TIMMERMAN
ENGINEERING
CONSTRUCTION

6/11

October 8, 1989

7000 Del Valle Rd.
Livermore 94550

Ted Krebs
East Bay Regional Parks District
1500 Skyline Blvd.
Oakland, CA 94619

Ted:

Enclosed please find the test reports for the 13 tanks tested under our contract. The results are summarized below.

Tilden Park	1	8,000	U/L	Pass
	2	1,500	DIESEL	Unable to complete test due to permanent drop tube.
Redwood Park	1	2,000	DIESEL	Pass
	2	5,000	U/L	Fail
Sunol Park	1	1,000	REGULAR	Pass
	2	1,000	U/L	Pass
South Co. Equip. Maint.	1	8,000	REGULAR	Pass
	2	8,000	U/L	Pass
	3	2,000	DIESEL	Pass
	4	250	WASTE OIL	Pass
Del Valle Park	1	1,000	U/L	Pass } included here
	2	564	REGULAR	Pass } included here
	3	564	DIESEL	Pass } included here

Copies have been sent to the appropriate agencies. Thanks for using Timmerman Engineering Construction for your testing.

Sincerely,

Peter D. Timmerman
Owner

PDT/eam

Enclosures
CC: Contra Costa County Health Services Division
Alameda County Dept. of Environmental Health

P.O. Box 4479 • Walnut Creek, CA 94596 • (415) 934-4157 • FAX (415) 934-1823 • Cal.Lic. No. 561795

Data Chart for Tank System Tightness Test

PLEASE PRINT

1. OWNER Property ☐ Tank(s) ☐

Name	Address	Representative	Telephone
EBRPD	1500 SKYLINE BLVD, OAK,	TED KREBS	843-5314
Name	Address	Representative	Telephone

2. OPERATOR

Name	Address	Telephone

3. REASON FOR TEST (Explain Fully)

Annual compliance with state underground storage tank reg

4. WHO REQUESTED TEST AND WHEN

Name	Title	Company or Affiliation	Date

Address _____ Telephone _____

5. TANK INVOLVED

Use additional lines for manifolded tanks

Identify by Direction	Capacity	Brand/Supplier	Grade	Approx. Age	Steel/Fiberglass
WEST	1000	U/L			

6. INSTALLATION DATA

Location	Cover	Fills	Vents	Siphones	Pumps
EAST OF SHOP.	CONCRETE	3"	2"		SUCTION
North inside driveway, Rear of station, etc.	Concrete, Black Top, Earth, etc	Size, Titefill make, Drop tubes, Remote Fills	Size, Manifolded	Which tanks?	Suction, Remote, Make if known

7. UNDERGROUND WATER

Depth to the Water table _____"

Is the water over the tank? ☐ Yes ☐ No

8. FILL-UP ARRANGEMENTS

Tanks to be filled _____ hr. _____ Date Arranged by _____ Name _____ Telephone

Extra product to "top off" and run tank tester. How and who to provide? Consider NO Lead

Terminal or other contact for notice or inquiry _____ Company _____ Name _____ Telephone

9. CONTRACTOR, MECHANICS, any other contractor involved

10. OTHER INFORMATION OR REMARKS

Additional information on any items above Officials or others to be advised when testing is in progress or completed. Visitors or observers present during test, etc

11. TEST RESULTS

Tests were made on the above tank systems in accordance with test procedures prescribed for as detailed on attached test charts with results as follows:

Tank Identification	Tight	Leakage Indicated	Date Tested
WEST	YES	-.027	9-14-89

12. SENSOR CERTIFICATION

10/87
Date

#2017
Serial No of Thermal Sensor

13. This is to certify that these tank systems were tested on the date(s) shown. Those indicated as "Tight" meet the criteria established by the National Fire Protection Association Pamphlet 329.

Technicians

1 Tim B Soucie

Certification # 411483405

2 _____

Certification # _____

TIMMERMAN ENGINEERING CONSTRUCTION
Tester's Name of Company By Signature

P.O. BOX 4479
Address

WALNUT CREEK, CA 94596

PN6827

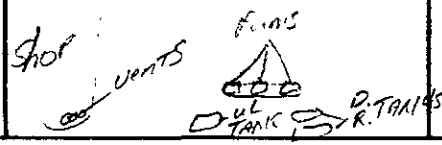
Name / Supplier, Owner or Dealer | Address No. and Street's. | City | State | Date of Test

15. TANK TO TEST

WEST
Identity by position

U/L
Brand and Grade

15a. BRIEF DIAGRAM OF TANK FIELD



16. CAPACITY

Nominal Capacity 1000 Gallons

By most accurate capacity chart available 1036 Gallons

From
- ☐ Station Chart
- ☑ Tank Manufacturer's Chart
- ☐ Company Engineering Data
- ☐ Charts supplied with
- ☐ Other

17. FILL-UP FOR TEST

Stick Water Bottom before Fill-up 0 to ⅛" in

0 Gallons

45 Tank Diameter in.

	Gallons	Total Gallons ea Reading
Inventory		1036
TOPOFF		10
		1046

Transfer total to line 25a

18. SPECIAL CONDITIONS AND PROCEDURES TO TEST THIS TANK

☐ Water in tank ☐ Line(s) being tested with LVLLT ☐ High water table in tank excavation

See manual sections applicable Check below and record procedure in log (27)

Use maximum allowable test pressure for all tests
Four pound rule does not apply to doublewalled tanks

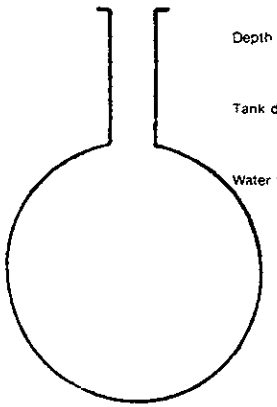
Complete section below

1 Is four pound rule required? Yes ☐ No ☑

2 Height to 12 mark from bottom of tank ____ in

3 Pressure at bottom of tank ____ P.S.I

4 Pressure at top of tank ____ P.S.I



Depth of burial ____ in

Tank dia ____ in

Water table ____ in

NOTES

*

The above calculations are to be used for dry soil conditions to establish a positive pressure advantage, or when using the four pound rule to compensate for the presence of subsurface water in the tank area.

Refer to N.F.P.A. 30, Sections 2-3.2.4 and 2-7.2 and the tank manufacturer regarding allowable system test pressures

19. TANK MEASUREMENTS FOR TSTT ASSEMBLY

Bottom of tank to grade* 96 in

Add 30" for "T" probe assy 30 in.

Total tubing to assemble — approximate 126 in

20. EXTENSION HOSE SETTING

Tank top to grade* 51 in

Extend hose on suction tube 6" or more below tank top ____ in

*If Fill pipe extends above grade, use top of fill

22. Thermal-Sensor reading after circulation 15773 digits

70-71 °F Between

23. Digits per °F in range of expected change 325 digits

COEFFICIENT OF EXPANSION (Complete after circulation)

24a. Corrected A.P.I. Gravity

Observed A.P.I. Gravity ____

Hydrometer employed ____ H

Observed Sample Temperature ____ °F

Corrected A.P.I. Gravity @ 60°F. From Table A ____

Coefficient of Expansion for Involved Product From Table B ____

Transfer COE to Line 25b

21. VAPOR RECOVERY SYSTEM ☐ Stage I ☐ Stage II

24b. COEFFICIENT OF EXPANSION RECIPROCAL METHOD

Type of Product GAS

Hydrometer Employed 6 H

Temperature in Tank After Circulation 70.2 °F

Temperature of Sample 73 °F

Difference (+/−) +3 °F

Observed A.P.I. Gravity 54.0

Reciprocal 1540 Page # 58

1046 (Total quantity in full tank (16 or 17)) − 1540 (Reciprocal) = 0.679220 (Volume change in this tank per °F)

Transfer to Line 26a

24c. FOR TESTING WITH WATER see Table C & D

Water Temperature after Circulation Table C ____ °F

Coefficient of Water Table D ____

Added Surfactant? ☐ Yes ☐ No Transfer COE to Line 25b

25. (a) ____ Total quantity in full tank (16 or 17) × (b) ____ Coefficient of expansion for involved product = (c) ____ Volume change in this tank per °F gallons

26. (a) 0.679220 Volume change per °F (25 or 24b) ÷ 325 Digits per °F in test Range (23) = 0.002091 Volume change per digit Compute to 4 decimal places

This is test factor (a) 0.0021

27. Sensor Calibration ____ / ____ LOG OF TEST PROCEDURES			30 HYDROSTATIC PRESSURE CONTROL		31. VOLUME MEASUREMENTS (V) RECORD TO .001 GAL.			34 TEMPERATURE COMPENSATION USE FACTOR (a)			38. NET VOLUME CHANGING EACH READING	39. ACCUMULATED CHANGE
28. DATE / TIME (24 hr)	Record details of setting up and running test (Use full length of line if needed.)	29. Reading No	Standpipe Level in Inches: Beginning of Reading	Standpipe Level in Inches: Level to which Restored	32. Product in Graduate: Before Reading	32. Product in Graduate: After Reading	33. Product Replaced (-): Product Recovered (+)	35. Thermal Sensor Reading	36. Change Higher + Lower - (c)	37. Computation (c) × (a) = Expansion + Contraction -	Temperature Adjustment: Volume Minus Expansion (+) or Contraction (-) #33(V) — #37(T)	At Low Level compute Change per Hour (NFPA criteria)
07:30	ARRIVED JOB SITE											
	SETUP TEST EQUIPMENT											
12:00	START RECIRCULATION							15				
12:15	START HIGH LEVEL TEST	1		12				773		.0021		
12:30	HIGH LEVEL	2	42.2	42	.310	.330	+.020	796	+23	+.048	-.025	
12:45		3	42.2	42	.330	.355	+.025	819	+23	+.048	-.023	
13:00		4	42.3	42	.355	.380	+.025	839	+20	+.042	-.017	
	START LOW LEVEL TEST			42								
13:05	LOW LEVEL	1	12.9	12	.380	.460	+.080	851	+12	+.025	+.055	
13:10		2	12.2	12	.460	.480	+.020	864	+13	+.027	-.007	-.007
13:15		3	12.2	12	.480	.500	+.020	874	+10	+.021	-.001	-.008
13:20		4	12.2	12	.500	.520	+.020	884	+10	+.021	-.001	-.009
13:25		5	12.2	12	.520	.540	+.020	895	+11	+.023	-.003	-.012
13:30		6	12.2	12	.540	.560	+.020	903	+8	+.017	-.007	-.019
13:35		7	12.2	12	.110	.130	+.020	916	+13	+.027	-.007	-.026
13:40		8	12.2	12	.130	.150	+.020	929	+13	+.027	-.007	-.033
13:46		9	12.2	12	.150	.170	+.020	938	+9	+.019	+.001	-.032
13:50		10	12.2	12	.170	.190	+.020	947	+9	+.019	+.001	-.031
13:55		11	12.3	12	.190	.215	+.025	958	+11	+.023	+.002	-.029
14:00		12	12.2	12	.215	.235	+.020	968	+10	+.021	-.001	-.030
14:05		13	12.2	12	.235	.255	+.020	978	+10	+.021	-.001	-.031
14:10		14	12.3	12	.255	.280	+.025	987	+9	+.019	+.006	-.025
14:15		15	12.2	12	.280	.300	+.020	998	+11	+.023	-.003	-.028
14:20		16	12.2	12	.300	.320	+.020	010	+12	+.025	-.005	-.033
14:25		17	12.2	12	.320	.340	+.020	021	+11	+.023	-.003	-.036
14:30		18	12.2	12	.340	.360	+.020	031	+10	+.021	-.001	-.037
14:35		19	12.3	12	.360	.385	+.025	040	+9	+.019	+.006	-.031
[illegible]		[illegible]	[illegible]	12	.385	.405	+.020	051	+11	+.023	-.002	-.033

14:45		21	12.2	12	.405	.425	±.020	062	±11	±.023	-.003	-.027
14:50		27	12.2	12	.425	.4415	±.020	075	±13	±.027	-.003	-.044
14:55		27	12.2	12	.445	.465	±.020	087	±12	±.025	-.005	-.049
15:00		34	12.2	12	.465	.485	±.020	099	±12	±.025	-.005	-.054
										-.054	÷2 =	-.027

P-T Tank Test Data Chart
Additional Info

1 Net Volume Change at Conclusion of Precision Test ____ gph

Signature of Tester _____

Date _____

2. Statement.

☐ Tank and product handling system has been tested tight according to the Precision Test Criteria as established by N.F.P.A. publication 329. This is not intended to indicate permission of a leak.

OR

☐ Tank and product handling system has failed the tank tightness test according to the Precision Test Criteria as established by N.F.P.A. publication 329.

It is the responsibility of the owner and/or operator of this system to immediately advise state and local authorities of any implied hazard and the possibility of any reportable pollution to the environment as a result of the indicated failure of this system. Heath Consultants Incorporated does not assume any responsibility or liability for any loss of product to the environment.

Tank Owner/Operator _____

Date _____

Data Chart for Tank System Tightness Test

PLEASE PRINT

1. OWNER Property ☐ Tank(s) ☐

Name	Address	Representative	Telephone
EBRPD	1500 SKYLINE BLVD, OAKLAND		
TED KREBS			843-8314

Name	Address	Representative	Telephone

2. OPERATOR

Name	Address	Telephone

3. REASON FOR TEST (Explain Fully)

Annual compliance with State underground storage tank Reg

4. WHO REQUESTED TEST AND WHEN

Name	Title	Company or Affiliation	Date

Address	Telephone

5. TANK INVOLVED

Use additional lines for manifolded tanks

Identify by Direction	Capacity	Brand/Supplier	Grade	Approx Age	Steel/Fiberglass
WEST	550	REG.			

6. INSTALLATION DATA

Location	Cover	Fills	Vents	Siphones	Pumps
DISTRICT SHOP	DIRT	3"	2"		SUCTION
North inside driveway, Rear of station, etc.	Concrete, Black Top, Earth, etc.	Size, Titefill make, Drop tubes, Remote Fills	Size, Manifolded	Which tanks?	Suction, Remote, Make if known

7. UNDERGROUND WATER

Depth to the Water table _____"

Is the water over the tank? ☐ Yes ☐ No

8. FILL-UP ARRANGEMENTS

Tanks to be filled _____ hr _____ Date Arranged by _____ Name Telephone

Extra product to "top off" and run tank tester. How and who to provide? Consider NO Lead.

Terminal or other contact for notice or inquiry _____ Company Name Telephone

9. CONTRACTOR, MECHANICS, any other contractor involved

10. OTHER INFORMATION OR REMARKS

Additional information on any items above Officials or others to be advised when testing is in progress or completed Visitors or observers present during test, etc.

11. TEST RESULTS

Tests were made on the above tank systems in accordance with test procedures prescribed for as detailed on attached test charts with results as follows:

Tank Identification	Tight	Leakage Indicated	Date Tested
WEST	YES	+.023	9-18-89

12. SENSOR CERTIFICATION

10/87
Date
#2017
Serial No of Thermal Sensor

13. This is to certify that these tank systems were tested on the date(s) shown. Those indicated as "Tight" meet the criteria established by the National Fire Protection Association Pamphlet 329.

Technicians

1 Tim B. Soucie

Certification # 111481354105

2 _____

Certification # _____

TIMMERMAN ENGINEERING CONSTRUCTION
Testing Contractor or Company

By: Signature

P.O. BOX 4479
Address
WALNUT CREEK, CA 94596

PN6827

Name of Facility Owner or Dealer | Address No. and Street(s) | City | State | Date of Test

15 TANK TO TEST

WEST
Identity by position

REG.
Brand and Grade

15a. BRIEF DIAGRAM OF TANK FIELD

16. CAPACITY

Nominal Capacity 550 Gallons

By most accurate capacity chart available 556 Gallons

From
- ☐ Station Chart
- ☐ Tank Manufacturer's Chart
- ☐ Company Engineering Data
- ☐ Charts supplied with
- ☐ Other

17. FILL-UP FOR TEST

Stick Water Bottom before Fill-up Ø to ⅛" in

Ø Gallons

47 in Tank Diameter

Inventory	Gallons	Total Gallons ea. Reading
		556
TOPOFF		5
		561

Transfer total to line 25a

18. SPECIAL CONDITIONS AND PROCEDURES TO TEST THIS TANK

☐ Water in tank ☐ Line(s) being tested with LVLLT ☐ High water table in tank excavation

See manual sections applicable. Check below and record procedure in log (27)

Use maximum allowable test pressure for all tests
Four pound rule does not apply to doublewalled tanks

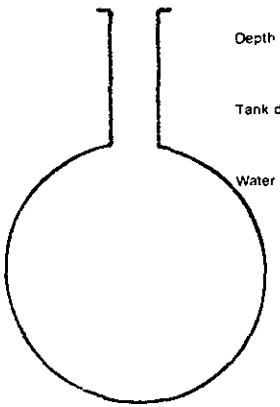
Complete section below

1 Is four pound rule required? Yes ☐ No ☑

2 Height to 12" mark from bottom of tank _____ in

3 Pressure at bottom of tank _____ P.S.I.

4 Pressure at top of tank _____ P.S.I.



Depth of burial _____ in

Tank dia _____ in.

Water table _____ in

NOTES

The above calculations are to be used for dry soil conditions to establish a positive pressure advantage, or when using the four pound rule to compensate for the presence of subsurface water in the tank area.

Refer to N F P A 30, Sections 2-3 2 4 and 2-7 2 and the tank manufacturer regarding allowable system test pressures

19. TANK MEASUREMENTS FOR TSTT ASSEMBLY

Bottom of tank to grade* 87 in

Add 30" for "T" probe assy. 30 in.

Total tubing to assemble — approximate 117 in

20. EXTENSION HOSE SETTING

Tank top to grade* 40 in

Extend hose on suction tube 6" or more below tank top _____ in.

*If Fill pipe extends above grade, use top of fill

22. Thermal-Sensor reading after circulation 15110 digits

66.69 °F Between

23. Digits per °F in range of expected change 326 digits

COEFFICIENT OF EXPANSION (Complete after circulation)

24a. Corrected A P I Gravity

Observed A P I Gravity _____

Hydrometer employed _____ H

Observed Sample Temperature _____ °F

Corrected A P I Gravity @ 60°F From Table A _____

Coefficient of Expansion for Involved Product From Table B _____

Transfer COE to Line 25b

21. VAPOR RECOVERY SYSTEM ☐ Stage I ☐ Stage II

24b. COEFFICIENT OF EXPANSION RECIPROCAL METHOD

Type of Product GAS

Hydrometer Employed 6 H

Temperature in Tank *After Circulation* 68.2 °F

Temperature of Sample 70 °F

Difference (+/-) +2 °F

Observed A P I Gravity 56.1

Reciprocal 1512 Page # 60

561 (Total quantity in full tank (16 or 17)) × 1512 (Reciprocal) = 0.3710317 (Volume change in this tank per °F)

Transfer to Line 26a

24c. FOR TESTING WITH WATER see Table C & D

Water Temperature after Circulation Table C _____ °F

Coefficient of Water Table D _____

Added Surfactant? ☐ Yes ☐ No Transfer COE to Line 25b

25. (a) _____ (Total quantity in full tank (16 or 17)) × (b) _____ (Coefficient of expansion for involved product) = (c) _____ (Volume change in this tank per °F) gallons

26. (a) 0.3710317 (Volume change per °F (25 or 24b)) × 326 (Digits per °F in test Range (23)) = 0.0011381 (Volume change per digit Compute to 4 decimal places)

This is test factor (a) .0011

27. Sensor Calibration ____ / ____ LOG OF TEST PROCEDURES			30 HYDROSTATIC PRESSURE CONTROL		31 VOLUME MEASUREMENTS (V) RECORD TO .001 GAL			34 TEMPERATURE COMPENSATION USE FACTOR (a)			38 NET VOLUME CHANGING EACH READING	39 ACCUMULATED CHANGE
28. DATE / TIME (24 hr)	Record details of setting up and running test. (Use full length of line if needed.)	29. Reading No	Standpipe Level in Inches: Beginning of Reading	Standpipe Level in Inches: Level to which Restored	32 Product in Graduate: Before Reading	32 Product in Graduate: After Reading	33. Product Replaced (-): Product Recovered (+)	35. Thermal Sensor Reading	36. Change Higher + Lower - (c)	37. Computation (c) × (a) = Expansion + Contraction -	Temperature Adjustment: Volume Minus Expansion (+) or Contraction (-) #33(V) — #37(T)	At Low Level compute Change per Hour (NFPA criteria)
07:30	ARRIVED JOB SITE											
	SET UP TEST EQUIPMENT											
08:30	START RECIRCULATION							15				
08:45	START HIGH LEVEL TEST	1		42				110		.0011		
09:00	HIGH LEVEL	2	42.3	42	.335	.360	+.025	155	+45	+.050	-.025	
09:15		3	42.5	42	.360	.400	+.040	205	+50	+.055	-.015	
09:30		4	42.5	42	.400	.440	+.040	246	+41	+.045	-.005	
				12								
09:35		1	12.8	12	.120	.180	+.060	266	+20	+.022		
09:40		2	12.3	12	.180	.205	+.025	285	+19	+.021	+.004	+.004
09:45		3	12.2	12	.205	.225	+.020	300	+15	+.017	+.003	+.007
09:50		4	12.2	12	.225	.245	+.020	321	+21	+.023	-.003	+.004
09:55		5	12.2	12	.245	.265	+.020	335	+14	+.015	+.005	+.009
10:00		6	12.2	12	.265	.285	+.020	351	+16	+.018	+.002	+.011
10:05		7	12.2	12	.285	.305	+.020	367	+16	+.018	+.002	+.013
10:10		8	12.2	12	.305	.325	+.020	382	+15	+.017	+.003	+.016
10:15		9	12.2	12	.325	.345	+.020	397	+15	+.017	+.003	+.019
10:20		10	12.2	12	.345	.365	+.020	416	+19	+.021	-.001	+.018
10:25		11	12.2	12	.365	.385	+.020	436	+20	+.022	-.002	+.016
10:30		12	12.2	12	.385	.405	+.020	451	+15	+.017	+.003	+.019
10:35		13	12.2	12	.405	.425	+.020	465	+14	+.015	+.005	+.024
10:40		14	12.2	12	.425	.445	+.020	482	+17	+.019	+.001	+.025
10:45		15	12.2	12	.445	.465	+.020	495	+13	+.014	+.006	+.031
10:50		16	12.2	12	.120	.140	+.020	512	+17	+.019	+.001	+.032
10:55		17	12.2	12	.140	.160	+.020	527	+15	+.017	+.003	+.035
11:00		18	12.2	12	.160	.180	+.020	548	+21	+.023	-.003	+.032
11:05		19	12.2	12	.180	.200	+.020	566	+18	+.020	+.000	+.032
11:10		20	12.2	12	.200	.220	+.020	581	+15	+.017	+.003	+.035

11:15		21	12.2	12	.220	.240	±.020	597	±13	±.014	±.006	±.038
11:20		22	12.2	12	.240	.260	±.020	614	±17	±.019	±.001	±.039
11:25		23	12.2	12	.260	.280	±.020	631	±17	±.019	±.001	±.040
11:30		24	12.2	12	.280	.300	±.020	645	±14	±.015	±.005	±.045
										±.045	÷2 =	±.023

P-T Tank Test Data Chart
Additional Info

1 Net Volume Change at Conclusion of Precision Test _____ gph

Signature of Tester _____

Date _____

2 Statement.

☐ Tank and product handling system has been tested tight according to the Precision Test Criteria as established by N.F.P.A. publication 329. This is not intended to indicate permission of a leak

OR

☐ Tank and product handling system has failed the tank tightness test according to the Precision Test Criteria as established by N.F.P.A. publication 329.

It is the responsibility of the owner and/or operator of this system to immediately advise state and local authorities of any implied hazard and the possibility of any reportable pollution to the environment as a result of the indicated failure of this system Heath Consultants Incorporated does not assume any responsibility or liability for any loss of product to the environment.

Tank Owner/Operator _____

Date _____

Data Chart for Tank System Tightness Test

PLEASE PRINT

1. OWNER Property [X] Tank(s) [X]

EBRPD 1500 SKYLINE BLVD., OAKLAND
Name — Address — Representative — Telephone

Name — Address — TED KREBS 843-8314 — Representative — Telephone

2. OPERATOR

Name — Address — Telephone

3. REASON FOR TEST (Explain Fully)

Annual compliance with State underground storage tank reg

4. WHO REQUESTED TEST AND WHEN

Name — Title — Company or Affiliation — Date

Address — Telephone

5. TANK INVOLVED

Use additional lines for manifolded tanks

Identify by Direction	Capacity	Brand/Supplier	Grade	Approx Age	Steel/Fiberglass
WEST	550	DIESEL			

6. INSTALLATION DATA

Location	Cover	Fills	Vents	Siphones	Pumps
EAST OF SHOP	DIRT	3"	2"		SUCTION
North inside driveway, Rear of station, etc	Concrete, Black Top, Earth, etc	Size, Titefill make, Drop tubes, Remote Fills	Size, Manifolded	Which tanks?	Suction, Remote, Make if known

7. UNDERGROUND WATER

Depth to the Water table _____"

Is the water over the tank? ☐ Yes ☐ No

8. FILL-UP ARRANGEMENTS

Tanks to be filled _____ hr. _____ Date Arranged by _____
Name — Telephone

Extra product to "top off" and run tank tester How and who to provide? Consider NO Lead.

Terminal or other contact for notice or inquiry _____
Company — Name — Telephone

9. CONTRACTOR, MECHANICS, any other contractor involved

10. OTHER INFORMATION OR REMARKS

Additional information on any items above Officials or others to be advised when testing is in progress or completed. Visitors or observers present during test, etc.

11. TEST RESULTS

Tests were made on the above tank systems in accordance with test procedures prescribed for as detailed on attached test charts with results as follows:

Tank Identification	Tight	Leakage Indicated	Date Tested
WEST	YES	-.002	9-18-89

12. SENSOR CERTIFICATION

10/87
Date

#2017
Serial No of Thermal Sensor

13. This is to certify that these tank systems were tested on the date(s) shown. Those indicated as "Tight" meet the criteria established by the National Fire Protection Association Pamphlet 328.

Technicians

1 Tim B. Soucie

Certification # C1114813405

2 _____

Certification # _____

TIMMERMAN
Testing Contractor or Company — By Signature

ENGINEERING CONSTRUCTION
P.O. BOX 4479
WALNUT CREEK, CA 94596
Address

PN6827

Name of Supplier Owner or Dealer | Address No and Street(s) | City | State | Date of Test

15 TANK TO TEST

West
Identity by position

DIESEL
Brand and Grade

15a. BRIEF DIAGRAM OF TANK FIELD

16. CAPACITY

Nominal Capacity 550 Gallons

By most accurate capacity chart available 556 Gallons

From
- ☐ Station Chart
- ☐ Tank Manufacturer's Chart
- ☐ Company Engineering Data
- ☐ Charts supplied with
- ☐ Other

17 FILL-UP FOR TEST

Stick Water Bottom before Fill-up Ø in. to ⅛"

Ø Gallons

46 Tank Diameter in.

	Gallons	Total Gallons ea Reading
Inventory		556
TOPOFF		10
		566

Transfer total to line 25a

18. SPECIAL CONDITIONS AND PROCEDURES TO TEST THIS TANK

☐ Water in tank ☐ Line(s) being tested with LVLLT ☐ High water table in tank excavation

See manual sections applicable. Check below and record procedure in log (27).

Use maximum allowable test pressure for all tests
Four pound rule does not apply to doublewalled tanks

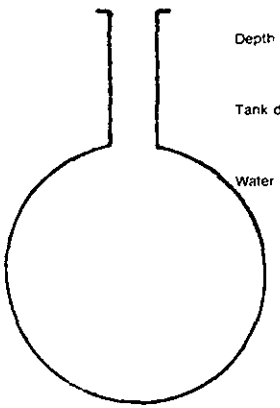
Complete section below

1 Is four pound rule required? Yes ☐ No ☑

2 Height to 12 mark from bottom of tank ____ in.

3 Pressure at bottom of tank ____ PSI

4 Pressure at top of tank ____ PSI



Depth of burial ____ in

Tank dia ____ in

Water table ____ in

NOTES.

The above calculations are to be used for dry soil conditions to establish a positive pressure advantage, or when using the four pound *rule to compensate for the presence of subsurface water in the tank* area

Refer to NFPA 30 Sections 2-3 2 4 and 2-7 2 and the tank *manufacturer regarding allowable system test pressures*

19. TANK MEASUREMENTS FOR TSTT ASSEMBLY

Bottom of tank to grade* 87 in

Add 30" for "T" probe assy 30 in.

Total tubing to assemble — approximate 117 in.

20. EXTENSION HOSE SETTING

Tank top to grade* 41 in

Extend hose on suction tube 6" or more below tank top ____ in

If Fill pipe extends above grade, use top of fill.

22. Thermal-Sensor reading after circulation 12167 digits

67.68 °F

Between

23. Digits per °F in range of expected change 326 digits

COEFFICIENT OF EXPANSION (Complete after circulation)

24a. Corrected A P.I. Gravity

Observed A.P I Gravity ____

Hydrometer employed ____ H

Observed Sample Temperature ____ °F

Corrected A P I Gravity @ 60°F. From Table A ____

Coefficient of Expansion for Involved Product From Table B ____

Transfer COE to Line 25b

21. VAPOR RECOVERY SYSTEM ☐ Stage I ☐ Stage II

24b. COEFFICIENT OF EXPANSION RECIPROCAL METHOD

Type of Product DIESEL

Hydrometer Employed 4 H

Temperature in Tank After Circulation 67.0 °F

Temperature of Sample 70 °F

Difference (+/-) +3 °F

Observed A.P.I Gravity 32.5

Reciprocal 2211 Page # 36

566 (Total quantity in full tank (16 or 17)) × 2211 (Reciprocal) = 0.2559927 (Volume change in this tank per °F)

Transfer to Line 26a.

24c. FOR TESTING WITH WATER see Table C & D

Water Temperature after Circulation Table C ____ °F

Coefficient of Water Table D ____

Added Surfactant? ☐ Yes ☐ No Transfer COE to Line 25b

25. (a) ____ (Total quantity in full tank (16 or 17)) × (b) ____ (Coefficient of expansion for involved product) = (c) ____ (Volume change in this tank per °F) gallons

26. (a) 0.2559927 (Volume change per °F (25 or 24b)) × 326 (Digits per °F in test Range (23)) = 0.0007852 (Volume change per digit Compute to 4 decimal places)

This is test factor (a) .0008

27. Sensor Calibration ____ / ____ LOG OF TEST PROCEDURES			30. HYDROSTATIC PRESSURE CONTROL		31. VOLUME MEASUREMENTS (V) RECORD TO .001 GAL.			34. TEMPERATURE COMPENSATION USE FACTOR (a)			38. NET VOLUME CHANGING EACH READING	39. ACCUMULATED CHANGE
28 DATE / TIME (24 hr)	Record details of setting up and running test. (Use full length of line if needed)	29. Reading No	Standpipe Level in Inches: Beginning of Reading	Standpipe Level in Inches: Level to which Restored	32. Product in Graduate: Before Reading	32. Product in Graduate: After Reading	33. Product Replaced (–): Product Recovered (+)	35. Thermal Sensor Reading	36. Change Higher + Lower – (c)	37 Computation (c) × (a) = Expansion + Contraction –	Temperature Adjustment: Volume Minus Expansion (+) or Contraction (–) #33(V) — #37(T)	At Low Level compute Change per Hour (NFPA criteria)
07:30	ARRIVED JOB SITE											
	SETUP TEST EQUIPMENT											
08:30	START RECIRCULATION							14				
09:05	START HIGH LEVEL TEST	1		42				687		.0008		
09:00	HIGH LEVEL	2	42.1	42	.335	.345	+.010	743	+56	+.045	-.035	
09:15		3	42.1	42	.345	.365	+.020	811	+68	+.054	-.034	
09:30		4	42.2	42	.365	.385	+.020	862	+51	+.041	-.021	
	START LOW LEVEL TEST			12								
09:35	LOW LEVEL	1	12.6	12	.385	.4135	+.050	894	+32	+.026	+.024	
09:40		2	12.3	12	.435	.460	+.025	919	+25	+.020	+.005	+.005
09:45		3	12.3	12	.125	.150	+.025	958	+39	+.031	-.006	-.001
09:50		4	12.2	12	.150	.170	+.020	982	+24	+.019	+.001	+.000
09:55		5	12.2	12	.170	.190	+.020	015	+33	+.026	-.006	-.005
10:00		6	12.2	12	.190	.210	+.020	048	+33	+.026	-.006	-.012
10:05		7	12.3	12	.210	.235	+.025	082	+34	+.027	-.002	-.014
10:10		8	12.2	12	.235	.255	+.020	111	+29	+.023	-.003	-.017
10:15		9	12.2	12	.255	.275	+.020	140	+29	+.023	-.003	-.020
10:20		10	12.2	12	.275	.295	+.020	168	+28	+.022	-.002	-.022
10:25		11	12.3	12	.295	.320	+.025	199	+31	+.025	+.000	-.022
10:30		12	12.2	12	.320	.340	+.020	231	+37	+.026	-.006	-.028
10:35		13	12.3	12	.340	.365	+.025	260	+29	+.023	+.002	-.026
10:40		14	12.2	12	.365	.385	+.020	287	+27	+.022	-.002	-.028
10:45		15	12.2	12	.385	.4105	+.020	321	+34	+.027	-.007	-.035
10:50		16	12.2	12	.4105	.4325	+.020	358	+37	+.030	-.010	-.045
10:55		17	12.3	12	.4125	.4350	+.025	389	+31	+.025	+.000	-.045
11:00		18	12.2	12	.4150	.4370	+.020	417	+28	+.022	-.002	-.047
11:05		19	12.2	12	.4220	.4390	+.020	438	+21	+.017	+.003	-.044
11:10		20	12.2	12	.4340	.4560	+.020	463	+25	+.020	+.000	-.044

11:15		21	12.2	12	.260	.280	+.020	494	+31	+.025	-.005	-.019
11:20		22	12.2	12	.280	.300	+.020	527	+33	+.026	-.006	-.055
11:25		23	12.2	12	.300	.320	+.020	556	+29	+.023	-.003	-.058
11:30		24	12.2	12	.320	.340	+.020	587	+31	+.025	-.005	-.063
										-.063	÷2=	-.032

P-T Tank Test Data Chart
Additional Info

1 Net Volume Change at Conclusion of Precision Test ____ gph

Signature of Tester _____

Date _____

2. Statement:

☐ Tank and product handling system has been tested tight according to the Precision Test Criteria as established by N F P A. publication 329. This is not intended to indicate permission of a leak.

OR

☐ Tank and product handling system has failed the tank tightness test according to the Precision Test Criteria as established by N.F.P.A. publication 329

It is the responsibility of the owner and/or operator of this system to immediately advise state and local authorities of any implied hazard and the possibility of any reportable pollution to the environment as a result of the indicated failure of this system. Heath Consultants Incorporated does not assume any responsibility or liability for any loss of product to the environment

Tank Owner/Operator _____

Date _____