TA-35

ATTACHMENT 2

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO: File

DATE: December 10, 1986

THRU: Thomas C. Gunderson
HSE-8 Group Leader, MS K490

MAIL STOP/TELEPHONE: K490/5-0454

FROM: Charlie Nylander, HSE-8

SYMBOL: HSE8-86-1354

SUBJECT: OIL SPILL AT TA-35 TSL-125

On December 3, 1986 at 1100 hours, Charlie Nylander and Anthony Drypolcher of the Environmental Surveillance Group (HSE-8) were at TA-35 TSL-125 discussing oil storage practices and oil spill prevention and control with the following persons: Larry Blair, Bill Martin, Bob Anderson, and Jerry Umphres. At approximately 1115 hours, this group began walking northeast behind building TSL 125 when they observed liquid running out an open doorway and draining into a curbed area surrounding an oil reclaimation trailer behind the building. The liquid was at first believed to be water, but upon touch was determined to be oil.

The group went into the building to determine the source of the oil spill and discovered a Marx generator overflowing from the top. Evidently, the tank was being filled with oil and the pump transfer was left unattended resulting in over-filling and spillage. While trying to shut off the transfer pump the group called out to locate anyone in the vicinity with no reply. Suddenly, the spilling oil came in contact with the heating element on the diffusion pump and a fire broke out. A nearby fire extinguisher was used while the fire alarm was pulled. However, the group quickly moved outside the building due to heavy smoke and concern for safety.

Once outside, the group dispatched several people to locate absorbents to direct the flow of oil flowing out the door into the curbed drainage area, from where it would flow into the concrete lined holding pond on the canyon edge. Absorbents were also spread across the entrance to a drainage culvert in order to prevent oil from discharging to the canyon. Telephone calls were placed to Michael Bailey and Pete Carlson, Pan American World Services, Inc. to request environmental sampling and spill control assistance.

After the fire response vehicles arrived, water from the building fire control sprinkling system and pump truck leakage caused the absorbents spread for spill control to breech and oil and water discharged to the canyon. However, an estimate was made that less than 100 gallons of oil discharged to the canyon. As the fire was being brought under control, the Environmental Surveillance Group personnel directed Pan Am to siphon the water out of the concrete holding pond to prevent the oil that was floating on the water surface and nearing the spillway from overflowing into the canyon. Therefore, Pan Am placed a submersible pump in the bottom of the pond and water was discharged to the canyon.

An oil sample was taken of the oil remaining in the Marx tank inside the building and delivered to the Health and Environmental Chemistry Group (HSE-9) at 1230 hours for polychlorinated biphenyl (PCB) analysis. By 1330 hours an additional sample was submitted to the laboratory for analysis. The results (in parts per million) are as follows:

Marx tank	4.1 ppm
Oil in concrete pond	Less than minimum detection limit

Samples collected in the canyon bottom on December 4, 1986 contained the following PCB concentrations in parts per million, prior to clean-up.

Distal point of spill downstream	4.7
Mid-point of affected channel	11.7
Point below cement pond	9.1

The cement holding pond was pumped until the liquid level was well below the spillway and the pump disconnected. Unfortunately, Pan Am left the pump in the pond overnight and created a siphon that drained the pond entirely during the night. Therefore, oil and water were discharged accidently into the canyon for a distance of appoximately 400 yards.

On December 4th and 5th, Pan Am conducted clean-up operations in the canyon to remove the oil. Fortunately, snow melt in the channel bottom was frozen and the oil was spread on the ice. Absorbent pillows, towels, and shovels were used to pick up the oil. In many places, the frozen oil/water slush could be swept with a broom. Therefore, the canyon was cleaned up quite satisfactorily.

REGULATORY CONCERNS

The volume of oil spilled was estimated to be less than 1000 gallons and therefore the Laboratory will not be required to submit the Spill Prevention Control and Countermeasure (SPCC) Plan to the Environmental Protection Agency (EPA) for review and approval (40 CFR 112).

The low concentration of PCBs in the oil did not require reporting to EPA under 40 CFR 302 Designation, Reportable Quantities and Notification. Moreover, the low concentration of PCBs in the oil spilled falls below EPA's proposed clean-up criteria for limited access environmental sites. Therefore, especially given the oil clean-up, the spill was satisfactorily mitigated pursuant to 40 CFR 761.

CN:tms

Attachment: a/s

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7.6 TA 35-125 Antares Laser Building

A variety of high-voltage equipment that uses dielectric oil is located in this building for the laser research that is conducted here. Any oil spills that occur in the building are collected in a sump that drains to a gunite-lined surface impoundment south of the building on the canyon rim (Figure 7-6).

Outside, on the south side of the building, is a 24,000-gallon capacity underground tank. Above the tank is a curbed area with a 4,200-gallon volume. This area contains a 3,000-gallon horizontal tank and a dielectric oil reclamation trailer with a 1,000-gallon capacity. The curbed area receives storm runoff from the building roof and drains to the surface impoundment.

The surface impoundment will be removed and the building and curbed area drains plugged to prevent an overflow of oil out of the impoundment and into Mortandad Canyon.

New programs are anticipated for TA 35-125 and the exact nature of the spill control and secondary containment that is needed depends on the oil usage of the future equipment. If the above-ground and the underground tanks are still used in the new program, the roof drain will be rerouted to discharge outside the curbed area, a sump will be installed in the down-grade

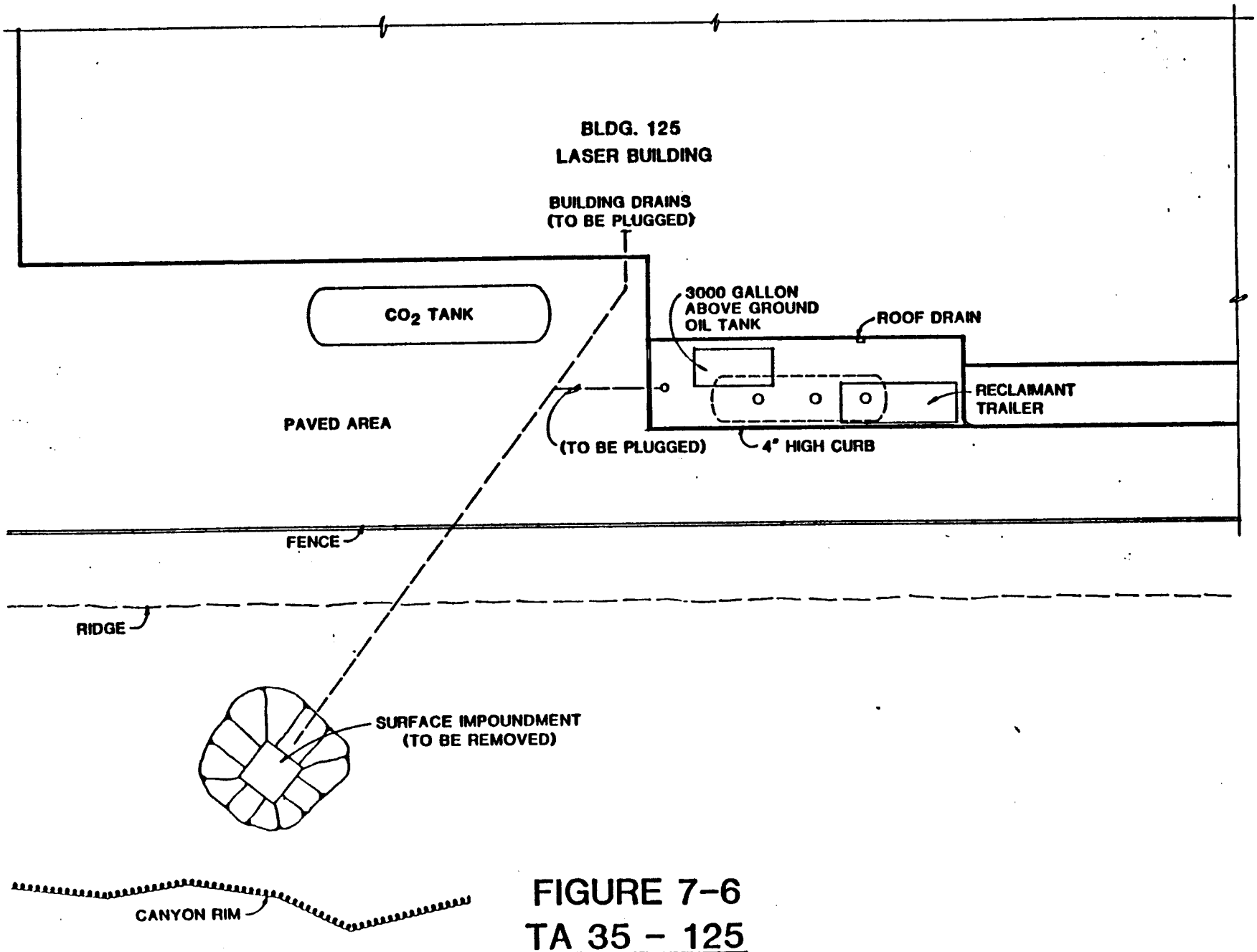

FIGURE 7-6

TA 35 - 125

EXISTING OIL STORAGE & COLLECTION

HSE-9 ORGANIC ANALYSIS SECTION
VOLATILE ORGANICS RESULT SHEET

35-125 water

SAMPLE NUMBER: 88-00330 REQUEST SHEET: 88.7061
NUMBER OF REPLICATE RUNS: 1

SURROGATE SPIKE RECOVERIES: (% RECOVERY)

COMPOUND		ACCEPTABLE RANGE (CLP)
1,2-DICHLOROETHANE d4	62.6	(76-114)
TOLUENE d8	95.7	(88-110)
p-BROMOFLUOROBENZENE	82.8	(86-115)

CAS #	COMPOUND	RESULT +/- (ppb)	MDL (ppb)
74873	CHLOROMETHANE		5.0
73839	BROMOMETHANE		5.0
75014	VINYL CHLORIDE		5.0
75003	CHLOROETHANE		5.0
75092	METHYLENE CHLORIDE		5.0
75150	CARBON DISULFIDE		5.0
	1,1-DICHLOROETHENE		5.0
75343	1,1-DICHLOROETHANE		5.0
540590	1,2-DICHLOROETHENE	77.7 I 7.8 TIC	5.0
67663	CHLOROFORM	(TOTAL)	5.0
107062	1,2-DICHLOROETHANE		5.0
78933	2-BUTANONE		5.0
71556	1,1,1-TRICHLOROETHANE		5.0
56235	CARBON TETRACHLORIDE	parts per million range	5.0
108054	VINYL ACETATE		5.0
75274	BROMODICHLOROMETHANE		5.0
78875	1,2-DICHLOROPROPANE		5.0
10061015	cis-1,3-DICHLOROPROPENE		5.0
79016	TRICHLOROETHENE		5.0
124481	DIBROMOCHLOROMETHANE		5.0
79005	1,1,2-TRICHLOROETHANE		5.0
71432	BENZENE		5.0
10061026	trans-1,3-DICHLOROPROPENE		5.0
75252	BROMOFORM		5.0
108101	4-METHYL-2-PENTANONE		5.0
591786	2-HEXANONE		5.0
127184	TETRACHLOROETHENE		5.0
79345	1,1,2,2-TETRACHLOROETHANE		5.0
108883	TOLUENE		5.0
108907	CHLOROBENZENE		5.0
100414	ETHYLBENZENE		5.0
100425	STYRENE		5.0
1330	XYLENES		5.0
95501	1,2-DICHLOROBENZENE	(TOTAL)	5.0
541731	1,3-DICHLOROBENZENE		5.0
			5.0

			5.0
106467	1,4-DICHLOROBENZENE		5.0
91023	NAPHTHALENE		5.0
104518	n-BUTYLBENZENE		5.0
108861	BROMOBENZENE		5.0
95498	2-CHLOROTOLUENE		5.0
106434	4-CHLOROTOLUENE		5.0
142289	1,3-DICHLOROPROPANE		5.0
87683	HEXACHLOROBUTADIENE		5.0
630206	1,1,1,2-TETRACHLOROETHANE		5.0
120821	1,2,4-TRICHLOROBENZENE		5.0
96184	1,2,3-TRICHLOROPROPANE		5.0
95636	1,2,4-TRIMETHYLBENZENE		5.0
75694	TRICHLOROFLUOROMETHANE		5.0
106934	1,2-DIBROMOETHANE		5.0
98828	ISOPROPYLBENZENE		5.0
98066	t-BUTYLBENZENE		5.0
135988	s-BUTYLBENZENE		5.0
99876	p-ISOPROPYLTOLUENE		5.0
544105	1-CHLOROHEXANE		5.0
563586	1,1-DICHLOROPROPENE		5.0
108703	1,3,5-TRICHLOROBENZENE		5.0
96128	1,2-DIBROMO-3-CHLOROPROPANE		5.0
67641	ACETONE	109.6 ± 54.8	50.0
60297	DIETHYL ETHER		
76131	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		20.0

MDL: Estimated minimum detection limit. The minimum limit of quantitation for these samples was 20 ppb.

All results are reported with a corresponding uncertainty. Values close to the MDL have larger uncertainties associated with them. If a sample is run at least in triplicate, the reported uncertainty represents the standard deviation of these values.

SAMPLE NUMBER: 88-00330 REQUEST SHEET NUMBER: 88.7061

appeared to be primarily water. The extremely high concentration of the 1,1,1-Trichloroethane severly interferred with identification of some compounds. Since this was an identification scan, no additional dilutions were performed. "TIC" indicates a tentatively identified compound. Also detected 2 unknown peaks, apparently halogenated hydrocarbons

A blank next to a compound indicates a result of <MDL