1808M	Soil	08/11/03	08/11/03	099-SC19-SS3.0
		Soil	08/11/03	08/11/03	099-SC19-SS3.0 (MS)
		Soil	08/11/03	08/11/03	099-SC19-SS3.0 (MSD)
		Soil	08/11/03	08/11/03	099-SC20-SS3.0

EB - equipment rinsate blank
FD - field duplicate
MS - matrix spike sample
MSD - matrix spike duplicate sample
PAHs - polycyclic aromatic hydrocarbons
SIM - selected ion monitoring
SVOCs - semivolatile organic compounds
TB - trip blank
TPH - total petroleum hydrocarbons
VOCs - volatile organic compounds

TABLE I-3

SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason*
03-1094-1	133-MW01-GW01	133-MW01	01/09/2003	SW8015B	Diesel Range	0.044	0.5	mg/L	F	23
				SW8015B	Gasoline Range	0.025	0.1	mg/L	F	23
				SW8015B	Motor oils	0.068	0.5	mg/L	F	23
				SW8260B	Acetone	< 10	10	µg/L	R	5
				SW8270C	Dibenzofuran	< 9.6	9.6	µg/L	R	5
03-1094-2	TB010903-01	FIELD QC	01/09/2003	SW8260B	Acetone	4.4	10	µg/L	R	5
03-1118-1	133-MW02-GW01	133-MW02	01/10/2003	SW8015B	Diesel Range	0.34	0.48	mg/L	F	23
				SW8015B	Gasoline Range	0.016	0.1	mg/L	F	23
				SW8015B	Motor oils	0.31	0.48	mg/L	F	23
				SW8260B	Acetone	< 10	10	µg/L	R	5
				SW8260B	Chloromethane	0.52	1	µg/L	F	23
				SW8260B	Methyl tertiary-butyl ether	0.5	5	µg/L	F	23
				SW8270C	4-Bromophenyl phenyl ether	< 9.6	9.6	µg/L	J	5
				SW8270C	Dibenzofuran	< 9.6	9.6	µg/L	R	5
				SW8270C	Hexachlorocyclopentadiene	< 9.6	9.6	µg/L	J	5
				SW8270C	n-Nitrosodimethylamine	< 9.6	9.6	µg/L	R	5
03-1118-2	133-MW03-GW01	133-MW03	01/10/2003	SW8015B	Diesel Range	0.22	0.48	mg/L	F	23
				SW8015B	Gasoline Range	0.029	0.1	mg/L	F	23
				SW8015B	Motor oils	0.35	0.48	mg/L	F	23
				SW8260B	Acetone	< 10	10	µg/L	R	5
				SW8270C	4-Bromophenyl phenyl ether	< 9.6	9.6	µg/L	J	5
				SW8270C	Dibenzofuran	< 9.6	9.6	µg/L	R	5
				SW8270C	Hexachlorocyclopentadiene	< 9.6	9.6	µg/L	J	5
				SW8270C	n-Nitrosodimethylamine	< 9.6	9.6	µg/L	R	5
03-1118-3	TB011003-01	FIELD QC	01/10/2003	SW8260B	Acetone	3.9	10	µg/L	R	23,5
03-1161-1	133-MW05-GW01	133-MW05	01/14/2003	SW8015B	Gasoline Range	0.025	0.1	mg/L	F	23
				SW8015B	Motor oils	0.29	0.48	mg/L	F	23
				SW8260B	4-Methyl-2-pentanone (MIBK)	< 10	10	µg/L	R	5
				SW8260B	Acetone	< 10	10	µg/L	R	5
				SW8260B	Carbon disulfide	< 1	1	µg/L	R	5
				SW8260B	Chloroethane	< 1	1	µg/L	R	5
				SW8260B	Chloromethane	< 1	1	µg/L	R	5
				SW8260B	Dichlorodifluoromethane	< 1	1	µg/L	R	5
				SW8270C	4-Bromophenyl phenyl ether	< 9.6	9.6	µg/L	J	5
				SW8270C	Dibenzofuran	< 9.6	9.6	µg/L	R	5
				SW8270C	Hexachlorocyclopentadiene	< 9.6	9.6	µg/L	J	5
				SW8270C	n-Nitrosodimethylamine	< 9.6	9.6	µg/L	R	5
03-1161-2	59TB0114200B	FIELD QC	01/14/2003	SW8260B	Acetone	4.3	10	µg/L	R	5
03-1165-1	133-MW04-GW01	133-MW04	01/13/2003	SW8260B	4-Methyl-2-pentanone (MIBK)	8.6	100	µg/L	F	23
				SW8260B	Acetone	41.7	100	µg/L	R	5
				SW8260B	Methylene chloride	9.2	10	µg/L	F	23
				SW8270C	2-Methylphenol (o-cresol)	2.7	9.6	µg/L	F	23
				SW8270C	3/4-Methylphenol (m,p-cresol)	7.5	48	µg/L	F	23
				SW8270C	4-Bromophenyl phenyl ether	< 9.6	9.6	µg/L	J	5
				SW8270C	Dibenzofuran	< 9.6	9.6	µg/L	R	5

TABLE I-3

SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason[a]
				SW8270C	Hexachlorocyclopentadiene	< 9.6	9.6	µg/L	J	5
				SW8270C	n-Nitrosodimethylamine	< 9.6	9.6	µg/L	R	5
03-1165-2	TB-011303-02	FIELD QC	01/13/2003	SW8260B	1-chlorohexane	< 1	1	µg/L	R	5
				SW8260B	Acetone	4.5	10	µg/L	R	5
				SW8260B	Dichlorodifluoromethane	< 1	1	µg/L	R	5
				SW8260B	Hexachlorobutadiene	< 0.6	0.6	µg/L	R	5
03-1359-1	020-SB04-SS0.0	020-SB04	01/28/2003	SW8015B	Diesel Range	6.5	11	mg/kg	F	23
03-1359-10	020-SB06-SS2.5	020-SB06	01/28/2003	SW8015B	Motor oils	3.3	11	mg/kg	F	23
03-1359-12	020-SB06-SS10.0	020-SB06	01/28/2003	SW8015B	Diesel Range	2.9	10	mg/kg	F	23
03-1359-14	020-SB08-SS2.5	020-SB08	01/28/2003	SW8015B	Diesel Range	1.3	11	mg/kg	F	23
03-1359-15	020-SB08-SS5.0	020-SB08	01/28/2003	SW8015B	Diesel Range	2.8	11	mg/kg	F	23
03-1359-16	020-SB08-SS10.0	020-SB08	01/28/2003	SW8015B	Diesel Range	2.8	10	mg/kg	F	23
03-1359-17	020-SB09-SS0.0	020-SB09	01/28/2003	SW8015B	Diesel Range	1.5	11	mg/kg	F	23
03-1359-17	020-SB09-SS0.0	020-SB09	01/28/2003	SW8015B	Motor oils	4.5	11	mg/kg	F	23
03-1359-19	020-SB09-SS5.0	020-SB09	01/28/2003	SW8015B	Diesel Range	10.9	11	mg/kg	F	23
03-1359-2	020-SB04-SS2.5	020-SB04	01/28/2003	SW8015B	Diesel Range	1.2	11	mg/kg	F	23
03-1359-20	020-SB09-SS10.0	020-SB09	01/28/2003	SW8015B	Diesel Range	5.5	10	mg/kg	F	23
03-1359-21	020-SB10-SS0.0	020-SB10	01/28/2003	SW8015B	Diesel Range	2.4	11	mg/kg	F	23
03-1359-23	020-SB10-SS5.0	020-SB10	01/28/2003	SW8015B	Diesel Range	3.4	10	mg/kg	F	23
03-1359-24	020-SB10-SS10.0	020-SB10	01/28/2003	SW8015B	Diesel Range	1.9	10	mg/kg	F	23
03-1359-25	020-SB99-SS5.0	020-SB04	01/28/2003	SW8015B	Diesel Range	7.7	10	mg/kg	F	23
03-1359-26	020-SB99-SS10.0	020-SB06	01/28/2003	SW8015B	Diesel Range	6.9	10	mg/kg	F	23
03-1359-27	60ER-012803-01	FIELD QC	01/28/2003	SW8015B	Diesel Range	0.014	0.5	mg/L	F	23
				SW8015B	Motor oils	0.071	0.5	mg/L	F	23
03-1359-3	020-SB04-SS5.0	020-SB04	01/28/2003	SW8015B	Diesel Range	3.5	11	mg/kg	F	23
03-1359-4	020-SB04-SS10.0	020-SB04	01/28/2003	SW8015B	Diesel Range	4.0	11	mg/kg	F	23
03-1359-5	020-SB05-SS0.0	020-SB05	01/28/2003	SW8015B	Diesel Range	33.6	120	mg/kg	F	23
03-1359-5RE	020-SB05-SS0.0	020-SB05	01/28/2003	SW8270C	2,4-Dinitrophenol	< 3900	3900	µg/kg	M	8,9
				SW8270C	3,3'-Dichlorobenzidine	< 840	840	µg/kg	M	8
				SW8270C	4,6-Dinitro-2-methylphenol	< 3900	3900	µg/kg	M	8,9
				SW8270C	4-Bromophenyl phenyl ether	< 840	840	µg/kg	J	5
				SW8270C	4-Nitrophenol	< 1900	1900	µg/kg	R	5
				SW8270C	Benzo(a)pyrene	< 840	840	µg/kg	M	19
				SW8270C	Benzo(b)fluoranthene	< 840	840	µg/kg	M	19
				SW8270C	Benzo(g,h,i)perylene	< 840	840	µg/kg	M	19
				SW8270C	Benzo(k)fluoranthene	< 840	840	µg/kg	M	19
				SW8270C	bis(2-Ethylhexyl)phthalate	64.7	840	µg/kg	F	23
				SW8270C	Dibenz(a,h)anthracene	< 840	840	µg/kg	M	19
				SW8270C	Dibenzofuran	< 840	840	µg/kg	R	5
				SW8270C	Di-n-octylphthalate	< 840	840	µg/kg	M	19
				SW8270C	Hexachlorocyclopentadiene	< 840	840	µg/kg	M	8
				SW8270C	Indeno(1,2,3-c,d)pyrene	< 840	840	µg/kg	M	19
				SW8270C	n-Nitrosodimethylamine	< 840	840	µg/kg	R	5
				SW8270C	Phenol	125	360	µg/kg	F	23
03-1359-6	020-SB05-SS2.5	020-SB05	01/28/2003	SW8015B	Diesel Range	2.0	11	mg/kg	F	23

TABLE I-3

SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason[a]
03-1359-7	020-SB05-SS5.0	020-SB05	01/28/2003	SW8015B	Motor oils	3.6	11	mg/kg	F	23
03-1359-8	020-SB05-SS10.0	020-SB05	01/28/2003	SW8015B	Diesel Range	5.8	11	mg/kg	F	23
03-1359-9	020-SB06-SS0.0	020-SB06	01/28/2003	SW8270C	2,4-Dinitrophenol	< 3900	3900	µg/kg	M	8,9
				SW8270C	3,3'-Dichlorobenzidine	< 830	830	µg/kg	M	8
				SW8270C	4,6-Dinitro-2-methylphenol	< 3900	3900	µg/kg	M	8,9
				SW8270C	4-Bromophenyl phenyl ether	< 830	830	µg/kg	J	5
				SW8270C	4-Nitrophenol	< 1900	1900	µg/kg	R	5
				SW8270C	Benzo(a)pyrene	< 830	830	µg/kg	M	19
				SW8270C	Benzo(b)fluoranthene	< 830	830	µg/kg	M	19
				SW8270C	Benzo(g,h,i)perylene	< 830	830	µg/kg	M	19
				SW8270C	Benzo(k)fluoranthene	< 830	830	µg/kg	M	19
				SW8270C	Dibenz(a,h)anthracene	< 830	830	µg/kg	M	19
				SW8270C	Dibenzofuran	< 830	830	µg/kg	R	5
				SW8270C	Di-n-octylphthalate	< 830	830	µg/kg	M	19
				SW8270C	Hexachlorocyclopentadiene	< 830	830	µg/kg	M	8
				SW8270C	Indeno(1,2,3-c,d)pyrene	< 830	830	µg/kg	M	19
				SW8270C	n-Nitrosodimethylamine	< 830	830	µg/kg	R	5
				SW8270C	Phenol	148	360	µg/kg	F	23
03-1396-1	020-SB07-SS0.0	020-SB07	01/29/2003	SW8015B	Diesel Range	17.7	54	mg/kg	F	23
				SW8270C	2,4-Dinitrophenol	< 7100	7100	µg/kg	M	8,9
				SW8270C	3,3'-Dichlorobenzidine	< 1500	1500	µg/kg	M	8
				SW8270C	4,6-Dinitro-2-methylphenol	< 7100	7100	µg/kg	M	8,9
				SW8270C	4-Bromophenyl phenyl ether	< 1500	1500	µg/kg	J	5
				SW8270C	4-Nitrophenol	< 3500	3500	µg/kg	R	5
				SW8270C	Benzo(a)pyrene	< 1500	1500	µg/kg	M	19
				SW8270C	Benzo(b)fluoranthene	< 1500	1500	µg/kg	M	19
				SW8270C	Benzo(g,h,i)perylene	< 1500	1500	µg/kg	M	19
				SW8270C	Benzo(k)fluoranthene	< 1500	1500	µg/kg	M	19
				SW8270C	Dibenz(a,h)anthracene	< 1500	1500	µg/kg	M	19
				SW8270C	Dibenzofuran	< 1500	1500	µg/kg	R	5
				SW8270C	Di-n-octylphthalate	< 1500	1500	µg/kg	M	19
				SW8270C	Hexachlorocyclopentadiene	< 1500	1500	µg/kg	M	8
				SW8270C	Indeno(1,2,3-c,d)pyrene	< 1500	1500	µg/kg	M	19
				SW8270C	n-Nitrosodimethylamine	< 1500	1500	µg/kg	J	5
03-1396-16	020-SC01-SS2.0	020-SC01	01/29/2003	SW8015B	Diesel Range	101	110	mg/kg	F	23
				SW8270C	2,4-Dinitrophenol	< 15000	15000	µg/kg	M	8,9
				SW8270C	3,3'-Dichlorobenzidine	< 3100	3100	µg/kg	M	8
				SW8270C	4,6-Dinitro-2-methylphenol	< 15000	15000	µg/kg	M	8,9
				SW8270C	4-Bromophenyl phenyl ether	< 3100	3100	µg/kg	J	5
				SW8270C	4-Nitrophenol	< 7100	7100	µg/kg	R	5
				SW8270C	Benzo(a)pyrene	< 3100	3100	µg/kg	M	19
				SW8270C	Benzo(b)fluoranthene	< 3100	3100	µg/kg	M	19
				SW8270C	Benzo(g,h,i)perylene	< 3100	3100	µg/kg	MJ	5,19
				SW8270C	Benzo(k)fluoranthene	< 3100	3100	µg/kg	M	19
				SW8270C	Dibenz(a,h)anthracene	< 3100	3100	µg/kg	M	19

TABLE I-3

SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason[a]
				SW8270C	Dibenzofuran	< 3100	3100	µg/kg	R	5
				SW8270C	Di-n-octylphthalate	< 3100	3100	µg/kg	M	19
				SW8270C	Hexachlorocyclopentadiene	< 3100	3100	µg/kg	M	8
				SW8270C	Indeno(1,2,3-c,d)pyrene	< 3100	3100	µg/kg	M	19
				SW8270C	n-Nitrosodimethylamine	< 3100	3100	µg/kg	R	5
03-1396-17	020-SC02-SS2.0	020-SC02	01/29/2003	SW8015B	Diesel Range	51.9	110	mg/kg	F	23
				SW8270C	2,4-Dinitrophenol	< 14000	14000	µg/kg	M	8,9
				SW8270C	3,3'-Dichlorobenzidine	< 3000	3000	µg/kg	M	8
				SW8270C	4,6-Dinitro-2-methylphenol	< 14000	14000	µg/kg	M	8,9
				SW8270C	4-Bromophenyl phenyl ether	< 3000	3000	µg/kg	J	5
				SW8270C	4-Nitrophenol	< 6900	6900	µg/kg	R	5
				SW8270C	Benzo(a)pyrene	< 3000	3000	µg/kg	M	19
				SW8270C	Benzo(b)fluoranthene	< 3000	3000	µg/kg	M	19
				SW8270C	Benzo(g,h,i)perylene	< 3000	3000	µg/kg	MJ	5,19
				SW8270C	Benzo(k)fluoranthene	< 3000	3000	µg/kg	M	19
				SW8270C	Dibenz(a,h)anthracene	< 3000	3000	µg/kg	M	19
				SW8270C	Dibenzofuran	< 3000	3000	µg/kg	R	5
				SW8270C	Di-n-octylphthalate	< 3000	3000	µg/kg	M	19
				SW8270C	Hexachlorocyclopentadiene	< 3000	3000	µg/kg	M	8
				SW8270C	Indeno(1,2,3-c,d)pyrene	< 3000	3000	µg/kg	M	19
				SW8270C	n-Nitrosodimethylamine	< 3000	3000	µg/kg	R	5
03-1396-2	020-SB07-SS2.5	020-SB07	01/29/2003	SW8015B	Diesel Range	66.1	110	mg/kg	F	23
				SW8270C	2,4-Dinitrophenol	< 3500	3500	µg/kg	M	8,9
				SW8270C	3,3'-Dichlorobenzidine	< 740	740	µg/kg	M	8
				SW8270C	4,6-Dinitro-2-methylphenol	< 3500	3500	µg/kg	M	8,9
				SW8270C	4-Bromophenyl phenyl ether	< 740	740	µg/kg	J	5
				SW8270C	4-Nitrophenol	< 1700	1700	µg/kg	R	5
				SW8270C	Benzo(a)pyrene	< 740	740	µg/kg	M	19
				SW8270C	Benzo(b)fluoranthene	< 740	740	µg/kg	M	19
				SW8270C	Benzo(g,h,i)perylene	< 740	740	µg/kg	M	19
				SW8270C	Benzo(k)fluoranthene	< 740	740	µg/kg	M	19
				SW8270C	Dibenz(a,h)anthracene	< 740	740	µg/kg	M	19
				SW8270C	Dibenzofuran	< 740	740	µg/kg	R	5
				SW8270C	Di-n-octylphthalate	< 740	740	µg/kg	M	19
				SW8270C	Hexachlorocyclopentadiene	< 740	740	µg/kg	M	8
				SW8270C	Indeno(1,2,3-c,d)pyrene	< 740	740	µg/kg	M	19
				SW8270C	n-Nitrosodimethylamine	< 740	740	µg/kg	J	5
03-1396-8	020-SB11-SS0.0	020-SB11	01/29/2003	SW8015B	Diesel Range	2.5	11	mg/kg	F	23
				SW8015B	Motor oils	4.0	11	mg/kg	F	23
03-1398-10	061-SB03-SS5.0	061-SB03	01/30/2003	SW8015B	Diesel Range	5.0	11	mg/kg	F	23
03-1398-18	061-SB05-SS5.0	061-SB05	01/30/2003	SW8015B	Motor oils	3.0	12	mg/kg	F	23
03-1398-2	061-SB01-SS5.0	061-SB01	01/30/2003	SW8015B	Motor oils	4.5	11	mg/kg	F	23
03-1398-21	ER012903	FIELD QC	01/30/2003	SW8015B	Diesel Range	0.030	0.48	mg/L	F	23
				SW8015B	Motor oils	0.064	0.48	mg/L	F	23
03-1398-22	ER013003	FIELD QC	01/30/2003	SW8015B	Diesel Range	0.13	0.48	mg/L	F	23

TABLE I-3

SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason[a]
				SW8015B	Motor oils	0.11	0.48	mg/L	F	23
03-1398-6	061-SB02-SS5.0	061-SB02	01/30/2003	SW8015B	Motor oils	3.9	11	mg/kg	F	23
03-1434-1	055-TW01-GW01	055-TW01	02/03/2003	SW8015B	Diesel Range	0.14	0.5	mg/L	F	23
				SW8015B	Motor oils	0.28	0.5	mg/L	F	23
				SW8260B	Acetone	< 10	10	µg/L	R	5
				SW8260B	Dichlorodifluoromethane	< 1	1	µg/L	R	5
				SW8260B	Hexachlorobutadiene	< 0.6	0.6	µg/L	R	5
				SW8270C	2-Nitroaniline	< 50	50	µg/L	M	9
				SW8270C	3,3'-Dichlorobenzidine	< 20	20	µg/L	M	8,9
				SW8270C	4-Chloroaniline	< 20	20	µg/L	M	9
				SW8270C	4-Nitroaniline	< 50	50	µg/L	M	9
				SW8270C	Benzo(g,h,i)perylene	< 10	10	µg/L	R	5
				SW8270C	Benzoic acid	< 100	100	µg/L	M	9
				SW8270C	bis(2-Ethylhexyl)phthalate	0.62	10	µg/L	F	23
				SW8270C	Indeno(1,2,3-c,d)pyrene	< 10	10	µg/L	M	9
03-1434-10	055-TW01-SS80.0	055-TW01	02/03/2003	SW8015B	Motor oils	< 12	12	mg/kg	J	14
				SW8260B	1,2,4-Trichlorobenzene	< 5.4	5.4	µg/kg	R	5
				SW8260B	2-Hexanone	< 11	11	µg/kg	J	5
				SW8260B	4-Methyl-2-pentanone (MIBK)	< 22	22	µg/kg	J	5
				SW8260B	Carbon disulfide	< 5.4	5.4	µg/kg	R	5
				SW8260B	Dibromomethane	< 5.4	5.4	µg/kg	R	5
				SW8260B	Methylene chloride	4.0	5.4	µg/kg	F	23
				SW8260B	trans-1,2-Dichloroethene	< 5.4	5.4	µg/kg	R	5
				SW8260B	Vinyl acetate	< 11	11	µg/kg	M	8
				SW8270C	2,4,5-Trichlorophenol	< 3900	3900	µg/kg	M	8
				SW8270C	2,4,6-Trichlorophenol	< 360	360	µg/kg	M	8
				SW8270C	2,4-Dinitrophenol	< 3900	3900	µg/kg	M	8,9
				SW8270C	4,6-Dinitro-2-methylphenol	< 3900	3900	µg/kg	M	8,9
				SW8270C	Benzo(g,h,i)perylene	< 830	830	µg/kg	M	8
				SW8270C	Benzoic acid	< 5900	5900	µg/kg	M	8
				SW8270C	Pentachlorophenol	< 3900	3900	µg/kg	M	8,9
03-1434-11	055-TW99-GW01	055-TW01	02/03/2003	SW8015B	Diesel Range	0.052	0.5	mg/L	F	23
				SW8015B	Motor oils	0.055	0.5	mg/L	F	23
				SW8260B	Acetone	< 10	10	µg/L	R	5
				SW8260B	Dichlorodifluoromethane	< 1	1	µg/L	R	5
				SW8260B	Hexachlorobutadiene	< 0.6	0.6	µg/L	R	5
				SW8270C	2-Nitroaniline	< 50	50	µg/L	M	9
				SW8270C	3,3'-Dichlorobenzidine	< 20	20	µg/L	M	8,9
				SW8270C	4-Chloroaniline	< 20	20	µg/L	M	9
				SW8270C	4-Nitroaniline	< 50	50	µg/L	M	9
				SW8270C	Benzo(g,h,i)perylene	< 10	10	µg/L	R	5
				SW8270C	Benzoic acid	< 100	100	µg/L	M	9
				SW8270C	bis(2-Ethylhexyl)phthalate	0.80	10	µg/L	F	23
				SW8270C	Indeno(1,2,3-c,d)pyrene	< 10	10	µg/L	M	9
03-1434-12	055-TW99-SS25.0	055-TW01	02/03/2003	PAH-SIM	Benzo(a)anthracene	16.7	27	µg/kg	F	23

TABLE I-3

SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason[a]
				PAH-SIM	Benzo(a)pyrene	13.5	27	µg/kg	F	23
				PAH-SIM	Benzo(b)fluoranthene	16.4	27	µg/kg	F	23
				PAH-SIM	Benzo(k)fluoranthene	15.3	27	µg/kg	F	23
				PAH-SIM	Chrysene	17.1	27	µg/kg	F	23
				PAH-SIM	Fluoranthene	11.6	27	µg/kg	F	23
				PAH-SIM	Pyrene	14.6	27	µg/kg	F	23
				SW8015B	Diesel Range	3.1	11	mg/kg	F	23
				SW8015B	Motor oils	27.0	11	mg/kg	J	14
				SW8260B	2-Hexanone	< 9.8	9.8	µg/kg	J	5
				SW8260B	4-Methyl-2-pentanone (MIBK)	< 20	20	µg/kg	J	5
				SW8260B	Carbon disulfide	< 4.9	4.9	µg/kg	R	5
				SW8260B	Dibromomethane	< 4.9	4.9	µg/kg	R	5,10
				SW8260B	Methylene chloride	1.7	4.9	µg/kg	F	23
				SW8260B	trans-1,2-Dichloroethene	< 4.9	4.9	µg/kg	R	5
				SW8260B	Vinyl acetate	< 9.8	9.8	µg/kg	M	8
				SW8270C	2,4,5-Trichlorophenol	< 3600	3600	µg/kg	M	8
				SW8270C	2,4,6-Trichlorophenol	< 330	330	µg/kg	M	8
				SW8270C	2,4-Dinitrophenol	< 3600	3600	µg/kg	M	8,9
				SW8270C	4,6-Dinitro-2-methylphenol	< 3600	3600	µg/kg	M	8,9
				SW8270C	Benzo(g,h,i)perylene	< 760	760	µg/kg	M	8
				SW8270C	Benzoic acid	< 5500	5500	µg/kg	M	8
				SW8270C	Pentachlorophenol	< 3600	3600	µg/kg	M	8,9
03-1434-13	055-TW99-SS35.0	055-TW01	02/03/2003	SW8015B	Diesel Range	3.4	11	mg/kg	F	23
				SW8015B	Motor oils	19.4	11	mg/kg	J	14
				SW8260B	2-Hexanone	< 11	11	µg/kg	J	5
				SW8260B	4-Methyl-2-pentanone (MIBK)	< 21	21	µg/kg	J	5
				SW8260B	Carbon disulfide	< 5.3	5.3	µg/kg	R	5
				SW8260B	Dibromomethane	< 5.3	5.3	µg/kg	R	5,10
				SW8260B	Methylene chloride	4.1	5.3	µg/kg	F	23
				SW8260B	trans-1,2-Dichloroethene	< 5.3	5.3	µg/kg	R	5
				SW8260B	Vinyl acetate	< 11	11	µg/kg	M	8
				SW8270C	2,4,5-Trichlorophenol	< 3700	3700	µg/kg	M	8
				SW8270C	2,4,6-Trichlorophenol	< 330	330	µg/kg	M	8
				SW8270C	2,4-Dinitrophenol	< 3700	3700	µg/kg	M	8,9
				SW8270C	4,6-Dinitro-2-methylphenol	< 3700	3700	µg/kg	M	8,9
				SW8270C	Benzo(g,h,i)perylene	< 780	780	µg/kg	M	8
				SW8270C	Benzoic acid	< 5600	5600	µg/kg	M	8
				SW8270C	Pentachlorophenol	< 3700	3700	µg/kg	M	8,9
03-1434-14	055-TW99-SS80.0	055-TW01	02/03/2003	SW8015B	Motor oils	< 12	12	mg/kg	J	14
03-1434-15	59ER-020303-01	FIELD QC	02/03/2003	SW8260B	Acetone	< 10	10	µg/L	R	5
				SW8260B	Dichlorodifluoromethane	< 1	1	µg/L	R	5
				SW8260B	Hexachlorobutadiene	< 0.6	0.6	µg/L	R	5
				SW8270C	2-Nitroaniline	< 48	48	µg/L	M	9
				SW8270C	3,3'-Dichlorobenzidine	< 19	19	µg/L	M	8,9
				SW8270C	4-Chloroaniline	< 19	19	µg/L	M	9

TABLE I-3

SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason[a]
				SW8270C	4-Nitroaniline	< 48	48	µg/L	M	9
				SW8270C	Benzo(g,h,i)perylene	< 9.6	9.6	µg/L	R	5
				SW8270C	Benzoic acid	< 96	96	µg/L	M	9
				SW8270C	Indeno(1,2,3-c,d)pyrene	< 9.6	9.6	µg/L	M	9
03-1434-16	59TB-020303-02	FIELD QC	02/03/2003	SW8260B	Acetone	< 10	10	µg/L	R	5
				SW8260B	Dichlorodifluoromethane	< 1	1	µg/L	R	5
				SW8260B	Hexachlorobutadiene	< 0.6	0.6	µg/L	R	5
03-1434-17	59TB-020303-03	FIELD QC	02/03/2003	SW8260B	Acetone	< 10	10	µg/L	R	5
				SW8260B	Dichlorodifluoromethane	< 1	1	µg/L	R	5
				SW8260B	Hexachlorobutadiene	< 0.6	0.6	µg/L	R	5
03-1434-18	59TB-020303-01	FIELD QC	02/03/2003	SW8260B	Acetone	< 10	10	µg/L	R	5
				SW8260B	Dichlorodifluoromethane	< 1	1	µg/L	R	5
				SW8260B	Hexachlorobutadiene	< 0.6	0.6	µg/L	R	5
03-1434-2	055-TW01-SS25.0	055-TW01	02/03/2003	PAH-SIM	Naphthalene	24.0	27	µg/kg	F	23
				SW8015B	Diesel Range	7.1	11	mg/kg	F	23
				SW8015B	Motor oils	41.8	11	mg/kg	J	14
				SW8260B	1,2,4-Trichlorobenzene	< 5.1	5.1	µg/kg	R	5
				SW8260B	2-Hexanone	< 10	10	µg/kg	J	5
				SW8260B	4-Methyl-2-pentanone (MIBK)	< 21	21	µg/kg	J	5
				SW8260B	Carbon disulfide	< 5.1	5.1	µg/kg	R	5
				SW8260B	Dibromomethane	< 5.1	5.1	µg/kg	R	5
				SW8260B	Methylene chloride	4.4	5.1	µg/kg	F	23
				SW8260B	trans-1,2-Dichloroethene	< 5.1	5.1	µg/kg	R	5
				SW8260B	Vinyl acetate	< 10	10	µg/kg	M	8
03-1434-2RE	055-TW01-SS25.0	055-TW01	02/03/2003	SW8270C	2,4,5-Trichlorophenol	< 3600	3600	µg/kg	M	8
				SW8270C	2,4,6-Trichlorophenol	< 330	330	µg/kg	M	8
				SW8270C	2,4-Dinitrophenol	< 3600	3600	µg/kg	M	8,9
				SW8270C	4,6-Dinitro-2-methylphenol	< 3600	3600	µg/kg	M	8,9
				SW8270C	Benzo(g,h,i)perylene	< 760	760	µg/kg	M	8
				SW8270C	Benzoic acid	< 5500	5500	µg/kg	M	8
				SW8270C	Pentachlorophenol	< 3600	3600	µg/kg	M	8,9
03-1434-3	055-TW01-SS30.0	055-TW01	02/03/2003	SW8015B	Diesel Range	1.9	11	mg/kg	F	23
				SW8015B	Motor oils	15.4	11	mg/kg	J	14
				SW8260B	1,2,4-Trichlorobenzene	< 4.9	4.9	µg/kg	R	5
				SW8260B	2-Hexanone	< 9.7	9.7	µg/kg	J	5
				SW8260B	4-Methyl-2-pentanone (MIBK)	< 19	19	µg/kg	J	5
				SW8260B	Carbon disulfide	< 4.9	4.9	µg/kg	R	5
				SW8260B	Dibromomethane	< 4.9	4.9	µg/kg	R	5
				SW8260B	Methylene chloride	4.5	4.9	µg/kg	F	23
				SW8260B	trans-1,2-Dichloroethene	< 4.9	4.9	µg/kg	R	5
				SW8260B	Vinyl acetate	< 9.7	9.7	µg/kg	M	8
				SW8270C	2,4,5-Trichlorophenol	< 3700	3700	µg/kg	M	8
				SW8270C	2,4,6-Trichlorophenol	< 340	340	µg/kg	M	8
				SW8270C	2,4-Dinitrophenol	< 3700	3700	µg/kg	M	8,9
				SW8270C	4,6-Dinitro-2-methylphenol	< 3700	3700	µg/kg	M	8,9

TABLE I-3

SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason[a]
				SW8270C	Benzo(a)pyrene	< 790	790	µg/kg	M	19
				SW8270C	Benzo(b)fluoranthene	< 790	790	µg/kg	M	19
				SW8270C	Benzo(g,h,i)perylene	< 790	790	µg/kg	M	19
				SW8270C	Benzo(k)fluoranthene	< 790	790	µg/kg	M	19
				SW8270C	Benzoic acid	< 5600	5600	µg/kg	M	8
				SW8270C	Dibenz(a,h)anthracene	< 790	790	µg/kg	M	19
				SW8270C	Di-n-octylphthalate	< 790	790	µg/kg	M	19
				SW8270C	Indeno(1,2,3-c,d)pyrene	< 790	790	µg/kg	M	19
				SW8270C	Pentachlorophenol	< 3700	3700	µg/kg	M	8,9
03-1434-4	055-TW01-SS35.0	055-TW01	02/03/2003	SW8015B	Diesel Range	6.2	11	mg/kg	F	23
				SW8015B	Motor oils	33.3	11	mg/kg	J	14
				SW8260B	1,2,4-Trichlorobenzene	< 5.2	5.2	µg/kg	R	5
				SW8260B	2-Hexanone	< 10	10	µg/kg	J	5
				SW8260B	4-Methyl-2-pentanone (MIBK)	< 21	21	µg/kg	J	5
				SW8260B	Carbon disulfide	< 5.2	5.2	µg/kg	R	5
				SW8260B	Dibromomethane	< 5.2	5.2	µg/kg	R	5
				SW8260B	Methylene chloride	2.9	5.2	µg/kg	F	23
				SW8260B	trans-1,2-Dichloroethene	< 5.2	5.2	µg/kg	R	5
				SW8260B	Vinyl acetate	< 10	10	µg/kg	M	8
				SW8270C	2,4,5-Trichlorophenol	< 3700	3700	µg/kg	M	8
				SW8270C	2,4,6-Trichlorophenol	< 330	330	µg/kg	M	8
				SW8270C	2,4-Dinitrophenol	< 3700	3700	µg/kg	M	8,9
				SW8270C	4,6-Dinitro-2-methylphenol	< 3700	3700	µg/kg	M	8,9
				SW8270C	Benzo(g,h,i)perylene	< 780	780	µg/kg	M	8
				SW8270C	Benzoic acid	< 5600	5600	µg/kg	M	8
				SW8270C	Pentachlorophenol	< 3700	3700	µg/kg	M	8,9
03-1434-5	055-TW01-SS40.0	055-TW01	02/03/2003	PAH-SIM	Dibenz(a,h)anthracene	25.1	27	µg/kg	F	23
				SW8015B	Diesel Range	3.2	11	mg/kg	F	23
				SW8015B	Motor oils	14.6	11	mg/kg	J	14
				SW8260B	1,2,4-Trichlorobenzene	< 5.1	5.1	µg/kg	R	5
				SW8260B	2-Hexanone	< 10	10	µg/kg	J	5
				SW8260B	4-Methyl-2-pentanone (MIBK)	< 20	20	µg/kg	J	5
				SW8260B	Carbon disulfide	< 5.1	5.1	µg/kg	R	5
				SW8260B	Dibromomethane	< 5.1	5.1	µg/kg	R	5
				SW8260B	Methylene chloride	3.2	5.1	µg/kg	F	23
				SW8260B	trans-1,2-Dichloroethene	< 5.1	5.1	µg/kg	R	5
				SW8260B	Vinyl acetate	< 10	10	µg/kg	M	8
				SW8270C	2,4,5-Trichlorophenol	< 3600	3600	µg/kg	M	8
				SW8270C	2,4,6-Trichlorophenol	< 330	330	µg/kg	M	8
				SW8270C	2,4-Dinitrophenol	< 3600	3600	µg/kg	M	8,9
				SW8270C	4,6-Dinitro-2-methylphenol	< 3600	3600	µg/kg	M	8,9
				SW8270C	Benzo(a)anthracene	155	760	µg/kg	F	23
				SW8270C	Benzo(a)pyrene	120	760	µg/kg	F	23
				SW8270C	Benzo(b)fluoranthene	83.9	760	µg/kg	F	23
				SW8270C	Benzo(g,h,i)perylene	< 760	760	µg/kg	M	8

TABLE I-3

SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason[a]
				SW8270C	Benzo(k)fluoranthene	129	760	µg/kg	F	23
				SW8270C	Benzoic acid	< 5500	5500	µg/kg	M	8
				SW8270C	Chrysene	186	760	µg/kg	F	23
				SW8270C	Fluoranthene	212	760	µg/kg	F	23
				SW8270C	Pentachlorophenol	< 3600	3600	µg/kg	M	8,9
				SW8270C	Phenanthrene	68.9	760	µg/kg	F	23
				SW8270C	Pyrene	275	760	µg/kg	F	23
03-1434-6	055-TW01-SS45.0	055-TW01	02/03/2003	PAH-SIM	Anthracene	13.1	29	µg/kg	F	23
				PAH-SIM	Benzo(g,h,i)perylene	17.3	29	µg/kg	F	23
				PAH-SIM	Indeno(1,2,3-c,d)pyrene	20.0	29	µg/kg	F	23
				SW8015B	Diesel Range	5.4	12	mg/kg	F	23
				SW8015B	Motor oils	43.7	12	mg/kg	J	14
				SW8260B	1,2,4-Trichlorobenzene	< 5.4	5.4	µg/kg	R	5
				SW8260B	2-Hexanone	< 11	11	µg/kg	J	5
				SW8260B	4-Methyl-2-pentanone (MIBK)	< 21	21	µg/kg	J	5
				SW8260B	Carbon disulfide	< 5.4	5.4	µg/kg	R	5
				SW8260B	Dibromomethane	< 5.4	5.4	µg/kg	R	5
				SW8260B	trans-1,2-Dichloroethene	< 5.4	5.4	µg/kg	R	5
				SW8260B	Vinyl acetate	< 11	11	µg/kg	M	8
				SW8270C	1,2,4-Trichlorobenzene	< 810	810	µg/kg	R	13
				SW8270C	1,2-Dichlorobenzene	< 810	810	µg/kg	R	13
				SW8270C	1,3-Dichlorobenzene	< 810	810	µg/kg	R	13
				SW8270C	1,4-Dichlorobenzene	< 810	810	µg/kg	R	13
				SW8270C	2,4,5-Trichlorophenol	< 3800	3800	µg/kg	R	13
				SW8270C	2,4,6-Trichlorophenol	< 350	350	µg/kg	R	13
				SW8270C	2,4-Dichlorophenol	< 350	350	µg/kg	R	13
				SW8270C	2,4-Dimethylphenol	< 350	350	µg/kg	R	13
				SW8270C	2,4-Dinitrophenol	< 3800	3800	µg/kg	R	13
				SW8270C	2,4-Dinitrotoluene	< 810	810	µg/kg	R	13
				SW8270C	2,6-Dinitrotoluene	< 810	810	µg/kg	R	13
				SW8270C	2-Chloronaphthalene	< 810	810	µg/kg	R	13
				SW8270C	2-Chlorophenol	< 350	350	µg/kg	R	13
				SW8270C	2-Methylnaphthalene	< 810	810	µg/kg	R	13
				SW8270C	2-Methylphenol (o-cresol)	< 350	350	µg/kg	R	13
				SW8270C	2-Nitroaniline	< 3800	3800	µg/kg	R	13
				SW8270C	2-Nitrophenol	< 350	350	µg/kg	R	13
				SW8270C	3,3'-Dichlorobenzidine	< 810	810	µg/kg	R	13
				SW8270C	3/4-Methylphenol (m,p-cresol)	< 2300	2300	µg/kg	R	13
				SW8270C	3-Nitroaniline	< 3800	3800	µg/kg	R	13
				SW8270C	4,6-Dinitro-2-methylphenol	< 3800	3800	µg/kg	R	13
				SW8270C	4-Bromophenyl phenyl ether	< 810	810	µg/kg	R	13
				SW8270C	4-Chloro-3-methylphenol	< 1500	1500	µg/kg	R	13
				SW8270C	4-Chloroaniline	< 1500	1500	µg/kg	R	13
				SW8270C	4-Chlorophenyl phenyl ether	< 810	810	µg/kg	R	13
				SW8270C	4-Nitroaniline	< 3800	3800	µg/kg	R	13

TABLE I-3

SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason[a]
				SW8270C	4-Nitrophenol	< 1800	1800	µg/kg	R	13
				SW8270C	Acenaphthene	< 810	810	µg/kg	R	13
				SW8270C	Acenaphthylene	< 810	810	µg/kg	R	13
				SW8270C	Anthracene	< 810	810	µg/kg	R	13
				SW8270C	Benzo(a)anthracene	46.4	810	µg/kg	R	13
				SW8270C	Benzo(a)pyrene	< 810	810	µg/kg	R	13,19
				SW8270C	Benzo(b)fluoranthene	< 810	810	µg/kg	R	13
				SW8270C	Benzo(g,h,i)perylene	< 810	810	µg/kg	R	13,19
				SW8270C	Benzo(k)fluoranthene	37.7	810	µg/kg	R	19
				SW8270C	Benzoic acid	< 5800	5800	µg/kg	R	13
				SW8270C	Benzyl alcohol	< 1500	1500	µg/kg	R	13
				SW8270C	Benzyl butyl phthalate	< 810	810	µg/kg	R	13
				SW8270C	bis(2-Chloroethoxy)methane	< 810	810	µg/kg	R	13
				SW8270C	bis(2-Chloroethyl)ether	< 810	810	µg/kg	R	13
				SW8270C	bis(2-Chloroisopropyl)ether	< 810	810	µg/kg	R	13
				SW8270C	bis(2-Ethylhexyl)phthalate	103	810	µg/kg	J	23,13
				SW8270C	Chrysene	56.9	810	µg/kg	R	13
				SW8270C	Dibenz(a,h)anthracene	< 810	810	µg/kg	R	13,19
				SW8270C	Dibenzofuran	< 810	810	µg/kg	R	13
				SW8270C	Diethyl phthalate	< 810	810	µg/kg	R	13
				SW8270C	Dimethyl phthalate	< 810	810	µg/kg	R	13
				SW8270C	Di-n-butyl phthalate	< 810	810	µg/kg	R	13
				SW8270C	Di-n-octylphthalate	< 810	810	µg/kg	R	13,19
				SW8270C	Fluoranthene	64.6	810	µg/kg	R	13
				SW8270C	Fluorene	< 810	810	µg/kg	R	13
				SW8270C	Hexachlorobenzene	< 810	810	µg/kg	R	13
				SW8270C	Hexachlorobutadiene	< 810	810	µg/kg	R	13
				SW8270C	Hexachlorocyclopentadiene	< 810	810	µg/kg	R	13
				SW8270C	Hexachloroethane	< 810	810	µg/kg	R	13
				SW8270C	Indeno(1,2,3-c,d)pyrene	< 810	810	µg/kg	R	13,19
				SW8270C	Isophorone	< 810	810	µg/kg	R	13
				SW8270C	Naphthalene	< 810	810	µg/kg	R	13
				SW8270C	Nitrobenzene	< 810	810	µg/kg	R	13
				SW8270C	n-Nitrosodimethylamine	< 810	810	µg/kg	R	13
				SW8270C	n-Nitrosodi-n-propylamine	< 810	810	µg/kg	R	13
				SW8270C	n-Nitrosodiphenylamine	< 810	810	µg/kg	R	13
				SW8270C	Pentachlorophenol	< 3800	3800	µg/kg	R	13
				SW8270C	Phenanthrene	< 810	810	µg/kg	R	13
				SW8270C	Phenol	< 350	350	µg/kg	R	13
				SW8270C	Pyrene	81.9	810	µg/kg	R	13
03-1434-7	055-TW01-SS50.0	055-TW01	02/03/2003	SW8015B	Motor oils	< 11	11	mg/kg	J	14
				SW8260B	1,2,4-Trichlorobenzene	< 5.5	5.5	µg/kg	R	5
				SW8260B	2-Hexanone	< 11	11	µg/kg	J	5
				SW8260B	4-Methyl-2-pentanone (MIBK)	< 22	22	µg/kg	J	5
				SW8260B	Carbon disulfide	< 5.5	5.5	µg/kg	R	5

TABLE I-3

SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason[a]
				SW8260B	Dibromomethane	< 5.5	5.5	µg/kg	R	5
				SW8260B	Methylene chloride	3.4	5.5	µg/kg	F	23
				SW8260B	trans-1,2-Dichloroethene	< 5.5	5.5	µg/kg	R	5
				SW8260B	Vinyl acetate	< 11	11	µg/kg	M	8
				SW8270C	2,4,5-Trichlorophenol	< 3800	3800	µg/kg	M	8
				SW8270C	2,4,6-Trichlorophenol	< 340	340	µg/kg	M	8
				SW8270C	2,4-Dinitrophenol	< 3800	3800	µg/kg	M	8,9
				SW8270C	4,6-Dinitro-2-methylphenol	< 3800	3800	µg/kg	M	8,9
				SW8270C	Benzo(g,h,i)perylene	< 800	800	µg/kg	M	8
				SW8270C	Benzoic acid	< 5700	5700	µg/kg	M	8
				SW8270C	Pentachlorophenol	< 3800	3800	µg/kg	M	8,9
03-1434-8	055-TW01-SS60.0	055-TW01	02/03/2003	SW8015B	Motor oils	< 11	11	mg/kg	J	14
				SW8260B	1,2,4-Trichlorobenzene	< 5.3	5.3	µg/kg	R	5
				SW8260B	2-Hexanone	< 11	11	µg/kg	J	5
				SW8260B	4-Methyl-2-pentanone (MIBK)	< 21	21	µg/kg	J	5
				SW8260B	Carbon disulfide	< 5.3	5.3	µg/kg	R	5
				SW8260B	Dibromomethane	< 5.3	5.3	µg/kg	R	5
				SW8260B	Methylene chloride	4.7	5.3	µg/kg	F	23
				SW8260B	trans-1,2-Dichloroethene	< 5.3	5.3	µg/kg	R	5
				SW8260B	Vinyl acetate	< 11	11	µg/kg	M	8
				SW8270C	2,4,5-Trichlorophenol	< 3700	3700	µg/kg	M	8
				SW8270C	2,4,6-Trichlorophenol	< 340	340	µg/kg	M	8
				SW8270C	2,4-Dinitrophenol	< 3700	3700	µg/kg	M	8,9
				SW8270C	4,6-Dinitro-2-methylphenol	< 3700	3700	µg/kg	M	8,9
				SW8270C	Benzo(g,h,i)perylene	< 790	790	µg/kg	M	8
				SW8270C	Benzoic acid	< 5600	5600	µg/kg	M	8
				SW8270C	Pentachlorophenol	< 3700	3700	µg/kg	M	8,9
03-1434-9	055-TW01-SS70.0	055-TW01	02/03/2003	SW8015B	Motor oils	< 12	12	mg/kg	J	14
				SW8260B	1,2,4-Trichlorobenzene	< 5.7	5.7	µg/kg	R	5
				SW8260B	2-Hexanone	< 11	11	µg/kg	J	5
				SW8260B	4-Methyl-2-pentanone (MIBK)	< 23	23	µg/kg	J	5
				SW8260B	Carbon disulfide	< 5.7	5.7	µg/kg	R	5
				SW8260B	Dibromomethane	< 5.7	5.7	µg/kg	R	5
				SW8260B	Methylene chloride	5.3	5.7	µg/kg	F	23
				SW8260B	trans-1,2-Dichloroethene	< 5.7	5.7	µg/kg	R	5
				SW8260B	Vinyl acetate	< 11	11	µg/kg	M	8
				SW8270C	2,4,5-Trichlorophenol	< 3800	3800	µg/kg	M	8
				SW8270C	2,4,6-Trichlorophenol	< 350	350	µg/kg	M	8
				SW8270C	2,4-Dinitrophenol	< 3800	3800	µg/kg	M	8,9
				SW8270C	4,6-Dinitro-2-methylphenol	< 3800	3800	µg/kg	M	8,9
				SW8270C	Benzo(g,h,i)perylene	< 820	820	µg/kg	M	8
				SW8270C	Benzoic acid	< 5800	5800	µg/kg	M	8
				SW8270C	Pentachlorophenol	< 3800	3800	µg/kg	M	8,9
03-2192-1	59TB-031203-01	FIELD QC	03/12/2003	SW8260B	4-Methyl-2-pentanone (MIBK)	0.44	10	µg/L	F	23
				SW8260B	Acetone	< 10	10	µg/L	R	5

TABLE I-3

SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason"
03-2192-2	59TB-031203-03	FIELD QC	03/12/2003	SW8260B	4-Methyl-2-pentanone (MIBK)	0.45	10	µg/L	F	23
				SW8260B	Acetone	< 10	10	µg/L	R	5
				SW8260B	Methylene chloride	0.91	1	µg/L	F	23
03-2192-3	133-MW02-GW02	133-MW02	03/12/2003	SW8015B	Diesel Range	0.13	0.5	mg/L	F	23
				SW8015B	Gasoline Range	0.027	0.1	mg/L	F	23
				SW8015B	Motor oils	0.22	0.5	mg/L	F	23
				SW8260B	1,2-Dibromoethane (Ethylene Dibromide)	< 1	1	µg/L	M	8
				SW8260B	2-Hexanone	7.1	10	µg/L	F	23
				SW8260B	4-Methyl-2-pentanone (MIBK)	0.38	10	µg/L	F	23
				SW8260B	Acetone	< 10	10	µg/L	R	5
				SW8260B	Naphthalene	0.33	1	µg/L	F	23
				SW8270C	4-Nitroaniline	< 48	48	µg/L	R	5
				SW8270C	bis(2-Ethylhexyl)phthalate	1.0	9.6	µg/L	F	23
03-2192-4	133-MW03-GW02	133-MW03	03/12/2003	SW8015B	Diesel Range	0.20	0.5	mg/L	F	23
				SW8015B	Gasoline Range	0.017	0.1	mg/L	F	23
				SW8015B	Motor oils	0.26	0.5	mg/L	F	23
				SW8260B	1,2,3-Trichloropropane	< 1	1	µg/L	R	5
				SW8260B	1,2-Dibromo-3-chloropropane	< 2	2	µg/L	R	5
				SW8260B	1,2-Dibromoethane (Ethylene Dibromide)	< 1	1	µg/L	M	8
				SW8260B	Chloromethane	< 1	1	µg/L	R	5
				SW8260B	Methyl tertiary-butyl ether	< 5	5	µg/L	R	5
				SW8270C	4-Nitroaniline	< 48	48	µg/L	R	5
03-2192-5	133-MW99-GW02	133-MW02	03/12/2003	SW8015B	Diesel Range	0.40	0.5	mg/L	F	23
03-2192-5	133-MW99-GW02	133-MW02	03/12/2003	SW8015B	Gasoline Range	0.016	0.1	mg/L	F	23
				SW8015B	Motor oils	0.44	0.5	mg/L	F	23
				SW8260B	1,2,3-Trichloropropane	< 1	1	µg/L	R	5
				SW8260B	1,2-Dibromo-3-chloropropane	< 2	2	µg/L	R	5
				SW8260B	1,2-Dibromoethane (Ethylene Dibromide)	< 1	1	µg/L	M	8
				SW8260B	Chloromethane	< 1	1	µg/L	R	5
				SW8260B	Methyl tertiary-butyl ether	< 5	5	µg/L	R	5
				SW8270C	4-Nitroaniline	< 48	48	µg/L	R	5
				SW8270C	bis(2-Ethylhexyl)phthalate	1.1	9.6	µg/L	F	23
03-2225-1	59ER-031203-01	FIELD QC	03/13/2003	SW8015B	Gasoline Range	0.022	0.1	mg/L	F	23
				SW8260B	1,2,3-Trichloropropane	< 1	1	µg/L	R	5
				SW8260B	1,2-Dibromo-3-chloropropane	< 2	2	µg/L	R	5
				SW8260B	1,2-Dibromoethane (Ethylene Dibromide)	< 1	1	µg/L	M	8
				SW8260B	Chloromethane	< 1	1	µg/L	J	5
				SW8260B	Methyl tertiary-butyl ether	< 5	5	µg/L	R	5
03-2225-2	59TB-031303-01	FIELD QC	03/13/2003	SW8260B	1,2,3-Trichloropropane	< 1	1	µg/L	R	5
				SW8260B	1,2-Dibromo-3-chloropropane	< 2	2	µg/L	R	5
				SW8260B	1,2-Dibromoethane (Ethylene Dibromide)	< 1	1	µg/L	M	8
				SW8260B	2-Butanone(MEK)	0.57	10	µg/L	F	23
				SW8260B	Chloromethane	< 1	1	µg/L	J	5
				SW8260B	Methyl tertiary-butyl ether	< 5	5	µg/L	R	5
				SW8260B	Methylene chloride	0.66	1	µg/L	F	23

TABLE I-3

SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason*
03-2225-3	59TB-031303-02	FIELD QC	03/13/2003	SW8260B	1,2,3-Trichloropropane	< 1	1	µg/L	R	5
				SW8260B	1,2-Dibromo-3-chloropropane	< 2	2	µg/L	R	5
				SW8260B	1,2-Dibromoethane (Ethylene Dibromide)	< 1	1	µg/L	M	8
				SW8260B	2-Hexanone	0.37	10	µg/L	F	23
				SW8260B	Chloromethane	< 1	1	µg/L	J	5
				SW8260B	Methyl tertiary-butyl ether	< 5	5	µg/L	R	5
				SW8260B	Methylene chloride	0.64	1	µg/L	F	23
03-2225-4	59TB-031403-01	FIELD QC	03/13/2003	SW8260B	1,2,3-Trichloropropane	< 1	1	µg/L	R	5
				SW8260B	1,2-Dibromo-3-chloropropane	< 2	2	µg/L	R	5
				SW8260B	1,2-Dibromoethane (Ethylene Dibromide)	< 1	1	µg/L	M	8
				SW8260B	4-Methyl-2-pentanone (MIBK)	0.49	10	µg/L	F	23
				SW8260B	Chloromethane	< 1	1	µg/L	J	5
				SW8260B	Methyl tertiary-butyl ether	< 5	5	µg/L	R	5
				SW8260B	Methylene chloride	0.74	1	µg/L	F	23
03-2225-5	133-MW01-GW02	133-MW01	03/13/2003	SW8015B	Diesel Range	0.035	0.48	mg/L	F	23
				SW8015B	Gasoline Range	0.012	0.1	mg/L	F	23
				SW8015B	Motor oils	0.070	0.48	mg/L	F	23
				SW8260B	1,2,3-Trichloropropane	< 1	1	µg/L	R	5
				SW8260B	1,2-Dibromo-3-chloropropane	< 2	2	µg/L	R	5
				SW8260B	1,2-Dibromoethane (Ethylene Dibromide)	< 1	1	µg/L	M	8
				SW8260B	Chloromethane	< 1	1	µg/L	J	5
				SW8260B	Methyl tertiary-butyl ether	< 5	5	µg/L	R	5
03-2225-6	133-MW04-GW02	133-MW04	03/13/2003	SW8260B	1,2-Dibromoethane (Ethylene Dibromide)	< 10	10	µg/L	M	8
				SW8260B	Chloromethane	< 10	10	µg/L	J	5
				SW8260B	m,p-Xylene	8.0	20	µg/L	F	23
				SW8260B	p-Cymene (p-isopropyltoluene)	4.0	10	µg/L	F	23
				SW8260B	Sec-butylbenzene	6.4	10	µg/L	F	23
				SW8260B	Toluene	5.6	10	µg/L	F	23
				SW8270C	bis(2-Ethylhexyl)phthalate	1.6	9.6	µg/L	F	23
03-2225-7	133-MW05-GW02	133-MW05	03/13/2003	SW8015B	Diesel Range	0.27	0.48	mg/L	F	23
				SW8015B	Gasoline Range	0.013	0.1	mg/L	F	23
				SW8015B	Motor oils	0.19	0.48	mg/L	F	23
				SW8260B	1,2,3-Trichloropropane	< 1	1	µg/L	R	5
				SW8260B	1,2-Dibromo-3-chloropropane	< 2	2	µg/L	R	5
				SW8260B	1,2-Dibromoethane (Ethylene Dibromide)	< 1	1	µg/L	M	8
				SW8260B	Chloromethane	< 1	1	µg/L	J	5
				SW8260B	Methyl tertiary-butyl ether	< 5	5	µg/L	R	5
				SW8270C	bis(2-Ethylhexyl)phthalate	1.3	9.6	µg/L	F	23
03-2855-1	020-SB12-SS0.0	020-SB12	04/23/2003	SW8015B	Diesel Range	53.5	57	mg/kg	F	23
				SW8270C	2,4,5-Trichlorophenol	< 7500	7500	µg/kg	J	13
				SW8270C	2,4,6-Trichlorophenol	< 680	680	µg/kg	J	13
				SW8270C	2,4-Dichlorophenol	< 680	680	µg/kg	J	13
				SW8270C	2,4-Dimethylphenol	< 680	680	µg/kg	J	13
				SW8270C	2,4-Dinitrophenol	< 7500	7500	µg/kg	J	13
				SW8270C	2-Chlorophenol	< 680	680	µg/kg	J	13

TABLE I-3

SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason[a]
				SW8270C	2-Methylphenol (o-cresol)	< 680	680	µg/kg	J	13
				SW8270C	2-Nitrophenol	< 680	680	µg/kg	J	13
				SW8270C	3/4-Methylphenol (m,p-cresol)	< 4500	4500	µg/kg	J	13
				SW8270C	4,6-Dinitro-2-methylphenol	< 7500	7500	µg/kg	J	13
				SW8270C	4-Chloro-3-methylphenol	< 2900	2900	µg/kg	J	13
				SW8270C	4-Nitroaniline	< 7500	7500	µg/kg	J	5
				SW8270C	4-Nitrophenol	< 3600	3600	µg/kg	J	13
				SW8270C	Benzo(g,h,i)perylene	< 1600	1600	µg/kg	J	5
				SW8270C	Pentachlorophenol	< 7500	7500	µg/kg	J	13
				SW8270C	Phenol	< 680	680	µg/kg	J	13
03-2855-2	020-SB12-SS2.0	020-SB12	04/23/2003	SW8015B	Diesel Range	2.5	11	mg/kg	F	23
03-2855-3	020-SB13-SS0.0	020-SB13	04/23/2003	SW8270C	4-Nitroaniline	< 3600	3600	µg/kg	J	5
				SW8270C	Benzo(g,h,i)perylene	< 770	770	µg/kg	J	5
03-2855-4	020-SB13-SS2.0	020-SB13	04/23/2003	SW8015B	Diesel Range	1.7	11	mg/kg	F	23
				SW8015B	Motor oils	10.6	11	mg/kg	F	23
03-2855-5	020-SB14-SS0.0	020-SB14	04/23/2003	SW8270C	4-Nitroaniline	< 7200	7200	µg/kg	J	5
				SW8270C	Benzo(g,h,i)perylene	< 1500	1500	µg/kg	J	5
03-2855-6	020-SB14-SS2.0	020-SB14	04/23/2003	SW8015B	Motor oils	8.5	11	mg/kg	F	23
03-2855-7	020-SB99-SS2.0	020-SB14	04/23/2003	SW8015B	Diesel Range	2.2	11	mg/kg	F	23
				SW8015B	Motor oils	8.9	11	mg/kg	F	23
03-4269-1	020-SB15-SS0.5	020-SB15	07/21/2003	SW8015B	Diesel Range	31.7	110	MG/KG	F	23
				SW8270C	Benzo(k)fluoranthene	< 790	790	µg/kg	J	5
				SW8270C	bis(2-Ethylhexyl)phthalate	48.1	790	µg/kg	F	23
				SW8270C	Diethyl phthalate	110	790	µg/kg	F	23
03-4269-2	020-SB15-SS1.5	020-SB15	07/21/2003	SW8015B	Diesel Range	2.8	10	mg/kg	F	23
03-4269-3	020-SB16-SS0.5	020-SB16	07/21/2003	SW8015B	Diesel Range	5.8	10	mg/kg	F	23
03-4269-5	020-SB17-SS0.5	020-SB17	07/21/2003	SW8015B	Diesel Range	3.9	10	mg/kg	F	23
03-4269-7	020-SB18-SS0.5	020-SB18	07/21/2003	SW8015B	Diesel Range	3.4	11	mg/kg	F	23
03-4460-1	099-SC01-SS1.0	099-SC01	08/04/2003	SW6010B	Aluminum	2010	82	mg/kg	J	14
				SW6010B	Antimony	0.56	41	mg/kg	F	23
				SW6010B	Arsenic	1.3	20	mg/kg	F	23
				SW6010B	Barium	6.2	4.1	mg/kg	J	14
				SW6010B	Beryllium	0.025	4.1	mg/kg	F	23
				SW6010B	Boron	2.6	5.1	mg/kg	F	23
				SW6010B	Chromium	4.3	4.1	mg/kg	J	14
				SW6010B	Cobalt	1.8	4.1	mg/kg	F	23
				SW6010B	Copper	0.92	8.2	mg/kg	F	23
				SW6010B	Iron	4000	12	mg/kg	J	14
				SW6010B	Lead	2.9	12	mg/kg	F	23
				SW6010B	Manganese	18.8	4.1	mg/kg	J	14
				SW6010B	Molybdenum	0.34	0.82	mg/kg	F	23
				SW6010B	Nickel	1.8	8.2	mg/kg	F	23
				SW6010B	Vanadium	10.6	4.1	mg/kg	J	14
03-4460-10	099-SC10-SS1.0	099-SC10	08/04/2003	SW6010B	Aluminum	7190	89	mg/kg	J	14
				SW6010B	Antimony	1.1	44	mg/kg	F	23

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SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason[a]
				SW6010B	Arsenic	1.7	22	mg/kg	F	23
				SW6010B	Barium	35.0	4.4	mg/kg	J	14
				SW6010B	Beryllium	0.075	4.4	mg/kg	F	23
				SW6010B	Cadmium	0.63	2.2	mg/kg	F	23
				SW6010B	Chromium	13.1	4.4	mg/kg	J	14
				SW6010B	Cobalt	1.1	4.4	mg/kg	F	23
				SW6010B	Copper	5.7	8.9	mg/kg	F	23
				SW6010B	Iron	10700	13	mg/kg	J	14
				SW6010B	Lead	5.3	13	mg/kg	F	23
				SW6010B	Manganese	15.8	4.4	mg/kg	J	14
				SW6010B	Molybdenum	0.31	0.89	mg/kg	F	23
				SW6010B	Nickel	8.0	8.9	mg/kg	F	23
				SW6010B	Vanadium	18.5	4.4	mg/kg	J	14
03-4460-11	099-SC11-SS1.0	099-SC11	08/04/2003	SW6010B	Aluminum	10100	95	mg/kg	J	14
				SW6010B	Antimony	0.67	47	mg/kg	F	23
				SW6010B	Arsenic	1.1	24	mg/kg	F	23
				SW6010B	Barium	10.6	4.7	mg/kg	J	14
				SW6010B	Beryllium	0.10	4.7	mg/kg	F	23
				SW6010B	Boron	2.2	5.9	mg/kg	F	23
				SW6010B	Cadmium	0.14	2.4	mg/kg	F	23
				SW6010B	Chromium	14.8	4.7	mg/kg	J	14
				SW6010B	Cobalt	1.9	4.7	mg/kg	F	23
				SW6010B	Copper	6.0	9.5	mg/kg	F	23
				SW6010B	Iron	8900	14	mg/kg	J	14
				SW6010B	Lead	5.5	14	mg/kg	F	23
				SW6010B	Manganese	20.3	4.7	mg/kg	J	14
				SW6010B	Molybdenum	0.23	0.95	mg/kg	F	23
				SW6010B	Nickel	6.0	9.5	mg/kg	F	23
				SW6010B	Vanadium	20.5	4.7	mg/kg	J	14
03-4460-12	099-SC12-SS1.0	099-SC12	08/04/2003	SW6010B	Aluminum	6890	94	mg/kg	J	14
				SW6010B	Antimony	0.98	47	mg/kg	F	23
				SW6010B	Arsenic	6.2	23	mg/kg	F	23
				SW6010B	Barium	39.2	4.7	mg/kg	J	14
				SW6010B	Beryllium	0.097	4.7	mg/kg	F	23
				SW6010B	Cadmium	0.27	2.3	mg/kg	F	23
				SW6010B	Chromium	14.4	4.7	mg/kg	J	14
				SW6010B	Cobalt	1.6	4.7	mg/kg	F	23
				SW6010B	Copper	8.4	9.4	mg/kg	F	23
				SW6010B	Iron	18200	14	mg/kg	J	14
				SW6010B	Lead	6.4	14	mg/kg	F	23
				SW6010B	Manganese	42.6	4.7	mg/kg	J	14
				SW6010B	Molybdenum	0.52	0.94	mg/kg	F	23
				SW6010B	Nickel	6.6	9.4	mg/kg	F	23
				SW6010B	Vanadium	44.8	4.7	mg/kg	J	14
03-4460-13	099-SC13-SS1.0	099-SC13	08/04/2003	SW6010B	Aluminum	3520	87	mg/kg	J	14

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SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason[a]
				SW6010B	Antimony	0.60	43	mg/kg	F	23
				SW6010B	Arsenic	1.2	22	mg/kg	F	23
				SW6010B	Barium	12.6	4.3	mg/kg	J	14
				SW6010B	Cadmium	0.32	2.2	mg/kg	F	23
				SW6010B	Chromium	8.2	4.3	mg/kg	J	14
				SW6010B	Cobalt	0.79	4.3	mg/kg	F	23
				SW6010B	Copper	2.5	8.7	mg/kg	F	23
				SW6010B	Iron	4650	13	mg/kg	J	14
				SW6010B	Lead	9.8	13	mg/kg	F	23
				SW6010B	Manganese	16.9	4.3	mg/kg	J	14
				SW6010B	Molybdenum	0.39	0.87	mg/kg	F	23
				SW6010B	Nickel	2.7	8.7	mg/kg	F	23
				SW6010B	Vanadium	10.9	4.3	mg/kg	J	14
03-4460-14	099-SC14-SS1.0	099-SC14	08/04/2003	SW6010B	Aluminum	3870	84	mg/kg	J	14
				SW6010B	Antimony	1.2	42	mg/kg	F	23
				SW6010B	Arsenic	1.8	21	mg/kg	F	23
				SW6010B	Barium	18.9	4.2	mg/kg	J	14
				SW6010B	Boron	2.1	5.3	mg/kg	F	23
				SW6010B	Cadmium	1.1	2.1	mg/kg	F	23
				SW6010B	Chromium	13.7	4.2	mg/kg	J	14
				SW6010B	Cobalt	1.4	4.2	mg/kg	F	23
				SW6010B	Copper	4.6	8.4	mg/kg	F	23
				SW6010B	Iron	7070	13	mg/kg	J	14
				SW6010B	Manganese	40.6	4.2	mg/kg	J	14
				SW6010B	Molybdenum	0.39	0.84	mg/kg	F	23
				SW6010B	Nickel	4.8	8.4	mg/kg	F	23
				SW6010B	Vanadium	14.5	4.2	mg/kg	J	14
03-4460-15	099-SC15-SS1.0	099-SC15	08/04/2003	SW6010B	Aluminum	2910	84	mg/kg	J	14
				SW6010B	Antimony	1.0	42	mg/kg	F	23
				SW6010B	Arsenic	2.1	21	mg/kg	F	23
				SW6010B	Barium	17.9	4.2	mg/kg	J	14
				SW6010B	Cadmium	1.2	2.1	mg/kg	F	23
				SW6010B	Chromium	10.4	4.2	mg/kg	J	14
				SW6010B	Cobalt	1.5	4.2	mg/kg	F	23
				SW6010B	Copper	5.7	8.4	mg/kg	F	23
				SW6010B	Iron	7600	13	mg/kg	J	14
				SW6010B	Manganese	39.5	4.2	mg/kg	J	14
				SW6010B	Molybdenum	0.43	0.84	mg/kg	F	23
				SW6010B	Nickel	4.5	8.4	mg/kg	F	23
				SW6010B	Vanadium	12.7	4.2	mg/kg	J	14
03-4460-16	099-SC16-SS2.0	099-SC16	08/04/2003	SW6010B	Aluminum	14900	96	mg/kg	J	14
				SW6010B	Antimony	0.68	48	mg/kg	F	23
				SW6010B	Arsenic	2.1	24	mg/kg	F	23
				SW6010B	Barium	10.5	4.8	mg/kg	J	14
				SW6010B	Beryllium	0.32	4.8	mg/kg	F	23

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SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason[a]
				SW6010B	Chromium	21.0	4.8	mg/kg	J	14
				SW6010B	Cobalt	1.6	4.8	mg/kg	F	23
				SW6010B	Copper	4.4	9.6	mg/kg	F	23
				SW6010B	Iron	18800	14	mg/kg	J	14
				SW6010B	Lead	7.2	14	mg/kg	F	23
				SW6010B	Manganese	8.4	4.8	mg/kg	J	14
				SW6010B	Molybdenum	0.43	0.96	mg/kg	F	23
				SW6010B	Nickel	5.2	9.6	mg/kg	F	23
				SW6010B	Vanadium	25.7	4.8	mg/kg	J	14
03-4460-17	099-SC17-SS2.0	099-SC17	08/04/2003	SW6010B	Aluminum	10100	94	mg/kg	J	14
				SW6010B	Antimony	0.57	47	mg/kg	F	23
				SW6010B	Barium	7.9	4.7	mg/kg	J	14
				SW6010B	Beryllium	0.14	4.7	mg/kg	F	23
				SW6010B	Chromium	12.8	4.7	mg/kg	J	14
				SW6010B	Cobalt	0.60	4.7	mg/kg	F	23
				SW6010B	Copper	3.8	9.4	mg/kg	F	23
				SW6010B	Iron	7650	14	mg/kg	J	14
				SW6010B	Lead	4.9	14	mg/kg	F	23
				SW6010B	Manganese	5.2	4.7	mg/kg	J	14
				SW6010B	Nickel	5.3	9.4	mg/kg	F	23
				SW6010B	Vanadium	13.0	4.7	mg/kg	J	14
03-4460-18	099-SC18-SS2.0	099-SC18	08/04/2003	SW6010B	Aluminum	6350	91	mg/kg	J	14
				SW6010B	Antimony	0.64	46	mg/kg	F	23
				SW6010B	Arsenic	3.4	23	mg/kg	F	23
				SW6010B	Barium	7.2	4.6	mg/kg	J	14
				SW6010B	Beryllium	0.17	4.6	mg/kg	F	23
				SW6010B	Chromium	9.4	4.6	mg/kg	J	14
				SW6010B	Cobalt	0.94	4.6	mg/kg	F	23
				SW6010B	Copper	1.7	9.1	mg/kg	F	23
				SW6010B	Iron	9250	14	mg/kg	J	14
				SW6010B	Lead	7.0	14	mg/kg	F	23
				SW6010B	Manganese	6.8	4.6	mg/kg	J	14
				SW6010B	Molybdenum	0.37	0.91	mg/kg	F	23
				SW6010B	Nickel	4.2	9.1	mg/kg	F	23
				SW6010B	Vanadium	23.0	4.6	mg/kg	J	14
03-4460-19	099-SC89-SS1.0	099-SC11	08/04/2003	SW6010B	Aluminum	4420	92	mg/kg	J	14
				SW6010B	Antimony	0.97	46	mg/kg	F	23
				SW6010B	Barium	22.7	4.6	mg/kg	J	14
				SW6010B	Beryllium	0.056	4.6	mg/kg	F	23
				SW6010B	Cadmium	0.27	2.3	mg/kg	F	23
				SW6010B	Chromium	9.7	4.6	mg/kg	J	14
				SW6010B	Cobalt	0.54	4.6	mg/kg	F	23
				SW6010B	Copper	7.7	9.2	mg/kg	F	23
				SW6010B	Iron	5820	14	mg/kg	J	14
				SW6010B	Lead	8.3	14	mg/kg	F	23

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SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason[a]
				SW6010B	Manganese	10.2	4.6	mg/kg	J	14
				SW6010B	Nickel	3.7	9.2	mg/kg	F	23
				SW6010B	Vanadium	9.7	4.6	mg/kg	J	14
03-4460-2	099-SC02-SS1.0	099-SC02	08/04/2003	SW6010B	Aluminum	1440	82	mg/kg	J	14
				SW6010B	Arsenic	0.99	20	mg/kg	F	23
				SW6010B	Barium	7.0	4.1	mg/kg	J	14
				SW6010B	Boron	2.1	5.1	mg/kg	F	23
				SW6010B	Chromium	3.3	4.1	mg/kg	J	23,14
				SW6010B	Cobalt	0.55	4.1	mg/kg	F	23
				SW6010B	Copper	0.51	8.2	mg/kg	F	23
				SW6010B	Iron	2910	12	mg/kg	J	14
				SW6010B	Lead	2.4	12	mg/kg	F	23
				SW6010B	Manganese	4.0	4.1	mg/kg	J	23,14
				SW6010B	Molybdenum	0.24	0.82	mg/kg	F	23
				SW6010B	Nickel	1.1	8.2	mg/kg	F	23
				SW6010B	Vanadium	8.9	4.1	mg/kg	J	14
03-4460-20	099-SC97-SS1.0	099-SC03	08/04/2003	SW6010B	Aluminum	7030	92	mg/kg	J	14
				SW6010B	Antimony	0.60	46	mg/kg	F	23
				SW6010B	Arsenic	2.5	23	mg/kg	F	23
				SW6010B	Barium	14.1	4.6	mg/kg	J	14
				SW6010B	Beryllium	0.13	4.6	mg/kg	F	23
				SW6010B	Boron	2.8	5.7	mg/kg	F	23
				SW6010B	Cadmium	1.8	2.3	mg/kg	F	23
				SW6010B	Chromium	17.6	4.6	mg/kg	J	14
				SW6010B	Cobalt	1.1	4.6	mg/kg	F	23
				SW6010B	Iron	9000	14	mg/kg	J	14
				SW6010B	Manganese	8.3	4.6	mg/kg	J	14
				SW6010B	Molybdenum	0.61	0.92	mg/kg	F	23
				SW6010B	Nickel	4.5	9.2	mg/kg	F	23
				SW6010B	Vanadium	18.1	4.6	mg/kg	J	14
03-4460-3	099-SC03-SS1.0	099-SC03	08/04/2003	SW6010B	Aluminum	1480	81	mg/kg	J	14
				SW6010B	Antimony	0.67	41	mg/kg	F	23
				SW6010B	Arsenic	1.1	20	mg/kg	F	23
				SW6010B	Barium	5.0	4.1	mg/kg	J	14
				SW6010B	Chromium	3.3	4.1	mg/kg	J	23,14
				SW6010B	Cobalt	2.2	4.1	mg/kg	F	23
				SW6010B	Copper	0.65	8.1	mg/kg	F	23
				SW6010B	Iron	3560	12	mg/kg	J	14
				SW6010B	Lead	2.3	12	mg/kg	F	23
				SW6010B	Manganese	43.5	4.1	mg/kg	J	14
				SW6010B	Molybdenum	0.37	0.81	mg/kg	F	23
				SW6010B	Nickel	1.3	8.1	mg/kg	F	23
				SW6010B	Vanadium	9.9	4.1	mg/kg	J	14
03-4460-4	099-SC04-SS1.0	099-SC04	08/04/2003	SW6010B	Aluminum	8360	89	mg/kg	J	14
				SW6010B	Arsenic	0.71	22	mg/kg	F	23

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SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason[a]
				SW6010B	Barium	8.5	4.5	mg/kg	J	14
				SW6010B	Beryllium	0.092	4.5	mg/kg	F	23
				SW6010B	Boron	2.9	5.6	mg/kg	F	23
				SW6010B	Chromium	17.4	4.5	mg/kg	J	14
				SW6010B	Cobalt	0.81	4.5	mg/kg	F	23
				SW6010B	Iron	8080	13	mg/kg	J	14
				SW6010B	Lead	10.5	13	mg/kg	F	23
				SW6010B	Manganese	6.4	4.5	mg/kg	J	14
				SW6010B	Nickel	3.4	8.9	mg/kg	F	23
				SW6010B	Vanadium	18.7	4.5	mg/kg	J	14
03-4460-5	099-SC05-SS1.0	099-SC05	08/04/2003	SW6010B	Aluminum	10500	93	mg/kg	J	14
				SW6010B	Arsenic	5.9	23	mg/kg	F	23
				SW6010B	Barium	9.8	4.6	mg/kg	J	14
				SW6010B	Beryllium	0.16	4.6	mg/kg	F	23
				SW6010B	Boron	3.1	5.8	mg/kg	F	23
				SW6010B	Cadmium	1.5	2.3	mg/kg	F	23
				SW6010B	Chromium	18.9	4.6	mg/kg	J	14
				SW6010B	Cobalt	1.3	4.6	mg/kg	F	23
				SW6010B	Iron	21900	14	mg/kg	J	14
				SW6010B	Lead	10.6	14	mg/kg	F	23
				SW6010B	Manganese	6.1	4.6	mg/kg	J	14
				SW6010B	Nickel	4.6	9.3	mg/kg	F	23
				SW6010B	Vanadium	33.5	4.6	mg/kg	J	14
03-4460-6	099-SC06-SS1.0	099-SC06	08/04/2003	SW6010B	Aluminum	12800	94	mg/kg	J	14
				SW6010B	Antimony	0.78	47	mg/kg	F	23
				SW6010B	Arsenic	2.1	24	mg/kg	F	23
				SW6010B	Barium	13.2	4.7	mg/kg	J	14
				SW6010B	Beryllium	0.13	4.7	mg/kg	F	23
				SW6010B	Boron	3.5	5.9	mg/kg	F	23
				SW6010B	Cadmium	0.86	2.4	mg/kg	F	23
				SW6010B	Chromium	23.5	4.7	mg/kg	J	14
				SW6010B	Cobalt	1.4	4.7	mg/kg	F	23
				SW6010B	Copper	8.1	9.4	mg/kg	F	23
				SW6010B	Iron	17400	14	mg/kg	J	14
				SW6010B	Manganese	20.7	4.7	mg/kg	J	14
				SW6010B	Molybdenum	0.71	0.94	mg/kg	F	23
				SW6010B	Nickel	5.3	9.4	mg/kg	F	23
				SW6010B	Vanadium	26.8	4.7	mg/kg	J	14
03-4460-7	099-SC07-SS1.0	099-SC07	08/04/2003	SW6010B	Aluminum	4160	89	mg/kg	J	14
				SW6010B	Antimony	1.3	45	mg/kg	F	23
				SW6010B	Arsenic	2.4	22	mg/kg	F	23
				SW6010B	Barium	15.4	4.5	mg/kg	J	14
				SW6010B	Beryllium	0.086	4.5	mg/kg	F	23
				SW6010B	Boron	3.7	5.6	mg/kg	F	23
				SW6010B	Chromium	9.6	4.5	mg/kg	J	14

TABLE I-3

SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason[a]
				SW6010B	Cobalt	1.8	4.5	mg/kg	F	23
				SW6010B	Iron	9100	13	mg/kg	J	14
				SW6010B	Lead	7.2	13	mg/kg	F	23
				SW6010B	Manganese	33.9	4.5	mg/kg	J	14
				SW6010B	Molybdenum	0.81	0.89	mg/kg	F	23
				SW6010B	Nickel	7.0	8.9	mg/kg	F	23
				SW6010B	Vanadium	13.5	4.5	mg/kg	J	14
03-4460-8	099-SC08-SS1.0	099-SC08	08/04/2003	SW6010B	Aluminum	2940	88	mg/kg	J	14
				SW6010B	Antimony	0.69	44	mg/kg	F	23
				SW6010B	Arsenic	1.1	22	mg/kg	F	23
				SW6010B	Barium	9.4	4.4	mg/kg	J	14
				SW6010B	Beryllium	0.12	4.4	mg/kg	F	23
				SW6010B	Cadmium	0.11	2.2	mg/kg	F	23
				SW6010B	Chromium	5.1	4.4	mg/kg	J	14
				SW6010B	Cobalt	1.4	4.4	mg/kg	F	23
				SW6010B	Copper	1.5	8.8	mg/kg	F	23
				SW6010B	Iron	3690	13	mg/kg	J	14
				SW6010B	Lead	9.1	13	mg/kg	F	23
				SW6010B	Manganese	10	4.4	mg/kg	J	14
				SW6010B	Molybdenum	0.28	0.88	mg/kg	F	23
				SW6010B	Nickel	2.3	8.8	mg/kg	F	23
				SW6010B	Vanadium	9.9	4.4	mg/kg	J	14
03-4460-9	099-SC09-SS1.0	099-SC09	08/04/2003	SW6010B	Aluminum	3440	85	mg/kg	J	14
				SW6010B	Antimony	0.77	43	mg/kg	F	23
				SW6010B	Arsenic	0.70	21	mg/kg	F	23
				SW6010B	Barium	13.1	4.3	mg/kg	J	14
				SW6010B	Beryllium	0.10	4.3	mg/kg	F	23
				SW6010B	Chromium	5.6	4.3	mg/kg	J	14
				SW6010B	Cobalt	1.1	4.3	mg/kg	F	23
				SW6010B	Copper	1.7	8.5	mg/kg	F	23
				SW6010B	Iron	4340	13	mg/kg	J	14
				SW6010B	Lead	4.8	13	mg/kg	F	23
				SW6010B	Manganese	28.9	4.3	mg/kg	J	14
				SW6010B	Molybdenum	0.22	0.85	mg/kg	F	23
				SW6010B	Nickel	3.7	8.5	mg/kg	F	23
				SW6010B	Vanadium	10.4	4.3	mg/kg	J	14
03-4551-1	099-SC19-SS3.0	099-SC19	08/06/2003	SW6010B	Antimony	1.6	46	mg/kg	F	23
				SW6010B	Arsenic	2.4	23	mg/kg	F	23
				SW6010B	Beryllium	0.068	4.6	mg/kg	F	23
				SW6010B	Boron	3.4	5.7	mg/kg	F	23
				SW6010B	Cadmium	0.21	2.3	mg/kg	F	23
				SW6010B	Cobalt	0.78	4.6	mg/kg	F	23
				SW6010B	Copper	2.8	9.2	mg/kg	F	23
				SW6010B	Lead	5.3	14	mg/kg	F	23
				SW6010B	Molybdenum	0.46	0.92	mg/kg	F	23

TABLE I-3

SUMMARY OF QUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Laboratory ID	Field Sample ID	Sample Location	Logdate	Method	Parameter	Result	RL	Units	Qualifier	Reason*
				SW6010B	Nickel	2.2	9.2	mg/kg	F	23
				SW6010B	Selenium	0.95	14	mg/kg	F	23
				SW6010B	Zinc	4.5	9.2	mg/kg	F	23
03-4551-2	099-SC20-SS3.0	099-SC20	08/06/2003	SW6010B	Antimony	1.4	49	mg/kg	F	23
				SW6010B	Arsenic	2.0	24	mg/kg	F	23
				SW6010B	Beryllium	0.089	4.9	mg/kg	F	23
				SW6010B	Boron	2.9	6.1	mg/kg	F	23
				SW6010B	Cadmium	0.47	2.4	mg/kg	F	23
				SW6010B	Cobalt	0.70	4.9	mg/kg	F	23
				SW6010B	Copper	4.8	9.8	mg/kg	F	23
				SW6010B	Lead	10.1	15	mg/kg	F	23
				SW6010B	Molybdenum	0.32	0.98	mg/kg	F	23
				SW6010B	Nickel	1.6	9.8	mg/kg	F	23
				SW6010B	Selenium	0.76	15	mg/kg	F	23
04-1885-01	055-TW01-GW02	055-TW01	3/1/2004	PAH-SIM	Benzo(g,h,i)perylene	< 0.48	0.48	UG/L	J	5
				PAH-SIM	Dibenz(a,h)anthracene	< 0.48	0.48	UG/L	J	5
				PAH-SIM	Indeno(1,2,3-c,d)pyrene	< 0.48	0.48	UG/L	J	5
				SW8015B	Diesel Range	0.22	0.96	MG/L	F	23
				SW8015B	Motor oils	0.14	0.96	MG/L	F	23
				SW8260B	2,2-dichloropropane	< 1	1	UG/L	R	10
				SW8260B	Bromomethane	< 3	3	UG/L	J	5
				SW8260B	Trichlorofluoromethane	< 1	1	UG/L	J	5

F - The detected concentration is less than the reporting limit and greater than method detection limit.
ID - identification
J - The result is qualified as estimated.
< - less than
M - The result(s) of associated quality control indicates possible matrix interference.
µg/kg - micrograms per kilogram
µg/L - micrograms per liter
mg/kg - milligrams per kilogram
mg/L - milligrams per liter
PAH - polycyclic aromatic hydrocarbons
QC - quality control
R - The result is rejected due to quality control non-conformance.
RL - reporting limit
SIM - selected ion monitoring
TB - trip blank

***Reason for Qualification (as specified by Laboratory Data Consultants, Inc.)**
5 - Instrument calibration was outside control limit
8 - Matrix spike
9 - Matrix spike duplicate
10 - Laboratory control sample recovery was outside control limit
13 - Surrogate recovery was outside control limit
14 - Field duplicate relative percent difference was outside control limit
19 - Internal standards
23 - The result is greater than the method detection limit but less than the practical quantitation limit

TABLE I-4

REQUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
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Field Sample Identification	Laboratory Sample Identification	Parameter	Result	RL	Units	Orginal Verification Qualifier	Revised Qualifier	Rationale Summary
133-MW02-GW01	03-1118-1	Hexachlorocyclopentadiene	< 9.6	9.6	µg/L	R	J	%R of associated CCV exceeded the CL (high bias) but result in sample was ND.
		4-Bromophenyl phenyl ether	< 9.6	9.6	µg/L	R	J	
133-MW03-GW01	03-1118-2	Hexachlorocyclopentadiene	< 9.6	9.6	µg/L	R	J	
		4-Bromophenyl phenyl ether	< 9.6	9.6	µg/L	R	J	
133-MW05-GW01	03-1161-1	Hexachlorocyclopentadiene	< 9.6	9.6	µg/L	R	J	
		4-Bromophenyl phenyl ether	< 9.6	9.6	µg/L	R	J	
133-MW04-GW01	03-1165-1	Hexachlorocyclopentadiene	< 9.6	9.6	µg/L	R	J	
		4-Bromophenyl phenyl ether	< 9.6	9.6	µg/L	R	J	
020-SB05-SS0.0RE	03-1359-5RE	4-Bromophenyl phenyl ether	< 840	840	µg/kg	R	J	
020-SB06-SS0.0	03-1359-9	4-Bromophenyl phenyl ether	< 830	830	µg/kg	R	J	
020-SB07-SS0.0	03-1396-1	n-Nitrosodimethylamine	< 1500	1500	µg/kg	R	J	
		4-Bromophenyl phenyl ether	< 1500	1500	µg/kg	R	J	
020-SB07-SS2.5	03-1396-2	n-Nitrosodimethylamine	< 740	740	µg/kg	R	J	
		4-Bromophenyl phenyl ether	< 740	740	µg/kg	R	J	
020-SC01-SS2.0	03-1396-16	4-Bromophenyl phenyl ether	<3100	3100	µg/kg	R	J	
		Benzo(g,h,i)perylene	<3100	3100	µg/kg	R	J	
020-SC02-SS2.0	03-1396-17	4-Bromophenyl phenyl ether	<3000	3000	µg/kg	R	J	
		Benzo(g,h,i)perylene	<3000	3000	µg/kg	R	J	
055-TW01-SS25.0	03-1434-2	4-Methyl-2-pentanone (MIBK)	<21	21	µg/kg	R	J	
		2-Hexanone	<10	10	µg/kg	R	J	
055-TW01-SS30.0	03-1434-3	4-Methyl-2-pentanone (MIBK)	<19	19	µg/kg	R	J	
		2-Hexanone	<9.7	10	µg/kg	R	J	
055-TW01-SS35.0	03-1434-4	4-Methyl-2-pentanone (MIBK)	<21	21	µg/kg	R	J	
		2-Hexanone	<10	10	µg/kg	R	J	
055-TW01-SS40.0	03-1434-5	4-Methyl-2-pentanone (MIBK)	<20	20	µg/kg	R	J	
		2-Hexanone	<10	10	µg/kg	R	J	
055-TW01-SS45.0	03-1434-6	4-Methyl-2-pentanone (MIBK)	<21	21	µg/kg	R	J	
		2-Hexanone	<11	11	µg/kg	R	J	
055-TW01-SS50.0	03-1434-7	4-Methyl-2-pentanone (MIBK)	<22	22	µg/kg	R	J	
		2-Hexanone	<11	11	µg/kg	R	J	
055-TW01-SS60.0	03-1434-8	4-Methyl-2-pentanone (MIBK)	<21	21	µg/kg	R	J	
		2-Hexanone	<11	11	µg/kg	R	J	
055-TW01-SS70.0	03-1434-9	4-Methyl-2-pentanone (MIBK)	<23	23	µg/kg	R	J	
		2-Hexanone	<11	11	µg/kg	R	J	
055-TW01-SS80.0	03-1434-10	4-Methyl-2-pentanone (MIBK)	<22	22	µg/kg	R	J	
		2-Hexanone	<11	11	µg/kg	R	J	
055-TW99-SS25.0	03-1434-12	4-Methyl-2-pentanone (MIBK)	<20	20	µg/kg	R	J	
		2-Hexanone	<9.8	9.8	µg/kg	R	J	
055-TW99-SS35.0	03-1434-13	4-Methyl-2-pentanone (MIBK)	<21	21	µg/kg	R	J	
		2-Hexanone	<11	11	µg/kg	R	J	
59ER-031203-01	03-2225-1	Chloromethane	<1	1	µg/L	R	J	
59TB-031303-01	03-2225-2	Chloromethane	<1	1	µg/L	R	J	

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REQUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
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Field Sample Identification	Laboratory Sample Identification	Parameter	Result	RL	Units	Orginal Verification Qualifier	Revised Qualifier	Rationale Summary
59TB-031303-02	03-2225-3	Chloromethane	<1	1	µg/L	R	J	%R of associated CCV exceeded the CL (high bias) but result in sample was ND.
59TB-031403-01	03-2225-4	Chloromethane	<1	1	µg/L	R	J	
133-MW01-GW02	03-2225-5	Chloromethane	<1	1	µg/L	R	J	
133-MW04-GW02	03-2225-6	Chloromethane	<10	10	µg/L	R	J	
133-MW05-GW02	03-2225-7	Chloromethane	<10	10	µg/L	R	J	
020-SB12-SS0.0	03-2855-1	4-Nitroaniline	<7500	7500	µg/kg	R	J	
		Benzo(g,h,i)perylene	<1600	1600	µg/kg	R	J	
020-SB13-SS0.0	03-2855-3	4-Nitroaniline	<3600	3600	µg/kg	R	J	
		Benzo(g,h,i)perylene	<770	770	µg/kg	R	J	
020-SB14-SS0.0	03-2855-5	4-Nitroaniline	<7200	7200	µg/kg	R	J	
		Benzo(g,h,i)perylene	<1500	1500	µg/kg	R	J	
020-SB15-SS0.5	03-4269-1	Benzo(k)fluoranthene	< 790	790	µg/kg	R	J	
055-TW01-SS50.0	03-1434-7	Motor Oils	<11	11	mg/kg	R	J	Field duplicates used for qualitative assessment of sampling conditions not analytical precision.
055-TW01-SS60.0	03-1434-8	Motor Oils	<11	11	mg/kg	R	J	
055-TW01-SS70.0	03-1434-9	Motor Oils	<12	12	mg/kg	R	J	
055-TW01-SS80.0	03-1434-10	Motor Oils	<12	12	mg/kg	R	J	
055-TW99-SS80.0	03-1434-14	Motor Oils	<12	12	mg/kg	R	J	
055-TW01-SS45.0	03-1434-6	bis(2-Ethylhexyl)phthalate	103	810	µg/kg	R	J	Soil was alkaline and acidic surrogate %R was below LCL, but this result not likely to be biased because the compound is not acidic.
020-SB12-SS0.0	03-2855-1	2,4,5-Trichlorophenol	< 7500	7500	µg/kg	R	J	Surrogate %R was 1% below LCL, but action levels of compounds are over an order of magnitude greater than RLs, and slight low bias would not cause fals negeative data to be reported.
		2,4,6-Trichlorophenol	< 680	680	µg/kg	R	J	
		2,4-Dichlorophenol	< 680	680	µg/kg	R	J	
		2,4-Dimethylphenol	< 680	680	µg/kg	R	J	
		2,4-Dinitrophenol	< 7500	7500	µg/kg	R	J	
		2-Chlorophenol	< 680	680	µg/kg	R	J	
		2-Methylphenol (o-cresol)	< 680	680	µg/kg	R	J	
		2-Nitrophenol	< 680	680	µg/kg	R	J	
		3/4-Methylphenol (m,p-cresol)	< 4500	4500	µg/kg	R	J	
		4,6-Dinitro-2-methylphenol	< 7500	7500	µg/kg	R	J	
		4-Chloro-3-methylphenol	< 2900	2900	µg/kg	R	J	
		4-Nitrophenol	< 3600	3600	µg/kg	R	J	
		Phenol	< 680	680	µg/kg	R	J	
020-SB07-SS0.0	03-1396-1	Benzo(a)pyrene	< 1500	1500	µg/kg	R	M	Internal standard area counts were low in analysis and re-analysis, which appears to be matrix related and not due to analytical performance.
		Benzo(b)fluoranthene	< 1500	1500	µg/kg	R	M	
		Benzo(g,h,i)perylene	< 1500	1500	µg/kg	R	M	
		Benzo(k)fluoranthene	< 1500	1500	µg/kg	R	M	
		Dibenz(a,h)anthracene	< 1500	1500	µg/kg	R	M	
		Di-n-octylphthalate	< 1500	1500	µg/kg	R	M	

TABLE I-4

REQUALIFIED DATA
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
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Field Sample Identification	Laboratory Sample Identification	Parameter	Result	RL	Units	Orginal Verification Qualifier	Revised Qualifier	Rationale Summary
		Indeno(1,2,3-c,d)pyrene	< 1500	1500	µg/kg	R	M	Internal standard area counts were low in analysis and re-analysis, which appears to be matrix related and not due to analytical performance.
020-SB07-SS2.5	03-1396-2	Benzo(a)pyrene	< 740	740	µg/kg	R	M	
		Benzo(b)fluoranthene	< 740	740	µg/kg	R	M	
		Benzo(g,h,i)perylene	< 740	740	µg/kg	R	M	
		Benzo(k)fluoranthene	< 740	740	µg/kg	R	M	
		Dibenz(a,h)anthracene	< 740	740	µg/kg	R	M	
		Di-n-octylphthalate	< 740	740	µg/kg	R	M	
		Indeno(1,2,3-c,d)pyrene	< 740	740	µg/kg	R	M	
020-SC01-SS2.0	03-1396-16	Benzo(a)pyrene	< 3100	3100	µg/kg	R	M	
		Benzo(b)fluoranthene	< 3100	3100	µg/kg	R	M	
		Benzo(g,h,i)perylene	< 3100	3100	µg/kg	R	M	
		Benzo(k)fluoranthene	< 3100	3100	µg/kg	R	M	
		Dibenz(a,h)anthracene	< 3100	3100	µg/kg	R	M	
		Di-n-octylphthalate	< 3100	3100	µg/kg	R	M	
		Indeno(1,2,3-c,d)pyrene	< 3100	3100	µg/kg	R	M	
020-SC02-SS2.0	03-1396-17	Benzo(a)pyrene	< 3000	3000	µg/kg	R	M	
		Benzo(b)fluoranthene	< 3000	3000	µg/kg	R	M	
		Benzo(g,h,i)perylene	< 3000	3000	µg/kg	R	M	
		Benzo(k)fluoranthene	< 3000	3000	µg/kg	R	M	
		Dibenz(a,h)anthracene	< 3000	3000	µg/kg	R	M	
		Di-n-octylphthalate	< 3000	3000	µg/kg	R	M	
		Hexachlorocyclopentadiene	< 3000	3000	µg/kg	R	M	
		Indeno(1,2,3-c,d)pyrene	< 3000	3000	µg/kg	R	M	
055-TW01-SS30.0	03-1434-3	Benzo(a)pyrene	< 790	790	µg/kg	R	M	
		Benzo(b)fluoranthene	< 790	790	µg/kg	R	M	
		Benzo(g,h,i)perylene	< 790	790	µg/kg	R	M	
		Benzo(k)fluoranthene	< 790	790	µg/kg	R	M	
		Benzoic acid	< 5600	5600	µg/kg	R	M	
		Dibenz(a,h)anthracene	< 790	790	µg/kg	R	M	
		Di-n-octylphthalate	< 790	790	µg/kg	R	M	
		Indeno(1,2,3-c,d)pyrene	< 790	790	µg/kg	R	M	
		Pentachlorophenol	< 3700	3700	µg/kg	R	M	
099-SC01-SS1.0	03-4460-1	Aluminum	2010	82	µg/kg	J	J ("M" removed) [a]	MS/MSD %Rs were outside CLs, but concentration of analyte was an order of magnitude greater in the parent sample than the spike concentration.
		Iron	4000	12	µg/kg	J	J ("M" removed) [a]	
099-SC02-SS1.0	03-4460-2	Aluminum	1440	82	µg/kg	J	J ("M" removed) [a]	
		Iron	2910	12	µg/kg	J	J ("M" removed) [a]	
099-SC03-SS1.0	03-4460-3	Aluminum	1480	81	µg/kg	J	J ("M" removed) [a]	
		Iron	3560	12	µg/kg	J	J ("M" removed) [a]	
099-SC04-SS1.0	03-4460-4	Aluminum	8360	89	µg/kg	J	J ("M" removed) [a]	
		Iron	8080	13	µg/kg	J	J ("M" removed) [a]	
099-SC05-SS1.0	03-4460-5	Aluminum	10500	93	µg/kg	J	J ("M" removed) [a]	
		Iron	21900	14	µg/kg	J	J ("M" removed) [a]	

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REQUALIFIED DATA
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Field Sample Identification	Laboratory Sample Identification	Parameter	Result	RL	Units	Orginal Verification Qualifier	Revised Qualifier	Rationale Summary
099-SC06-SS1.0	03-4460-6	Aluminum	12800	94	µg/kg	J	J ("M" removed)[a]	MS/MSD %Rs were outside CLs, but concentration of analyte was an order of magnitude greater in the parent sample than the spike concentration.
		Iron	17400	14	µg/kg	J	J ("M" removed)[a]	
099-SC07-SS1.0	03-4460-7	Aluminum	4160	89	µg/kg	J	J ("M" removed)[a]	
		Iron	9100	13	µg/kg	J	J ("M" removed)[a]	
099-SC08-SS1.0	03-4460-8	Aluminum	2940	88	µg/kg	J	J ("M" removed)[a]	
		Iron	3690	13	µg/kg	J	J ("M" removed)[a]	
099-SC09-SS1.0	03-4460-9	Aluminum	3440	85	µg/kg	J	J ("M" removed)[a]	
		Iron	4340	13	µg/kg	J	J ("M" removed)[a]	
099-SC10-SS1.0	03-4460-10	Aluminum	7190	89	µg/kg	J	J ("M" removed)[a]	
		Iron	10700	13	µg/kg	J	J ("M" removed)[a]	
099-SC11-SS1.0	03-4460-11	Aluminum	10100	95	µg/kg	J	J ("M" removed)[a]	
		Iron	8900	14	µg/kg	J	J ("M" removed)[a]	
099-SC12-SS1.0	03-4460-12	Aluminum	6890	94	µg/kg	J	J ("M" removed)[a]	
		Iron	18200	14	µg/kg	J	J ("M" removed)[a]	
099-SC13-SS1.0	03-4460-13	Aluminum	3520	87	µg/kg	J	J ("M" removed)[a]	
		Iron	4650	13	µg/kg	J	J ("M" removed)[a]	
099-SC14-SS1.0	03-4460-14	Aluminum	3870	84	µg/kg	J	J ("M" removed)[a]	
		Iron	7070	13	µg/kg	J	J ("M" removed)[a]	
099-SC15-SS1.0	03-4460-15	Aluminum	2910	84	µg/kg	J	J ("M" removed)[a]	
		Iron	7600	13	µg/kg	J	J ("M" removed)[a]	
099-SC16-SS2.0	03-4460-16	Aluminum	14900	96	µg/kg	J	J ("M" removed)[a]	
		Iron	18800	14	µg/kg	J	J ("M" removed)[a]	
099-SC17-SS2.0	03-4460-17	Aluminum	10100	94	µg/kg	J	J ("M" removed)[a]	
		Iron	7650	14	µg/kg	J	J ("M" removed)[a]	
099-SC18-SS2.0	03-4460-18	Aluminum	6350	91	µg/kg	J	J ("M" removed)[a]	
		Iron	9250	14	µg/kg	J	J ("M" removed)[a]	
099-SC89-SS1.0	03-4460-19	Aluminum	4420	92	µg/kg	J	J ("M" removed)[a]	
		Iron	5820	14	µg/kg	J	J ("M" removed)[a]	
099-SC97-SS1.0	03-4460-20	Aluminum	7030	92	µg/kg	J	J ("M" removed)[a]	
		Iron	9000	14	µg/kg	J	J ("M" removed)[a]	

[a] The "J" flag was retained because these samples had already been qualified for field duplicate precision, see Section I.5.1 of the text.

µg/kg - Micrograms per kilogram
µg/L - Micrograms per liter
% - percent
%R - percent recovery
CCV - continuing calibration verification standard
CL - control limit
LCL - lower control limit level calibration standard
J - Result is qualified as estimated.
M - A matrix effect is present.
mg/kg - Milligrams per kilogram (ppm)
MS/MSD - matrix spike sample/matrix spike duplicate sample
ND - non detect
R - Result is rejected.
RE - re-extracted sample
RL - Reporting limit

TABLE I-5

FIELD DUPLICATE RPD SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
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Field Sample Identification	Laboratory Sample Identification	Analytical Method	Compound	Primary Sample Concentration	Flag	Field Duplicate Concentration	Flag	Units	RPD	Max RPD
020-SB04-SS5.0	03-1359-3	SW8015B	Diesel Range	3.5	F	7.7	F	mg/kg	NA	50
			Motor oils			- - No parameter detected - -				
020-SB06-SS10.0	03-1359-12	SW8015B	Diesel Range	2.9	F	6.9	F	mg/kg	NA	50
			Motor oils			- - No parameter detected - -				
020-SB14-SS2.0	03-2855-6	SW8015B	Diesel Range	< 11		2.2	F	mg/kg	NA	50
			Motor oils	8.5	F	8.9	F	mg/kg	NA	50
055-TW01-GW01	03-1434-1	SW8270C-SIM	PAHs			- - No parameter detected - -				
		SW8015B	Diesel Range	0.14	F	0.052	F	mg/L	NA	50
			Motor oils	0.28	F	0.055	F	mg/L	NA	50
		SW8260B	VOCs			- - No parameter detected - -				
055-TW01-GW01	03-1434-1	SW8270C	bis(2-Ethylhexyl)phthalate	0.62	F	0.8	F	µg/L	NA	20
055-TW01-SS25.0	03-1434-2	SW8270C-SIM	Benzo(a)anthracene	< 27		16.7	F	µg/kg	NA	30
			Benzo(a)pyrene	< 27		13.5	F	µg/kg	NA	30
			Benzo(b)fluoranthene	< 27		16.4	F	µg/kg	NA	30
			Benzo(k)fluoranthene	< 27		15.3	F	µg/kg	NA	30
			Chrysene	< 27		17.1	F	µg/kg	NA	30
			Fluoranthene	< 27		11.6	F	µg/kg	NA	30
			Naphthalene	24	F	< 27		µg/kg	NA	30
			Pyrene	< 27		14.6	F	µg/kg	NA	30
055-TW01-SS25.0	03-1434-2	SW8015B	Diesel Range	7.1	F	3.1	F	mg/kg	NA	50
			Motor oils	41.8	J	27	J	mg/kg	43	50
		SW8260B	Methylene chloride	4.4	F	1.7	F	µg/kg	NA	30
055-TW01-SS25.0	03-1434-2RE	SW8270C	SVOCs			- - No parameter detected - -				
055-TW01-SS35.0	03-1434-4	SW8270C-SIM	PAHs			- - No parameter detected - -				
		SW8015B	Diesel Range	6.2	F	3.4	F	mg/kg	NA	50
			Motor oils	33.3	J	19.4	J	mg/kg	53[a]	50
		SW8260B	Methylene chloride	2.9	F	4.1	F	µg/kg	NA	30
		SW8270C	SVOCs			- - No parameter detected - -				
055-TW01-SS80.0	03-1434-10	SW8015B	Diesel Range			- - No parameter detected - -				
			Motor oils			- - No parameter detected - -				
133-MW02-GW02	03-2192-3	SW8015B	Diesel Range	0.13	F	0.4	F	mg/L	NA	50
			Gasoline Range	0.027	F	0.016	F	mg/L	NA	50
			Motor oils	0.22	F	0.44	F	mg/L	NA	50
133-MW02-GW02	03-2192-3	SW8260B	2-Hexanone	7.1	F	< 10		µg/L	NA	20
			4-Methyl-2-pentanone (MIBK)	0.38	F	< 10		µg/L	NA	20
			Naphthalene	0.33	F	< 1		µg/L	NA	20

TABLE I-5

FIELD DUPLICATE RPD SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 2 of 2)

Field Sample Identification	Laboratory Sample Identification	Analytical Method	Compound	Primary Sample Concentration	Flag	Field Duplicate Concentration	Flag	Units	RPD	Max RPD
133-MW02-GW02	03-2192-3	SW8270C	bis(2-Ethylhexyl)phthalate	1	F	1.1	F	µg/L	NA	20
099-SC03-SS1.0	03-4460-20	SW6010B	Aluminum	1480	J	7,030.	J	mg/kg	130	30
			Antimony	0.67	F	0.6	F	mg/kg	NA	30
			Arsenic	1.1	F	2.5	F	mg/kg	NA	30
			Barium	5.0	J	14.1	J	mg/kg	95	30
			Chromium	3.3	J	17.6	J	mg/kg	137	30
			Cobalt	2.2	F	1.1	F	mg/kg	NA	30
			Copper	0.65	F	9.6		mg/kg	NA	30
			Iron	3560	J	9000	J	mg/kg	87	30
			Lead	2.3	F	26		mg/kg	NA	30
			Manganese	43.5	J	8.3	J	mg/kg	136	30
			Molybdenum	0.37	F	0.61	F	mg/kg	NA	30
			Nickel	1.3	F	4.5	F	mg/kg	NA	30
			Vanadium	9.9	J	18.1	J	mg/kg	59	30
			Zinc	2.3	M	130	M	mg/kg	NA	30
099-SC11-SS1.0	03-4460-19	SW6010B	Aluminum	10100	J	4420	J	mg/kg	78	30
			Antimony	0.67	F	0.97	F	mg/kg	NA	30
			Barium	10.6	J	22.7	J	mg/kg	73	30
			Beryllium	0.1	F	0.056	F	mg/kg	NA	30
			Cadmium	0.14	F	0.27	F	mg/kg	NA	30
			Chromium	14.8	J	9.7	J	mg/kg	42	30
			Cobalt	1.9	F	0.54	F	mg/kg	NA	30
			Copper	6.0	F	7.7	F	mg/kg	NA	30
			Iron	8900	J	5820	J	mg/kg	42	30
			Lead	5.5	F	8.3	F	mg/kg	NA	30
			Manganese	20	J	10	J	mg/kg	66	30
			Nickel	6.	F	3.7	F	mg/kg	NA	30
			Vanadium	21	J	9.7	J	mg/kg	72	30
			Zinc	136	M	121	M	mg/kg	12	30

[a] RPD was outside the control limit.

F - The result is estimated because the concentration is below the reporting limit.
J - The result is estimated.
< - less than
µg/kg - micrograms per kilogram
µg/L - micrograms per liter
mg/kg - milligrams per kilogram
mg/L - milligrams per liter

NA - not applicable, RPD was not calculated if compound was not detected above the reporting limit
PAHs - polycyclic aromatic hydrocarbons
RE - sample was re-analyzed
RPD - relative percent difference
SIM - selected ion monitoring
SVOCs - semivolatile organic compounds
VOCs - volatile organic compounds

TABLE I-6

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
020-SB06-SS5.0	03-1359-11	Soil	SW8015B	Diesel Range	102	105	51-153	Yes	2.9	50	Yes
020-SB07-SS2.5	03-1396-2	Soil	SW8270C	1,2,4-Trichlorobenzene	73	71	44-125	Yes	2.8	30	Yes
				1,2-Dichlorobenzene	64	64	45-125	Yes	0.0	30	Yes
				1,3-Dichlorobenzene	65	65	39-125	Yes	0.0	30	Yes
				1,4-Dichlorobenzene	63	63	35-125	Yes	0.0	30	Yes
				2,4,5-Trichlorophenol	70	69	49-125	Yes	1.4	30	Yes
				2,4,6-Trichlorophenol	70	69	43-125	Yes	1.4	30	Yes
				2,4-Dichlorophenol	75	74	45-125	Yes	1.3	30	Yes
				2,4-Dimethylphenol	74	74	32-125	Yes	0.0	30	Yes
				2,4-Dinitrophenol	9	5	25-132	No	57	30	No
				2,4-Dinitrotoluene	63	56	48-125	Yes	12	30	Yes
				2,6-Dinitrotoluene	66	60	48-125	Yes	9.5	30	Yes
				2-Chloronaphthalene	70	69	45-125	Yes	1.4	30	Yes
				2-Chlorophenol	66	68	44-125	Yes	3.0	30	Yes
				2-Methylnaphthalene	80	80	47-125	Yes	0.0	30	Yes
				2-Methylphenol (o-cresol)	68	72	40-125	Yes	5.7	30	Yes
				2-Nitroaniline	71	70	44-125	Yes	1.4	30	Yes
				2-Nitrophenol	66	59	42-125	Yes	11	30	Yes
				3,3'-Dichlorobenzidine	4	5	25-128	No	22	30	Yes
				3-Nitroaniline	51	48	27-125	Yes	6.1	30	Yes
				3/4-Methylphenol (m,p-cresol)	61	65	41-125	Yes	6.3	30	Yes
				4,6-Dinitro-2-methylphenol	13	9	29-137	No	36	30	No
				4-Bromophenyl phenyl ether	85	84	46-125	Yes	1.2	30	Yes
				4-Chloro-3-methylphenol	70	72	46-125	Yes	2.8	30	Yes
				4-Chloroaniline	42	44	25-125	Yes	4.7	30	Yes
				4-Chlorophenyl phenyl ether	78	76	47-125	Yes	2.6	30	Yes
				4-Nitroaniline	58	57	34-125	Yes	1.7	30	Yes
				4-Nitrophenol	47	52	25-138	Yes	10	30	Yes
				Acenaphthene	75	71	46-125	Yes	5.5	30	Yes
				Acenaphthylene	70	68	44-125	Yes	2.9	30	Yes
				Anthracene	72	71	53-125	Yes	1.4	30	Yes
				Benzo(a)anthracene	58	56	52-125	Yes	3.5	30	Yes
				Benzo(a)pyrene	76	75	50-125	Yes	1.3	30	Yes
				Benzo(b)fluoranthene	73	73	45-125	Yes	0.0	30	Yes
				Benzo(g,h,i)perylene	41	43	38-126	Yes	4.8	30	Yes
				Benzo(k)fluoranthene	116	115	45-125	Yes	0.9	30	Yes
				Benzoic acid	45	44	25-125	Yes	2.2	30	Yes

TABLE I-6

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
				Benzyl alcohol	31	42	25-125	Yes	30	30	No
				Benzyl butyl phthalate	100	103	49-125	Yes	3.0	30	Yes
				bis(2-Chloroethoxy)methane	71	72	43-125	Yes	1.4	30	Yes
				bis(2-Chloroethyl)ether	47	48	38-125	Yes	2.1	30	Yes
				bis(2-Chloroisopropyl)ether	64	66	25-125	Yes	3.1	30	Yes
				bis(2-Ethylhexyl)phthalate	89	90	47-127	Yes	1.1	30	Yes
				Chrysene	66	64	53-125	Yes	3.1	30	Yes
				Di-n-butyl phthalate	78	76	56-125	Yes	2.6	30	Yes
				Di-n-octylphthalate	193	188	41-132	No	2.6	30	Yes
				Dibenz(a,h)anthracene	41	44	41-125	Yes	7.1	30	Yes
				Dibenzofuran	78	76	51-125	Yes	2.6	30	Yes
				Diethyl phthalate	80	79	50-125	Yes	1.3	30	Yes
				Dimethyl phthalate	74	74	49-125	Yes	0.0	30	Yes
				Fluoranthene	68	64	54-125	Yes	6.1	30	Yes
				Fluorene	76	75	49-125	Yes	1.3	30	Yes
				Hexachlorobenzene	76	76	47-125	Yes	0.0	30	Yes
				Hexachlorobutadiene	77	77	40-125	Yes	0.0	30	Yes
				Hexachlorocyclopentadiene	18	18	31-135	No	0.0	30	Yes
				Hexachloroethane	53	50	34-125	Yes	5.8	30	Yes
				Indeno(1,2,3-c,d)pyrene	41	44	38-125	Yes	7.1	30	Yes
				Isophorone	62	63	43-125	Yes	1.6	30	Yes
				n-Nitrosodi-n-propylamine	54	55	40-125	Yes	1.8	30	Yes
				n-Nitrosodimethylamine	45	46	25-135	Yes	2.2	30	Yes
				n-Nitrosodiphenylamine	81	80	49-125	Yes	1.2	30	Yes
				Naphthalene	69	68	40-125	Yes	1.5	30	Yes
				Nitrobenzene	58	58	41-125	Yes	0.0	30	Yes
				Pentachlorophenol	65	62	25-125	Yes	4.7	30	Yes
				Phenanthrene	74	74	50-125	Yes	0.0	30	Yes
				Phenol	57	61	39-125	Yes	6.8	30	Yes
				Pyrene	101	106	46-125	Yes	4.8	30	Yes
020-SB07-SS60.0	03-1396-7	Soil	SW8015B	Diesel Range	80	79	51-153	Yes	1.3	50	Yes
020-SB09-SS2.5	03-1359-18	Soil	SW8015B	Diesel Range	90	95	51-153	Yes	5.4	50	Yes
020-SB14-SS2.0	03-2855-6	Soil	SW8015B	Diesel Range	76	75	51-153	Yes	1.3	50	Yes
055-TW01-SS30.0	03-1434-3	Soil	PAH-SIM	2-Methylnaphthalene	78	79	40-140	Yes	1.3	30	Yes
				Acenaphthene	75	77	40-140	Yes	2.6	30	Yes
				Acenaphthylene	74	75	40-140	Yes	1.3	30	Yes
				Anthracene	78	78	40-140	Yes	0.0	30	Yes

TABLE I-6

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
				Benzo(a)anthracene	57	58	40-140	Yes	1.7	30	Yes
				Benzo(a)pyrene	86	87	40-140	Yes	1.2	30	Yes
				Benzo(b)fluoranthene	97	97	40-140	Yes	0.0	30	Yes
				Benzo(g,h,i)perylene	51	50	40-140	Yes	2.0	30	Yes
				Benzo(k)fluoranthene	107	110	40-140	Yes	2.8	30	Yes
				Chrysene	57	58	40-140	Yes	1.7	30	Yes
				Dibenz(a,h)anthracene	60	60	40-140	Yes	0.0	30	Yes
				Fluoranthene	79	81	40-140	Yes	2.5	30	Yes
				Fluorene	80	81	40-140	Yes	1.2	30	Yes
				Indeno(1,2,3-c,d)pyrene	57	56	40-140	Yes	1.8	30	Yes
				Naphthalene	77	79	40-140	Yes	2.6	30	Yes
				Phenanthrene	77	77	40-140	Yes	0.0	30	Yes
				Pyrene	71	73	40-140	Yes	2.8	30	Yes
			SW8015B	Diesel Range	88	90	51-153	Yes	2.2	50	Yes
			SW8260B	1,1,1,2-Tetrachloroethane	102	101	74-125	Yes	1.0	30	Yes
				1,1,1-Trichloroethane	88	87	68-130	Yes	1.1	30	Yes
				1,1,2,2-Tetrachloroethane	81	81	59-140	Yes	0.0	30	Yes
				1,1,2-Trichloroethane	84	84	62-127	Yes	0.0	30	Yes
				1,1-Dichloroethane	81	88	73-125	Yes	8.3	30	Yes
				1,1-Dichloroethene	87	89	65-136	Yes	2.3	30	Yes
				1,1-Dichloropropene	88	93	70-135	Yes	5.5	30	Yes
				1,2,3-Trichlorobenzene	78	83	62-133	Yes	6.2	30	Yes
				1,2,3-Trichloropropane	74	75	63-130	Yes	1.3	30	Yes
				1,2,4-Trichlorobenzene	80	89	65-131	Yes	11	30	Yes
				1,2,4-Trimethylbenzene	103	107	65-135	Yes	3.8	30	Yes
				1,2-Dibromo-3-chloropropane	65	71	49-135	Yes	8.8	30	Yes
				1,2-Dibromoethane (Ethylene Dibromide	76	80	70-124	Yes	5.1	30	Yes
				1,2-Dichlorobenzene	101	101	74-120	Yes	0.0	30	Yes
				1,2-Dichloroethane	79	82	72-137	Yes	3.7	30	Yes
				1,2-Dichloropropane	93	96	71-120	Yes	3.2	30	Yes
				1,3,5-Trimethylbenzene	108	111	65-133	Yes	2.7	30	Yes
				1,3-Dichlorobenzene	97	101	72-124	Yes	4.0	30	Yes
				1,3-Dichloropropane	89	85	76-123	Yes	4.6	30	Yes
				1,4-Dichlorobenzene	100	100	72-125	Yes	0.0	30	Yes
				1-chlorohexane	117	117	60-135	Yes	0.0	30	Yes
				2,2-dichloropropane	84	82	67-134	Yes	2.4	30	Yes
				2-Butanone(MEK)	67	81	40-135	Yes	19	30	Yes

TABLE I-6

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
				2-chlorotoluene	103	111	69-128	Yes	7.5	30	Yes
				2-Hexanone	87	94	50-150	Yes	7.7	30	Yes
				4-chlorotoluene	111	111	73-126	Yes	0.0	30	Yes
				4-Methyl-2-pentanone (MIBK)	82	87	47-147	Yes	5.9	30	Yes
				Acetone	100	113	40-141	Yes	12	30	Yes
				Benzene	88	89	73-126	Yes	1.1	30	Yes
				Bromobenzene	100	100	66-121	Yes	0.0	30	Yes
				Bromochloromethane	72	74	71-127	Yes	2.7	30	Yes
				Bromodichloromethane	88	90	72-128	Yes	2.2	30	Yes
				Bromoform	78	82	66-137	Yes	5.0	30	Yes
				Bromomethane	96	96	45-141	Yes	0.0	30	Yes
				Carbon disulfide	71	73	70-130	Yes	2.8	30	Yes
				Carbon tetrachloride	95	91	67-133	Yes	4.3	30	Yes
				Chlorobenzene	98	100	75-123	Yes	2.0	30	Yes
				Chloroethane	94	90	41-141	Yes	4.3	30	Yes
				Chloroform	77	82	72-124	Yes	6.3	30	Yes
				Chloromethane	95	94	51-129	Yes	1.1	30	Yes
				cis-1,2-Dichloroethylene	80	86	67-125	Yes	7.2	30	Yes
				cis-1,3-Dichloropropene	89	92	72-126	Yes	3.3	30	Yes
				Dibromochloromethane	79	85	66-130	Yes	7.3	30	Yes
				Dibromomethane	65	67	73-128	No	3.0	30	Yes
				Dichlorodifluoromethane	76	74	34-136	Yes	2.7	30	Yes
				Ethylbenzene	107	109	74-127	Yes	1.9	30	Yes
				Hexachlorobutadiene	72	88	53-142	Yes	20	30	Yes
				Isopropylbenzene (Cumene)	110	110	77-129	Yes	0.0	30	Yes
				m,p-Xylene	109	108	79-126	Yes	0.9	30	Yes
				Methyl tertiary-butyl ether	85	90	50-135	Yes	5.7	30	Yes
				Methylene chloride	80	79	63-137	Yes	1.3	30	Yes
				n-Butylbenzene	97	99	65-138	Yes	2.0	30	Yes
				n-Propylbenzene	101	100	63-135	Yes	1.0	30	Yes
				Naphthalene	73	74	51-135	Yes	1.4	30	Yes
				o-Xylene	108	112	77-125	Yes	3.6	30	Yes
				p-Cymene (p-isopropyltoluene)	101	103	75-133	Yes	2.0	30	Yes
				Sec-butylbenzene	101	104	63-132	Yes	2.9	30	Yes
				Styrene	104	109	74-128	Yes	4.7	30	Yes
				t-Butylbenzene	100	101	65-132	Yes	1.0	30	Yes
				Tetrachloroethylene (PCE)	85	91	67-139	Yes	6.8	30	Yes

TABLE I-6

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
				Toluene	98	97	71-127	Yes	1.0	30	Yes
				trans-1,2-Dichloroethene	76	77	66-134	Yes	1.3	30	Yes
				trans-1,3-Dichloropropene	83	83	65-127	Yes	0.0	30	Yes
				Trichloroethylene (TCE)	85	91	77-124	Yes	6.8	30	Yes
				Trichlorofluoromethane	90	94	49-139	Yes	4.3	30	Yes
				Vinyl acetate	50	45	60-140	No	11	30	Yes
				Vinyl chloride	88	92	58-126	Yes	4.4	30	Yes
			SW8270C	1,2,4-Trichlorobenzene	61	65	44-125	Yes	6.3	30	Yes
				1,2-Dichlorobenzene	61	63	45-125	Yes	3.2	30	Yes
				1,3-Dichlorobenzene	60	60	39-125	Yes	0.0	30	Yes
				1,4-Dichlorobenzene	61	61	35-125	Yes	0.0	30	Yes
				2,4,5-Trichlorophenol	66	66	49-125	Yes	0.0	30	Yes
				2,4,6-Trichlorophenol	67	64	43-125	Yes	4.6	30	Yes
				2,4-Dichlorophenol	65	66	45-125	Yes	1.5	30	Yes
				2,4-Dimethylphenol	65	67	32-125	Yes	3.0	30	Yes
				2,4-Dinitrophenol	59	60	25-132	Yes	1.7	30	Yes
				2,4-Dinitrotoluene	69	70	48-125	Yes	1.4	30	Yes
				2,6-Dinitrotoluene	68	66	48-125	Yes	3.0	30	Yes
				2-Chloronaphthalene	65	66	45-125	Yes	1.5	30	Yes
				2-Chlorophenol	63	64	44-125	Yes	1.6	30	Yes
				2-Methylnaphthalene	67	70	47-125	Yes	4.4	30	Yes
				2-Methylphenol (o-cresol)	63	62	40-125	Yes	1.6	30	Yes
				2-Nitroaniline	66	67	44-125	Yes	1.5	30	Yes
				2-Nitrophenol	65	67	42-125	Yes	3.0	30	Yes
				3,3'-Dichlorobenzidine	50	52	25-128	Yes	3.9	30	Yes
				3-Nitroaniline	59	59	27-125	Yes	0.0	30	Yes
				3/4-Methylphenol (m,p-cresol)	63	61	41-125	Yes	3.2	30	Yes
				4,6-Dinitro-2-methylphenol	78	77	29-137	Yes	1.3	30	Yes
				4-Bromophenyl phenyl ether	65	63	46-125	Yes	3.1	30	Yes
				4-Chloro-3-methylphenol	67	69	46-125	Yes	2.9	30	Yes
				4-Chloroaniline	41	42	25-125	Yes	2.4	30	Yes
				4-Chlorophenyl phenyl ether	65	65	47-125	Yes	0.0	30	Yes
				4-Nitroaniline	63	63	34-125	Yes	0.0	30	Yes
				4-Nitrophenol	68	69	25-138	Yes	1.5	30	Yes
				Acenaphthene	69	68	46-125	Yes	1.5	30	Yes
				Acenaphthylene	70	70	44-125	Yes	0.0	30	Yes
				Anthracene	66	65	53-125	Yes	1.5	30	Yes

TABLE I-6

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
				Benzo(a)anthracene	68	69	52-125	Yes	1.5	30	Yes
				Benzo(a)pyrene	66	66	50-125	Yes	0.0	30	Yes
				Benzo(b)fluoranthene	52	52	45-125	Yes	0.0	30	Yes
				Benzo(g,h,i)perylene	48	48	38-126	Yes	0.0	30	Yes
				Benzo(k)fluoranthene	79	82	45-125	Yes	3.7	30	Yes
				Benzoic acid	60	61	25-125	Yes	1.7	30	Yes
				Benzyl alcohol	59	58	25-125	Yes	1.7	30	Yes
				Benzyl butyl phthalate	72	72	49-125	Yes	0.0	30	Yes
				bis(2-Chloroethoxy)methane	62	63	43-125	Yes	1.6	30	Yes
				bis(2-Chloroethyl)ether	59	60	38-125	Yes	1.7	30	Yes
				bis(2-Chloroisopropyl)ether	60	59	25-125	Yes	1.7	30	Yes
				bis(2-Ethylhexyl)phthalate	74	76	47-127	Yes	2.7	30	Yes
				Chrysene	65	67	53-125	Yes	3.0	30	Yes
				Di-n-butyl phthalate	69	68	56-125	Yes	1.5	30	Yes
				Di-n-octylphthalate	83	86	41-132	Yes	3.6	30	Yes
				Dibenz(a,h)anthracene	50	52	41-125	Yes	3.9	30	Yes
				Dibenzofuran	66	67	51-125	Yes	1.5	30	Yes
				Diethyl phthalate	65	64	50-125	Yes	1.6	30	Yes
				Dimethyl phthalate	68	68	49-125	Yes	0.0	30	Yes
				Fluoranthene	65	65	54-125	Yes	0.0	30	Yes
				Fluorene	65	65	49-125	Yes	0.0	30	Yes
				Hexachlorobenzene	66	66	47-125	Yes	0.0	30	Yes
				Hexachlorobutadiene	61	65	40-125	Yes	6.3	30	Yes
				Hexachlorocyclopentadiene	58	57	31-135	Yes	1.7	30	Yes
				Hexachloroethane	60	60	34-125	Yes	0.0	30	Yes
				Indeno(1,2,3-c,d)pyrene	50	52	38-125	Yes	3.9	30	Yes
				Isophorone	59	61	43-125	Yes	3.3	30	Yes
				n-Nitrosodi-n-propylamine	60	59	40-125	Yes	1.7	30	Yes
				n-Nitrosodimethylamine	56	56	25-135	Yes	0.0	30	Yes
				n-Nitrosodiphenylamine	74	73	49-125	Yes	1.4	30	Yes
				Naphthalene	61	62	40-125	Yes	1.6	30	Yes
				Nitrobenzene	62	63	41-125	Yes	1.6	30	Yes
				Pentachlorophenol	70	70	25-125	Yes	0.0	30	Yes
				Phenanthrene	65	65	50-125	Yes	0.0	30	Yes
				Phenol	57	56	39-125	Yes	1.8	30	Yes
				Pyrene	70	72	46-125	Yes	2.8	30	Yes

TABLE I-6

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
055-TW01-SS45.0	03-1434-6	Soil	PAH-SIM	2-Methylnaphthalene	69	71	40-140	Yes	2.9	30	Yes
				Acenaphthene	68	70	40-140	Yes	2.9	30	Yes
				Acenaphthylene	68	69	40-140	Yes	1.5	30	Yes
				Anthracene	70	72	40-140	Yes	2.8	30	Yes
				Benzo(a)anthracene	49	49	40-140	Yes	0.0	30	Yes
				Benzo(a)pyrene	75	78	40-140	Yes	3.9	30	Yes
				Benzo(b)fluoranthene	70	85	40-140	Yes	19	30	Yes
				Benzo(g,h,i)perylene	47	52	40-140	Yes	10	30	Yes
				Benzo(k)fluoranthene	112	95	40-140	Yes	16	30	Yes
				Chrysene	47	48	40-140	Yes	2.1	30	Yes
				Dibenz(a,h)anthracene	56	61	40-140	Yes	8.5	30	Yes
				Fluoranthene	67	70	40-140	Yes	4.4	30	Yes
				Fluorene	72	75	40-140	Yes	4.1	30	Yes
				Indeno(1,2,3-c,d)pyrene	53	57	40-140	Yes	7.3	30	Yes
				Naphthalene	69	72	40-140	Yes	4.3	30	Yes
				Phenanthrene	67	70	40-140	Yes	4.4	30	Yes
				Pyrene	59	60	40-140	Yes	1.7	30	Yes
			SW8015B	Diesel Range	74	81	51-153	Yes	9.0	50	Yes
			SW8260B	1,1,1,2-Tetrachloroethane	102	104	74-125	Yes	1.9	30	Yes
				1,1,1-Trichloroethane	91	95	68-130	Yes	4.3	30	Yes
				1,1,2,2-Tetrachloroethane	89	88	59-140	Yes	1.1	30	Yes
				1,1,2-Trichloroethane	91	89	62-127	Yes	2.2	30	Yes
				1,1-Dichloroethane	90	94	73-125	Yes	4.3	30	Yes
				1,1-Dichloroethene	93	93	65-136	Yes	0.0	30	Yes
				1,1-Dichloropropene	94	101	70-135	Yes	7.2	30	Yes
				1,2,3-Trichlorobenzene	92	99	62-133	Yes	7.3	30	Yes
				1,2,3-Trichloropropane	78	81	63-130	Yes	3.8	30	Yes
				1,2,4-Trichlorobenzene	94	100	65-131	Yes	6.2	30	Yes
				1,2,4-Trimethylbenzene	110	113	65-135	Yes	2.7	30	Yes
				1,2-Dibromo-3-chloropropane	69	74	49-135	Yes	7.0	30	Yes
				1,2-Dibromoethane (Ethylene Dibromide	81	82	70-124	Yes	1.2	30	Yes
				1,2-Dichlorobenzene	99	112	74-120	Yes	12	30	Yes
				1,2-Dichloroethane	82	89	72-137	Yes	8.2	30	Yes
				1,2-Dichloropropane	102	106	71-120	Yes	3.8	30	Yes
				1,3,5-Trimethylbenzene	114	119	65-133	Yes	4.3	30	Yes
				1,3-Dichlorobenzene	102	108	72-124	Yes	5.7	30	Yes
				1,3-Dichloropropane	87	85	76-123	Yes	2.3	30	Yes

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MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
				1,4-Dichlorobenzene	105	110	72-125	Yes	4.7	30	Yes
				1-chlorohexane	121	121	60-135	Yes	0.0	30	Yes
				2,2-dichloropropane	89	94	67-134	Yes	5.5	30	Yes
				2-Butanone(MEK)	65	63	40-135	Yes	3.1	30	Yes
				2-chlorotoluene	107	113	69-128	Yes	5.5	30	Yes
				2-Hexanone	78	79	50-150	Yes	1.3	30	Yes
				4-chlorotoluene	113	116	73-126	Yes	2.6	30	Yes
				4-Methyl-2-pentanone (MIBK)	83	81	47-147	Yes	2.4	30	Yes
				Acetone	58	60	40-141	Yes	3.4	30	Yes
				Benzene	91	97	73-126	Yes	6.4	30	Yes
				Bromobenzene	98	107	66-121	Yes	8.8	30	Yes
				Bromochloromethane	77	80	71-127	Yes	3.8	30	Yes
				Bromodichloromethane	97	96	72-128	Yes	1.0	30	Yes
				Bromoform	81	85	66-137	Yes	4.8	30	Yes
				Bromomethane	100	103	45-141	Yes	3.0	30	Yes
				Carbon disulfide	75	79	70-130	Yes	5.2	30	Yes
				Carbon tetrachloride	102	101	67-133	Yes	1.0	30	Yes
				Chlorobenzene	102	107	75-123	Yes	4.8	30	Yes
				Chloroethane	94	103	41-141	Yes	9.1	30	Yes
				Chloroform	83	87	72-124	Yes	4.7	30	Yes
				Chloromethane	97	99	51-129	Yes	2.0	30	Yes
				cis-1,2-Dichloroethylene	86	92	67-125	Yes	6.7	30	Yes
				cis-1,3-Dichloropropene	90	97	72-126	Yes	7.5	30	Yes
				Dibromochloromethane	84	88	66-130	Yes	4.7	30	Yes
				Dibromomethane	70	74	73-128	No	5.6	30	Yes
				Dichlorodifluoromethane	78	83	34-136	Yes	6.2	30	Yes
				Ethylbenzene	110	113	74-127	Yes	2.7	30	Yes
				Hexachlorobutadiene	107	108	53-142	Yes	0.9	30	Yes
				Isopropylbenzene (Cumene)	115	118	77-129	Yes	2.6	30	Yes
				m,p-Xylene	109	113	79-126	Yes	3.6	30	Yes
				Methyl tertiary-butyl ether	90	92	50-135	Yes	2.2	30	Yes
				Methylene chloride	85	92	63-137	Yes	7.9	30	Yes
				n-Butylbenzene	102	111	65-138	Yes	8.5	30	Yes
				n-Propylbenzene	103	108	63-135	Yes	4.7	30	Yes
				Naphthalene	77	79	51-135	Yes	2.6	30	Yes
				o-Xylene	109	115	77-125	Yes	5.4	30	Yes
				p-Cymene (p-isopropyltoluene)	107	113	75-133	Yes	5.5	30	Yes

TABLE I-6

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
				Sec-butylbenzene	108	111	63-132	Yes	2.7	30	Yes
				Styrene	108	113	74-128	Yes	4.5	30	Yes
				t-Butylbenzene	104	111	65-132	Yes	6.5	30	Yes
				Tetrachloroethylene (PCE)	90	92	67-139	Yes	2.2	30	Yes
				Toluene	101	106	71-127	Yes	4.8	30	Yes
				trans-1,2-Dichloroethene	78	83	66-134	Yes	6.2	30	Yes
				trans-1,3-Dichloropropene	84	89	65-127	Yes	5.8	30	Yes
				Trichloroethylene (TCE)	87	95	77-124	Yes	8.8	30	Yes
				Trichlorofluoromethane	94	101	49-139	Yes	7.2	30	Yes
				Vinyl acetate	91	93	60-140	Yes	2.2	30	Yes
				Vinyl chloride	95	100	58-126	Yes	5.1	30	Yes
			SW8270C	1,2,4-Trichlorobenzene	65	63	44-125	Yes	3.1	30	Yes
				1,2-Dichlorobenzene	65	61	45-125	Yes	6.3	30	Yes
				1,3-Dichlorobenzene	63	59	39-125	Yes	6.6	30	Yes
				1,4-Dichlorobenzene	65	60	35-125	Yes	8.0	30	Yes
				2,4,5-Trichlorophenol	48	44	49-125	No	8.7	30	Yes
				2,4,6-Trichlorophenol	32	31	43-125	No	3.2	30	Yes
				2,4-Dichlorophenol	59	56	45-125	Yes	5.2	30	Yes
				2,4-Dimethylphenol	64	61	32-125	Yes	4.8	30	Yes
				2,4-Dinitrophenol	4	1	25-132	No	120	30	No
				2,4-Dinitrotoluene	69	67	48-125	Yes	2.9	30	Yes
				2,6-Dinitrotoluene	65	65	48-125	Yes	0.0	30	Yes
				2-Chloronaphthalene	65	63	45-125	Yes	3.1	30	Yes
				2-Chlorophenol	62	58	44-125	Yes	6.7	30	Yes
				2-Methylnaphthalene	69	66	47-125	Yes	4.4	30	Yes
				2-Methylphenol (o-cresol)	62	60	40-125	Yes	3.3	30	Yes
				2-Nitroaniline	68	67	44-125	Yes	1.5	30	Yes
				2-Nitrophenol	58	55	42-125	Yes	5.3	30	Yes
				3,3'-Dichlorobenzidine	53	55	25-128	Yes	3.7	30	Yes
				3-Nitroaniline	65	62	27-125	Yes	4.7	30	Yes
				3/4-Methylphenol (m,p-cresol)	63	61	41-125	Yes	3.2	30	Yes
				4,6-Dinitro-2-methylphenol	15	9	29-137	No	50	30	No
				4-Bromophenyl phenyl ether	66	64	46-125	Yes	3.1	30	Yes
				4-Chloro-3-methylphenol	66	64	46-125	Yes	3.1	30	Yes
				4-Chloroaniline	62	59	25-125	Yes	5.0	30	Yes
				4-Chlorophenyl phenyl ether	66	63	47-125	Yes	4.7	30	Yes
				4-Nitroaniline	60	59	34-125	Yes	1.7	30	Yes

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MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
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Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
				4-Nitrophenol	47	40	25-138	Yes	16	30	Yes
				Acenaphthene	70	69	46-125	Yes	1.4	30	Yes
				Acenaphthylene	69	68	44-125	Yes	1.5	30	Yes
				Anthracene	67	64	53-125	Yes	4.6	30	Yes
				Benzo(a)anthracene	71	71	52-125	Yes	0.0	30	Yes
				Benzo(a)pyrene	65	65	50-125	Yes	0.0	30	Yes
				Benzo(b)fluoranthene	56	54	45-125	Yes	3.6	30	Yes
				Benzo(g,h,i)perylene	40	37	38-126	No	7.8	30	Yes
				Benzo(k)fluoranthene	79	88	45-125	Yes	11	30	Yes
				Benzoic acid	10	9	25-125	No	11	30	Yes
				Benzyl alcohol	61	58	25-125	Yes	5.0	30	Yes
				Benzyl butyl phthalate	74	74	49-125	Yes	0.0	30	Yes
				bis(2-Chloroethoxy)methane	64	61	43-125	Yes	4.8	30	Yes
				bis(2-Chloroethyl)ether	63	59	38-125	Yes	6.6	30	Yes
				bis(2-Chloroisopropyl)ether	62	59	25-125	Yes	5.0	30	Yes
				bis(2-Ethylhexyl)phthalate	73	72	47-127	Yes	1.4	30	Yes
				Chrysene	65	64	53-125	Yes	1.6	30	Yes
				Di-n-butyl phthalate	71	69	56-125	Yes	2.9	30	Yes
				Di-n-octylphthalate	98	104	41-132	Yes	5.9	30	Yes
				Dibenz(a,h)anthracene	44	42	41-125	Yes	4.7	30	Yes
				Dibenzofuran	66	66	51-125	Yes	0.0	30	Yes
				Diethyl phthalate	66	63	50-125	Yes	4.7	30	Yes
				Dimethyl phthalate	66	66	49-125	Yes	0.0	30	Yes
				Fluoranthene	66	63	54-125	Yes	4.7	30	Yes
				Fluorene	66	63	49-125	Yes	4.7	30	Yes
				Hexachlorobenzene	66	64	47-125	Yes	3.1	30	Yes
				Hexachlorobutadiene	66	62	40-125	Yes	6.3	30	Yes
				Hexachlorocyclopentadiene	46	42	31-135	Yes	9.1	30	Yes
				Hexachloroethane	63	58	34-125	Yes	8.3	30	Yes
				Indeno(1,2,3-c,d)pyrene	43	42	38-125	Yes	2.4	30	Yes
				Isophorone	59	56	43-125	Yes	5.2	30	Yes
				n-Nitrosodi-n-propylamine	61	58	40-125	Yes	5.0	30	Yes
				n-Nitrosodimethylamine	59	54	25-135	Yes	8.8	30	Yes
				n-Nitrosodiphenylamine	77	76	49-125	Yes	1.3	30	Yes
				Naphthalene	63	59	40-125	Yes	6.6	30	Yes
				Nitrobenzene	62	60	41-125	Yes	3.3	30	Yes
				Pentachlorophenol	8	5	25-125	No	46	30	No

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MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
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Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
				Phenanthrene	66	65	50-125	Yes	1.5	30	Yes
				Phenol	58	54	39-125	Yes	7.1	30	Yes
				Pyrene	71	73	46-125	Yes	2.8	30	Yes
061-SB03-SS10.0	03-1398-11	Soil	SW8015B	Diesel Range	78	83	51-153	Yes	6.2	50	Yes
055-TW01-GW01	03-1434-1	Water	PAH-SIM	2-Methylnaphthalene	56	55	40-140	Yes	1.8	20	Yes
				Acenaphthene	53	52	40-140	Yes	1.9	20	Yes
				Acenaphthylene	53	53	40-140	Yes	0.0	20	Yes
				Anthracene	59	59	40-140	Yes	0.0	20	Yes
				Benzo(a)anthracene	43	42	40-140	Yes	2.4	20	Yes
				Benzo(a)pyrene	63	63	40-140	Yes	0.0	20	Yes
				Benzo(b)fluoranthene	64	63	40-140	Yes	1.6	20	Yes
				Benzo(g,h,i)perylene	63	63	40-140	Yes	0.0	20	Yes
				Benzo(k)fluoranthene	73	75	40-140	Yes	2.7	20	Yes
				Chrysene	43	43	40-140	Yes	0.0	20	Yes
				Dibenz(a,h)anthracene	61	62	40-140	Yes	1.6	20	Yes
				Fluoranthene	62	63	40-140	Yes	1.6	20	Yes
				Fluorene	57	57	40-140	Yes	0.0	20	Yes
				Indeno(1,2,3-c,d)pyrene	61	61	40-140	Yes	0.0	20	Yes
				Naphthalene	53	53	40-140	Yes	0.0	20	Yes
				Phenanthrene	58	58	40-140	Yes	0.0	20	Yes
				Pyrene	51	51	40-140	Yes	0.0	20	Yes
			SW8015B	Diesel Range	76	69	61-143	Yes	9.7	30	Yes
			SW8260B	1,1,1,2-Tetrachloroethane	98	93	81-129	Yes	5.2	20	Yes
				1,1,1-Trichloroethane	91	90	67-132	Yes	1.1	20	Yes
				1,1,2,2-Tetrachloroethane	92	93	63-128	Yes	1.1	20	Yes
				1,1,2-Trichloroethane	98	94	75-125	Yes	4.2	20	Yes
				1,1-Dichloroethane	95	94	69-133	Yes	1.1	20	Yes
				1,1-Dichloroethene	89	87	68-130	Yes	2.3	20	Yes
				1,1-Dichloropropene	92	90	73-132	Yes	2.2	20	Yes
				1,2,3-Trichlorobenzene	87	90	67-137	Yes	3.4	20	Yes
				1,2,3-Trichloropropane	89	90	73-124	Yes	1.1	20	Yes
				1,2,4-Trichlorobenzene	87	89	66-134	Yes	2.3	20	Yes
				1,2,4-Trimethylbenzene	93	94	74-132	Yes	1.1	20	Yes
				1,2-Dibromo-3-chloropropane	83	88	50-132	Yes	5.8	20	Yes
				1,2-Dibromoethane (Ethylene Dibromide	98	95	80-121	Yes	3.1	20	Yes
				1,2-Dichlorobenzene	93	93	71-122	Yes	0.0	20	Yes
				1,2-Dichloroethane	96	95	69-132	Yes	1.0	20	Yes

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MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
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VANDENBERG AIR FORCE BASE, CALIFORNIA

Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
				1,2-Dichloropropane	101	99	75-125	Yes	2.0	20	Yes
				1,3,5-Trimethylbenzene	94	94	74-131	Yes	0.0	20	Yes
				1,3-Dichlorobenzene	92	93	75-124	Yes	1.1	20	Yes
				1,3-Dichloropropane	99	93	73-126	Yes	6.3	20	Yes
				1,4-Dichlorobenzene	92	93	74-123	Yes	1.1	20	Yes
				1-chlorohexane	87	88	70-125	Yes	1.1	20	Yes
				2,2-dichloropropane	95	91	69-137	Yes	4.3	20	Yes
				2-Butanone(MEK)	80	82	49-136	Yes	2.5	20	Yes
				2-chlorotoluene	95	96	73-126	Yes	1.0	20	Yes
				2-Hexanone	86	85	50-150	Yes	1.2	20	Yes
				4-chlorotoluene	95	96	74-128	Yes	1.0	20	Yes
				4-Methyl-2-pentanone (MIBK)	85	82	58-134	Yes	3.6	20	Yes
				Acetone	63	69	40-135	Yes	9.1	20	Yes
				Benzene	98	96	81-122	Yes	2.1	20	Yes
				Bromobenzene	92	92	76-124	Yes	0.0	20	Yes
				Bromochloromethane	103	101	65-129	Yes	2.0	20	Yes
				Bromodichloromethane	93	91	76-121	Yes	2.2	20	Yes
				Bromoform	93	89	69-128	Yes	4.4	20	Yes
				Bromomethane	98	96	53-141	Yes	2.1	20	Yes
				Carbon disulfide	86	83	70-130	Yes	3.6	20	Yes
				Carbon tetrachloride	89	87	66-138	Yes	2.3	20	Yes
				Chlorobenzene	100	95	81-122	Yes	5.1	20	Yes
				Chloroethane	105	99	58-133	Yes	5.9	20	Yes
				Chloroform	96	94	69-128	Yes	2.1	20	Yes
				Chloromethane	90	87	56-131	Yes	3.4	20	Yes
				cis-1,2-Dichloroethylene	98	98	72-126	Yes	0.0	20	Yes
				cis-1,3-Dichloropropene	100	96	69-131	Yes	4.1	20	Yes
				Dibromochloromethane	94	90	66-133	Yes	4.3	20	Yes
				Dibromomethane	97	96	76-125	Yes	1.0	20	Yes
				Dichlorodifluoromethane	69	70	53-153	Yes	1.4	20	Yes
				Ethylbenzene	92	91	73-127	Yes	1.1	20	Yes
				Hexachlorobutadiene	79	82	67-131	Yes	3.7	20	Yes
				Isopropylbenzene (Cumene)	94	95	75-127	Yes	1.1	20	Yes
				m,p-Xylene	92	92	76-128	Yes	0.0	20	Yes
				Methyl tertiary-butyl ether	96	94	65-123	Yes	2.1	20	Yes
				Methylene chloride	94	90	63-137	Yes	4.3	20	Yes
				n-Butylbenzene	87	88	69-137	Yes	1.1	20	Yes

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MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
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VANDENBERG AIR FORCE BASE, CALIFORNIA

Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
				n-Propylbenzene	94	96	72-129	Yes	2.1	20	Yes
				Naphthalene	94	96	54-138	Yes	2.1	20	Yes
				o-Xylene	95	94	80-121	Yes	1.1	20	Yes
				p-Cymene (p-isopropyltoluene)	87	88	73-130	Yes	1.1	20	Yes
				Sec-butylbenzene	87	88	72-127	Yes	1.1	20	Yes
				Styrene	96	97	65-134	Yes	1.0	20	Yes
				t-Butylbenzene	94	96	70-129	Yes	2.1	20	Yes
				Tetrachloroethylene (PCE)	89	86	66-128	Yes	3.4	20	Yes
				Toluene	98	93	77-122	Yes	5.2	20	Yes
				trans-1,2-Dichloroethene	94	93	63-137	Yes	1.1	20	Yes
				trans-1,3-Dichloropropene	100	98	59-135	Yes	2.0	20	Yes
				Trichloroethylene (TCE)	95	93	70-127	Yes	2.1	20	Yes
				Trichlorofluoromethane	93	91	57-129	Yes	2.2	20	Yes
				Vinyl acetate	98	96	60-140	Yes	2.1	20	Yes
				Vinyl chloride	91	91	50-134	Yes	0.0	20	Yes
			SW8270C	1,2,4-Trichlorobenzene	65	56	37-120	Yes	15	20	Yes
				1,2-Dichlorobenzene	65	57	33-120	Yes	13	20	Yes
				1,3-Dichlorobenzene	63	55	32-120	Yes	14	20	Yes
				1,4-Dichlorobenzene	65	56	32-120	Yes	15	20	Yes
				2,4,5-Trichlorophenol	69	62	49-120	Yes	11	20	Yes
				2,4,6-Trichlorophenol	67	60	49-126	Yes	11	20	Yes
				2,4-Dichlorophenol	67	60	48-120	Yes	11	20	Yes
				2,4-Dimethylphenol	120	105	28-120	Yes	13	20	Yes
				2,4-Dinitrophenol	62	51	25-130	Yes	20	20	Yes
				2,4-Dinitrotoluene	75	66	51-120	Yes	13	20	Yes
				2,6-Dinitrotoluene	74	63	49-120	Yes	16	20	Yes
				2-Chloronaphthalene	72	64	49-120	Yes	12	20	Yes
				2-Chlorophenol	62	59	37-120	Yes	5.0	20	Yes
				2-Methylnaphthalene	75	65	46-120	Yes	14	20	Yes
				2-Methylphenol (o-cresol)	57	55	38-120	Yes	3.6	20	Yes
				2-Nitroaniline	74	68	48-120	Yes	8.5	20	Yes
				2-Nitrophenol	69	62	39-123	Yes	11	20	Yes
				3,3'-Dichlorobenzidine	2	8	20-120	No	120	20	No
				3-Nitroaniline	20	52	20-126	Yes	89	20	No
				3/4-Methylphenol (m,p-cresol)	53	50	32-120	Yes	5.8	20	Yes
				4,6-Dinitro-2-methylphenol	79	67	40-130	Yes	16	20	Yes
				4-Bromophenyl phenyl ether	68	62	52-120	Yes	9.2	20	Yes

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MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
				4-Chloro-3-methylphenol	67	61	47-120	Yes	9.4	20	Yes
				4-Chloroaniline	25	56	20-120	Yes	77	20	No
				4-Chlorophenyl phenyl ether	72	63	50-120	Yes	13	20	Yes
				4-Nitroaniline	42	61	36-120	Yes	37	20	No
				4-Nitrophenol	33	27	20-120	Yes	20	20	Yes
				Acenaphthene	75	66	47-120	Yes	13	20	Yes
				Acenaphthylene	76	66	50-120	Yes	14	20	Yes
				Anthracene	73	64	54-120	Yes	13	20	Yes
				Benzo(a)anthracene	70	63	56-100	Yes	11	20	Yes
				Benzo(a)pyrene	73	62	53-120	Yes	16	20	Yes
				Benzo(b)fluoranthene	59	52	45-124	Yes	13	20	Yes
				Benzo(g,h,i)perylene	56	48	38-123	Yes	15	20	Yes
				Benzo(k)fluoranthene	82	70	45-124	Yes	16	20	Yes
				Benzoic acid	27	20	20-120	Yes	30	20	No
				Benzyl alcohol	48	48	30-120	Yes	0.0	20	Yes
				Benzyl butyl phthalate	79	70	46-120	Yes	12	20	Yes
				bis(2-Chloroethoxy)methane	70	62	46-120	Yes	12	20	Yes
				bis(2-Chloroethyl)ether	67	60	37-120	Yes	11	20	Yes
				bis(2-Chloroisopropyl)ether	71	62	26-131	Yes	14	20	Yes
				bis(2-Ethylhexyl)phthalate	78	70	42-126	Yes	11	20	Yes
				Chrysene	71	63	55-120	Yes	12	20	Yes
				Di-n-butyl phthalate	71	63	54-120	Yes	12	20	Yes
				Di-n-octylphthalate	82	72	37-137	Yes	13	20	Yes
				Dibenz(a,h)anthracene	67	56	42-127	Yes	18	20	Yes
				Dibenzofuran	73	64	54-120	Yes	13	20	Yes
				Diethyl phthalate	75	66	41-120	Yes	13	20	Yes
				Dimethyl phthalate	75	65	25-127	Yes	14	20	Yes
				Fluoranthene	69	61	54-120	Yes	12	20	Yes
				Fluorene	74	64	50-120	Yes	15	20	Yes
				Hexachlorobenzene	69	63	52-120	Yes	9.1	20	Yes
				Hexachlorobutadiene	62	53	27-120	Yes	16	20	Yes
				Hexachlorocyclopentadiene	69	62	41-125	Yes	11	20	Yes
				Hexachloroethane	64	54	28-120	Yes	17	20	Yes
				Indeno(1,2,3-c,d)pyrene	69	56	43-125	Yes	21	20	No
				Isophorone	67	60	50-120	Yes	11	20	Yes
				n-Nitrosodi-n-propylamine	71	63	34-128	Yes	12	20	Yes
				n-Nitrosodimethylamine	48	44	27-125	Yes	8.7	20	Yes

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MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
				n-Nitrosodiphenylamine	74	69	48-120	Yes	7.0	20	Yes
				Naphthalene	68	59	39-120	Yes	14	20	Yes
				Nitrobenzene	66	60	44-120	Yes	9.5	20	Yes
				Pentachlorophenol	72	63	38-120	Yes	13	20	Yes
				Phenanthrene	71	64	51-120	Yes	10	20	Yes
				Phenol	29	25	20-120	Yes	15	20	Yes
				Pyrene	77	71	49-128	Yes	8.1	20	Yes
133-MW05-GW02	03-2225-7	Water	SW8015B	Diesel Range	113	109	61-143	Yes	3.6	30	Yes
				Gasoline Range	101	103	67-136	Yes	2.0	30	Yes
			SW8260B	1,1,1,2-Tetrachloroethane	95	100	81-129	Yes	5.1	20	Yes
				1,1,1-Trichloroethane	97	101	67-132	Yes	4.0	20	Yes
				1,1,2,2-Tetrachloroethane	77	84	63-128	Yes	8.7	20	Yes
				1,1,2-Trichloroethane	78	84	75-125	Yes	7.4	20	Yes
				1,1-Dichloroethane	97	100	69-133	Yes	3.0	20	Yes
				1,1-Dichloroethene	105	107	68-130	Yes	1.9	20	Yes
				1,1-Dichloropropene	98	102	73-132	Yes	4.0	20	Yes
				1,2,3-Trichlorobenzene	85	90	67-137	Yes	5.7	20	Yes
				1,2,3-Trichloropropane	74	80	73-124	Yes	7.8	20	Yes
				1,2,4-Trichlorobenzene	88	92	66-134	Yes	4.4	20	Yes
				1,2,4-Trimethylbenzene	94	97	74-132	Yes	3.1	20	Yes
				1,2-Dibromo-3-chloropropane	70	77	50-132	Yes	9.5	20	Yes
				1,2-Dibromoethane (Ethylene Dibromide	78	84	80-121	No	7.4	20	Yes
				1,2-Dichlorobenzene	84	89	71-122	Yes	5.8	20	Yes
				1,2-Dichloroethane	85	92	69-132	Yes	7.9	20	Yes
				1,2-Dichloropropane	89	94	75-125	Yes	5.5	20	Yes
				1,3,5-Trimethylbenzene	99	102	74-131	Yes	3.0	20	Yes
				1,3-Dichlorobenzene	89	93	75-124	Yes	4.4	20	Yes
				1,3-Dichloropropane	82	88	73-126	Yes	7.1	20	Yes
				1,4-Dichlorobenzene	86	91	74-123	Yes	5.6	20	Yes
				1-chlorohexane	110	114	70-125	Yes	3.6	20	Yes
				2,2-dichloropropane	105	109	69-137	Yes	3.7	20	Yes
				2-Butanone(MEK)	71	76	49-136	Yes	6.8	20	Yes
				2-chlorotoluene	94	97	73-126	Yes	3.1	20	Yes
				2-Hexanone	79	84	50-150	Yes	6.1	20	Yes
				4-chlorotoluene	95	99	74-128	Yes	4.1	20	Yes
				4-Methyl-2-pentanone (MIBK)	77	84	58-134	Yes	8.7	20	Yes
				Acetone	66	72	40-135	Yes	8.7	20	Yes

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MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
DELIVERY ORDER 0059
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Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
				Benzene	91	95	81-122	Yes	4.3	20	Yes
				Bromobenzene	88	92	76-124	Yes	4.4	20	Yes
				Bromochloromethane	84	89	65-129	Yes	5.8	20	Yes
				Bromodichloromethane	83	88	76-121	Yes	5.8	20	Yes
				Bromoform	76	82	69-128	Yes	7.6	20	Yes
				Bromomethane	104	106	53-141	Yes	1.9	20	Yes
				Carbon disulfide	107	109	70-130	Yes	1.9	20	Yes
				Carbon tetrachloride	107	111	66-138	Yes	3.7	20	Yes
				Chlorobenzene	92	96	81-122	Yes	4.3	20	Yes
				Chloroethane	109	111	58-133	Yes	1.8	20	Yes
				Chloroform	91	95	69-128	Yes	4.3	20	Yes
				Chloromethane	111	109	56-131	Yes	1.8	20	Yes
				cis-1,2-Dichloroethylene	94	97	72-126	Yes	3.1	20	Yes
				cis-1,3-Dichloropropene	85	91	69-131	Yes	6.8	20	Yes
				Dibromochloromethane	81	86	66-133	Yes	6.0	20	Yes
				Dibromomethane	81	85	76-125	Yes	4.8	20	Yes
				Dichlorodifluoromethane	105	104	53-153	Yes	1.0	20	Yes
				Ethylbenzene	101	105	73-127	Yes	3.9	20	Yes
				Hexachlorobutadiene	96	99	67-131	Yes	3.1	20	Yes
				Isopropylbenzene (Cumene)	102	106	75-127	Yes	3.8	20	Yes
				m,p-Xylene	99	103	76-128	Yes	4.0	20	Yes
				Methyl tertiary-butyl ether	74	79	65-123	Yes	6.5	20	Yes
				Methylene chloride	94	98	63-137	Yes	4.2	20	Yes
				n-Butylbenzene	98	102	69-137	Yes	4.0	20	Yes
				n-Propylbenzene	102	105	72-129	Yes	2.9	20	Yes
				Naphthalene	80	84	54-138	Yes	4.9	20	Yes
				o-Xylene	97	100	80-121	Yes	3.0	20	Yes
				p-Cymene (p-isopropyltoluene)	99	103	73-130	Yes	4.0	20	Yes
				Sec-butylbenzene	103	108	72-127	Yes	4.7	20	Yes
				Styrene	94	98	65-134	Yes	4.2	20	Yes
				t-Butylbenzene	102	105	70-129	Yes	2.9	20	Yes
				Tetrachloroethylene (PCE)	101	106	66-128	Yes	4.8	20	Yes
				Toluene	99	102	77-122	Yes	3.0	20	Yes
				trans-1,2-Dichloroethene	98	102	63-137	Yes	4.0	20	Yes
				trans-1,3-Dichloropropene	83	88	59-135	Yes	5.8	20	Yes
				Trichloroethylene (TCE)	90	95	70-127	Yes	5.4	20	Yes
				Trichlorofluoromethane	109	112	57-129	Yes	2.7	20	Yes

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MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
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Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
				Vinyl acetate	90	95	60-140	Yes	5.4	20	Yes
				Vinyl chloride	101	101	50-134	Yes	0.0	20	Yes
			SW8270C	1,2,4-Trichlorobenzene	67	69	37-120	Yes	2.9	20	Yes
				1,2-Dichlorobenzene	69	68	33-120	Yes	1.5	20	Yes
				1,3-Dichlorobenzene	68	67	32-120	Yes	1.5	20	Yes
				1,4-Dichlorobenzene	68	67	32-120	Yes	1.5	20	Yes
				2,4,5-Trichlorophenol	75	74	49-120	Yes	1.3	20	Yes
				2,4,6-Trichlorophenol	73	73	49-126	Yes	0.0	20	Yes
				2,4-Dichlorophenol	69	69	48-120	Yes	0.0	20	Yes
				2,4-Dimethylphenol	68	68	28-120	Yes	0.0	20	Yes
				2,4-Dinitrophenol	72	72	25-130	Yes	0.0	20	Yes
				2,4-Dinitrotoluene	77	75	51-120	Yes	2.6	20	Yes
				2,6-Dinitrotoluene	76	76	49-120	Yes	0.0	20	Yes
				2-Chloronaphthalene	72	70	49-120	Yes	2.8	20	Yes
				2-Chlorophenol	65	64	37-120	Yes	1.6	20	Yes
				2-Methylnaphthalene	72	71	46-120	Yes	1.4	20	Yes
				2-Methylphenol (o-cresol)	56	55	38-120	Yes	1.8	20	Yes
				2-Nitroaniline	77	75	48-120	Yes	2.6	20	Yes
				2-Nitrophenol	72	72	39-123	Yes	0.0	20	Yes
				3,3'-Dichlorobenzidine	51	48	20-120	Yes	6.1	20	Yes
				3-Nitroaniline	75	74	20-126	Yes	1.3	20	Yes
				3/4-Methylphenol (m,p-cresol)	51	51	32-120	Yes	0.0	20	Yes
				4,6-Dinitro-2-methylphenol	86	84	40-130	Yes	2.4	20	Yes
				4-Bromophenyl phenyl ether	70	70	52-120	Yes	0.0	20	Yes
				4-Chloro-3-methylphenol	67	68	47-120	Yes	1.5	20	Yes
				4-Chloroaniline	72	71	20-120	Yes	1.4	20	Yes
				4-Chlorophenyl phenyl ether	73	72	50-120	Yes	1.4	20	Yes
				4-Nitroaniline	72	69	36-120	Yes	4.3	20	Yes
				4-Nitrophenol	29	28	20-120	Yes	3.5	20	Yes
				Acenaphthene	75	75	47-120	Yes	0.0	20	Yes
				Acenaphthylene	66	66	50-120	Yes	0.0	20	Yes
				Anthracene	73	72	54-120	Yes	1.4	20	Yes
				Benzo(a)anthracene	74	76	56-100	Yes	2.7	20	Yes
				Benzo(a)pyrene	71	71	53-120	Yes	0.0	20	Yes
				Benzo(b)fluoranthene	61	66	45-124	Yes	7.9	20	Yes
				Benzo(g,h,i)perylene	68	62	38-123	Yes	9.2	20	Yes
				Benzo(k)fluoranthene	74	69	45-124	Yes	7.0	20	Yes

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MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
				Benzoic acid	41	41	20-120	Yes	0.0	20	Yes
				Benzyl alcohol	56	56	30-120	Yes	0.0	20	Yes
				Benzyl butyl phthalate	74	75	46-120	Yes	1.3	20	Yes
				bis(2-Chloroethoxy)methane	67	68	46-120	Yes	1.5	20	Yes
				bis(2-Chloroethyl)ether	64	62	37-120	Yes	3.2	20	Yes
				bis(2-Chloroisopropyl)ether	65	66	26-131	Yes	1.5	20	Yes
				bis(2-Ethylhexyl)phthalate	75	77	42-126	Yes	2.6	20	Yes
				Chrysene	71	72	55-120	Yes	1.4	20	Yes
				Di-n-butyl phthalate	70	70	54-120	Yes	0.0	20	Yes
				Di-n-octylphthalate	77	79	37-137	Yes	2.6	20	Yes
				Dibenz(a,h)anthracene	70	66	42-127	Yes	5.9	20	Yes
				Dibenzofuran	70	69	54-120	Yes	1.4	20	Yes
				Diethyl phthalate	74	72	41-120	Yes	2.7	20	Yes
				Dimethyl phthalate	74	72	25-127	Yes	2.7	20	Yes
				Fluoranthene	71	72	54-120	Yes	1.4	20	Yes
				Fluorene	72	71	50-120	Yes	1.4	20	Yes
				Hexachlorobenzene	72	72	52-120	Yes	0.0	20	Yes
				Hexachlorobutadiene	63	66	27-120	Yes	4.7	20	Yes
				Hexachlorocyclopentadiene	68	66	41-125	Yes	3.0	20	Yes
				Hexachloroethane	65	64	28-120	Yes	1.6	20	Yes
				Indeno(1,2,3-c,d)pyrene	70	65	43-125	Yes	7.4	20	Yes
				Isophorone	67	66	50-120	Yes	1.5	20	Yes
				n-Nitrosodi-n-propylamine	65	65	34-128	Yes	0.0	20	Yes
				n-Nitrosodimethylamine	43	42	27-125	Yes	2.4	20	Yes
				n-Nitrosodiphenylamine	77	77	48-120	Yes	0.0	20	Yes
				Naphthalene	69	68	39-120	Yes	1.5	20	Yes
				Nitrobenzene	67	67	44-120	Yes	0.0	20	Yes
				Pentachlorophenol	69	68	38-120	Yes	1.5	20	Yes
				Phenanthrene	72	72	51-120	Yes	0.0	20	Yes
				Phenol	27	27	20-120	Yes	0.0	20	Yes
				Pyrene	74	77	49-128	Yes	4.0	20	Yes
020-SB15-SS0.5	03-4269-1	Soil	SW8270C	1,2,4-Trichlorobenzene	81	81	44-125	Yes	0.0	30	Yes
				1,2-Dichlorobenzene	78	77	45-125	Yes	1.3	30	Yes
				1,3-Dichlorobenzene	76	76	39-125	Yes	0.0	30	Yes
				1,4-Dichlorobenzene	78	78	35-125	Yes	0.0	30	Yes
				2,4,5-Trichlorophenol	81	80	49-125	Yes	1.2	30	Yes
				2,4,6-Trichlorophenol	82	82	43-125	Yes	0.0	30	Yes

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DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
				2,4-Dichlorophenol	81	81	45-125	Yes	0.0	30	Yes
				2,4-Dimethylphenol	78	78	32-125	Yes	0.0	30	Yes
				2,4-Dinitrophenol	78	81	25-132	Yes	3.8	30	Yes
				2,4-Dinitrotoluene	84	85	48-125	Yes	1.2	30	Yes
				2,6-Dinitrotoluene	87	87	48-125	Yes	0.0	30	Yes
				2-Chloronaphthalene	84	83	45-125	Yes	1.2	30	Yes
				2-Chlorophenol	77	77	44-125	Yes	0.0	30	Yes
				2-Methylnaphthalene	83	84	47-125	Yes	1.2	30	Yes
				2-Methylphenol (o-cresol)	80	78	40-125	Yes	2.5	30	Yes
				2-Nitroaniline	85	84	44-125	Yes	1.2	30	Yes
				2-Nitrophenol	84	84	42-125	Yes	0.0	30	Yes
				3,3'-Dichlorobenzidine	41	42	25-128	Yes	2.4	30	Yes
				3-Nitroaniline	81	81	27-125	Yes	0.0	30	Yes
				3/4-Methylphenol (m,p-cresol)	80	78	41-125	Yes	2.5	30	Yes
				4,6-Dinitro-2-methylphenol	84	85	29-137	Yes	1.2	30	Yes
				4-Bromophenyl phenyl ether	85	87	46-125	Yes	2.3	30	Yes
				4-Chloro-3-methylphenol	82	83	46-125	Yes	1.2	30	Yes
				4-Chloroaniline	77	77	25-125	Yes	0.0	30	Yes
				4-Chlorophenyl phenyl ether	83	81	47-125	Yes	2.4	30	Yes
				4-Nitroaniline	79	80	34-125	Yes	1.3	30	Yes
				4-Nitrophenol	68	67	25-138	Yes	1.5	30	Yes
				Acenaphthene	85	87	46-125	Yes	2.3	30	Yes
				Acenaphthylene	79	79	44-125	Yes	0.0	30	Yes
				Anthracene	80	80	53-125	Yes	0.0	30	Yes
				Benzo(a)anthracene	85	85	52-125	Yes	0.0	30	Yes
				Benzo(a)pyrene	88	90	50-125	Yes	2.2	30	Yes
				Benzo(b)fluoranthene	97	102	45-125	Yes	5.0	30	Yes
				Benzo(g,h,i)perylene	46	48	38-126	Yes	4.3	30	Yes
				Benzo(k)fluoranthene	116	113	45-125	Yes	2.6	30	Yes
				Benzoic acid	83	75	25-125	Yes	10	30	Yes
				Benzyl alcohol	77	75	25-125	Yes	2.6	30	Yes
				Benzyl butyl phthalate	100	104	49-125	Yes	3.9	30	Yes
				bis(2-Chloroethoxy)methane	83	83	43-125	Yes	0.0	30	Yes
				bis(2-Chloroethyl)ether	83	78	38-125	Yes	6.2	30	Yes
				bis(2-Chloroisopropyl)ether	75	71	25-125	Yes	5.5	30	Yes
				bis(2-Ethylhexyl)phthalate	102	111	47-127	Yes	8.5	30	Yes
				Chrysene	83	81	53-125	Yes	2.4	30	Yes

TABLE I-6

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
				Di-n-butyl phthalate	87	88	56-125	Yes	1.1	30	Yes
				Di-n-octylphthalate	176	191	41-132	No	8.2	30	Yes
				Dibenz(a,h)anthracene	46	49	41-125	Yes	6.3	30	Yes
				Dibenzofuran	81	81	51-125	Yes	0.0	30	Yes
				Diethyl phthalate	86	86	50-125	Yes	0.0	30	Yes
				Dimethyl phthalate	88	87	49-125	Yes	1.1	30	Yes
				Fluoranthene	83	80	54-125	Yes	3.7	30	Yes
				Fluorene	84	84	49-125	Yes	0.0	30	Yes
				Hexachlorobenzene	83	83	47-125	Yes	0.0	30	Yes
				Hexachlorobutadiene	81	81	40-125	Yes	0.0	30	Yes
				Hexachlorocyclopentadiene	32	27	31-135	No	17	30	Yes
				Hexachloroethane	64	56	34-125	Yes	13	30	Yes
				Indeno(1,2,3-c,d)pyrene	46	47	38-125	Yes	2.2	30	Yes
				Isophorone	86	85	43-125	Yes	1.2	30	Yes
				n-Nitrosodi-n-propylamine	81	78	40-125	Yes	3.8	30	Yes
				n-Nitrosodimethylamine	74	76	25-135	Yes	2.7	30	Yes
				n-Nitrosodiphenylamine	83	84	49-125	Yes	1.2	30	Yes
				Naphthalene	79	78	40-125	Yes	1.3	30	Yes
				Nitrobenzene	84	83	41-125	Yes	1.2	30	Yes
				Pentachlorophenol	81	83	25-125	Yes	2.4	30	Yes
				Phenanthrene	85	85	50-125	Yes	0.0	30	Yes
				Phenol	75	70	39-125	Yes	6.9	30	Yes
				Pyrene	102	107	46-125	Yes	4.8	30	Yes
099-SC07-SS1.0	03-4460-7	Soil	SW6010B	Aluminum	2360	2440	79-120	No	3.3	30	Yes
				Antimony	93	95	80-120	Yes	2.1	30	Yes
				Arsenic	101	100	80-120	Yes	1.0	30	Yes
				Barium	112	113	80-120	Yes	0.9	30	Yes
				Beryllium	98	99	80-120	Yes	1.0	30	Yes
				Boron	87	89	75-125	Yes	2.3	30	Yes
				Cadmium	109	106	80-120	Yes	2.8	30	Yes
				Chromium	101	99	80-120	Yes	2.0	30	Yes
				Cobalt	108	106	80-120	Yes	1.9	30	Yes
				Copper	88	85	80-120	Yes	3.5	30	Yes
				Iron	-3230	-3080	80-120	No	-4.8	30	Yes
				Lead	107	106	80-120	Yes	0.9	30	Yes
				Manganese	80	82	80-120	Yes	2.5	30	Yes
				Molybdenum	103	102	80-120	Yes	1.0	30	Yes

TABLE I-6

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Field Sample Identification	Lab Sample Identification	Matrix	Analytical Method	Compound	Matrix Spike Recovery (%)	Matrix Spike Duplicate Recovery (%)	Control Limits (%)	Accuracy Acceptability	RPD	RPD Control Limits	Precision Acceptability
				Nickel	106	104	80-120	Yes	1.9	30	Yes
				Selenium	99	99	80-120	Yes	0.0	30	Yes
				Silver	100	98	75-120	Yes	2.0	30	Yes
				Thallium	95	99	80-120	Yes	4.1	30	Yes
				Vanadium	97	95	80-120	Yes	2.1	30	Yes
				Zinc	53	50	80-120	No	5.8	30	Yes
099-SC19-SS3.0	03-4551-1	Soil	SW6010B	Aluminum	-112	-60	79-120	No	-61	30	No
				Antimony	105	103	80-120	Yes	1.9	30	Yes
				Arsenic	112	109	80-120	Yes	2.7	30	Yes
				Barium	109	110	80-120	Yes	0.9	30	Yes
				Beryllium	99	100	80-120	Yes	1.0	30	Yes
				Boron	86	87	75-125	Yes	1.2	30	Yes
				Cadmium	110	108	80-120	Yes	1.8	30	Yes
				Chromium	103	103	80-120	Yes	0.0	30	Yes
				Cobalt	109	110	80-120	Yes	0.9	30	Yes
				Copper	101	102	80-120	Yes	1.0	30	Yes
				Iron	-627	-575	80-120	No	-8.7	30	Yes
				Lead	110	109	80-120	Yes	0.9	30	Yes
				Manganese	100	101	80-120	Yes	1.0	30	Yes
				Molybdenum	103	101	80-120	Yes	2.0	30	Yes
				Nickel	109	110	80-120	Yes	0.9	30	Yes
				Selenium	108	106	80-120	Yes	1.9	30	Yes
				Silver	101	102	75-120	Yes	1.0	30	Yes
				Thallium	101	100	80-120	Yes	1.0	30	Yes
				Vanadium	94	95	80-120	Yes	1.1	30	Yes
				Zinc	105	102	80-120	Yes	2.9	30	Yes

% - percent
RPD - relative percent difference

TABLE I-7a

LABORATORY CONTROL SAMPLE RECOVERY SUMMARY
VOLATILE ORGANIC COMPOUNDS BY SW8260B
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability
03G1316	Soil	1,1,1,2-Tetrachloroethane	109	74-125	yes
03G1316	Soil	1,1,1-Trichloroethane	91	68-130	yes
03G1316	Soil	1,1,2 2-Tetrachloroethane	103	59-140	yes
03G1316	Soil	1,1,2-Trichloroethane	99	62-127	yes
03G1316	Soil	1,1-Dichloroethane	98	73-125	yes
03G1316	Soil	1,1-Dichloroethene	96	65-136	yes
03G1316	Soil	1,1-Dichloropropene	97	70-135	yes
03G1316	Soil	1,2,3-Trichlorobenzene	104	62-133	yes
03G1316	Soil	1,2,3-Trichloropropane	95	63-130	yes
03G1316	Soil	1,2,4-Trichlorobenzene	105	65-131	yes
03G1316	Soil	1,2,4-Trimethylbenzene	109	65-135	yes
03G1316	Soil	1,2-Dibromo-3-chloropropane	96	49-135	yes
03G1316	Soil	1,2-Dibromoethane (Ethylene Dibromide)	95	70-124	yes
03G1316	Soil	1,2-Dichlorobenzene	109	74-120	yes
03G1316	Soil	1,2-Dichloroethane	98	72-137	yes
03G1316	Soil	1,2-Dichloropropane	105	71-120	yes
03G1316	Soil	1,3,5-Trimethylbenzene	115	65-133	yes
03G1316	Soil	1,3-Dichlorobenzene	104	72-124	yes
03G1316	Soil	1,3-Dichloropropane	100	76-123	yes
03G1316	Soil	1,4-Dichlorobenzene	113	72-125	yes
03G1316	Soil	1-chlorohexane	121	60-135	yes
03G1316	Soil	2,2-dichloropropane	93	67-134	yes
03G1316	Soil	2-Butanone(MEK)	111	40-135	yes
03G1316	Soil	2-chlorotoluene	113	69-128	yes
03G1316	Soil	2-Hexanone	129	50-150	yes
03G1316	Soil	4-chlorotoluene	114	73-126	yes
03G1316	Soil	4-Methyl-2-pentanone (MIBK)	125	47-147	yes
03G1316	Soil	Acetone	125	40-141	yes
03G1316	Soil	Benzene	96	73-126	yes
03G1316	Soil	Bromobenzene	102	66-121	yes
03G1316	Soil	Bromochloromethane	88	71-127	yes
03G1316	Soil	Bromodichloromethane	101	72-128	yes
03G1316	Soil	Bromoform	98	66-137	yes
03G1316	Soil	Bromomethane	112	45-141	yes
03G1316	Soil	Carbon disulfide	81	70-130	yes
03G1316	Soil	Carbon tetrachloride	98	67-133	yes
03G1316	Soil	Chlorobenzene	109	75-123	yes
03G1316	Soil	Chloroethane	108	41-141	yes
03G1316	Soil	Chloroform	88	72-124	yes
03G1316	Soil	Chloromethane	103	51-129	yes
03G1316	Soil	cis-1,2-Dichloroethylene	93	67-125	yes
03G1316	Soil	cis-1,3-Dichloropropene	98	72-126	yes
03G1316	Soil	Dibromochloromethane	93	66-130	yes
03G1316	Soil	Dibromomethane	80	73-128	yes
03G1316	Soil	Dichlorodifluoromethane	89	34-136	yes
03G1316	Soil	Ethylbenzene	110	74-127	yes
03G1316	Soil	Hexachlorobutadiene	110	53-142	yes
03G1316	Soil	Isopropylbenzene (Cumene)	113	77-129	yes
03G1316	Soil	m,p-Xylene	109	79-126	yes
03G1316	Soil	Methyl tertiary-butyl ether	101	50-135	yes
03G1316	Soil	Methylene chloride	99	63-137	yes
03G1316	Soil	Naphthalene	98	51-135	yes
03G1316	Soil	n-Butylbenzene	106	65-138	yes
03G1316	Soil	n-Propylbenzene	105	63-135	yes
03G1316	Soil	o-Xylene	108	77-125	yes
03G1316	Soil	p-Cymene (p-isopropyltoluene)	108	75-133	yes

TABLE I-7a

LABORATORY CONTROL SAMPLE RECOVERY SUMMARY
VOLATILE ORGANIC COMPOUNDS BY SW8260B
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability
03G1316	Soil	Sec-butylbenzene	108	63-132	yes
03G1316	Soil	Styrene	108	74-128	yes
03G1316	Soil	t-Butylbenzene	105	65-132	yes
03G1316	Soil	Tetrachloroethylene (PCE)	95	67-139	yes
03G1316	Soil	Toluene	108	71-127	yes
03G1316	Soil	trans-1,2-Dichloroethene	85	66-134	yes
03G1316	Soil	trans-1 3-Dichloropropene	99	65-127	yes
03G1316	Soil	Trichloroethylene (TCE)	92	77-124	yes
03G1316	Soil	Trichlorofluoromethane	97	49-139	yes
03G1316	Soil	Vinyl acetate	120	60-140	yes
03G1316	Soil	Vinyl chloride	105	58-126	yes
03G1330	Soil	1,1,1,2-Tetrachloroethane	92	74-125	yes
03G1330	Soil	1,1,1-Trichloroethane	83	68-130	yes
03G1330	Soil	1,1,2 2-Tetrachloroethane	101	59-140	yes
03G1330	Soil	1,1,2-Trichloroethane	87	62-127	yes
03G1330	Soil	1,1-Dichloroethane	88	73-125	yes
03G1330	Soil	1,1-Dichloroethene	92	65-136	yes
03G1330	Soil	1,1-Dichloropropene	87	70-135	yes
03G1330	Soil	1,2,3-Trichlorobenzene	97	62-133	yes
03G1330	Soil	1,2 3-Trichloropropane	90	63-130	yes
03G1330	Soil	1,2,4-Trichlorobenzene	97	65-131	yes
03G1330	Soil	1,2,4-Trimethylbenzene	104	65-135	yes
03G1330	Soil	1,2-Dibromo-3-chloropropane	98	49-135	yes
03G1330	Soil	1,2-Dibromoethane (Ethylene Dibromide)	85	70-124	yes
03G1330	Soil	1,2-Dichlorobenzene	103	74-120	yes
03G1330	Soil	1,2-Dichloroethane	92	72-137	yes
03G1330	Soil	1,2-Dichloropropane	96	71-120	yes
03G1330	Soil	1,3,5-Trimethylbenzene	107	65-133	yes
03G1330	Soil	1,3-Dichlorobenzene	97	72-124	yes
03G1330	Soil	1,3-Dichloropropane	91	76-123	yes
03G1330	Soil	1,4-Dichlorobenzene	103	72-125	yes
03G1330	Soil	1-chlorohexane	117	60-135	yes
03G1330	Soil	2,2-dichloropropane	82	67-134	yes
03G1330	Soil	2-Butanone(MEK)	93	40-135	yes
03G1330	Soil	2-chlorotoluene	102	69-128	yes
03G1330	Soil	2-Hexanone	116	50-150	yes
03G1330	Soil	4-chlorotoluene	103	73-126	yes
03G1330	Soil	4-Methyl-2-pentanone (MIBK)	121	47-147	yes
03G1330	Soil	Acetone	91	40-141	yes
03G1330	Soil	Benzene	86	73-126	yes
03G1330	Soil	Bromobenzene	93	66-121	yes
03G1330	Soil	Bromochloromethane	76	71-127	yes
03G1330	Soil	Bromodichloromethane	85	72-128	yes
03G1330	Soil	Bromoform	90	66-137	yes
03G1330	Soil	Bromomethane	95	45-141	yes
03G1330	Soil	Carbon disulfide	73	70-130	yes
03G1330	Soil	Carbon tetrachloride	97	67-133	yes
03G1330	Soil	Chlorobenzene	96	75-123	yes
03G1330	Soil	Chloroethane	93	41-141	yes
03G1330	Soil	Chloroform	81	72-124	yes
03G1330	Soil	Chloromethane	99	51-129	yes
03G1330	Soil	cis-1,2-Dichloroethylene	84	67-125	yes
03G1330	Soil	cis-1,3-Dichloropropene	83	72-126	yes
03G1330	Soil	Dibromochloromethane	84	66-130	yes
03G1330	Soil	Dibromomethane	70	73-128	no
03G1330	Soil	Dichlorodifluoromethane	81	34-136	yes

TABLE I-7a

LABORATORY CONTROL SAMPLE RECOVERY SUMMARY
VOLATILE ORGANIC COMPOUNDS BY SW8260B
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability
03G1330	Soil	Ethyl tertiary-butyl ether	97	65-135	yes
03G1330	Soil	Ethylbenzene	104	74-127	yes
03G1330	Soil	Hexachlorobutadiene	103	53-142	yes
03G1330	Soil	Isopropyl Ether	115	65-135	yes
03G1330	Soil	Isopropylbenzene (Cumene)	105	77-129	yes
03G1330	Soil	m,p-Xylene	103	79-126	yes
03G1330	Soil	Methyl tertiary-butyl ether	92	50-135	yes
03G1330	Soil	Methylene chloride	83	63-137	yes
03G1330	Soil	Naphthalene	97	51-135	yes
03G1330	Soil	n-Butylbenzene	98	65-138	yes
03G1330	Soil	n-Propylbenzene	101	63-135	yes
03G1330	Soil	o-Xylene	102	77-125	yes
03G1330	Soil	p-Cymene (p-isopropyltoluene)	103	75-133	yes
03G1330	Soil	Sec-butylbenzene	104	63-132	yes
03G1330	Soil	Styrene	102	74-128	yes
03G1330	Soil	t-Butylbenzene	102	65-132	yes
03G1330	Soil	Tert-amyl-methyl ether	98	65-135	yes
03G1330	Soil	tert-Butyl alcohol	100	65-135	yes
03G1330	Soil	Tetrachloroethylene (PCE)	84	67-139	yes
03G1330	Soil	Toluene	96	71-127	yes
03G1330	Soil	trans-1,2-Dichloroethene	75	66-134	yes
03G1330	Soil	trans-1,3-Dichloropropene	90	65-127	yes
03G1330	Soil	Trichloroethylene (TCE)	83	77-124	yes
03G1330	Soil	Trichlorofluoromethane	96	49-139	yes
03G1330	Soil	Vinyl acetate	106	60-140	yes
03G1330	Soil	Vinyl chloride	94	58-126	yes
03G1737	Soil	1,1,1,2-Tetrachloroethane	97	74-125	yes
03G1737	Soil	1,1,1-Trichloroethane	119	68-130	yes
03G1737	Soil	1,1,2,2-Tetrachloroethane	89	59-140	yes
03G1737	Soil	1,1,2-Trichloroethane	89	62-127	yes
03G1737	Soil	1,1-Dichloroethane	106	73-125	yes
03G1737	Soil	1,1-Dichloroethene	118	65-136	yes
03G1737	Soil	1,1-Dichloropropene	100	70-135	yes
03G1737	Soil	1,2,3-Trichlorobenzene	101	62-133	yes
03G1737	Soil	1,2,3-Trichloropropane	95	63-130	yes
03G1737	Soil	1,2,4-Trichlorobenzene	98	65-131	yes
03G1737	Soil	1,2,4-Trimethylbenzene	101	65-135	yes
03G1737	Soil	1,2-Dibromo-3-chloropropane	102	49-135	yes
03G1737	Soil	1,2-Dibromoethane (Ethylene Dibromide)	91	70-124	yes
03G1737	Soil	1,2-Dichlorobenzene	97	74-120	yes
03G1737	Soil	1,2-Dichloroethane	98	72-137	yes
03G1737	Soil	1,2-Dichloropropane	90	71-120	yes
03G1737	Soil	1,3,5-Trimethylbenzene	104	65-133	yes
03G1737	Soil	1,3-Dichlorobenzene	95	72-124	yes
03G1737	Soil	1,3-Dichloropropane	87	76-123	yes
03G1737	Soil	1,4-Dichlorobenzene	96	72-125	yes
03G1737	Soil	1-chlorohexane	92	60-135	yes
03G1737	Soil	2,2-dichloropropane	114	67-134	yes
03G1737	Soil	2-Butanone(MEK)	65	40-135	yes
03G1737	Soil	2-chlorotoluene	97	69-128	yes
03G1737	Soil	2-Hexanone	74	50-150	yes
03G1737	Soil	4-chlorotoluene	99	73-126	yes
03G1737	Soil	4-Methyl-2-pentanone (MIBK)	73	47-147	yes
03G1737	Soil	Acetone	79	40-141	yes
03G1737	Soil	Benzene	96	73-126	yes
03G1737	Soil	Bromobenzene	101	66-121	yes

TABLE I-7a

LABORATORY CONTROL SAMPLE RECOVERY SUMMARY
VOLATILE ORGANIC COMPOUNDS BY SW8260B
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability
03G1737	Soil	Bromochloromethane	104	71-127	yes
03G1737	Soil	Bromodichloromethane	99	72-128	yes
03G1737	Soil	Bromoform	102	66-137	yes
03G1737	Soil	Bromomethane	112	45-141	yes
03G1737	Soil	Carbon disulfide	92	70-130	yes
03G1737	Soil	Carbon tetrachloride	133	67-133	yes
03G1737	Soil	Chlorobenzene	98	75-123	yes
03G1737	Soil	Chloroethane	106	41-141	yes
03G1737	Soil	Chloroform	106	72-124	yes
03G1737	Soil	Chloromethane	92	51-129	yes
03G1737	Soil	cis-1,2-Dichloroethylene	111	67-125	yes
03G1737	Soil	cis-1,3-Dichloropropene	93	72-126	yes
03G1737	Soil	Dibromochloromethane	97	66-130	yes
03G1737	Soil	Dibromomethane	104	73-128	yes
03G1737	Soil	Dichlorodifluoromethane	102	34-136	yes
03G1737	Soil	Ethylbenzene	100	74-127	yes
03G1737	Soil	Hexachlorobutadiene	116	53-142	yes
03G1737	Soil	Isopropylbenzene (Cumene)	103	77-129	yes
03G1737	Soil	m,p-Xylene	98	79-126	yes
03G1737	Soil	Methyl tertiary-butyl ether	93	50-135	yes
03G1737	Soil	Methylene chloride	102	63-137	yes
03G1737	Soil	Naphthalene	98	51-135	yes
03G1737	Soil	n-Butylbenzene	99	65-138	yes
03G1737	Soil	n-Propylbenzene	101	63-135	yes
03G1737	Soil	o-Xylene	99	77-125	yes
03G1737	Soil	p-Cymene (p-isopropyltoluene)	102	75-133	yes
03G1737	Soil	Sec-butylbenzene	106	63-132	yes
03G1737	Soil	Styrene	97	74-128	yes
03G1737	Soil	t-Butylbenzene	107	65-132	yes
03G1737	Soil	Tetrachloroethylene (PCE)	107	67-139	yes
03G1737	Soil	Toluene	98	71-127	yes
03G1737	Soil	trans-1,2-Dichloroethene	101	66-134	yes
03G1737	Soil	trans-1,3-Dichloropropene	92	65-127	yes
03G1737	Soil	Trichloroethylene (TCE)	101	77-124	yes
03G1737	Soil	Trichlorofluoromethane	142	49-139	no
03G1737	Soil	Vinyl acetate	78	60-140	yes
03G1737	Soil	Vinyl chloride	112	58-126	yes
03G1056	Water	1,1,1,2-Tetrachloroethane	99	81-129	yes
03G1056	Water	1,1,1-Trichloroethane	104	67-132	yes
03G1056	Water	1,1,2,2-Tetrachloroethane	102	63-128	yes
03G1056	Water	1,1,2-Trichloroethane	102	75-125	yes
03G1056	Water	1,1-Dichloroethane	101	69-133	yes
03G1056	Water	1,1-Dichloroethene	103	68-130	yes
03G1056	Water	1,1-Dichloropropene	108	73-132	yes
03G1056	Water	1,2,3-Trichlorobenzene	107	67-137	yes
03G1056	Water	1,2,3-Trichloropropane	100	73-124	yes
03G1056	Water	1,2,4-Trichlorobenzene	108	66-134	yes
03G1056	Water	1,2,4-Trimethylbenzene	104	74-132	yes
03G1056	Water	1,2-Dibromo-3-chloropropane	101	50-132	yes
03G1056	Water	1,2-Dibromoethane (Ethylene Dibromide)	105	80-121	yes
03G1056	Water	1,2-Dichlorobenzene	103	71-122	yes
03G1056	Water	1,2-Dichloroethane	102	69-132	yes
03G1056	Water	1,2-Dichloropropane	103	75-125	yes
03G1056	Water	1,3,5-Trimethylbenzene	106	74-131	yes
03G1056	Water	1,3-Dichlorobenzene	105	75-124	yes

TABLE I-7a

LABORATORY CONTROL SAMPLE RECOVERY SUMMARY
VOLATILE ORGANIC COMPOUNDS BY SW8260B
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability
03G1056	Water	1,3-Dichloropropane	101	73-126	yes
03G1056	Water	1,4-Dichlorobenzene	105	74-123	yes
03G1056	Water	1-chlorohexane	100	70-125	yes
03G1056	Water	2,2-dichloropropane	110	69-137	yes
03G1056	Water	2-Butanone(MEK)	113	49-136	yes
03G1056	Water	2-chlorotoluene	105	73-126	yes
03G1056	Water	2-Hexanone	113	50-150	yes
03G1056	Water	4-chlorotoluene	104	74-128	yes
03G1056	Water	4-Methyl-2-pentanone (MIBK)	101	58-134	yes
03G1056	Water	Acetone	110	40-135	yes
03G1056	Water	Benzene	102	81-122	yes
03G1056	Water	Bromobenzene	101	76-124	yes
03G1056	Water	Bromochloromethane	108	65-129	yes
03G1056	Water	Bromodichloromethane	97	76-121	yes
03G1056	Water	Bromoform	101	69-128	yes
03G1056	Water	Bromomethane	96	53-141	yes
03G1056	Water	Carbon disulfide	101	70-130	yes
03G1056	Water	Carbon tetrachloride	106	66-138	yes
03G1056	Water	Chlorobenzene	101	81-122	yes
03G1056	Water	Chloroethane	106	58-133	yes
03G1056	Water	Chloroform	99	69-128	yes
03G1056	Water	Chloromethane	101	56-131	yes
03G1056	Water	cis-1,2-Dichloroethylene	103	72-126	yes
03G1056	Water	cis-1,3-Dichloropropene	106	69-131	yes
03G1056	Water	Dibromochloromethane	98	66-133	yes
03G1056	Water	Dibromomethane	105	76-125	yes
03G1056	Water	Dichlorodifluoromethane	101	53-153	yes
03G1056	Water	Ethylbenzene	100	73-127	yes
03G1056	Water	Hexachlorobutadiene	101	67-131	yes
03G1056	Water	Isopropylbenzene (Cumene)	105	75-127	yes
03G1056	Water	m,p-Xylene	100	76-128	yes
03G1056	Water	Methyl tertiary-butyl ether	107	65-123	yes
03G1056	Water	Methylene chloride	109	63-137	yes
03G1056	Water	Naphthalene	113	54-138	yes
03G1056	Water	n-Butylbenzene	101	69-137	yes
03G1056	Water	n-Propylbenzene	107	72-129	yes
03G1056	Water	o-Xylene	101	80-121	yes
03G1056	Water	p-Cymene (p-isopropyltoluene)	100	73-130	yes
03G1056	Water	Sec-butylbenzene	99	72-127	yes
03G1056	Water	Styrene	103	65-134	yes
03G1056	Water	t-Butylbenzene	106	70-129	yes
03G1056	Water	Tetrachloroethylene (PCE)	104	66-128	yes
03G1056	Water	Toluene	101	77-122	yes
03G1056	Water	trans-1,2-Dichloroethene	103	63-137	yes
03G1056	Water	trans-1,3-Dichloropropene	109	59-135	yes
03G1056	Water	Trichloroethylene (TCE)	104	70-127	yes
03G1056	Water	Trichlorofluoromethane	113	57-129	yes
03G1056	Water	Vinyl acetate	107	60-140	yes
03G1056	Water	Vinyl chloride	105	50-134	yes
03G1086	Water	1,1,2-Tetrachloroethane	99	81-129	yes
03G1086	Water	1,1,1-Trichloroethane	103	67-132	yes
03G1086	Water	1,1,2,2-Tetrachloroethane	94	63-128	yes
03G1086	Water	1,1,2-Trichloroethane	98	75-125	yes
03G1086	Water	1,1-Dichloroethane	101	69-133	yes
03G1086	Water	1,1-Dichloroethene	106	68-130	yes
03G1086	Water	1,1-Dichloropropene	107	73-132	yes

TABLE I-7a

LABORATORY CONTROL SAMPLE RECOVERY SUMMARY
VOLATILE ORGANIC COMPOUNDS BY SW8260B
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability
03G1086	Water	1,2,3-Trichlorobenzene	102	67-137	yes
03G1086	Water	1,2,3-Trichloropropane	91	73-124	yes
03G1086	Water	1,2,4-Trichlorobenzene	102	66-134	yes
03G1086	Water	1,2,4-Trimethylbenzene	103	74-132	yes
03G1086	Water	1,2-Dibromo-3-chloropropane	89	50-132	yes
03G1086	Water	1,2-Dibromoethane (Ethylene Dibromide)	100	80-121	yes
03G1086	Water	1,2-Dichlorobenzene	101	71-122	yes
03G1086	Water	1,2-Dichloroethane	99	69-132	yes
03G1086	Water	1,2-Dichloropropane	105	75-125	yes
03G1086	Water	1,3,5-Trimethylbenzene	104	74-131	yes
03G1086	Water	1,3-Dichlorobenzene	104	75-124	yes
03G1086	Water	1,3-Dichloropropane	99	73-126	yes
03G1086	Water	1,4-Dichlorobenzene	104	74-123	yes
03G1086	Water	1-chlorohexane	102	70-125	yes
03G1086	Water	2,2-dichloropropane	104	69-137	yes
03G1086	Water	2-Butanone(MEK)	118	49-136	yes
03G1086	Water	2-chlorotoluene	105	73-126	yes
03G1086	Water	2-Hexanone	119	50-150	yes
03G1086	Water	4-chlorotoluene	105	74-128	yes
03G1086	Water	4-Methyl-2-pentanone (MIBK)	91	58-134	yes
03G1086	Water	Acetone	121	40-135	yes
03G1086	Water	Benzene	103	81-122	yes
03G1086	Water	Bromobenzene	100	76-124	yes
03G1086	Water	Bromochloromethane	103	65-129	yes
03G1086	Water	Bromodichloromethane	96	76-121	yes
03G1086	Water	Bromoform	96	69-128	yes
03G1086	Water	Bromomethane	94	53-141	yes
03G1086	Water	Carbon disulfide	104	70-130	yes
03G1086	Water	Carbon tetrachloride	105	66-138	yes
03G1086	Water	Chlorobenzene	103	81-122	yes
03G1086	Water	Chloroethane	105	58-133	yes
03G1086	Water	Chloroform	100	69-128	yes
03G1086	Water	Chloromethane	101	56-131	yes
03G1086	Water	cis-1,2-Dichloroethylene	102	72-126	yes
03G1086	Water	cis-1,3-Dichloropropene	104	69-131	yes
03G1086	Water	Dibromochloromethane	94	66-133	yes
03G1086	Water	Dibromomethane	99	76-125	yes
03G1086	Water	Dichlorodifluoromethane	96	53-153	yes
03G1086	Water	Ethylbenzene	100	73-127	yes
03G1086	Water	Hexachlorobutadiene	101	67-131	yes
03G1086	Water	Isopropylbenzene (Cumene)	106	75-127	yes
03G1086	Water	m,p-Xylene	102	76-128	yes
03G1086	Water	Methyl tertiary-butyl ether	98	65-123	yes
03G1086	Water	Methylene chloride	118	63-137	yes
03G1086	Water	Naphthalene	99	54-138	yes
03G1086	Water	n-Butylbenzene	99	69-137	yes
03G1086	Water	n-Propylbenzene	109	72-129	yes
03G1086	Water	o-Xylene	103	80-121	yes
03G1086	Water	p-Cymene (p-isopropyltoluene)	100	73-130	yes
03G1086	Water	Sec-butylbenzene	101	72-127	yes
03G1086	Water	Styrene	105	65-134	yes
03G1086	Water	t-Butylbenzene	107	70-129	yes
03G1086	Water	Tetrachloroethylene (PCE)	104	66-128	yes
03G1086	Water	Toluene	102	77-122	yes
03G1086	Water	trans-1,2-Dichloroethene	103	63-137	yes
03G1086	Water	trans-1,3-Dichloropropene	103	59-135	yes

TABLE I-7a

LABORATORY CONTROL SAMPLE RECOVERY SUMMARY
VOLATILE ORGANIC COMPOUNDS BY SW8260B
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability
03G1086	Water	Trichloroethylene (TCE)	104	70-127	yes
03G1086	Water	Trichlorofluoromethane	110	57-129	yes
03G1086	Water	Vinyl acetate	100	60-140	yes
03G1086	Water	Vinyl chloride	107	50-134	yes
03G1113	Water	1,1,1,2-Tetrachloroethane	98	81-129	yes
03G1113	Water	1,1,1-Trichloroethane	98	67-132	yes
03G1113	Water	1,1,2,2-Tetrachloroethane	98	63-128	yes
03G1113	Water	1,1,2-Trichloroethane	103	75-125	yes
03G1113	Water	1,1-Dichloroethane	104	69-133	yes
03G1113	Water	1,1-Dichloroethene	98	68-130	yes
03G1113	Water	1,1-Dichloropropene	98	73-132	yes
03G1113	Water	1,2,3-Trichlorobenzene	96	67-137	yes
03G1113	Water	1,2,3-Trichloropropane	95	73-124	yes
03G1113	Water	1,2,4-Trichlorobenzene	96	66-134	yes
03G1113	Water	1,2,4-Trimethylbenzene	97	74-132	yes
03G1113	Water	1,2-Dibromo-3-chloropropane	91	50-132	yes
03G1113	Water	1,2-Dibromoethane (Ethylene Dibromide)	104	80-121	yes
03G1113	Water	1,2-Dichlorobenzene	97	71-122	yes
03G1113	Water	1,2-Dichloroethane	106	69-132	yes
03G1113	Water	1,2-Dichloropropane	109	75-125	yes
03G1113	Water	1,3,5-Trimethylbenzene	96	74-131	yes
03G1113	Water	1,3-Dichlorobenzene	98	75-124	yes
03G1113	Water	1,3-Dichloropropane	103	73-126	yes
03G1113	Water	1,4-Dichlorobenzene	98	74-123	yes
03G1113	Water	1-chlorohexane	84	70-125	yes
03G1113	Water	2,2-dichloropropane	101	69-137	yes
03G1113	Water	2-Butanone(MEK)	89	49-136	yes
03G1113	Water	2-chlorotoluene	98	73-126	yes
03G1113	Water	2-Hexanone	93	50-150	yes
03G1113	Water	4-chlorotoluene	98	74-128	yes
03G1113	Water	4-Methyl-2-pentanone (MIBK)	98	58-134	yes
03G1113	Water	Acetone	66	40-135	yes
03G1113	Water	Benzene	104	81-122	yes
03G1113	Water	Bromobenzene	96	76-124	yes
03G1113	Water	Bromochloromethane	110	65-129	yes
03G1113	Water	Bromodichloromethane	101	76-121	yes
03G1113	Water	Bromoform	99	69-128	yes
03G1113	Water	Bromomethane	101	53-141	yes
03G1113	Water	Carbon disulfide	96	70-130	yes
03G1113	Water	Carbon tetrachloride	95	66-138	yes
03G1113	Water	Chlorobenzene	102	81-122	yes
03G1113	Water	Chloroethane	110	58-133	yes
03G1113	Water	Chloroform	104	69-128	yes
03G1113	Water	Chloromethane	101	56-131	yes
03G1113	Water	cis-1,2-Dichloroethylene	107	72-126	yes
03G1113	Water	cis-1,3-Dichloropropene	108	69-131	yes
03G1113	Water	Dibromochloromethane	98	66-133	yes
03G1113	Water	Dibromomethane	108	76-125	yes
03G1113	Water	Dichlorodifluoromethane	80	53-153	yes
03G1113	Water	Ethylbenzene	93	73-127	yes
03G1113	Water	Hexachlorobutadiene	84	67-131	yes
03G1113	Water	Isopropylbenzene (Cumene)	94	75-127	yes
03G1113	Water	m,p-Xylene	94	76-128	yes
03G1113	Water	Methyl tertiary-butyl ether	107	65-123	yes
03G1113	Water	Methylene chloride	100	63-137	yes
03G1113	Water	Naphthalene	100	54-138	yes

TABLE I-7a

LABORATORY CONTROL SAMPLE RECOVERY SUMMARY
VOLATILE ORGANIC COMPOUNDS BY SW8260B
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability
03G1113	Water	n-Butylbenzene	86	69-137	yes
03G1113	Water	n-Propylbenzene	95	72-129	yes
03G1113	Water	o-Xylene	97	80-121	yes
03G1113	Water	p-Cymene (p-isopropyltoluene)	88	73-130	yes
03G1113	Water	Sec-butylbenzene	87	72-127	yes
03G1113	Water	Styrene	100	65-134	yes
03G1113	Water	t-Butylbenzene	96	70-129	yes
03G1113	Water	Tetrachloroethylene (PCE)	90	66-128	yes
03G1113	Water	Toluene	100	77-122	yes
03G1113	Water	trans-1,2-Dichloroethene	103	63-137	yes
03G1113	Water	trans-1,3-Dichloropropene	110	59-135	yes
03G1113	Water	Trichloroethylene (TCE)	100	70-127	yes
03G1113	Water	Trichlorofluoromethane	97	57-129	yes
03G1113	Water	Vinyl acetate	112	60-140	yes
03G1113	Water	Vinyl chloride	101	50-134	yes
03G1115	Water	1,1,1,2-Tetrachloroethane	106	81-129	yes
03G1115	Water	1,1,1-Trichloroethane	101	67-132	yes
03G1115	Water	1,1,2,2-Tetrachloroethane	88	63-128	yes
03G1115	Water	1,1,2-Trichloroethane	106	75-125	yes
03G1115	Water	1,1-Dichloroethane	85	69-133	yes
03G1115	Water	1,1-Dichloroethene	90	68-130	yes
03G1115	Water	1,1-Dichloropropene	94	73-132	yes
03G1115	Water	1,2,3-Trichlorobenzene	105	67-137	yes
03G1115	Water	1,2,3-Trichloropropane	95	73-124	yes
03G1115	Water	1,2,4-Trichlorobenzene	107	66-134	yes
03G1115	Water	1,2,4-Trimethylbenzene	101	74-132	yes
03G1115	Water	1,2-Dibromo-3-chloropropane	86	50-132	yes
03G1115	Water	1,2-Dibromoethane (Ethylene Dibromide)	105	80-121	yes
03G1115	Water	1,2-Dichlorobenzene	96	71-122	yes
03G1115	Water	1,2-Dichloroethane	91	69-132	yes
03G1115	Water	1,2-Dichloropropane	90	75-125	yes
03G1115	Water	1,3,5-Trimethylbenzene	93	74-131	yes
03G1115	Water	1,3-Dichlorobenzene	94	75-124	yes
03G1115	Water	1,3-Dichloropropane	101	73-126	yes
03G1115	Water	1,4-Dichlorobenzene	97	74-123	yes
03G1115	Water	1-chlorohexane	91	70-125	yes
03G1115	Water	2,2-dichloropropane	93	69-137	yes
03G1115	Water	2-Butanone(MEK)	89	49-136	yes
03G1115	Water	2-chlorotoluene	100	73-126	yes
03G1115	Water	2-Hexanone	96	50-150	yes
03G1115	Water	4-chlorotoluene	103	74-128	yes
03G1115	Water	4-Methyl-2-pentanone (MIBK)	88	58-134	yes
03G1115	Water	Acetone	80	40-135	yes
03G1115	Water	Benzene	92	81-122	yes
03G1115	Water	Bromobenzene	97	76-124	yes
03G1115	Water	Bromochloromethane	95	65-129	yes
03G1115	Water	Bromodichloromethane	91	76-121	yes
03G1115	Water	Bromoform	108	69-128	yes
03G1115	Water	Bromomethane	75	53-141	yes
03G1115	Water	Carbon disulfide	78	70-130	yes
03G1115	Water	Carbon tetrachloride	106	66-138	yes
03G1115	Water	Chlorobenzene	95	81-122	yes
03G1115	Water	Chloroethane	78	58-133	yes
03G1115	Water	Chloroform	91	69-128	yes
03G1115	Water	Chloromethane	74	56-131	yes
03G1115	Water	cis-1 2-Dichloroethylene	95	72-126	yes

TABLE I-7a

LABORATORY CONTROL SAMPLE RECOVERY SUMMARY
VOLATILE ORGANIC COMPOUNDS BY SW8260B
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability
03G1115	Water	cis-1,3-Dichloropropene	99	69-131	yes
03G1115	Water	Dibromochloromethane	109	66-133	yes
03G1115	Water	Dibromomethane	104	76-125	yes
03G1115	Water	Dichlorodifluoromethane	101	53-153	yes
03G1115	Water	Ethylbenzene	92	73-127	yes
03G1115	Water	Hexachlorobutadiene	105	67-131	yes
03G1115	Water	Isopropylbenzene (Cumene)	94	75-127	yes
03G1115	Water	m,p-Xylene	91	76-128	yes
03G1115	Water	Methyl tertiary-butyl ether	91	65-123	yes
03G1115	Water	Methylene chloride	99	63-137	yes
03G1115	Water	Naphthalene	109	54-138	yes
03G1115	Water	n-Butylbenzene	110	69-137	yes
03G1115	Water	n-Propylbenzene	98	72-129	yes
03G1115	Water	o-Xylene	89	80-121	yes
03G1115	Water	p-Cymene (p-isopropyltoluene)	97	73-130	yes
03G1115	Water	Sec-butylbenzene	97	72-127	yes
03G1115	Water	Styrene	90	65-134	yes
03G1115	Water	t-Butylbenzene	96	70-129	yes
03G1115	Water	Tetrachloroethylene (PCE)	113	66-128	yes
03G1115	Water	Toluene	101	77-122	yes
03G1115	Water	trans-1,2-Dichloroethene	93	63-137	yes
03G1115	Water	trans-1,3-Dichloropropene	90	59-135	yes
03G1115	Water	Trichloroethylene (TCE)	101	70-127	yes
03G1115	Water	Trichlorofluoromethane	117	57-129	yes
03G1115	Water	Vinyl acetate	102	60-140	yes
03G1115	Water	Vinyl chloride	89	50-134	yes
03G1138	Water	1,1,1,2-Tetrachloroethane	100	81-129	yes
03G1138	Water	1,1,1-Trichloroethane	104	67-132	yes
03G1138	Water	1,1,2,2-Tetrachloroethane	99	63-128	yes
03G1138	Water	1,1,2-Trichloroethane	103	75-125	yes
03G1138	Water	1,1-Dichloroethane	102	69-133	yes
03G1138	Water	1,1-Dichloroethene	104	68-130	yes
03G1138	Water	1,1-Dichloropropene	108	73-132	yes
03G1138	Water	1,2,3-Trichlorobenzene	104	67-137	yes
03G1138	Water	1,2,3-Trichloropropane	96	73-124	yes
03G1138	Water	1,2,4-Trichlorobenzene	105	66-134	yes
03G1138	Water	1,2,4-Trimethylbenzene	107	74-132	yes
03G1138	Water	1,2-Dibromo-3-chloropropane	94	50-132	yes
03G1138	Water	1,2-Dibromoethane (Ethylene Dibromide)	105	80-121	yes
03G1138	Water	1,2-Dichlorobenzene	103	71-122	yes
03G1138	Water	1,2-Dichloroethane	106	69-132	yes
03G1138	Water	1,2-Dichloropropane	106	75-125	yes
03G1138	Water	1,3,5-Trimethylbenzene	106	74-131	yes
03G1138	Water	1,3-Dichlorobenzene	105	75-124	yes
03G1138	Water	1,3-Dichloropropane	104	73-126	yes
03G1138	Water	1,4-Dichlorobenzene	105	74-123	yes
03G1138	Water	1-chlorohexane	101	70-125	yes
03G1138	Water	2,2-dichloropropane	102	69-137	yes
03G1138	Water	2-Butanone(MEK)	91	49-136	yes
03G1138	Water	2-chlorotoluene	107	73-126	yes
03G1138	Water	2-Hexanone	96	50-150	yes
03G1138	Water	4-chlorotoluene	105	74-128	yes
03G1138	Water	4-Methyl-2-pentanone (MIBK)	98	58-134	yes
03G1138	Water	Acetone	73	40-135	yes
03G1138	Water	Benzene	105	81-122	yes
03G1138	Water	Bromobenzene	101	76-124	yes

TABLE I-7a

LABORATORY CONTROL SAMPLE RECOVERY SUMMARY
VOLATILE ORGANIC COMPOUNDS BY SW8260B
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability
03G1138	Water	Bromochloromethane	106	65-129	yes
03G1138	Water	Bromodichloromethane	101	76-121	yes
03G1138	Water	Bromoform	99	69-128	yes
03G1138	Water	Bromomethane	102	53-141	yes
03G1138	Water	Carbon disulfide	99	70-130	yes
03G1138	Water	Carbon tetrachloride	106	66-138	yes
03G1138	Water	Chlorobenzene	104	81-122	yes
03G1138	Water	Chloroethane	113	58-133	yes
03G1138	Water	Chloroform	102	69-128	yes
03G1138	Water	Chloromethane	100	56-131	yes
03G1138	Water	cis-1 2-Dichloroethylene	105	72-126	yes
03G1138	Water	cis-1,3-Dichloropropene	107	69-131	yes
03G1138	Water	Dibromochloromethane	98	66-133	yes
03G1138	Water	Dibromomethane	106	76-125	yes
03G1138	Water	Dichlorodifluoromethane	89	53-153	yes
03G1138	Water	Ethylbenzene	100	73-127	yes
03G1138	Water	Hexachlorobutadiene	96	67-131	yes
03G1138	Water	Isopropylbenzene (Cumene)	104	75-127	yes
03G1138	Water	m,p-Xylene	102	76-128	yes
03G1138	Water	Methyl tertiary-butyl ether	103	65-123	yes
03G1138	Water	Methylene chloride	93	63-137	yes
03G1138	Water	Naphthalene	107	54-138	yes
03G1138	Water	n-Butylbenzene	99	69-137	yes
03G1138	Water	n-Propylbenzene	107	72-129	yes
03G1138	Water	o-Xylene	102	80-121	yes
03G1138	Water	p-Cymene (p-isopropyltoluene)	99	73-130	yes
03G1138	Water	Sec-butylbenzene	99	72-127	yes
03G1138	Water	Styrene	104	65-134	yes
03G1138	Water	t-Butylbenzene	107	70-129	yes
03G1138	Water	Tetrachloroethylene (PCE)	103	66-128	yes
03G1138	Water	Toluene	104	77-122	yes
03G1138	Water	trans-1,2-Dichloroethene	103	63-137	yes
03G1138	Water	trans-1,3-Dichloropropene	109	59-135	yes
03G1138	Water	Trichloroethylene (TCE)	105	70-127	yes
03G1138	Water	Trichlorofluoromethane	107	57-129	yes
03G1138	Water	Vinyl acetate	108	60-140	yes
03G1138	Water	Vinyl chloride	110	50-134	yes
03G1163	Water	1,1,1,2-Tetrachloroethane	106	81-129	yes
03G1163	Water	1,1,1-Trichloroethane	104	67-132	yes
03G1163	Water	1,1,2,2-Tetrachloroethane	78	63-128	yes
03G1163	Water	1,1,2-Trichloroethane	99	75-125	yes
03G1163	Water	1,1-Dichloroethane	85	69-133	yes
03G1163	Water	1,1-Dichloroethene	89	68-130	yes
03G1163	Water	1,1-Dichloropropene	93	73-132	yes
03G1163	Water	1,2,3-Trichlorobenzene	100	67-137	yes
03G1163	Water	1,2,3-Trichloropropane	88	73-124	yes
03G1163	Water	1,2,4-Trichlorobenzene	104	66-134	yes
03G1163	Water	1,2,4-Trimethylbenzene	101	74-132	yes
03G1163	Water	1 2-Dibromo-3-chloropropane	81	50-132	yes
03G1163	Water	1,2-Dibromoethane (Ethylene Dibromide)	97	80-121	yes
03G1163	Water	1,2-Dichlorobenzene	93	71-122	yes
03G1163	Water	1,2-Dichloroethane	89	69-132	yes
03G1163	Water	1,2-Dichloropropane	85	75-125	yes
03G1163	Water	1,3,5-Trimethylbenzene	96	74-131	yes
03G1163	Water	1,3-Dichlorobenzene	95	75-124	yes
03G1163	Water	1,3-Dichloropropane	91	73-126	yes

TABLE I-7a

LABORATORY CONTROL SAMPLE RECOVERY SUMMARY
VOLATILE ORGANIC COMPOUNDS BY SW8260B
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability
03G1163	Water	1,4-Dichlorobenzene	97	74-123	yes
03G1163	Water	1-chlorohexane	93	70-125	yes
03G1163	Water	2,2-dichloropropane	102	69-137	yes
03G1163	Water	2-Butanone(MEK)	84	49-136	yes
03G1163	Water	2-chlorotoluene	99	73-126	yes
03G1163	Water	2-Hexanone	90	50-150	yes
03G1163	Water	4-chlorotoluene	104	74-128	yes
03G1163	Water	4-Methyl-2-pentanone (MIBK)	73	58-134	yes
03G1163	Water	Acetone	123	40-135	yes
03G1163	Water	Benzene	88	81-122	yes
03G1163	Water	Bromobenzene	96	76-124	yes
03G1163	Water	Bromochloromethane	90	65-129	yes
03G1163	Water	Bromodichloromethane	87	76-121	yes
03G1163	Water	Bromoform	101	69-128	yes
03G1163	Water	Bromomethane	97	53-141	yes
03G1163	Water	Carbon disulfide	74	70-130	yes
03G1163	Water	Carbon tetrachloride	107	66-138	yes
03G1163	Water	Chlorobenzene	94	81-122	yes
03G1163	Water	Chloroethane	76	58-133	yes
03G1163	Water	Chloroform	86	69-128	yes
03G1163	Water	Chloromethane	70	56-131	yes
03G1163	Water	cis-1,2-Dichloroethylene	94	72-126	yes
03G1163	Water	cis-1,3-Dichloropropene	93	69-131	yes
03G1163	Water	Dibromochloromethane	102	66-133	yes
03G1163	Water	Dibromomethane	95	76-125	yes
03G1163	Water	Dichlorodifluoromethane	98	53-153	yes
03G1163	Water	Ethylbenzene	93	73-127	yes
03G1163	Water	Hexachlorobutadiene	109	67-131	yes
03G1163	Water	Isopropylbenzene (Cumene)	95	75-127	yes
03G1163	Water	m,p-Xylene	91	76-128	yes
03G1163	Water	Methyl tertiary-butyl ether	81	65-123	yes
03G1163	Water	Methylene chloride	97	63-137	yes
03G1163	Water	Naphthalene	99	54-138	yes
03G1163	Water	n-Butylbenzene	113	69-137	yes
03G1163	Water	n-Propylbenzene	99	72-129	yes
03G1163	Water	o-Xylene	88	80-121	yes
03G1163	Water	p-Cymene (p-isopropyltoluene)	98	73-130	yes
03G1163	Water	Sec-butylbenzene	100	72-127	yes
03G1163	Water	Styrene	88	65-134	yes
03G1163	Water	t-Butylbenzene	98	70-129	yes
03G1163	Water	Tetrachloroethylene (PCE)	114	66-128	yes
03G1163	Water	Toluene	100	77-122	yes
03G1163	Water	trans-1,2-Dichloroethene	95	63-137	yes
03G1163	Water	trans-1,3-Dichloropropene	83	59-135	yes
03G1163	Water	Trichloroethylene (TCE)	101	70-127	yes
03G1163	Water	Trichlorofluoromethane	96	57-129	yes
03G1163	Water	Vinyl acetate	90	60-140	yes
03G1163	Water	Vinyl chloride	86	50-134	yes
03G1340	Water	1,1,1,2-Tetrachloroethane	92	81-129	yes
03G1340	Water	1,1,1-Trichloroethane	85	67-132	yes
03G1340	Water	1,1,2,2-Tetrachloroethane	90	63-128	yes
03G1340	Water	1,1,2-Trichloroethane	95	75-125	yes
03G1340	Water	1,1-Dichloroethane	89	69-133	yes
03G1340	Water	1,1-Dichloroethene	83	68-130	yes
03G1340	Water	1,1-Dichloropropene	86	73-132	yes
03G1340	Water	1,2,3-Trichlorobenzene	85	67-137	yes

TABLE I-7a

LABORATORY CONTROL SAMPLE RECOVERY SUMMARY
VOLATILE ORGANIC COMPOUNDS BY SW8260B
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability
03G1340	Water	1,2,3-Trichloropropane	86	73-124	yes
03G1340	Water	1,2,4-Trichlorobenzene	86	66-134	yes
03G1340	Water	1,2,4-Trimethylbenzene	88	74-132	yes
03G1340	Water	1,2-Dibromo-3-chloropropane	83	50-132	yes
03G1340	Water	1,2-Dibromoethane (Ethylene Dibromide)	94	80-121	yes
03G1340	Water	1,2-Dichlorobenzene	90	71-122	yes
03G1340	Water	1,2-Dichloroethane	92	69-132	yes
03G1340	Water	1,2-Dichloropropane	95	75-125	yes
03G1340	Water	1,3,5-Trimethylbenzene	89	74-131	yes
03G1340	Water	1,3-Dichlorobenzene	89	75-124	yes
03G1340	Water	1,3-Dichloropropane	94	73-126	yes
03G1340	Water	1,4-Dichlorobenzene	90	74-123	yes
03G1340	Water	1-chlorohexane	80	70-125	yes
03G1340	Water	2,2-dichloropropane	89	69-137	yes
03G1340	Water	2-Butanone(MEK)	83	49-136	yes
03G1340	Water	2-chlorotoluene	92	73-126	yes
03G1340	Water	2-Hexanone	85	50-150	yes
03G1340	Water	4-chlorotoluene	90	74-128	yes
03G1340	Water	4-Methyl-2-pentanone (MIBK)	86	58-134	yes
03G1340	Water	Acetone	70	40-135	yes
03G1340	Water	Benzene	91	81-122	yes
03G1340	Water	Bromobenzene	88	76-124	yes
03G1340	Water	Bromochloromethane	98	65-129	yes
03G1340	Water	Bromodichloromethane	88	76-121	yes
03G1340	Water	Bromoform	90	69-128	yes
03G1340	Water	Bromomethane	90	53-141	yes
03G1340	Water	Carbon disulfide	80	70-130	yes
03G1340	Water	Carbon tetrachloride	83	66-138	yes
03G1340	Water	Chlorobenzene	96	81-122	yes
03G1340	Water	Chloroethane	97	58-133	yes
03G1340	Water	Chloroform	91	69-128	yes
03G1340	Water	Chloromethane	84	56-131	yes
03G1340	Water	cis-1,2-Dichloroethylene	93	72-126	yes
03G1340	Water	cis-1,3-Dichloropropene	95	69-131	yes
03G1340	Water	Dibromochloromethane	90	66-133	yes
03G1340	Water	Dibromomethane	93	76-125	yes
03G1340	Water	Dichlorodifluoromethane	65	53-153	yes
03G1340	Water	Ethylbenzene	85	73-127	yes
03G1340	Water	Hexachlorobutadiene	75	67-131	yes
03G1340	Water	Isopropylbenzene (Cumene)	87	75-127	yes
03G1340	Water	m p-Xylene	87	76-128	yes
03G1340	Water	Methyl tertiary-butyl ether	93	65-123	yes
03G1340	Water	Methylene chloride	88	63-137	yes
03G1340	Water	Naphthalene	92	54-138	yes
03G1340	Water	n-Butylbenzene	82	69-137	yes
03G1340	Water	n-Propylbenzene	89	72-129	yes
03G1340	Water	o-Xylene	90	80-121	yes
03G1340	Water	p-Cymene (p-isopropyltoluene)	82	73-130	yes
03G1340	Water	Sec-butylbenzene	80	72-127	yes
03G1340	Water	Styrene	93	65-134	yes
03G1340	Water	t-Butylbenzene	88	70-129	yes
03G1340	Water	Tetrachloroethylene (PCE)	83	66-128	yes
03G1340	Water	Toluene	93	77-122	yes
03G1340	Water	trans-1,2-Dichloroethene	89	63-137	yes
03G1340	Water	trans-1,3-Dichloropropene	96	59-135	yes
03G1340	Water	Trichloroethylene (TCE)	89	70-127	yes

TABLE I-7a

LABORATORY CONTROL SAMPLE RECOVERY SUMMARY
VOLATILE ORGANIC COMPOUNDS BY SW8260B
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability
03G1340	Water	Trichlorofluoromethane	84	57-129	yes
03G1340	Water	Vinyl acetate	94	60-140	yes
03G1340	Water	Vinyl chloride	86	50-134	yes
03G1761	Water	1,1,1,2-Tetrachloroethane	100	81-129	yes
03G1761	Water	1,1,1-Trichloroethane	98	67-132	yes
03G1761	Water	1,1,2,2-Tetrachloroethane	91	63-128	yes
03G1761	Water	1,1,2-Trichloroethane	92	75-125	yes
03G1761	Water	1,1-Dichloroethane	97	69-133	yes
03G1761	Water	1,1-Dichloroethene	102	68-130	yes
03G1761	Water	1,1-Dichloropropene	98	73-132	yes
03G1761	Water	1,2,3-Trichlorobenzene	92	67-137	yes
03G1761	Water	1,2,3-Trichloropropane	89	73-124	yes
03G1761	Water	1,2,4-Trichlorobenzene	92	66-134	yes
03G1761	Water	1,2,4-Trimethylbenzene	93	74-132	yes
03G1761	Water	1,2-Dibromo-3-chloropropane	88	50-132	yes
03G1761	Water	1,2-Dibromoethane (Ethylene Dibromide)	95	80-121	yes
03G1761	Water	1,2-Dichlorobenzene	89	71-122	yes
03G1761	Water	1,2-Dichloroethane	95	69-132	yes
03G1761	Water	1,2-Dichloropropane	92	75-125	yes
03G1761	Water	1,3,5-Trimethylbenzene	97	74-131	yes
03G1761	Water	1,3-Dichlorobenzene	92	75-124	yes
03G1761	Water	1,3-Dichloropropane	95	73-126	yes
03G1761	Water	1,4-Dichlorobenzene	89	74-123	yes
03G1761	Water	1-chlorohexane	109	70-125	yes
03G1761	Water	2,2-dichloropropane	101	69-137	yes
03G1761	Water	2-Butanone(MEK)	105	49-136	yes
03G1761	Water	2-chlorotoluene	94	73-126	yes
03G1761	Water	2-Hexanone	103	50-150	yes
03G1761	Water	4-chlorotoluene	96	74-128	yes
03G1761	Water	4-Methyl-2-pentanone (MIBK)	93	58-134	yes
03G1761	Water	Acetone	145	40-135	no
03G1761	Water	Benzene	93	81-122	yes
03G1761	Water	Bromobenzene	93	76-124	yes
03G1761	Water	Bromochloromethane	91	65-129	yes
03G1761	Water	Bromodichloromethane	89	76-121	yes
03G1761	Water	Bromoform	94	69-128	yes
03G1761	Water	Bromomethane	101	53-141	yes
03G1761	Water	Carbon disulfide	103	70-130	yes
03G1761	Water	Carbon tetrachloride	106	66-138	yes
03G1761	Water	Chlorobenzene	96	81-122	yes
03G1761	Water	Chloroethane	106	58-133	yes
03G1761	Water	Chloroform	93	69-128	yes
03G1761	Water	Chloromethane	108	56-131	yes
03G1761	Water	cis-1,2-Dichloroethylene	95	72-126	yes
03G1761	Water	cis-1,3-Dichloropropene	92	69-131	yes
03G1761	Water	Dibromochloromethane	94	66-133	yes
03G1761	Water	Dibromomethane	95	76-125	yes
03G1761	Water	Dichlorodifluoromethane	107	53-153	yes
03G1761	Water	Ethylbenzene	99	73-127	yes
03G1761	Water	Hexachlorobutadiene	97	67-131	yes
03G1761	Water	Isopropylbenzene (Cumene)	101	75-127	yes
03G1761	Water	m,p-Xylene	98	76-128	yes
03G1761	Water	Methyl tertiary-butyl ether	85	65-123	yes
03G1761	Water	Methylene chloride	97	63-137	yes
03G1761	Water	Naphthalene	91	54-138	yes
03G1761	Water	n-Butylbenzene	98	69-137	yes

TABLE I-7a

LABORATORY CONTROL SAMPLE RECOVERY SUMMARY
VOLATILE ORGANIC COMPOUNDS BY SW8260B
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability
03G1761	Water	n-Propylbenzene	100	72-129	yes
03G1761	Water	o-Xylene	96	80-121	yes
03G1761	Water	p-Cymene (p-isopropyltoluene)	98	73-130	yes
03G1761	Water	Sec-butylbenzene	102	72-127	yes
03G1761	Water	Styrene	96	65-134	yes
03G1761	Water	t-Butylbenzene	100	70-129	yes
03G1761	Water	Tetrachloroethylene (PCE)	104	66-128	yes
03G1761	Water	Toluene	100	77-122	yes
03G1761	Water	trans-1,2-Dichloroethene	99	63-137	yes
03G1761	Water	trans-1,3-Dichloropropene	93	59-135	yes
03G1761	Water	Trichloroethylene (TCE)	95	70-127	yes
03G1761	Water	Trichlorofluoromethane	108	57-129	yes
03G1761	Water	Vinyl acetate	101	60-140	yes
03G1761	Water	Vinyl chloride	98	50-134	yes
03G1774	Water	1,1,1,2-Tetrachloroethane	102	81-129	yes
03G1774	Water	1,1,1-Trichloroethane	99	67-132	yes
03G1774	Water	1,1,2,2-Tetrachloroethane	85	63-128	yes
03G1774	Water	1,1,2-Trichloroethane	86	75-125	yes
03G1774	Water	1,1-Dichloroethane	100	69-133	yes
03G1774	Water	1,1-Dichloroethene	104	68-130	yes
03G1774	Water	1,1-Dichloropropene	99	73-132	yes
03G1774	Water	1,2,3-Trichlorobenzene	95	67-137	yes
03G1774	Water	1,2,3-Trichloropropane	82	73-124	yes
03G1774	Water	1,2,4-Trichlorobenzene	96	66-134	yes
03G1774	Water	1,2,4-Trimethylbenzene	101	74-132	yes
03G1774	Water	1,2-Dibromo-3-chloropropane	81	50-132	yes
03G1774	Water	1,2-Dibromoethane (Ethylene Dibromide)	85	80-121	yes
03G1774	Water	1,2-Dichlorobenzene	92	71-122	yes
03G1774	Water	1,2-Dichloroethane	93	69-132	yes
03G1774	Water	1,2-Dichloropropane	93	75-125	yes
03G1774	Water	1,3,5-Trimethylbenzene	105	74-131	yes
03G1774	Water	1,3-Dichlorobenzene	96	75-124	yes
03G1774	Water	1,3-Dichloropropane	89	73-126	yes
03G1774	Water	1,4-Dichlorobenzene	92	74-123	yes
03G1774	Water	1-chlorohexane	113	70-125	yes
03G1774	Water	2,2-dichloropropane	106	69-137	yes
03G1774	Water	2-Butanone(MEK)	82	49-136	yes
03G1774	Water	2-chlorotoluene	101	73-126	yes
03G1774	Water	2-Hexanone	87	50-150	yes
03G1774	Water	4-chlorotoluene	102	74-128	yes
03G1774	Water	4-Methyl-2-pentanone (MIBK)	87	58-134	yes
03G1774	Water	Acetone	88	40-135	yes
03G1774	Water	Benzene	95	81-122	yes
03G1774	Water	Bromobenzene	94	76-124	yes
03G1774	Water	Bromochloromethane	90	65-129	yes
03G1774	Water	Bromodichloromethane	89	76-121	yes
03G1774	Water	Bromoform	87	69-128	yes
03G1774	Water	Bromomethane	105	53-141	yes
03G1774	Water	Carbon disulfide	108	70-130	yes
03G1774	Water	Carbon tetrachloride	109	66-138	yes
03G1774	Water	Chlorobenzene	97	81-122	yes
03G1774	Water	Chloroethane	115	58-133	yes
03G1774	Water	Chloroform	96	69-128	yes
03G1774	Water	Chloromethane	121	56-131	yes
03G1774	Water	cis-1,2-Dichloroethylene	97	72-126	yes
03G1774	Water	cis-1,3-Dichloropropene	92	69-131	yes

TABLE I-7a

LABORATORY CONTROL SAMPLE RECOVERY SUMMARY
VOLATILE ORGANIC COMPOUNDS BY SW8260B
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability
03G1774	Water	Dibromochloromethane	90	66-133	yes
03G1774	Water	Dibromomethane	87	76-125	yes
03G1774	Water	Dichlorodifluoromethane	108	53-153	yes
03G1774	Water	Ethylbenzene	105	73-127	yes
03G1774	Water	Hexachlorobutadiene	103	67-131	yes
03G1774	Water	Isopropylbenzene (Cumene)	107	75-127	yes
03G1774	Water	m,p-Xylene	105	76-128	yes
03G1774	Water	Methyl tertiary-butyl ether	80	65-123	yes
03G1774	Water	Methylene chloride	100	63-137	yes
03G1774	Water	Naphthalene	89	54-138	yes
03G1774	Water	n-Butylbenzene	104	69-137	yes
03G1774	Water	n-Propylbenzene	107	72-129	yes
03G1774	Water	o-Xylene	103	80-121	yes
03G1774	Water	p-Cymene (p-isopropyltoluene)	105	73-130	yes
03G1774	Water	Sec-butylbenzene	109	72-127	yes
03G1774	Water	Styrene	100	65-134	yes
03G1774	Water	t-Butylbenzene	107	70-129	yes
03G1774	Water	Tetrachloroethylene (PCE)	104	66-128	yes
03G1774	Water	Toluene	104	77-122	yes
03G1774	Water	trans-1,2-Dichloroethene	100	63-137	yes
03G1774	Water	trans-1,3-Dichloropropene	93	59-135	yes
03G1774	Water	Trichloroethylene (TCE)	94	70-127	yes
03G1774	Water	Trichlorofluoromethane	108	57-129	yes
03G1774	Water	Vinyl acetate	98	60-140	yes
03G1774	Water	Vinyl chloride	105	50-134	yes
03G1803	Water	1,1,1,2-Tetrachloroethane	116	81-129	yes
03G1803	Water	1,1,1-Trichloroethane	111	67-132	yes
03G1803	Water	1,1,2,2-Tetrachloroethane	93	63-128	yes
03G1803	Water	1,1,2-Trichloroethane	94	75-125	yes
03G1803	Water	1,1-Dichloroethane	106	69-133	yes
03G1803	Water	1,1-Dichloroethene	114	68-130	yes
03G1803	Water	1,1-Dichloropropene	108	73-132	yes
03G1803	Water	1,2,3-Trichlorobenzene	97	67-137	yes
03G1803	Water	1,2,3-Trichloropropane	90	73-124	yes
03G1803	Water	1,2,4-Trichlorobenzene	99	66-134	yes
03G1803	Water	1,2,4-Trimethylbenzene	107	74-132	yes
03G1803	Water	1,2-Dibromo-3-chloropropane	87	50-132	yes
03G1803	Water	1,2-Dibromoethane (Ethylene Dibromide)	93	80-121	yes
03G1803	Water	1,2-Dichlorobenzene	96	71-122	yes
03G1803	Water	1,2-Dichloroethane	94	69-132	yes
03G1803	Water	1,2-Dichloropropane	98	75-125	yes
03G1803	Water	1,3,5-Trimethylbenzene	112	74-131	yes
03G1803	Water	1,3-Dichlorobenzene	101	75-124	yes
03G1803	Water	1 3-Dichloropropane	98	73-126	yes
03G1803	Water	1,4-Dichlorobenzene	98	74-123	yes
03G1803	Water	1-chlorohexane	126	70-125	no
03G1803	Water	2,2-dichloropropane	130	69-137	yes
03G1803	Water	2-Butanone(MEK)	106	49-136	yes
03G1803	Water	2-chlorotoluene	106	73-126	yes
03G1803	Water	2-Hexanone	108	50-150	yes
03G1803	Water	4-chlorotoluene	108	74-128	yes
03G1803	Water	4-Methyl-2-pentanone (MIBK)	90	58-134	yes
03G1803	Water	Acetone	176	40-135	no
03G1803	Water	Benzene	100	81-122	yes
03G1803	Water	Bromobenzene	100	76-124	yes
03G1803	Water	Bromochloromethane	95	65-129	yes

TABLE I-7a

LABORATORY CONTROL SAMPLE RECOVERY SUMMARY
VOLATILE ORGANIC COMPOUNDS BY SW8260B
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability
03G1803	Water	Bromodichloromethane	93	76-121	yes
03G1803	Water	Bromoform	98	69-128	yes
03G1803	Water	Bromomethane	114	53-141	yes
03G1803	Water	Carbon disulfide	114	70-130	yes
03G1803	Water	Carbon tetrachloride	126	66-138	yes
03G1803	Water	Chlorobenzene	103	81-122	yes
03G1803	Water	Chloroethane	120	58-133	yes
03G1803	Water	Chloroform	100	69-128	yes
03G1803	Water	Chloromethane	123	56-131	yes
03G1803	Water	cis-1,2-Dichloroethylene	102	72-126	yes
03G1803	Water	cis-1,3-Dichloropropene	100	69-131	yes
03G1803	Water	Dibromochloromethane	100	66-133	yes
03G1803	Water	Dibromomethane	90	76-125	yes
03G1803	Water	Dichlorodifluoromethane	115	53-153	yes
03G1803	Water	Ethylbenzene	113	73-127	yes
03G1803	Water	Hexachlorobutadiene	112	67-131	yes
03G1803	Water	Isopropylbenzene (Cumene)	116	75-127	yes
03G1803	Water	m,p-Xylene	111	76-128	yes
03G1803	Water	Methyl tertiary-butyl ether	85	65-123	yes
03G1803	Water	Methylene chloride	103	63-137	yes
03G1803	Water	Naphthalene	91	54-138	yes
03G1803	Water	n-Butylbenzene	113	69-137	yes
03G1803	Water	n-Propylbenzene	115	72-129	yes
03G1803	Water	o-Xylene	108	80-121	yes
03G1803	Water	p-Cymene (p-isopropyltoluene)	113	73-130	yes
03G1803	Water	Sec-butylbenzene	118	72-127	yes
03G1803	Water	Styrene	105	65-134	yes
03G1803	Water	t-Butylbenzene	116	70-129	yes
03G1803	Water	Tetrachloroethylene (PCE)	115	66-128	yes
03G1803	Water	Toluene	110	77-122	yes
03G1803	Water	trans-1,2-Dichloroethene	108	63-137	yes
03G1803	Water	trans-1,3-Dichloropropene	102	59-135	yes
03G1803	Water	Trichloroethylene (TCE)	103	70-127	yes
03G1803	Water	Trichlorofluoromethane	119	57-129	yes
03G1803	Water	Vinyl acetate	99	60-140	yes
03G1803	Water	Vinyl chloride	107	50-134	yes
04G1585	Water	1,1,1,2-Tetrachloroethane	111	81-129	Yes
04G1585	Water	1,1,1-Trichloroethane	116	67-132	Yes
04G1585	Water	1,1,2,2-Tetrachloroethane	100	63-128	Yes
04G1585	Water	1,1,2-Trichloroethane	105	75-125	Yes
04G1585	Water	1,1-Dichloroethane	105	69-133	Yes
04G1585	Water	1,1-Dichloroethene	121	68-130	Yes
04G1585	Water	1,1-Dichloropropene	113	73-132	Yes
04G1585	Water	1,2,3-Trichlorobenzene	104	67-137	Yes
04G1585	Water	1,2,3-Trichloropropane	110	73-124	Yes
04G1585	Water	1,2,4-Trichlorobenzene	101	66-134	Yes
04G1585	Water	1,2,4-Trimethylbenzene	100	74-132	Yes
04G1585	Water	1,2-Dibromo-3-chloropropane	101	50-132	Yes
04G1585	Water	1,2-Dibromoethane (Ethylene Dibromide)	106	80-121	Yes
04G1585	Water	1,2-Dichlorobenzene	101	71-122	Yes
04G1585	Water	1,2-Dichloroethane	109	69-132	Yes
04G1585	Water	1,2-Dichloropropane	95	75-125	Yes
04G1585	Water	1,3,5-Trimethylbenzene	102	74-131	Yes
04G1585	Water	1,3-Dichlorobenzene	100	75-124	Yes
04G1585	Water	1,3-Dichloropropane	106	73-126	Yes
04G1585	Water	1,4-Dichlorobenzene	101	74-123	Yes

TABLE I-7a

LABORATORY CONTROL SAMPLE RECOVERY SUMMARY
VOLATILE ORGANIC COMPOUNDS BY SW8260B
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability
04G1585	Water	1-chlorohexane	93	70-125	Yes
04G1585	Water	2,2-dichloropropane	68	69-137	No
04G1585	Water	2-Butanone(MEK)	88	49-136	Yes
04G1585	Water	2-chlorotoluene	96	73-126	Yes
04G1585	Water	2-Hexanone	94	50-150	Yes
04G1585	Water	4-chlorotoluene	97	74-128	Yes
04G1585	Water	4-Methyl-2-pentanone (MIBK)	91	58-134	Yes
04G1585	Water	Acetone	74	40-160	Yes
04G1585	Water	Benzene	105	81-122	Yes
04G1585	Water	Bromobenzene	99	76-124	Yes
04G1585	Water	Bromochloromethane	102	65-129	Yes
04G1585	Water	Bromodichloromethane	115	76-121	Yes
04G1585	Water	Bromoform	114	69-128	Yes
04G1585	Water	Bromomethane	137	53-141	Yes
04G1585	Water	Carbon disulfide	89	70-130	Yes
04G1585	Water	Carbon tetrachloride	121	66-138	Yes
04G1585	Water	Chlorobenzene	105	81-122	Yes
04G1585	Water	Chloroethane	98	58-133	Yes
04G1585	Water	Chloroform	115	69-128	Yes
04G1585	Water	Chloromethane	94	56-131	Yes
04G1585	Water	cis-1,2-Dichloroethylene	102	72-126	Yes
04G1585	Water	cis-1,3-Dichloropropene	93	69-131	Yes
04G1585	Water	Dibromochloromethane	112	66-133	Yes
04G1585	Water	Dibromomethane	112	76-125	Yes
04G1585	Water	Dichlorodifluoromethane	117	53-153	Yes
04G1585	Water	Ethylbenzene	94	73-127	Yes
04G1585	Water	Hexachlorobutadiene	110	67-131	Yes
04G1585	Water	Isopropylbenzene (Cumene)	99	75-127	Yes
04G1585	Water	m,p-Xylene	97	76-128	Yes
04G1585	Water	Methyl tertiary-butyl ether	79	65-123	Yes
04G1585	Water	Methylene chloride	99	63-137	Yes
04G1585	Water	n-Butylbenzene	102	69-137	Yes
04G1585	Water	n-Propylbenzene	97	72-129	Yes
04G1585	Water	Naphthalene	102	54-138	Yes
04G1585	Water	o-Xylene	97	80-121	Yes
04G1585	Water	p-Cymene (p-isopropyltoluene)	104	73-130	Yes
04G1585	Water	Sec-butylbenzene	102	72-127	Yes
04G1585	Water	Styrene	94	65-134	Yes
04G1585	Water	t-Butylbenzene	102	70-129	Yes
04G1585	Water	Tetrachloroethylene (PCE)	107	66-128	Yes
04G1585	Water	Toluene	95	77-122	Yes
04G1585	Water	trans-1,2-Dichloroethene	100	63-137	Yes
04G1585	Water	trans-1,3-Dichloropropene	83	59-135	Yes
04G1585	Water	Trichloroethylene (TCE)	107	70-127	Yes
04G1585	Water	Trichlorofluoromethane	138	57-129	No
04G1585	Water	Vinyl acetate	92	60-140	Yes
04G1585	Water	Vinyl chloride	100	50-134	Yes

ID - identification
LCS - laboratory control sample
% - percent
RPD - relative percent difference

TAB. 1-7b

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 1 of 20)

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G1272	Soil	1,2,4-Trichlorobenzene	77	77	44-125	yes	0.0	30	yes
03G1272	Soil	1,2-Dichlorobenzene	71	71	45-125	yes	0.0	30	yes
03G1272	Soil	1,3-Dichlorobenzene	69	69	39-125	yes	0.0	30	yes
03G1272	Soil	1,4-Dichlorobenzene	70	70	35-125	yes	0.0	30	yes
03G1272	Soil	2,4,5-Trichlorophenol	74	80	49-125	yes	7.8	30	yes
03G1272	Soil	2,4,6-Trichlorophenol	76	80	43-125	yes	5.1	30	yes
03G1272	Soil	2,4-Dichlorophenol	82	84	45-125	yes	2.4	30	yes
03G1272	Soil	2,4-Dimethylphenol	81	84	32-125	yes	3.6	30	yes
03G1272	Soil	2,4-Dinitrophenol	63	65	25-132	yes	3.1	30	yes
03G1272	Soil	2,4-Dinitrotoluene	77	81	48-125	yes	5.1	30	yes
03G1272	Soil	2,6-Dinitrotoluene	76	77	48-125	yes	1.3	30	yes
03G1272	Soil	2-Chloronaphthalene	74	81	45-125	yes	9.0	30	yes
03G1272	Soil	2-Chlorophenol	74	75	44-125	yes	1.3	30	yes
03G1272	Soil	2-Methylnaphthalene	82	83	47-125	yes	1.2	30	yes
03G1272	Soil	2-Methylphenol (o-cresol)	73	74	40-125	yes	1.4	30	yes
03G1272	Soil	2-Nitroaniline	72	78	44-125	yes	8.0	30	yes
03G1272	Soil	2-Nitrophenol	76	79	42-125	yes	3.9	30	yes
03G1272	Soil	3,3'-Dichlorobenzidine	42	41	25-128	yes	2.4	30	yes
03G1272	Soil	3/4-Methylphenol (m,p-cresol)	73	75	41-125	yes	2.7	30	yes
03G1272	Soil	3-Nitroaniline	48	49	27-125	yes	2.1	30	yes
03G1272	Soil	4,6-Dinitro-2-methylphenol	78	80	29-137	yes	2.5	30	yes
03G1272	Soil	4-Bromophenyl phenyl ether	95	95	46-125	yes	0.0	30	yes
03G1272	Soil	4-Chloro-3-methylphenol	79	79	46-125	yes	0.0	30	yes
03G1272	Soil	4-Chloroaniline	41	42	25-125	yes	2.4	30	yes
03G1272	Soil	4-Chlorophenyl phenyl ether	81	86	47-125	yes	6.0	30	yes
03G1272	Soil	4-Nitroaniline	64	67	34-125	yes	4.6	30	yes
03G1272	Soil	4-Nitrophenol	52	55	25-138	yes	5.6	30	yes
03G1272	Soil	Acenaphthene	78	79	46-125	yes	1.3	30	yes
03G1272	Soil	Acenaphthylene	75	76	44-125	yes	1.3	30	yes
03G1272	Soil	Anthracene	80	81	53-125	yes	1.2	30	yes
03G1272	Soil	Benzo(a)anthracene	69	69	52-125	yes	0.0	30	yes
03G1272	Soil	Benzo(a)pyrene	77	78	50-125	yes	1.3	30	yes
03G1272	Soil	Benzo(b)fluoranthene	81	76	45-125	yes	6.4	30	yes
03G1272	Soil	Benzo(g,h,i)perylene	85	84	38-126	yes	1.2	30	yes
03G1272	Soil	Benzo(k)fluoranthene	73	80	45-125	yes	9.2	30	yes
03G1272	Soil	Benzoic acid	68	68	25-125	yes	0.0	30	yes
03G1272	Soil	Benzyl alcohol	69	71	25-125	yes	2.9	30	yes

TABLE I-7b

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G1272	Soil	Benzyl butyl phthalate	72	72	49-125	yes	0.0	30	yes
03G1272	Soil	bis(2-Chloroethoxy)methane	72	77	43-125	yes	6.7	30	yes
03G1272	Soil	bis(2-Chloroethyl)ether	84	88	38-125	yes	4.7	30	yes
03G1272	Soil	bis(2-Chloroisopropyl)ether	70	72	25-125	yes	2.8	30	yes
03G1272	Soil	bis(2-Ethylhexyl)phthalate	73	72	47-127	yes	1.4	30	yes
03G1272	Soil	Chrysene	71	71	53-125	yes	0.0	30	yes
03G1272	Soil	Dibenz(a,h)anthracene	84	83	41-125	yes	1.2	30	yes
03G1272	Soil	Dibenzofuran	79	81	51-125	yes	2.5	30	yes
03G1272	Soil	Diethyl phthalate	77	80	50-125	yes	3.8	30	yes
03G1272	Soil	Dimethyl phthalate	77	78	49-125	yes	1.3	30	yes
03G1272	Soil	Di-n-butyl phthalate	84	84	56-125	yes	0.0	30	yes
03G1272	Soil	Di-n-octylphthalate	80	80	41-132	yes	0.0	30	yes
03G1272	Soil	Fluoranthene	78	78	54-125	yes	0.0	30	yes
03G1272	Soil	Fluorene	78	83	49-125	yes	6.2	30	yes
03G1272	Soil	Hexachlorobenzene	89	91	47-125	yes	2.2	30	yes
03G1272	Soil	Hexachlorobutadiene	87	87	40-125	yes	0.0	30	yes
03G1272	Soil	Hexachlorocyclopentadiene	73	77	31-135	yes	5.3	30	yes
03G1272	Soil	Hexachloroethane	68	69	34-125	yes	1.5	30	yes
03G1272	Soil	Indeno(1,2,3-c,d)pyrene	83	83	38-125	yes	0.0	30	yes
03G1272	Soil	Isophorone	66	69	43-125	yes	4.4	30	yes
03G1272	Soil	Naphthalene	75	76	40-125	yes	1.3	30	yes
03G1272	Soil	Nitrobenzene	62	63	41-125	yes	1.6	30	yes
03G1272	Soil	n-Nitrosodimethylamine	54	54	25-135	yes	0.0	30	yes
03G1272	Soil	n-Nitrosodi-n-propylamine	56	58	40-125	yes	3.5	30	yes
03G1272	Soil	n-Nitrosodiphenylamine	85	86	49-125	yes	1.2	30	yes
03G1272	Soil	Pentachlorophenol	83	84	25-125	yes	1.2	30	yes
03G1272	Soil	Phenanthrene	81	83	50-125	yes	2.4	30	yes
03G1272	Soil	Phenol	67	69	39-125	yes	2.9	30	yes
03G1272	Soil	Pyrene	70	71	46-125	yes	1.4	30	yes
03G1320	Soil	1,2,4-Trichlorobenzene	68	68	44-125	yes	0.0	30	yes
03G1320	Soil	1,2-Dichlorobenzene	68	68	45-125	yes	0.0	30	yes
03G1320	Soil	1,3-Dichlorobenzene	66	66	39-125	yes	0.0	30	yes
03G1320	Soil	1,4-Dichlorobenzene	67	68	35-125	yes	1.5	30	yes
03G1320	Soil	2,4,5-Trichlorophenol	77	80	49-125	yes	3.8	30	yes
03G1320	Soil	2,4,6-Trichlorophenol	73	77	43-125	yes	5.3	30	yes
03G1320	Soil	2,4-Dichlorophenol	76	75	45-125	yes	1.3	30	yes
03G1320	Soil	2,4-Dimethylphenol	122	123	32-125	yes	0.8	30	yes

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 3 of 20)

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G1320	Soil	2,4-Dinitrophenol	67	68	25-132	yes	1.5	30	yes
03G1320	Soil	2,4-Dinitrotoluene	81	81	48-125	yes	0.0	30	yes
03G1320	Soil	2,6-Dinitrotoluene	77	78	48-125	yes	1.3	30	yes
03G1320	Soil	2-Chloronaphthalene	78	77	45-125	yes	1.3	30	yes
03G1320	Soil	2-Chlorophenol	74	73	44-125	yes	1.4	30	yes
03G1320	Soil	2-Methylnaphthalene	79	76	47-125	yes	3.9	30	yes
03G1320	Soil	2-Methylphenol (o-cresol)	73	74	40-125	yes	1.4	30	yes
03G1320	Soil	2-Nitroaniline	81	78	44-125	yes	3.8	30	yes
03G1320	Soil	2-Nitrophenol	74	75	42-125	yes	1.3	30	yes
03G1320	Soil	3,3'-Dichlorobenzidine	44	42	25-128	yes	4.7	30	yes
03G1320	Soil	3/4-Methylphenol (m,p-cresol)	74	74	41-125	yes	0.0	30	yes
03G1320	Soil	3-Nitroaniline	52	52	27-125	yes	0.0	30	yes
03G1320	Soil	4,6-Dinitro-2-methylphenol	79	81	29-137	yes	2.5	30	yes
03G1320	Soil	4-Bromophenyl phenyl ether	75	76	46-125	yes	1.3	30	yes
03G1320	Soil	4-Chloro-3-methylphenol	79	77	46-125	yes	2.6	30	yes
03G1320	Soil	4-Chloroaniline	38	36	25-125	yes	5.4	30	yes
03G1320	Soil	4-Chlorophenyl phenyl ether	77	80	47-125	yes	3.8	30	yes
03G1320	Soil	4-Nitroaniline	69	69	34-125	yes	0.0	30	yes
03G1320	Soil	4-Nitrophenol	79	77	25-138	yes	2.6	30	yes
03G1320	Soil	Acenaphthene	78	80	46-125	yes	2.5	30	yes
03G1320	Soil	Acenaphthylene	78	78	44-125	yes	0.0	30	yes
03G1320	Soil	Anthracene	74	75	53-125	yes	1.3	30	yes
03G1320	Soil	Benzo(a)anthracene	80	79	52-125	yes	1.3	30	yes
03G1320	Soil	Benzo(a)pyrene	78	78	50-125	yes	0.0	30	yes
03G1320	Soil	Benzo(b)fluoranthene	63	69	45-125	yes	9.1	30	yes
03G1320	Soil	Benzo(g,h,i)perylene	59	54	38-126	yes	8.8	30	yes
03G1320	Soil	Benzo(k)fluoranthene	90	89	45-125	yes	1.1	30	yes
03G1320	Soil	Benzoic acid	83	84	25-125	yes	1.2	30	yes
03G1320	Soil	Benzyl alcohol	64	63	25-125	yes	1.6	30	yes
03G1320	Soil	Benzyl butyl phthalate	80	80	49-125	yes	0.0	30	yes
03G1320	Soil	bis(2-Chloroethoxy)methane	71	73	43-125	yes	2.8	30	yes
03G1320	Soil	bis(2-Chloroethyl)ether	66	68	38-125	yes	3.0	30	yes
03G1320	Soil	bis(2-Chloroisopropyl)ether	71	71	25-125	yes	0.0	30	yes
03G1320	Soil	bis(2-Ethylhexyl)phthalate	81	83	47-127	yes	2.4	30	yes
03G1320	Soil	Chrysene	77	78	53-125	yes	1.3	30	yes
03G1320	Soil	Dibenz(a,h)anthracene	72	68	41-125	yes	5.7	30	yes
03G1320	Soil	Dibenzofuran	78	78	51-125	yes	0.0	30	yes

TABLE I-7b

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G1320	Soil	Diethyl phthalate	77	78	50-125	yes	1.3	30	yes
03G1320	Soil	Dimethyl phthalate	78	80	49-125	yes	2.5	30	yes
03G1320	Soil	Di-n-butyl phthalate	78	78	56-125	yes	0.0	30	yes
03G1320	Soil	Di-n-octylphthalate	88	93	41-132	yes	5.5	30	yes
03G1320	Soil	Fluoranthene	75	77	54-125	yes	2.6	30	yes
03G1320	Soil	Fluorene	77	78	49-125	yes	1.3	30	yes
03G1320	Soil	Hexachlorobenzene	77	78	47-125	yes	1.3	30	yes
03G1320	Soil	Hexachlorobutadiene	65	66	40-125	yes	1.5	30	yes
03G1320	Soil	Hexachlorocyclopentadiene	58	59	31-135	yes	1.7	30	yes
03G1320	Soil	Hexachloroethane	66	67	34-125	yes	1.5	30	yes
03G1320	Soil	Indeno(1,2,3-c,d)pyrene	69	66	38-125	yes	4.4	30	yes
03G1320	Soil	Isophorone	69	69	43-125	yes	0.0	30	yes
03G1320	Soil	Naphthalene	72	72	40-125	yes	0.0	30	yes
03G1320	Soil	Nitrobenzene	70	71	41-125	yes	1.4	30	yes
03G1320	Soil	n-Nitrosodimethylamine	65	65	25-135	yes	0.0	30	yes
03G1320	Soil	n-Nitrosodi-n-propylamine	70	70	40-125	yes	0.0	30	yes
03G1320	Soil	n-Nitrosodiphenylamine	81	81	49-125	yes	0.0	30	yes
03G1320	Soil	Pentachlorophenol	81	82	25-125	yes	1.2	30	yes
03G1320	Soil	Phenanthrene	74	77	50-125	yes	4.0	30	yes
03G1320	Soil	Phenol	67	67	39-125	yes	0.0	30	yes
03G1320	Soil	Pyrene	81	81	46-125	yes	0.0	30	yes
03G1339	Soil	1,2,4-Trichlorobenzene	81	82	44-125	yes	1.2	30	yes
03G1339	Soil	1,2-Dichlorobenzene	72	73	45-125	yes	1.4	30	yes
03G1339	Soil	1,3-Dichlorobenzene	75	75	39-125	yes	0.0	30	yes
03G1339	Soil	1,4-Dichlorobenzene	72	72	35-125	yes	0.0	30	yes
03G1339	Soil	2,4,5-Trichlorophenol	85	83	49-125	yes	2.4	30	yes
03G1339	Soil	2,4,6-Trichlorophenol	86	85	43-125	yes	1.2	30	yes
03G1339	Soil	2,4-Dichlorophenol	87	87	45-125	yes	0.0	30	yes
03G1339	Soil	2,4-Dimethylphenol	88	88	32-125	yes	0.0	30	yes
03G1339	Soil	2,4-Dinitrophenol	66	68	25-132	yes	3.0	30	yes
03G1339	Soil	2,4-Dinitrotoluene	86	87	48-125	yes	1.2	30	yes
03G1339	Soil	2,6-Dinitrotoluene	85	86	48-125	yes	1.2	30	yes
03G1339	Soil	2-Chloronaphthalene	84	84	45-125	yes	0.0	30	yes
03G1339	Soil	2-Chlorophenol	76	76	44-125	yes	0.0	30	yes
03G1339	Soil	2-Methylnaphthalene	94	90	47-125	yes	4.3	30	yes
03G1339	Soil	2-Methylphenol (o-cresol)	77	78	40-125	yes	1.3	30	yes
03G1339	Soil	2-Nitroaniline	83	84	44-125	yes	1.2	30	yes

TAB[illegible] 1-7b

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G1339	Soil	2-Nitrophenol	83	82	42-125	yes	1.2	30	yes
03G1339	Soil	3,3'-Dichlorobenzidine	45	44	25-128	yes	2.2	30	yes
03G1339	Soil	3/4-Methylphenol (m,p-cresol)	75	76	41-125	yes	1.3	30	yes
03G1339	Soil	3-Nitroaniline	51	52	27-125	yes	1.9	30	yes
03G1339	Soil	4,6-Dinitro-2-methylphenol	86	85	29-137	yes	1.2	30	yes
03G1339	Soil	4-Bromophenyl phenyl ether	96	101	46-125	yes	5.1	30	yes
03G1339	Soil	4-Chloro-3-methylphenol	90	86	46-125	yes	4.5	30	yes
03G1339	Soil	4-Chloroaniline	41	43	25-125	yes	4.8	30	yes
03G1339	Soil	4-Chlorophenyl phenyl ether	89	92	47-125	yes	3.3	30	yes
03G1339	Soil	4-Nitroaniline	68	72	34-125	yes	5.7	30	yes
03G1339	Soil	4-Nitrophenol	55	53	25-138	yes	3.7	30	yes
03G1339	Soil	Acenaphthene	86	86	46-125	yes	0.0	30	yes
03G1339	Soil	Acenaphthylene	82	83	44-125	yes	1.2	30	yes
03G1339	Soil	Anthracene	87	88	53-125	yes	1.1	30	yes
03G1339	Soil	Benzo(a)anthracene	76	76	52-125	yes	0.0	30	yes
03G1339	Soil	Benzo(a)pyrene	87	88	50-125	yes	1.1	30	yes
03G1339	Soil	Benzo(b)fluoranthene	80	80	45-125	yes	0.0	30	yes
03G1339	Soil	Benzo(g,h,i)perylene	83	76	38-126	yes	8.8	30	yes
03G1339	Soil	Benzo(k)fluoranthene	98	98	45-125	yes	0.0	30	yes
03G1339	Soil	Benzoic acid	83	80	25-125	yes	3.7	30	yes
03G1339	Soil	Benzyl alcohol	56	55	25-125	yes	1.8	30	yes
03G1339	Soil	Benzyl butyl phthalate	81	83	49-125	yes	2.4	30	yes
03G1339	Soil	bis(2-Chloroethoxy)methane	81	81	43-125	yes	0.0	30	yes
03G1339	Soil	bis(2-Chloroethyl)ether	53	52	38-125	yes	1.9	30	yes
03G1339	Soil	bis(2-Chloroisopropyl)ether	72	75	25-125	yes	4.1	30	yes
03G1339	Soil	bis(2-Ethylhexyl)phthalate	82	82	47-127	yes	0.0	30	yes
03G1339	Soil	Chrysene	78	79	53-125	yes	1.3	30	yes
03G1339	Soil	Dibenz(a,h)anthracene	92	89	41-125	yes	3.3	30	yes
03G1339	Soil	Dibenzofuran	86	85	51-125	yes	1.2	30	yes
03G1339	Soil	Diethyl phthalate	83	86	50-125	yes	3.6	30	yes
03G1339	Soil	Dimethyl phthalate	87	87	49-125	yes	0.0	30	yes
03G1339	Soil	Di-n-butyl phthalate	92	91	56-125	yes	1.1	30	yes
03G1339	Soil	Di-n-octylphthalate	93	95	41-132	yes	2.1	30	yes
03G1339	Soil	Fluoranthene	86	86	54-125	yes	0.0	30	yes
03G1339	Soil	Fluorene	86	90	49-125	yes	4.5	30	yes
03G1339	Soil	Hexachlorobenzene	91	93	47-125	yes	2.2	30	yes
03G1339	Soil	Hexachlorobutadiene	90	93	40-125	yes	3.3	30	yes

TABLE I-7b

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G1339	Soil	Hexachlorocyclopentadiene	78	76	31-135	yes	2.6	30	yes
03G1339	Soil	Hexachloroethane	70	71	34-125	yes	1.4	30	yes
03G1339	Soil	Indeno(1,2,3-c,d)pyrene	90	86	38-125	yes	4.5	30	yes
03G1339	Soil	Isophorone	72	71	43-125	yes	1.4	30	yes
03G1339	Soil	Naphthalene	80	80	40-125	yes	0.0	30	yes
03G1339	Soil	Nitrobenzene	68	66	41-125	yes	3.0	30	yes
03G1339	Soil	n-Nitrosodimethylamine	54	55	25-135	yes	1.8	30	yes
03G1339	Soil	n-Nitrosodi-n-propylamine	59	58	40-125	yes	1.7	30	yes
03G1339	Soil	n-Nitrosodiphenylamine	93	92	49-125	yes	1.1	30	yes
03G1339	Soil	Pentachlorophenol	84	84	25-125	yes	0.0	30	yes
03G1339	Soil	Phenanthrene	89	89	50-125	yes	0.0	30	yes
03G1339	Soil	Phenol	69	69	39-125	yes	0.0	30	yes
03G1339	Soil	Pyrene	80	81	46-125	yes	1.2	30	yes
03G1763	Soil	1,2,4-Trichlorobenzene	79	80	44-125	yes	1.3	30	yes
03G1763	Soil	1,2-Dichlorobenzene	74	74	45-125	yes	0.0	30	yes
03G1763	Soil	1,3-Dichlorobenzene	72	72	39-125	yes	0.0	30	yes
03G1763	Soil	1,4-Dichlorobenzene	72	72	35-125	yes	0.0	30	yes
03G1763	Soil	2,4,5-Trichlorophenol	83	83	49-125	yes	0.0	30	yes
03G1763	Soil	2,4,6-Trichlorophenol	89	89	43-125	yes	0.0	30	yes
03G1763	Soil	2,4-Dichlorophenol	84	85	45-125	yes	1.2	30	yes
03G1763	Soil	2,4-Dimethylphenol	79	79	32-125	yes	0.0	30	yes
03G1763	Soil	2,4-Dinitrophenol	81	83	25-132	yes	2.4	30	yes
03G1763	Soil	2,4-Dinitrotoluene	89	89	48-125	yes	0.0	30	yes
03G1763	Soil	2,6-Dinitrotoluene	86	85	48-125	yes	1.2	30	yes
03G1763	Soil	2-Chloronaphthalene	79	79	45-125	yes	0.0	30	yes
03G1763	Soil	2-Chlorophenol	74	73	44-125	yes	1.4	30	yes
03G1763	Soil	2-Methylnaphthalene	85	84	47-125	yes	1.2	30	yes
03G1763	Soil	2-Methylphenol (o-cresol)	77	74	40-125	yes	4.0	30	yes
03G1763	Soil	2-Nitroaniline	84	85	44-125	yes	1.2	30	yes
03G1763	Soil	2-Nitrophenol	82	83	42-125	yes	1.2	30	yes
03G1763	Soil	3,3'-Dichlorobenzidine	70	71	25-128	yes	1.4	30	yes
03G1763	Soil	3/4-Methylphenol (m,p-cresol)	79	77	41-125	yes	2.6	30	yes
03G1763	Soil	3-Nitroaniline	79	79	27-125	yes	0.0	30	yes
03G1763	Soil	4,6-Dinitro-2-methylphenol	97	99	29-137	yes	2.0	30	yes
03G1763	Soil	4-Bromophenyl phenyl ether	84	85	46-125	yes	1.2	30	yes
03G1763	Soil	4-Chloro-3-methylphenol	78	78	46-125	yes	0.0	30	yes
03G1763	Soil	4-Chloroaniline	62	63	25-125	yes	1.6	30	yes

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 7 of 20)

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G1763	Soil	4-Chlorophenyl phenyl ether	84	84	47-125	yes	0.0	30	yes
03G1763	Soil	4-Nitroaniline	61	63	34-125	yes	3.2	30	yes
03G1763	Soil	4-Nitrophenol	78	76	25-138	yes	2.6	30	yes
03G1763	Soil	Acenaphthene	82	82	46-125	yes	0.0	30	yes
03G1763	Soil	Acenaphthylene	75	75	44-125	yes	0.0	30	yes
03G1763	Soil	Anthracene	87	87	53-125	yes	0.0	30	yes
03G1763	Soil	Benzo(a)anthracene	90	91	52-125	yes	1.1	30	yes
03G1763	Soil	Benzo(a)pyrene	83	84	50-125	yes	1.2	30	yes
03G1763	Soil	Benzo(b)fluoranthene	82	83	45-125	yes	1.2	30	yes
03G1763	Soil	Benzo(g,h,i)perylene	86	84	38-126	yes	2.4	30	yes
03G1763	Soil	Benzo(k)fluoranthene	87	88	45-125	yes	1.1	30	yes
03G1763	Soil	Benzoic acid	92	94	25-125	yes	2.2	30	yes
03G1763	Soil	Benzyl alcohol	71	69	25-125	yes	2.9	30	yes
03G1763	Soil	Benzyl butyl phthalate	82	82	49-125	yes	0.0	30	yes
03G1763	Soil	bis(2-Chloroethoxy)methane	80	80	43-125	yes	0.0	30	yes
03G1763	Soil	bis(2-Chloroethyl)ether	76	73	38-125	yes	4.0	30	yes
03G1763	Soil	bis(2-Chloroisopropyl)ether	75	72	25-125	yes	4.1	30	yes
03G1763	Soil	bis(2-Ethylhexyl)phthalate	77	79	47-127	yes	2.6	30	yes
03G1763	Soil	Chrysene	85	86	53-125	yes	1.2	30	yes
03G1763	Soil	Dibenz(a,h)anthracene	81	79	41-125	yes	2.5	30	yes
03G1763	Soil	Dibenzofuran	81	81	51-125	yes	0.0	30	yes
03G1763	Soil	Diethyl phthalate	82	82	50-125	yes	0.0	30	yes
03G1763	Soil	Dimethyl phthalate	86	86	49-125	yes	0.0	30	yes
03G1763	Soil	Di-n-butyl phthalate	86	84	56-125	yes	2.4	30	yes
03G1763	Soil	Di-n-octylphthalate	79	81	41-132	yes	2.5	30	yes
03G1763	Soil	Fluoranthene	89	89	54-125	yes	0.0	30	yes
03G1763	Soil	Fluorene	81	82	49-125	yes	1.2	30	yes
03G1763	Soil	Hexachlorobenzene	87	86	47-125	yes	1.2	30	yes
03G1763	Soil	Hexachlorobutadiene	80	82	40-125	yes	2.5	30	yes
03G1763	Soil	Hexachlorocyclopentadiene	89	91	31-135	yes	2.2	30	yes
03G1763	Soil	Hexachloroethane	72	71	34-125	yes	1.4	30	yes
03G1763	Soil	Indeno(1,2,3-c,d)pyrene	81	79	38-125	yes	2.5	30	yes
03G1763	Soil	Isophorone	78	79	43-125	yes	1.3	30	yes
03G1763	Soil	Naphthalene	74	75	40-125	yes	1.3	30	yes
03G1763	Soil	Nitrobenzene	79	79	41-125	yes	0.0	30	yes
03G1763	Soil	n-Nitrosodimethylamine	75	71	25-135	yes	5.5	30	yes
03G1763	Soil	n-Nitrosodi-n-propylamine	78	74	40-125	yes	5.3	30	yes

TABLE I-7b

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G1763	Soil	n-Nitrosodiphenylamine	80	80	49-125	yes	0.0	30	yes
03G1763	Soil	Pentachlorophenol	81	81	25-125	yes	0.0	30	yes
03G1763	Soil	Phenanthrene	86	85	50-125	yes	1.2	30	yes
03G1763	Soil	Phenol	75	73	39-125	yes	2.7	30	yes
03G1763	Soil	Pyrene	84	85	46-125	yes	1.2	30	yes
03G2214	Soil	1,2,4-Trichlorobenzene	62	62	44-125	yes	0.0	30	yes
03G2214	Soil	1,2-Dichlorobenzene	59	58	45-125	yes	1.7	30	yes
03G2214	Soil	1,3-Dichlorobenzene	57	57	39-125	yes	0.0	30	yes
03G2214	Soil	1,4-Dichlorobenzene	57	56	35-125	yes	1.8	30	yes
03G2214	Soil	2,4,5-Trichlorophenol	64	66	49-125	yes	3.1	30	yes
03G2214	Soil	2,4,6-Trichlorophenol	65	67	43-125	yes	3.0	30	yes
03G2214	Soil	2,4-Dichlorophenol	60	61	45-125	yes	1.7	30	yes
03G2214	Soil	2,4-Dimethylphenol	60	57	32-125	yes	5.1	30	yes
03G2214	Soil	2,4-Dinitrophenol	65	70	25-132	yes	7.4	30	yes
03G2214	Soil	2,4-Dinitrotoluene	66	68	48-125	yes	3.0	30	yes
03G2214	Soil	2,6-Dinitrotoluene	65	66	48-125	yes	1.5	30	yes
03G2214	Soil	2-Chloronaphthalene	62	65	45-125	yes	4.7	30	yes
03G2214	Soil	2-Chlorophenol	56	56	44-125	yes	0.0	30	yes
03G2214	Soil	2-Methylnaphthalene	62	62	47-125	yes	0.0	30	yes
03G2214	Soil	2-Methylphenol (o-cresol)	53	53	40-125	yes	0.0	30	yes
03G2214	Soil	2-Nitroaniline	62	63	44-125	yes	1.6	30	yes
03G2214	Soil	2-Nitrophenol	60	61	42-125	yes	1.7	30	yes
03G2214	Soil	3,3'-Dichlorobenzidine	63	62	25-128	yes	1.6	30	yes
03G2214	Soil	3/4-Methylphenol (m,p-cresol)	55	55	41-125	yes	0.0	30	yes
03G2214	Soil	3-Nitroaniline	62	64	27-125	yes	3.2	30	yes
03G2214	Soil	4,6-Dinitro-2-methylphenol	101	105	29-137	yes	3.9	30	yes
03G2214	Soil	4-Bromophenyl phenyl ether	66	68	46-125	yes	3.0	30	yes
03G2214	Soil	4-Chloro-3-methylphenol	62	60	46-125	yes	3.3	30	yes
03G2214	Soil	4-Chloroaniline	57	55	25-125	yes	3.6	30	yes
03G2214	Soil	4-Chlorophenyl phenyl ether	66	67	47-125	yes	1.5	30	yes
03G2214	Soil	4-Nitroaniline	55	57	34-125	yes	3.6	30	yes
03G2214	Soil	4-Nitrophenol	55	56	25-138	yes	1.8	30	yes
03G2214	Soil	Acenaphthene	65	68	46-125	yes	4.5	30	yes
03G2214	Soil	Acenaphthylene	58	60	44-125	yes	3.4	30	yes
03G2214	Soil	Anthracene	65	66	53-125	yes	1.5	30	yes
03G2214	Soil	Benzo(a)anthracene	71	70	52-125	yes	1.4	30	yes
03G2214	Soil	Benzo(a)pyrene	64	64	50-125	yes	0.0	30	yes

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
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Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G2214	Soil	Benzo(b)fluoranthene	62	57	45-125	yes	8.4	30	yes
03G2214	Soil	Benzo(g,h,i)perylene	57	59	38-126	yes	3.4	30	yes
03G2214	Soil	Benzo(k)fluoranthene	77	86	45-125	yes	11.0	30	yes
03G2214	Soil	Benzoic acid	75	78	25-125	yes	3.9	30	yes
03G2214	Soil	Benzyl alcohol	54	53	25-125	yes	1.9	30	yes
03G2214	Soil	Benzyl butyl phthalate	63	62	49-125	yes	1.6	30	yes
03G2214	Soil	bis(2-Chloroethoxy)methane	61	62	43-125	yes	1.6	30	yes
03G2214	Soil	bis(2-Chloroethyl)ether	56	50	38-125	yes	11.3	30	yes
03G2214	Soil	bis(2-Chloroisopropyl)ether	56	57	25-125	yes	1.8	30	yes
03G2214	Soil	bis(2-Ethylhexyl)phthalate	62	61	47-127	yes	1.6	30	yes
03G2214	Soil	Chrysene	63	62	53-125	yes	1.6	30	yes
03G2214	Soil	Dibenz(a,h)anthracene	56	56	41-125	yes	0.0	30	yes
03G2214	Soil	Dibenzofuran	63	65	51-125	yes	3.1	30	yes
03G2214	Soil	Diethyl phthalate	65	65	50-125	yes	0.0	30	yes
03G2214	Soil	Dimethyl phthalate	66	66	49-125	yes	0.0	30	yes
03G2214	Soil	Di-n-butyl phthalate	66	66	56-125	yes	0.0	30	yes
03G2214	Soil	Di-n-octylphthalate	75	74	41-132	yes	1.3	30	yes
03G2214	Soil	Fluoranthene	66	66	54-125	yes	0.0	30	yes
03G2214	Soil	Fluorene	65	65	49-125	yes	0.0	30	yes
03G2214	Soil	Hexachlorobenzene	70	72	47-125	yes	2.8	30	yes
03G2214	Soil	Hexachlorobutadiene	63	63	40-125	yes	0.0	30	yes
03G2214	Soil	Hexachlorocyclopentadiene	65	68	31-135	yes	4.5	30	yes
03G2214	Soil	Hexachloroethane	59	57	34-125	yes	3.4	30	yes
03G2214	Soil	Indeno(1,2,3-c,d)pyrene	55	55	38-125	yes	0.0	30	yes
03G2214	Soil	Isophorone	60	59	43-125	yes	1.7	30	yes
03G2214	Soil	Naphthalene	57	58	40-125	yes	1.7	30	yes
03G2214	Soil	Nitrobenzene	55	55	41-125	yes	0.0	30	yes
03G2214	Soil	n-Nitrosodimethylamine	49	49	25-135	yes	0.0	30	yes
03G2214	Soil	n-Nitrosodi-n-propylamine	59	57	40-125	yes	3.4	30	yes
03G2214	Soil	n-Nitrosodiphenylamine	58	59	49-125	yes	1.7	30	yes
03G2214	Soil	Pentachlorophenol	63	64	25-125	yes	1.6	30	yes
03G2214	Soil	Phenanthrene	65	65	50-125	yes	0.0	30	yes
03G2214	Soil	Phenol	52	51	39-125	yes	1.9	30	yes
03G2214	Soil	Pyrene	65	64	46-125	yes	1.6	30	yes
03G3478	Soil	1,2,4-Trichlorobenzene	65	66	44-125	yes	1.5	30	yes
03G3478	Soil	1,2-Dichlorobenzene	61	62	45-125	yes	1.6	30	yes
03G3478	Soil	1,3-Dichlorobenzene	60	60	39-125	yes	0.0	30	yes

TABLE I-7b

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G3478	Soil	1,4-Dichlorobenzene	62	62	35-125	yes	0.0	30	yes
03G3478	Soil	2,4,5-Trichlorophenol	73	74	49-125	yes	1.4	30	yes
03G3478	Soil	2,4,6-Trichlorophenol	73	72	43-125	yes	1.4	30	yes
03G3478	Soil	2,4-Dichlorophenol	71	71	45-125	yes	0.0	30	yes
03G3478	Soil	2,4-Dimethylphenol	67	66	32-125	yes	1.5	30	yes
03G3478	Soil	2,4-Dinitrophenol	72	74	25-132	yes	2.7	30	yes
03G3478	Soil	2,4-Dinitrotoluene	76	74	48-125	yes	2.7	30	yes
03G3478	Soil	2,6-Dinitrotoluene	78	78	48-125	yes	0.0	30	yes
03G3478	Soil	2-Chloronaphthalene	71	71	45-125	yes	0.0	30	yes
03G3478	Soil	2-Chlorophenol	64	63	44-125	yes	1.6	30	yes
03G3478	Soil	2-Methylnaphthalene	70	70	47-125	yes	0.0	30	yes
03G3478	Soil	2-Methylphenol (o-cresol)	69	68	40-125	yes	1.5	30	yes
03G3478	Soil	2-Nitroaniline	77	77	44-125	yes	0.0	30	yes
03G3478	Soil	2-Nitrophenol	71	71	42-125	yes	0.0	30	yes
03G3478	Soil	3,3'-Dichlorobenzidine	77	78	25-128	yes	1.3	30	yes
03G3478	Soil	3-Nitroaniline	79	79	27-125	yes	0.0	30	yes
03G3478	Soil	3/4-Methylphenol (m,p-cresol)	71	70	41-125	yes	1.4	30	yes
03G3478	Soil	4,6-Dinitro-2-methylphenol	78	78	29-137	yes	0.0	30	yes
03G3478	Soil	4-Bromophenyl phenyl ether	83	81	46-125	yes	2.4	30	yes
03G3478	Soil	4-Chloro-3-methylphenol	76	75	46-125	yes	1.3	30	yes
03G3478	Soil	4-Chloroaniline	74	73	25-125	yes	1.4	30	yes
03G3478	Soil	4-Chlorophenyl phenyl ether	73	72	47-125	yes	1.4	30	yes
03G3478	Soil	4-Nitroaniline	78	76	34-125	yes	2.6	30	yes
03G3478	Soil	4-Nitrophenol	73	72	25-138	yes	1.4	30	yes
03G3478	Soil	Acenaphthene	74	74	46-125	yes	0.0	30	yes
03G3478	Soil	Acenaphthylene	65	65	44-125	yes	0.0	30	yes
03G3478	Soil	Anthracene	77	75	53-125	yes	2.6	30	yes
03G3478	Soil	Benzo(a)anthracene	74	76	52-125	yes	2.7	30	yes
03G3478	Soil	Benzo(a)pyrene	75	77	50-125	yes	2.6	30	yes
03G3478	Soil	Benzo(b)fluoranthene	71	73	45-125	yes	2.8	30	yes
03G3478	Soil	Benzo(g,h,i)perylene	65	61	38-126	yes	6.3	30	yes
03G3478	Soil	Benzo(k)fluoranthene	72	72	45-125	yes	0.0	30	yes
03G3478	Soil	Benzoic acid	72	74	25-125	yes	2.7	30	yes
03G3478	Soil	Benzyl alcohol	67	66	25-125	yes	1.5	30	yes
03G3478	Soil	Benzyl butyl phthalate	80	80	49-125	yes	0.0	30	yes
03G3478	Soil	bis(2-Chloroethoxy)methane	69	69	43-125	yes	0.0	30	yes
03G3478	Soil	bis(2-Chloroethyl)ether	67	67	38-125	yes	0.0	30	yes

TAB. 1-7b

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 11 of 20)

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G3478	Soil	bis(2-Chloroisopropyl)ether	62	59	25-125	yes	5.0	30	yes
03G3478	Soil	bis(2-Ethylhexyl)phthalate	81	80	47-127	yes	1.2	30	yes
03G3478	Soil	Chrysene	77	77	53-125	yes	0.0	30	yes
03G3478	Soil	Di-n-butyl phthalate	83	81	56-125	yes	2.4	30	yes
03G3478	Soil	Di-n-octylphthalate	78	78	41-132	yes	0.0	30	yes
03G3478	Soil	Dibenz(a,h)anthracene	64	61	41-125	yes	4.8	30	yes
03G3478	Soil	Dibenzofuran	73	72	51-125	yes	1.4	30	yes
03G3478	Soil	Diethyl phthalate	78	77	50-125	yes	1.3	30	yes
03G3478	Soil	Dimethyl phthalate	78	78	49-125	yes	0.0	30	yes
03G3478	Soil	Fluoranthene	77	77	54-125	yes	0.0	30	yes
03G3478	Soil	Fluorene	74	75	49-125	yes	1.3	30	yes
03G3478	Soil	Hexachlorobenzene	78	77	47-125	yes	1.3	30	yes
03G3478	Soil	Hexachlorobutadiene	64	65	40-125	yes	1.6	30	yes
03G3478	Soil	Hexachlorocyclopentadiene	72	71	31-135	yes	1.4	30	yes
03G3478	Soil	Hexachloroethane	57	57	34-125	yes	0.0	30	yes
03G3478	Soil	Indeno(1,2,3-c,d)pyrene	63	61	38-125	yes	3.2	30	yes
03G3478	Soil	Isophorone	74	75	43-125	yes	1.3	30	yes
03G3478	Soil	n-Nitrosodi-n-propylamine	71	68	40-125	yes	4.3	30	yes
03G3478	Soil	n-Nitrosodimethylamine	62	64	25-135	yes	3.2	30	yes
03G3478	Soil	n-Nitrosodiphenylamine	77	78	49-125	yes	1.3	30	yes
03G3478	Soil	Naphthalene	65	65	40-125	yes	0.0	30	yes
03G3478	Soil	Nitrobenzene	69	69	41-125	yes	0.0	30	yes
03G3478	Soil	Pentachlorophenol	77	77	25-125	yes	0.0	30	yes
03G3478	Soil	Phenanthrene	80	80	50-125	yes	0.0	30	yes
03G3478	Soil	Phenol	63	62	39-125	yes	1.6	30	yes
03G3478	Soil	Pyrene	78	79	46-125	yes	1.3	30	yes
03G1057	Water	1,2,4-Trichlorobenzene	76	77	37-120	yes	1.3	20	yes
03G1057	Water	1,2-Dichlorobenzene	69	68	33-120	yes	1.5	20	yes
03G1057	Water	1,3-Dichlorobenzene	70	68	32-120	yes	2.9	20	yes
03G1057	Water	1,4-Dichlorobenzene	69	68	32-120	yes	1.5	20	yes
03G1057	Water	2,4,5-Trichlorophenol	76	76	49-120	yes	0.0	20	yes
03G1057	Water	2,4,6-Trichlorophenol	76	76	49-126	yes	0.0	20	yes
03G1057	Water	2,4-Dichlorophenol	78	78	48-120	yes	0.0	20	yes
03G1057	Water	2,4-Dimethylphenol	79	80	28-120	yes	1.3	20	yes
03G1057	Water	2,4-Dinitrophenol	60	64	25-130	yes	6.5	20	yes
03G1057	Water	2,4-Dinitrotoluene	77	77	51-120	yes	0.0	20	yes

TABLE I-7b

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G1057	Water	2,6-Dinitrotoluene	77	76	49-120	yes	1.3	20	yes
03G1057	Water	2-Chloronaphthalene	77	76	49-120	yes	1.3	20	yes
03G1057	Water	2-Chlorophenol	69	66	37-120	yes	4.4	20	yes
03G1057	Water	2-Methylnaphthalene	83	82	46-120	yes	1.2	20	yes
03G1057	Water	2-Methylphenol (o-cresol)	70	67	38-120	yes	4.4	20	yes
03G1057	Water	2-Nitroaniline	73	73	48-120	yes	0.0	20	yes
03G1057	Water	2-Nitrophenol	77	78	39-123	yes	1.3	20	yes
03G1057	Water	3,3'-Dichlorobenzidine	46	48	20-120	yes	4.3	20	yes
03G1057	Water	3/4-Methylphenol (m,p-cresol)	70	67	32-120	yes	4.4	20	yes
03G1057	Water	3-Nitroaniline	52	52	20-126	yes	0.0	20	yes
03G1057	Water	4,6-Dinitro-2-methylphenol	71	76	40-130	yes	6.8	20	yes
03G1057	Water	4-Bromophenyl phenyl ether	89	87	52-120	yes	2.3	20	yes
03G1057	Water	4-Chloro-3-methylphenol	83	82	47-120	yes	1.2	20	yes
03G1057	Water	4-Chloroaniline	46	46	20-120	yes	0.0	20	yes
03G1057	Water	4-Chlorophenyl phenyl ether	80	80	50-120	yes	0.0	20	yes
03G1057	Water	4-Nitroaniline	64	64	36-120	yes	0.0	20	yes
03G1057	Water	4-Nitrophenol	57	56	20-120	yes	1.8	20	yes
03G1057	Water	Acenaphthene	77	76	47-120	yes	1.3	20	yes
03G1057	Water	Acenaphthylene	77	77	50-120	yes	0.0	20	yes
03G1057	Water	Anthracene	78	79	54-120	yes	1.3	20	yes
03G1057	Water	Benzo(a)anthracene	67	67	56-100	yes	0.0	20	yes
03G1057	Water	Benzo(a)pyrene	76	76	53-120	yes	0.0	20	yes
03G1057	Water	Benzo(b)fluoranthene	70	71	45-124	yes	1.4	20	yes
03G1057	Water	Benzo(g,h,i)perylene	60	57	38-123	yes	5.1	20	yes
03G1057	Water	Benzo(k)fluoranthene	84	82	45-124	yes	2.4	20	yes
03G1057	Water	Benzoic acid	77	78	20-120	yes	1.3	20	yes
03G1057	Water	Benzyl alcohol	70	66	30-120	yes	5.9	20	yes
03G1057	Water	Benzyl butyl phthalate	66	66	46-120	yes	0.0	20	yes
03G1057	Water	bis(2-Chloroethoxy)methane	75	76	46-120	yes	1.3	20	yes
03G1057	Water	bis(2-Chloroethyl)ether	88	84	37-120	yes	4.7	20	yes
03G1057	Water	bis(2-Chloroisopropyl)ether	70	66	26-131	yes	5.9	20	yes
03G1057	Water	bis(2-Ethylhexyl)phthalate	67	67	42-126	yes	0.0	20	yes
03G1057	Water	Chrysene	69	68	55-120	yes	1.5	20	yes
03G1057	Water	Dibenz(a,h)anthracene	80	78	42-127	yes	2.5	20	yes
03G1057	Water	Dibenzofuran	78	78	54-120	yes	0.0	20	yes
03G1057	Water	Diethyl phthalate	73	73	41-120	yes	0.0	20	yes
03G1057	Water	Dimethyl phthalate	79	78	25-127	yes	1.3	20	yes

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 13 of 20)

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G1057	Water	Di-n-butyl phthalate	81	79	54-120	yes	2.5	20	yes
03G1057	Water	Di-n-octylphthalate	76	77	37-137	yes	1.3	20	yes
03G1057	Water	Fluoranthene	80	79	54-120	yes	1.3	20	yes
03G1057	Water	Fluorene	76	77	50-120	yes	1.3	20	yes
03G1057	Water	Hexachlorobenzene	85	84	52-120	yes	1.2	20	yes
03G1057	Water	Hexachlorobutadiene	86	86	27-120	yes	0.0	20	yes
03G1057	Water	Hexachlorocyclopentadiene	91	89	41-125	yes	2.2	20	yes
03G1057	Water	Hexachloroethane	68	67	28-120	yes	1.5	20	yes
03G1057	Water	Indeno(1,2,3-c,d)pyrene	78	75	43-125	yes	3.9	20	yes
03G1057	Water	Isophorone	72	72	50-120	yes	0.0	20	yes
03G1057	Water	Naphthalene	75	75	39-120	yes	0.0	20	yes
03G1057	Water	Nitrobenzene	66	66	44-120	yes	0.0	20	yes
03G1057	Water	n-Nitrosodimethylamine	45	43	27-125	yes	4.5	20	yes
03G1057	Water	n-Nitrosodi-n-propylamine	58	56	34-128	yes	3.5	20	yes
03G1057	Water	n-Nitrosodiphenylamine	78	77	48-120	yes	1.3	20	yes
03G1057	Water	Pentachlorophenol	77	76	38-120	yes	1.3	20	yes
03G1057	Water	Phenanthrene	79	79	51-120	yes	0.0	20	yes
03G1057	Water	Phenol	64	61	20-120	yes	4.8	20	yes
03G1057	Water	Pyrene	68	68	49-128	yes	0.0	20	yes
03G1119	Water	1,2,4-Trichlorobenzene	75	75	37-120	yes	0.0	20	yes
03G1119	Water	1,2-Dichlorobenzene	67	67	33-120	yes	0.0	20	yes
03G1119	Water	1,3-Dichlorobenzene	67	67	32-120	yes	0.0	20	yes
03G1119	Water	1,4-Dichlorobenzene	67	67	32-120	yes	0.0	20	yes
03G1119	Water	2,4,5-Trichlorophenol	79	78	49-120	yes	1.3	20	yes
03G1119	Water	2,4,6-Trichlorophenol	79	79	49-126	yes	0.0	20	yes
03G1119	Water	2,4-Dichlorophenol	83	82	48-120	yes	1.2	20	yes
03G1119	Water	2,4-Dimethylphenol	82	82	28-120	yes	0.0	20	yes
03G1119	Water	2,4-Dinitrophenol	62	63	25-130	yes	1.6	20	yes
03G1119	Water	2,4-Dinitrotoluene	80	80	51-120	yes	0.0	20	yes
03G1119	Water	2,6-Dinitrotoluene	82	82	49-120	yes	0.0	20	yes
03G1119	Water	2-Chloronaphthalene	76	76	49-120	yes	0.0	20	yes
03G1119	Water	2-Chlorophenol	73	71	37-120	yes	2.8	20	yes
03G1119	Water	2-Methylnaphthalene	82	82	46-120	yes	0.0	20	yes
03G1119	Water	2-Methylphenol (o-cresol)	75	71	38-120	yes	5.5	20	yes
03G1119	Water	2-Nitroaniline	80	79	48-120	yes	1.3	20	yes
03G1119	Water	2-Nitrophenol	78	78	39-123	yes	0.0	20	yes
03G1119	Water	3,3'-Dichlorobenzidine	37	38	20-120	yes	2.7	20	yes

TABLE I-7b

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G1119	Water	3/4-Methylphenol (m,p-cresol)	76	73	32-120	yes	4.0	20	yes
03G1119	Water	3-Nitroaniline	56	55	20-126	yes	1.8	20	yes
03G1119	Water	4,6-Dinitro-2-methylphenol	75	77	40-130	yes	2.6	20	yes
03G1119	Water	4-Bromophenyl phenyl ether	91	88	52-120	yes	3.4	20	yes
03G1119	Water	4-Chloro-3-methylphenol	85	85	47-120	yes	0.0	20	yes
03G1119	Water	4-Chloroaniline	42	42	20-120	yes	0.0	20	yes
03G1119	Water	4-Chlorophenyl phenyl ether	81	80	50-120	yes	1.2	20	yes
03G1119	Water	4-Nitroaniline	70	71	36-120	yes	1.4	20	yes
03G1119	Water	4-Nitrophenol	61	60	20-120	yes	1.7	20	yes
03G1119	Water	Acenaphthene	77	77	47-120	yes	0.0	20	yes
03G1119	Water	Acenaphthylene	78	78	50-120	yes	0.0	20	yes
03G1119	Water	Anthracene	80	79	54-120	yes	1.3	20	yes
03G1119	Water	Benzo(a)anthracene	67	68	56-100	yes	1.5	20	yes
03G1119	Water	Benzo(a)pyrene	79	79	53-120	yes	0.0	20	yes
03G1119	Water	Benzo(b)fluoranthene	80	84	45-124	yes	4.9	20	yes
03G1119	Water	Benzo(g,h,i)perylene	62	61	38-123	yes	1.6	20	yes
03G1119	Water	Benzo(k)fluoranthene	85	80	45-124	yes	6.1	20	yes
03G1119	Water	Benzoic acid	72	72	20-120	yes	0.0	20	yes
03G1119	Water	Benzyl alcohol	72	68	30-120	yes	5.7	20	yes
03G1119	Water	Benzyl butyl phthalate	68	69	46-120	yes	1.5	20	yes
03G1119	Water	bis(2-Chloroethoxy)methane	76	76	46-120	yes	0.0	20	yes
03G1119	Water	bis(2-Chloroethyl)ether	88	86	37-120	yes	2.3	20	yes
03G1119	Water	bis(2-Chloroisopropyl)ether	72	68	26-131	yes	5.7	20	yes
03G1119	Water	bis(2-Ethylhexyl)phthalate	69	69	42-126	yes	0.0	20	yes
03G1119	Water	Chrysene	69	70	55-120	yes	1.4	20	yes
03G1119	Water	Dibenz(a,h)anthracene	68	65	42-127	yes	4.5	20	yes
03G1119	Water	Dibenzofuran	77	76	54-120	yes	1.3	20	yes
03G1119	Water	Diethyl phthalate	81	78	41-120	yes	3.8	20	yes
03G1119	Water	Dimethyl phthalate	83	82	25-127	yes	1.2	20	yes
03G1119	Water	Di-n-butyl phthalate	86	84	54-120	yes	2.4	20	yes
03G1119	Water	Di-n-octylphthalate	87	87	37-137	yes	0.0	20	yes
03G1119	Water	Fluoranthene	84	82	54-120	yes	2.4	20	yes
03G1119	Water	Fluorene	78	76	50-120	yes	2.6	20	yes
03G1119	Water	Hexachlorobenzene	82	82	52-120	yes	0.0	20	yes
03G1119	Water	Hexachlorobutadiene	86	86	27-120	yes	0.0	20	yes
03G1119	Water	Hexachlorocyclopentadiene	88	85	41-125	yes	3.5	20	yes
03G1119	Water	Hexachloroethane	67	66	28-120	yes	1.5	20	yes

TAB. 1-7b

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
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Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G1119	Water	Indeno(1,2,3-c,d)pyrene	67	64	43-125	yes	4.6	20	yes
03G1119	Water	Isophorone	71	71	50-120	yes	0.0	20	yes
03G1119	Water	Naphthalene	73	74	39-120	yes	1.4	20	yes
03G1119	Water	Nitrobenzene	65	65	44-120	yes	0.0	20	yes
03G1119	Water	n-Nitrosodimethylamine	50	53	27-125	yes	5.8	20	yes
03G1119	Water	n-Nitrosodi-n-propylamine	60	58	34-128	yes	3.4	20	yes
03G1119	Water	n-Nitrosodiphenylamine	83	82	48-120	yes	1.2	20	yes
03G1119	Water	Pentachlorophenol	86	84	38-120	yes	2.4	20	yes
03G1119	Water	Phenanthrene	81	80	51-120	yes	1.2	20	yes
03G1119	Water	Phenol	68	66	20-120	yes	3.0	20	yes
03G1119	Water	Pyrene	67	67	49-128	yes	0.0	20	yes
03G1323	Water	1,2,4-Trichlorobenzene	70	74	37-120	yes	5.6	20	yes
03G1323	Water	1,2-Dichlorobenzene	75	74	33-120	yes	1.3	20	yes
03G1323	Water	1,3-Dichlorobenzene	73	72	32-120	yes	1.4	20	yes
03G1323	Water	1,4-Dichlorobenzene	74	73	32-120	yes	1.4	20	yes
03G1323	Water	2,4,5-Trichlorophenol	78	80	49-120	yes	2.5	20	yes
03G1323	Water	2,4,6-Trichlorophenol	74	76	49-126	yes	2.7	20	yes
03G1323	Water	2,4-Dichlorophenol	80	82	48-120	yes	2.5	20	yes
03G1323	Water	2,4-Dimethylphenol	129	134	28-120	no	3.8	20	yes
03G1323	Water	2,4-Dinitrophenol	67	65	25-130	yes	3.0	20	yes
03G1323	Water	2,4-Dinitrotoluene	81	83	51-120	yes	2.4	20	yes
03G1323	Water	2,6-Dinitrotoluene	78	79	49-120	yes	1.3	20	yes
03G1323	Water	2-Chloronaphthalene	79	78	49-120	yes	1.3	20	yes
03G1323	Water	2-Chlorophenol	81	81	37-120	yes	0.0	20	yes
03G1323	Water	2-Methylnaphthalene	82	83	46-120	yes	1.2	20	yes
03G1323	Water	2-Methylphenol (o-cresol)	82	84	38-120	yes	2.4	20	yes
03G1323	Water	2-Nitroaniline	82	80	48-120	yes	2.5	20	yes
03G1323	Water	2-Nitrophenol	77	79	39-123	yes	2.6	20	yes
03G1323	Water	3,3'-Dichlorobenzidine	43	41	20-120	yes	4.8	20	yes
03G1323	Water	3/4-Methylphenol (m,p-cresol)	83	84	32-120	yes	1.2	20	yes
03G1323	Water	3-Nitroaniline	56	56	20-126	yes	0.0	20	yes
03G1323	Water	4,6-Dinitro-2-methylphenol	79	78	40-130	yes	1.3	20	yes
03G1323	Water	4-Bromophenyl phenyl ether	77	78	52-120	yes	1.3	20	yes
03G1323	Water	4-Chloro-3-methylphenol	82	85	47-120	yes	3.6	20	yes
03G1323	Water	4-Chloroaniline	43	42	20-120	yes	2.4	20	yes
03G1323	Water	4-Chlorophenyl phenyl ether	79	78	50-120	yes	1.3	20	yes
03G1323	Water	4-Nitroaniline	70	69	36-120	yes	1.4	20	yes

TABLE I-7b

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G1323	Water	4-Nitrophenol	81	79	20-120	yes	2.5	20	yes
03G1323	Water	Acenaphthene	81	81	47-120	yes	0.0	20	yes
03G1323	Water	Acenaphthylene	79	78	50-120	yes	1.3	20	yes
03G1323	Water	Anthracene	75	77	54-120	yes	2.6	20	yes
03G1323	Water	Benzo(a)anthracene	81	79	56-100	yes	2.5	20	yes
03G1323	Water	Benzo(a)pyrene	82	83	53-120	yes	1.2	20	yes
03G1323	Water	Benzo(b)fluoranthene	68	72	45-124	yes	5.7	20	yes
03G1323	Water	Benzo(g,h,i)perylene	64	61	38-123	yes	4.8	20	yes
03G1323	Water	Benzo(k)fluoranthene	96	93	45-124	yes	3.2	20	yes
03G1323	Water	Benzoic acid	84	86	20-120	yes	2.4	20	yes
03G1323	Water	Benzyl alcohol	75	74	30-120	yes	1.3	20	yes
03G1323	Water	Benzyl butyl phthalate	83	82	46-120	yes	1.2	20	yes
03G1323	Water	bis(2-Chloroethoxy)methane	76	79	46-120	yes	3.9	20	yes
03G1323	Water	bis(2-Chloroethyl)ether	75	76	37-120	yes	1.3	20	yes
03G1323	Water	bis(2-Chloroisopropyl)ether	79	80	26-131	yes	1.3	20	yes
03G1323	Water	bis(2-Ethylhexyl)phthalate	82	83	42-126	yes	1.2	20	yes
03G1323	Water	Chrysene	76	76	55-120	yes	0.0	20	yes
03G1323	Water	Dibenz(a,h)anthracene	74	72	42-127	yes	2.7	20	yes
03G1323	Water	Dibenzofuran	80	79	54-120	yes	1.3	20	yes
03G1323	Water	Diethyl phthalate	79	78	41-120	yes	1.3	20	yes
03G1323	Water	Dimethyl phthalate	80	80	25-127	yes	0.0	20	yes
03G1323	Water	Di-n-butyl phthalate	78	80	54-120	yes	2.5	20	yes
03G1323	Water	Di-n-octylphthalate	95	99	37-137	yes	4.1	20	yes
03G1323	Water	Fluoranthene	77	76	54-120	yes	1.3	20	yes
03G1323	Water	Fluorene	79	79	50-120	yes	0.0	20	yes
03G1323	Water	Hexachlorobenzene	77	77	52-120	yes	0.0	20	yes
03G1323	Water	Hexachlorobutadiene	67	71	27-120	yes	5.8	20	yes
03G1323	Water	Hexachlorocyclopentadiene	57	56	41-125	yes	1.8	20	yes
03G1323	Water	Hexachloroethane	73	72	28-120	yes	1.4	20	yes
03G1323	Water	Indeno(1,2,3-c,d)pyrene	72	69	43-125	yes	4.3	20	yes
03G1323	Water	Isophorone	75	78	50-120	yes	3.9	20	yes
03G1323	Water	Naphthalene	77	76	39-120	yes	1.3	20	yes
03G1323	Water	Nitrobenzene	73	75	44-120	yes	2.7	20	yes
03G1323	Water	n-Nitrosodimethylamine	73	72	27-125	yes	1.4	20	yes
03G1323	Water	n-Nitrosodi-n-propylamine	79	81	34-128	yes	2.5	20	yes
03G1323	Water	n-Nitrosodiphenylamine	81	81	48-120	yes	0.0	20	yes
03G1323	Water	Pentachlorophenol	81	81	38-120	yes	0.0	20	yes

TABLE 1-7b

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G1323	Water	Phenanthrene	77	76	51-120	yes	1.3	20	yes
03G1323	Water	Phenol	75	77	20-120	yes	2.6	20	yes
03G1323	Water	Pyrene	83	83	49-128	yes	0.0	20	yes
03G1733	Water	1,2,4-Trichlorobenzene	77	77	37-120	yes	0.0	20	yes
03G1733	Water	1,2-Dichlorobenzene	74	74	33-120	yes	0.0	20	yes
03G1733	Water	1,3-Dichlorobenzene	72	72	32-120	yes	0.0	20	yes
03G1733	Water	1,4-Dichlorobenzene	73	73	32-120	yes	0.0	20	yes
03G1733	Water	2,4,5-Trichlorophenol	79	79	49-120	yes	0.0	20	yes
03G1733	Water	2,4,6-Trichlorophenol	84	84	49-126	yes	0.0	20	yes
03G1733	Water	2,4-Dichlorophenol	80	80	48-120	yes	0.0	20	yes
03G1733	Water	2,4-Dimethylphenol	76	76	28-120	yes	0.0	20	yes
03G1733	Water	2,4-Dinitrophenol	82	83	25-130	yes	1.2	20	yes
03G1733	Water	2,4-Dinitrotoluene	85	85	51-120	yes	0.0	20	yes
03G1733	Water	2,6-Dinitrotoluene	82	82	49-120	yes	0.0	20	yes
03G1733	Water	2-Chloronaphthalene	76	77	49-120	yes	1.3	20	yes
03G1733	Water	2-Chlorophenol	73	72	37-120	yes	1.4	20	yes
03G1733	Water	2-Methylnaphthalene	82	82	46-120	yes	0.0	20	yes
03G1733	Water	2-Methylphenol (o-cresol)	76	75	38-120	yes	1.3	20	yes
03G1733	Water	2-Nitroaniline	80	80	48-120	yes	0.0	20	yes
03G1733	Water	2-Nitrophenol	79	79	39-123	yes	0.0	20	yes
03G1733	Water	3,3'-Dichlorobenzidine	71	71	20-120	yes	0.0	20	yes
03G1733	Water	3/4-Methylphenol (m,p-cresol)	78	76	32-120	yes	2.6	20	yes
03G1733	Water	3-Nitroaniline	74	74	20-126	yes	0.0	20	yes
03G1733	Water	4,6-Dinitro-2-methylphenol	92	94	40-130	yes	2.2	20	yes
03G1733	Water	4-Bromophenyl phenyl ether	81	83	52-120	yes	2.4	20	yes
03G1733	Water	4-Chloro-3-methylphenol	78	78	47-120	yes	0.0	20	yes
03G1733	Water	4-Chloroaniline	64	63	20-120	yes	1.6	20	yes
03G1733	Water	4-Chlorophenyl phenyl ether	80	82	50-120	yes	2.5	20	yes
03G1733	Water	4-Nitroaniline	54	56	36-120	yes	3.6	20	yes
03G1733	Water	4-Nitrophenol	73	73	20-120	yes	0.0	20	yes
03G1733	Water	Acenaphthene	79	80	47-120	yes	1.3	20	yes
03G1733	Water	Acenaphthylene	73	73	50-120	yes	0.0	20	yes
03G1733	Water	Anthracene	84	85	54-120	yes	1.2	20	yes
03G1733	Water	Benzo(a)anthracene	83	81	56-100	yes	2.4	20	yes
03G1733	Water	Benzo(a)pyrene	80	80	53-120	yes	0.0	20	yes
03G1733	Water	Benzo(b)fluoranthene	74	74	45-124	yes	0.0	20	yes
03G1733	Water	Benzo(g,h,i)perylene	63	59	38-123	yes	6.6	20	yes

TABLE I-7b

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G1733	Water	Benzo(k)fluoranthene	85	90	45-124	yes	5.7	20	yes
03G1733	Water	Benzoic acid	93	94	20-120	yes	1.1	20	yes
03G1733	Water	Benzyl alcohol	70	68	30-120	yes	2.9	20	yes
03G1733	Water	Benzyl butyl phthalate	81	81	46-120	yes	0.0	20	yes
03G1733	Water	bis(2-Chloroethoxy)methane	79	79	46-120	yes	0.0	20	yes
03G1733	Water	bis(2-Chloroethyl)ether	77	75	37-120	yes	2.6	20	yes
03G1733	Water	bis(2-Chloroisopropyl)ether	76	74	26-131	yes	2.7	20	yes
03G1733	Water	bis(2-Ethylhexyl)phthalate	78	79	42-126	yes	1.3	20	yes
03G1733	Water	Chrysene	82	83	55-120	yes	1.2	20	yes
03G1733	Water	Dibenz(a,h)anthracene	78	78	42-127	yes	0.0	20	yes
03G1733	Water	Dibenzofuran	78	78	54-120	yes	0.0	20	yes
03G1733	Water	Diethyl phthalate	79	79	41-120	yes	0.0	20	yes
03G1733	Water	Dimethyl phthalate	82	82	25-127	yes	0.0	20	yes
03G1733	Water	Di-n-butyl phthalate	82	82	54-120	yes	0.0	20	yes
03G1733	Water	Di-n-octylphthalate	77	80	37-137	yes	3.8	20	yes
03G1733	Water	Fluoranthene	85	86	54-120	yes	1.2	20	yes
03G1733	Water	Fluorene	78	78	50-120	yes	0.0	20	yes
03G1733	Water	Hexachlorobenzene	83	84	52-120	yes	1.2	20	yes
03G1733	Water	Hexachlorobutadiene	77	78	27-120	yes	1.3	20	yes
03G1733	Water	Hexachlorocyclopentadiene	80	81	41-125	yes	1.2	20	yes
03G1733	Water	Hexachloroethane	72	72	28-120	yes	0.0	20	yes
03G1733	Water	Indeno(1,2,3-c,d)pyrene	76	74	43-125	yes	2.7	20	yes
03G1733	Water	Isophorone	78	78	50-120	yes	0.0	20	yes
03G1733	Water	Naphthalene	73	73	39-120	yes	0.0	20	yes
03G1733	Water	Nitrobenzene	77	77	44-120	yes	0.0	20	yes
03G1733	Water	n-Nitrosodimethylamine	67	67	27-125	yes	0.0	20	yes
03G1733	Water	n-Nitrosodi-n-propylamine	78	75	34-128	yes	3.9	20	yes
03G1733	Water	n-Nitrosodiphenylamine	74	74	48-120	yes	0.0	20	yes
03G1733	Water	Pentachlorophenol	79	80	38-120	yes	1.3	20	yes
03G1733	Water	Phenanthrene	81	83	51-120	yes	2.4	20	yes
03G1733	Water	Phenol	66	64	20-120	yes	3.1	20	yes
03G1733	Water	Pyrene	82	82	49-128	yes	0.0	20	yes
03G1779	Water	1,2,4-Trichlorobenzene	74	74	37-120	yes	0.0	20	yes
03G1779	Water	1,2-Dichlorobenzene	77	77	33-120	yes	0.0	20	yes
03G1779	Water	1,3-Dichlorobenzene	75	76	32-120	yes	1.3	20	yes
03G1779	Water	1,4-Dichlorobenzene	77	77	32-120	yes	0.0	20	yes
03G1779	Water	2,4,5-Trichlorophenol	79	78	49-120	yes	1.3	20	yes

TAB. 1-7b

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G1779	Water	2,4,6-Trichlorophenol	79	78	49-126	yes	1.3	20	yes
03G1779	Water	2,4-Dichlorophenol	76	76	48-120	yes	0.0	20	yes
03G1779	Water	2,4-Dimethylphenol	78	77	28-120	yes	1.3	20	yes
03G1779	Water	2,4-Dinitrophenol	79	78	25-130	yes	1.3	20	yes
03G1779	Water	2,4-Dinitrotoluene	84	83	51-120	yes	1.2	20	yes
03G1779	Water	2,6-Dinitrotoluene	83	80	49-120	yes	3.7	20	yes
03G1779	Water	2-Chloronaphthalene	76	76	49-120	yes	0.0	20	yes
03G1779	Water	2-Chlorophenol	79	77	37-120	yes	2.6	20	yes
03G1779	Water	2-Methylnaphthalene	81	80	46-120	yes	1.2	20	yes
03G1779	Water	2-Methylphenol (o-cresol)	75	74	38-120	yes	1.3	20	yes
03G1779	Water	2-Nitroaniline	80	80	48-120	yes	0.0	20	yes
03G1779	Water	2-Nitrophenol	77	76	39-123	yes	1.3	20	yes
03G1779	Water	3,3'-Dichlorobenzidine	65	64	20-120	yes	1.6	20	yes
03G1779	Water	3/4-Methylphenol (m,p-cresol)	76	75	32-120	yes	1.3	20	yes
03G1779	Water	3-Nitroaniline	71	70	20-126	yes	1.4	20	yes
03G1779	Water	4,6-Dinitro-2-methylphenol	88	89	40-130	yes	1.1	20	yes
03G1779	Water	4-Bromophenyl phenyl ether	73	73	52-120	yes	0.0	20	yes
03G1779	Water	4-Chloro-3-methylphenol	80	77	47-120	yes	3.8	20	yes
03G1779	Water	4-Chloroaniline	61	60	20-120	yes	1.7	20	yes
03G1779	Water	4-Chlorophenyl phenyl ether	78	77	50-120	yes	1.3	20	yes
03G1779	Water	4-Nitroaniline	70	70	36-120	yes	0.0	20	yes
03G1779	Water	4-Nitrophenol	78	76	20-120	yes	2.6	20	yes
03G1779	Water	Acenaphthene	80	80	47-120	yes	0.0	20	yes
03G1779	Water	Acenaphthylene	75	73	50-120	yes	2.7	20	yes
03G1779	Water	Anthracene	76	76	54-120	yes	0.0	20	yes
03G1779	Water	Benzo(a)anthracene	81	79	56-100	yes	2.5	20	yes
03G1779	Water	Benzo(a)pyrene	75	74	53-120	yes	1.3	20	yes
03G1779	Water	Benzo(b)fluoranthene	69	60	45-124	yes	14.0	20	yes
03G1779	Water	Benzo(g,h,i)perylene	86	86	38-123	yes	0.0	20	yes
03G1779	Water	Benzo(k)fluoranthene	68	68	45-124	yes	0.0	20	yes
03G1779	Water	Benzoic acid	99	100	20-120	yes	1.0	20	yes
03G1779	Water	Benzyl alcohol	75	74	30-120	yes	1.3	20	yes
03G1779	Water	Benzyl butyl phthalate	77	76	46-120	yes	1.3	20	yes
03G1779	Water	bis(2-Chloroethoxy)methane	74	73	46-120	yes	1.4	20	yes
03G1779	Water	bis(2-Chloroethyl)ether	73	72	37-120	yes	1.4	20	yes
03G1779	Water	bis(2-Chloroisopropyl)ether	75	74	26-131	yes	1.3	20	yes
03G1779	Water	bis(2-Ethylhexyl)phthalate	78	79	42-126	yes	1.3	20	yes

TABLE I-7b

LABORATORY CONTROL SAMPLE / LABORATORY CONTROL SAMPLE DUPLICATE
RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G1779	Water	Chrysene	78	75	55-120	yes	3.9	20	yes
03G1779	Water	Dibenz(a,h)anthracene	83	83	42-127	yes	0.0	20	yes
03G1779	Water	Dibenzofuran	74	72	54-120	yes	2.7	20	yes
03G1779	Water	Diethyl phthalate	78	78	41-120	yes	0.0	20	yes
03G1779	Water	Dimethyl phthalate	83	81	25-127	yes	2.4	20	yes
03G1779	Water	Di-n-butyl phthalate	75	76	54-120	yes	1.3	20	yes
03G1779	Water	Di-n-octylphthalate	76	74	37-137	yes	2.7	20	yes
03G1779	Water	Fluoranthene	74	74	54-120	yes	0.0	20	yes
03G1779	Water	Fluorene	77	76	50-120	yes	1.3	20	yes
03G1779	Water	Hexachlorobenzene	75	76	52-120	yes	1.3	20	yes
03G1779	Water	Hexachlorobutadiene	70	68	27-120	yes	2.9	20	yes
03G1779	Water	Hexachlorocyclopentadiene	76	74	41-125	yes	2.7	20	yes
03G1779	Water	Hexachloroethane	75	73	28-120	yes	2.7	20	yes
03G1779	Water	Indeno(1,2,3-c,d)pyrene	85	83	43-125	yes	2.4	20	yes
03G1779	Water	Isophorone	73	73	50-120	yes	0.0	20	yes
03G1779	Water	Naphthalene	73	74	39-120	yes	1.4	20	yes
03G1779	Water	Nitrobenzene	71	72	44-120	yes	1.4	20	yes
03G1779	Water	n-Nitrosodimethylamine	71	70	27-125	yes	1.4	20	yes
03G1779	Water	n-Nitrosodi-n-propylamine	77	76	34-128	yes	1.3	20	yes
03G1779	Water	n-Nitrosodiphenylamine	82	80	48-120	yes	2.5	20	yes
03G1779	Water	Pentachlorophenol	72	72	38-120	yes	0.0	20	yes
03G1779	Water	Phenanthrene	76	77	51-120	yes	1.3	20	yes
03G1779	Water	Phenol	75	73	20-120	yes	2.7	20	yes
03G1779	Water	Pyrene	78	78	49-128	yes	0.0	20	yes

ID - identification
LCS - laboratory control sample
% - percent
RPD - relative percent difference

TABLE I-7c

LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE RECOVERY SUMMARY
POLYNUCLEAR AROMATIC HYDROCARBONS BY SW8270C-SIM
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 1 of 2)

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G1321	Soil	2-Methylnaphthalene	85	85	40-140	yes	0.0	30	yes
03G1321	Soil	Acenaphthene	83	84	40-140	yes	1.2	30	yes
03G1321	Soil	Acenaphthylene	83	83	40-140	yes	0.0	30	yes
03G1321	Soil	Anthracene	47	47	40-140	yes	0.0	30	yes
03G1321	Soil	Benzo(a)anthracene	65	65	40-140	yes	0.0	30	yes
03G1321	Soil	Benzo(a)pyrene	92	91	40-140	yes	1.1	30	yes
03G1321	Soil	Benzo(b)fluoranthene	92	92	40-140	yes	0.0	30	yes
03G1321	Soil	Benzo(g,h,i)perylene	106	105	40-140	yes	0.9	30	yes
03G1321	Soil	Benzo(k)fluoranthene	130	129	40-140	yes	0.8	30	yes
03G1321	Soil	Chrysene	69	68	40-140	yes	1.5	30	yes
03G1321	Soil	Dibenz(a,h)anthracene	96	95	40-140	yes	1.0	30	yes
03G1321	Soil	Fluoranthene	89	90	40-140	yes	1.1	30	yes
03G1321	Soil	Fluorene	90	92	40-140	yes	2.2	30	yes
03G1321	Soil	Indeno(1,2,3-c,d)pyrene	100	99	40-140	yes	1.0	30	yes
03G1321	Soil	Naphthalene	87	87	40-140	yes	0.0	30	yes
03G1321	Soil	Phenanthrene	89	89	40-140	yes	0.0	30	yes
03G1321	Soil	Pyrene	83	82	40-140	yes	1.2	30	yes
03G1328	Water	2-Methylnaphthalene	89	88	40-140	yes	1.1	20	yes
03G1328	Water	Acenaphthene	88	88	40-140	yes	0.0	20	yes
03G1328	Water	Acenaphthylene	86	86	40-140	yes	0.0	20	yes
03G1328	Water	Anthracene	50	49	40-140	yes	2.0	20	yes
03G1328	Water	Benzo(a)anthracene	68	67	40-140	yes	1.5	20	yes
03G1328	Water	Benzo(a)pyrene	94	95	40-140	yes	1.1	20	yes
03G1328	Water	Benzo(b)fluoranthene	96	97	40-140	yes	1.0	20	yes
03G1328	Water	Benzo(g,h,i)perylene	110	110	40-140	yes	0.0	20	yes
03G1328	Water	Benzo(k)fluoranthene	135	134	40-140	yes	0.7	20	yes
03G1328	Water	Chrysene	72	71	40-140	yes	1.4	20	yes
03G1328	Water	Dibenz(a,h)anthracene	99	99	40-140	yes	0.0	20	yes
03G1328	Water	Fluoranthene	94	94	40-140	yes	0.0	20	yes
03G1328	Water	Fluorene	95	95	40-140	yes	0.0	20	yes
03G1328	Water	Indeno(1,2,3-c,d)pyrene	104	104	40-140	yes	0.0	20	yes
03G1328	Water	Naphthalene	90	90	40-140	yes	0.0	20	yes
03G1328	Water	Phenanthrene	93	93	40-140	yes	0.0	20	yes
03G1328	Water	Pyrene	87	86	40-140	yes	1.2	20	yes
04G1583	Water	Acenaphthene	78	77	40-140	Yes	1.3	20	Yes
04G1583	Water	Acenaphthylene	75	75	40-140	Yes	0	20	Yes
04G1583	Water	Anthracene	82	82	40-140	Yes	0	20	Yes

TABLE I-7c

LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE RECOVERY SUMMARY
POLYNUCLEAR AROMATIC HYDROCARBONS BY SW8270C-SIM
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 2 of 2)

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
04G1583	Water	Benzo(a)anthracene	84	80	40-140	Yes	4.9	20	Yes
04G1583	Water	Benzo(a)pyrene	81	81	40-140	Yes	0	20	Yes
04G1583	Water	Benzo(b)fluoranthene	77	83	40-140	Yes	7.5	20	Yes
04G1583	Water	Benzo(g,h,i)perylene	86	87	40-140	Yes	1.2	20	Yes
04G1583	Water	Benzo(k)fluoranthene	87	81	40-140	Yes	7.1	20	Yes
04G1583	Water	Chrysene	81	85	40-140	Yes	4.8	20	Yes
04G1583	Water	Dibenz(a,h)anthracene	91	90	40-140	Yes	1.1	20	Yes
04G1583	Water	Fluoranthene	79	80	40-140	Yes	1.3	20	Yes
04G1583	Water	Fluorene	78	80	40-140	Yes	2.5	20	Yes
04G1583	Water	Indeno(1,2,3-c,d)pyrene	89	89	40-140	Yes	0	20	Yes
04G1583	Water	Naphthalene	70	71	40-140	Yes	1.4	20	Yes
04G1583	Water	Phenanthrene	74	76	40-140	Yes	2.7	20	Yes
04G1583	Water	Pyrene	83	84	40-140	Yes	1.2	20	Yes

ID - identification
LCS - laboratory control sample
% - percent
RPD - relative percent difference
SIM - selected ion monitoring

TABLE I-7d

LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE RECOVERY SUMMARY
TOTAL PETROLEUM HYDROCARBONS BY SW8015B MODIFIED
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Sample Batch Id	Matrix	Analyte	LCS Recovery (%)	LCS Duplicate Recovery (%)	Control Limits Recovery (%)	Accuracy Acceptability	RPD (%)	Control Limits (%)	Precision Acceptability
03G1239	Soil	Diesel Range	77	87	51-153	yes	12	50	yes
03G1240	Soil	Diesel Range	80	77	51-153	yes	3.8	50	yes
03G1277	Soil	Diesel Range	67	66	51-153	yes	1.5	50	yes
03G1280	Soil	Diesel Range	70	61	51-153	yes	14	50	yes
03G1313	Soil	Diesel Range	66	65	51-153	yes	1.5	50	yes
03G1729	Soil	Diesel Range	96	96	51-153	yes	0.0	50	yes
03G2180	Soil	Diesel Range	81	80	51-153	yes	1.2	50	yes
03G3427	Soil	Diesel Range	101	107	51-153	yes	6.0	50	yes
03G3467	Soil	Diesel Range	83	97	51-153	yes	14	50	yes
03G1743	Soil	Gasoline Range	101	101	57-146	yes	0.0	50	yes
03G1089	Water	Diesel Range	80	83	61-143	yes	3.7	30	yes
03G1118	Water	Diesel Range	92	86	61-143	yes	6.7	30	yes
03G1241	Water	Diesel Range	76	65	61-143	yes	16	30	yes
03G1278	Water	Diesel Range	77	69	61-143	yes	11	30	yes
03G1307	Water	Diesel Range	71	72	61-143	yes	1.4	30	yes
03G1728	Water	Diesel Range	85	87	61-143	yes	2.3	30	yes
03G1748	Water	Diesel Range	82	85	61-143	yes	3.6	30	yes
03G1099	Water	Gasoline Range	92	94	67-136	yes	2.2	30	yes
03G1139	Water	Gasoline Range	91	88	67-136	yes	3.4	30	yes
03G1730	Water	Gasoline Range	104	103	67-136	yes	1.0	30	yes
03G1752	Water	Gasoline Range	94	92	67-136	yes	2.2	30	yes
04G1579	Water	Diesel Range	108	109	61-143	Yes	0.9	30	Yes

ID - identification
LCS - laboratory control sample
% - percent
RPD - relative percent difference

TABLE I-8a

SURROGATE PERCENT RECOVERY SUMMARY
VOLATILE ORGANIC COMPOUNDS BY METHOD SW8260B
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 1 of 2)

Field Sample Identification	Date	1,2-Dichloroethane-d4 % Recovery	Accuracy Acceptability	4-Bromofluorobenzene % Recovery	Accuracy Acceptability	Dibromofluoromethane % Recovery	Accuracy Acceptability	Toluene-d8 % Recovery	Accuracy Acceptability
133-MW01-GW01	01/09/03	89	yes	77	yes	98	yes	99	yes
TB010903-01 (TB)	01/09/03	91	yes	86	yes	100	yes	99	yes
133-MW02-GW01	01/10/03	94	yes	98	yes	100	yes	105	yes
133-MW03-GW01	01/10/03	95	yes	96	yes	102	yes	104	yes
TB011003-01 (TB)	01/10/03	94	yes	98	yes	101	yes	103	yes
133-MW04-GW01	01/13/03	94	yes	89	yes	101	yes	104	yes
TB-011303-02 (TB)	01/13/03	95	yes	101	yes	102	yes	105	yes
133-MW05-GW01	01/14/03	97	yes	100	yes	111	yes	109	yes
59TB0114200B (TB)	01/14/03	98	yes	102	yes	102	yes	104	yes
055-TW01-GW01	02/03/03	105	yes	104	yes	105	yes	105	yes
055-TW01-GW01 (MS)	02/03/03	94	yes	87	yes	98	yes	99	yes
055-TW01-GW01 (MSD)	02/03/03	92	yes	88	yes	97	yes	95	yes
055-TW01-SS25.0	02/03/03	111	yes	104	yes	96	yes	107	yes
055-TW01-SS30.0	02/03/03	102	yes	101	yes	94	yes	106	yes
055-TW01-SS30.0 (MS)	02/03/03	80	yes	98	yes	85	yes	102	yes
055-TW01-SS30.0 (MSD)	02/03/03	83	yes	97	yes	85	yes	102	yes
055-TW01-SS35.0	02/03/03	114	yes	104	yes	94	yes	104	yes
055-TW01-SS40.0	02/03/03	115	yes	105	yes	99	yes	111	yes
055-TW01-SS45.0	02/03/03	112	yes	101	yes	95	yes	111	yes
055-TW01-SS45.0 (MS)	02/03/03	85	yes	99	yes	87	yes	107	yes
055-TW01-SS45.0 (MSD)	02/03/03	87	yes	105	yes	86	yes	104	yes
055-TW01-SS50.0	02/03/03	116	yes	100	yes	96	yes	111	yes
055-TW01-SS60.0	02/03/03	114	yes	104	yes	103	yes	109	yes
055-TW01-SS70.0	02/03/03	114	yes	100	yes	97	yes	112	yes
055-TW01-SS80.0	02/03/03	117	yes	106	yes	98	yes	108	yes
055-TW99-GW01 (FD)	02/03/03	95	yes	104	yes	103	yes	106	yes
055-TW99-SS25.0 (FD)	02/03/03	117	yes	98	yes	92	yes	103	yes
055-TW99-SS35.0 (FD)	02/03/03	112	yes	98	yes	91	yes	107	yes
59ER-020303-01 (EB)	02/03/03	92	yes	103	yes	101	yes	107	yes
59TB-020303-01 (TB)	02/03/03	97	yes	104	yes	104	yes	107	yes
59TB-020303-02 (TB)	02/03/03	92	yes	105	yes	102	yes	107	yes
59TB-020303-03 (TB)	02/03/03	97	yes	106	yes	104	yes	106	yes
133-MW02-GW02	03/12/03	94	yes	103	yes	106	yes	108	yes
133-MW03-GW02	03/12/03	93	yes	105	yes	108	yes	111	yes
133-MW99-GW02 (FD)	03/12/03	95	yes	104	yes	109	yes	111	yes
59TB-031203-01 (TB)	03/12/03	101	yes	106	yes	110	yes	110	yes
59TB-031203-03 (TB)	03/12/03	100	yes	107	yes	109	yes	110	yes
B3-IDW-031203	03/12/03	127	yes	109	yes	109	yes	106	yes

TABLE I-8a

SURROGATE PERCENT RECOVERY SUMMARY
VOLATILE ORGANIC COMPOUNDS BY METHOD SW8260B
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 2 of 2)

Field Sample Identification	Date	1,2-Dichloroethane-d4 % Recovery	Accuracy Acceptability	4-Bromofluorobenzene % Recovery	Accuracy Acceptability	Dibromofluoromethane % Recovery	Accuracy Acceptability	Toluene-d8 % Recovery	Accuracy Acceptability
133-MW01-GW02	03/13/03	93	yes	104	yes	106	yes	112	yes
133-MW04-GW02	03/13/03	90	yes	102	yes	103	yes	111	yes
133-MW05-GW02	03/13/03	94	yes	105	yes	107	yes	112	yes
133-MW05-GW02 (MS)	03/13/03	86	yes	90	yes	96	yes	98	yes
133-MW05-GW02 (MSD)	03/13/03	91	yes	94	yes	100	yes	102	yes
59ER-031203-01 (EB)	03/13/03	93	yes	105	yes	108	yes	111	yes
59TB-031303-01 (TB)	03/13/03	92	yes	105	yes	107	yes	111	yes
59TB-031303-02 (TB)	03/13/03	93	yes	106	yes	106	yes	111	yes
59TB-031403-01 (TB)	03/13/03	95	yes	104	yes	108	yes	111	yes
055-TW01-GW02	03/01/04	118	yes	102	yes	114	yes	102	yes

Accuracy control limits:
1,2-Dichloroethane-d4: 52 - 149% (soil); 72 - 119% (water)
4-Bromofluorobenzene: 84 - 118% (soil); 76 - 119% (water)
Dibromofluoromethane: 65 - 135% (soil); 85 - 115% (water)
Toluene-d8: 84 - 116 (soil); 81 - 120% (water)

EB - equipment rinsate blank
FD - field duplicate
MS - matrix spike sample
MSD - matrix spike duplicate
% - percent
TB - trip blank

TABLE I-8b

SURROGATE PERCENT RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY METHOD SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 1 of 4)

Field Sample Identification	Date	2,4,6-Tribromophenol % Recovery	Accuracy Acceptability	2-Fluorobiphenyl % Recovery	Accuracy Acceptability	2-Fluorophenol % Recovery	Accuracy Acceptability
133-MW01-GW01	01/09/03	69	yes	63	yes	35	yes
133-MW02-GW01	01/10/03	80	yes	74	yes	43	yes
133-MW03-GW01	01/10/03	80	yes	75	yes	43	yes
133-MW04-GW01	01/13/03	74	yes	64	yes	45	yes
133-MW05-GW01	01/14/03	81	yes	66	yes	38	yes
020-SB05-SS0.0	01/28/03	83	yes	69	yes	69	yes
020-SB06-SS0.0	01/28/03	92	yes	77	yes	70	yes
020-SB07-SS0.0	01/29/03	84	yes	77	yes	70	yes
020-SB07-SS2.5	01/29/03	81	yes	66	yes	65	yes
020-SB07-SS2.5 (MS)	01/29/03	89	yes	73	yes	71	yes
020-SB07-SS2.5 (MSD)	01/29/03	87	yes	72	yes	72	yes
020-SC01-SS2.0	01/29/03	78	yes	76	yes	65	yes
020-SC02-SS2.0	01/29/03	69	yes	74	yes	63	yes
055-TW01-GW01	02/03/03	67	yes	62	yes	37	yes
055-TW01-GW01 (MS)	02/03/03	85	yes	74	yes	47	yes
055-TW01-GW01 (MSD)	02/03/03	73	yes	66	yes	41	yes
055-TW01-SS25.0	02/03/03	71	yes	63	yes	60	yes
055-TW01-SS30.0	02/03/03	67	yes	64	yes	63	yes
055-TW01-SS30.0 (MS)	02/03/03	78	yes	66	yes	69	yes
055-TW01-SS30.0 (MSD)	02/03/03	79	yes	67	yes	68	yes
055-TW01-SS35.0	02/03/03	64	yes	65	yes	65	yes
055-TW01-SS40.0	02/03/03	70	yes	73	yes	72	yes
055-TW01-SS45.0	02/03/03	15	no	74	yes	68	yes
055-TW01-SS45.0 (MS)	02/03/03	40	yes	67	yes	67	yes
055-TW01-SS45.0 (MSD)	02/03/03	39	yes	66	yes	61	yes
055-TW01-SS50.0	02/03/03	66	yes	69	yes	71	yes
055-TW01-SS60.0	02/03/03	64	yes	62	yes	64	yes
055-TW01-SS70.0	02/03/03	64	yes	64	yes	66	yes
055-TW01-SS80.0	02/03/03	61	yes	65	yes	66	yes
055-TW99-GW01 (FD)	02/03/03	75	yes	66	yes	43	yes
055-TW99-SS25.0 (FD)	02/03/03	77	yes	77	yes	79	yes
055-TW99-SS35.0 (FD)	02/03/03	69	yes	68	yes	71	yes
59ER-020303-01 (EB)	02/03/03	58	yes	68	yes	40	yes
133-MW02-GW02	03/12/03	66	yes	67	yes	33	yes
133-MW03-GW02	03/12/03	78	yes	72	yes	30	yes
133-MW99-GW02 (FD)	03/12/03	81	yes	75	yes	31	yes
B3-IDW-031203	03/12/03	87	yes	74	yes	59	yes

TABLE I-8b

SURROGATE PERCENT RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY METHOD SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 2 of 4)

Field Sample Identification	Date	2,4,6-Tribromophenol % Recovery	Accuracy Acceptability	2-Fluorobiphenyl % Recovery	Accuracy Acceptability	2-Fluorophenol % Recovery	Accuracy Acceptability
B3-IDW-031203 (MS)	03/12/03	98	yes	76	yes	62	yes
B3-IDW-031203 (MSD)	03/12/03	98	yes	76	yes	63	yes
133-MW01-GW02	03/13/03	76	yes	68	yes	41	yes
133-MW04-GW02	03/13/03	84	yes	65	yes	45	yes
133-MW05-GW02	03/13/03	87	yes	75	yes	47	yes
133-MW05-GW02 (MS)	03/13/03	83	yes	72	yes	44	yes
133-MW05-GW02 (MSD)	03/13/03	82	yes	71	yes	44	yes
59ER-031203-01 (EB)	03/13/03	68	yes	64	yes	38	yes
020-SB12-SS0.0	04/23/03	65	yes	48	yes	54	yes
020-SB13-SS0.0	04/23/03	73	yes	56	yes	59	yes
020-SB14-SS0.0	04/23/03	87	yes	63	yes	68	yes
020-SB15-SS0.5	07/21/03	73	yes	77	yes	80	yes
020-SB15-SS0.5 (MS)	07/21/03	99	yes	101	yes	100	yes
020-SB15-SS0.5 (MSD)	07/21/03	97	yes	100	yes	100	yes

TABLE I-8b

SURROGATE PERCENT RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY METHOD SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 3 of 4)

Field Sample Identification	Nitrobenzene-d5 % Recovery	Accuracy Acceptability	Phenol-d5 % Recovery	Accuracy Acceptability	Terphenyl-d14 % Recovery	Accuracy Acceptability
133-MW01-GW01	67	yes	25	yes	65	yes
133-MW02-GW01	81	yes	31	yes	67	yes
133-MW03-GW01	80	yes	32	yes	66	yes
133-MW04-GW01	88	yes	35	yes	69	yes
133-MW05-GW01	76	yes	28	yes	61	yes
020-SB05-SS0.0	75	yes	78	yes	107	yes
020-SB06-SS0.0	86	yes	76	yes	90	yes
020-SB07-SS0.0	84	yes	75	yes	102	yes
020-SB07-SS2.5	70	yes	70	yes	92	yes
020-SB07-SS2.5 (MS)	82	yes	84	yes	112	yes
020-SB07-SS2.5 (MSD)	81	yes	88	yes	116	yes
020-SC01-SS2.0	82	yes	81	yes	81	yes
020-SC02-SS2.0	78	yes	72	yes	81	yes
055-TW01-GW01	73	yes	31	yes	66	yes
055-TW01-GW01 (MS)	90	yes	44	yes	74	yes
055-TW01-GW01 (MSD)	80	yes	36	yes	68	yes
055-TW01-SS25.0	74	yes	73	yes	65	yes
055-TW01-SS30.0	73	yes	74	yes	83	yes
055-TW01-SS30.0 (MS)	84	yes	87	yes	67	yes
055-TW01-SS30.0 (MSD)	87	yes	85	yes	69	yes
055-TW01-SS35.0	78	yes	80	yes	72	yes
055-TW01-SS40.0	83	yes	89	yes	78	yes
055-TW01-SS45.0	85	yes	86	yes	82	yes
055-TW01-SS45.0 (MS)	83	yes	87	yes	69	yes
055-TW01-SS45.0 (MSD)	82	yes	81	yes	71	yes
055-TW01-SS50.0	81	yes	88	yes	76	yes
055-TW01-SS60.0	75	yes	78	yes	65	yes
055-TW01-SS70.0	79	yes	80	yes	70	yes
055-TW01-SS80.0	77	yes	79	yes	68	yes
055-TW99-GW01 (FD)	79	yes	36	yes	73	yes
055-TW99-SS25.0 (FD)	95	yes	90	yes	82	yes
055-TW99-SS35.0 (FD)	82	yes	88	yes	76	yes
59ER-020303-01 (EB)	85	yes	33	yes	75	yes
133-MW02-GW02	81	yes	28	yes	65	yes
133-MW03-GW02	85	yes	25	yes	70	yes
133-MW99-GW02 (FD)	88	yes	26	yes	73	yes
B3-IDW-031203	86	yes	88	yes	74	yes

TABLE I-8b

SURROGATE PERCENT RECOVERY SUMMARY
SEMIVOLATILE ORGANIC COMPOUNDS BY METHOD SW8270C
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 4 of 4)

Field Sample Identification	Nitrobenzene-d5 % Recovery	Accuracy Acceptability	Phenol-d5 % Recovery	Accuracy Acceptability	Terphenyl-d14 % Recovery	Accuracy Acceptability
B3-IDW-031203 (MS)	92	yes	93	yes	79	yes
B3-IDW-031203 (MSD)	92	yes	93	yes	81	yes
133-MW01-GW02	86	yes	33	yes	69	yes
133-MW04-GW02	83	yes	36	yes	66	yes
133-MW05-GW02	95	yes	38	yes	74	yes
133-MW05-GW02 (MS)	88	yes	37	yes	70	yes
133-MW05-GW02 (MSD)	86	yes	37	yes	72	yes
59ER-031203-01 (EB)	79	yes	30	yes	66	yes
020-SB12-SS0.0	51	yes	39	no	65	yes
020-SB13-SS0.0	55	yes	47	yes	71	yes
020-SB14-SS0.0	63	yes	51	yes	86	yes
020-SB15-SS0.5	82	yes	80	yes	85	yes
020-SB15-SS0.5 (MS)	107	yes	99	yes	123	yes
020-SB15-SS0.5 (MSD)	106	yes	97	yes	129	yes

Accuracy control limits:
2,4,6-Tribromophenol: 36 - 126% (soil); 42 - 124% (water)
2-Fluorobiphenyl: 43 - 125% (soil); 48 - 120% (water)
2-Fluorophenol: 37 - 125% (soil); 20 - 120% (water)
Nitrobenzene-d5: 37- 125% (soil); 20-120% (water)
Phenol-d5: 40 - 125% (soil); 20-120% (water)
Terphenyl-d14: 32 - 125% (soil); 51 - 135% (water)

EB - equipment rinsate blank
FD - field duplicate
MS - matrix spike sample
MSD - matrix spike duplicate
% - percent

TABLE I-8c

SURROGATE PERCENT RECOVERY SUMMARY
POLYNUCLEAR AROMATIC HYDROCARBONS BY METHOD SW8270C-SIM
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Field Sample Identification	Date	2-Fluorobiphenyl % Recovery	Accuracy Acceptability	Nitrobenzene-d5 % Recovery	Accuracy Acceptability	Terphenyl-d14 % Recovery	Accuracy Acceptability
055-TW01-GW01	02/03/03	66	yes	79	yes	57	yes
055-TW01-GW01 (MS)	02/03/03	57	yes	68	yes	57	yes
055-TW01-GW01 (MSD)	02/03/03	57	yes	68	yes	56	yes
055-TW01-SS25.0	02/03/03	75	yes	87	yes	68	yes
055-TW01-SS30.0	02/03/03	74	yes	86	yes	66	yes
055-TW01-SS30.0 (MS)	02/03/03	82	yes	98	yes	76	yes
055-TW01-SS30.0 (MSD)	02/03/03	83	yes	101	yes	76	yes
055-TW01-SS35.0	02/03/03	76	yes	90	yes	64	yes
055-TW01-SS40.0	02/03/03	79	yes	93	yes	70	yes
055-TW01-SS45.0	02/03/03	81	yes	96	yes	71	yes
055-TW01-SS45.0 (MS)	02/03/03	75	yes	90	yes	70	yes
055-TW01-SS45.0 (MSD)	02/03/03	77	yes	93	yes	70	yes
055-TW01-SS50.0	02/03/03	76	yes	88	yes	64	yes
055-TW01-SS60.0	02/03/03	71	yes	82	yes	59	yes
055-TW01-SS70.0	02/03/03	73	yes	84	yes	61	yes
055-TW01-SS80.0	02/03/03	72	yes	84	yes	60	yes
055-TW99-GW01 (FD)	02/03/03	73	yes	85	yes	62	yes
055-TW99-SS25.0 (FD)	02/03/03	82	yes	100	yes	70	yes
055-TW99-SS35.0 (FD)	02/03/03	76	yes	90	yes	64	yes
59ER-020303-01 (EB)	02/03/03	80	yes	100	yes	63	yes
055-TW01-GW02	03/01/04	60	yes	55	yes	68	yes

Accuracy control limits:
2-Fluorobiphenyl: 35 - 125% (soil and water)
Nitrobenzene-d5: 35 - 125% (soil and water)
Terphenyl-d14: 35 - 125% (soil and water)

EB - equipment rinsate blank
FD - field duplicate
MS - matrix spike sample
MSD - matrix spike duplicate
% - percent
SIM - selected ion monitoring

TABLE I-8d

SURROGATE PERCENT RECOVERY SUMMARY
TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE BY METHOD SW8015 MODIFIED
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA

Field Sample Identification	Date	Chlorobenzene % Recovery	Accuracy Acceptability
133-MW01-GW01	01/09/03	103	yes
133-MW01-GW02	03/13/03	106	yes
133-MW02-GW01	01/10/03	103	yes
133-MW02-GW02	03/12/03	105	yes
133-MW03-GW01	01/10/03	100	yes
133-MW03-GW02	03/12/03	107	yes
133-MW04-GW01	01/13/03	102	yes
133-MW04-GW02	03/13/03	96	yes
133-MW05-GW01	01/14/03	93	yes
133-MW05-GW02	03/13/03	111	yes
133-MW05-GW02 (MS)	03/13/03	104	yes
133-MW05-GW02 (MSD)	03/13/03	107	yes
133-MW99-GW02 (FD)	03/12/03	102	yes
59ER-031203-01 (EB)	03/13/03	99	yes

Accuracy control limits:
Chlorobenzene: 74 - 138 (water)

EB - equipment rinsate blank
FD - field duplicate
MS - matrix spike sample
MSD - matrix spike duplicate

TABLE I-8e

SURROGATE PERCENT RECOVERY SUMMARY
TOTAL PETROLEUM HYDROCARBONS - DIESEL / MOTOR OIL RANGE BY METHOD SW8015 MODIFIED
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 1 of 3)

Field Sample Identification	Date	n-Octacosane % Recovery	Accuracy Acceptability	n-Triacontane % Recovery	Accuracy Acceptability
020-SB04-SS0.0	01/28/03	88	yes	90	yes
020-SB04-SS10.0	01/28/03	93	yes	101	yes
020-SB04-SS2.5	01/28/03	95	yes	103	yes
020-SB04-SS5.0	01/28/03	90	yes	100	yes
020-SB05-SS0.0	01/28/03	65	yes	113	yes
020-SB05-SS10.0	01/28/03	101	yes	110	yes
020-SB05-SS2.5	01/28/03	102	yes	114	yes
020-SB05-SS5.0	01/28/03	115	yes	123	yes
020-SB06-SS0.0	01/28/03	99	yes	106	yes
020-SB06-SS10.0	01/28/03	98	yes	109	yes
020-SB06-SS2.5	01/28/03	99	yes	108	yes
020-SB06-SS5.0	01/28/03	95	yes	103	yes
020-SB06-SS5.0 (MS)	01/28/03	108	yes	112	yes
020-SB06-SS5.0 (MSD)	01/28/03	118	yes	126	yes
020-SB07-SS0.0	01/29/03	84	yes	101	yes
020-SB07-SS10.0	01/29/03	87	yes	98	yes
020-SB07-SS2.5	01/29/03	88	yes	88	yes
020-SB07-SS20.0	01/29/03	92	yes	105	yes
020-SB07-SS30.0	01/29/03	92	yes	106	yes
020-SB07-SS5.0	01/29/03	87	yes	97	yes
020-SB07-SS60.0	01/29/03	92	yes	103	yes
020-SB07-SS60.0 (MS)	01/29/03	81	yes	89	yes
020-SB07-SS60.0 (MSD)	01/29/03	79	yes	90	yes
020-SB08-SS0.0	01/28/03	100	yes	107	yes
020-SB08-SS10.0	01/28/03	103	yes	108	yes
020-SB08-SS2.5	01/28/03	103	yes	113	yes
020-SB08-SS5.0	01/28/03	88	yes	95	yes
020-SB09-SS0.0	01/28/03	91	yes	98	yes
020-SB09-SS10.0	01/28/03	89	yes	96	yes
020-SB09-SS2.5	01/28/03	87	yes	86	yes
020-SB09-SS2.5 (MS)	01/28/03	95	yes	94	yes
020-SB09-SS2.5 (MSD)	01/28/03	93	yes	92	yes
020-SB09-SS5.0	01/28/03	101	yes	106	yes
020-SB10-SS0.0	01/28/03	94	yes	100	yes
020-SB10-SS10.0	01/28/03	92	yes	88	yes
020-SB10-SS2.5	01/28/03	83	yes	82	yes
020-SB10-SS5.0	01/28/03	83	yes	81	yes
020-SB11-SS0.0	01/29/03	89	yes	105	yes
020-SB11-SS10.0	01/29/03	84	yes	93	yes
020-SB11-SS2.5	01/29/03	85	yes	97	yes
020-SB11-SS20.0	01/29/03	89	yes	100	yes
020-SB11-SS30.0	01/29/03	82	yes	91	yes
020-SB11-SS40.0	01/29/03	91	yes	102	yes
020-SB11-SS5.0	01/29/03	87	yes	98	yes
020-SB11-SS50.0	01/29/03	84	yes	95	yes
020-SB12-SS0.0	04/23/03	100	yes	102	yes
020-SB12-SS2.0	04/23/03	74	yes	73	yes
020-SB13-SS0.0	04/23/03	89	yes	89	yes
020-SB13-SS2.0	04/23/03	75	yes	76	yes
020-SB14-SS0.0	04/23/03	87	yes	88	yes
020-SB14-SS2.0	04/23/03	76	yes	74	yes
020-SB14-SS2.0 (MS)	04/23/03	86	yes	89	yes

TABLE I-8e

SURROGATE PERCENT RECOVERY SUMMARY
TOTAL PETROLEUM HYDROCARBONS - DIESEL / MOTOR OIL RANGE BY METHOD SW8015 MODIFIED
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 2 of 3)

Field Sample Identification	Date	n-Octacosane % Recovery	Accuracy Acceptability	n-Triacontane % Recovery	Accuracy Acceptability
020-SB14-SS2 0 (MSD)	04/23/03	78	yes	79	yes
020-SB99-SS10 0 (FD)	01/28/03	88	yes	81	yes
020-SB99-SS2 0 (FD)	04/23/03	67	yes	65	yes
020-SB99-SS5 0 (FD)	01/28/03	84	yes	83	yes
020-SC01-SS2 0	01/29/03	86	yes	105	yes
020-SC02-SS2 0	01/29/03	84	yes	96	yes
055-TW01-GW01	02/03/03	66	yes	72	yes
055-TW01-GW01 (MS)	02/03/03	70	yes	77	yes
055-TW01-GW01 (MSD)	02/03/03	77	yes	85	yes
055-TW01-SS25 0	02/03/03	89	yes	100	yes
055-TW01-SS30 0	02/03/03	81	yes	87	yes
055-TW01-SS30 0 (MS)	02/03/03	89	yes	95	yes
055-TW01-SS30 0 (MSD)	02/03/03	88	yes	95	yes
055-TW01-SS35 0	02/03/03	88	yes	97	yes
055-TW01-SS40 0	02/03/03	91	yes	97	yes
055-TW01-SS45 0	02/03/03	88	yes	97	yes
055-TW01-SS45 0 (MS)	02/03/03	83	yes	90	yes
055-TW01-SS45 0 (MSD)	02/03/03	85	yes	93	yes
055-TW01-SS50 0	02/03/03	86	yes	97	yes
055-TW01-SS60 0	02/03/03	75	yes	84	yes
055-TW01-SS70 0	02/03/03	70	yes	80	yes
055-TW01-SS80 0	02/03/03	65	yes	72	yes
055-TW99-GW01 (FD)	02/03/03	93	yes	102	yes
055-TW99-SS25 0 (FD)	02/03/03	85	yes	93	yes
055-TW99-SS35 0 (FD)	02/03/03	87	yes	94	yes
055-TW99-SS80 0 (FD)	02/03/03	81	yes	91	yes
061-SB01-GW01	01/30/03	69	yes	78	yes
061-SB01-SS10 0	01/30/03	84	yes	93	yes
061-SB01-SS15 0	01/30/03	81	yes	90	yes
061-SB01-SS5 0	01/30/03	85	yes	92	yes
061-SB02-GW01	01/30/03	85	yes	96	yes
061-SB02-SS10 0	01/30/03	82	yes	92	yes
061-SB02-SS15 0	01/30/03	81	yes	91	yes
061-SB02-SS5 0	01/30/03	92	yes	103	yes
061-SB03-GW01	01/30/03	73	yes	83	yes
061-SB03-SS10 0	01/30/03	68	yes	76	yes
061-SB03-SS10 0 (MS)	01/30/03	78	yes	86	yes
061-SB03-SS10 0 (MSD)	01/30/03	81	yes	91	yes
061-SB03-SS15 0	01/30/03	77	yes	85	yes
061-SB03-SS5 0	01/30/03	80	yes	92	yes
061-SB04-GW01	01/30/03	102	yes	114	yes
061-SB04-SS10 0	01/30/03	93	yes	104	yes
061-SB04-SS15 0	01/30/03	80	yes	91	yes
061-SB04-SS5 0	01/30/03	81	yes	89	yes
061-SB05-GW01	01/30/03	69	yes	76	yes
061-SB05-SS10 0	01/30/03	83	yes	88	yes
061-SB05-SS15 0	01/30/03	91	yes	104	yes
061-SB05-SS5 0	01/30/03	87	yes	97	yes
133-MW01-GW01	01/09/03	119	yes	117	yes
133-MW01-GW02	03/13/03	113	yes	117	yes
133-MW02-GW01	01/10/03	112	yes	128	yes
133-MW02-GW02	03/12/03	95	yes	100	yes

TABLE I-8e

SURROGATE PERCENT RECOVERY SUMMARY
TOTAL PETROLEUM HYDROCARBONS - DIESEL / MOTOR OIL RANGE BY METHOD SW8015 MODIFIED
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 3 of 3)

Field Sample Identification	Date	n-Octacosane % Recovery	Accuracy Acceptability	n-Triacontane % Recovery	Accuracy Acceptability
133-MW03-GW01	01/10/03	104	yes	119	yes
133-MW03-GW02	03/12/03	84	yes	89	yes
133-MW04-GW01	01/13/03	113	yes	103	yes
133-MW04-GW02	03/13/03	135	yes	131	yes
133-MW05-GW01	01/14/03	79	yes	90	yes
133-MW05-GW02	03/13/03	111	yes	116	yes
133-MW05-GW02 (MS)	03/13/03	111	yes	116	yes
133-MW05-GW02 (MSD)	03/13/03	107	yes	112	yes
133-MW99-GW02 (FD)	03/12/03	99	yes	104	yes
59ER-020303-01 (EB)	02/03/03	90	yes	99	yes
59ER-031203-01 (EB)	03/13/03	93	yes	90	yes
60ER-012803-01 (EB)	01/28/03	105	yes	116	yes
ER012903 (EB)	01/30/03	99	yes	107	yes
ER013003 (EB)	01/30/03	97	yes	95	yes
020-SB15-SS0.5	07/21/03	116	yes	119	yes
020-SB15-SS1.5	07/21/03	84	yes	86	yes
020-SB16-SS0.5	07/21/03	104	yes	110	yes
020-SB17-SS0.5	07/21/03	95	yes	99	yes
020-SB18-SS0.5	07/21/03	85	yes	90	yes
055-TW01-GW02	03/01/04	100	Yes	101	Yes

Accuracy control limits:
n-Octacosane: 25 - 162% (soil); 26 - 152% (water)
n-Triacontane: 30 - 150% (soil); 40 - 140% (water)

EB - equipment rinsate blank
FD - field duplicate
MS - matrix spike sample
MSD - matrix spike duplicate

TABLE I-9

COMPLETENESS SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 1 of 3)

Matrix	Method	Analytical Parameter(s)[a]	Total Number of Data Points	Number of Rejected Data Points	Percent Complete (%)[b]	Completeness Goal
Soil	SW8015 modified	Diesel Range	76	0	100	90%
		Motor oils	76	0	100	90%
Soil	SW8270C-SIM	PAHs	153	0	100	90%
Soil	SW8260B	VOCs	603	36	94	90%
		1,2,4-Trichlorobenzene	9	9	0	90%
		Carbon disulfide	9	9	0	90%
		Dibromomethane	9	9	0	90%
		trans-1,2-Dichloroethene	9	9	0	90%
Soil	SW8270C	SVOCs	1254	81	93	90%
		1,2,4-Trichlorobenzene	19	1	94	90%
		1,2-Dichlorobenzene	19	1	94	90%
		1,3-Dichlorobenzene	19	1	94	90%
		1,4-Dichlorobenzene	19	1	94	90%
		2,4,5-Trichlorophenol	19	1	94	90%
		2,4,6-Trichlorophenol	19	1	94	90%
		2,4-Dichlorophenol	19	1	94	90%
		2,4-Dimethylphenol	19	1	94	90%
		2,4-Dinitrophenol	19	1	94	90%
		2,4-Dinitrotoluene	19	1	94	90%
		2,6-Dinitrotoluene	19	1	94	90%
		2-Chloronaphthalene	19	1	94	90%
		2-Chlorophenol	19	1	94	90%
		2-Methylnaphthalene	19	1	94	90%
		2-Methylphenol (o-cresol)	19	1	94	90%
		2-Nitroaniline	19	1	94	90%
		2-Nitrophenol	19	1	94	90%
		3,3'-Dichlorobenzidine	19	1	94	90%
		3-Nitroaniline	19	1	94	90%
		3/4-Methylphenol (m,p-cresol)	19	1	94	90%
		4,6-Dinitro-2-methylphenol	19	1	94	90%
		4-Bromophenyl phenyl ether	19	1	94	90%
		4-Chloro-3-methylphenol	19	1	94	90%
		4-Chloroaniline	19	1	94	90%
		4-Chlorophenyl phenyl ether	19	1	94	90%

TABLE I-9

COMPLETENESS SUMMARY
DELIVERY ORDER 0059
VANDENBERG AIR FORCE BASE, CALIFORNIA
(Page 2 of 3)

Matrix	Method	Analytical Parameter(s)[a]	Total Number of Data Points	Number of Rejected Data Points	Percent Complete (%)[b]	Completeness Goal
		4-Nitroaniline	19	1	94	90%
		4-Nitrophenol	19	7	61	90%
		Acenaphthene	19	1	94	90%
		Acenaphthylene	19	1	94	90%
		Anthracene	19	1	94	90%
		Benzo(a)anthracene	19	1	94	90%
		Benzo(a)pyrene	19	1	94	90%
		Benzo(b)fluoranthene	19	1	94	90%
		Benzo(g,h,i)perylene	19	1	94	90%
		Benzo(k)fluoranthene	19	1	94	90%
		Benzoic acid	19	1	94	90%
		Benzyl alcohol	19	1	94	90%
		Benzyl butyl phthalate	19	1	94	90%
		bis(2-Chloroethoxy)methane	19	1	94	90%
		bis(2-Chloroethyl)ether	19	1	94	90%
		bis(2-Chloroisopropyl)ether	19	1	94	90%
		Chrysene	19	1	94	90%
		Di-n-butyl phthalate	19	1	94	90%
		Di-n-octylphthalate	19	1	94	90%
		Dibenz(a,h)anthracene	19	1	94	90%
		Dibenzofuran	19	7	61	90%
		Diethyl phthalate	19	1	94	90%
		Dimethyl phthalate	19	1	94	90%
		Fluoranthene	19	1	94	90%
		Fluorene	19	1	94	90%
		Hexachlorobenzene	19	1	94	90%
		Hexachlorobutadiene	19	1	94	90%
		Hexachlorocyclopentadiene	19	1	94	90%
		Hexachloroethane	19	1	94	90%
		Indeno(1,2,3-c,d)pyrene	19	1	94	90%
		Isophorone	19	1	94	90%
		n-Nitrosodi-n-propylamine	19	1	94	90%
		n-Nitrosodimethylamine	19	5	72	90%
		n-Nitrosodiphenylamine	19	1	94	90%

APPENDIX J

PENFIELD & SMITH WELL SURVEY

WELL LOCATION SURVEYS
No. 3PAE-A0059-16722-OF

Vandenberg Air Force Base, California

August 1, 2003

CLIENT:	MWH Global
PREPARED BY:	Penfield & Smith 101 East Victoria Street Santa Barbara, California 93101 (805) 963-9532
WORK ORDER NO.:	15420.01
PROJECT MANAGER:	James P. Fallon, P.L.S. 7807

GLOBAL_ID	FIELD_PT_NAME	FIELD_PT_CLASS	XY_SURVEY_DATE	LATITUDE	LONGITUDE	XY_METHOD	XY_DATUM	XY_ACC_VAL	XY_SURVEY_ORG	GPS_EQUIP_TYPE	XY_SURVEY_DESC
T0608300375	133-MW01	MW	07/23/2003	34.7329874	-120.5362289	CGPS	NAD83	1.5	Penfield & Smith	T48	PS # 7002
T0608300375	133-MW02	MW	07/23/2003	34.7331496	-120.5360441	CGPS	NAD83	1.5	Penfield & Smith	T48	PS # 7004
T0608300375	133-MW03	MW	07/23/2003	34.7332411	-120.5362040	CGPS	NAD83	1.5	Penfield & Smith	T48	PS # 7006
T0608300375	133-MW04	MW	07/23/2003	34.7333810	-120.5359918	CGPS	NAD83	1.5	Penfield & Smith	T48	PS # 7008
T0608300375	133-MW05	MW	07/23/2003	34.7337207	-120.5358710	CGPS	NAD83	1.5	Penfield & Smith	T48	PS # 7010

GLOBAL_ID	FIELD_PT_NAME	ELEV_SURVEY_DATE	ELEVATION	ELEV_METHOD	ELEV_DATUM	ELEV_ACC_VAL	ELEV_SURVEY_ORG	RISER_HT	ELEV_DESC
T0608300375	133-MW01	07/23/2003	339.66	TRIG	NAVD88	1.7	Penfield & Smith		PS # 7002
T0608300375	133-MW02	07/23/2003	339.09	TRIG	NAVD88	1.7	Penfield & Smith		PS # 7004
T0608300375	133-MW03	07/23/2003	338.82	TRIG	NAVD88	1.7	Penfield & Smith		PS # 7006
T0608300375	133-MW04	07/23/2003	339.53	TRIG	NAVD88	1.7	Penfield & Smith		PS # 7008
T0608300375	133-MW05	07/23/2003	340.03	TRIG	NAVD88	1.7	Penfield & Smith		PS # 7010

```
EDITED BY DWH 7-24-03
JOB 15420T1 ! DT07-23-2003 TM14:32:03
UNIT USFOOT DMS
EDM OFFSET 0.0000
SCALE FACTOR 1.0000000
HORIZ ANGLE RIGHT
VERT ANGLE ZENITH
!NEZ  7000 5000.0000 5000.0000 100.0000 "START"
! Loaded control file: 15420CP.job
STN  1 5.520 "START"
PRISM  5.320
!AZ  1 2 10.00000
BS  2 0.00000
! HR at Backsight: 5.32
STN  1 5.520 "START"
BS  2 0.00000
! HR at Backsight: 5.32
! BS check 1 - 2:ZE89.5550,SD292.834414,HD err= -0.165801, VD err= 0.554925
! BS Circle check : angular err= 0.0001
STN  1 5.520 "START"
BS  2 0.00000
! HR at Backsight: 5.32
STN  1 5.520 "START"
BS  2 0.00000
! HR at Backsight: 5.32
! BS check 1 - 2:ZE89.5552,SD292.834414,HD err= -0.165797, VD err= 0.552086
! BS Circle check : angular err= 0.0000
F1 VA 7000 0.00000 292.834 89.55520 "CK BS 2"
PRISM  7.000
F1 VA 7001 219.23360 73.740 88.21400 "WELL"
F1 VA 7002 219.30080 73.450 88.35100 "T/PIPE"
! WELL CASING IN AC T/PIPE IS NOTCH IN NORTH SIDE 5" PVC MW01
F1 VA 7003 304.46060 40.400 87.37490 "WELL"
F1 VA 7004 305.05190 40.480 88.15000 "T/PIPE"
! WELL CASING IN DIRT T/PIPE IS NOTCH IN NORTH SIDE 5" PVC MW02
F1 VA 7005 284.51390 94.700 89.11370 "WELL"
F1 VA 7006 284.55470 94.770 89.24560 "T/PIPE"
! WELL CASING IN DIRT T/PIPE IS NOTCH IN NORTH SIDE 5" PVC MW03
F1 VA 7007 326.48560 121.810 89.00550 "WELL"
F1 VA 7008 326.52540 121.920 89.12390 "T/PIPE"
! WELL CASING IN DIRT T/PIPE IS NOTCH IN NORTH SIDE 5" PVC MW04
F1 VA 7009 335.02280 248.320 89.24100 "WELL"
F1 VA 7010 335.02330 248.360 89.29490 "T/PIPE"
! WELL CASING IN AC T/PIPE IS NOTCH IN NORTH SIDE 5" PVC MW05
STN  1 5.520 "START"
BS  2 0.00000
! HR at Backsight: 5.32
```

Penfield & Smith
ENGINEERS • SURVEYORS • PLANNERS

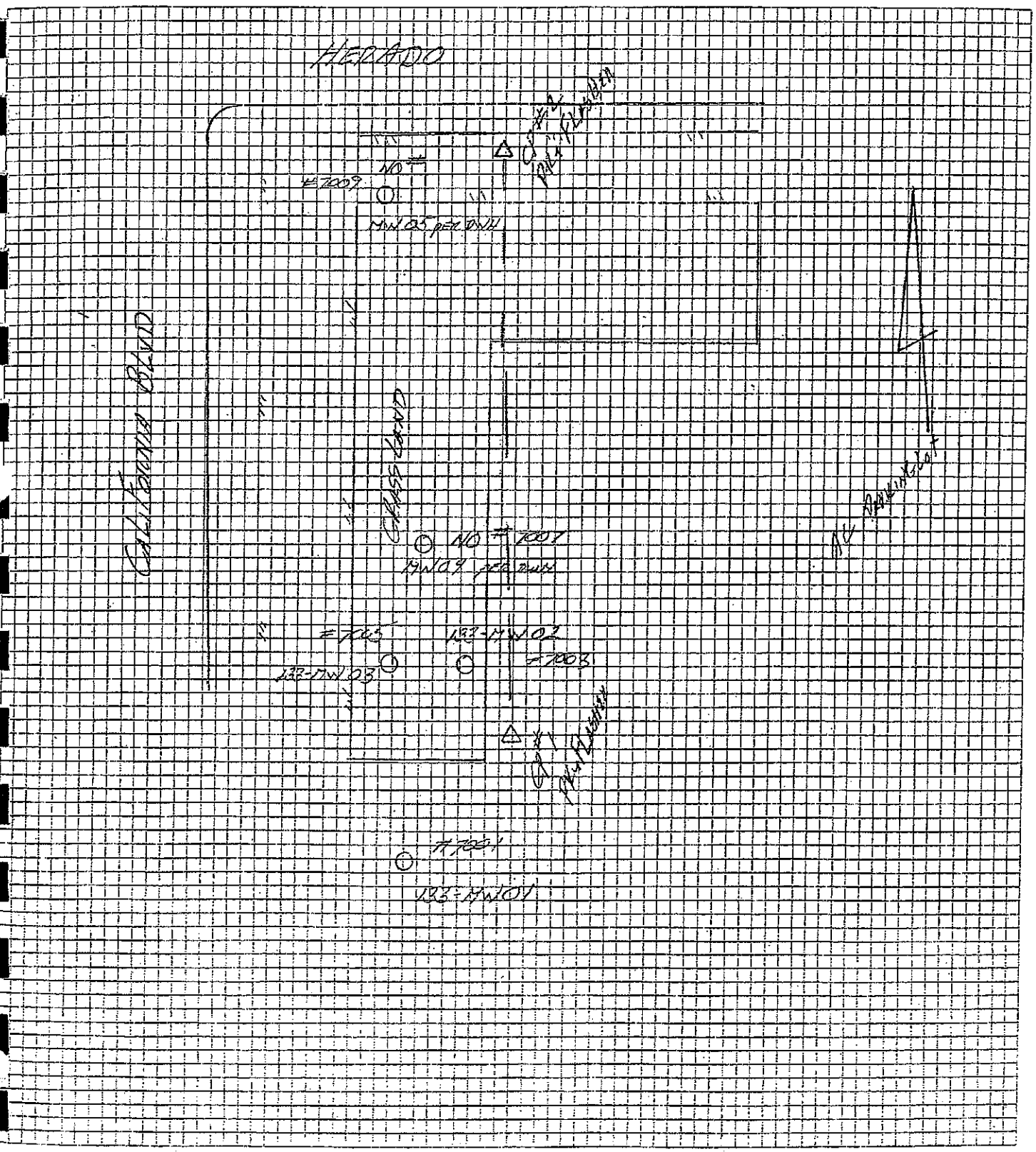
POST-PROCESS GPS SURVEY FIELD NOTE FORM

W.O. 15420

Date 7-23-03

Project _____ Page ____ of ____ Pages

Task _____ Survey Crew _____



APPENDIX K

AOC-055 TANK REMOVAL ANALYTICAL DATA

COUNTY OF SANTA BARBARA
PROTECTION SERVICES DIVISION
Hazardous Materials Unit

2125 S. Centerpointe Pkwy. #333, Santa Maria, CA 93455 (805) 346-8477 FAX (805) 346-8485
4410 Cathedral Oaks Road, Santa Barbara, CA 93110 (805) 681-5500 FAX (805) 681-5553

May 16, 1997

Mr. John Fouche, Environmental Engineer
30 CES/CEVCC, Suite 116
806 13th Street,
Vandenberg Air Force BAse, CA. 93437-5242

RE: PERMIT TO ABANDON UST

Dear Mr. Fouche,

Thank you for calling and introducing yourself this past Wednesday. I look forward to working with you on UST related projects and other issues as they arise. As I indicated I'm enclosing a permit application to abandon an UST, as well as the Leaking Underground Fuel Tank (LUFT) Guidance Document.

Please contact me at 346-8483 if you have any questions.

Sincerely,

D. Kerry Boyle

D. Kerry Boyle
Hazardous Materials Specialist

enclosure UST Permit Application; LUFT Guidance Document

COUNTY OF SANTA BARBARA ● PROTECTION SERVICES DIVISION
Hazardous Materials Unit
4410 Cathedral Oaks Road • Santa Barbara, CA 93110 • (805) 681-5500 • FAX (805) 681-5553
2125 South Centerpointe Parkway #333 • Santa Maria, CA 93455 • (805) 346-8477 • FAX (805) 346-8485

FOR OFFICE USE	
Operating Permit #:	
Date Received:	
# of Tanks:	
Fee Paid:	($210.00/Tank)
Receipt #:	

APPLICATION TO PERMANENTLY CLOSE AN UNDERGROUND HAZARDOUS MATERIALS STORAGE TANK

Applicant must submit this completed form, State Form A, and State Form B for each tank, plus applicable fees.

A. **FACILITY / SITE INFORMATION:**

Site Name _____

Site Address _____

B. **TANK OPERATOR:**

Name _____

Mailing Address _____

Contact _____ Telephone: (____) _____

24 Hour Emergency Contact _____ Telephone: (____) _____

C. **CONTRACTOR:**

CONTRACTORS ACTING AS AN AGENT FOR THE TANK OWNER MUST ALSO SUBMIT A LETTER FROM THE TANK OWNER AUTHORIZING THEIR AGENT STATUS.

Primary Contractor _____

Mailing Address _____

Contact _____ Telephone: (____) _____

License # _____ Type of License _____

Worker's Compensation Ins. Co. _____

Insurance Company Telephone (_____) _____

Proposed Start Date _____

Note: You are responsible for contacting the following agencies prior to tank removal:

Local Fire Department, Air Pollution Control District, Building Department and Cal OSHA.

EM-307.UST Revised 01/96

I declare to the best of my knowledge and belief, the statements and information provided are true and correct. I understand that additional information may be needed in order to obtain approval from the County Hazardous Materials Unit.

I will notify the County Hazardous Materials Unit at least two weeks before tank removal is to begin, in order to schedule the first required inspection. I will authorize the laboratory to release analytical results directly to the County Hazardous Materials Unit as soon as they are available.

Signature and Title: _____

Print Name: _____ Date: _____

Telephone Number: (____)_____

FOR OFFICE USE ONLY:

Approved/Denied By: _____ Date: _____

County Hazardous Materials Unit conditions for approval; based on forms and plans as submitted -- any changes must be reflected on new forms and plans, and approved:

1. Adhere to the permitting requirements of other County agencies, e.g. Building Department, Local Fire Department.
2. Ensure a representative from the applicable local Fire Department is on-site during tank removal activity.
3. Comply with all applicable OSHA regulations.
4. Segregate all contaminated soil encountered (if applicable), place on visqueen and cover. Failure to segregate shall result in escalated soil sampling requirements for stockpiled soil.
5. Utilize, at a minimum, 3% of tank volumes for rinsing tanks.
6. Remove all abandoned piping associated with the tanks and assure piping is also rinsed.
7. Submit a copy of the lab report, chain of custody documentation and hazardous waste manifest for rinsate disposal and contaminated soil, where applicable.
8. Observe the 90 day storage limit for hazardous waste, e.g. contaminated, stockpiled soil. Proper storage requirements for a hazardous waste also apply.
9. Secure open excavations per Building Department requirements.
10. Provide copy of hazardous waste manifest used to dispose/recycle tank rinsate prior to removing the tank.

_____

_____

_____

_____

_____

_____

HM-307.UST Revised 01/96

UNDERGROUND STORAGE TANK SITE SAFETY PLAN

(To be filled out by Contractor)

Date:

1	Site Name			
	Site Address			
2	Property Owner		Telephone	
	Property Owner Address			
3	Contractor		License #	Expires
	Contractor Address		Telephone	
4	Type of UST Action	☐ Removal	☐ Abandonment	☐ Temporary Closure
5	Material			
6	Chemical Hazards	☐ Fire	☐ Explosion	☐ Inhalation ☐ Environmental
7	Actions to Reduce Chemical Hazards	☐ Triple Rinsing	☐ Tank Inerting	☐ Fire Extinguisher
8	Physical Hazards ☐ Other (explain)	☐ Tank Excavation		☐ Building Support
9	Actions to Reduce Physical Hazards ☐ Other (explain)	☐ Sloping of Excavation		☐ Building Shoring
10	Personnel Protection Equipment to be Used			
11	Monitoring Equipment to be Used			
12	Medical Emergency Facility Name		Telephone	
	Address			

COUNTY OF SANTA BARBARA

Protection Services Division ♦ Hazardous Materials Unit

4410 Cathedral Oaks Road, Santa Barbara CA 93110 ♦ (805) 681-5500 ♦ FAX: (805) 681-5563

December 10 , 1997

Federal Government (Air Force)
John Fouche
30 CES/CEVCC
806 13th St. #116
VAFB, CA 93437

RE: COST RECOVERY FOR OVERSIGHT OF SITE CONTAMINATION CLEANUP **(SMU Site #All V.A.F.B. Sites)**

The Santa Barbara County Board of Supervisors authorized this division to recover costs associated with overseeing the assessment and clean up of contaminated sites. The enclosed bill includes both site specific and program management charges associated with your site.

When your site was included in the oversight program, you received a letter explaining that the County of Santa Barbara, Environmental Health Services would bill you for costs of clean up oversight. On October 24, 1995 the Santa Barbara County Board of Supervisors approved the transfer of this program to the Fire Department effective January 1, 1996. Invoices for services performed in 1996 reflect a reduction in the hourly rate.

If you have any questions please call Program Manager, Glenn Odell at 681-5554.

RICHARD HIMENEZ 681 4040

Attached: Invoice

****** I N V O I C E *****

SITE MITIGATION - SITE SPECIFIC

Site Name: V.A.F.B. Bldg 1987 SITE I.D.#: 1987
Address: Bldg 1987 Dept. Invoice No.:74
City: VAFB CA 93437 Invoice Date:12-11-97

Date of Work	Employee	Employ Class	Pro. Code	Svc. Code	Hours Worked	Hour Rate	Total Cost
10-28-97	BOYLE	103	23	30	1.00	51.00	$51.00
11-18-97	BOYLE	103	23	21	2.00	51.00	$102.00
11-21-97	BOYLE	103	23	184	3.00	51.00	$153.00
		AMOUNT DUE IF PAID BY: 01-12-98					$306.00

*** PENALTY WILL BE ASSESSED FOR LATE PAYMENT ***

TOP PORTION IS FOR YOUR RECORDS

DETACH AND RETURN THIS BOTTOM PORTION WITH PAYMENT

Site Number: 1987 Dept. Invoice: #74 Invoice Total:*****$306.00

Please Remit To: COUNTY OF SANTA BARBARA
Protection Services Division
Hazardous Materials Unit
4410 Cathedral Oaks Road
Santa Barbara, CA. 93110

Due Date: 01-12-98

PRELIMINARY DATA
QC REVIEW PENDING
PROJECT MANAGER_____

ANALYTICAL REPORT

Maness Environmental Services, Inc.
1101 East Spring Street
Long Beach, CA 90806-1809

Attn: Gabriele Baader
RE: Vandenberg AFB/80702

Date Sampled:	01/07/98
Date Received:	01/08/98
Date Extracted:	01/09/98
Date Analyzed:	01/09/98
Work Order No.:	98-01-113
Method:	EPA 418.1
Page 1 of 1	

All total recoverable petroleum hydrocarbon concentrations are reported in mg/kg (ppm).

Sample Number	Concentration	Reportable Limit
11-N	ND	10
T2-S	ND	10
Method Blank	ND	10

To John
Fouche
B. 1987

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

PRELIMINARY DATA
QC REVIEW PENDING
PROJECT [illegible]

ANALYTICAL REPORT

Maness Environmental Services, Inc.
1101 East Spring Street
Long Beach, CA 90806-1809

Attn: Gabriele Baader
RE: Vandenberg AFB/80702

Date Sampled:	01/07/98
Date Received:	01/08/98
Date Extracted:	01/09/98
Date Analyzed:	01/10/98
Work Order No.:	98-01-113
Method:	EPA 8015M
Page 1 of 1	

All total petroleum hydrocarbon concentrations are reported in mg/kg (ppm) using diesel fuel as a standard.

Sample Number	Concentration	Reportable Limit
T1-N	ND	5.0
T2-S	ND	5.0
Method Blank	ND	5.0

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

PRELIMINARY DATA
QC REVIEW PENDING
PROJECT MANAGER

ANALYTICAL REPORT

Maness Environmental Services, Inc.
1101 East Spring Street
Long Beach, CA 90806-1809

Attn: Gabriele Baader
RE: Vandenberg AFB/80702

Date Sampled:	01/07/98
Date Received:	01/08/98
Date Extracted:	P/T
Date Analyzed:	01/09/98
Work Order No.:	98-01-113
Method:	EPA 8020A
Page 1 of 1	

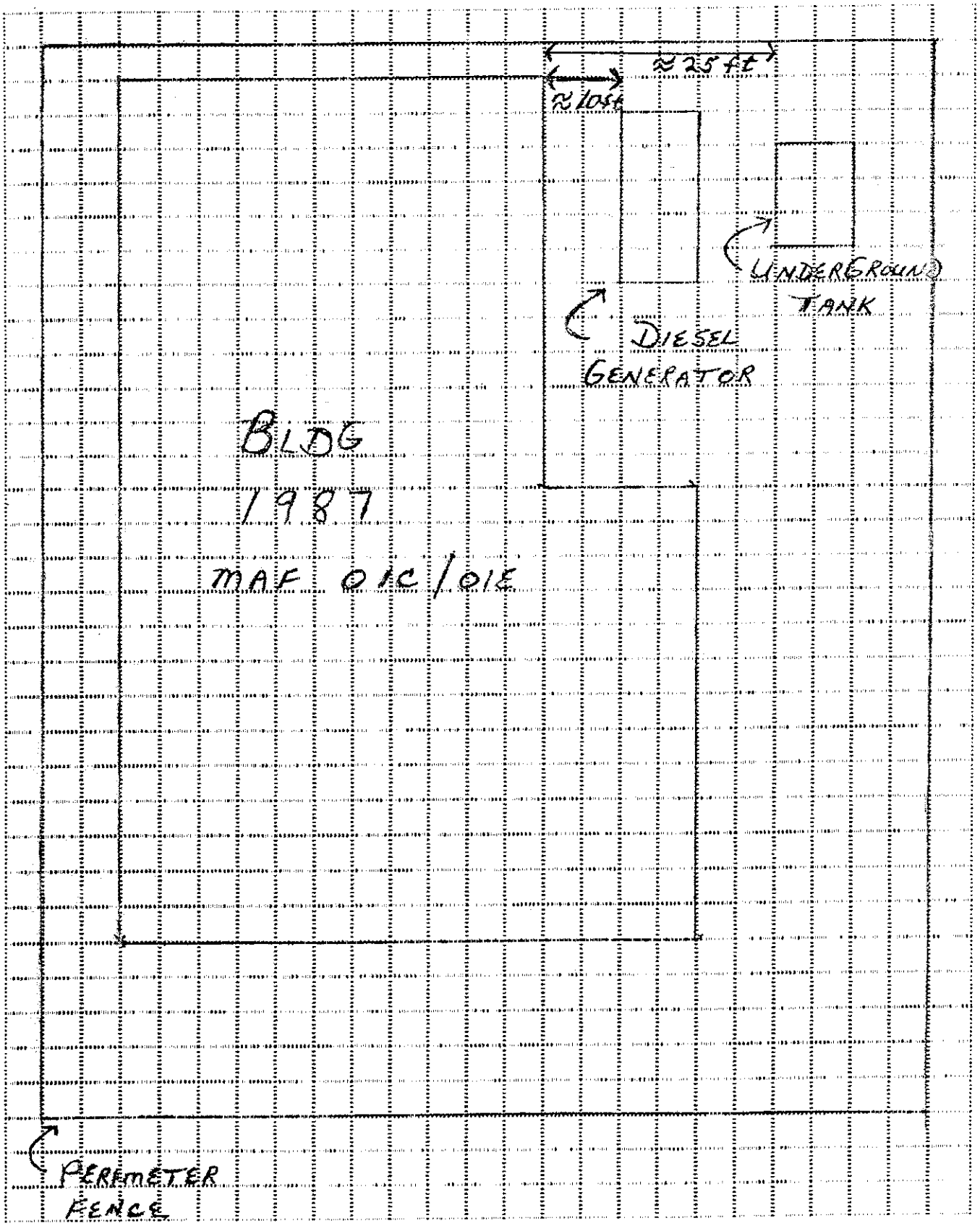
All concentrations are reported in µg/kg (ppb).

Analyte	Concentration	Reportable Limit
Sample Number: T1-N		
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
Total Xylenes	ND	10.0
Sample Number: T2-S		
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
Total Xylenes	ND	10.0
Sample Number: Method Blank		
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
Total Xylenes	ND	10.0

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

Provide a site map showing ation of tanks in relation to building c and other structures on-site.
A copy of an existing map may be submitted.



APPENDIX L

RESPONSES TO STATE COMMENTS

RESPONSES TO
THE STATE (DTSC & RWQCB) COMMENTS ON
DRAFT REPORT, AREAS OF CONCERN
DELIVERY ORDER 59
APRIL 2004

MWH
7 June 2004

DoD – VANDENBERG AFB; STATE COMMENTS ON AREAS OF CONCERN DRAFT REPORT, DELIVERY ORDER 59, APRIL 2004

The State (Regional Board and DTSC) has reviewed the subject Area of Concern (AOC) draft report that was prepared by Montgomery Watson Harza, dated April 5, 2004, and received April 6, 2004. Work conducted under Delivery Order 59 includes soil/groundwater site inspections and excavation of TPH and metals contaminated soils. The subject draft report presents findings and proposes recommendations for five AOCs (020, 055, 061, 099, and 133). We provided joint State comments on the draft final and final work plans in our letters dated February 18, 2003 and July 17, 2003, respectively, and all our comments have been adequately addressed. Our comments on the subject draft report are outlined below.

AOC-020:

Clarify whether the vertical extent of TPH was delineated near borings SB01 and SB07. If not, we will require vertical delineation of TPH prior to determining if the risk-based closure recommendation is appropriate. Also, please provide a discussion to address potential surface water pathways since TPH contamination in shallow soil is proposed to remain in-place (856 mg/kg TPH-motor oil at 2.0 feet below ground surface in soil confirmation sample 020-SC01). If shallow TPH contaminated soil is left in-place in a drainage area and there is potential for runoff, this could present a water quality problem.

Response: Soil samples collected from boring 020-SB07 at 6-, 11-, 21-, 31-, and 61-feet below ground surface did not contain TPH, showing that the vertical extent of TPH in the vicinity of borings SB01 and SB07 is limited. A statement describing the vertical extent of TPH impacts at the former culvert structure will be added to the "Nature and Extent of Contamination" section of the AOC-020 Evaluation Sheet.

Since the site was regraded and the culvert was removed, the area around borings 020-SB01 and 020-SB07 is no longer in a drainage area. This information will be included in the "Recommendations" section of the Evaluation Sheet.

AOC-055:

We concur with the recommendation to validate data and see if a closure recommendation is reasonable at some future date.

Response: **Comment noted.**

AOC-061:

Since no soil samples collected during site inspection work contained TPH at concentrations greater than 100 mg/kg TPH, we concur with the closure recommendation for the former UST site and have no additional comments.

Response: **Comment noted.**

AOC-099:

Since lead "hot spot" removal activities have been adequately completed, the area has been paved, and the unlined drainage ditch has been lined, we concur with the recommendation for closure of this AOC.

Response: **Comment noted.**

AOC-133:

We concur with the recommendation for soil hot spot removal and continued groundwater monitoring to determine if monitored natural attenuation is sufficient to achieve cleanup objectives in a timely manner.

Response: **Comment noted.**

Atta Amena GS-12 30 CES/CEVR <Amena.Atta@vandenberg.af.mil>

06/22/2004 02:01 PM

To: "'Carol Kolb'" <Ckolb@rb3 swrcb.ca.gov>, Scott.Emerson-Price@us.mwhglobal.com
cc: QThan@dtsc.ca.gov, Bill Meece <Bmeece@rb3.swrcb ca.gov>, Christopher.R.Bartos@us.mwhglobal com, Michael.W.McDonald@us mwhglobal.com, Susan.L.Anderson@us.mwhglobal.com, Atta Amena GS-12 30 CES/CEVR <Amena.Atta@vandenberg.af.mil>
Subject: RE: State Responses to MWH Responses to State comments on Draft R eport 3P DO59

Thanks

-----Original Message-----
From: Carol Kolb [mailto:Ckolb@rb3.swrcb.ca.gov]
Sent: Monday, June 21, 2004 4:34 PM
To: Scott.Emerson-Price@us.mwhglobal.com
Cc: QThan@dtsc.ca.gov; Bill Meece;
Christopher.R.Bartos@us.mwhglobal.com;
Michael.W.McDonald@us.mwhglobal.com; Susan.L.Anderson@us.mwhglobal.com;
Amena.Atta@vandenberg.af.mil
Subject: Re: State Responses to MWH Responses to State comments on Draft Report 3P DO59

Hi Scott:

Thanks for responding to our State letter dated June 1, 2004 on the AOC Draft Report, DO 59. All your comments look good. The explanation of vertical delineation of TPH at AOC-20 is very informative. Thanks for adding it to the Final Report.

Carol

>>> <Scott.Emerson-Price@us.mwhglobal.com> 06/09/04 08:31AM >>>
Hello Carol and Quang,

Please see the attached Air Force responses to State comments on Draft Report, Areas of Concern, EC-RCRA Corrective Actions....(MWH, April 2004). This report covered work conducted at AOCs 20, 55, 61, 99, and 133 under our DO59 contract. With your concurrence, we will submit the final report.

Thanks,
Scott Emerson-Price

(See attached file: RESPONSE TO RWQCB Drft Report.doc)

"Quang Than"
<QThan@dtsc.ca.gov>

07/08/2004 10:19 AM

To: <Ckolb@rb3.swrcb.ca.gov>,
<Scott.Emerson-Price@us.mwhglobal.com>
cc: <Judith.Keith@brooks.af.mil>, "Emad Yemut" <EYemut@dtsc.ca.gov>,
"Quang Than" <QThan@dtsc.ca.gov>,
<Christopher.R.Bartos@us.mwhglobal.com>,
<Michael.W.McDonald@us.mwhglobal.com>,
<Susan.L.Anderson@us.mwhglobal.com>,
<Amena.Atta@vandenberg.af.mil>,
<Beatrice.Kephart@vandenberg.af.mil>
Subject: Re: Responses to State comments on Draft Report 3P DO59

Hi Scott,

Thanks for the response to our June 1, 2004 State letter on the AOC Draft Report, DO 59. The response looks good. Please incorporate it into the Final Report. Thanks.

Quang

>>> <Scott.Emerson-Price@us.mwhglobal.com> 6/9/2004 8:31:29 AM >>>
Hello Carol and Quang,

Please see the attached Air Force responses to State comments on Draft Report, Areas of Concern, EC-RCRA Corrective Actions....(MWH, April 2004).
This report covered work conducted at AOCs 20, 55, 61, 99, and 133 under
our DO59 contract. With your concurrence, we will submit the final report.

Thanks,
Scott Emerson-Price

(See attached file: RESPONSE TO RWQCB Drft Report.doc)