ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
(510) 337-9335 (FAX)

REMEDIAL ACTION COMPLETION CERTIFICATION

StID 674 - 16800 Kelso Road, Byron, CA
(2 USTs removed in February 1994, and 2 USTs removed in May 1997)

August 28, 1998

Mr. Herbert Ng
US Bureau of Reclamation
RR 1 Box 35
Byron, CA 94514-9614

Dear Mr. Ng:

This letter confirms the completion of site investigation and remedial action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tanka are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, no further action related to the underground tank release is required.

This notice is issued pursuant to a regulation contained in Title 23, Section 2721(e) of the California Code of Regulations.

Please contact our office if you have any questions regarding this matter.

Sincerely,

Mee Ling Tung, Director

cc: Richard Pantages, Chief of Division of Environmental Protection
J.Lawrence Pearson, CV-RWQCB
Dave Deaner, SWRCB
Leroy Griffin, OFD
Jim Scullin, Dep of Interior, 2800 Cottage Way, Sacramento, CA 95825-1898
files-ec (reclamat-9)

ALAMEDA COUNTY
HEALTH CARE SERVICES
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DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
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(510) 337-9335 (FAX)

StID 674

January 28, 1998

Mr. James Scullin
US Dept of Interior
2800 Cottage Way
Sacramento, CA 95825-1898

Re: Remedial Action Completion at the WAPA Former Storage Shed Area, 16550 Keslo Road, Tracy, CA

Dear Mr. Scullin:

This letter confirms the completion of site investigation and remedial action for the soil contaminated with mineral oil at the former storage sheds located along the north side of the Western Area Power Administration warehouse building at the above referenced address. Approximately five cubic yards of oil-impacted soil was excavated. Three confirmatory soil samples collected at ~1' bgs did not contain detectable concentrations of TPH as motor oil.

Based upon the available information and with the provision that the information provided to this agency was accurate and representative of site conditions, no further action related to the surface contamination by mineral oil is required.

If you have any further questions concerning this matter, please contact me at (510) 567-6762.

Sincerely,

eva chu
Hazardous Materials Specialist

cc: Bruce Thomas, WAPA, 114 Parkshore Dr, Folsom, CA 95630

reclamat.slc

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

copy

ENVIRONMENTAL HEALTH SERVICES
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
(510) 337-9335 (FAX)

StID 674

October 7, 1998

Mr. Herbert Ng
US Bureau of Reclamation
RR 1 Box 35
Byron, CA 94514-9614

Mr. Jim Scullin
US Bureau of Reclamation
2800 Cottage Way, Room E-2604
Sacramento, CA 95825-1898

Re: Fuel Leak Site Case Closure for US Bureau of Reclamation at 16800 Kelso Road, Byron, CA

Dear Messrs. Ng and Scullin:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Environmental Protection Division is required to use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at the subject site. The subject fuel leak case is closed.

SITE INVESTIGATION AND CLEANUP SUMMARY

Please be advised that the following conditions exist at the site:

- up to 3,300ppm TPH as diesel and 0.12ppm benzene exists in soil beneath the site; and,
- a site safety plan must be prepared for construction workers in the event that excavation/trenching is proposed in the vicinity of residual soil contamination.

If you have any questions, please contact me at (510) 567-6762.

eva chu
Hazardous Materials Specialist

enlosure: 1. Case Closure Letter 2. Case Closure Summary

c: Alameda County Planning Dept, 399 Elmhurst Street, Room 136, Hayward, CA 94544

reclamat-10

PAA

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION Date: March 24, 1998

Agency name: **Alameda County-HazMat** Address: **1131 Harbor Bay Pkwy**
City/State/Zip: **Alameda, CA 94502** Phone: **(510) 567-6700**
Responsible staff person: **Eva Chu** Title: **Hazardous Materials Spec.**

II. CASE INFORMATION

Site facility name: **US Bureau of Reclamation**
Site facility address: **16800 Kelso Rd, Byron, CA 94514**
RB LUSTIS Case No: **N/A** Local Case No./LOP Case No.: **674**
URF filing date: **6/14/94** SWEEPS No: **N/A**

Responsible Parties:	Addresses:	Phone Numbers:
Herbert Ng	**RR 1 Box 35**	**(209) 836-6261**
US Bureau of Reclamation	**Byron, CA 94514-9614**	

Tank No:	Size in gal.:	Contents:	Closed in-place or removed?:	Date:
1	2,000	Reg Gasoline	Removed	2/8/94
2	1,000	Waste Oil	"	"
3	2,000	Unl Gasoline	Removed	5/13/97
4	2,000	Diesel	"	"

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: **Leaking product line and UST**
Site characterization complete? **YES**
Date approved by oversight agency: **1/27/98**
Monitoring Wells installed? **Yes** Number: 1/2
Proper screened interval? **Yes, 7.3' to 18' bgs**
Highest GW depth below ground surface: **10.6'** Lowest depth: **12.5' in MW-7**
Flow direction: **North**
Most sensitive current use: **Industrial**
Are drinking water wells affected? **No** Aquifer name:
Is surface water affected? **No** Nearest affected SW name: **NA**
Off-site beneficial use impacts (addresses/locations): **None**
Report(s) on file? **YES** Where is report(s) filed? **Alameda County**
1131 Harbor Bay Pkwy
Alameda, CA 94502

98 MAR 31 PM 1:20

Treatment and Disposal of Affected Material:

Material	Amount (include units)	Action (Treatment or Disposal w/destination)	Date
Tank & Piping	2 USTs	Disposed by Erickson, Richmond	2/8/94
	2 USTs	Disposed at McCormick Demcon in Santa Maria	5/12/97
Soil	~620 tons	TPS Technologies, in Richmond	5/16/97
Groundwater	~1,500 gal.	Pacific Custom Mat'ls, Port Costa	5/19/97

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	Soil (ppm)		Water (ppb)	
	Before[1]	After[2]	Before[3]	After[4]
TPH (Gas)	4,200	150	12,000	ND
TPH (Diesel)	700	3,300	NA	ND
TPH (Motor Oil)	NA	NA	NA	ND
Benzene	20	0.12	110	ND
Toluene	31	ND	3.5	ND
Ethylbenzene	36	1.95	690	ND
Xylenes	113	17.1	470	ND
MtBE	NA	0.4	1,080	ND
Oil & Grease	ND			
Other HVOC & SVOC	ND			

NOTE: 1 maximum concentrations from tank pits (samples WO-1, S-201, or BRTTG-1
2 soil conc left adjacent/under vehicle maintenance garage
3 grab water sample from enlarged excavation, May 1997
4 results from monitoring well MW-7

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes
Does corrective action protect public health for current land use? **YES**
Site management requirements: **A site safety plan must be prepared for construction workers in the event excavation/trenching is proposed in the vicinity of residual soil and groundwater contamination.**
Should corrective action be reviewed if land use changes? **YES**
Monitoring wells Decommissioned: **None, pending site closure**
Number Decommissioned: **0** Number Retained: **1**
List enforcement actions taken: **None**
List enforcement actions rescinded: **NA**

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: **Eva Chu** Title: **Haz Mat Specialist**

Signature: [signature] Date: 3/24/98

Reviewed by

Name: **Pam Evans** Title: **Sr. Haz Mat Specialist**

Signature: [signature] Date: 3-25-98

Name: **Thomas Peacock** Title: **Supervisor**

Signature: [signature] Date: 3-24-98

VI. RWQCB NOTIFICATION

Date Submitted to RB: RB Response: CONCUR

RWQCB Staff Name: **Pat Anderson** Title: Associate Engineering Geologist

JAMES E. BRATHOVDE

Signature: [signature] Date: 4/10/98

VII. ADDITIONAL COMMENTS, DATA, ETC.

The site operates an electrical substation (managed by Western Area Power Administration, WAPA) and a large pumping plant that delivers water for the Delta-Mendota Canal (managed by the US Bureau of Reclamation, USBR)

A vehicle maintenance garage, operated by USBR, is located inside the western boundary of the maintenance yard. Four USTs (1-2K reg gasoline, 1-1K waste oil, 1-2K unl gasoline, and 1-2K diesel) were located by the garage. (See Figs 1, 2, and 3)

In February 1994 the regular gasoline UST and waste oil USTs (in separate pits) were removed. Soil samples were collected from the pit after the tanks were removed. Soil from the waste oil pit did not contain remarkable levels of contaminants. Soil from the gasoline pit contained up to 130ppm TPHg, and ND, 0.16, 0.76, and 1.9ppm BTEX, respectively. (See Fig 4 and Table 1)

Data from existing groundwater monitoring wells onsite suggests groundwater flows northward. Therefore, groundwater monitoring well MW-7 was installed north of the former gasoline UST in June 1994 to determine if groundwater was impacted by the fuel release. (See Figs 5 and 6)

The gasoline pit was overexcavated in August 1994. Excavation activities uncovered additional hydrocarbon impacted soil which may have originated from a previous leaking gasoline UST which was removed in 1976, as well as from the piping line for the existing unleaded gasoline UST. Groundwater was encountered in the pit at ~15'bgs. Confirmatory soil samples S-201 and S-202 were collected at 12' and 13'bgs. A grab water sample, W-101, was also collected. The

soil samples contained up to 4,200ppm TPHg, and 3.3, 9.9, 36, and 75ppm BTEX, respectively. The grab water sample contained 12,000ppb TPHg, and 110, 3.5, 690, and 470ppb BTEX, respectively (see Table 2). It was anticipated that the remaining USTs would be removed in the near future, and that additional overexcavation would continue at that time.

In October 1995 the diesel UST was overfilled, spilling ~25 gallons of diesel to the surface. Impacted soil was identified as the product line and asphalt were uncovered/removed. At this time it was observed that the dispensing line was leaking at a repaired joint and that the vent line has a 1" gap. Both lines were constructed of PVC. It appears that the PVC cement was degraded by the diesel. It is not known the quantity of fuel which may have leaked over time. Approximately 10cy of diesel-impacted soil from three areas were excavated. Confirmatory soil samples were collected from the trench area, from the piping area, and from an area near a utility box. Analytical results suggest that most of the impacted soil was removed. (See Fig 7 and Table 3)

In May 1997 the remaining two USTs, dispensers, and product lines were removed. Soil samples collected were from beneath each end of the USTs (BRTTD-1, BRRTD-2, BRRTG-1 and BRRTG-2) and from below the product dispensers (BRTP-1 and BRTP-2). Based on the analytical results, hydrocarbon-impacted soil was overexcavated. A total of ~620 tons of soil was removed. Overexcavation activities extended beyond the former leaded gasoline tank and terminated on the north by the presence of an underground high voltage utility conduit, and to the west by the underground fire protection water utility line, and to the east by the vehicle maintenance building. Six confirmatory soil samples were collected at 9.5' to 13' bgs. A grab water sample, BRT-W2 was also collected. Residual soil contamination by the vehicle maintenance building contained up to 3,300 ppm TPHd, 150ppm TPHg, and 0.119, ND, 1.95, and 17.1ppm BTEX, respectively. The grab water sample also contained moderate levels of petroleum hydrocarbons. (See Figs 8, 9 and Table 4)

Well MW-7 has been sampled for four consecutive quarters (6/94 to 3/95) and has not identified TPHg or BTEX. In October groundwater was also analyzed for TPHd, TPHmo, and MtBE. None of these constituents were identified. (See Tables 5 and 6)

It appears the fuel release(s) at the site has not significantly impacted groundwater quality. The plume appears stable and has not migrated to well MW-7. Residual hydrocarbons in soil should not pose a risk to human health based on benzene values in ASTMs RBCA Tier 1 Lookup Table. Continued sampling is not warranted.

In summary, case closure is recommended because:

- the leak and ongoing sources have been removed;
- the site has been adequately characterized;
- the dissolved plume is not migrating;
- no water wells, surface water, or other sensitive receptors are likely to be impacted; and,
- the site presents no significant risk to human health or the environment.

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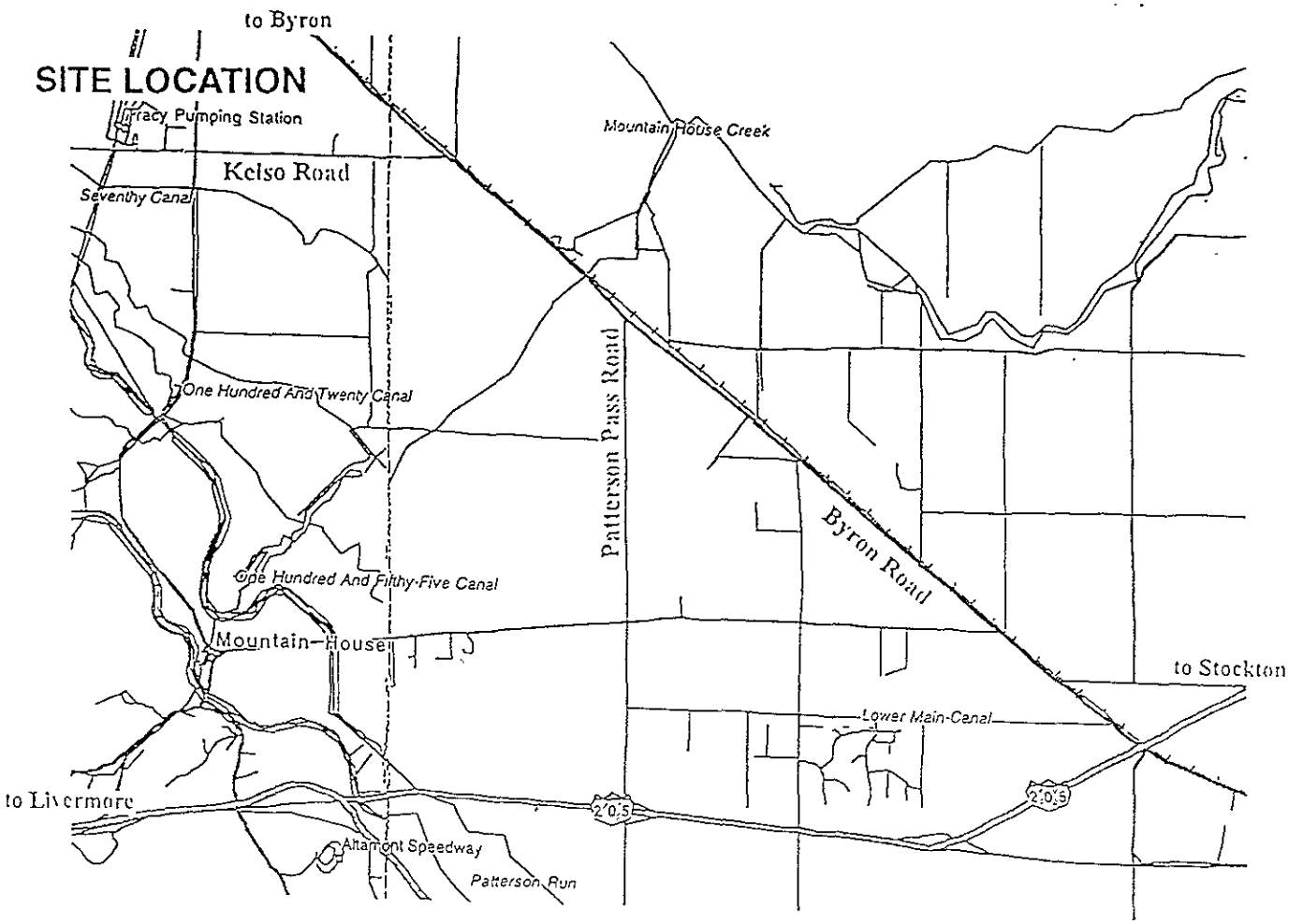

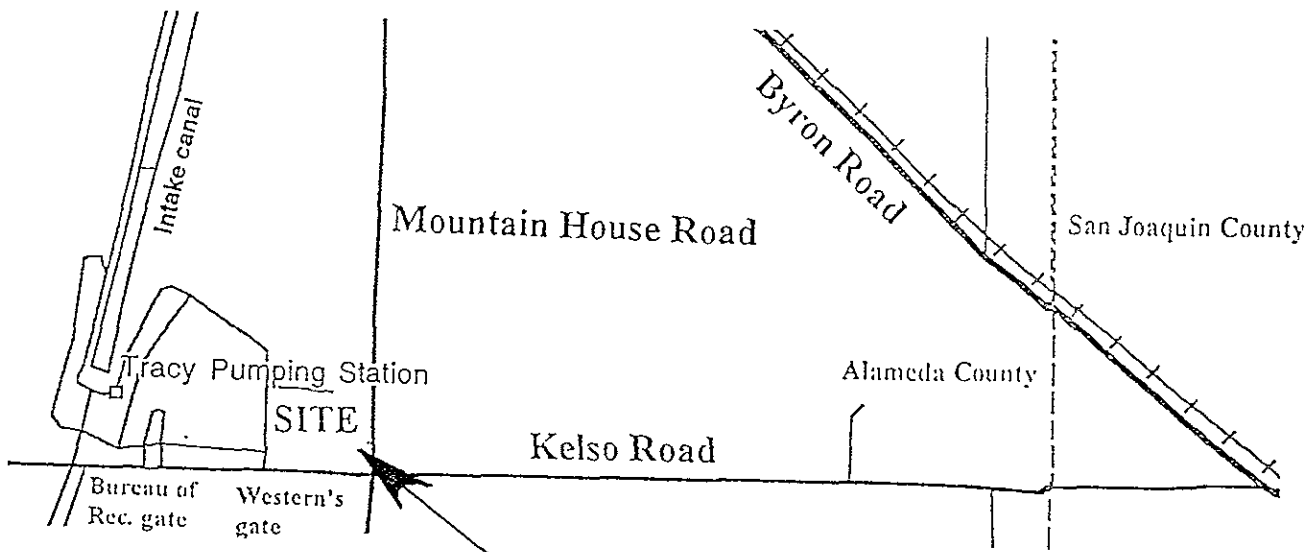

Area of Figure 1-2

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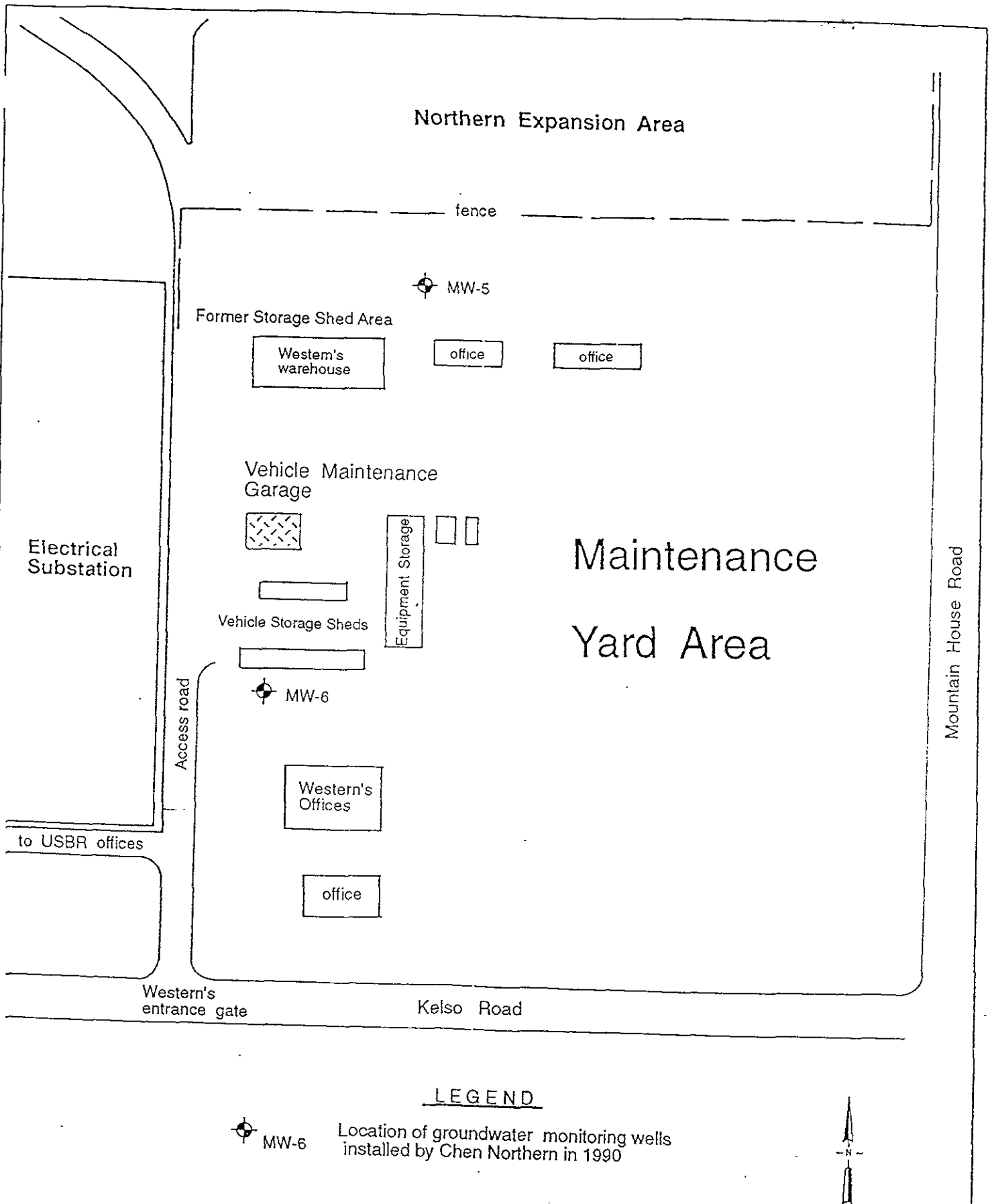
not to scale

Project No. S96203	Bureau of Reclamation	LOCATION MAP TRACY PUMPING PLANT AND SUBSTATION FACILITY	Figure 1-1
Woodward-Clyde			



Source: Chen Northern, 1990, figure 5

approximate scale: 1 inch = 200 feet

Project No. S96203	Bureau of Reclamation	MAINTENANCE YARD AREA SOUTHEAST CORNER OF TPPS FACILITY	Figure 1-2
Woodward-Clyde			

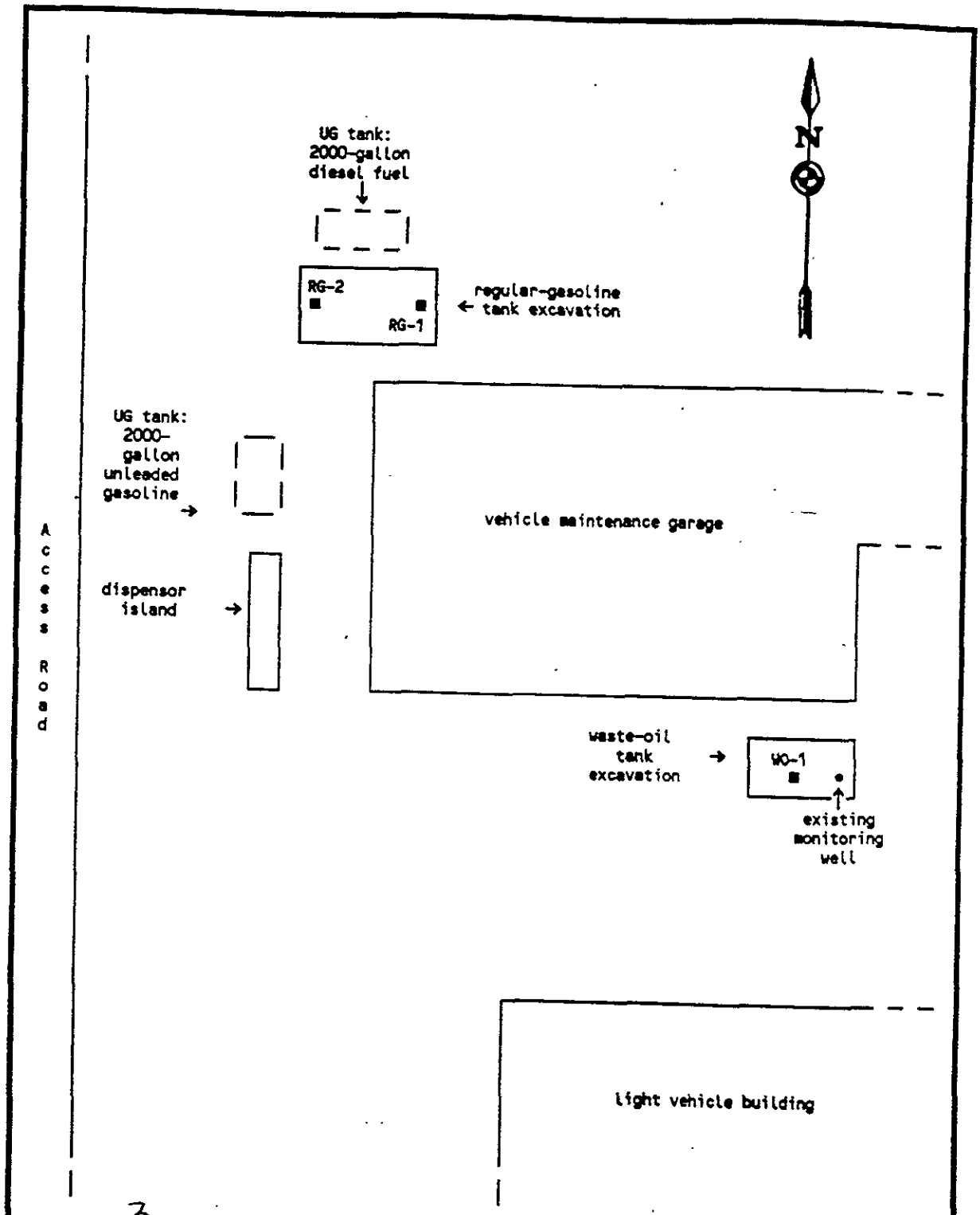


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FIGURE 3: UST REMOVAL SOIL SAMPLES	APRIL, 1994
TRACY PUMPING STATION & SUBSTATION Mtn. House & Kelso Rds., Tracy, CA	SCALE: 1 inch = approximately 20 feet
COTTLE ENGINEERING	

Table 1

Analytical Results of Soil Samples Collected During Tank Removal Activities, February 1994, Vehicle Maintenance Garage.

Sample Number	Location	Depth in ft. bgs	TEPH as diesel (1)	TPH as gasoline (2)	Benzene (3)	Toluene (3)	Ethyl-benzene (3)	Xylenes (3)	Total Lead (4)	TRPH as oil & grease (5)	SVOC (6) / VOC (6)
Leaded Gasoline UST Removal February 1994											
RG-1	east end of excavation	11	NA	3.1	<0.005 (7)	<0.005	<0.005	<0.005	<4.0	NA	NA/NA
RG-2	west (fill) end of excavation	12	NA	130	<0 025	0.16	0.76	1.9	5.7	NA	NA/NA
Waste Oil UST Removal February 1994											
WO-1	center of excavation	unknown	<10	<1.0	<0.005	<0.005	<0 005	<0.005	5.1	<50	ND/0.019#
Stockpile Sampling February 1994											
RG-Comp	gas stockpile		NA	94	0.006	0.062	0.01	0.98	10	NA	NA/NA
WO-Comp	waste oil stockpile		<10	<1 0	<0.005	<0.005	<0.005	<0.005	<1.0	56	NA/NA

Data source: Cottle Engineering, 1994

All results are in mg/Kg (parts per million-ppm).

(1) Total Extractable Petroleum Hydrocarbons (TEPH) as diesel using modified EPA Method 8015.

(2) Total Petroleum Hydrocarbon (TPH) as gasoline using modified EPA Method 8015

(3) Benzene, toluene, ethylbenzene, xylenes (BTEX) using EPA Method 8020.

(4) Total Lead using EPA Method 6010

(5) Total Recoverable Petroleum Hydrocarbons (TRPH) as oil and grease using EPA Method 418.1.

(6) Semi-volatile organic compounds using EPA Method 8270/volatile organic compounds using EPA Method 8240.

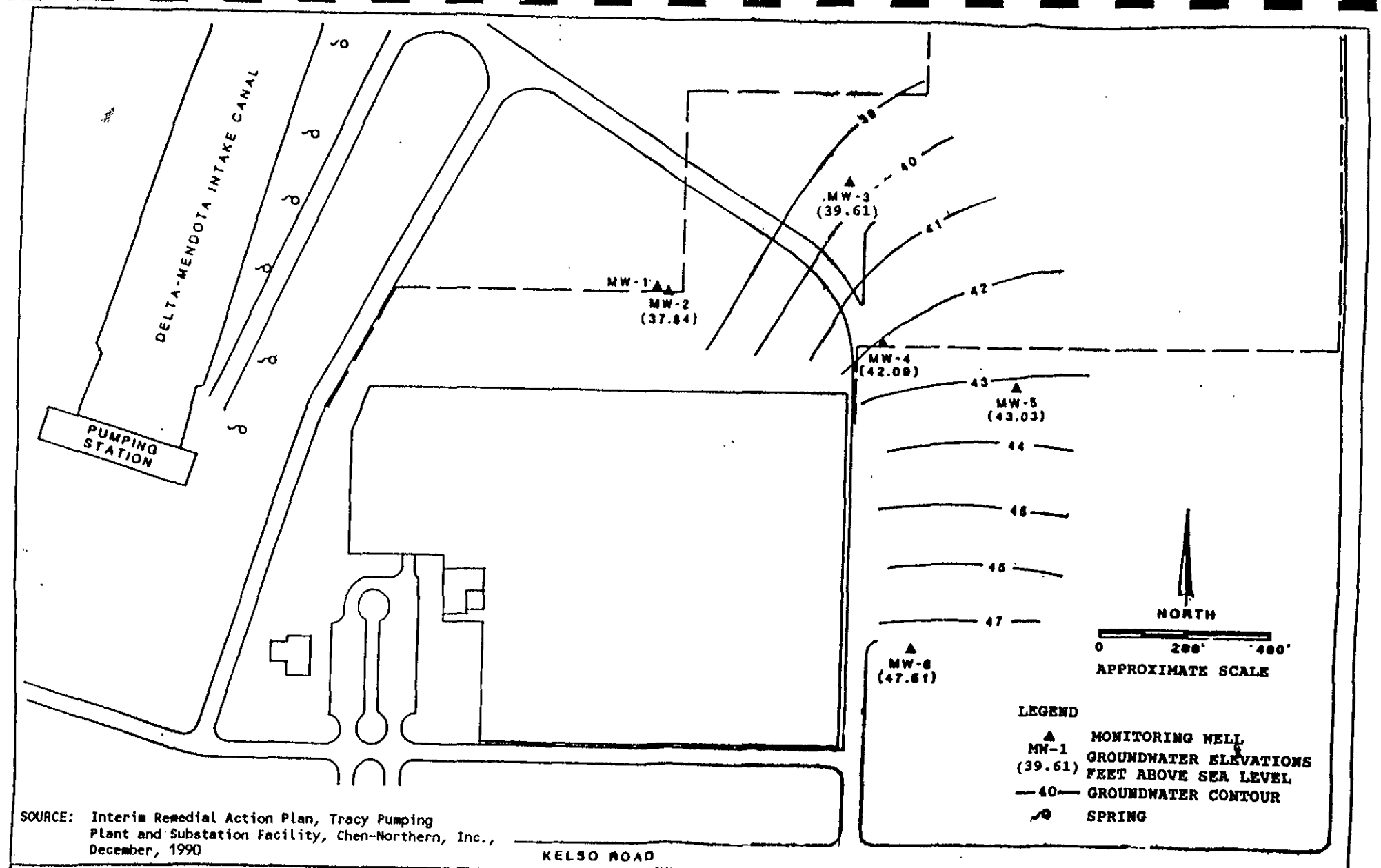
(7) Not detected at or above Analytical Laboratory Reporting Limit

NA = not analyzed

ND = Not detected at or above Analytical Laboratory Reporting Limit for all constituents analyzed.

= detectable concentration of 0.019 mg/Kg xylenes by EPA Method 8240.

Shaded areas are results detected above analytical laboratory reporting limits.



SOURCE: Interim Remedial Action Plan, Tracy Pumping Plant and Substation Facility, Chen-Northern, Inc., December, 1990

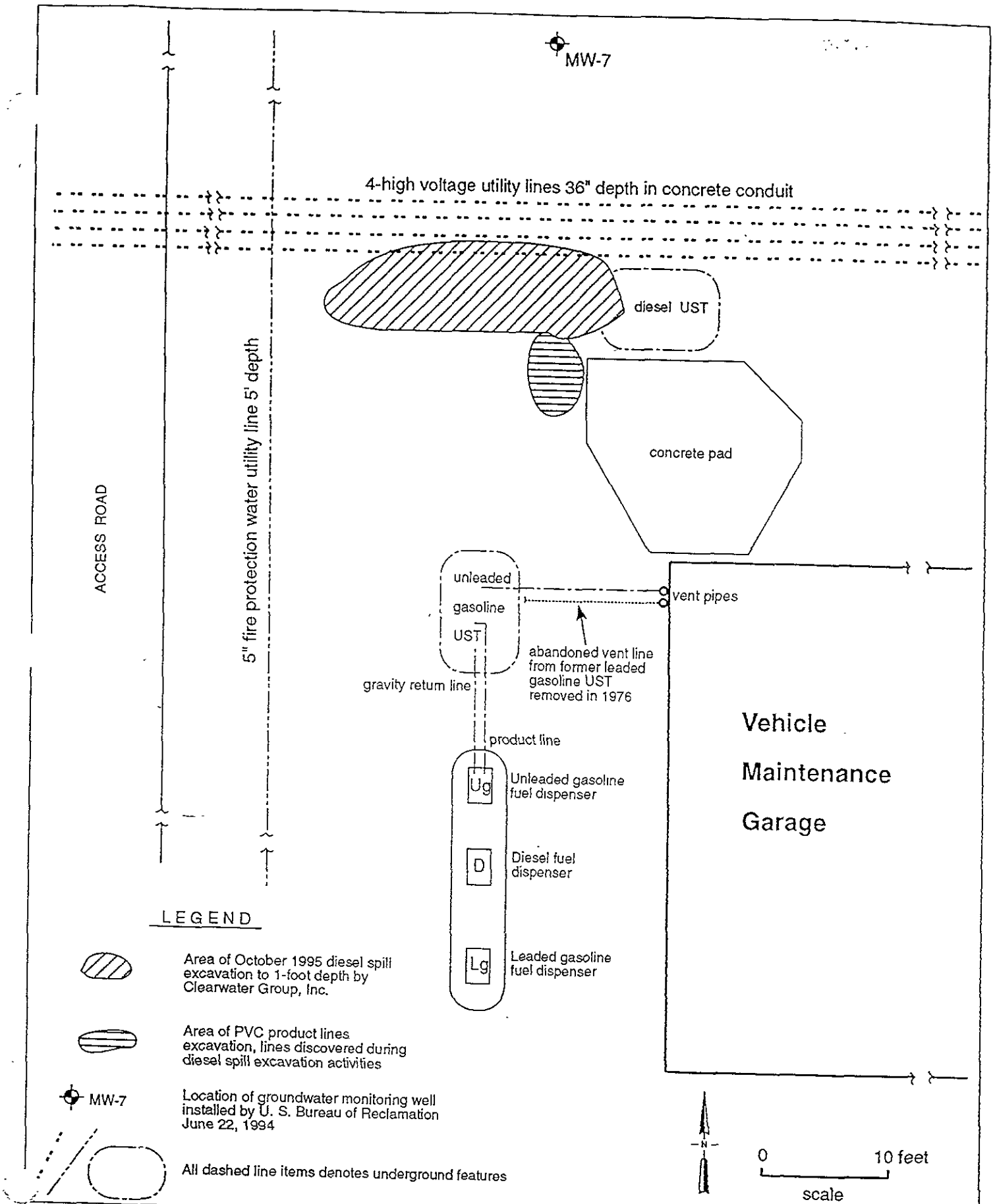
COTTLE ENGINEERING
P.O. Box 7
Antioch, CA 94509

WATER TABLE ELEVATION CONTOURS

TRACY PUMPING STATION AND SUBSTATION
Mtn. House & Kelso Roads, Tracy, CA

FIGURE

4



Project No. S96203	Bureau of Reclamation	VEHICLE MAINTENANCE GARAGE SITE MAP	Figure 5
Woodward-Clyde			

Table 2

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Cottle Industries P.O. Box 7 Antioch, CA 94509	Client Project ID: U.S.B.R.; Tracy Pumping Plant	Date Sampled: 08/24/94
		Date Received: 08/26/94
	Client Contact: Roy Pantle	Date Extracted: 08/26-08/27/94
	Client P.O:	Date Analyzed: 08/27-08/29/94

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCPID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	Benzene	Toluene	Ethylbenzene	Xylenes	% Rec. Surrogate
40566	W-101	W	12,000,b,c	110	3.5	690	470	99
40567	S-201	S	92,g,d	ND	0.050	ND	0.043	85
40568	S-202	S	4200,b	3.3	9.9	36	73	124#
Detection Limit unless otherwise stated; ND means Not Detected		W	50 ug/L	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.005	0.005	0.005	0.005	

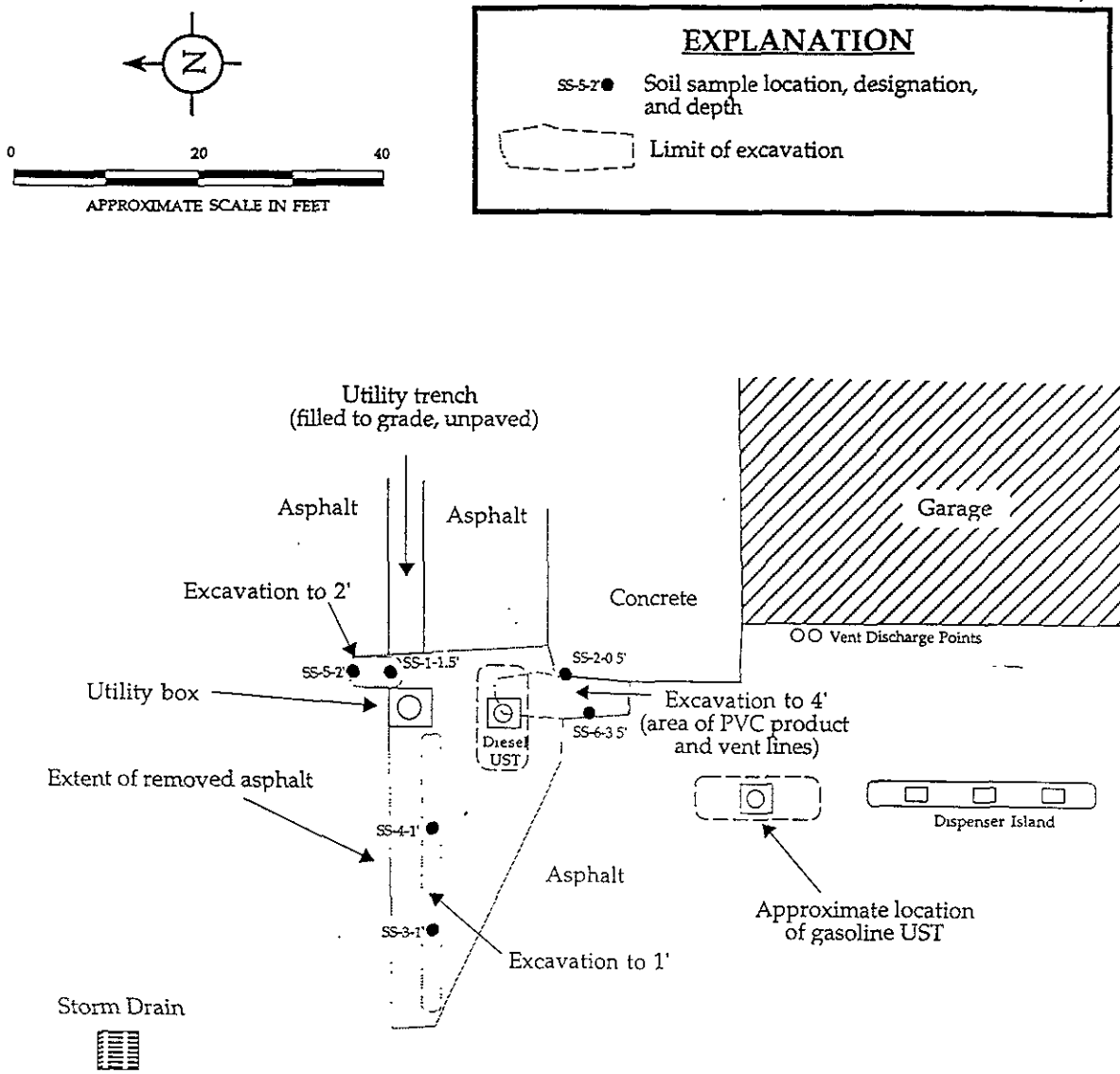
*water samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram; sample peak co-elutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds are significant; no recognizable pattern; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible phase is present.

DHS Certification No 1644

Edward Hamilton Lab Director



SITE PLAN

San Luis & Delta-Mendota Water Authority
Pumping Facility
Byron, California

CLEARWATER GROUP, INC.

Project No.	Report Date	Figure
A-172	10/95	6

Table 3-3

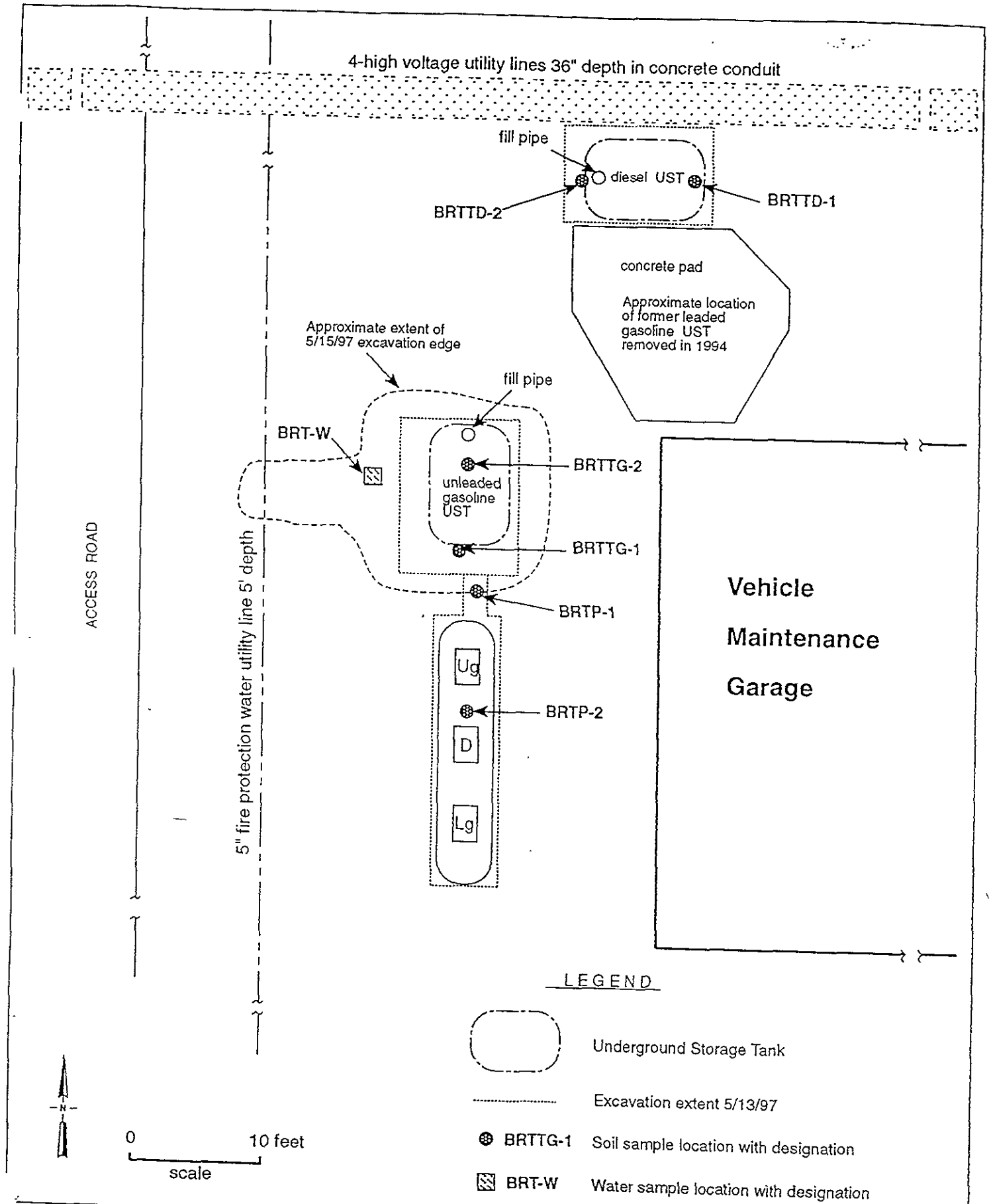
Analytical Results of Soil Samples Collected Following Diesel Spill, and at Western's Former Storage Shed Area

Sample Number	Location	Depth (1)	TPH as diesel (2)	Benzene (3)	Toluene (3)	Ethylbenzene (3)	m,p-Xylene (3)	o-Xylene (3)
SAMPLING CONDUCTED FOLLOWING DIESEL SPILL ON OCTOBER 2, 1995. Data source: Clearwater Group, Inc., 1995								
Soil Samples Collected October 2, 1995 - - Analyzed by Delta Environmental Laboratories, Benicia, California								
SS-1	east-central portion of trench	1	2860	0.332	4	0.302	24.1	12.4
SS-2	west-central portion of trench	1	8 5	<0.005 (6)	<0.005	<0.005	<0.005	<0.005
Soil Sampes Collected October 19, 1995 - - Analyzed by American Environmental Network, Pleasanton, California								
SS-3-1	south end of linear trench	1	7	NA	NA	NA	NA	NA
SS-4-1	north end of linear trench	1	25	NA	NA	NA	NA	NA
SS-5-1	near utility box	1	<1	NA	NA	NA	NA	NA
SS-6-3.5'	sidewall of piping trench	3.5	<5	NA	NA	NA	NA	NA

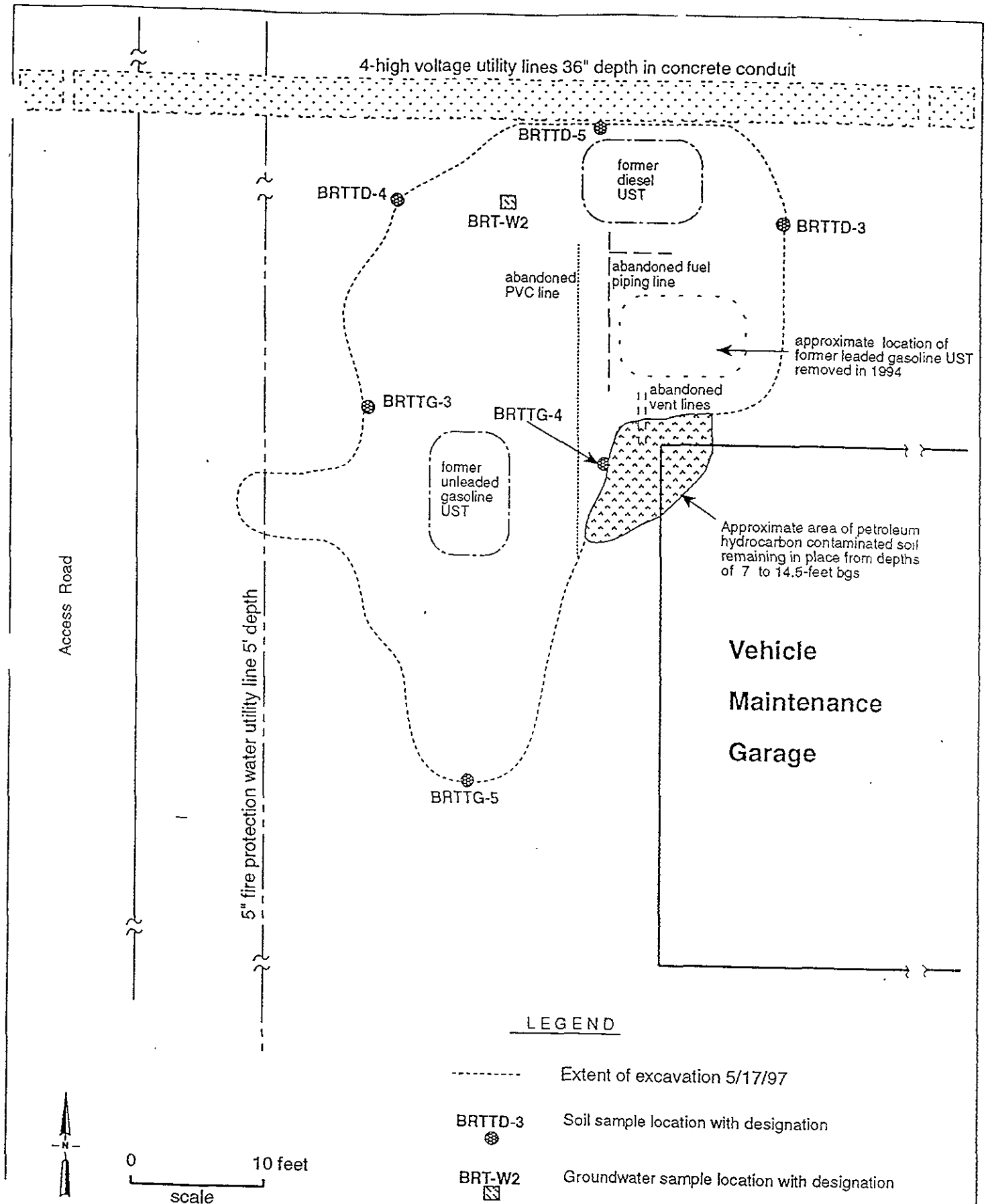
SAMPLING CONDUCTED IN JUNE 1996 AT WESTERN'S FORMER STORAGE SHED AREA. Data source: Western Area Power Administration, 1996

				TPH as kerosene (4)	TPH as mineral oil (4)	TPH as fuel oil (4)	PCB (5)	
Tracy Warehouse #1	near wall crack	unknown	<1	<1	<100	<1	<1	NA
Tracy Warehouse #2	#2 middle rack	unknown	<1	<1	2,650	<1	1	NA
Tracy Shed #3	shed, from rack and floor	unknown	<1	<1	3,930	<1	<1	NA
Tracy Warehouse Back	spill on wooden floor	unknown	<1	<1	243	<1	<1	NA

(1) Depth in feet below ground surface (bgs)
(2) Total Petroleum Hydrocarbon as diesel using modified EPA Method 8015.
(3) Benzene, toluene, ethylbenzene, xylenes (BTEX) using EPA Method 8020.
(4) Total Petroleum Hydrocarbons as kerosene, as mineral oil, and as fuel oil using modified EPA Method 8015.
(5) Polychlorinated biphenyls (PCBs) using EPA Method 8080.
(6) Not detected at or above Analytical Laboratory Reporting Limit.
All results are in mg/Kg (parts per million-ppm)
Samples collected June 1996 analyzed by Analytical ChemTech International, Inc., Sacramento, California
NA = not analyzed



Project No. S96203	Bureau of Reclamation	UST REMOVAL SAMPLE LOCATION MAP May 13, 1997	Figure 7
Woodward-Clyde			



Project No. S96203	Bureau of Reclamation	OVEREXCAVATION / REMEDIAL ACTIVITIES SAMPLE LOCATION MAP May 16 and 17, 1997	Figure 8
Woodward-Clyde			

Table 4

Analytical Results of Samples Collected During Tank Removal and Remedial Activities, May 1997, Vehicle Maintenance Garage.

Sample Number	Location	Depth (1)	TPH as diesel (2)	TPH as gasoline (2)	Benzene (3)	Toluene (3)	Ethyl-benzene (3)	Xylenes (3)	Total Lead (4)	MTBE (3)
Tank Removal Samples May 13, 1997										
BRTTD-1	east end diesel UST	10.5	48	<0.5 (5)	<0.005	<0.005	<0.005	<0.005	NA	<0.005
BRTTD-2	west end diesel UST	10	700	390	0 71	1.3	2.5	5.1	NA	0.65
BRTTG-1	south end gasoline UST	10.5	NA	1900	20	31	23	113	7.1	<2.5
BRTTG-2	north end gasoline UST	11	NA	<2.5	<0.025	0.09	0.25	0.23	8.3	<0.025
BRTP-1	product pipeline	3.5	NA	<0.5	<0 005	<0.005	<0.005	<0.005	8.8	<0.005
BRTP-2	pump island, pipeline	3	NA	0.1	0.46	0.83	1.5	3	8.5	0.15
Overexcavation Samples May 16 and 17, 1997										
BRTTD-3	east wall diesel excavation	11	<10	<0.05	<0.002	<0.002	<0.002	<0.002	6.33	<0.010
BRTTD-4	west wall of diesel excavation	10.5	<9	<0.05	<0.002	<0 002	<0.002	<0.002	7.46	0.405
BRTTD-5	north wall of diesel excavation	10.5	18.6	1.05	<0 002	<0.002	<0 002	<0.002	6.9	<0.010
BRTTG-3	west wall of gas excavation	10	<9	<0.05	<0 002	<0.002	<0.002	<0.002	7.2	<0.010
BRTTG-4#	east wall of gas excavation	9.5	3300	150	0.119	<0.05	1.95	17.1	7.61	<0.25
BRTTG-5	south end of gas excavation	13	<10	<0.05	<0 002	<0.002	<0.002	<0 002	5.75	<0.010
Stockpile Samples May 13, 1997										
DSTP-1	diesel stockpile		680	12	<0.005	9.2	6.7	15	NA	16
GSTP-1	gas stockpile		NA	<0.5	<0 005	<0.005	<0.005	<0.005	9.4	<0.005
Water Samples May 15 and 17, 1997										
BRT-W	gas excavation-pipe break		<0 05	0.11	<0 0005	0.0011	0.0015	0.017	<0.005	<0.005
BRT-W2	enlarged excavation seepage		3.32	7.04	0.45	0.274	0.442	2.27	<0.005	1.08

Sample BRTTG-4 was also analyzed for PAHs using EPA Method 8270. Results indicate non-detect for all analytes tested (see Analytical Reports, Appendix C).

(1) Depth in feet below ground surface (bgs).

(2) Total Petroleum Hydrocarbon as diesel and as gasoline using modified EPA Method 8015.

(3) Benzene, toluene, ethylbenzene, xylenes (BTEX) and Methyl tertiary Butyl Ether (MTBE) using EPA Method 8020.

(4) Total Lead using EPA Method 6010.

(5) Not detected at or above Analytical Laboratory Reporting Limit.

Soil results are in mg/Kg (parts per million-ppm).

Water results are in mg/L (ppm).

NA = not analyzed

Shaded areas are results detected above analytical laboratory reporting limit.

Table 25

Analytical Results of Soil and Groundwater Samples Collected from Monitoring Well MW-7, Vehicle Maintenance Garage.

Sample Number	Location	Depth (1)	Date Sample Collected	TPH as gasoline (2)	Benzene (3)	Toluene (3)	Ethyl-benzene (3)	Xylenes (3)
Soil Samples Collected during Installation of MW-7								
MW7001#	Soil boring MW-7	4.8-5.2	6/22/94	<1 0 (4)	<0 02	<0.02	<0.02	<0.02
MW7002#	"	9.5-10	"	<1.0	0.02	<0.02	<0.02	<0.02
Groundwater Samples Collected Quarterly								
MW7003#	Monitoring Well MW-7		6/30/94	<0.02	<0.0005	<0.0005	<0.0005	<0.0005
MW7003*	"		9/23/94	<0.02	<0.0005	<0.0005	<0.0005	<0.0005
MW7004#	"		12/29/94	<0.02	<0.0005	<0.0005	<0.0005	<0.0005
MW7004##	"		3/28/95	<0.05	<0.0003	<0.0003	<0.0003	<0.0003

Data source: USBR Inter-office memoranda, 1994, 1995

NOTES:

(1) Depth in feet below ground surface (bgs)

(2) Total Petroleum Hydrocarbon as gasoline using modified EPA Method 8015.

(3) Benzene, toluene, ethylbenzene, xylenes (BTEX) using EPA Method 8020.

(4) Not detected at or above Analytical Laboratory Reporting Limit.

= Samples analyzed by Agriculture and Priority Pollutants Laboratories, Inc., (Certified Lab #1312), Fresno, California

* = Sample analyzed by Anlab Analytical Laboratory, (Certified Lab #1468), Sacramento, California.

= Sample analyzed by Western Environmental Science and Technology Laboratory, (Certified Lab #1346), Davis, California.

Soil results are mg/Kg (parts per million-ppm) and water results are mg/L (ppm).

Anlab
ANALYTICAL LABORATORY
1910 S STREET SACRAMENTO, CALIFORNIA 95814 • 916-447-2946 • FAX 916-447-8321

December 18, 1997
Moldenhauer Eng.

Table 6

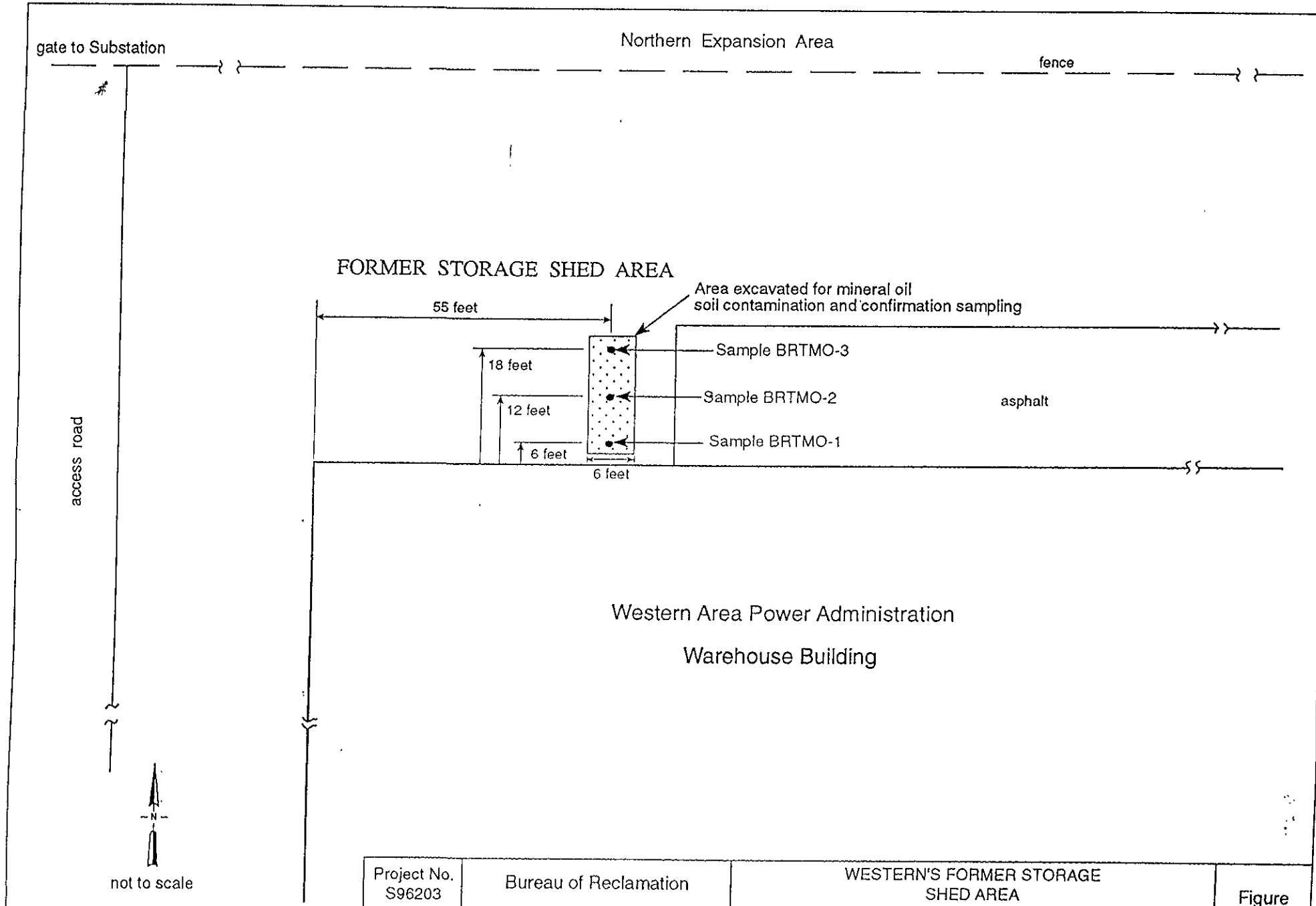
Anlab I.D. AG16752
SAMPLE DESCRIPTION: #7
Sample collection date: 10/23/97
Lab submittal date: 10/23/97
Turn-Around-Time: REG

Client Code: 2534CR
Matrix: W
Time: 12:00
Time: 16:20
Sample Disposal: LAB

TEST PARAMETER	UNITS	TEST RESULT	DETECTION LIMIT
Multicomponent analysis: TPH by Modified 8015			
Petroleum Hydrocarbon as Diesel	mg/l	ND	0.050
Pet. Hydrocarbon as Motor Oil	mg/l	ND	0.50
Multicomponent analysis: Gas(8015)/BTX&E(8020) EPA 5030			
Gasoline	ug/l	ND	20
Benzene	ug/l	ND	0.50
Toluene	ug/l	ND	0.50
Xylene	ug/l	ND	0.50
Ethylbenzene	ug/l	ND	0.50
MTBE	ug/l	ND	4.0

ND = Not Detected

	Date Extracted	Date Analyzed
EPA 8015, Mod	10/30/97	11/05/97
EPA 5030		11/30/97



Project No. S96203	Bureau of Reclamation	WESTERN'S FORMER STORAGE SHED AREA SAMPLE LOCATION MAP MAY 13, 1997	Figure 2 9
Woodward-Clyde			

GEOLOGIC LOG OF DRILL HOLE NO. MW-7

FEATURE: TRACY PUMPING PLANT
LOCATION: SEE NOTES
BEGUN: 06-21-94 FINISHED: 06-23-94
DEPTH AND ELEV. OF WATER LEVEL AND DATE MEASURED: SEE NOTES, SHEET 2

PROJECT: CENTRAL VALLEY PROJECT
COORDINATES: N 473879 E 1688170
TOTAL DEPTH: 19.3
DEPTH TO BEDROCK:

STATE: CALIFORNIA
GROUND ELEVATION: 56.9
ANGLE FROM HORIZONTAL: 90 BEARING:
HOLE LOGGED BY: STEVEN SHERER
REVIEWED BY:

NOTES

ALL MEASUREMENTS ARE IN FEET FROM GROUND SURFACE.

DRILLED BY: Regional Drill Crew; Al Velarde, driller.

PURPOSE OF HOLE: To install piezometer to monitor for groundwater contamination by petroleum products from nearby gasoline and diesel underground storage tanks.

LOCATION OF HOLE: Vehicle maintenance facility; 39.5 ft north and 8 ft west of northwest corner of garage.

DRILL RIG: CME 75

DRILLING & SAMPLING METHODS:
0.0 to 1.0 ft: 3-3/4 inch by 7-5/8 inch flight auger with pilot bit.
1.0 to 19.3 ft: 3-inch i.d. by 5 ft split barrel dry coring system (FADC) except:
4.2 to 5.7 ft and 9.2 to 10.7 ft: Standard penetration test (SPT). See "COMMENTS" below for details of SPTs.

DRILLING CONDITIONS:
0.0 to 19.3 ft: Slow and smooth.

HYDRAULIC PRESSURE GAUGE READINGS (LBS/SQUARE INCH):

Interval From (feet)	Interval To (feet)	Gauge Reading
0.0	4.2	300
4.2	9.2	300/400
9.2	14.2	300/250
14.2	19.2	300/450/350

HOLE COMPLETION:
Installed 12.0 ft of 0.010-inch machine-slotted Schedule 40 PVC screen at 7.2 to 19.2 ft and Schedule 40 PVC pipe from 0.4 to 7.3 ft. Piezometer was plugged at bottom with 0.1 ft long cap. Backfilled hole as follows (also see diagram, Sheet 2): from 19.3 to 5.2 ft, Monterey No. 2-size sand; from 5.2 to 3.2 ft, bentonite hole plug;

DEPTH	HOLE TYPE/SIZE	% RECOVERY	TPH-GASOLINE	BENZENE	ETHYLBENZENE	TOLUENE	TOTAL XYLENESS	[a] BLOWS/0.5 FT	[b] SPT	CLASSIFICATION	DEPTH
0	FA	0							Asphalt / Road Base		0
	FADC	100								CH	
5	SPT	100	<1.0	<0.02	<0.02	<0.02	<0.02	3 / 8 / 14	22	CH/CL	5
	FADC	100									
10	SPT	100	<1.0	0.02	<0.02	<0.02	<0.02	2 / 3 / 5	8	SP-SM	10
		100								CH-CL	
										SC	
15	FADC									SP	15
		100								CL/SC	
										ML/SM	
20	BOTTOM OF HOLE										20
	WATER SAMPLE MW-7003		< 20	< 0.5	< 0.5	< 0.5	< 0.5				

SAMPLE MW-7001
SAMPLE MW-7002

NOTES ON LABORATORY TESTING OF SOIL & WATER SAMPLES:

THE MINIMUM DETECTION LIMIT FOR THE TEST IS 0.02 mg/kg, AND WHEN THE RESULTS ARE AT THE DETECTION LIMIT, THEY ARE CONSIDERED TO BE INCONCLUSIVE.

WATER SAMPLE MW-7003 WAS TAKEN THREE DAYS AFTER THE WELL WAS INITIALLY DEVELOPED.

FIELD VISUAL CLASSIFICATION AND PHYSICAL CONDITION

0.0 to 0.4 ft: Asphalt.

0.4 to 0.8 ft: Roadbase material, GW-GM; maximum size 3 inches.

0.8 to 2.8 ft: Fat Clay, CH. About 100% fines with high plasticity, high dry strength, no dilatancy, high toughness; dry; dark brown.

2.8 to 7.3 ft: Lean to Fat Clay, CH/CL. About 95% fines with high plasticity, medium to high dry strength, no dilatancy, high toughness; about 5% fine, subangular to rounded sand; maximum size fine sand; dry; yellow brown.

7.3 to 11.3 ft: Poorly Graded Sand with Silt, SP-SM. About 90% fine, subangular to rounded sand; about 10% nonplastic fines; maximum size fine sand; dark brown.
7.3 to 9.7 ft: Dry.
9.7 to 11.3 ft: Saturated.

11.3 to 12.9 ft: Lean to Fat Clay, CH/CL. About 100% fines with medium to high plasticity, high dry strength, no dilatancy, medium to high toughness; saturated; dark brown.

12.9 to 14.2 ft: Clayey Sand, SC. About 60% fine, subangular to rounded sand; about 40% fines with medium to high plasticity; maximum size fine sand; saturated; dark brown.

14.2 to 15.2 ft: Poorly Graded Sand, SP. About 95% fine, subrounded to rounded sand; about 5% fines with medium to high plasticity; maximum size fine sand; saturated; dark brown.

15.2 to 18.8 ft: Sandy Lean Clay, CL/SC. About 50% fine to medium, angular to rounded sand; about 50% fines with to high plasticity, medium dry strength, no dilatancy, medium to high toughness; maximum size medium sand; saturated; dark yellow brown.

18.8 to 19.3 ft: Sandy Silt, ML/SM. About 55% fines with low plasticity, low dry strength, fast dilatancy, low toughness; about 45%

COMMENTS:

THE SPTS WERE CONDUCTED USING THE FOLLOWING EQUIPMENT:
1) CME 140 LB AUTOMATIC SPT HYDRAULIC HAMMER WITH 30-INCH DROP. CALIBRATED ENERGY RATING IS 95% (MEASURED AT MORMON ISLAND AUXILIARY DAM, 1992).
2) MOBILE NWJ UPSET DRILL RODS, APPROX. 57.5 LBS/10 FT.
3) PENETRATION SAMPLER WITH SPLIT INNER BARREL; 2.95 FT LONG, 1-3/8 INCH I.D., 2-INCH O.D.; LINER NOT USED.

SOIL AND WATER SAMPLE ANALYSES PERFORMED BY STATE CERTIFIED LAB (NUMBER 1312) AGRICULTURE AND PRIORITY POLLUTANTS LABORATORIES, INC. OF FRESNO, CA.

[a] = INITIAL 0.5 FT OF PENETRATION
= FIRST 0.5 FT OF TEST PENETRATION
= LAST 0.5 FT OF TEST PENETRATION

[b] TOTAL BLOWS FOR 1.0 FT TEST PENETRATION.

FA: 3-3/4 inch by 7-5/8 inch flight auger with pilot bit.
FADC: 3-inch i.d. by 5 ft split barrel dry coring system.
SPT: Standard penetration test.

Boring Log