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Test Pit Logs

Paul C. Rizzo Associates, Inc.
CONSULTANTS

TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. A.H.T. ELEVATION(FT.) 1,023.3 TEST PIT NO. LTP-1
COORD. (N) 558,243 DEPTH TO GWL. N/A DATE 11-1-90
(E) 2,517,284

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	TONO-SO LTP1-4		BLACK, PLASTIC PIECES OF BROKEN BATTERY CASINGS, WHITE ABSORBING BOOMS, TRACE OF ORANGE BROWN SILTSTONE AND SANDSTONE BOULDERS, WET 4.0'		—	0	EXCAVATION FILLED WITH SURFACE WATER HELD IN LAND-FILL. FUEL SHEEN VISIBLE ON SURFACE.
					—	0	
					—	0	
5			BOTTOM OF TEST PIT AT 4.0'				TEST PIT CONTINUED TO CAVE IN DURING ATTEMPTS TO EXCAVATE DEEPER.
10							
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: STEVE ULRICH OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 50' DUE EAST OF NORTHERN-MOST MANHOLE IN TEST PIT.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TJG

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. A.H.T. ELEVATION(FT.) 1,023.3 TEST PIT NO. LTP-2
COORD. (N) 558,171 DEPTH TO GWL. N/A DATE 11-1-90
(E) 2,517,107

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
5	(1) SEE BELOW		BLACK, PLASTIC PIECES OF BROKEN BATTERY CASINGS, TRACE AMOUNTS OF WHITE STIFF SLUDGE, WET ABSORBING BOOMS FOUND BETWEEN 5' AND 8.8' SANDSTONE BOULDERS > 1' DIAMETER FOUND AT 6 FEET.		—	0	EXCAVATION FILLED WITH SURFACE WATER HELD IN LAND-FILL.
					—	0	FROM 2'-8.8' GAS BUBBLES RISING TO SURFACE.
					—	0	FUEL SHEEN VISIBLE ON SURFACE DURING EXCAVATION. SHEEN QUICKLY EVAPORATES.
			8.8'		—	0	
10			BOTTOM OF TEST PIT AT 8.8'				
			(1) TWO COMPOSITE SAMPLES WERE COLLECTED OF THE TWO MOST PROMINENT MATERIALS ENCOUNTERED. TONO-SO-LTP2-WHITE TONO-SO-LTP2-BLACK				
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: STEVE ULRICH OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 80' WEST OF NORTHERN-MOST MANHOLE IN LANDFILL.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 39-599 PAGE 1 OF
FIELD ENG./GEO. A.H.T. ELEVATION(FT.) 1,023.1 TEST PIT NO. LTP-3
COORD. (N) 558,075 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-1-90
(E) 2,517,257

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BLACK PLASTIC PIECES OF BROKEN BATTERY CASINGS, TRACE TO SOME LARGE SANDSTONE BOULDERS AND PIECE OF TIRE INNER TUBE AT APPROXIMATELY 6', WET		—	0	EXCAVATION FILLED WITH SURFACE WATER HELD IN LAND-FILL.
					—	0	
					—	0	FUEL SHEEN VISIBLE ON SURFACE AND EMANATING FROM SIDES OF TEST PIT. SLIGHT ODOR TO MATERIAL EXCAVATED.
5					—	0	
	TONO-SO LTP3-6.5		6.5'		—	0	
			BOTTOM OF TEST PIT AT 6.5'				TEST PIT CONTINUED TO CAVE IN DURING ATTEMPTS TO EXCAVATE DEEPER.
10							
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: STEVE ULRICH OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 30' NORTH OF SOUTHERN-MOST MANHOLE IN LANDFILL.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1014.7 TEST PIT NO. TP-1
COORD. (N) 558,295 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-9-90
(E) 2,516,876

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			ASPHALT MIXED WITH BATTERY CASINGS AND 0.1' LAYER OF COAL FRAGMENTS BETWEEN 0.6' AND 0.7' 0.7'		4,783	0	
					684	0	
			ORANGE BROWN TO BROWN CLAYEY SAND AND GRAVEL, SOME ORANGE AND GRAY SANDSTONE BOULDERS, BETWEEN 1.5' AND 1.6' BLACK SILT WITH SOME BATTERY SCRAPS AND WOOD CHIPS, DRY TO MOIST	gc	239	0	
	TONO-SO S1-3				0	0	
5			BLACK SILTY CLAY, WET 5.1' 5.0'	cl	0	0	
			BOTTOM OF TEST PIT AT 5.1'				
10							
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: DON SANTMYER OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 40' EAST AND 20' NORTH OF THE NORTHEAST CORNER OF THE CRUSHER BUILDING.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,012.6 TEST PIT NO. TP-2
COORD. (N) 558,054 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-9-90
(E) 2,516,227

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BROWN TO ORANGE BROWN SAND TO GRAVELLY SAND, SOME BOULDERS (>1'DIAM.) AND CLAY, TRACE OF SILT, DRY TO WET	gc	1,318	0	
					478	0	
	TONO-SO S2-3				0	0	
5	TONO-SO S2-DEC-6		6.0'		—	0	
			BOTTOM OF TEST PIT AT 6.0'				
10							
15							
20							

NOTES:
BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: DON SANTMYER OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 40' EAST OF WEST FENCE AND 10' NORTH OF BUMPER AT THE END OF RAILROAD TRACKS.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. A.H.T. ELEVATION(FT.) 1009.4 TEST PIT NO. TP-3
COORD. (N) 557,806 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-8-90
(E) 2,516,748

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			REDDISH BROWN MEDIUM STIFF CLAY, TRACE TO SOME GRAVEL, GRASS AND ROOTS IN THE TOP 0.2', DRY 0.8'	cl	3,748	0	
			ORANGE BROWN CLAYEY SAND, SOME GRAVEL AND LARGE SANDSTONE BOULDERS, DRY	sc	491	0	
			4.0'		953	0	
5	TONO-SO S3-3		BLACK FINE TO MEDIUM SAND INTERMIXED WITH SLAG BETWEEN 5.4' AND 8.2', TRACE AMOUNTS OF GRAVEL SIZE COAL FRAGMENTS, DRY		141	0	MINE SPOIL INTERMIXED WITH SLAG
	TONO-SO S3-8		8.2'		0	0	
			BOTTOM OF TEST PIT AT 8.2'				
10							
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: DON SANTMYER OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 20' DUE WEST OF WATER TANK USED FOR SURFACE WATER TREATMENT.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. A.H.T. ELEVATION(FT.) 1027.0 TEST PIT NO. TP-4
COORD. (N) 558,490 DEPTH TO GWL. NOT ENCOUNTERED DATE 10-26-90
(E) 2,516,076

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BROWN TO ORANGE BROWN SAND TO GRAVELLY SAND, SOME ORANGE AND GRAY COBBLES, BOULDERS (> 1' DIAM.) AND PIECES OF BROKEN BATTERY CASINGS ON THE SURFACE, MOIST	gp	5,867	0	
	TONO-SO S4-1.5				3,247	0	
					463	0	
5	TONO-SO S4-5		5.0'		138	0	
			BOTTOM OF TEST PIT AT 5.0'				
10							
15							
20							

NOTES:

BACKHOE: CASE 580K WITH 24" BUCKET
BACKHOE OPERATOR: JEFF CORRAN OF HARDIN-HUBER INC.
LOCATION: NORTHWEST CORNER OF SITE, ADJACENT TO PILE OF BATTERY CASING AND APPROXIMATELY 20' SOUTH OF BLUE PIN FLAG #158.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF
FIELD ENG./GEO. A.H.T. ELEVATION(FT.) 1,019.6 TEST PIT NO. TP-5
COORD. (N) 558,406 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-8-90
(E) 2,516,424

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BLACK BROWN PIECES OF BATTERY CASING, DRY 0.3'		0	0	
			ORANGE BROWN CLAYEY SAND AND GRAVEL, MANY LARGE SANDSTONE AND SILTSTONE BOULDERS, DRY TO MOIST	gc	1,497	0	
					4,422	0	
5					2,181	0	
	TONO-SO S5-8				0	5	
10			10.0'		0	0	
			BOTTOM OF TEST PIT AT 10.0'				
15							
20							

NOTES:
BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: DON SANTMYER OF HARDIN-HUBER INC.
LOCATION: ADJACENT TO MW-17D LOCATION ALONG EAST-WEST ASPHALT ACCESS ROAD BEHIND REFINERY BUILDING.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,024.3 TEST PIT NO. TP-6
COORD. (N) 558,556 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-1-90
(E) 2,516,346

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BLACK, WHITE, RED BATTERY CASINGS, DRY 0.35'		9,969	0	
	TONO-SO S6-1.5		BROWN TO ORANGE BROWN, CLAYEY SAND AND GRAVEL, SOME COBBLES AND BOULDERS, DRY	gc	0	0	
			3.0'		61	0	
			BOTTOM OF TEST PIT AT 3.0'				
5							
10							
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: STEVE ULRICH OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 150' EAST OF LARGE BATTERY SCRAP PILE IN BACK OF SITE AND 20' SOUTH OF NORTH FENCE.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. A.H.T. ELEVATION(FT.) 1,025.7 TEST PIT NO. TP-7
COORD. (N) 558,602 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-6-90
(E) 2,516,606

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BLACK SILTY SAND, SOME BROKEN BATTERY CASING, DRY	sm	10,220 1,731	0 0	
	TONO-SO S7-3		2.5' ORANGE BROWN CLAYEY SAND, SOME LARGE SANDSTONE BOULDERS, DRY	sc	1,600	30	
			3.0' BLACK FINE TO MEDIUM SAND, SOME REFUSE, TRACE AMOUNTS OF COAL FRAGMENTS AND GRAVEL, DRY		3,793	0	MINE SPOIL
5			6.5' ORANGE BROWN SILTY CLAY, TRACE AMOUNTS OF LARGE SANDSTONE BOULDERS, SAND GRAVEL, MOIST	cl			
10	TONO-SO S7-10		10.0'		–	0	
			BOTTOM OF TEST PIT AT 10.0'				
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: DON SANTMYER OF HARDIN-HUBER INC.
LOCATION: NORTHEAST CORNER OF SITE, APPROXIMATELY 20' NORTH OF THE EDGE OF ASPHALT.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 39-599 PAGE 1 OF 1
FIELD ENG./GEO. A.H.T. ELEVATION(FT.) 1,025.3 TEST PIT NO. TP-8
COORD. (N) 558,585 DEPTH TO GWL. NOT ENCOUNTERED DATE 10-25-90
(E) 2,516,828

DEPTH (FT.)	SAMPLE No. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	TONO-SO S8-0		BROWN TO REDDISH BROWN, SILTY SAND, SOME LARGE SANDSTONE BOULDERS WITH DIAMETERS > 6", DRY TO MOIST	sw	7,812	0	SOME PIECES OF PLASTIC BATTERY CASING
					444	0	
			3.25'		344	0	
			BLACK MEDIUM SAND, SOME GRAVEL AND LARGE BOULDERS AND COAL FRAGMENTS, TRACE OF SILT, MOIST	sw			PLASTIC PIECES VISIBLE ON BOTTOM OF TEST PIT
5	TONO-SO S8-5		5.5'		113	0	
			BOTTOM OF TEST PIT AT 5.5'				
10							
15							
20							

NOTES:
BACKHOE: CASE 580K WITH 24" BUCKET
BACKHOE OPERATOR: JEFF CORRAN OF HARDIN-HUBER INC.
LOCATION: NORTHEAST CORNER OF FENCED PROPERTY, APPROXIMATELY 5' SOUTH OF BLUE PIN FLAG #151.
* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,014.5 TEST PIT NO. TP-9
COORD. (N) 558,289 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-12-90
(E) 2,516,338

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			WEATHERED CONCRETE 0.5'		—	0	
			BROWN, SANDY AND GRAVELLY CLAY, SOME COBBLES AND BOULDERS, DRY TO MOIST	cl	402	0	
					309	0	
5	TONO-SO S9-5				0	0	
			7.0'		0	0	
			BOTTOM OF TEST PIT AT 7.0'				
10							
15							
20							

NOTES:

BACKHOE: CASE 580K WITH 24" BUCKET
BACKHOE OPERATOR: DON SANTMYER OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 10' NORTH AND 10' EAST OF THE NORTHEAST CORNER OF THE RAZED BUILDING.
* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TJG

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. A.H.T. ELEVATION(FT.) 1,017.5 TEST PIT NO. TP-10
COORD. (N) 558,368 DEPTH TO GWL. NOT ENCOUNTERED DATE 10-25-90
(E) 2,516,520

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	TONO-SO S10-0		BLACK FINE SAND, TRACE TO SOME GRAVEL AND COBBLES, DRY 0.75'	sm	6,417	0	MINE SPOIL
			LIGHT ORANGE BROWN SAND, SOME LARGE BOULDERS (SOME > 1' DIAMETER), TRACE OF CLAY, DRY	sw	0	0	
					27	0	
	TONO-SO S10-3		3.5'		57	0	
			BOTTOM OF TEST PIT AT 3.5'				
5							
10							
15							
20							

NOTES:

BACKHOE: CASE 580K WITH 24" BUCKET
BACKHOE OPERATOR: JEFF CORRAN OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 300' NORTH OF REFINERY BUILDING, NEAR TWO LARGE SCRAP PILES OF WOOD AND METALS.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,014.2 TEST PIT NO. TP-11
COORD. (N) 558,442 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-9-90
(E) 2,516,780

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			WHITE PASTE SLUDGE AND BATTERY SCRAPS, WET 0.4'		1,742	0	
			BLACK, MEDIUM TO COARSE SLAG, TRACE TO SOME SILT, SAND AND GRAVEL, DRY TO WET	gm	424	0	
	TONO-SO S11-3A		2.8'		41	0	
					109	0	MINE SPOIL
	TONO-SO S11-3B		BROWN TO ORANGE BROWN CLAY, SOME SAND, GRAVEL, AND LARGE BOULDERS, MOIST	cl	2,060	0	
5	TONO-SO S11-5		5.5'		0	0	
			BOTTOM OF TEST PIT AT 5.5'				
10							
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: DON SANTMYER OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 20' WEST OF SOUTHEAST WALL OF BATTERY STORAGE AREA.
* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,014.2 TEST PIT NO. TP-12
COORD. (N) 558,327 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-12-90
(E) 2,516,728

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BLACK ASPHALT AND CONCRETE 0.5'			0	
			BLACK, SANDY AND GRAVELLY SILT, SOME COAL FRAGMENTS, DRY TO MOIST 2.6'	gm	12,570	0	MINE SPOIL AND FLY ASH. GRIDS FROM BATTERY CASINGS
	TONO-SO S12-3		ORANGE BROWN TO BROWN, CLAYEY SAND AND GRAVEL, SOME COBBLES AND BOULDERS, DRY TO MOIST	gc	301	0.7	
					0	1.3	
5	TONO-SO S12-5				0	4.9	
							BATTERY SCRAPS AT 7'
			9.0'		0	0	
			BOTTOM OF TEST PIT AT 9.0'				
10							
15							
20							

NOTES:

BACKHOE: CASE 580K WITH 24" BUCKET
BACKHOE OPERATOR: DON SANTMYER OF HARDIN-HUBER INC.
LOCATION: NEAR BATTERY BREAKING AREA, NEXT TO PILE OF BATTERY SCRAPS AND APPROXIMATELY 40' TO 60' WEST OF SUMP.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,014.7 TEST PIT NO. TP-13
COORD. (N) 558,156 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-12-90
(E) 2,516,697

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			REINFORCED CONCRETE 0.8'				
			BLACK, SILT AND GRAVEL, TRACE OF COBBLES, DRY TO MOIST 1.4'	gm	2,261	0	MINE SPOIL
			BROWN, SAND AND GRAVELLY SAND, SOME CLAY, COBBLES, AND BOULDERS, DRY TO MOIST 2.8'	gc	2,607	0	
	TONO-SO S13-3A				61	0	
	TONO-SO S13-3B		BLACK, SILT AND GRAVEL, TRACE OF BOULDERS AND COBBLES, DRY TO MOIST	gm			
5					31	0	
			6.2'		0	0	
			BOTTOM OF TEST PIT AT 6.2'				
10							
15							
20							

NOTES:

BACKHOE: CASE 580K WITH 24" BUCKET
BACKHOE OPERATOR: DON SANTMYER OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 20' NORTH OF THE NORTHEAST CORNER OF THE REFINERY BUILDING.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

F-193
TJG

AR301970

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1020.8 TEST PIT NO. TP-14
COORD. (N) 558,372 DEPTH TO GWL. NOT ENCOUNTERED DATE 10-30-90
(E) 2,516,942

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	TONO-SO S14-0.5		BLACK, COAL FRAGMENTS AND SILT, SOME SAND, DRY TO MOIST 0.5'	gm	17,010	0	MINE SPOIL
			BLACK, COARSE TO FINE SLAG, TRACE OF SILT, DRY TO MOIST	sp	5,431	0	
					10,410	0	
5					5,021	0	
10	TONO-SO S14-10		10.0'		190	0	
			BOTTOM OF TEST PIT AT 10.0'				
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: STEVE ULRICH OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 5' EAST OF MW-14.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. A.H.T. ELEVATION(FT.) 1,013.5 TEST PIT NO. TP-15
COORD. (N) 558,183 DEPTH TO GWL. 8.0' DATE 10-25-90
(E) 2,516,920

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BLACK ASPHALT, DRY 0.5'		–	0	THIS TEST PIT WAS LOCATED ADJACENT TO A CONCRETE SLAB. THE CONCRETE SLAB WAS APPROX. 12" THK. DURING EXCAVATION AN APPARENT CONCRETE WALL WITH A MIN. DEPTH OF 7.5' WAS FOUND. SOIL ADJACENT TO THIS WALL WAS MOIST TO WET AND CONTINUED TO CAVE IN AS EXCAVATION PROGRESSED. THE SOIL WAS BLACK SILTY SAND WITH SOME ROCK FRAGMENTS. READINGS FROM X-RAY FLUORESCENCE SCREENING DEVICE INDICATED A GENERALLY HIGHER LEAD CONTENT THAN THE SOIL ON THE OPPOSITE SIDE OF THE EXCAVATION. IT IS BELIEVED THIS CONCRETE WALL IS A DRAINAGE CONTROL STRUCTURE ALLOWING FLOW TO CHANGE DIRECTION. AT 8' WATER ENTERED THE PIT FROM THE CONCRETE WALL SIDE ONLY.
	TONO-SO S15-1		BLACK SILTY SAND, SOME BOULDERS, SOME BATTERY CASING FRAGMENTS 1.5'	sw	12,900	0	
			BROWN SILT, SOME SAND, MANY BOULDERS, TRACE CLAY, DRY TO MOIST 3.5'		113	0	
			YELLOW TAN SAND, TRACE SILT AND COBBLES DRY TO MOIST 5.0'	sw	3,122	0	
5			BLACK SAND, SOME SILT, SOME BOULDERS, MOIST	sm			
	TONO-SO S15-9		9.5'		–	0	
10			BOTTOM OF TEST PIT AT 9.5'				
15							
20							

NOTES:

BACKHOE: CASE 580K WITH 24" BUCKET
BACKHOE OPERATOR: JEFF CORRAN OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 30' EAST OF THE CRUSHER BUILDING, IN THE VICINITY OF THE BASE FOR A WATER TANK.
* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. A.H.T. ELEVATION(FT.) 1,011.9 TEST PIT NO. TP-16
COORD. (N) 557,777 DEPTH TO GWL. NOT ENCOUNTERED DATE 10-25-90
(E) 2,516,388

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	TONO-SO S16-0.5		BLACK ASPHALT, DRY 0.5'		3,123	0	
			BROWN SAND, TRACE OF CLAY, SOME GRAVEL, MOIST 1.25'	sw	1,123	0	
			BLACK AND BROWN SANDY GRAVEL/GRAVELLY SAND, SOME COAL FRAGMENTS AND GRAY SANDSTONE BOULDERS, TRACE OF CLAY, MOIST 1.75'	gw sp	0	0	
	TONO-SO S16-3		LIGHT ORANGE BROWN, SAND, TRACE OF CLAY AND TRACE TO SOME GRAVEL, MOIST 3.5'		0	0	
			BOTTOM OF TEST PIT AT 3.5'				
5							
10							
15							
20							

NOTES:

BACKHOE: CASE 580K WITH 24" BUCKET
BACKHOE OPERATOR: JEFF CORRAN OF HARDIN-HUBER INC.
LOCATION: SOUTHWEST AREA OF FENCED AREA, APPROXIMATELY 150' NORTH OF ENTRANCE GATE.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. A.H.T./D.A.C. ELEVATION(FT.) 1,011.9 TEST PIT NO. TP-17
COORD. (N) 558,028 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-8-90
(E) 2,516,923

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BLACK CRACKED ASPHALT, DRY 0.3'		12	0	
			BLACK FINE TO MEDIUM SAND, SOME SLATE, SHALE, AND COAL FRAGMENTS, DRY 2.0'	gp	1,912	0	MINE SPOIL
			BROWN CLAYEY SAND AND GRAVEL, SOME SANDSTONE BOULDERS, DRY TO MOIST 2.5'	gc sw			
	TONO-SO S17-3		BLACK FINE TO MEDIUM SAND, TRACE AMOUNTS OF COAL FRAGMENTS, DRY 3.0'		926	1.5	MINE SPOIL
5	TONO-SO S17-5		BROWN CLAYEY SAND, SOME GRAVEL, COBBLES AND LARGE SANDSTONE BOULDERS, MOIST 6.0'	gc	48	1.7	
			BLACK FINE TO MEDIUM SILT, SOME SAND, TRACE AMOUNTS OF COAL SLAG, DRY TO MOIST	sm	0	0	FLY ASH INTER-MIXED WITH COAL SLAG
10			10.0'		0	0	
			BOTTOM OF TEST PIT AT 10.0'				
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: DON SANTMYER OF HARDIN-HUBER INC.
LOCATION: ADJACENT TO MW-11D, APPROXIMATELY 100' SOUTH OF REFINERY BUILDING.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,013.5 TEST PIT NO. TP-18
COORD. (N) 558,178 DEPTH TO GWL. NOT ENCOUNTERED DATE 10-30-90
(E) 2,516,971

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BLACK SILT AND COAL FINES, TRACE TO SOME COAL FRAGMENTS, DRY TO MOIST	sm	6,772	0	MINE SPOIL
					5,813	0	
					3,419	0	
5	TONO-SO S18-5				1,273	0	AT 4', MATERIAL BEGAN TO CAVE IN
	TONO-SO S18-8		8.0'		159	0	
			BOTTOM OF TEST PIT AT 8.0'				
10							
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: STEVE ULRICH OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 35' NORTH AND 45' WEST OF THE SOUTHWEST CORNER OF THE CRUSHER BUILDING.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 39-599 PAGE 1 OF 1
FIELD ENG./GEO. A.H.T./D.A.C. ELEVATION(FT.) 1,012.8 TEST PIT NO. TP-19
COORD. (N) 557,898 DEPTH TO GWL. NOT ENCOUNTERED DATE 10-24-90
(E) 2,516,697

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BLACK WEATHERED ASPHALT 0.3'		0	0	
			BLACK, MINE SPOIL, SOME SLATE AND SHALE FRAGMENTS, BOULDERS (>1'DIAM.), DRY 2.0'	gp	6,805	0	MINE SPOIL
	TONO-SO S19-3		BROWN SILTY SAND, SOME LARGE BROWN AND GRAY SANDSTONE BOULDERS, AND CONGLOMERATE (WITH QUARTZITE) BOULDERS, DRY 4.0'	gm	312	0	YELLOW AND RED BRICKS
5	TONO-SO S19-5		BLACK COAL SLAG, DRY 5.5'	gm	33	0	
			BOTTOM OF TEST PIT AT 5.5'				
10							
15							
20							

NOTES:

BACKHOE: CASE 580K WITH 24" BUCKET
BACKHOE OPERATOR: JEFF CORRAN OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 30' SOUTH OF MAINTENANCE SHOP AND 100' NORTHWEST OF WATER TANK.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF
FIELD ENG./GEO. A.H.T. ELEVATION(FT.) 1,008.0 TEST PIT NO. TP-20
COORD. (N) 557,974 DEPTH TO GWL. NOT ENCOUNTERED DATE 10-30-90
(E) 2,517,056

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BLACK SILT AND COAL FRAGMENTS, TRACE TO SOME BLACK COARSE SAND, TRACE GRAVEL, DRY	gm	11,700	0	MINE SPOIL
					7,900	0	
					3,720	0	
5	TONO-SO S20-5				1,400	0	
					195	0	
10	TONO-SO S20-10		10.0'		32	0	
			BOTTOM OF TEST PIT AT 10.0'				
15							
20							

NOTES:
BACKHOE: CASE 580K WITH 24" BUCKET
BACKHOE OPERATOR: JEFF CORRAN OF HARDIN-HUBER INC.
LOCATION: IN DRAINAGE DITCH, DIRECTLY WEST OF LANDFILL APPROXIMATELY 30' DUE EAST OF SMALL BUILDING.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,010.9 TEST PIT NO. TP-21
COORD. (N) 557,924 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-2-90
(E) 2,517,006

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BROWN SAND AND GRAVELLY SAND, TRACE OF SILT, DRY TO MOIST 1.0'	gp	0	0	
			BLACK SILT, SAND, AND COAL FRAGMENTS, SOME COBBLES AND BOULDERS, DRY TO MOIST 2.0'	gm	3,830	0	MINE SPOIL
			BROWN TO ORANGE BROWN, SILTY CLAYEY GRAVEL, SOME COBBLES AND BOULDERS, TRACE SAND, DRY	gc	3,481	0	
5	TONO-SO S21-5				1,229	0	
			6.5'				
			BLACK, COAL FRAGMENTS AND SLAG, SOME SILT, DRY TO MOIST	gm			MINE SPOIL
10	TONO-SO S21-10		10.0'		63	0	
			BOTTOM OF TEST PIT AT 10.0'				
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: STEVE ULRICH OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 30' SOUTH OF GENERATOR BUILDING.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,010.6 TEST PIT NO. TP-22
COORD. (N) 557,795 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-13-90
(E) 2,516,697

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			REDDISH BROWN GRAVEL AND SAND, DRY TO MOIST 0.2'	gp	1,022	0	
	TONO-SOIL S22-1.5		BROWN SILT AND SAND, SOME GRAVEL, DRY TO MOIST 1.0'	gm gm	49	0	
			BLACK, SANDY GRAVELLY SILT, TRACE COBBLES, DRY 1.4'	cl	0	0	
5			BROWN TO ORANGE BROWN SAND AND SILTY CLAY, SOME GRAVEL, COBBLES, AND BOULDERS (> 1' DIAM.), MOIST 3.4'				
			BOTTOM OF TEST PIT AT 3.4'				
10							
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: DON SANTMYER OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 50' EAST OF RED BRICK BUILDING.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) TEST PIT NO. TP-23
COORD. (N) DEPTH TO GWL. DATE
(E)

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			THIS TEST PIT WAS NOT EXCAVATED				
5							
10							
15							
20							

NOTES:

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TJG

AR301980

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,009.9 TEST PIT NO. TP-24
COORD. (N) 557,890 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-9-90
(E) 2,516,998

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BROWN SILT, TRACE CLAY, DRY TO MOIST 0.7'	ml	7	0	
			BLACK, COARSE TO FINE SAND, COAL FRAGMENTS, SOME COBBLES AND BOULDERS, DRY TO MOIST	gp	7,129	0	MINE SPOIL
					4,481	0	
5					6,957	0	PIECE OF ASPHALT 1'X 2'X 3' FOUND AT 5'
			8.0' BLACK, SILT AND SAND, DRY TO MOIST	sm			PIECE OF METAL TUBING AND LID TO 5 GALLON CONTAINER FOUND AT 7'
10	TONO-SO S24-10		10.2'		412	0	
			BOTTOM OF TEST PIT AT 10.2'				
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: DON SANTMYER OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 15' EAST OF SURFACE WATER COLLECTION SUMP.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. A.H.T. ELEVATION(FT.) 1,009.3 TEST PIT NO. TP-25
COORD. (N) 557,735 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-8-90
(E) 2,516,813

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			ORANGE BROWN GRAVELLY SANDY CLAY, SOME COBBLES AND TRACE AMOUNTS OF BOULDERS, DRY 0.4'	gc	209	0	MINE SPOIL
			BLACK SAND, SOME CLAY, TRACE OF MEDIUM BOULDERS, DRY 1.0'	gc			
			MEDIUM STIFF REDDISH CLAY, SOME GRAVEL AND SAND, DRY 1.4'	cl	1	0	
			BLACK FINE TO MEDIUM SAND, TRACE TO SOME CLAY, SOME MEDIUM BOULDERS, TRACE AMOUNTS OF COAL FRAGMENTS AND A LAYER OF ORANGE BROWN CLAYEY SAND WITH SOME GRAVEL BETWEEN 1.9' AND 2.1', DRY 3.1'	gc	2,204	0	MINE SPOIL
5			DARK BROWN SANDY CLAY, SOME SILT, TRACE AMOUNTS OF GRAVEL AND COBBLES, DRY 5.0'	sc			
	TONO-SO S25-7		BLACK FINE TO MEDIUM SAND, SOME COAL FRAGMENTS, DRY TO MOIST 7.0'	sc	612	0	MINE SPOIL PIECE OF WOOD AT 7.0'
			BOTTOM OF TEST PIT AT 7.0'		25	0	
10							
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: DON SANTMYER OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 12' SOUTH OF WATER TANK USED FOR WATER TREATMENT.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,006.2 TEST PIT NO. TP-26
COORD. (N) 557,815 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-5-90
(E) 2,516,938

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BROWN TO REDDISH BROWN, CLAY, SOME SAND AND GRAVEL SOME BOULDERS (≥ 2' DIAM.), DRY TO MOIST, WITH COAL FRAGMENTS AND SAND LAYER BETWEEN 2.6'AND 2.8'	cl	0	0	
					0	0	
	TONO-SO S26-2.6				1,758	0	
5	TONO-SO S26-5				0	0	
10			10.0'		0	0	
			BOTTOM OF TEST PIT AT 10.0'				
15							
20							

NOTES: BACKHOE: CASE 580D WITH 24" BUCKET WAS USED TO EXCAVATE THE INITIAL 2.5'. A CASE 580K WITH 24" BUCKET USED TO EXCAVATE FROM 2.5' TO 10' BECAUSE THE CASE 580D REQUIRED MAINTENAN
BACKHOE OPERATOR: DON SANTMYER OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 20' SOUTH OF THE SUMP FOR SURFACE WATER TREATMENT, IN LAGOON AREA.
* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) _____ TEST PIT NO. TP-27
COORD. (N) _____ DEPTH TO GWL. _____ DATE _____
(E) _____

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			THIS TEST PIT WAS NOT EXCAVATED				
5							
10							
15							
20							

NOTES:

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TJG

AR301984

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,005.7 TEST PIT NO. TP-28
COORD. (N) 557,812 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-5-90
(E) 2,517,004

DEPTH (FT.)	SAMPLE No. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	TONO-SO S28-0.5		RED BROWN CLAY, TRACE OF GRAVEL, SAND, AND BOULDERS, DRY TO MOIST 0.4'	cl	1,254	0	
			BLACK, SANDY CLAY, TRACE OF GRAVEL, DRY TO MOIST 0.8'	cl sm	2,751	0	
			RED BROWN CLAY, TRACE OF GRAVEL, SAND, AND BOULDERS, DRY TO MOIST 1.4'	cl	0	0	
			BLACK, SANDY SILT, SOME GRAVEL AND BOULDERS, DRY TO MOIST 1.9'	gm sw			
5	TONO-SO S28-5		RED BROWN CLAY, TRACE OF GRAVEL, SAND, AND BOULDERS, DRY TO MOIST 3.0'		0	0	
			BLACK, COARSE TO MEDIUM SLAG, DRY TO MOIST 4.0'				COAL SLAG
			ORANGE MEDIUM TO FINE SAND, DRY TO MOIST 4.5'				
			ORANGE, BROWN AND MOSTLY BLACK SLAG, MEDIUM TO COARSE, DRY TO MOIST 11.0'	gm			
10					0	0	
			BOTTOM OF TEST PIT AT 11.0'				
15							
20							

NOTES:

BACKHOE: CASE 580K WITH 24" BUCKET
BACKHOE OPERATOR: DON SANTMYER OF HARDIN-HUBER INC.
LOCATION: SOUTHEAST CORNER OF LAGOON.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TJG

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CONSULTANTS

TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,005.7 TEST PIT NO. TP-29
COORD. (N) 557,875 DEPTH TO GWL. NOT ENCOUNTERED DATE 10-26-90
(E) 2,517,053

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BLACK, COARSE TO FINE SILT AND SAND, SOME GRAVEL AND COAL FRAGMENTS, DRY TO MOIST	gm	8,060	0	MINE SPOIL
					5,001	0	
			3.5'		2,462	0	
			ORANGE TO ORANGE BROWN CLAY AND SILT, DRY TO MOIST 3.7'	cl			
5	TONO-SO S29-5		BLACK, COARSE TO FINE SILT AND SAND, SOME GRAVEL AND COAL FRAGMENTS, DRY TO MOIST 6.0'	gm	4,450	0	MINE SPOIL
			BLACK, BROWN, AND RED SLAG, DRY TO MOIST 6.5'	sp			COAL SLAG
			BLACK, COARSE TO FINE SILT AND SAND, SOME GRAVEL AND COAL FRAGMENTS, MOIST TO WET	gm			MINE SPOIL
10	TONO-SO S29-10		10.0'		0	0	
			BOTTOM OF TEST PIT AT 10.0'				
15							
20							

NOTES:
BACKHOE: CASE 580K WITH 24" BUCKET
BACKHOE OPERATOR: JEFF CORRAN OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 20' NORTH OF CULVERT NEAR LANDFILL AND LAGOON.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TJG

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CONSULTANTS

TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,007.9 TEST PIT NO. TP-30
COORD. (N) 557,705 DEPTH TO GWL. NOT ENCOUNTERED DATE 10-31-90
(E) 2,516,791

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BROWN TO ORANGE BROWN, GRAVELLY SILT, SOME CLAY AND COBBLES, DRY TO MOIST	gm	75	0	PLANT ROOTS
					636	0	
					876	0	BRICK FOUND AT 2.5'
5					272	0	
			6.0'				
			BLACK, SLAG, SOME COAL FRAGMENTS AND SILT, MOIST	gm	0	0	COAL SLAG
10	TONO-SO S30-10.0		10.0'		78	0	
			BOTTOM OF TEST PIT AT 10.0'				
15							
20							

NOTES:
BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: STEVE ULRICH OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 20' SOUTH OF OIL TANK AND 10' NORTH OF FENCE.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,004.7 TEST PIT NO. TP-31
COORD. (N) 557,703 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-2-90
(E) 2,516,857

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	TONO-SO S31-1.5A		ORANGE BROWN, SANDY AND GRAVELLY CLAY, SOME SILT, COBBLES, AND LARGE BOULDERS, DRY TO MOIST	gc	678	0	
	TONO-SO S31-1.5B				117	0	
			3.0'		6	0	
			BOTTOM OF TEST PIT AT 3.0'				
5							
10							
15							
20							

NOTES:
BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: STEVE ULRICH OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 3' FROM THE SITE FENCE IN FRONT OF LPG TANK AND BETWEEN THE FENCE AND RAILROAD TRACKS.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,003.6 TEST PIT NO. TP-32
COORD. (N) 557,736 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-2-90
(E) 2,516,959

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	TONO-SO S32-1.5		BLACK BROWN TO ORANGE BROWN, SANDY AND GRAVELLY CLAY, SOME SILT AND COBBLES, DRY TO MOIST	gc	939	0	
					11	0	
			3.0'		0	0	
			BOTTOM OF TEST PIT AT 3.0'				
5							
10							
15							
20							

NOTES:
BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: STEVE ULRICH OF HARDIN-HUBER INC.
LOCATION: BETWEEN RAILROAD TRACKS AND THE SOUTH FENCE AT CENTER LINE OF LAGOON.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 998.8 TEST PIT NO. TP-33
COORD. (N) 557,800 DEPTH TO GWL. 8.0' DATE 10-26-90
(E) 2,517,131

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BLACK, SAND AND GRAVELLY SAND, SOME COAL FINES, DRY TO WET	gp	2,525	0	MINE SPOIL
	TONO-SO S33-1.5				8,125	0	
					829	0	
5					373	0	
	TONO-SO S33-8.0		8.0'		TOO WET	0	
			BOTTOM OF TEST PIT AT 8.0'				
10							
15							
20							

NOTES:
BACKHOE: CASE 580K WITH 24" BUCKET
BACKHOE OPERATOR: JEFF CORRAN OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 20'-25' NORTH OF NESQUEHONING CREEK AND 40'-50' EAST OF DIVERSION DITCH ALONG LANDFILL IN BETWEEN TRACKS AND SOUTH FENCE.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 997.2 TEST PIT NO. TP-34
COORD. (N) 557,847 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-2-90
(E) 2,517,253

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	TONO-SO S34-1.5		BLACK, SAND, SOME SILT, TRACE OF COAL FRAGMENTS, DRY 2.0'	sm	870 0 0	0 0 0	MINE SPOIL
			BOTTOM OF TEST PIT AT 2.0'				
5							
10							
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: STEVE ULRICH OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 15' SOUTH OF MW-3.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 994.9 TEST PIT NO. TP-35
COORD. (N) 557,919 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-13-90
(E) 2,517,480

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	TONO-SO S35-0.5		BLACK SAND AND GRAVELLY SAND, SOME SILT, DRY TO MOIST	gm	980	0	
					41	0	METAL POLE AND CONCRETE BASE AT 3.5'
			2.4'				
			ORANGE, RED, BROWN, AND WHITE CLAY, SOME BLACK GRAVELLY SILT, DRY TO MOIST	cl	97	0	
5					81	0	PIECES OF SHEET METAL BETWEEN 5' AND 5.5'
			6.0'				
			BOTTOM OF TEST PIT AT 6.0'				
10							
15							
20							

NOTES:
BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: DON SANTMYER OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 30' SOUTHEAST OF THE CORNER OF THE LANDFILL.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 998.0 TEST PIT NO. TP-36
COORD. (N) 558,021 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-13-90
(E) 2,517,515

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	TONO-SO S36-0		BLACK SAND AND GRAVELLY SAND, SOME COAL FRAGMENTS, DRY TO WET	sp	66	0	MINE SPOIL
					39	0	
					12	0	
5					0	0	
					0	0	
10			10.2'		TOO WET	0	
			BOTTOM OF TEST PIT AT 10.2'				
15							
20							

NOTES:

BACKHOE: CASE 580K WITH 24" BUCKET
BACKHOE OPERATOR: DON SANTMYER OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 10' WEST OF MW-15D.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,003.6 TEST PIT NO. TP-37
COORD. (N) 558,221 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-1-90
(E) 2,517,491

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	TONO-SO S37-0		BLACK, SAND, TRACE OF COAL FRAGMENTS, SOME SILT, DRY	sm	0	0	MINE SPOIL
					0	0	
			3.0'		0	0	
			BOTTOM OF TEST PIT AT 3.0'				
5							
10							
15							
20							

NOTES:
BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: STEVE ULRICH OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 10' EAST OF EAST FENCE IN CENTER LINE OF LANDFILL.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,009.5 TEST PIT NO. TP-38
COORD. (N) 558,404 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-13-90
(E) 2,517,469

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	TONO-SO S38-0		BROWN TO REDDISH BROWN CLAY, SOME ROCK FRAGMENTS, SHALE, AND SAND, TRACE OF BOULDERS, DRY TO WET		0	0	
					0	0	
					0	0	
					7	0	
5			5.1'		0	0	
			BOTTOM OF TEST PIT AT 5.1'				
10							
15							
20							

NOTES:
BACKHOE: CASE 580K WITH 24" BUCKET
BACKHOE OPERATOR: DON SANTMYER OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 50' SOUTH AND 10' EAST OF NORTHEAST CORNER OF LANDFILL.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,101.8 TEST PIT NO. TP-39
COORD. (N) 558,710 DEPTH TO GWL. NOT ENCOUNTERED DATE 11-9-90
(E) 2,517,359

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	TONO-SO S39-0		BLACK, COAL FRAGMENTS AND GRAVEL, SOME COAL FINES OR SILT, DRY TO MOIST	gm	187	0	MINE SPOIL
	TONO-SO S39-1.5				0	0	
			3.0'				
			ORANGE BROWN CLAY, SOME BOULDERS, TRACE OF SAND, DRY TO MOIST		0	0	
5	TONO-SO S39-CEC-5		5.0'	cl	0	0	
			BOTTOM OF TEST PIT AT 5.0'				
10							
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: DON SANTMYER OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 30' EAST OF MW-18D AND 3' SOUTH.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TJG

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLL CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,017.0 TEST PIT NO. TP-40
COORD. (N) 558,215 DEPTH TO GWL. NOT ENCOUNTERED DATE 10-31-90
(E) 2,516,617

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BLACK, SAND AND GRAVELLY SAND, TRACE OF SILT AND COAL FRAGMENTS, DRY TO MOIST	gp	7,980	0	MINE SPOIL
					17,580	0	
					973	0	
			4.0'		107	0	
5	TONO-SO S40-5.0		ORANGE BROWN, SANDY AND GRAVELLY CLAY, SOME SILT, COBBLES, AND BOULDERS, DRY TO MOIST	gc	6,473	0	
10	TONO-SO S40-10.0		10.0'		494	0	
			BOTTOM OF TEST PIT AT 10.0'				
15							
20							

NOTES:
BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: STEVE ULRICH OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 5' WEST OF GAS PUMP IN THE BACK OF THE REFINERY BUILDING.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TJG

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TEST PIT CLASSIFICATION

PROJECT NAME TCNOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,003.4 TEST PIT NO. TP-41
COORD. (N) 557,494 DEPTH TO GWL. NOT ENCOUNTERED DATE 10-30-90
(E) 2,516,765

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	TCNO-SO S41-0.5		BLACK, SAND AND GRAVELLY SAND, TRACE TO SOME SILT AND COAL FRAGMENTS, DRY TO MOIST	gm	148	0	MINE SPOIL
	TONO-SO S41-1.5		2.0'		39	0	
			BOTTOM OF TEST PIT AT 2.0'				
5							
10							
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: STEVE ULRICH OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 75'-85' SOUTHWEST FROM REAR OF TRUCK GARAGE.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,004.9 TEST PIT NO. TP-42
COORD. (N) 557,454 DEPTH TO GWL. NOT ENCOUNTERED DATE 10-31-90
(E) 2,516,592

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	TONO-SO S42-0.5		BLACK SAND AND SILT, TRACE TO SOME COAL FRAGMENTS, DRY TO MOIST	sm	0	0	MINE SPOIL
					32	0	
					0	0	
5			5.5'		0	0	
			TAN TO YELLOW SAND AND SILT, DRY TO MOIST 6.5'	sm			TREE ROOTS AT 6.5'
			BROWN CLAY AND SILT, TRACE OF SAND AND GRAVEL, WET	cl			
			8.5'		TOO WET	0	
			TAN TO YELLOW SAND AND SILTY GRAVEL, WET 9.0'	sm			
			BOTTOM OF TEST PIT AT 9.0'				
10							
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: STEVE ULRICH OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 25'-30' NORTH OF THE NORTHEAST CORNER OF TRUCK GARAGE.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,004.6 TEST PIT NO. TP-43
COORD. (N) 557,378 DEPTH TO GWL. 6.0' DATE 10-30-90
(E) 2,516,607

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BLACK, SILTY SAND AND GRAVEL, DRY TO WET	gm	202	0	MINE SPOIL
					596	0	
					3,950	0	
5	TONO-SO S43-5.0				526	0	
	TONO-SO S43-6.5		7.0'		TOO WET	0	BRICKS AND TREE ROOTS FOUND AT APPROX. 6'
			BOTTOM OF TEST PIT AT 7.0'				
10							
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: STEVE ULRICH OF HARDIN-HUBER INC.
LOCATION: CENTER LINE OF TRUCK REPAIR GARAGE APPROXIMATELY 15' EAST OF GARAGE DOOR.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1,002.8 TEST PIT NO. TP-44
COORD. (N) 557,414 DEPTH TO GWL. 5.5' DATE 10-31-90
(E) 2,516,750

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BLACK SAND AND GRAVELLY SILTY SAND, SOME COAL FRAGMENTS, DRY TO WET	gm	1,475	0	MINE SPOIL
					1,736	0	
	TONO-SO S44-CEC-3				939	0	
5					1,403	0	
					TOO WET	0	PIECES OF LUMBER FOUND AT 6.0'
	TONO-SO S44-8.0		8.0'		TOO WET	0	
			BOTTOM OF TEST PIT AT 8.0'				
10							
15							
20							

NOTES:

BACKHOE: CASE 580D WITH 24" BUCKET
BACKHOE OPERATOR: STEVE ULRICH OF HARDIN-HUBER INC.
LOCATION: APPROXIMATELY 50' EAST OF SOUTHEAST CORNER OF TRUCK GARAGE.

* LEAD READINGS REPRESENT CONCENTRATIONS DETECTED BY THE X-MET 880 PORTABLE XRF ANALYZER DURING FIELD SCREENING.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1021.0 TEST PIT NO. TP-45
COORD. (N) 558,374 DEPTH TO GWL. NOT ENCOUNTERED DATE 5-29-91
(E) 2,516,986

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			RED BROWN GRAVEL AND SHALE, SOME SAND, TRACE SILT, DRY 1.75'	gp			
5	S45-8		BLACK GRAVEL AND SAND, SOME FINES, SOME LARGE PIECES OF COAL, DRY TO MOIST 8.0'	gm			
10			BOTTOM OF TEST PIT AT 8.0'				
15							
20							

NOTES:

BACKHOE OPERATOR: KEITH JACOBS OF HARDIN-HUBER INC.
BACKHOE: CASE 580K WITH 24" BUCKET
LOCATION: NEAR LANDFILL AND MW-12

NOTE: NO VOC'S ENCOUNTERED.

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1023.9 TEST PIT NO. TP-46
COORD. (N) 558,567 DEPTH TO GWL. NOT ENCOUNTERED DATE 5-29-91
(E) 2,516,465

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
5	S46-1 S46-7.0		ORANGE BROWN GRAVEL, SOME SAND AND SILT, SOME BOULDERS (> 1' DIAM.), DRY TO MOIST 7.2'	gm			
10 15 20			BOTTOM OF TEST PIT AT 7.2'				

NOTES:

BACKHOE OPERATOR: KEITH JACOBS OF HARDIN-HUBER INC.
BACKHOE: CASE 580K WITH 24" BUCKET
LOCATION: APPROXIMATELY 200' WEST OF TP-7

NOTE: NO VOC'S ENCOUNTERED.

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TJG

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TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1029.2 TEST PIT NO. TP-47
COORD. (N) 558,513 DEPTH TO GWL. NOT ENCOUNTERED DATE 5-29-91
(E) 2,515,966

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	S47-1 S47-3		ORANGE BROWN GRAVEL, SOME CLAY, SOME BOULDERS (> 1' DIAM.) TRACE SILT AND SAND, DRY TO MOIST 3.5'	gc			
5			BOTTOM OF TEST PIT AT 3.5'				
10							
15							
20							

NOTES:

BACKHOE OPERATOR: KEITH JACOBS OF HARDIN-HUBER INC.
BACKHOE: CASE 580K WITH 24" BUCKET
LOCATION: APPROXIMATELY 100' WEST AND 5' NORTH OF LARGE PILE OF BATTERY CASINGS IN THE NORTH WEST CORNER OF THE FENCED-IN SITE.

NOTE: NO VOC'S ENCOUNTERED.

F-193
TJG

Paul C. Rizzo Associates, Inc.
CONSULTANTS

TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1025.4 TEST PIT NO. TP-48
COORD. (N) 558,365 DEPTH TO GWL. NOT ENCOUNTERED DATE 5-29-91
(E) 2,516,087

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			SURFACE COVERED WITH BATTERY SCRAPS 0.2'				
	S48-1		ORANGE BROWN TO BROWN GRAVEL, SOME SAND, TRACE SILT, TRACE BOULDERS (> 1' DIAM.), DRY TO MOIST	gp			
	S48-3		3.0'				
			BOTTOM OF TEST PIT AT 3.0'				
5							
10							
15							
20							

NOTES:

BACKHOE OPERATOR: KEITH JACOBS OF HARDIN-HUBER INC.
BACKHOE: CASE 580K WITH 24" BUCKET
LOCATION: APPROXIMATELY 40' SOUTHWEST OF LARGE BATTERY CHIPS PILE

NOTE: NO VOC'S ENCOUNTERED.

F-193
TJG

Paul C. Rizzo Associates, Inc.
CONSULTANTS

TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1014.8 TEST PIT NO. TP-49
COORD. (N) 558,117 DEPTH TO GWL. NOT ENCOUNTERED DATE 5-29-91
(E) 2,516,469

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			ASPHALT 1.0'				
	S49-1.5		ORANGE BROWN CLAYEY SAND, SOME GRAVEL, TRACE SILT AND BOULDERS (> 1' DIAM.), MOIST	ml			
	S49-3		3.0'				
			BOTTOM OF TEST PIT AT 3.0'				
5							
10							
15							
20							

NOTES:

BACKHOE OPERATOR: KEITH JACOBS OF HARDIN-HUBER INC.
BACKHOE: CASE 580K WITH 24" BUCKET
LOCATION: 20' NORTH OF THE BACK OF REFINERY BUILDING

NOTE: NO VOC'S ENCOUNTERED.

F-193
TJG

Paul C. Rizzo Associates, Inc.
CONSULTANTS

TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 39-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1018.9 TEST PIT NO. TP-50
COORD. (N) 558,344 DEPTH TO GWL. NOT ENCOUNTERED DATE 5-29-91
(E) 2,516,648

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BLACK ASPHALT 0.3'				
	S50-1.5		DETERIORATED CONCRETE 0.7'	gp			
			BLACK GRAVEL, SOME SAND, MOIST 1.8'				
			ORANGE BROWN GRAVELLY SILT, TRACE SAND, TRACE BOULDERS (> 1' DIAM.), MOIST	gm			
5	S50-5.0		5.2'				
			BOTTOM OF TEST PIT AT 5.2'				
10							
15							
20							

NOTES:

BACKHOE OPERATOR: KEITH JACOBS OF HARDIN-HUBER INC.
BACKHOE: CASE 580K WITH 24" BUCKET
LOCATION: BATTERY BREAKING AREA

NOTE: NO VOC'S ENCOUNTERED.

F-193
TJG

AR302007

Paul C. Rizzo Associates, Inc.
CONSULTANTS

TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1013.2 TEST PIT NO. TP-51
COORD. (N) 557,953 DEPTH TO GWL. NOT ENCOUNTERED DATE 5-29-91
(E) 2,516,272

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BLACK ASPHALT 0.4'				
	S51-3		ORANGE BROWN GRAVEL, SOME SAND, TRACE SILT AND BOULDERS (> 1' DIAM.), DRY TO MOIST 3.0'	gp			
			BOTTOM OF TEST PIT AT 3.0'				
5							
10							
15							
20							

NOTES:

BACKHOE OPERATOR: KEITH JACOBS OF HARDIN-HUBER INC.
BACKHOE: CASE 580K WITH 24" BUCKET
LOCATION: APPROXIMATELY 100' NORTH OF DRUMMED MELTED BATTERY SCRAPS NEAR RAILROAD TRACKS.

NOTE: NO VOC'S ENCOUNTERED.

F-193
TJG

Paul C. Rizzo Associates, Inc.
CONSULTANTS

TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1012.7 TEST PIT NO. TP-52
COORD. (N) 557,850 DEPTH TO GWL. NOT ENCOUNTERED DATE 5-30-91
(E) 2,516,506

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			4" OF ASPHALT WITH 3" BASE COAT OF 3/4" GRAVEL 0.75'				
	S52-3		ORANGE BROWN, SANDY CLAY, SOME TO TRACE GRAVEL, TRACE BOULDERS, DRY TO MOIST 3.0'	gc			
			BOTTOM OF TEST PIT AT 3.0'				
5							
10							
15							
20							

NOTES:

BACKHOE OPERATOR: KEITH JACOBS OF HARDIN-HUBER INC.
BACKHOE: CASE 580K WITH 24" BUCKET
LOCATION: APPROXIMATELY 100' NORTH OF DRUMMED MELTED BATTERY SCRAPS NEAR RAILROAD TRACKS.

NOTE: NO VOC'S ENCOUNTERED.

F-193
LPD

Paul C. Rizzo Associates, Inc.
CONSULTANTS

TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1012.8 TEST PIT NO. TP-53
COORD. (N) 557,968 DEPTH TO GWL. NOT ENCOUNTERED DATE 5-30-91
(E) 2,516,720

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			ASPHALT 0.33'				START 0915 VOC=18.8 PPM OIL OF FUEL SHEEN VISIBLE. OIL IS ENTERING IN WITH WATER AT 24" DEPTH, CONSTANT VOC READING BETWEEN 5PPM AND 18 PPM. SOIL BELOW 3.0' LOOK CLEAN AND IS BEING COVERED WITH OIL AND WATER AS WE EXCAVATE. 4" OF ASPHALT FOLLOWED BY 20" OF SOME OIL FLOWED IN FROM BOTH SIDES.
	S53-1.5		GRAVEL, SOME SAND, WET 2.0'	gp			
	S53-3		ORANGE BROWN SANDY CLAY, SOME SILT AND GRAVEL, TRACE BOULDERS 3.5'	gc			
5			BOTTOM OF TEST PIT AT 3.5'				
10							
15							
20							

NOTES:

BACKHOE OPERATOR: KEITH JACOBS OF HARDIN-HUBER INC.
BACKHOE: CASE 580K WITH 24" BUCKET
LOCATION: APPROXIMATELY 100' NORTHEAST OF TP-19

NOTE: NO VOC'S ENCOUNTERED.

F-193
TJG

Paul C. Rizzo Associates, Inc.
CONSULTANTS

TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1010.4 TEST PIT NO. TP-54
COORD. (N) 557,947 DEPTH TO GWL. NOT ENCOUNTERED DATE 5-30-91
(E) 2,517,081

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BLACK SAND, SOME SILT, TRACE GRAVEL, DRY 0.5'	sm			
	S54-1.5						
	S54-2 (DUP.)		BROWN, GRAVEL AND SAND, TRACE SILT, DRY 2.0'	gp			
			BOTTOM OF TEST PIT AT 2.0'				
5							
10							
15							
20							

NOTES:

BACKHOE OPERATOR: KEITH JACOBS OF HARDIN-HUBER INC.
BACKHOE: CASE 580K WITH 24" BUCKET
LOCATION: BETWEEN TP-21 AND TP-20

NOTE: NO VOC'S ENCOUNTERED.

F-193
TJG

Paul C. Rizzo Associates, Inc.
CONSULTANTS

TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1008.7 TEST PIT NO. TP-55
COORD. (N) 557,761 DEPTH TO GWL. NOT ENCOUNTERED DATE 5-30-91
(E) 2,516,799

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			BROWN SAND, SOME GRAVEL AND SILT, DRY 0.5'	gm			
	S55-1		BROWN, BLACK, AND ORANGE SAND, SOME GRAVEL, TRACE SILT, DRY 1.5'	sp			
	S55-3		BROWN TO ORANGE BROWN SAND, SOME GRAVEL AND SILT, TRACE BOULDERS (> 1' DIAM.), DRY 3.0'	gm			
			BOTTOM OF TEST PIT AT 3.0'				
5							
10							
15							
20							

NOTES:

BACKHOE OPERATOR: KEITH JACOBS OF HARDIN-HUBER INC.
BACKHOE: CASE 580K WITH 24" BUCKET
LOCATION: APPROXIMATELY 30' SOUTH OF WATER TANK

NOTE: NO VOC'S ENCOUNTERED.

F-193
TJG

Paul C. Rizzo Associates, Inc.
CONSULTANTS

TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1009.0 TEST PIT NO. TP-56
COORD. (N) 557,704 DEPTH TO GWL. NOT ENCOUNTERED DATE 5-30-91
(E) 2,516,639

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			GREY GRAVEL, SOME SAND, DRY 1.0'	gp			
	S56-1.5		ORANGE BROWN SAND, SOME GRAVEL, TRACE SILT, TRACE BOULDERS, DRY TO MOIST 4.2'	gp			
5	S56-5		BLACK COAL FRAGMENTS, SOME GRAVEL, SOME FINE SAND, TRACE SILT, MOIST 5.5'	gc			MINE SPOIL
			BOTTOM OF TEST PIT AT 5.5'				
10							
15							
20							

NOTES:

BACKHOE OPERATOR: KEITH JACOBS OF HARDIN-HUBER INC.
BACKHOE: CASE 580K WITH 24" BUCKET
LOCATION: IN FRONT (SOUTH) OF RED BRICK BUILDING

NOTE: NO VOC'S ENCOUNTERED.

F-193
TJG

Paul C. Rizzo Associates, Inc.
CONSULTANTS

TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1008.3 TEST PIT NO. TP-57
COORD. (N) 557,625 DEPTH TO GWL. NOT ENCOUNTERED DATE 5-30-91
(E) 2,516,564

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			GREY GRAVEL, SOME SILT, TRACE SAND, DRY 1.0'	gp			
	S57-1.5		ORANGE BROWN SAND, SOME GRAVEL, TRACE SILT, DRY TO MOIST	sp			
	S57-3		3.2'				
			BOTTOM OF TEST PIT AT 3.2'				
5							
10							
15							
20							

NOTES:

BACKHOE OPERATOR: KEITH JACOBS OF HARDIN-HUBER INC.
BACKHOE: CASE 580K WITH 24" BUCKET
LOCATION: APPROXIMATELY 40' SOUTH OF GUARD BUILDING

NOTE: NO VOC'S ENCOUNTERED.

F-193
TJG

Paul C. Rizzo Associates, Inc.
CONSULTANTS

TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 39-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1012.3 TEST PIT NO. TP-59
COORD. (N) 558,105 DEPTH TO GWL. NOT ENCOUNTERED DATE 5-30-91
(E) 2,516,985

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	S59-1.5		BLACK VERY FINE SAND, SOME GRAVEL, TRACE SILT, MOIST	sp			
5	S59-6		6.0'				
			BOTTOM OF TEST PIT AT 6.0'				
10							
15							
20							

NOTES:

BACKHOE OPERATOR: KEITH JACOBS OF HARDIN-HUBER INC.
BACKHOE: CASE 580K WITH 24" BUCKET
LOCATION: IN DRAINAGE DITCH NEAR LANDFILL

NOTE: NO VOC'S ENCOUNTERED.

F-193
TJG

Paul C. Rizzo Associates, Inc.
CONSULTANTS

TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 39-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1004.4 TEST PIT NO. TP-58
COORD. (N) 557,428 DEPTH TO GWL. NOT ENCOUNTERED DATE 5-30-91
(E) 2,516,681

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	S58-1.5 S58-3 (DUP.)		BLACK GRAVEL, SOME SAND, TRACE SILT, MOIST 3.0'	gp			
5 10 15 20			BOTTOM OF TEST PIT AT 3.0'				

NOTES:

BACKHOE OPERATOR: KEITH JACOBS OF HARDIN-HUBER INC.
BACKHOE: CASE 580K WITH 24" BUCKET
LOCATION: BEHIND TONOLLI TRUCK GARAGE

NOTE: NO VOC'S ENCOUNTERED.

F-193
TJG

AR302016

Paul C. Rizzo Associates, Inc.
CONSULTANTS

TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1005.3 TEST PIT NO. TP-60
COORD. (N) 558,583 DEPTH TO GWL. NOT ENCOUNTERED DATE 5-31-91
(E) 2,517,276

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	S60-3		BLACK SANDY GRAVEL, TRACE SILT AND BOULDERS (> 1' DIAM.), DRY TO MOIST 4.2'	gp			
5			ORANGE BROWN SANDY CLAY, TRACE GRAVEL AND SILT, MOIST 5.5'	gc			
			BOTTOM OF TEST PIT AT 5.5'				
10							
15							
20							

NOTES:

BACKHOE OPERATOR: KEITH JACOBS OF HARDIN-HUBER INC.
BACKHOE: CASE 580K WITH 24" BUCKET
LOCATION: NEAR FENCE OF LANDFILL AND MW-18

NOTE: NO VOC'S ENCOUNTERED.

F-193
TJG

Paul C Rizzo Associates, Inc.
CONSULTANTS

TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1023.6 TEST PIT NO. TP-61
COORD. (N) 558,394 DEPTH TO GWL. NOT ENCOUNTERED DATE 5-31-91
(E) 2,516,278

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
			ORANGE BROWN GRAVEL, SOME SAND, TRACE SILT AND BOULDERS (> 1' DIAM.), DRY TO MOIST	gp			
	S61-3						
5	S61-5		5.6'				
			BOTTOM OF TEST PIT AT 5.6'				
10							
15							
20							

NOTES:

BACKHOE OPERATOR: KEITH JACOBS OF HARDIN-HUBER INC.
BACKHOE: CASE 580K WITH 24" BUCKET
LOCATION: APPROXIMATELY 200' WEST AND 40' NORTH OF MW-17

NOTE: NO VOC'S ENCOUNTERED.

F-193
TJG

Paul C. Rizzo Associates, Inc.
CONSULTANTS

TEST PIT CLASSIFICATION

PROJECT NAME TONOLLI CORP. SITE PROJECT NO. 89-599 PAGE 1 OF 1
FIELD ENG./GEO. D.A.C. ELEVATION(FT.) 1019.8 TEST PIT NO. TP-62
COORD. (N) 558,244 DEPTH TO GWL. NOT ENCOUNTERED DATE 5-31-91
(E) 2,516,531

DEPTH (FT.)	SAMPLE NO. AND TYPE	SOIL PROFILE	DESCRIPTION	U.S.C.S. SYMBOL	Pb READING * (PPM)	MAX. VOC READING (PPM)	REMARKS
	S62-1, MS,MSD		BLACK GRAVEL AND BATTERY CASINGS, SOME SAND AND SILT, DRY 0.5'				
			ORANGE BROWN SAND, SOME GRAVEL, TRACE SILT, DRY TO MOIST	sp			
	S62-5		5.0'				
5			BOTTOM OF TEST PIT AT 5.0'				
10							
15							
20							

NOTES:

BACKHOE OPERATOR: KEITH JACOBS OF HARDIN-HUBER INC.
BACKHOE: CASE 580K WITH 24" BUCKET
LOCATION: APPROXIMATELY 50' WEST AND 20' NORTH TP-40

NOTE: NO VOC'S ENCOUNTERED.

F-193
TJG

AR302019

APPENDIX C

HYDRAULIC CONDUCTIVITY CALCULATIONS

HYDRAULIC CONDUCTIVITY CALCULATION
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

K, HYDRAULIC CONDUCTIVITY VALUE CALCULATIONS FOR MONITORING WELL MW-10S

WATER LEVEL =	1020.44	Ft. (MEAN SEA LEVEL)	FOR	1/24/91
BOTTOM OF SCREEN =	1001.77	Ft. (MEAN SEA LEVEL)		
H, SCREENED SATURATED THICKNESS =	18.67	Ft. (MEAN SEA LEVEL)		

WATER LEVEL =	1020.44	Ft. (MEAN SEA LEVEL)
BOTTOM OF SATURATED ZONE =	971.69	Ft. (MEAN SEA LEVEL)
D, SATURATED THICKNESS OF AQUIFIER =	48.75	Ft. (MEAN SEA LEVEL)

GIVEN : Rc = 0.08 Ft (2" well, R = 1" or 0.08')
Rw = 0.40 Ft (9.5 " bit, R = 4.75" or 0.40')

IF ln [(D-H) / Rw] < 6 USE THE CALCULATED VALUE .
WHEN ln [(D-H) / Rw] > 6 , USE THE VALUE 6 .

FOR MW-10S ln [(D-H) / Rw] = 4.32

$$\text{USE : } K \quad \frac{(Rc)^2 \ln (Re/Rw)}{2L} * ((1/t) * \ln (Yo / Yt))$$

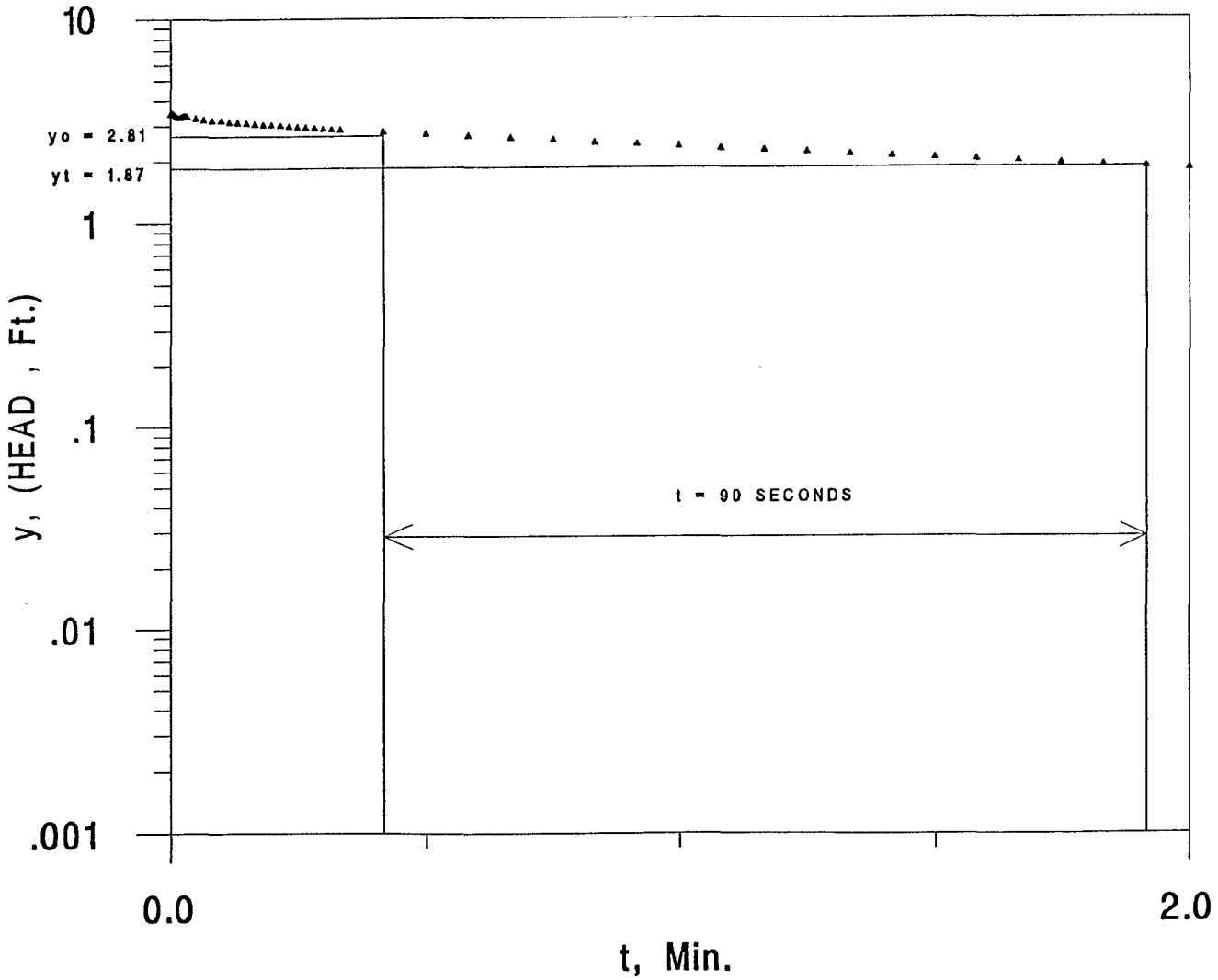
WHERE ln (Re / Rw) = [(1.1 / (ln (H / Rw)) + ((A + Bln[(D-H) / Rw)) / (L/Rw)] ^ -1

Rc =	0.08	Ft.
Rw =	0.40	Ft.
Rc ^ 2 =	0.0064	Ft.^2
2L =	20.00	Ft.
Yo =	2.81	Ft.
Yt =	1.87	Ft.
t =	90.00	Sec.
H =	18.67	Ft.
A =	2.3	
B =	0.3	
L =	10.00	Ft.

THEREFORE ln (Re / Rw) = 2.33

AND K = 3.37E-06 Ft./sec
OR K = 1.03E-04 cm. / sec.

RISING HEAD SLUG TEST FOR MW-10S



AR302022

	1	2	3	4
	TIME (MIN.)	HEAD	HEAD1	DATE
1	0.0000	4.920	3.4600	MW-10SA1.CGD
2	0.0033	4.960	3.5000	TIME 10:53 1/24/91
3	0.0066	4.940	3.4800	GRAPH=MW-10SA1.CGG
4	0.0099	4.880	3.4200	
5	0.0133	4.820	3.3600	
6	0.0166	4.790	3.3300	
7	0.0200	4.800	3.3400	
8	0.0233	4.840	3.3800	
9	0.0266	4.860	3.4000	
10	0.0300	4.850	3.3900	
11	0.0333	4.820	3.3600	
12	0.0500	4.770	3.3100	
13	0.0666	4.700	3.2400	
14	0.0833	4.680	3.2200	
15	0.1000	4.660	3.2000	
16	0.1166	4.620	3.1600	
17	0.1333	4.590	3.1300	
18	0.1500	4.580	3.1200	
19	0.1666	4.550	3.0900	
20	0.1833	4.530	3.0700	
21	0.2000	4.500	3.0400	
22	0.2166	4.480	3.0200	
23	0.2333	4.460	3.0000	
24	0.2500	4.440	2.9800	
25	0.2666	4.420	2.9600	
26	0.2833	4.400	2.9400	
27	0.3000	4.390	2.9300	
28	0.3166	4.370	2.9100	
29	0.3333	4.350	2.8900	
30	0.4167	4.270	2.8100	
31	0.5000	4.200	2.7400	
32	0.5833	4.130	2.6700	
33	0.6667	4.070	2.6100	
34	0.7500	4.000	2.5400	
35	0.8333	3.940	2.4800	
36	0.9167	3.890	2.4300	
37	1.0000	3.830	2.3700	
38	1.0833	3.780	2.3200	
39	1.1667	3.730	2.2700	
40	1.2500	3.690	2.2300	
41	1.3333	3.630	2.1700	
42	1.4166	3.580	2.1200	
43	1.5000	3.540	2.0800	
44	1.5833	3.490	2.0300	
45	1.6667	3.460	2.0000	
46	1.7500	3.410	1.9500	
47	1.8333	3.370	1.9100	
48	1.9167	3.330	1.8700	
49	2.0000	3.280	1.8200	
50	2.5000	3.060	1.6000	
51	3.0000	2.860	1.4000	
52	3.5000	2.680	1.2200	
53	4.0000	2.540	1.0800	
54	4.5000	2.390	0.9300	
55	5.0000	2.280	0.8200	
56	5.5000	2.170	0.7100	
57	6.0000	2.080	0.6200	
58	6.5000	2.010	0.5500	
59	7.0000	1.930	0.4700	
60	7.5000	1.870	0.4100	
61	8.0000	1.820	0.3600	
62	8.5000	1.770	0.3100	
63	9.0000	1.730	0.2700	
64	9.5000	1.700	0.2400	
65	10.0000	1.660	0.2000	
66	12.0000	1.570	0.1100	
67	14.0000	1.530	0.0700	
68	16.0000	1.490	0.0300	
69	18.0000	1.480	0.0200	
70	20.0000	1.460	0.0000	
71	22.0000	1.470	0.0100	
72	24.0000	1.460	0.0000	

HYDRAULIC CONDUCTIVITY CALCULATION
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

K, HYDRAULIC CONDUCTIVITY VALUE CALCULATIONS FOR MONITORING WELL MW-11S

WATER LEVEL =	998.36	Ft. (MEAN SEA LEVEL)	FOR	1/25/91
BOTTOM OF SCREEN =	982.55	Ft. (MEAN SEA LEVEL)		
H, SCREENED SATURATED THICKNESS =	15.81	Ft. (MEAN SEA LEVEL)		

WATER LEVEL =	998.36	Ft. (MEAN SEA LEVEL)
BOTTOM OF SATURATED ZONE =	909.50	Ft. (MEAN SEA LEVEL)
D, SATURATED THICKNESS OF AQUIFIER =	88.86	Ft. (MEAN SEA LEVEL)

GIVEN : Rc = 0.08 Ft (2" well, R = 1" or 0.08')
Rw = 0.40 Ft (9.5 " bit, R = 4.75" or 0.40')

IF ln [(D-H) / Rw] < 6 USE THE CALCULATED VALUE .
WHEN ln [(D-H) / Rw] > 6 , USE THE VALUE 6 .

FOR MW-11S ln [(D-H) / Rw] = 5.21

$$\text{USE : } K \quad \frac{(Rc)^2 \ln (Re/Rw)}{2L} * ((1 / t) * \ln (Yo / Yt))$$

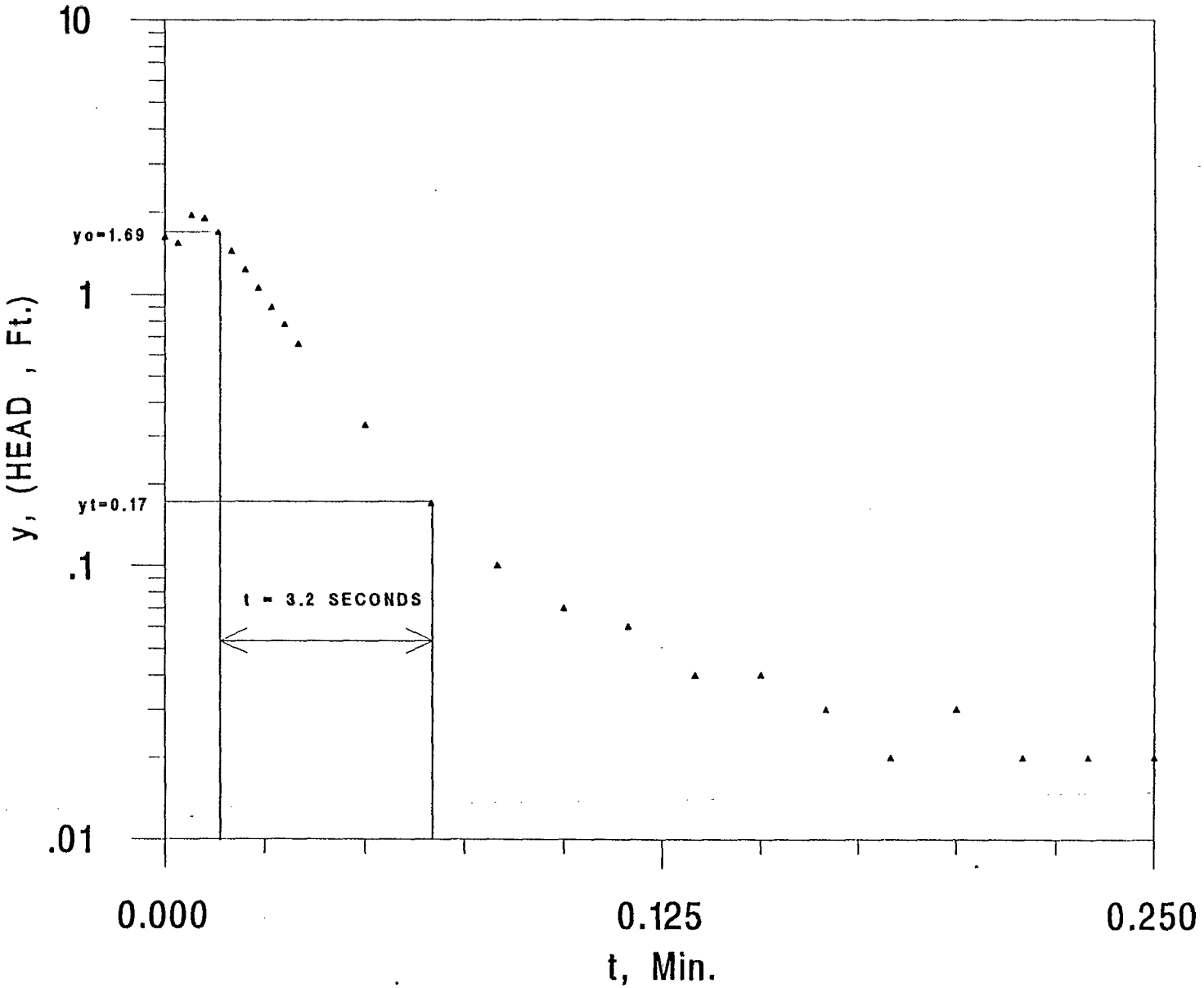
WHERE ln (Re / Rw) = [(1.1 / (ln (H / Rw)) + ((A+Bln[(D-H) / Rw)) / (L/Rw)] ^ -1

Rc =	0.08	Ft.
Rw =	0.40	Ft.
Rc ^ 2 =	0.0064	Ft.^2
2L =	20.00	Ft.
Yo =	1.69	Ft.
Yt =	0.17	Ft.
t =	3.20	Sec.
H =	15.81	Ft.
A =	2.3	
B =	0.3	
L =	10.00	Ft.

THEREFORE ln (Re / Rw) = 2.20

AND K = 5.06E-04 Ft./sec
OR K = 1.54E-02 cm. / sec.

RISING HEAD SLUG TEST FOR MW-11S



AR302025

	1	2	3
	TIME MIN.	HEAD FT.	DATE
1	0.0000	1.63	TIME 13:18 1/25/91
2	0.0033	1.55	MW-11SB1.CGD
3	0.0066	1.96	GRAPH=MW-11SB1.CGG
4	0.0099	1.90	
5	0.0133	1.69	
6	0.0166	1.45	
7	0.0200	1.24	
8	0.0233	1.06	
9	0.0266	0.90	
10	0.0300	0.78	
11	0.0333	0.66	
12	0.0500	0.33	
13	0.0666	0.17	
14	0.0833	0.10	
15	0.1000	0.07	
16	0.1166	0.06	
17	0.1333	0.04	
18	0.1500	0.04	
19	0.1666	0.03	
20	0.1833	0.02	
21	0.2000	0.03	
22	0.2166	0.02	
23	0.2333	0.02	
24	0.2500	0.02	
25	0.2666	0.02	
26	0.2833	0.02	
27	0.3000	0.02	
28	0.3166	0.02	
29	0.3333	0.01	
30	0.4167	0.01	
31	0.5000	0.01	
32	0.5833	0.01	
33	0.6667	0.01	
34	0.7500	0.01	
35	0.8333	0.01	
36	0.9167	0.01	
37	1.0000	0.01	
38	1.0833	0.01	
39	1.1667	0.01	
40	1.2500	0.01	
41	1.3333	0.01	
42	1.4166	0.01	
43	1.5000	0.01	
44	1.5833	0.01	
45	1.6667	0.01	
46	1.7500	0.01	
47	1.8333	0.01	
48	1.9167	0.01	
49	2.0000	0.01	
50	2.5000	0.00	
51	3.0000	0.01	
52	3.5000	0.00	
53	4.0000	0.00	
54	4.5000	0.00	
55	5.0000	0.00	
56	5.5000	0.00	
57	6.0000	0.00	
58	6.5000	0.00	
59	7.0000	0.00	
60	7.5000	0.00	
61	8.0000	0.00	
62	8.5000	0.00	
63	9.0000	0.00	
64	9.5000	0.00	
65	10.0000	0.00	

HYDRAULIC CONDUCTIVITY CALCULATION
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

K, HYDRAULIC CONDUCTIVITY VALUE CALCULATIONS FOR MONITORING WELL MW-12S

WATER LEVEL =	1001.02	Ft. (MEAN SEA LEVEL)	FOR	12/20/90
BOTTOM OF SCREEN =	980.93	Ft. (MEAN SEA LEVEL)		
H, SCREENED SATURATED THICKNESS =	20.09	Ft. (MEAN SEA LEVEL)		

WATER LEVEL =	1001.02	Ft. (MEAN SEA LEVEL)
BOTTOM OF SATURATED ZONE =	910.58	Ft. (MEAN SEA LEVEL)
D, SATURATED THICKNESS OF AQUIFIER =	90.44	Ft. (MEAN SEA LEVEL)

GIVEN : Rc = 0.08 Ft (2" well, R = 1" or 0.08')
Rw = 0.40 Ft (9.5 " bit, R = 4.75" or 0.40')

IF ln [(D-H) / Rw] < 6 USE THE CALCULATED VALUE .
WHEN ln [(D-H) / Rw] > 6 , USE THE VALUE 6 .

FOR MW-12S ln [(D-H) / Rw] = 5.17

$$\text{USE : } K \quad \frac{(Rc)^2 \ln (Re/Rw)}{2L} * ((1 / t) * \ln (Yo / Yt))$$

WHERE $\ln (Re / Rw) = [(1.1 / (\ln (H / Rw)) + ((A + B\ln[(D-H) / Rw)) / (L/Rw)]^{-1}$

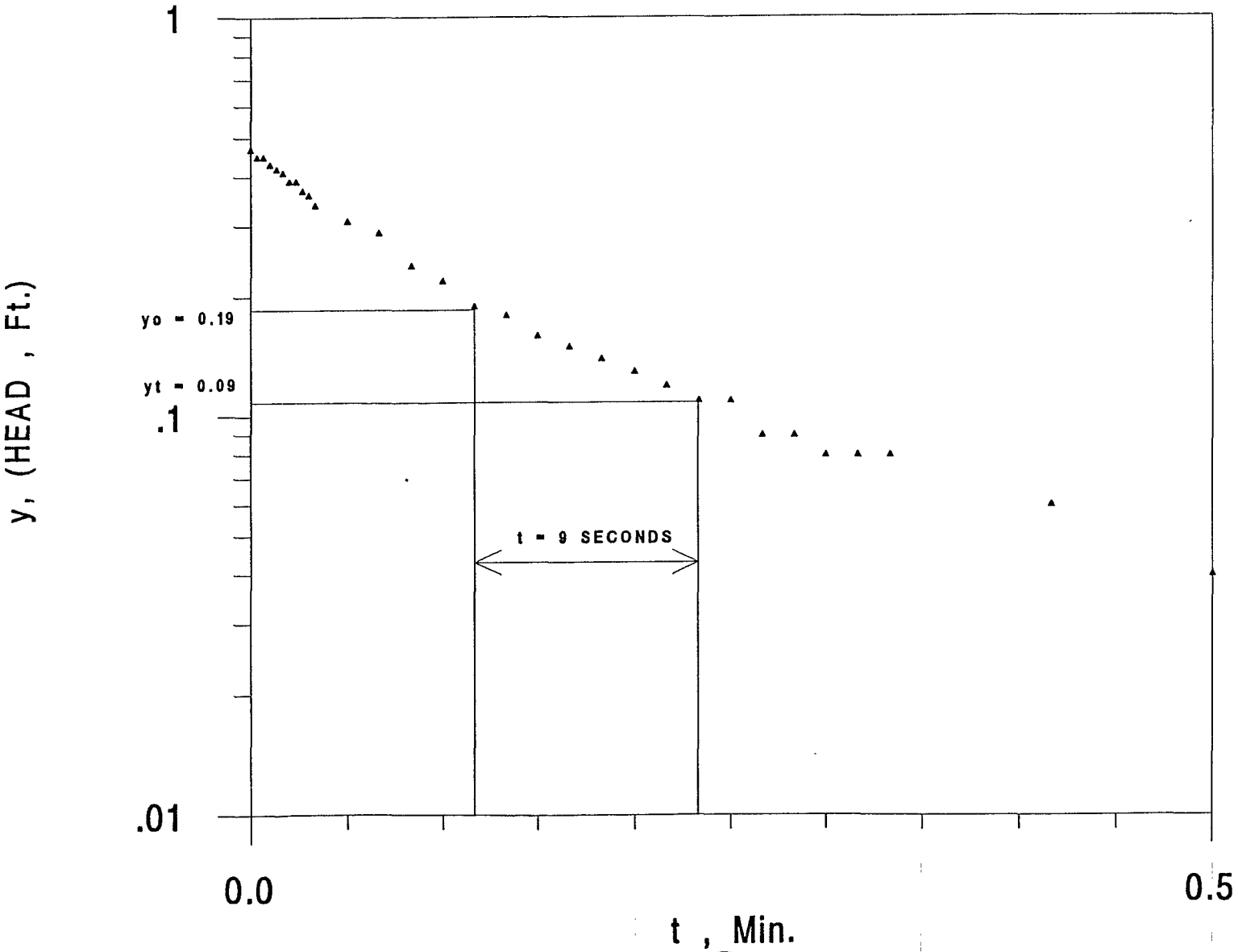
Rc =	0.08	Ft.
Rw =	0.40	Ft.
Rc ^ 2 =	0.0064	Ft.^2
2L =	20.00	Ft.
Yo =	0.19	Ft.
Yt =	0.09	Ft.
t =	9.00	Sec.
H =	20.09	Ft.
A =	2.3	
B =	0.3	
L =	10.00	Ft.

THEREFORE ln (Re / Rw) = 2.30

AND K = 6.11E-05 Ft./sec
OR K = 1.86E-03 cm. / sec.

AR302027

RISING HEAD SLUG TEST FOR MW-12S



AR302028

	1	2	3
	t (In Min)	HEAD	DATE
1			
2	0	0.47	MW-12S1.CGD
3	0.0033	0.45	IME= 15:54 12/19/9
4	0.0066	0.45	GRAPH=MW-12S1.CGG
5	0.0099	0.43	
6	0.0133	0.42	
7	0.0166	0.41	
8	0.02	0.39	
9	0.0233	0.39	
10	0.0266	0.37	
11	0.03	0.36	
12	0.0333	0.34	
13	0.05	0.31	
14	0.0666	0.29	
15	0.0833	0.24	
16	0.1	0.22	
17	0.1166	0.19	
18	0.1333	0.18	
19	0.15	0.16	
20	0.1666	0.15	
21	0.1833	0.14	
22	0.2	0.13	
23	0.2166	0.12	
24	0.2333	0.11	
25	0.25	0.11	
26	0.2666	0.09	
27	0.2833	0.09	
28	0.3	0.08	
29	0.3166	0.08	
30	0.3333	0.08	
31	0.4167	0.06	
32	0.5	0.04	
33	0.5833	0.03	
34	0.6667	0.03	
35	0.75	0.02	
36	0.8333	0.02	
37	0.9167	0.02	
38	1	0.02	
39	1.0833	0.02	
40	1.1667	0.01	
41	1.25	0.01	
42	1.3333	0.02	
43	1.4166	0.02	
44	1.5	0.02	
45	1.5833	0.01	
46	1.6667	0.02	
47	1.75	0.01	
48	1.8333	0.01	
49	1.9167	0.01	
50	2	0.02	
51	2.5	0.01	
52	3	0	
53	3.5	0.01	
54	4	0	
55	4.5	0	
56	5	0.01	
57	5.5	0	
58	6	0	
59	6.5	0	
60	7	0	
61	7.5	0	
62	8	0	
63	8.5	0	
64	9	0	
65	9.5	0	
66	10	0	
67	12	0.01	
68	14	0.01	
69	16	0	

HYDRAULIC CONDUCTIVITY CALCULATION
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

K, HYDRAULIC CONDUCTIVITY VALUE CALCULATIONS FOR MONITORING WELL MW-13S

WATER LEVEL =	991.94	Ft. (MEAN SEA LEVEL)	FOR	1/25/91
BOTTOM OF SCREEN =	983.08	Ft. (MEAN SEA LEVEL)		
H, SCREENED SATURATED THICKNESS =	8.86	Ft. (MEAN SEA LEVEL)		

WATER LEVEL =	991.94	Ft. (MEAN SEA LEVEL)
BOTTOM OF SATURATED ZONE =	901.30	Ft. (MEAN SEA LEVEL)
D, SATURATED THICKNESS OF AQUIFIER =	90.64	Ft. (MEAN SEA LEVEL)

GIVEN : Rce = = ((1-n)*Rc^2+(nRw^2))^0.5 = 0.23 ft
Rw = 0.40 Ft (9.5 " bit, R = 4.75" or 0.40')

IF ln [(D-H) / Rw] < 6 USE THE CALCULATED VALUE .
WHEN ln [(D-H) / Rw] > 6 , USE THE VALUE 6 .

FOR MW-13S ln [(D-H) / Rw] = 5.32

USE : $K \frac{(Rce)^2 \ln (Re/Rw)}{2L} *((1 / t) * \ln (Yo / Yt))$

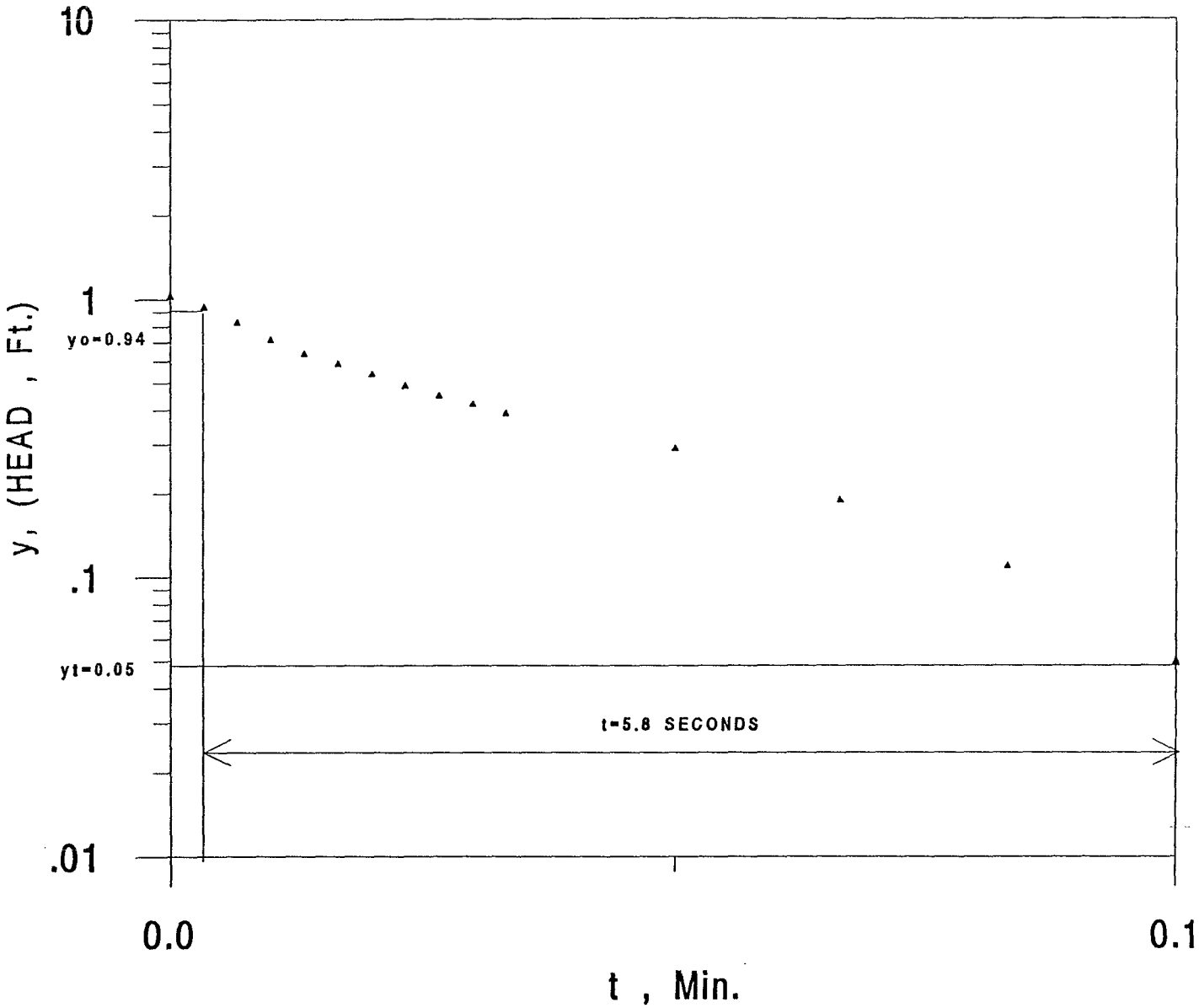
WHERE ln (Re / Rw) = [(1.1 / (ln (H / Rw)) + ((A+Bln[(D-H) / Rw)) / (L/Rw)] ^ -1

Rc =	0.08	Ft.
Rce =	0.23	Ft.
Rw =	0.40	Ft.
Rc ^ 2 =	0.0529	Ft.^2
2L =	20.00	Ft.
Yo =	0.94	Ft.
Yt =	0.05	Ft.
t =	5.80	Sec.
H =	8.86	Ft.
A =	2.3	
B =	0.3	
L =	10.00	Ft.

THEREFORE ln (Re / Rw) = 1.96

AND K = 2.62E-03 Ft./sec
OR K = 7.98E-02 cm. / sec.

RISING HEAD SLUG TEST FOR MW-13S



AR302031

	1	2	3
	t , Min.	Head	DATE
1	0.0000	1.030	MW-13SB1.CGD
2	0.0033	0.940	TIME 12:32 1/25/91
3	0.0066	0.830	GRAPH=MW-13SB1.CGG
4	0.0099	0.720	
5	0.0133	0.640	
6	0.0166	0.590	
7	0.0200	0.540	
8	0.0233	0.490	
9	0.0266	0.450	
10	0.0300	0.420	
11	0.0333	0.390	
12	0.0500	0.290	
13	0.0666	0.190	
14	0.0833	0.110	
15	0.1000	0.050	
16	0.1166	0.020	
17	0.1333	0.010	
18	0.1500	0.010	
19	0.1666	0.000	

HYDRAULIC CONDUCTIVITY CALCULATION
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

K, HYDRAULIC CONDUCTIVITY VALUE CALCULATIONS FOR MONITORING WELL MW-14S

WATER LEVEL =	991.64	Ft. (MEAN SEA LEVEL)	FOR	1/24/91
BOTTOM OF SCREEN =	978.24	Ft. (MEAN SEA LEVEL)		
H, SCREENED SATURATED THICKNESS =	13.4	Ft. (MEAN SEA LEVEL)		

WATER LEVEL =	991.64	Ft. (MEAN SEA LEVEL)
BOTTOM OF SATURATED ZONE =	900.76	Ft. (MEAN SEA LEVEL)
D, SATURATED THICKNESS OF AQUIFIER =	90.88	Ft. (MEAN SEA LEVEL)

GIVEN : Rc = 0.08 Ft (2" well, R = 1" or 0.08')
Rw = 0.40 Ft (9.5 " bit, R = 4.75" or 0.40')

IF ln [(D-H) / Rw] < 6 USE THE CALCULATED VALUE .
WHEN ln [(D-H) / Rw] > 6 , USE THE VALUE 6 .

FOR MW-14S ln [(D-H) / Rw] = 5.27

USE : $K \quad \frac{(Rc)^2 \ln (Re/Rw)}{2L} *((1/t) * \ln(Yo/Yt))$

WHERE ln (Re / Rw) = [(1.1 / (ln (H / Rw)) + ((A + Bln[(D-H) / Rw)) / (L/Rw)] ^ -1

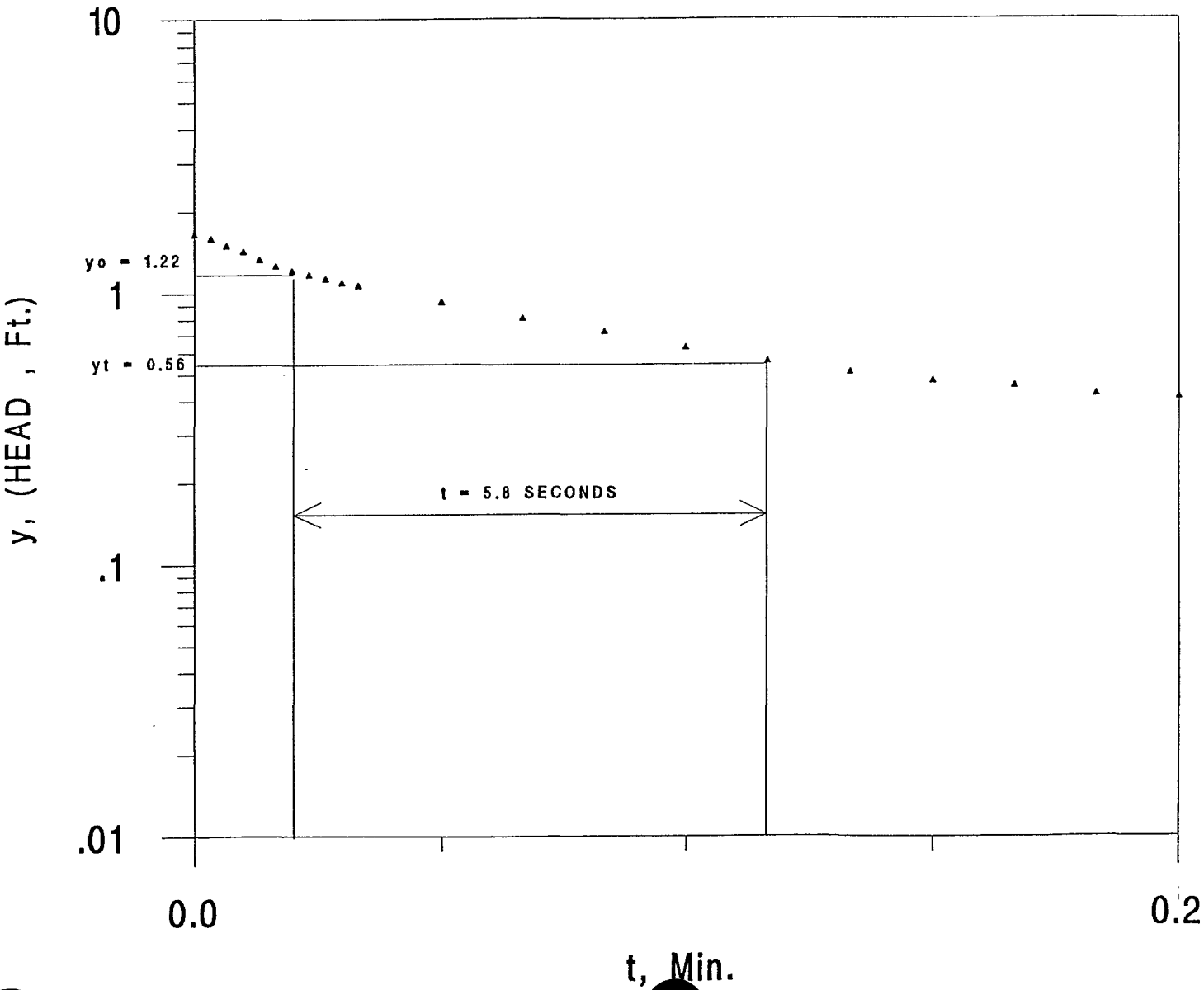
Rc =	0.08	Ft.
Rw =	0.40	Ft.
Rc ^ 2 =	0.0064	Ft.^2
2L =	20.00	Ft.
Yo =	1.22	Ft.
Yt =	0.56	Ft.
t =	5.80	Sec.
H =	13.40	Ft.
A =	2.3	
B =	0.3	
L =	10.00	Ft.

THEREFORE ln (Re / Rw) = 2.13

AND K = 9.17E-05 Ft./sec
OR K = 2.80E-03 cm. / sec.

AR302033

RISING HEAD SLUG TEST FOR MW-14S



AR302034

	1	2	3
	TIME (MIN.)	HEAD	DATE
1	0.0000	1.660	MW-14SA1.CGD
2	0.0033	1.600	TIME 13:31 1/24/91
3	0.0066	1.510	GRAPH=MW-14SA1.CGG
4	0.0099	1.440	
5	0.0133	1.340	
6	0.0166	1.270	
7	0.0200	1.220	
8	0.0233	1.180	
9	0.0266	1.140	
10	0.0300	1.100	
11	0.0333	1.070	
12	0.0500	0.930	
13	0.0666	0.810	
14	0.0833	0.720	
15	0.1000	0.630	
16	0.1166	0.560	
17	0.1333	0.510	
18	0.1500	0.470	
19	0.1666	0.450	
20	0.1833	0.420	
21	0.2000	0.410	
22	0.2166	0.390	
23	0.2333	0.380	
24	0.2500	0.370	
25	0.2666	0.350	
26	0.2833	0.340	
27	0.3000	0.330	
28	0.3166	0.320	
29	0.3333	0.300	
30	0.4167	0.250	
31	0.5000	0.210	
32	0.5833	0.180	
33	0.6667	0.160	
34	0.7500	0.140	
35	0.8333	0.130	
36	0.9167	0.120	
37	1.0000	0.120	
38	1.0833	0.110	
39	1.1667	0.110	
40	1.2500	0.100	
41	1.3333	0.090	
42	1.4166	0.100	
43	1.5000	0.090	
44	1.5833	0.080	
45	1.6667	0.080	
46	1.7500	0.070	
47	1.8333	0.070	
48	1.9167	0.060	
49	2.0000	0.070	
50	2.5000	0.060	
51	3.0000	0.050	
52	3.5000	0.050	
53	4.0000	0.050	
54	4.5000	0.050	
55	5.0000	0.050	
56	5.5000	0.050	
57	6.0000	0.050	
58	6.5000	0.030	
59	7.0000	0.040	
60	7.5000	0.040	
61	8.0000	0.030	
62	8.5000	0.030	
63	9.0000	0.030	
64	9.5000	0.040	
65	10.0000	0.040	

HYDRAULIC CONDUCTIVITY CALCULATION
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

K, HYDRAULIC CONDUCTIVITY VALUE CALCULATIONS FOR MONITORING WELL MW-15S

WATER LEVEL =	988.44	Ft. (MEAN SEA LEVEL)	FOR	12/19/90
BOTTOM OF SCREEN =	973.88	Ft. (MEAN SEA LEVEL)		
H, SCREENED SATURATED THICKNESS =	14.56	Ft. (MEAN SEA LEVEL)		

WATER LEVEL =	988.44	Ft. (MEAN SEA LEVEL)
BOTTOM OF SATURATED ZONE =	875.01	Ft. (MEAN SEA LEVEL)
D, SATURATED THICKNESS OF AQUIFIER =	113.43	Ft. (MEAN SEA LEVEL)

GIVEN : Rc = 0.08 Ft (2" well, R = 1" or 0.08')
Rw = 0.40 Ft (9.5 " bit, R = 4.75" or 0.40')

IF ln [(D-H) / Rw] < 6 USE THE CALCULATED VALUE .
WHEN ln [(D-H) / Rw] > 6 , USE THE VALUE 6 .

FOR MW-15S ln [(D-H) / Rw] = 5.51

$$\text{USE : } K \quad \frac{(Rc)^2 \ln (Re/Rw)}{2L} * ((1/t) * \ln (Yo / Yt))$$

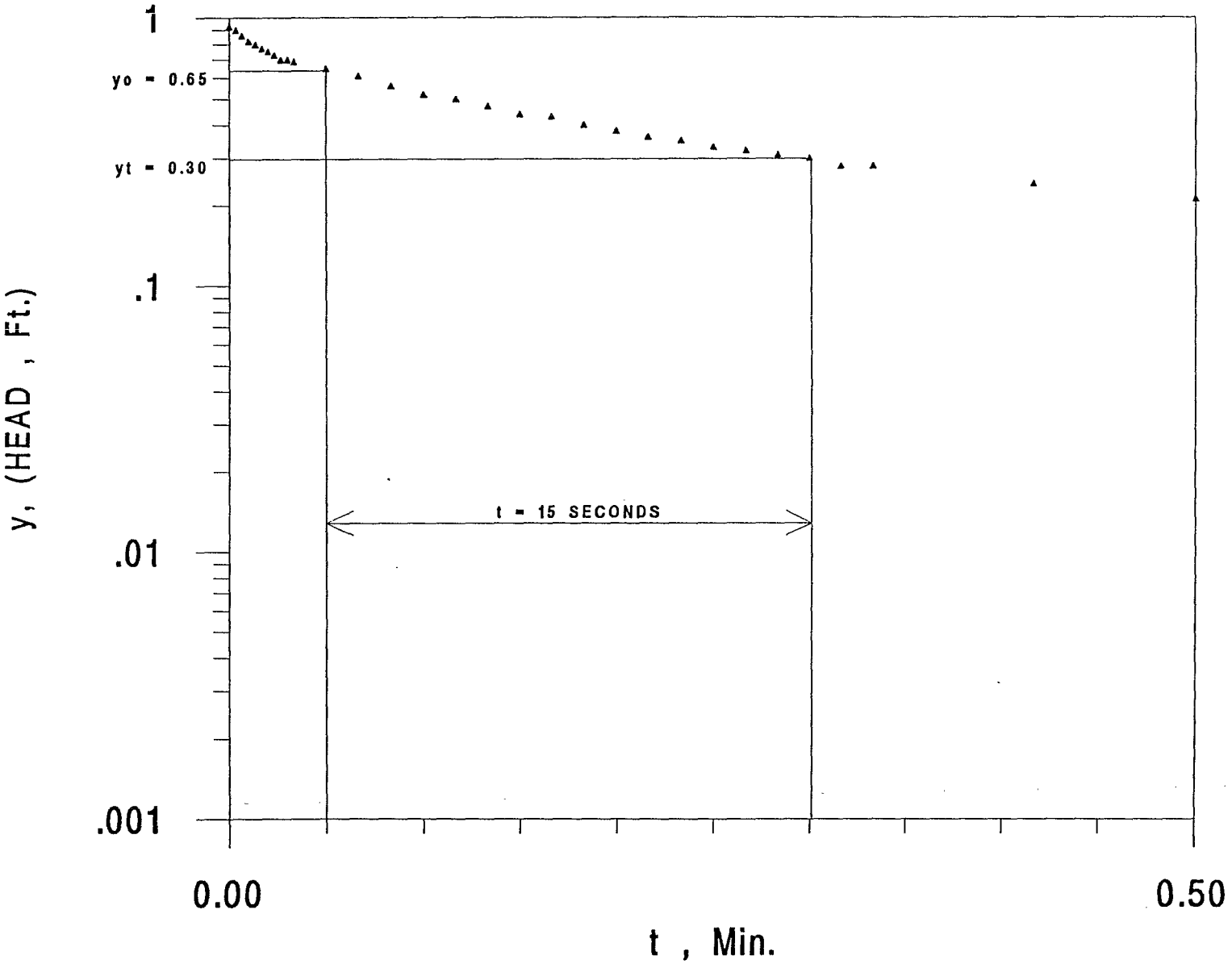
WHERE ln (Re / Rw) = [(1.1 / (ln (H / Rw)) + ((A + Bln[(D-H) / Rw)) / (L/Rw)] ^ -1

Rc =	0.08	Ft.
Rw =	0.40	Ft.
Rc ^ 2 =	0.0064	Ft.^2
2L =	20.00	Ft.
Yo =	0.65	Ft.
Yt =	0.3	Ft.
t =	15.00	Sec.
H =	14.56	Ft.
A =	2.3	
B =	0.3	
L =	10.00	Ft.

THEREFORE ln (Re / Rw) = 2.15

AND K = 3.55E-05 Ft./sec
OR K = 1.08E-03 cm. / sec.

FALLING HEAD SLUG TEST FOR MW-15S



AR302037

	1	2	3	4	5
	t , Min.	Head	Head 1	Head 2	DATE
1	0.0000	-18.910	18.910	0.930	MW-15S0.CGD
2	0.0033	-18.880	18.880	0.900	TIME= 08:47 12/19/90
3	0.0066	-18.840	18.840	0.860	GRAPH = MW-15S0.CGG
4	0.0099	-18.800	18.800	0.820	
5	0.0133	-18.780	18.780	0.800	
6	0.0166	-18.750	18.750	0.770	
7	0.0200	-18.730	18.730	0.750	
8	0.0233	-18.710	18.710	0.730	
9	0.0266	-18.680	18.680	0.700	
10	0.0300	-18.680	18.680	0.700	
11	0.0333	-18.670	18.670	0.690	
12	0.0500	-18.630	18.630	0.650	
13	0.0666	-18.590	18.590	0.610	
14	0.0833	-18.540	18.540	0.560	
15	0.1000	-18.500	18.500	0.520	
16	0.1166	-18.480	18.480	0.500	
17	0.1333	-18.450	18.450	0.470	
18	0.1500	-18.420	18.420	0.440	
19	0.1666	-18.410	18.410	0.430	
20	0.1833	-18.380	18.380	0.400	
21	0.2000	-18.360	18.360	0.380	
22	0.2166	-18.340	18.340	0.360	
23	0.2333	-18.330	18.330	0.350	
24	0.2500	-18.310	18.310	0.330	
25	0.2666	-18.300	18.300	0.320	
26	0.2833	-18.290	18.290	0.310	
27	0.3000	-18.280	18.280	0.300	
28	0.3166	-18.260	18.260	0.280	
29	0.3333	-18.260	18.260	0.280	
30	0.4167	-18.220	18.220	0.240	
31	0.5000	-18.190	18.190	0.210	
32	0.5833	-18.160	18.160	0.180	
33	0.6667	-18.140	18.140	0.160	
34	0.7500	-18.130	18.130	0.150	
35	0.8333	-18.110	18.110	0.130	
36	0.9167	-18.110	18.110	0.130	
37	1.0000	-18.100	18.100	0.120	
38	1.0833	-18.090	18.090	0.110	
39	1.1667	-18.090	18.090	0.110	
40	1.2500	-18.080	18.080	0.100	
41	1.3333	-18.070	18.070	0.090	
42	1.4166	-18.060	18.060	0.080	
43	1.5000	-18.060	18.060	0.080	
44	1.5833	-18.060	18.060	0.080	
45	1.6667	-18.050	18.050	0.070	
46	1.7500	-18.050	18.050	0.070	
47	1.8333	-18.050	18.050	0.070	
48	1.9167	-18.050	18.050	0.070	
49	2.0000	-18.050	18.050	0.070	
50	2.5000	-18.030	18.030	0.050	
51	3.0000	-18.030	18.030	0.050	
52	3.5000	-18.030	18.030	0.050	
53	4.0000	-18.010	18.010	0.030	
54	4.5000	-18.010	18.010	0.030	
55	5.0000	-18.010	18.010	0.030	
56	5.5000	-18.010	18.010	0.030	
57	6.0000	-18.000	18.000	0.020	
58	6.5000	-18.010	18.010	0.030	
59	7.0000	-18.000	18.000	0.020	
60	7.5000	-18.000	18.000	0.020	
61	8.0000	-18.000	18.000	0.020	
62	8.5000	-18.000	18.000	0.020	
63	9.0000	-17.990	17.990	0.010	
64	9.5000	-18.000	18.000	0.020	
65	10.0000	-17.990	17.990	0.010	
66	12.0000	-17.990	17.990	0.010	
67	14.0000	-17.980	17.980	0.000	
68	16.0000	-17.990	17.990	0.010	
69	18.0000	-17.980	17.980	0.000	

HYDRAULIC CONDUCTIVITY CALCULATION
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

K, HYDRAULIC CONDUCTIVITY VALUE CALCULATIONS FOR MONITORING WELL MW-16S

WATER LEVEL =	997.49	Ft. (MEAN SEA LEVEL)	FOR	12/20/90
BOTTOM OF SCREEN =	983.6	Ft. (MEAN SEA LEVEL)		
H, SCREENED SATURATED THICKNESS =	13.89	Ft. (MEAN SEA LEVEL)		

WATER LEVEL =	997.49	Ft. (MEAN SEA LEVEL)
BOTTOM OF SATURATED ZONE =	891.60	Ft. (MEAN SEA LEVEL)
D, SATURATED THICKNESS OF AQUIFIER =	105.89	Ft. (MEAN SEA LEVEL)

GIVEN : Rc = 0.08 Ft (2" well, R = 1" or 0.08')
Rw = 0.40 Ft (9.5 " bit, R = 4.75" or 0.40')

IF ln [(D-H) / Rw] < 6 USE THE CALCULATED VALUE .
WHEN ln [(D-H) / Rw] > 6 , USE THE VALUE 6 .

FOR MW-16S ln [(D-H) / Rw] = 5.44

$$\text{USE : } K \quad \frac{(Rc)^2 \ln (Re/Rw)}{2L} * ((1 / t) * \ln (Yo / Yt))$$

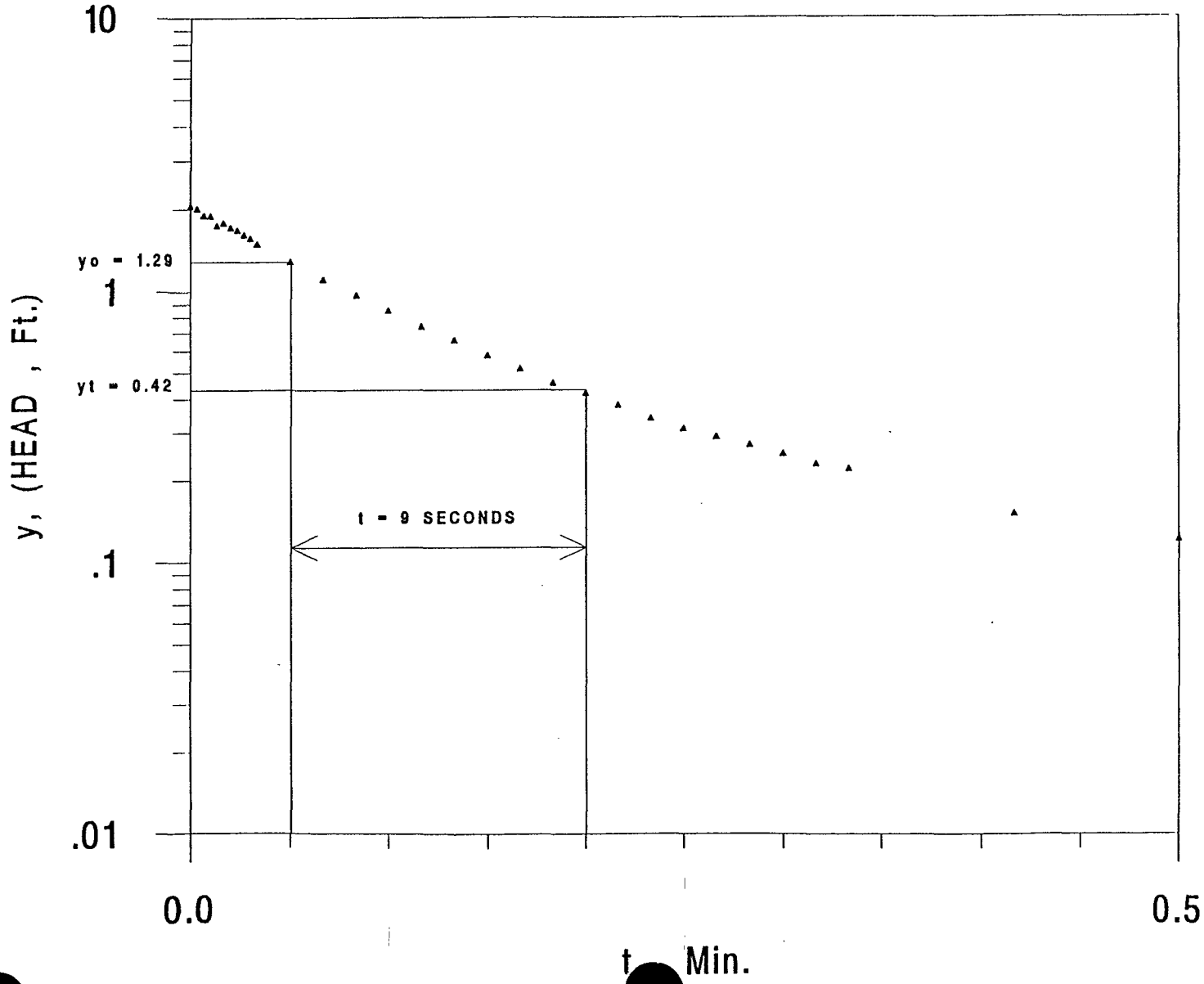
WHERE ln (Re / Rw) = [(1.1 / (ln (H / Rw)) + ((A + Bln[(D-H) / Rw)) / (L/Rw)] ^ -1

Rc =	0.08	Ft.
Rw =	0.40	Ft.
Rc ^ 2 =	0.0064	Ft.^2
2L =	20.00	Ft.
Yo =	1.29	Ft.
Yt =	0.42	Ft.
t =	9.00	Sec.
H =	13.89	Ft.
A =	2.3	
B =	0.3	
L =	10.00	Ft.

THEREFORE ln (Re / Rw) = 2.14

AND K = 8.54E-05 Ft./sec
OR K = 2.60E-03 cm. / sec.

RISING HEAD SLUG TEST FOR MW-16S



AR302040

	1	2	3	5
	t , Min.	HEAD	HEAD1	DATE
1	0.0000	-13.520	2.060	MW-16S1.CGD
2	0.0033	-13.560	2.020	TIME= 19:08 12/20/90
3	0.0066	-13.670	1.910	GRAPH = MW-16S0.CGG
4	0.0099	-13.680	1.900	
5	0.0133	-13.830	1.750	
6	0.0166	-13.790	1.790	
7	0.0200	-13.860	1.720	
8	0.0233	-13.900	1.680	
9	0.0266	-13.960	1.620	
10	0.0300	-14.010	1.570	
11	0.0333	-14.080	1.500	
12	0.0500	-14.290	1.290	
13	0.0666	-14.470	1.110	
14	0.0833	-14.610	0.970	
15	0.1000	-14.730	0.850	
16	0.1166	-14.840	0.740	
17	0.1333	-14.920	0.660	
18	0.1500	-15.000	0.580	
19	0.1666	-15.060	0.520	
20	0.1833	-15.120	0.460	
21	0.2000	-15.160	0.420	
22	0.2166	-15.200	0.380	
23	0.2333	-15.240	0.340	
24	0.2500	-15.270	0.310	
25	0.2666	-15.290	0.290	
26	0.2833	-15.310	0.270	
27	0.3000	-15.330	0.250	
28	0.3166	-15.350	0.230	
29	0.3333	-15.360	0.220	
30	0.4167	-15.430	0.150	
31	0.5000	-15.460	0.120	
32	0.5833	-15.480	0.100	
33	0.6667	-15.500	0.080	
34	0.7500	-15.510	0.070	
35	0.8333	-15.510	0.070	
36	0.9167	-15.520	0.060	
37	1.0000	-15.530	0.050	
38	1.0833	-15.530	0.050	
39	1.1667	-15.540	0.040	
40	1.2500	-15.540	0.040	
41	1.3333	-15.530	0.050	
42	1.4166	-15.540	0.040	
43	1.5000	-15.540	0.040	
44	1.5833	-15.540	0.040	
45	1.6667	-15.540	0.040	
46	1.7500	-15.540	0.040	
47	1.8333	-15.540	0.040	
48	1.9167	-15.540	0.040	
49	2.0000	-15.540	0.040	
50	2.5000	-15.550	0.030	
51	3.0000	-15.550	0.030	
52	3.5000	-15.550	0.030	
53	4.0000	-15.550	0.030	
54	4.5000	-15.550	0.030	
55	5.0000	-15.550	0.030	
56	5.5000	-15.550	0.030	
57	6.0000	-15.550	0.030	
58	6.5000	-15.550	0.030	
59	7.0000	-15.600	-0.020	
60	7.5000	-15.550	0.030	
61	8.0000	-15.550	0.030	
62	8.5000	-15.560	0.020	
63	9.0000	-15.550	0.030	
64	9.5000	-15.560	0.020	
65	10.0000	-15.550	0.030	
66	12.0000	-15.550	0.030	
67	14.0000	-15.560	0.020	
68	16.0000	-15.580	0.000	

HYDRAULIC CONDUCTIVITY CALCULATION
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

K, HYDRAULIC CONDUCTIVITY VALUE CALCULATIONS FOR MONITORING WELL MW-17S

WATER LEVEL =	1002.79	Ft. (MEAN SEA LEVEL)	FOR	1/25/91
BOTTOM OF SCREEN =	984.37	Ft. (MEAN SEA LEVEL)		
H, SCREENED SATURATED THICKNESS =	18.42	Ft. (MEAN SEA LEVEL)		
WATER LEVEL =	1002.79	Ft. (MEAN SEA LEVEL)		
BOTTOM OF SATURATED ZONE =	925.53	Ft. (MEAN SEA LEVEL)		
D, SATURATED THICKNESS OF AQUIFIER =	77.26	Ft. (MEAN SEA LEVEL)		

GIVEN : Rc = 0.08 Ft (2" well, R = 1" or 0.08')
Rw = 0.40 Ft (9.5 " bit, R = 4.75" or 0.40')

IF ln [(D-H) / Rw] < 6 USE THE CALCULATED VALUE .
WHEN ln [(D-H) / Rw] > 6 , USE THE VALUE 6 .

FOR MW-17S ln [(D-H) / Rw] = 4.99

$$\text{USE : } K \quad \frac{(Rc)^2 \ln (Re/Rw)}{2L} * ((1/t) * \ln (Yo / Yt))$$

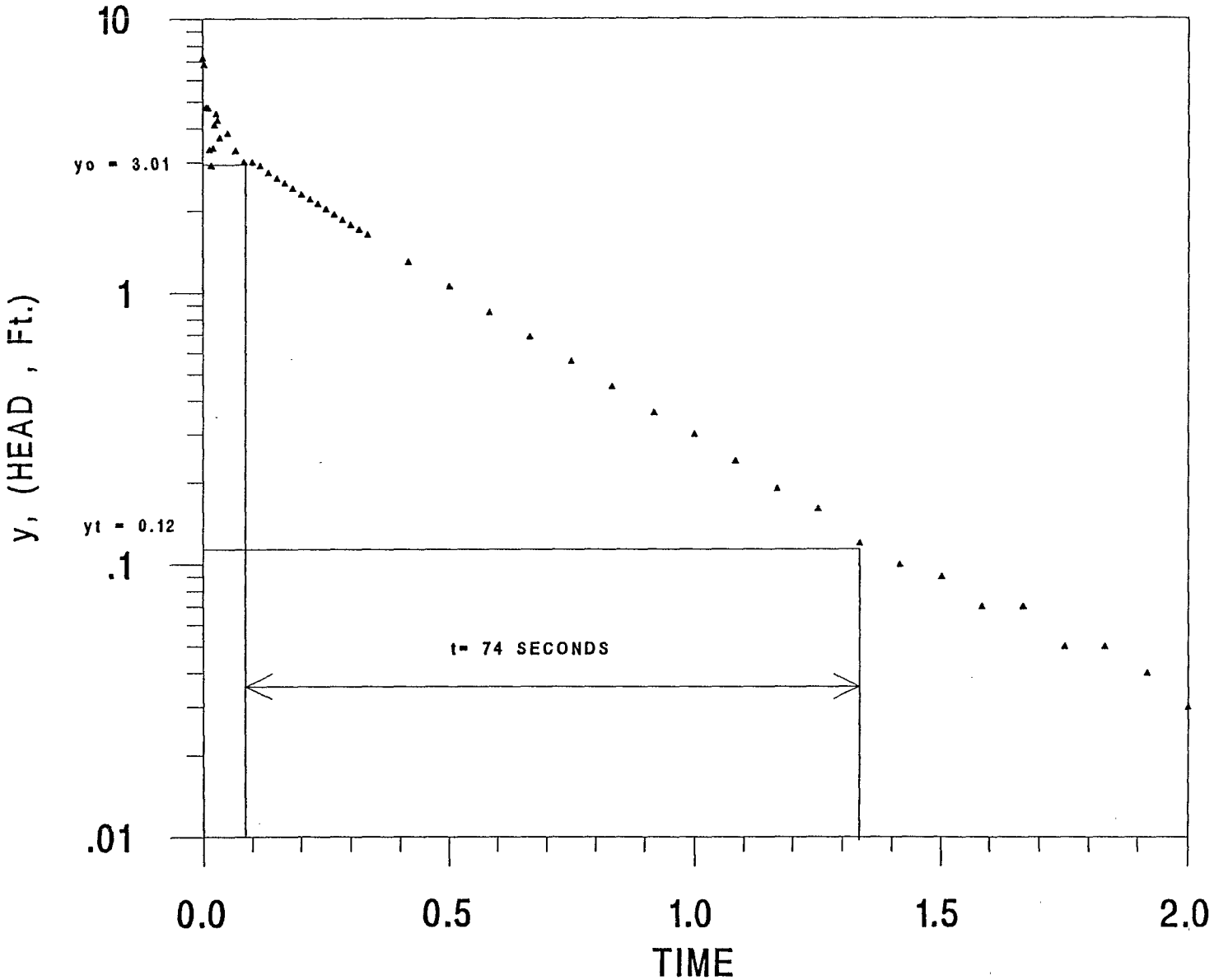
WHERE $\ln (Re / Rw) = [(1.1 / (\ln (H / Rw)) + ((A + B\ln[(D-H) / Rw)) / (L/Rw)]^{-1}$

Rc =	0.08	Ft.
Rw =	0.40	Ft.
Rc ^ 2 =	0.0064	Ft.^2
2L =	20.00	Ft.
Yo =	3.01	Ft.
Yt =	0.12	Ft.
t =	74.00	Sec.
H =	18.42	Ft.
A =	2.3	
B =	0.3	
L =	10.00	Ft.

THEREFORE ln (Re / Rw) = 2.28

AND K = 3.17E-05 Ft./sec
OR K = 9.67E-04 cm. / sec.

RISING HEAD SLUG TEST FOR MW-17S



AR302043

	1	2	3
	TIME	HEAD	DATE
1	0.0000	7.22	MW-17SA1.CGD
2	0.0033	6.83	TIME 10:18 1/25/91
3	0.0066	4.77	GRAPH=MW-17SA1.CGG
4	0.0099	4.75	
5	0.0133	3.34	
6	0.0166	2.93	
7	0.0200	3.39	
8	0.0233	4.12	
9	0.0266	4.52	
10	0.0300	4.28	
11	0.0333	3.7	
12	0.0500	3.85	
13	0.0666	3.32	
14	0.0833	3.02	
15	0.1000	3.01	
16	0.1166	2.93	
17	0.1333	2.75	
18	0.1500	2.62	
19	0.1666	2.53	
20	0.1833	2.42	
21	0.2000	2.30	
22	0.2166	2.21	
23	0.2333	2.12	
24	0.2500	2.03	
25	0.2666	1.94	
26	0.2833	1.86	
27	0.3000	1.78	
28	0.3166	1.71	
29	0.3333	1.64	
30	0.4167	1.3	
31	0.5000	1.06	
32	0.5833	.85	
33	0.6667	.69	
34	0.7500	.56	
35	0.8333	.45	
36	0.9167	.36	
37	1.0000	.30	
38	1.0833	.24	
39	1.1667	.19	
40	1.2500	.16	
41	1.3333	.12	
42	1.4166	.10	
43	1.5000	.09	
44	1.5833	.07	
45	1.6667	.07	
46	1.7500	.05	
47	1.8333	.05	
48	1.9167	.04	
49	2.0000	.03	
50	2.5000	.02	
51	3.0000	0	

HYDRAULIC CONDUCTIVITY CALCULATION
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

K, HYDRAULIC CONDUCTIVITY VALUE CALCULATIONS FOR MONITORING WELL MW-18S

WATER LEVEL =	999.12	Ft. (MEAN SEA LEVEL)	FOR	12/20/90
BOTTOM OF SCREEN =	961.28	Ft. (MEAN SEA LEVEL)		
H, SCREENED SATURATED THICKNESS =	37.84	Ft. (MEAN SEA LEVEL)		

WATER LEVEL =	999.12	Ft. (MEAN SEA LEVEL)
BOTTOM OF SATURATED ZONE =	912.01	Ft. (MEAN SEA LEVEL)
D, SATURATED THICKNESS OF AQUIFIER =	87.11	Ft. (MEAN SEA LEVEL)

GIVEN : Rc = 0.08 Ft (2" well, R = 1" or 0.08')
Rw = 0.40 Ft (9.5 " bit, R = 4.75" or 0.40')

IF ln [(D-H) / Rw] < 6 USE THE CALCULATED VALUE .
WHEN ln [(D-H) / Rw] > 6 , USE THE VALUE 6 .

FOR MW-18S ln [(D-H) / Rw] = 4.81

USE : $K \quad \frac{(Rc)^2 \ln (Re/Rw)}{2L} *((1/t) * \ln(Yo/Yt))$

WHERE ln (Re / Rw) = [(1.1 / (ln (H / Rw)) + ((A + Bln[(D-H) / Rw)) / (L/Rw)] ^ -1

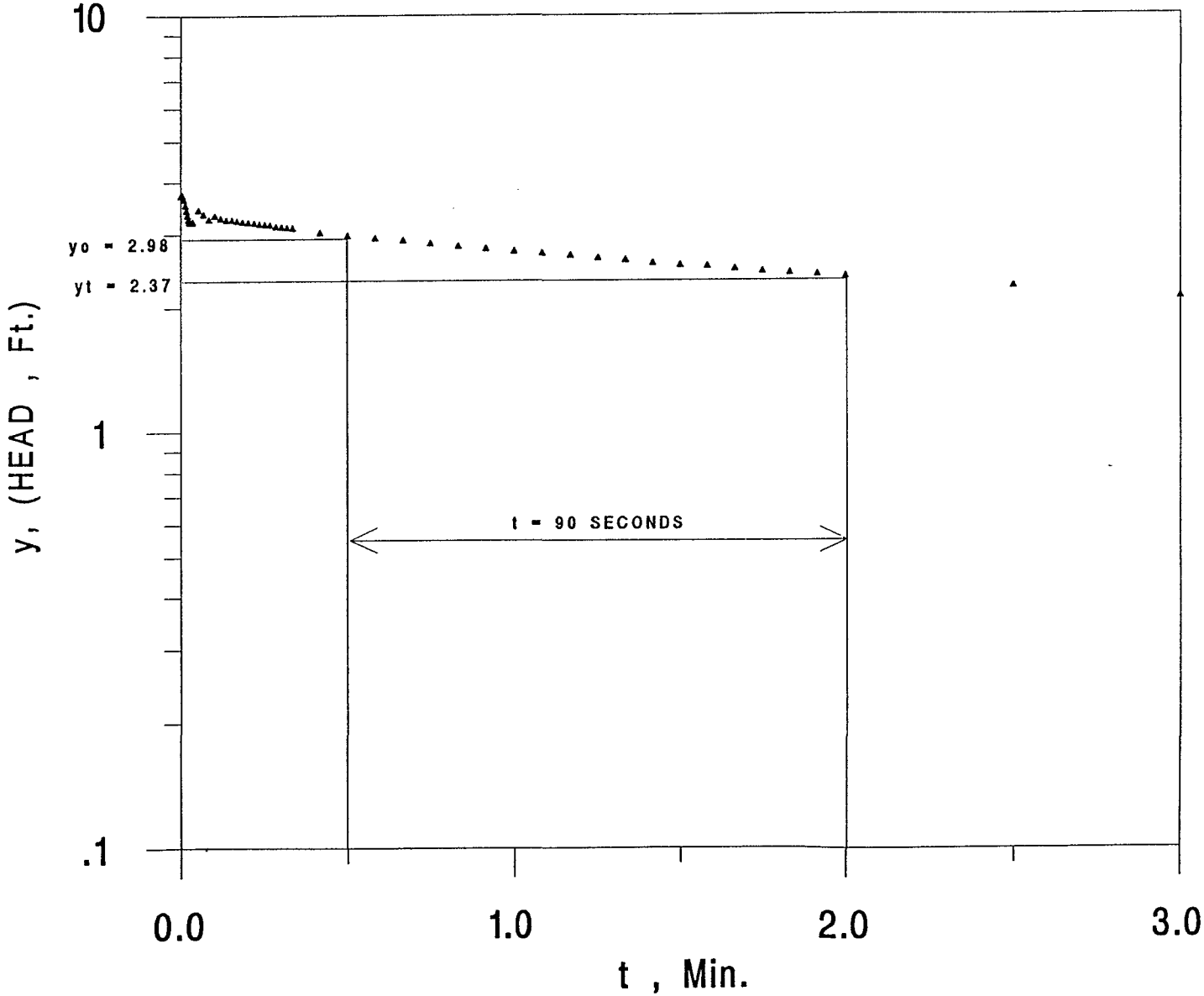
Rc =	0.08	Ft.
Rw =	0.40	Ft.
Rc ^ 2 =	0.0064	Ft.^2
2L =	30.00	Ft.
Yo =	2.98	Ft.
Yt =	2.37	Ft.
t =	90.00	Sec.
H =	37.84	Ft.
A =	2.3	
B =	0.3	
L =	15.00	Ft.

THEREFORE ln (Re / Rw) = 2.93

AND K = 1.59E-06 Ft./sec
OR K = 4.84E-05 cm. / sec.

AR302045

FALLING HEAD SLUG TEST FOR MW-18S



AR302046

	1	2	3	4	5
	t , Min.	Head	Head 1	Head 2	TIME
1	0.0000	-25.200	25.200	3.720	MW-18S0.CGD
2	0.0033	-25.220	25.220	3.740	12/20/91
3	0.0066	-25.200	25.200	3.720	MW-18S0.CGG
4	0.0099	-25.130	25.130	3.650	
5	0.0133	-25.010	25.010	3.530	
6	0.0166	-24.910	24.910	3.430	
7	0.0200	-24.820	24.820	3.340	
8	0.0233	-24.750	24.750	3.270	
9	0.0266	-24.700	24.700	3.220	
10	0.0300	-24.690	24.690	3.210	
11	0.0333	-24.710	24.710	3.230	
12	0.0500	-24.920	24.920	3.440	
13	0.0666	-24.840	24.840	3.360	
14	0.0833	-24.750	24.750	3.270	
15	0.1000	-24.810	24.810	3.330	
16	0.1166	-24.770	24.770	3.290	
17	0.1333	-24.740	24.740	3.260	
18	0.1500	-24.740	24.740	3.260	
19	0.1666	-24.720	24.720	3.240	
20	0.1833	-24.700	24.700	3.220	
21	0.2000	-24.690	24.690	3.210	
22	0.2166	-24.680	24.680	3.200	
23	0.2333	-24.660	24.660	3.180	
24	0.2500	-24.650	24.650	3.170	
25	0.2666	-24.640	24.640	3.160	
26	0.2833	-24.620	24.620	3.140	
27	0.3000	-24.610	24.610	3.130	
28	0.3166	-24.600	24.600	3.120	
29	0.3333	-24.590	24.590	3.110	
30	0.4167	-24.510	24.510	3.030	
31	0.5000	-24.460	24.460	2.980	
32	0.5833	-24.420	24.420	2.940	
33	0.6667	-24.380	24.380	2.900	
34	0.7500	-24.330	24.330	2.850	
35	0.8333	-24.290	24.290	2.810	
36	0.9167	-24.250	24.250	2.770	
37	1.0000	-24.210	24.210	2.730	
38	1.0833	-24.180	24.180	2.700	
39	1.1667	-24.150	24.150	2.670	
40	1.2500	-24.110	24.110	2.630	
41	1.3333	-24.080	24.080	2.600	
42	1.4166	-24.040	24.040	2.560	
43	1.5000	-24.010	24.010	2.530	
44	1.5833	-23.990	23.990	2.510	
45	1.6667	-23.960	23.960	2.480	
46	1.7500	-23.920	23.920	2.440	
47	1.8333	-23.900	23.900	2.420	
48	1.9167	-23.880	23.880	2.400	
49	2.0000	-23.850	23.850	2.370	
50	2.5000	-23.720	23.720	2.240	
51	3.0000	-23.590	23.590	2.110	
52	3.5000	-23.470	23.470	1.990	
53	4.0000	-23.370	23.370	1.890	
54	4.5000	-23.270	23.270	1.790	
55	5.0000	-23.180	23.180	1.700	
56	5.5000	-23.110	23.110	1.630	
57	6.0000	-23.030	23.030	1.550	
58	6.5000	-22.960	22.960	1.480	
59	7.0000	-22.900	22.900	1.420	
60	7.5000	-22.830	22.830	1.350	
61	8.0000	-22.770	22.770	1.290	
62	8.5000	-22.710	22.710	1.230	
63	9.0000	-22.670	22.670	1.190	
64	9.5000	-22.620	22.620	1.140	
65	10.0000	-22.570	22.570	1.090	
66	12.0000	-22.400	22.400	0.920	
67	14.0000	-22.260	22.260	0.780	
68	16.0000	-22.150	22.150	0.670	
69	18.0000	-22.070	22.070	0.590	
70	20.0000	-21.980	21.980	0.500	
71	22.0000	-21.930	21.930	0.450	
72	24.0000	-21.860	21.860	0.380	
73	26.0000	-21.810	21.810	0.330	

	1	2	3	4	5
	t , Min.	Head	Head 1	Head 2	TIME
74	28.0000	-21.770	21.770	0.290	
75	30.0000	-21.740	21.740	0.260	
76	32.0000	-21.700	21.700	0.220	
77	34.0000	-21.670	21.670	0.190	
78	36.0000	-21.640	21.640	0.160	
79	38.0000	-21.620	21.620	0.140	
80	40.0000	-21.600	21.600	0.120	
81	42.0000	-21.570	21.570	0.090	
82	44.0000	-21.570	21.570	0.090	
83	46.0000	-21.550	21.550	0.070	
84	48.0000	-21.540	21.540	0.060	
85	50.0000	-21.520	21.520	0.040	
86	52.0000	-21.510	21.510	0.030	
87	54.0000	-21.500	21.500	0.020	
88	56.0000	-21.490	21.490	0.010	
89	58.0000	-21.490	21.490	0.010	
90	60.0000	-21.480	21.480	0.000	

HYDRAULIC CONDUCTIVITY CALCULATION
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

K, HYDRAULIC CONDUCTIVITY VALUE CALCULATIONS FOR MONITORING WELL MW-19S

WATER LEVEL =	998.79	Ft. (MEAN SEA LEVEL)	FOR	12/19/90
BOTTOM OF SCREEN =	985.28	Ft. (MEAN SEA LEVEL)		
H, SCREENED SATURATED THICKNESS =	13.51	Ft. (MEAN SEA LEVEL)		

WATER LEVEL =	998.79	Ft. (MEAN SEA LEVEL)
BOTTOM OF SATURATED ZONE =	891.52	Ft. (MEAN SEA LEVEL)
D, SATURATED THICKNESS OF AQUIFIER =	107.27	Ft. (MEAN SEA LEVEL)

GIVEN : Rc = 0.08 Ft (2" well, R = 1" or 0.08')
Rw = 0.40 Ft (9.5 " bit, R = 4.75" or 0.40')

IF ln [(D-H) / Rw] < 6 USE THE CALCULATED VALUE .
WHEN ln [(D-H) / Rw] > 6 , USE THE VALUE 6 .

FOR MW-19S ln [(D-H) / Rw] = 5.46

$$\text{USE : } K \quad \frac{(Rc)^2 \ln (Re/Rw)}{2L} * ((1/t) * \ln (Yo / Yt))$$

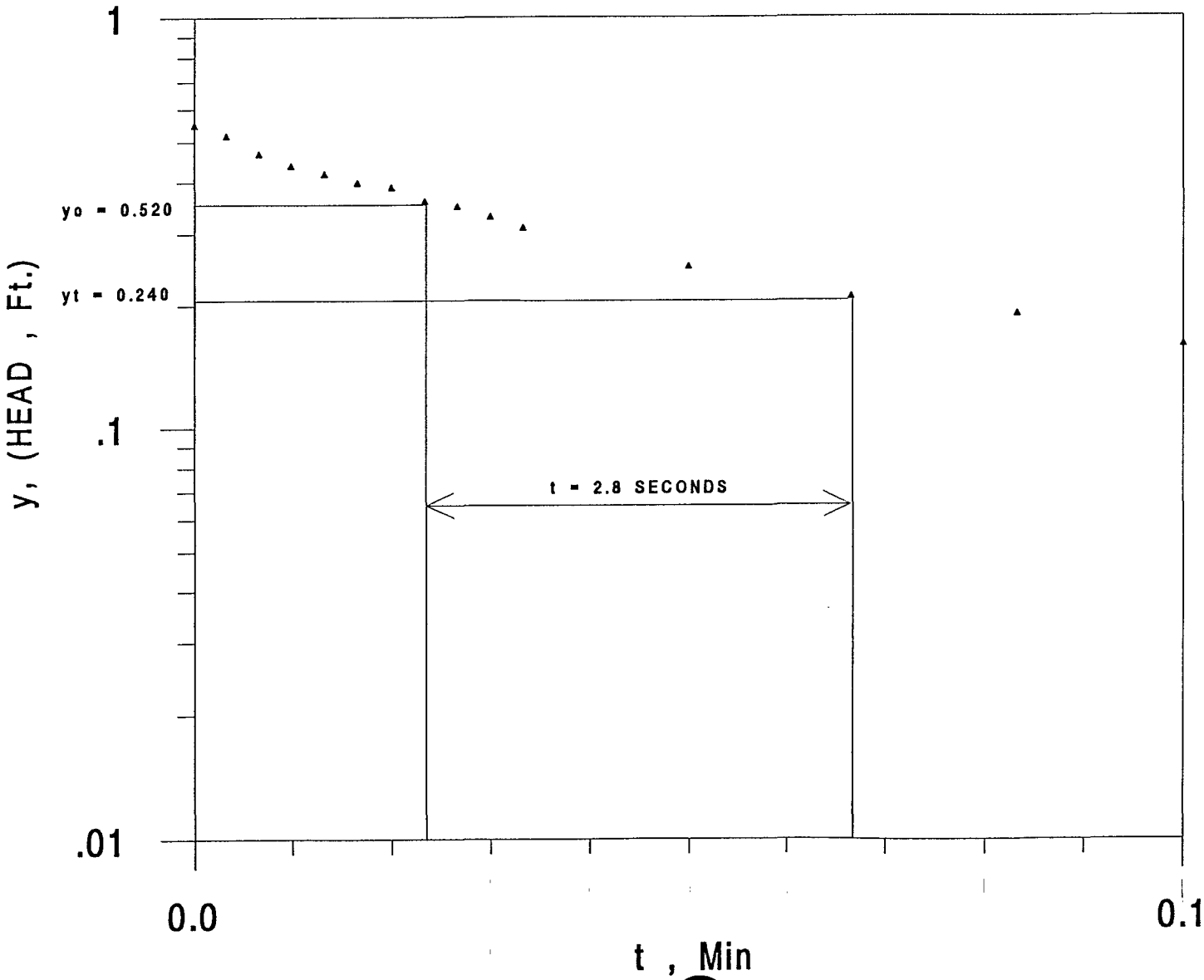
WHERE ln (Re / Rw) = [(1.1 / (ln (H / Rw)) + ((A + Bln[(D-H) / Rw)) / (L/Rw)] ^ -1

Rc =	0.08	Ft.
Rw =	0.40	Ft.
Rc ^ 2 =	0.0064	Ft.^2
2L =	20.00	Ft.
Yo =	0.52	Ft.
Yt =	0.24	Ft.
t =	2.80	Sec.
H =	13.51	Ft.
A =	2.3	
B =	0.3	
L =	10.00	Ft.

THEREFORE ln (Re / Rw) = 2.13

AND K = 1.88E-04 Ft./sec
OR K = 5.73E-03 cm. / sec.

RISING HEAD SLUG TEST FOR MW-19S



AR302050

	1	2	3	4
	t , Min	HEAD	HEAD 1	DATE
1	0.0000	-13.890	0.550	MW-19S1.CGD
2	0.0033	-13.920	0.520	TIME= 13:00 12/19/90
3	0.0066	-13.970	0.470	GRAPH = MW-19S1.CGG
4	0.0099	-14.000	0.440	
5	0.0133	-14.020	0.420	
6	0.0166	-14.040	0.400	
7	0.0200	-14.050	0.390	
8	0.0233	-14.080	0.360	
9	0.0266	-14.090	0.350	
10	0.0300	-14.110	0.330	
11	0.0333	-14.130	0.310	
12	0.0500	-14.190	0.250	
13	0.0666	-14.230	0.210	
14	0.0833	-14.250	0.190	
15	0.1000	-14.280	0.160	
16	0.1166	-14.300	0.140	
17	0.1333	-14.310	0.130	
18	0.1500	-14.310	0.130	
19	0.1666	-14.330	0.110	
20	0.1833	-14.330	0.110	
21	0.2000	-14.350	0.090	
22	0.2166	-14.340	0.100	
23	0.2333	-14.350	0.090	
24	0.2500	-14.350	0.090	
25	0.2666	-14.350	0.090	
26	0.2833	-14.360	0.080	
27	0.3000	-14.360	0.080	
28	0.3166	-14.360	0.080	
29	0.3333	-14.360	0.080	
30	0.4167	-14.370	0.070	
31	0.5000	-14.380	0.060	
32	0.5833	-14.380	0.060	
33	0.6667	-14.390	0.050	
34	0.7500	-14.400	0.040	
35	0.8333	-14.400	0.040	
36	0.9167	-14.400	0.040	
37	1.0000	-14.410	0.030	
38	1.0833	-14.410	0.030	
39	1.1667	-14.410	0.030	
40	1.2500	-14.410	0.030	
41	1.3333	-14.410	0.030	
42	1.4166	-14.410	0.030	
43	1.5000	-14.420	0.020	
44	1.5833	-14.420	0.020	
45	1.6667	-14.430	0.010	
46	1.7500	-14.420	0.020	
47	1.8333	-14.430	0.010	
48	1.9167	-14.420	0.020	
49	2.0000	-14.430	0.010	
50	2.5000	-14.430	0.010	
51	3.0000	-14.440	0.000	
52	3.5000	-14.440	0.000	
53	4.0000	-14.440	0.000	
54	4.5000	-14.440	0.000	
55	5.0000	-14.440	0.000	
56	5.5000	-14.430	0.010	
57	6.0000	-14.430	0.010	
58	6.5000	-14.430	0.010	
59	7.0000	-14.430	0.010	
60	7.5000	-14.430	0.010	
61	8.0000	-14.430	0.010	
62	8.5000	-14.430	0.010	
63	9.0000	-14.430	0.010	
64	9.5000	-14.430	0.010	
65	10.0000	-14.430	0.010	
66	12.0000	-14.420	0.020	
67	14.0000	-14.410	0.030	

HYDRAULIC CONDUCTIVITY CALCULATION
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

K, HYDRAULIC CONDUCTIVITY VALUE CALCULATIONS FOR MONITORING WELL MW-10D

WATER LEVEL = 1015.21 Ft. (MEAN SEA LEVEL) FOR 1/24/91
BOTTOM OF SCREEN = 971.69 Ft. (MEAN SEA LEVEL)
H, SCREENED SATURATED THICKNESS = 43.52 Ft. (MEAN SEA LEVEL)

WATER LEVEL = 1015.21 Ft. (MEAN SEA LEVEL)
BOTTOM OF SATURATED ZONE = 971.69 Ft. (MEAN SEA LEVEL)
D, SATURATED THICKNESS OF AQUIFIER = 43.52 Ft. (MEAN SEA LEVEL)

GIVEN : Rc = 0.08 Ft (2" well, R = 1" or 0.08')
Rw = 0.40 Ft (9.5 " bit, R = 4.75" or 0.40')

$$\text{USE : } K = \frac{(Rc)^2 \ln (Re/Rw)}{2L} * ((1 / t) * \ln (Yo / Yt))$$

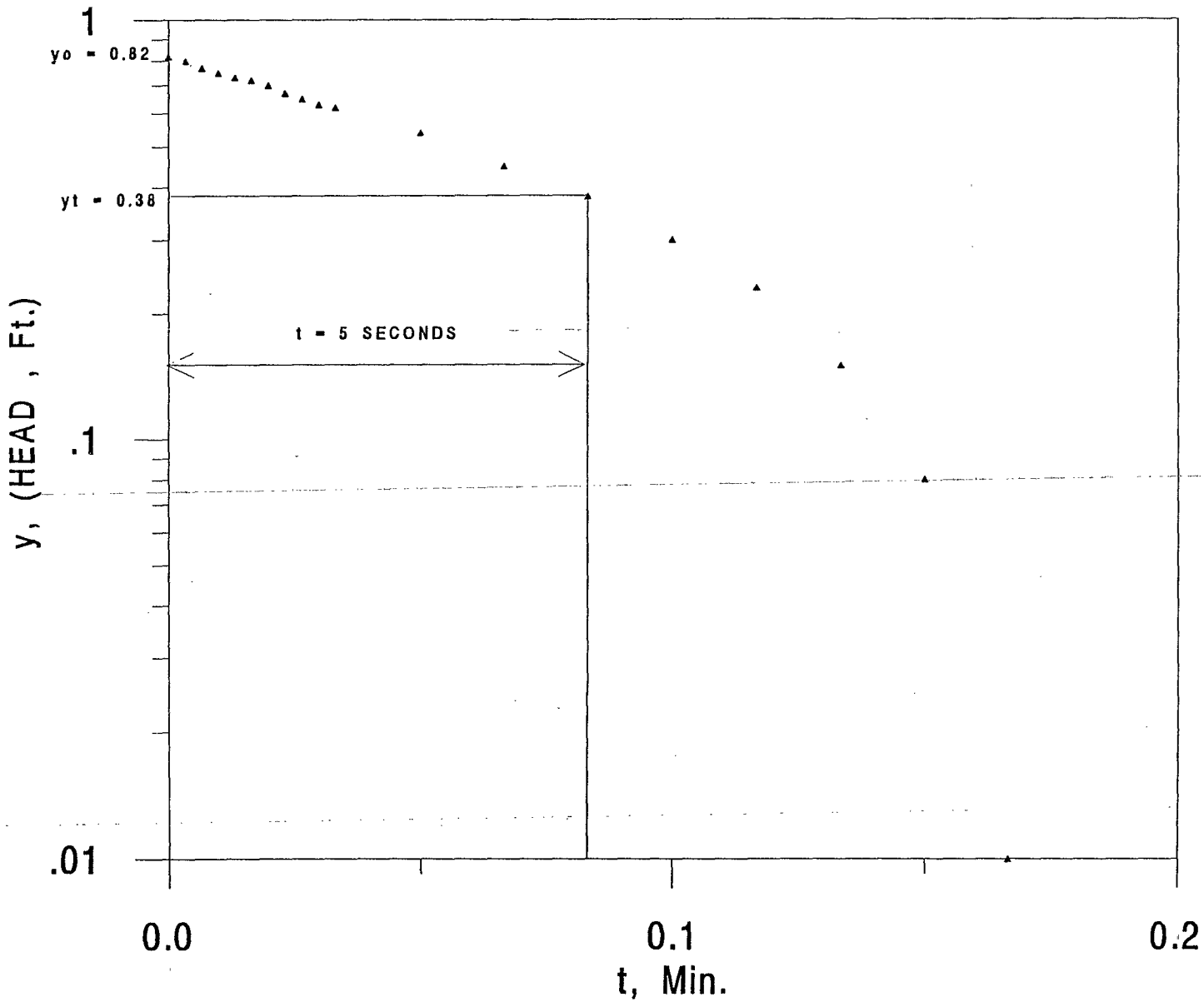
AND WHEN D=H , $\ln (Re / Rw) = [(1.1 / (\ln (H / Rw)) + (C / (L/Rw)]^{-1}$

Rc =	0.08	Ft.
Rw =	0.40	Ft.
Rc ^ 2 =	0.0064	Ft.^2
2L =	20.00	Ft.
Yo =	0.82	Ft.
Yt =	0.38	Ft.
t =	5.00	Sec.
H =	43.52	Ft.
C =	1.8	
L =	10.00	Ft.

THEREFORE ln (Re / Rw) = 3.3

AND K = 1.61E-04 Ft. / sec.
OR K = 4.89E-03 cm / sec.

RISING HEAD SLUG TEST FOR MW-10D



AR302053

	1	2	3
	t, Min.	HEAD	DATE
1	0.0000	0.8200	TEST 1/24/91 11:56
2	0.0033	0.8000	CGG= MW-10DB1.CGG
3	0.0066	0.7700	MW-10DB1.CGD
4	0.0099	0.7500	
5	0.0133	0.7300	
6	0.0166	0.7200	
7	0.0200	0.7000	
8	0.0233	0.6700	
9	0.0266	0.6500	
10	0.0300	0.6300	
11	0.0333	0.6200	
12	0.0500	0.5400	
13	0.0666	0.4500	
14	0.0833	0.3800	
15	0.1000	0.3000	
16	0.1166	0.2300	
17	0.1333	0.1500	
18	0.1500	0.0800	
19	0.1666	0.0100	
20	0.1833	0.0000	

HYDRAULIC CONDUCTIVITY CALCULATION
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

K, HYDRAULIC CONDUCTIVITY VALUE CALCULATIONS FOR MONITORING WELL MW-11D

WATER LEVEL =	996.44 Ft. (MEAN SEA LEVEL)	FOR	12/20/90
BOTTOM OF SCREEN =	909.50 Ft. (MEAN SEA LEVEL)		
H, SCREENED SATURATED THICKNESS =	86.94 Ft. (MEAN SEA LEVEL)		

WATER LEVEL =	996.44 Ft. (MEAN SEA LEVEL)
BOTTOM OF SATURATED ZONE =	909.50 Ft. (MEAN SEA LEVEL)
D, SATURATED THICKNESS OF AQUIFIER =	86.94 Ft. (MEAN SEA LEVEL)

GIVEN : Rc = 0.08 Ft (2" well, R = 1" or 0.08')
Rw = 0.40 Ft (9.5 " bit, R = 4.75" or 0.40')

$$\text{USE : } K = \frac{(Rc)^2 \ln (Re/Rw)}{2L} *((1/t) * \ln(Yo/Yt))$$

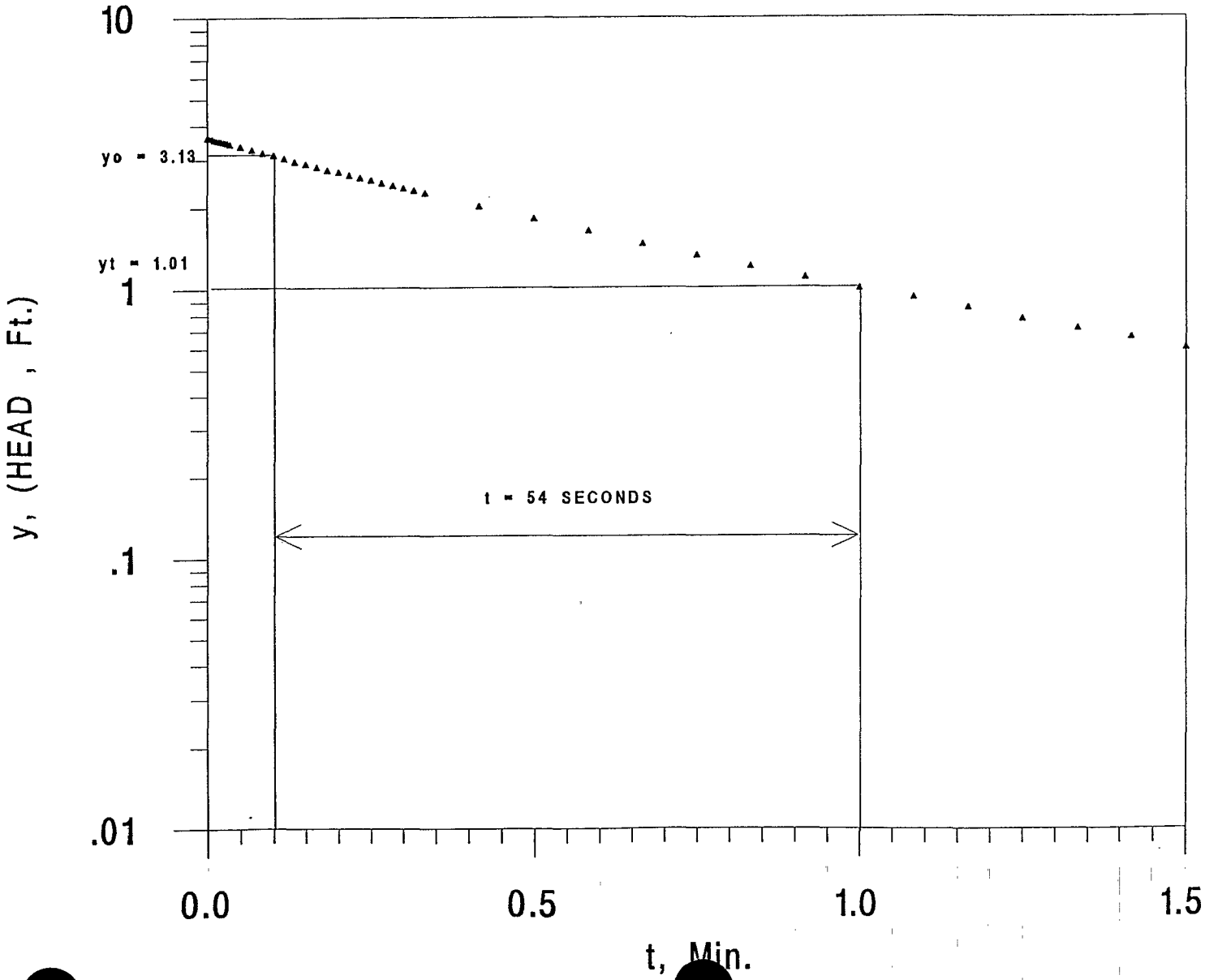
AND WHEN D=H , ln (Re / Rw) = [(1.1 / (ln (H / Rw)) + (C / (L/Rw)] ^ -1

Rc =	0.08	Ft.
Rw =	0.40	Ft.
Rc ^ 2 =	0.0064	Ft.^2
2L =	20.00	Ft.
Yo =	3.13	Ft.
Yt =	1.01	Ft.
t =	54.00	Sec.
H =	86.94	Ft.
C =	1.8	
L =	10.00	Ft.

THEREFORE ln (Re / Rw) = 3.6

AND K = 2.42E-05 Ft. / sec.
OR K = 7.39E-04 cm / sec.

RISING HEAD SLUG TEST FOR MW-11D



AR302056

	1	2	3	4
	TIME	HEAD	HEAD1	DATE
1	0.0000	-12.280	3.630	MW-11D1.CGD
2	0.0033	-12.300	3.610	ME= 1800 12/20/
3	0.0066	-12.290	3.620	APH = MW-11D1.C
4	0.0099	-12.340	3.570	
5	0.0133	-12.360	3.550	
6	0.0166	-12.370	3.540	
7	0.0200	-12.390	3.520	
8	0.0233	-12.410	3.500	
9	0.0266	-12.420	3.490	
10	0.0300	-12.440	3.470	
11	0.0333	-12.460	3.450	
12	0.0500	-12.540	3.370	
13	0.0666	-12.630	3.280	
14	0.0833	-12.700	3.210	
15	0.1000	-12.780	3.130	
16	0.1166	-12.860	3.050	
17	0.1333	-12.930	2.980	
18	0.1500	-13.000	2.910	
19	0.1666	-13.070	2.840	
20	0.1833	-13.140	2.770	
21	0.2000	-13.190	2.720	
22	0.2166	-13.260	2.650	
23	0.2333	-13.320	2.590	
24	0.2500	-13.370	2.540	
25	0.2666	-13.430	2.480	
26	0.2833	-13.490	2.420	
27	0.3000	-13.540	2.370	
28	0.3166	-13.590	2.320	
29	0.3333	-13.640	2.270	
30	0.4167	-13.880	2.030	
31	0.5000	-14.080	1.830	
32	0.5833	-14.260	1.650	
33	0.6667	-14.430	1.480	
34	0.7500	-14.570	1.340	
35	0.8333	-14.690	1.220	
36	0.9167	-14.800	1.110	
37	1.0000	-14.900	1.010	
38	1.0833	-14.980	0.930	
39	1.1667	-15.060	0.850	
40	1.2500	-15.140	0.770	
41	1.3333	-15.200	0.710	
42	1.4166	-15.250	0.660	
43	1.5000	-15.310	0.600	
44	1.5833	-15.360	0.550	
45	1.6667	-15.400	0.510	
46	1.7500	-15.430	0.480	
47	1.8333	-15.460	0.450	
48	1.9167	-15.510	0.400	
49	2.0000	-15.530	0.380	
50	2.5000	-15.660	0.250	
51	3.0000	-15.740	0.170	
52	3.5000	-15.790	0.120	
53	4.0000	-15.820	0.090	
54	4.5000	-15.840	0.070	
55	5.0000	-15.860	0.050	
56	5.5000	-15.860	0.050	
57	6.0000	-15.870	0.040	
58	6.5000	-15.880	0.030	
59	7.0000	-15.880	0.030	
60	7.5000	-15.890	0.020	
61	8.0000	-15.880	0.030	
62	8.5000	-15.880	0.030	
63	9.0000	-15.890	0.020	
64	9.5000	-15.890	0.020	
65	10.0000	-15.890	0.020	
66	12.0000	-15.890	0.020	
67	14.0000	-15.890	0.020	
68	16.0000	-15.880	0.030	
69	18.0000	-15.890	0.020	
70	20.0000	-15.880	0.030	
71	22.0000	-15.890	0.020	
72	24.0000	-15.880	0.030	
73				

	1	2	3	4
	TIME	HEAD	HEAD1	DATE
74	26.0000	-15.880	0.030	
75	28.0000	-15.880	0.030	
76	30.0000	-15.880	0.030	
77	32.0000	-15.890	0.020	
78	34.0000	-15.880	0.030	
79	36.0000	-15.890	0.020	
80	38.0000	-15.880	0.030	
81	40.0000	-15.890	0.020	
82	42.0000	-15.910	0.000	

HYDRAULIC CONDUCTIVITY CALCULATION
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

K, HYDRAULIC CONDUCTIVITY VALUE CALCULATIONS FOR MONITORING WELL MW-12D

WATER LEVEL =	996.64 Ft. (MEAN SEA LEVEL)	FOR	1/25/91
BOTTOM OF SCREEN =	910.58 Ft. (MEAN SEA LEVEL)		
H, SCREENED SATURATED THICKNESS =	86.06 Ft. (MEAN SEA LEVEL)		

WATER LEVEL =	996.64 Ft. (MEAN SEA LEVEL)
BOTTOM OF SATURATED ZONE =	910.58 Ft. (MEAN SEA LEVEL)
D, SATURATED THICKNESS OF AQUIFIER =	86.06 Ft. (MEAN SEA LEVEL)

GIVEN : Rc = 0.08 Ft (2" well, R = 1" or 0.08')
Rw = 0.40 Ft (9.5 " bit, R = 4.75" or 0.40')

$$\text{USE : } K = \frac{(Rc)^2 \ln (Re/Rw)}{2L} *((1/t) * \ln(Yo/Yt))$$

AND WHEN D=H , $\ln (Re / Rw) = [(1.1 / (\ln (H / Rw)) + (C / (L/Rw)]^{-1}$

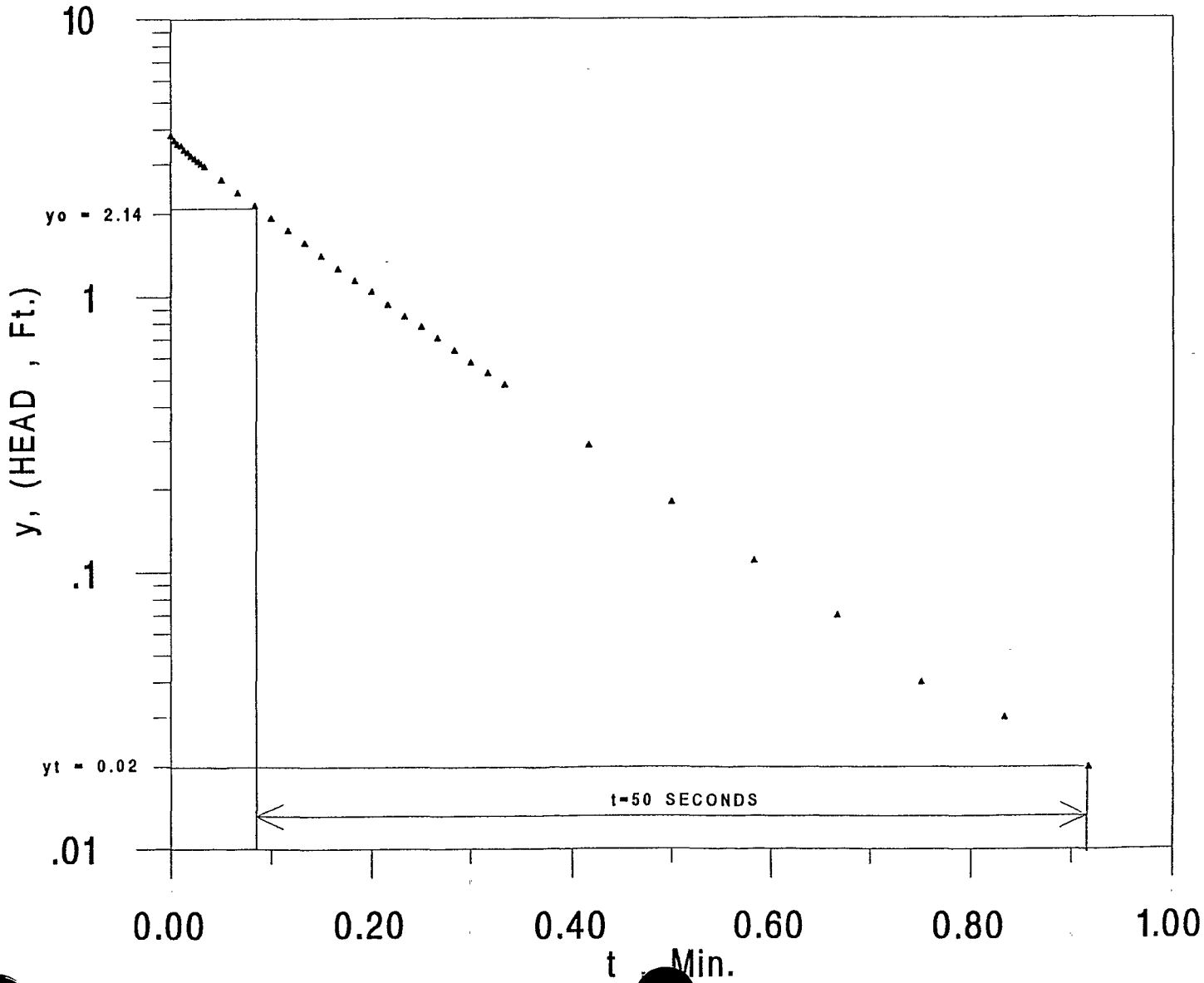
Rc =	0.08	Ft.
Rw =	0.40	Ft.
Rc ^ 2 =	0.0064	Ft.^2
2L =	20.00	Ft.
Yo =	2.14	Ft.
Yt =	0.02	Ft.
t =	50.00	Sec.
H =	86.06	Ft.
C =	1.8	
L =	10.00	Ft.

THEREFORE $\ln (Re / Rw) = 3.6$

AND K = 1.08E-04 Ft. / sec.
OR K = 3.29E-03 cm / sec.

AR302059

RISING HEAD SLUG TEST FOR MW-12D



AR302060

	1	2	3
	TIME (MIN.)	HEAD	DATE
1	0.0000	3.82	MW-12DA1.CGD
2	0.0033	3.67	TIME 14:06 1/25/91
3	0.0066	3.57	GRAPH=MW-12DA1.CGG
4	0.0099	3.53	
5	0.0133	3.41	
6	0.0166	3.33	
7	0.0200	3.24	
8	0.0233	3.17	
9	0.0266	3.10	
10	0.0300	3.03	
11	0.0333	2.97	
12	0.0500	2.65	
13	0.0666	2.38	
14	0.0833	2.14	
15	0.1000	1.93	
16	0.1166	1.74	
17	0.1333	1.57	
18	0.1500	1.41	
19	0.1666	1.27	
20	0.1833	1.15	
21	0.2000	1.05	
22	0.2166	.94	
23	0.2333	.85	
24	0.2500	.78	
25	0.2666	.71	
26	0.2833	.64	
27	0.3000	.58	
28	0.3166	.53	
29	0.3333	.48	
30	0.4167	.29	
31	0.5000	.18	
32	0.5833	.11	
33	0.6667	.07	
34	0.7500	.04	
35	0.8333	.03	
36	0.9167	.02	
37	1.0000	0	

HYDRAULIC CONDUCTIVITY CALCULATION
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

K, HYDRAULIC CONDUCTIVITY VALUE CALCULATIONS FOR MONITORING WELL MW-13D

WATER LEVEL = 996.08 Ft. (MEAN SEA LEVEL) FOR 12/19/90
BOTTOM OF SCREEN = 901.30 Ft. (MEAN SEA LEVEL)
H, SCREENED SATURATED THICKNESS = 94.78 Ft. (MEAN SEA LEVEL)

WATER LEVEL = 996.08 Ft. (MEAN SEA LEVEL)
BOTTOM OF SATURATED ZONE = 901.30 Ft. (MEAN SEA LEVEL)
D, SATURATED THICKNESS OF AQUIFIER = 94.78 Ft. (MEAN SEA LEVEL)

GIVEN : Rc = 0.08 Ft (2" well, R = 1" or 0.08')
Rw = 0.40 Ft (9.5 " bit, R = 4.75" or 0.40')

$$\text{USE : } K = \frac{(Rc)^2 \ln (Re/Rw)}{2L} *((1/t) * \ln(Yo/Yt))$$

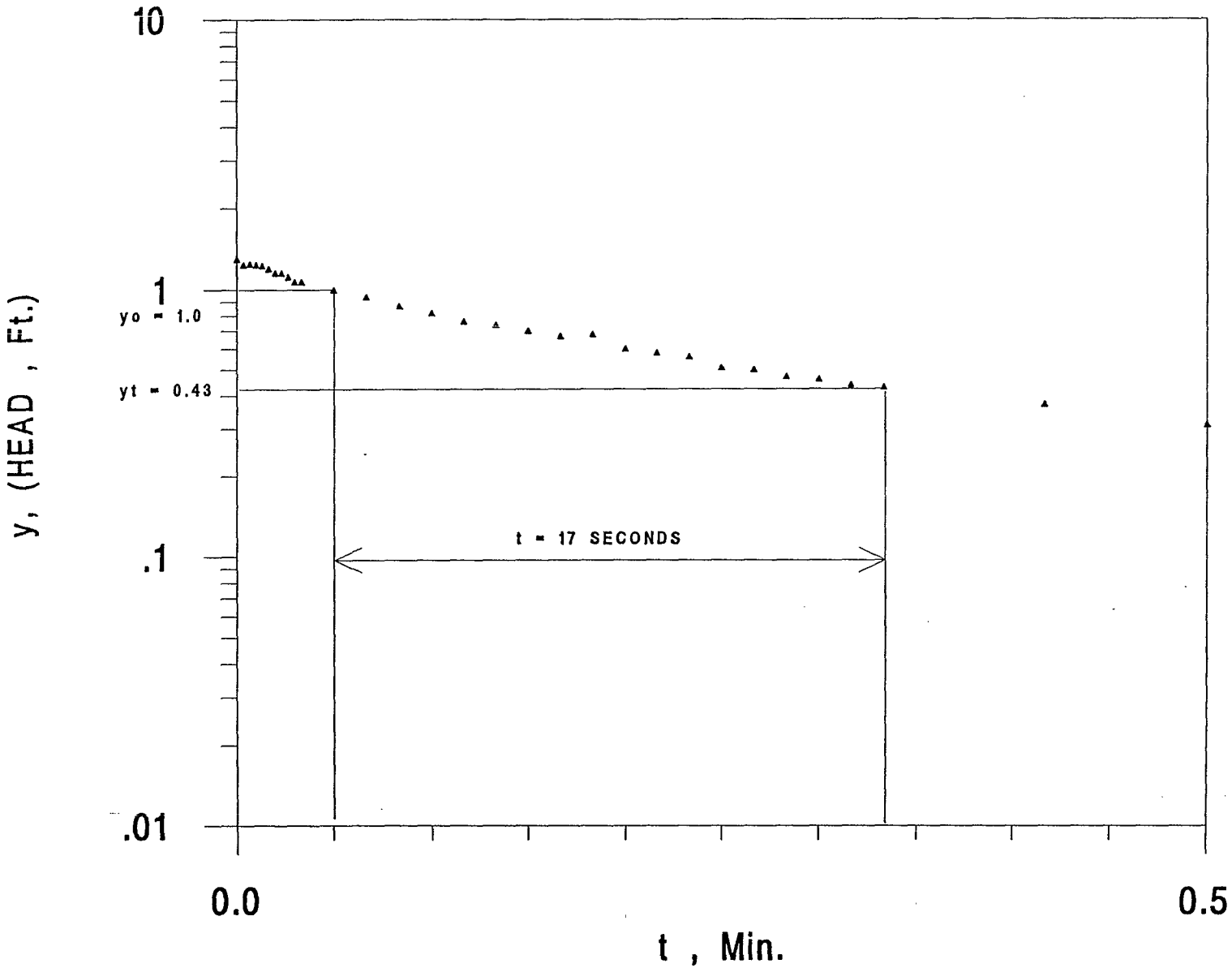
AND WHEN D=H , $\ln (Re / Rw) = [(1.1 / (\ln (H / Rw)) + (C / (L/Rw)]^{-1}$

Rc =	0.08	Ft.
Rw =	0.40	Ft.
Rc ^ 2 =	0.0064	Ft.^2
2L =	20.00	Ft.
Yo =	1	Ft.
Yt =	0.043	Ft.
t =	17.00	Sec.
H =	94.78	Ft.
C =	1.8	
L =	10.00	Ft.

THEREFORE $\ln (Re / Rw) = 3.7$

AND K = 2.17E-04 Ft. / sec.
OR K = 6.61E-03 cm / sec.

RISING HEAD SLUG TEST FOR MW-13D



AR302063

	1	2	3	4
	t (In Min.)	HEAD	HEAD 1	DATE
1	0.0000	-19.740	1.300	MW-13D1.CGD
2	0.0033	-19.800	1.240	TIME = 1710 12/19/90
3	0.0066	-19.790	1.250	GRAPH = MW-13D1.CGG
4	0.0099	-19.800	1.240	
5	0.0133	-19.810	1.230	
6	0.0166	-19.840	1.200	
7	0.0200	-19.880	1.160	
8	0.0233	-19.880	1.160	
9	0.0266	-19.920	1.120	
10	0.0300	-19.970	1.070	
11	0.0333	-19.970	1.070	
12	0.0500	-20.040	1.000	
13	0.0666	-20.100	0.940	
14	0.0833	-20.170	0.870	
15	0.1000	-20.220	0.820	
16	0.1166	-20.280	0.760	
17	0.1333	-20.300	0.740	
18	0.1500	-20.340	0.700	
19	0.1666	-20.370	0.670	
20	0.1833	-20.360	0.680	
21	0.2000	-20.440	0.600	
22	0.2166	-20.460	0.580	
23	0.2333	-20.480	0.560	
24	0.2500	-20.530	0.510	
25	0.2666	-20.540	0.500	
26	0.2833	-20.570	0.470	
27	0.3000	-20.580	0.460	
28	0.3166	-20.600	0.440	
29	0.3333	-20.610	0.430	
30	0.4167	-20.670	0.370	
31	0.5000	-20.730	0.310	
32	0.5833	-20.760	0.280	
33	0.6667	-20.790	0.250	
34	0.7500	-20.820	0.220	
35	0.8333	-20.840	0.200	
36	0.9167	-20.860	0.180	
37	1.0000	-20.880	0.160	
38	1.0833	-20.890	0.150	
39	1.1667	-20.890	0.150	
40	1.2500	-20.910	0.130	
41	1.3333	-20.920	0.120	
42	1.4166	-20.920	0.120	
43	1.5000	-20.930	0.110	
44	1.5833	-20.940	0.100	
45	1.6667	-20.940	0.100	
46	1.7500	-20.950	0.090	
47	1.8333	-20.960	0.080	
48	1.9167	-20.960	0.080	
49	2.0000	-20.960	0.080	
50	2.5000	-20.990	0.050	
51	3.0000	-21.000	0.040	
52	3.5000	-21.020	0.020	
53	4.0000	-21.020	0.020	
54	4.5000	-21.020	0.020	
55	5.0000	-21.020	0.020	
56	5.5000	-21.030	0.010	
57	6.0000	-21.020	0.020	
58	6.5000	-21.030	0.010	
59	7.0000	-21.040	0.000	
60	7.5000	-21.030	0.010	
61	8.0000	-21.030	0.010	
62	8.5000	-21.030	0.010	
63	9.0000	-21.040	0.000	
64	9.5000	-21.040	0.000	
65	10.0000	-21.040	0.000	
66	12.0000	-21.030	0.010	
67	14.0000	-21.020	0.020	
68	16.0000	-21.020	0.020	
69	18.0000	-21.030	0.010	
70	20.0000	-21.040	0.000	
71	22.0000	-21.040	0.000	
72	24.0000	-21.030	0.010	

HYDRAULIC CONDUCTIVITY CALCULATION
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

K, HYDRAULIC CONDUCTIVITY VALUE CALCULATIONS FOR MONITORING WELL MW-15D

WATER LEVEL = 990.87 Ft. (MEAN SEA LEVEL) FOR 12/20/90
BOTTOM OF SCREEN = 875.01 Ft. (MEAN SEA LEVEL)
H, SCREENED SATURATED THICKNESS = 115.86 Ft. (MEAN SEA LEVEL)

WATER LEVEL = 990.87 Ft. (MEAN SEA LEVEL)
BOTTOM OF SATURATED ZONE = 875.01 Ft. (MEAN SEA LEVEL)
D, SATURATED THICKNESS OF AQUIFIER = 115.86 Ft. (MEAN SEA LEVEL)

GIVEN : Rc = 0.08 Ft (2" well, R = 1" or 0.08')
Rw = 0.40 Ft (9.5 " bit, R = 4.75" or 0.40')

$$\text{USE : } K = \frac{(Rc)^2 \ln (Re/Rw)}{2L} *((1/t) * \ln(Yo/Yt))$$

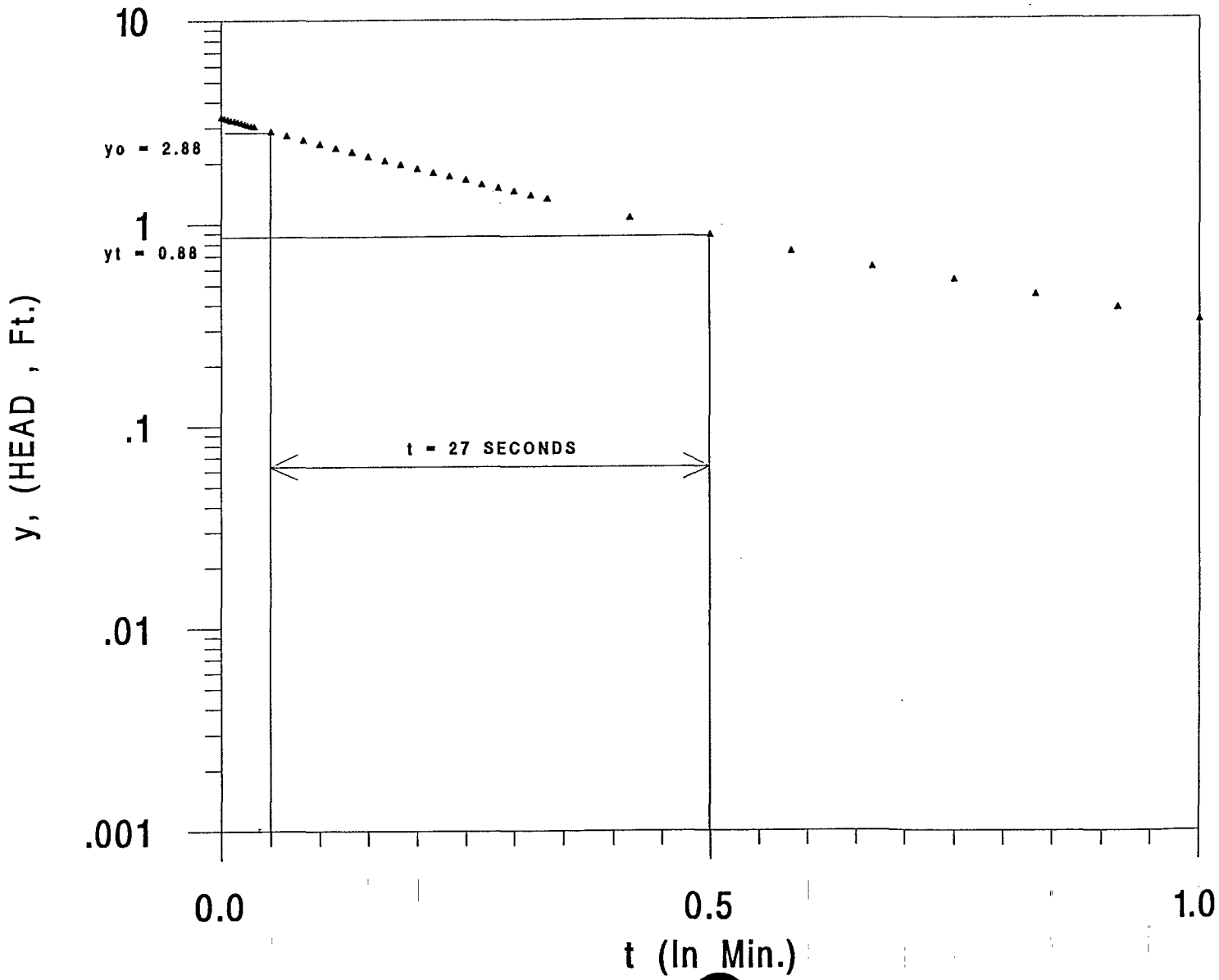
AND WHEN D=H , ln (Re / Rw) = [(1.1 / (ln (H / Rw)) + (C / (L/Rw)] ^ -1

Rc =	0.08	Ft.
Rw =	0.40	Ft.
Rc ^ 2 =	0.0064	Ft.^2
2L =	20.00	Ft.
Yo =	2.88	Ft.
Yt =	0.88	Ft.
t =	27.00	Sec.
H =	115.86	Ft.
C =	1.8	
L =	10.00	Ft.

THEREFORE ln (Re / Rw) = 3.8

AND K = 5.28E-05 Ft. / sec.
OR K = 1.61E-03 cm / sec.

RISING HEAD SLUG TEST FOR MW-15D



AR302066

	1	2	3	4
	t (In Min.)	HEAD	HEAD 1	DATE
1	0.0000	-17.660	3.380	MW-15D1.CGD
2	0.0033	-17.690	3.350	TIME = 0817 12/20/90
3	0.0066	-17.730	3.310	GRAPH = MW-15D1.CGG
4	0.0099	-17.770	3.270	
5	0.0133	-17.800	3.240	
6	0.0166	-17.840	3.200	
7	0.0200	-17.870	3.170	
8	0.0233	-17.910	3.130	
9	0.0266	-17.940	3.100	
10	0.0300	-17.970	3.070	
11	0.0333	-18.000	3.040	
12	0.0500	-18.160	2.880	
13	0.0666	-18.290	2.750	
14	0.0833	-18.430	2.610	
15	0.1000	-18.550	2.490	
16	0.1166	-18.660	2.380	
17	0.1333	-18.770	2.270	
18	0.1500	-18.890	2.150	
19	0.1666	-18.980	2.060	
20	0.1833	-19.070	1.970	
21	0.2000	-19.160	1.880	
22	0.2166	-19.250	1.790	
23	0.2333	-19.320	1.720	
24	0.2500	-19.390	1.650	
25	0.2666	-19.470	1.570	
26	0.2833	-19.530	1.510	
27	0.3000	-19.590	1.450	
28	0.3166	-19.660	1.380	
29	0.3333	-19.710	1.330	
30	0.4167	-19.970	1.070	
31	0.5000	-20.160	0.880	
32	0.5833	-20.310	0.730	
33	0.6667	-20.430	0.610	
34	0.7500	-20.520	0.520	
35	0.8333	-20.600	0.440	
36	0.9167	-20.660	0.380	
37	1.0000	-20.710	0.330	
38	1.0833	-20.750	0.290	
39	1.1667	-20.780	0.260	
40	1.2500	-20.820	0.220	
41	1.3333	-20.840	0.200	
42	1.4166	-20.850	0.190	
43	1.5000	-20.880	0.160	
44	1.5833	-20.890	0.150	
45	1.6667	-20.910	0.130	
46	1.7500	-20.920	0.120	
47	1.8333	-20.920	0.120	
48	1.9167	-20.930	0.110	
49	2.0000	-20.940	0.100	
50	2.5000	-20.970	0.070	
51	3.0000	-21.010	0.030	
52	3.5000	-21.020	0.020	
53	4.0000	-21.020	0.020	
54	4.5000	-21.020	0.020	
55	5.0000	-21.030	0.010	
56	5.5000	-21.030	0.010	
57	6.0000	-21.030	0.010	
58	6.5000	-21.030	0.010	
59	7.0000	-21.030	0.010	
60	7.5000	-21.030	0.010	
61	8.0000	-21.030	0.010	
62	8.5000	-21.030	0.010	
63	9.0000	-21.040	0.000	
64	9.5000	-21.040	0.000	
65	10.0000	-21.040	0.000	
66	12.0000	-21.040	0.000	
67	14.0000	-21.040	0.000	
68	16.0000	-21.030	0.010	

HYDRAULIC CONDUCTIVITY CALCULATION
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

K, HYDRAULIC CONDUCTIVITY VALUE CALCULATIONS FOR MONITORING WELL MW-17D

WATER LEVEL = 1000.69 Ft. (MEAN SEA LEVEL) FOR 12/21/90
BOTTOM OF SCREEN = 925.53 Ft. (MEAN SEA LEVEL)
H, SCREENED SATURATED THICKNESS = 75.16 Ft. (MEAN SEA LEVEL)

WATER LEVEL = 1000.69 Ft. (MEAN SEA LEVEL)
BOTTOM OF SATURATED ZONE = 925.53 Ft. (MEAN SEA LEVEL)
D, SATURATED THICKNESS OF AQUIFIER = 75.16 Ft. (MEAN SEA LEVEL)

GIVEN : Rc = 0.08 Ft (2" well, R = 1" or 0.08')
Rw = 0.40 Ft (9.5 " bit, R = 4.75" or 0.40')

$$\text{USE : } K = \frac{(Rc)^2 \ln (Re/Rw)}{2L} *((1/t) * \ln(Yo/Yt))$$

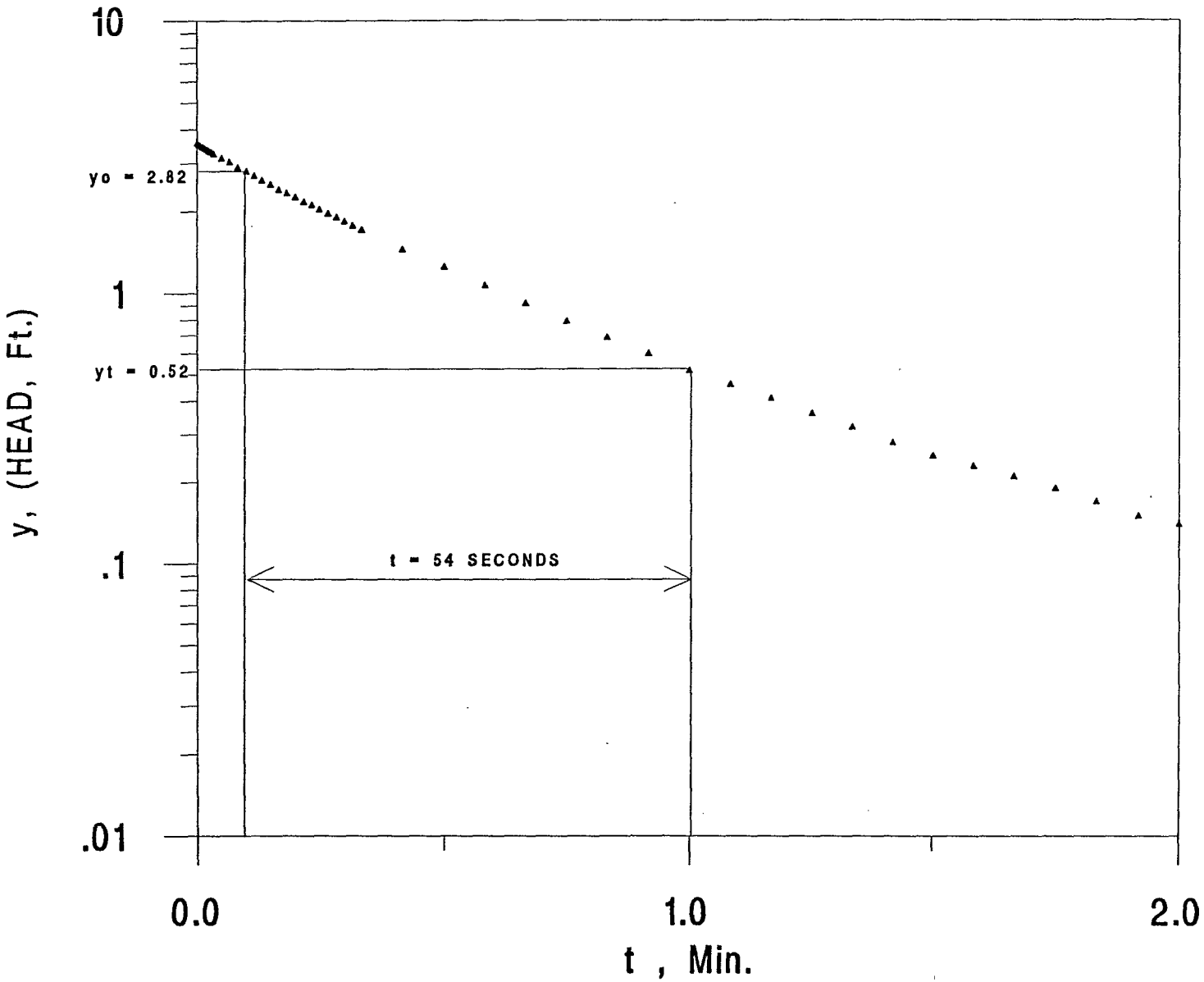
AND WHEN D=H , ln (Re / Rw) = [(1.1 / (ln (H / Rw)) + (C / (L/Rw)] ^ -1

Rc =	0.08	Ft.
Rw =	0.40	Ft.
Rc ^ 2 =	0.0064	Ft.^2
2L =	20.00	Ft.
Yo =	2.82	Ft.
Yt =	0.52	Ft.
t =	54.00	Sec.
H =	75.16	Ft.
C =	1.8	
L =	10.00	Ft.

THEREFORE ln (Re / Rw) = 3.5

AND K = 3.55E-05 Ft. / sec.
OR K = 1.08E-03 cm / sec.

RISING HEAD SLUG TEST FOR MW-17D



AR302069

	1	2	3	4
	t,Min	HEAD	HEAD 1	DATE
1	0.0000	3.620	3.570	MW-17D1.CGD
2	0.0033	3.580	3.530	TIME = 11:20 12/21/90
3	0.0066	3.560	3.510	GRAPH = MW-17D1.CGG
4	0.0099	3.520	3.470	
5	0.0133	3.500	3.450	
6	0.0166	3.470	3.420	
7	0.0200	3.440	3.390	
8	0.0233	3.410	3.360	
9	0.0266	3.380	3.330	
10	0.0300	3.360	3.310	
11	0.0333	3.330	3.280	
12	0.0500	3.200	3.150	
13	0.0666	3.100	3.050	
14	0.0833	2.960	2.910	
15	0.1000	2.870	2.820	
16	0.1166	2.770	2.720	
17	0.1333	2.660	2.610	
18	0.1500	2.570	2.520	
19	0.1666	2.470	2.420	
20	0.1833	2.400	2.350	
21	0.2000	2.320	2.270	
22	0.2166	2.230	2.180	
23	0.2333	2.170	2.120	
24	0.2500	2.090	2.040	
25	0.2666	2.020	1.970	
26	0.2833	1.960	1.910	
27	0.3000	1.900	1.850	
28	0.3166	1.830	1.780	
29	0.3333	1.770	1.720	
30	0.4167	1.510	1.460	
31	0.5000	1.300	1.250	
32	0.5833	1.120	1.070	
33	0.6667	0.970	0.920	
34	0.7500	0.840	0.790	
35	0.8333	0.740	0.690	
36	0.9167	0.650	0.600	
37	1.0000	0.570	0.520	
38	1.0833	0.510	0.460	
39	1.1667	0.460	0.410	
40	1.2500	0.410	0.360	
41	1.3333	0.370	0.320	
42	1.4166	0.330	0.280	
43	1.5000	0.300	0.250	
44	1.5833	0.280	0.230	
45	1.6667	0.260	0.210	
46	1.7500	0.240	0.190	
47	1.8333	0.220	0.170	
48	1.9167	0.200	0.150	
49	2.0000	0.190	0.140	
50	2.5000	0.130	0.080	
51	3.0000	0.100	0.050	
52	3.5000	0.080	0.030	
53	4.0000	0.070	0.020	
54	4.5000	0.070	0.020	
55	5.0000	0.070	0.020	
56	5.5000	0.060	0.010	
57	6.0000	0.060	0.010	
58	6.5000	0.060	0.010	
59	7.0000	0.060	0.010	
60	7.5000	0.050	0.000	
61	8.0000	0.060	0.010	
62	8.5000	0.050	0.000	
63	9.0000	0.050	0.000	
64	9.5000	0.050	0.000	
65	10.0000	0.050	0.000	

HYDRAULIC CONDUCTIVITY CALCULATION
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

K, HYDRAULIC CONDUCTIVITY VALUE CALCULATIONS FOR MONITORING WELL MW-18D

WATER LEVEL = 998.62 Ft. (MEAN SEA LEVEL) FOR 12/20/90
BOTTOM OF SCREEN = 912.01 Ft. (MEAN SEA LEVEL)
H, SCREENED SATURATED THICKNESS = 86.61 Ft. (MEAN SEA LEVEL)

WATER LEVEL = 998.62 Ft. (MEAN SEA LEVEL)
BOTTOM OF SATURATED ZONE = 912.01 Ft. (MEAN SEA LEVEL)
D, SATURATED THICKNESS OF AQUIFIER = 86.61 Ft. (MEAN SEA LEVEL)

GIVEN : Rc = 0.08 Ft (2" well, R = 1" or 0.08')
Rw = 0.40 Ft (9.5 " bit, R = 4.75" or 0.40')

$$\text{USE : } K = \frac{(Rc)^2 \ln (Re/Rw)}{2L} *((1 / t) * \ln (Yo / Yt))$$

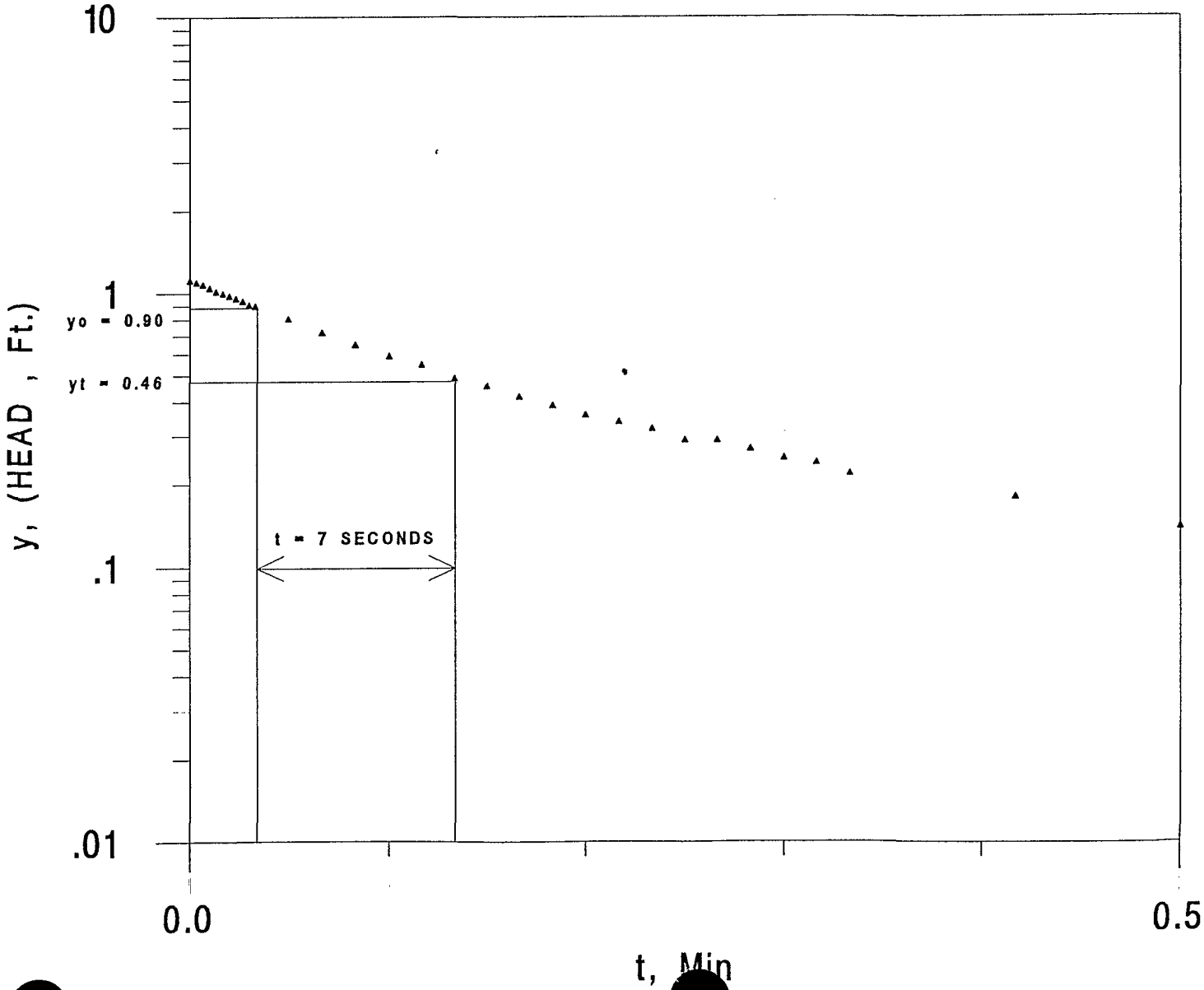
AND WHEN D=H , ln (Re / Rw) = [(1.1 / (ln (H / Rw)) + (C / (L/Rw)] ^ -1

Rc =	0.08	Ft.
Rw =	0.40	Ft.
Rc ^ 2 =	0.0064	Ft.^2
2L =	20.00	Ft.
Yo =	0.9	Ft.
Yt =	0.46	Ft.
t =	7.00	Sec.
H =	86.61	Ft.
C =	1.8	
L =	10.00	Ft.

THEREFORE ln (Re / Rw) = 3.6

AND K = 1.11E-04 Ft. / sec.
OR K = 3.38E-03 cm / sec.

RISING HEAD SLUG TEST FOR MW-18D



AR302072

	1	2	3	4
	t,Min	HEAD	HEAD 1	DATE
1	0.0000	-19.580	1.120	MW-18D1.CGD
2	0.0033	-19.600	1.100	TIME=12:56 12/20/90
3	0.0066	-19.620	1.080	GRAPH= MW-18D1.CGG
4	0.0099	-19.650	1.050	
5	0.0133	-19.680	1.020	
6	0.0166	-19.700	1.000	
7	0.0200	-19.720	0.980	
8	0.0233	-19.740	0.960	
9	0.0266	-19.760	0.940	
10	0.0300	-19.790	0.910	
11	0.0333	-19.800	0.900	
12	0.0500	-19.890	0.810	
13	0.0666	-19.980	0.720	
14	0.0833	-20.050	0.650	
15	0.1000	-20.110	0.590	
16	0.1166	-20.150	0.550	
17	0.1333	-20.210	0.490	
18	0.1500	-20.240	0.460	
19	0.1666	-20.280	0.420	
20	0.1833	-20.310	0.390	
21	0.2000	-20.340	0.360	
22	0.2166	-20.360	0.340	
23	0.2333	-20.380	0.320	
24	0.2500	-20.410	0.290	
25	0.2666	-20.410	0.290	
26	0.2833	-20.430	0.270	
27	0.3000	-20.450	0.250	
28	0.3166	-20.460	0.240	
29	0.3333	-20.480	0.220	
30	0.4167	-20.520	0.180	
31	0.5000	-20.560	0.140	
32	0.5833	-20.580	0.120	
33	0.6667	-20.590	0.110	
34	0.7500	-20.590	0.110	
35	0.8333	-20.610	0.090	
36	0.9167	-20.610	0.090	
37	1.0000	-20.610	0.090	
38	1.0833	-20.630	0.070	
39	1.1667	-20.630	0.070	
40	1.2500	-20.630	0.070	
41	1.3333	-20.640	0.060	
42	1.4166	-20.640	0.060	
43	1.5000	-20.640	0.060	
44	1.5833	-20.650	0.050	
45	1.6667	-20.650	0.050	
46	1.7500	-20.650	0.050	
47	1.8333	-20.660	0.040	
48	1.9167	-20.650	0.050	
49	2.0000	-20.650	0.050	
50	2.5000	-20.660	0.040	
51	3.0000	-20.670	0.030	
52	3.5000	-20.670	0.030	
53	4.0000	-20.670	0.030	
54	4.5000	-20.670	0.030	
55	5.0000	-20.680	0.020	
56	5.5000	-20.690	0.010	
57	6.0000	-20.680	0.020	
58	6.5000	-20.680	0.020	
59	7.0000	-20.680	0.020	
60	7.5000	-20.680	0.020	
61	8.0000	-20.680	0.020	
62	8.5000	-20.680	0.020	
63	9.0000	-20.680	0.020	
64	9.5000	-20.670	0.030	
65	10.0000	-20.680	0.020	
66	12.0000	-20.670	0.030	
67	14.0000	-20.670	0.030	
68	16.0000	-20.700	0.000	

HYDRAULIC CONDUCTIVITY CALCULATION
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

K, HYDRAULIC CONDUCTIVITY VALUE CALCULATIONS FOR MONITORING WELL MW-19D

WATER LEVEL =	999.54 Ft. (MEAN SEA LEVEL)	FOR	12/20/90
BOTTOM OF SCREEN =	891.52 Ft. (MEAN SEA LEVEL)		
H, SCREENED SATURATED THICKNESS =	108.02 Ft. (MEAN SEA LEVEL)		
WATER LEVEL =	999.54 Ft. (MEAN SEA LEVEL)		
BOTTOM OF SATURATED ZONE =	891.52 Ft. (MEAN SEA LEVEL)		
D, SATURATED THICKNESS OF AQUIFIER =	108.02 Ft. (MEAN SEA LEVEL)		

GIVEN : Rc = 0.08 Ft (2" well, R = 1" or 0.08')
Rw = 0.40 Ft (9.5 " bit, R = 4.75" or 0.40')

$$\text{USE : } K = \frac{(Rc)^2 \ln (Re/Rw)}{2L} *((1 / t) * \ln (Yo / Yt))$$

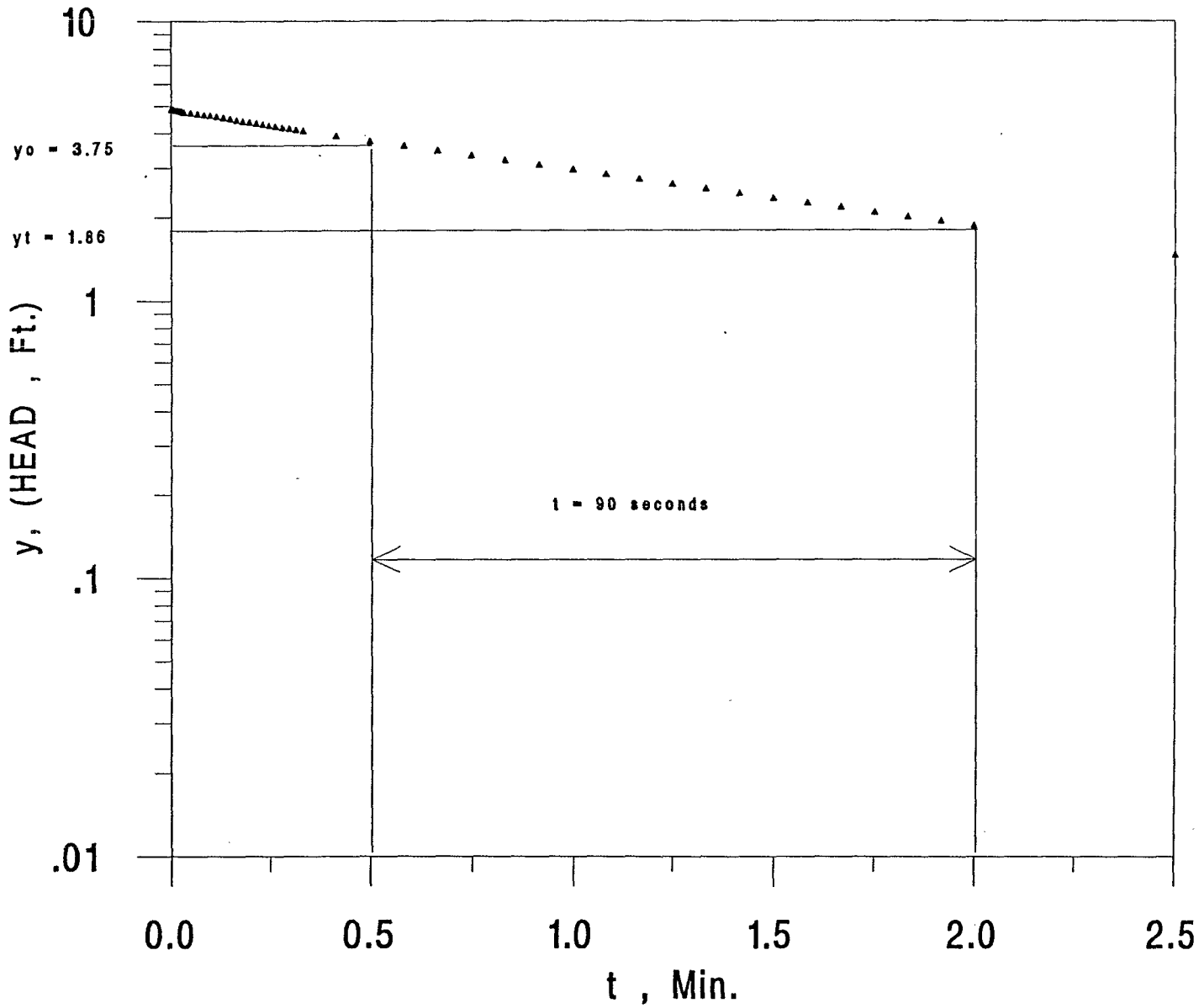
AND WHEN D=H , $\ln (Re / Rw) = [(1.1 / (\ln (H / Rw)) + (C / (L/Rw)]^{-1}$

Rc =	0.08	Ft.
Rw =	0.40	Ft.
Rc ^ 2 =	0.0064	Ft.^2
2L =	20.00	Ft.
Yo =	3.75	Ft.
Yt =	1.86	Ft.
t =	90.00	Sec.
H =	108.02	Ft.
C =	1.8	
L =	10.00	Ft.

THEREFORE ln (Re / Rw) = 3.7

AND K = 9.29E-06 Ft. / sec.
OR K = 2.83E-04 cm / sec.

RISING HEAD SLUG TEST FOR MW-19D



AR302075

	1	2	3	4
	t , Min.	HEAD	HEAD 1	DATE
1	0	4.98	4.87	MW-19D1.CGD
2	0.0033	4.98	4.87	TIME=20:38 12/20/90
3	0.0066	4.97	4.86	GRAPH=MW-19D1.CGG
4	0.0099	4.95	4.84	
5	0.0133	4.95	4.84	
6	0.0166	4.93	4.82	
7	0.02	4.92	4.81	
8	0.0233	4.9	4.79	
9	0.0266	4.9	4.79	
10	0.03	4.88	4.77	
11	0.0333	4.86	4.75	
12	0.05	4.84	4.73	
13	0.0666	4.8	4.69	
14	0.0833	4.78	4.67	
15	0.1	4.74	4.63	
16	0.1166	4.69	4.58	
17	0.1333	4.65	4.54	
18	0.15	4.61	4.50	
19	0.1666	4.57	4.46	
20	0.1833	4.52	4.41	
21	0.2	4.49	4.38	
22	0.2166	4.44	4.33	
23	0.2333	4.41	4.30	
24	0.25	4.37	4.26	
25	0.2666	4.33	4.22	
26	0.2833	4.3	4.19	
27	0.3	4.26	4.15	
28	0.3166	4.23	4.12	
29	0.3333	4.19	4.08	
30	0.4167	4.02	3.91	
31	0.5	3.86	3.75	
32	0.5833	3.71	3.60	
33	0.6667	3.58	3.47	
34	0.75	3.44	3.33	
35	0.8333	3.31	3.20	
36	0.9167	3.19	3.08	
37	1	3.07	2.96	
38	1.0833	2.96	2.85	
39	1.1667	2.85	2.74	
40	1.25	2.74	2.63	
41	1.3333	2.64	2.53	
42	1.4166	2.54	2.43	
43	1.5	2.45	2.34	
44	1.5833	2.36	2.25	
45	1.6667	2.28	2.17	
46	1.75	2.19	2.08	
47	1.8333	2.11	2.00	
48	1.9167	2.04	1.93	
49	2	1.97	1.86	
50	2.5	1.57	1.46	
51	3	1.27	1.16	
52	3.5	1.02	0.91	
53	4	0.83	0.72	
54	4.5	0.68	0.57	
55	5	0.56	0.45	
56	5.5	0.46	0.35	
57	6	0.39	0.28	
58	6.5	0.32	0.21	
59	7	0.28	0.17	
60	7.5	0.24	0.13	
61	8	0.2	0.09	
62	8.5	0.18	0.07	
63	9	0.17	0.06	
64	9.5	0.15	0.04	
65	10	0.14	0.03	
66	12	0.11	0.00	

APPENDIX D

X-RAY FLUORESCENCE SCREENING DATA

Paul C. Rizzo Associates, Inc.
CONSULTANTS

By DAC Date 9/25/90 Subject TONOLLI CORPORATION Sheet No. 1 of 14
Chkd. By ____ Date ____ CALIBRATION OF Pb LOW Proj. No. 89-599-04

Pb LOW - RANGE 0 - 20 000 PPM

1) PURE ELEMENTS

Pb
As
Cu
Fe
Bs
Zn
Hg
SE

2) LIM 8 CHANNELS

	Intensity	LOWER LIMIT	UPPER LIMITS	PEAK CHANNEL
Pb	2550.68	144	157	151
As	618.97	120	130	127
Cu	5726.64	90	99	96
Fe	818.42	71	81	77
Bs	784.89	255	255	255
Zn	3818.72	100	109	104
Hg	770.67	113	122	120
Se	5493.17	131	141	134

AR302078

Paul C. Rizzo Associates, Inc.
CONSULTANTS

By DAC Date 9/25/90 Subject TONOLLI Sheet No 2 of 14
Chkd. By ____ Date ____ CALIBRATION OF PbLOW Proj. No. 89-599

3) ASY

·NEW DEPENDENTS: AS CU PB ZN

VALUES OF ASSAYS ENTERED IN (mg/kg)/1000

STANDARD	AS	CU	PB	ZN
1	0.004	0.017	0.083	0.010
3	0.016	0.031	6.250	0.022
9	0.006	0.015	2.430	0.026
10	0.023	0.027	0.408	0.024
16	0.017	0.050	4.470	0.227
103	4.950	0.000	0.000	0.000
104	0.000	0.000	0.000	4.950
105	0.000	4.950	0.000	0.000
107	2.780	6.840	0.930	3.700
108	9.640	0.240	3.860	0.120
109	0.490	1.960	0.120	0.980
110	[illegible].970	0.480	2.910	0.480
113	[illegible].240	3.850	0.480	0.240
114	0.120	2.900	9.680	1.960
115	1.960	0.120	0.250	2.940
116	0.000	0.000	0.000	0.000
118	0.000	2.910	0.000	4.850
120	2.910	0.000	4.850	0.000

Paul C. Rizzo Associates, Inc.
CONSULTANTS

By DAC Date 9/25/90 Subject TONOLLI Sheet No. 3 of 14
Chkd. By ____ Date ____ CALIBRATION FOR PBLOW Proj. No. 89-599-04

4) CAL :

CALIBRATED 18 SAMPLES.
EACH SAMPLE INPUTED FOR 200 SECS

5) MOD :

REGRESSION	FOR	AS.	R = 0.999	S = 0.140	F(3,12) = 1560.5
"	"	CU	R = 0.979	S = 0.335	F(1,14) = 324.9
"	"	Pb	R = 0.999	S = 0.175	F(3,10) = 1287.2
"	"	Zn	R = 0.999	S = 0.060	F(4,10) = 2024.0

SEE SHEET 14 OF 14

SEE SHEETS 14 OF 14

6.) GENERAL PARAMETERS

TYPE	MEASURING TIME	CHANNELS	FLOW CHANNEL	MAX. C RATE
ASSAYS	200 SECS	~8	0	15 HZ

7) G-MATRIX

	1	2	3	4	5	6	7	8
1	1.189	0.429	-0.046	-0.006	-0.023	0.144	-0.879	-0.443
2	-1.329	1.353	0.014	0.007	0.018	-0.016	-0.214	-0.245
3	-0.011	-0.059	1.206	-0.013	-0.073	-0.453	0.106	-0.015
4	-0.168	0.121	-0.003	1.140	-0.135	-0.019	0.070	-0.007
5	-0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000
6	-0.116	0.147	-0.538	0.044	-0.058	1.246	-0.178	-0.035
7	-0.167	-0.685	0.082	0.003	-0.020	-0.277	1.635	0.257
8	0.114	-0.446	-0.034	-0.005	-0.007	0.097	-0.431	1.193

8) STANDARD - MST
STANDARD #17
STANDARD #17 = 72 PPM

AR302080

Pg 4

INSTRUMENT CALIBRATION X-MET 880 S/N 143762

Date: 9/25/90 Measured by: DAC

Gain control initialization, Chapter 5.1/3 (INI)

INI Gain Channel	Probe:	Probe:	Probe:
114	S/N 144039		

Pure element calibration, Chapter 5.1/5 (PUR)

MODEL: PbLOW ≤ 2	MTIME: SEC	Name:

PUR				LIM			
Pure sample	Probe number	Peak channel	Fwhm	Lower limit	Upper limit	Norm. c.rate	Norm. factor
1. Pb	1	151		144	157	2550.675	1
2. As	1	127		120	130	618.975	1
3. Cu	1	96		90	99	5726.635	1
4. Fe	1	77		71	81	818.415	1
5. Br	1	255		255	255	784.890	1
6. Zn	1	104		100	109	2818.715	1
7. Hg	1	120		113	122	770.670	1
8. Se	1	134		131	141	5493.165	1
9. —							
10. —							

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DOK7
CODE 3881 432-4VE
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LIM

Pg 4

REGRESSION CALCULATION FORM

Date: 9/25/90 Model: Pb Low Regression for: As

INDEPS: As Pb As x Pb

R = 0.999 S = 0.140 F(3, 12) = 1560.5

DELETE POINTS: 6, 15

COEFFICIENTS AND T-VALUES:

INTERCEPT = 0.042854

SLOPE 1 = 0.012043 T = 30.784180

SLOPE 2 = 0.002971 T = 11.015735

SLOPE 3 = -0.000004 T = -2.542214

SLOPE 4 = T =

SLOPE 5 = T =

SLOPE 6 = T =

INDEPS:

R = S = F( ) =

DELETE POINTS:

COEFFICIENTS AND T-VALUES:

INTERCEPT =

SLOPE 1 = T =

SLOPE 2 = T =

SLOPE 3 = T =

SLOPE 4 = T =

SLOPE 5 = T =

SLOPE 6 = T =

REGRESSION CALCULATION FORM

Date: 9/25/90 Model: Pb Low Regression for: Pb

INDEPS: Pb, Cu Pb Pb/

R = 0.999 S = 0.175 F(3, 10) = 1297.6

DELETE POINTS: 3, 5, 10, 12

COEFFICIENTS AND T-VALUES:

INTERCEPT = -0.067247

SLOPE 1 = 0.000078 T = 16.063938

SLOPE 2 = 0.057743 T = 24.689060

SLOPE 3 = -41.277420 T = -20.214634

SLOPE 4 = T =

SLOPE 5 = T =

SLOPE 6 = T =

INDEPS:

R = S = F( ) =

DELETE POINTS:

COEFFICIENTS AND T-VALUES:

INTERCEPT =

SLOPE 1 = T =

SLOPE 2 = T =

SLOPE 3 = T =

SLOPE 4 = T =

SLOPE 5 = T =

SLOPE 6 = T =

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REGRESSION CALCULATION FORM

Date: 9/25/90 Model: Pb Low Regression for: Cu

INDEPS: Cu

R = 0.979 S = 0.335 F(1,14) = 329.9

DELETE POINTS: 9,17

COEFFICIENTS AND T-VALUES:

INTERCEPT = 0.749891

SLOPE 1 = 0.023169 T = 18.162032

SLOPE 2 = T =

SLOPE 3 = T =

SLOPE 4 = T =

SLOPE 5 = T =

SLOPE 6 = T =

INDEPS:

R = S = F( ) =

DELETE POINTS:

COEFFICIENTS AND T-VALUES:

INTERCEPT =

SLOPE 1 = T =

SLOPE 2 = T =

SLOPE 3 = T =

SLOPE 4 = T =

SLOPE 5 = T =

SLOPE 6 = T =

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REGRESSION CALCULATION FORM

Date: 9/25/90 Model: Pb Low Regression for: Zn

INDEPS: Zn As Fe Cu

R = 0.999 S = 0.060 F(4, 10) = 2024.0

DELETE POINTS: 5, 9, 17

COEFFICIENTS AND T-VALUES:

INTERCEPT =

SLOPE 1 = T =

SLOPE 2 = T =

SLOPE 3 = T =

SLOPE 4 = T =

SLOPE 5 = T =

SLOPE 6 = T =

INDEPS:

R = S = F( ) =

DELETE POINTS:

COEFFICIENTS AND T-VALUES:

INTERCEPT =

SLOPE 1 = T =

SLOPE 2 = T =

SLOPE 3 = T =

SLOPE 4 = T =

SLOPE 5 = T =

SLOPE 6 = T =

```
emp

> MDE
MODEL 30 ? 2
L 'ALIBRATED MODEL

PUR
DELETE OLD SPECTRA?
CALIBRATING A NEW MODEL
NAME ? PBLOW
1. PURE SAMPLE: PB
NEW MEASUREMENT PB1 ?
2. PURE SAMPLE: AS
NEW MEASUREMENT AS1 ?
3. PURE SAMPLE: CU
NEW MEASUREMENT CU1 ?
4. PURE SAMPLE: FE
NEW MEASUREMENT FE1 ?
5. PURE SAMPLE: BS
NEW MEASUREMENT BS1 ?
6. PURE SAMPLE: ZN
NEW MEASUREMENT ZN1 ?
7. PURE SAMPLE: HG
NEW MEASUREMENT HG1 ?
8. PURE SAMPLE: SE
NEW MEASUREMENT SE1 ?
9. PURE SAMPLE:
WARNING! 2 VERY CLOSE PEAKS
MATRIX INVERSION ERROR

LIM
8 channels
EXAMINE?
PB1  2880.97   1.000
     123 133 NEW? 144 157
PB1  2550.68   1.000
     144 157 NEW?
AS1   618.97   1.000
     120 130 NEW?
CU1  5726.64   1.000
      90  99 NEW?
FE1   818.42   1.000
      71  81 NEW?
BS1   784.89   1.000
     255 255 NEW?
ZN1  2818.72   1.000
     100 109 NEW?
HG1   770.67   1.000
     113 122 NEW?
SE1  5493.17   1.000      LAST
     131 141 NEW?
SE1  5493.17   1.000      LAST
     131 141 NEW?

PRM
EL 2 ?
GENERAL PARAMETERS ?
CHANNEL PARAMETERS ?

Channel:  1 ?
```

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```
MEASURE SAMPLE 11
MEASURING: PROBE 1 TYPE SAPS
200 SECONDS
MEASUREMENT INTERRUPTED
TRY AGAIN?
MEASURING: PROBE 1 TYPE SAPS
200 SECONDS
MEASURE SAMPLE 12
MEASURING: PROBE 1 TYPE SAPS
200 SECONDS
MEASURE SAMPLE 13
MEASURING: PROBE 1 TYPE SAPS
200 SECONDS
MEASURE SAMPLE 14
MEASURING: PROBE 1 TYPE SAPS
200 SECONDS
MEASURE SAMPLE 15
MEASURING: PROBE 1 TYPE SAPS
200 SECONDS
MEASURE SAMPLE 16
MEASURING: PROBE 1 TYPE SAPS
200 SECONDS
MEASURE SAMPLE 17
MEASURING: PROBE 1 TYPE SAPS
200 SECONDS
MEASURE SAMPLE 18
LAST SAMPLE 17?
MEASURE SAMPLE 18 17
MEASURE SAMPLE 17
MEASURING: PROBE 1 TYPE SAPS
200 SECONDS
MEASURE SAMPLE 18
MEASURING: PROBE 1 TYPE SAPS
120 SECONDS
MEASURE SAMPLE 19
LAST SAMPLE 18?
18 SAMPLES
```

3

```
> ASY
OLD DEPENDENTS: AS CU PB ZN
NEW:
 1. SAMPLE AS:    0.0000? .004
 1. SAMPLE CU:    0.0000? .017
 1. SAMPLE PB:    0.0000? .083
 1. SAMPLE ZN:    0.0000? .01
 2. SAMPLE AS:    0.0000? .016
 2. SAMPLE CU:    0.0000? .031
 2. SAMPLE PB:    0.0000? 6.25
 2. SAMPLE ZN:    0.0000? .022
 3. SAMPLE AS:    0.0000? .006
 3. SAMPLE CU:    0.0000? .015
 3. SAMPLE PB:    0.0000? 2.43
 3. SAMPLE ZN:    0.0000? .026
 4. SAMPLE AS:    0.0000? .023
 4. SAMPLE CU:    0.0000? .027
 4. SAMPLE PB:    0.0000? .408
 4. SAMPLE ZN:    0.0000? .024
 5. SAMPLE AS:    0.0000? .017
 5. SAMPLE CU:    0.0000? .05
 5. SAMPLE PB:    0.0000? 4.47
```

```
 5. SAMPLE ZN:    0.0000? .227
 6. SAMPLE AS:    0.0000? 774.95
 6. SAMPLE CU:    0.0000? 0
    SAMPLE PB:    0.0000? 0
    SAMPLE ZN:    0.0000? 0
    SAMPLE AS:    0.0000? 0
 7. SAMPLE CU:    0.0000? 0
 7. SAMPLE PB:    0.0000? 0
 7. SAMPLE ZN:    0.0000? 4.95
 8. SAMPLE AS:    0.0000? 0
 8. SAMPLE CU:    0.0000? 4.95
 8. SAMPLE PB:    0.0000?
 8. SAMPLE ZN:    0.0000?
 9. SAMPLE AS:    0.0000? 2.78
 9. SAMPLE CU:    0.0000? 6.84
 9. SAMPLE PB:    0.0000? .930
 9. SAMPLE ZN:    0.0000? 3.7
10. SAMPLE AS:    0.0000? 9.64
10. SAMPLE CU:    0.0000? .24
10. SAMPLE PB:    0.0000? 3.86
10. SAMPLE ZN:    0.0000? .12
11. SAMPLE AS:    0.0000? .49
11. SAMPLE CU:    0.0000? 1.96
11. SAMPLE PB:    0.0000? .12
11. SAMPLE ZN:    0.0000? .98
12. SAMPLE AS:    0.0000? .97
12. SAMPLE CU:    0.0000? .48
12. SAMPLE PB:    0.0000? 2.91
    SAMPLE ZN:    0.0000? .48
    SAMPLE AS:    0.0000? .24
    SAMPLE CU:    0.0000? 3.85
13. SAMPLE PB:    0.0000? .48
13. SAMPLE ZN:    0.0000? .24
14. SAMPLE AS:    0.0000? .12
14. SAMPLE CU:    0.0000? 2.9
14. SAMPLE PB:    0.0000? 9.68
14. SAMPLE ZN:    0.0000? 1.96
15. SAMPLE AS:    0.0000? 1.96
15. SAMPLE CU:    0.0000? .12
15. SAMPLE PB:    0.0000? .25
15. SAMPLE ZN:    0.0000? 2.94
16. SAMPLE AS:    0.0000?
16. SAMPLE CU:    0.0000?
16. SAMPLE PB:    0.0000?
16. SAMPLE ZN:    0.0000?
17. SAMPLE AS:    0.0000?
17. SAMPLE CU:    0.0000? 2.91
17. SAMPLE PB:    0.0000?
17. SAMPLE ZN:    0.0000? 4.85
18. SAMPLE AS:    0.0000? 2.91
18. SAMPLE CU:    0.0000?
18. SAMPLE PB:    0.0000? 4.85
18. SAMPLE ZN:    0.0000?
18 * 4 ASSAYS

CIN
18 * 8 INTENSITIES
1. SAMPLE PB: 23.9166 ? P
```

CALIBRATION INTENSITIES (MODEL 2: PBLOW)

```
Element: PB ?
Probe number:  1 ?
Source: A ?
Channel low limit: 144 ?
Channel high limit: 157 ?
Peak channel: 126 ? 151
Norm. coefficient:    1.00000 ?
Norm. intentities: 2550.67504 ?
Safety low limit:    0.00000 ?
Safety high limit:  100.00000 ?

Channel:  2 ?
Element: AS ?
Probe number:  1 ?
Source: A ?
Channel low limit: 120 ?

Channel:  3 ?
Element: CU ?

Channel:  4 ?

G MATRIX ?
ASSAY/IDENT PARAMETERS ?

> CAL
OLD DATA: 6 SAMPLES, MODEL 1
OVERWRITE?
MEASURE SAMPLE 1
LAST SAMPLE 0?
MEASURE SAMPLE 1
LAST SAMPLE 0?
0 SAMPLES

> \
WHAT?


MEASURING: PROBE 1 TYPE SAPS
200 SECONDS
MEASURE SAMPLE 8
MEASURING: PROBE 1 TYPE SAPS
200 SECONDS
MEASURE SAMPLE 9
MEASURING: PROBE 1 TYPE SAPS
200 SECONDS
MEASURE SAMPLE 10
LAST SAMPLE 12?
12 SAMPLES

> CAL
OLD DATA: 12 SAMPLES
MEASURE SAMPLE 13 10
MEASURE SAMPLE 10
MEASURING: PROBE 1 TYPE SAPS
200 SECONDS
MEASUREMENT INTERRUPTED
TRY AGAIN?
MEASURING: PROBE 1 TYPE SAPS
200 SECONDS
```

4

8	0.000	0.012	-0.012	-0.030
9	0.930	1.271	-0.341	-0.842
10	3.860	3.654	0.206	0.510
11	0.120	0.175	-0.055	-0.137
[illegible]	2.910	2.425	0.485	1.199
[illegible]	0.480	0.843	-0.363	-0.898
14	9.680	9.535	0.145	0.358
15	0.250	0.256	-0.006	-0.016
16	0.000	0.000	-0.000	-0.001
17	0.000	-0.056	0.056	0.138
18	4.850	5.205	-0.355	-0.879

DELETE POINTS: 3 5

R= 0.997 S= 0.254 F(3,12)= 643.0

RESIDUALS?

NO.	ASSAY	ESTIM.	RESID.	ST.RES
1	0.083	0.255	-0.172	-0.678
2	6.250	6.244	0.006	0.022
4	0.408	0.620	-0.212	-0.835
6	0.000	-0.103	0.103	0.404
7	0.000	-0.183	0.183	0.720
8	0.000	-0.040	0.040	0.159
9	0.930	1.240	-0.310	-1.220
10	3.860	3.633	0.227	0.892
11	0.120	0.123	-0.003	-0.014
12	2.910	2.379	0.531	2.087
[illegible]	0.480	0.800	-0.320	-1.260
[illegible]	9.680	9.637	0.043	0.169
15	0.250	0.204	0.046	0.183
16	0.000	-0.053	0.053	0.207
17	0.000	-0.110	0.110	0.431
18	4.850	5.172	-0.322	-1.267

DELETE POINTS: 12

R= 0.998 S= 0.202 F(3,11)= 1007.7

RESIDUALS?

NO.	ASSAY	ESTIM.	RESID.	ST.RES
1	0.083	0.226	-0.143	-0.708
2	6.250	6.259	-0.009	-0.043
4	0.408	0.587	-0.179	-0.882
6	0.000	-0.125	0.125	0.620
7	0.000	-0.203	0.203	1.004
8	0.000	-0.064	0.064	0.318
9	0.930	1.226	-0.296	-1.463
10	3.860	3.538	0.322	1.592
11	0.120	0.097	0.023	0.114
13	0.480	0.774	-0.294	-1.452
14	9.680	9.627	0.053	0.262
15	0.250	0.172	0.078	0.385
[illegible]	0.000	-0.077	0.077	0.380
[illegible]	0.000	-0.134	0.134	0.662
18	4.850	5.009	-0.159	-0.788
18	4.850	5.009	-0.159	-0.788
18	4.850	5.009	-0.159	-0.788

DELETE POINTS: 10

```
R= 0.999 S= 0.175 F(3,10)= 1297.6
----------------------------------
```

MODEL Pb LOW: LEAD CORRELATION FOR XRF-880 MODEL CALIBRATION.

```
RESIDUALS?
COEFFICIENTS AND T-VALUES?
INTERCEPT= -9.404039E-2
SLOPE 1=7.756182E-5 T= 14.65 P

COEFFICIENTS AND T-VALUES FOR *PB*
        ITC       PB*CU       PB          PB/
SL  -0.094040   0.000078   0.057967 -41.442888
T               14.651863  22.723230 -18.601380

CHANGE INDEPENDENTS?


REGRESSION FOR ZN?
DEFINE INDEPENDENTS:
Stop indep input by END-key
1. indep:  ? ZN
2. indep:  ? FE
3. indep:  ? AS
4. indep:  ? ZN*FE
5. indep:  ?

R= 0.979 S= 0.407 F(4,13)=   75.2
----------------------------------

RESIDUALS?
COEFFICIENTS AND T-VALUES?

CHANGE INDEPENDENTS?
Stop indep input by END-key
1. indep: ZN?
2. indep: FE?
3. indep: AS?
4. indep: ZN*FE?
5. indep:  ?

R= 0.979 S= 0.407 F(4,13)=   75.2
----------------------------------

RESIDUALS?
NO. ASSAY  ESTIM.  RESID. ST.RES
 1  0.010  0.125  -0.115  -0.282
DELETE POINTS:
COEFFICIENTS AND T-VALUES?
INTERCEPT= 6.418119E-1
SLOPE 1=1.927284E-2 T=  9.17 P

COEFFICIENTS AND T-VALUES FOR *ZN*
        ITC       ZN          FE          AS          ZN*FE
SL   0.641812   0.019273  -0.000847  -0.000694  -0.000029
T               9.171056  -2.038001  -1.556879  -1.084758

CHANGE INDEPENDENTS?
Stop indep input by END-key
1. indep: ZN?
2. indep: FE?
```

XRF DATA FOR TEST PITS
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

	TP 1 PREPARED *	TP 1 INSITU	TP 1 LAB	TP-2 PREPARED *	TP-2 INSITU	TP-2 LAB	TP-3 PREPARED *	TP-3 INSITU	TP-3 LAB	TP-4 PREPARED *	TP-4 INSITU	TP-4 LAB	TP 5 PREPARED *	TP 5 INSITU	TP 5 LAB
SURFACE															
0.5		4,783			1,318			3,748			5,867			0	
1.5		684			478			491			3,247	2,250		1,497	
3	305	0	14.5		0	507		953	286	301	463			4,422	
5		0						141	96.3	137	138	174		2,181	
6															
7															
8								0						0	143
9															
10														0	0

	TP-6 PREPARED *	TP-6 INSITU	TP-6 LAB	TP-7 PREPARED *	TP-7 INSITU	TP-7 LAB	TP-8 PREPARED *	TP-8 INSITU	TP-8 LAB	TP-9 PREPARED *	TP-9 INSITU	TP-9 LAB	TP 10 PREPARED *	TP 10 INSITU	TP 10 LAB
SURFACE															
0.5		9,969			10,220		6,642	7,812	27,000		NA		5,799	6,417	30,600
1.5		0	21.3		1,731			444			402			0	
3		61			1,600	634		344			309		98	57	54.6
5					3,793		81	113	146		0	53.4			
6															
7											0				
8															
9															
10						124									

	TP 11 PREPARED *	TP 11 INSITU	TP 11 LAB	TP-12 PREPARED *	TP-12 INSITU	TP-12 LAB	TP-13 PREPARED *	TP-13 INSITU	TP-13 LAB	TP-14 PREPARED *	TP-14 INSITU	TP-14 LAB	TP 15 PREPARED *	TP 15 INSITU	TP 15 LAB
SURFACE															
0.5		1,742								15,030	17,000	95,200			
1.5		424			12,570			2,261			5,431			12,900	21,800
3		2,060	2,230		301	29.8		61	14.6		10,410			113	
5		0	185	0	0	23.0		31			5,021			3,122	
6		--						0							
7															
8															
9					0										414
10										6,994	190	1,290			

NOTE: * ALL PREPARED SAMPLES ARE ON DRY WEIGHT BASIS.
ALL VALUES ARE IN mg/kg.

XRF DATA FOR TEST PITS
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

	TP 16			TP 17			TP 18			TP 19			TP 20		
	PREPARED *	INSITU	LAB	PREPARED *	INSITU	LAB	PREPARED *	INSITU	LAB	PREPARED *	INSITU	LAB	PREPARED *	INSITU	LAB
SURFACE								6,772						11,700	
0.5	252	3,123	471		12						0				
1.5	0	0			1,912			5,813			6,805			7,900	
3	0	0	13.7	3,783	926	2,300		3,419		293	312	109		3,720	
5					48	81.4		1,273	8,470	21	33	4.7		1,400	2,070
6															
7					0									195	
8							261	159	29.7						
9															
10					0								1,029	32	64.7

	TP-21			TP-22			TP-24			TP-25			TP 26		
	PREPARED *	INSITU	LAB	PREPARED *	INSITU	LAB	PREPARED *	INSITU	LAB	PREPARED *	INSITU	LAB	PREPARED *	INSITU	LAB
SURFACE															
0.5		0			1,022			7			209			0	
1.5		3,830			49	793		7,129			1				
3		3,481			0			4,481			2,204		1,869	1,758	3,260
5		1,229	1,330					6,957			265	250		0	89.0
6															
7											25	56.5			
8															
9															
10		63	27.0				373	412	30.8					0	

	TP-28			TP-29			TP-30			TP-31			TP 32		
	PREPARED *	INSITU	LAB	PREPARED *	INSITU	LAB	PREPARED *	INSITU	LAB	PREPARED *	INSITU	LAB	PREPARED *	INSITU	LAB
SURFACE														939	
0.5		1,254	1,710		8,060			75			678				
1.5		2,751			5,001			636			117	95.8		11	13.8
3		0			2,462			876			6			0	
5		0	185	2,231	4,450	2,450		272							
6															
7								0							
8															
9															
10		0		211	0	15.3		78	11.7						

ALL PREPARED SAMPLES ARE ON DRY WEIGHT BASIS.

NOTE: * ALL VALUES ARE IN mg/kg.

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XRF DATA FOR TEST PITS
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

	TP-33 PREPARED *	TP-33 INSITU	TP-33 LAB	TP 34 PREPARED *	TP 34 INSITU	TP 34 LAB	TP 35 PREPARED *	TP 35 INSITU	TP 35 LAB	TP 36 PREPARED *	TP 36 INSITU	TP 36 LAB	TP 37 PREPARED *	TP 37 INSITU	TP 37 LAB
SURFACE														0	51.5
0.5		2,525			870			980	116		66	176			
1.5	7,505	8,125	890		0	24.7		41			39			0	
3		829						97			12			0	
5		373						81			0				
6															
7															
8		Too Wet	62.3												
9															
10											Too Wet				

	TP-38 PREPARED *	TP-38 INSITU	TP-38 LAB	TP-39 PREPARED *	TP-39 INSITU	TP-39 LAB	TP-40 PREPARED *	TP-40 INSITU	TP-40 LAB	TP-41 PREPARED *	TP-41 INSITU	TP-41 LAB	TP-42 PREPARED *	TP-42 INSITU	TP-42 LAB
SURFACE		0	32.5		187	329		7,980							
0.5											148	56.6	278	0	820
1.5		0			0	13.1		17,580		643	39			32	
3		0		0	0			973						0	
4		7						107							
5		0			0			6,473	7,370					0	
6															
7															
8														Too Wet	
9															
10								494	4,600						

	TP-43 PREPARED *	TP-43 INSITU	TP-43 LAB	TP-44 PREPARED *	TP-44 INSITU	TP-44 LAB
SURFACE						
0.5		202			1,475	
1.5	1,916	596			1,736	
3		3,950			939	
5	742	526	369		1,403	
6			212			
7		Too Wet			Too Wet	34.9
8					Too Wet	
9						
10						

NOTE: * ALL PREPARED SAMPLES ARE ON DRY WEIGHT BASIS.
ALL VALUES ARE IN mg/kg.

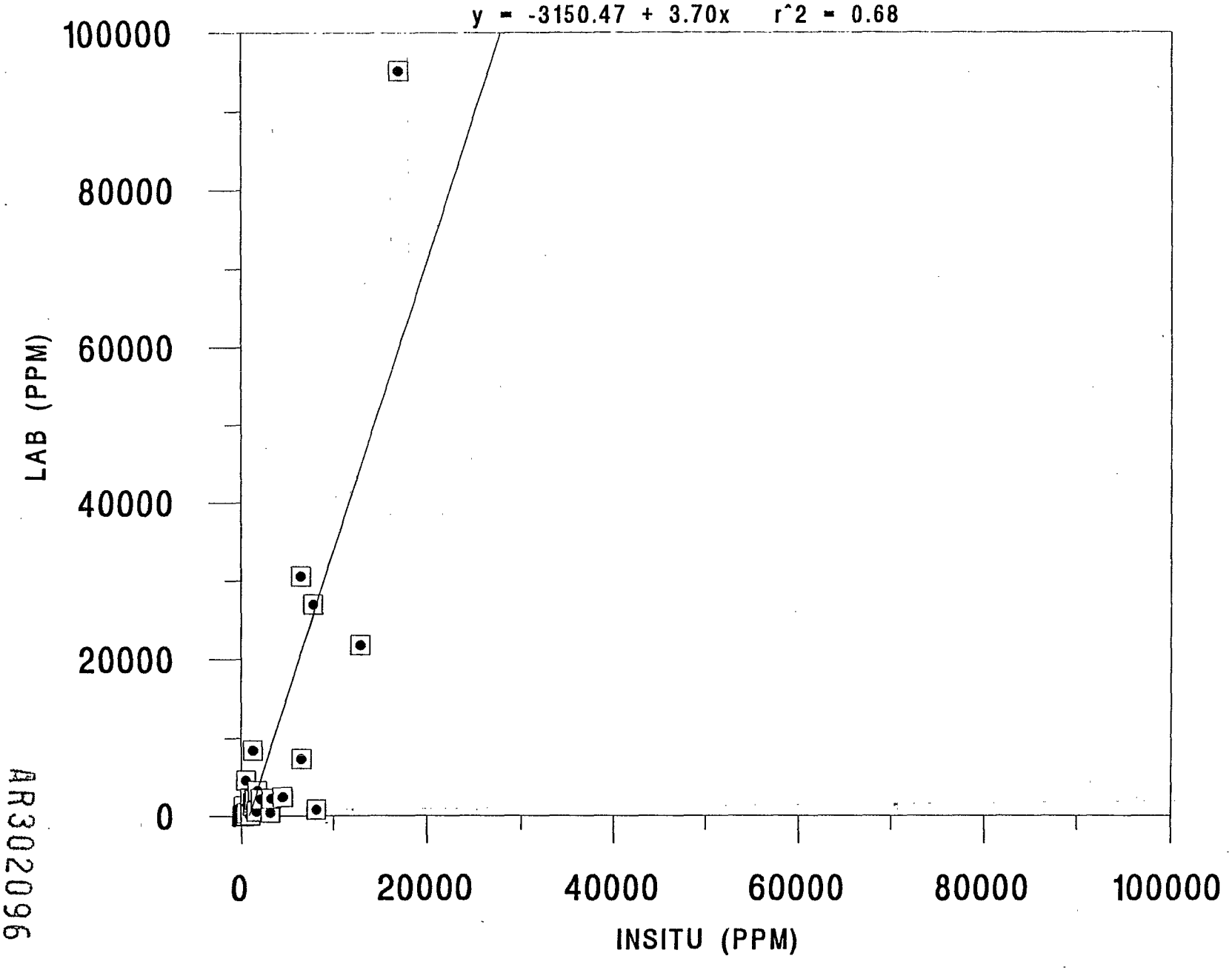
AR302094

XRF SCREENING QA DATA
INSITU VS. PREPARED
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA

SAMPLE I.D.	INSITU READING (PPM)	PREPARED READING (PPM)	PERCENT DIFFERENCE (%)
XRF-TP-4-3	463	301	54
XRF-TP-4-5	138	137	1
XRF-TP-8-0.5	7,812	6,642	18
XRF-TP-10-0.5	6,417	5,799	11
XRF-TP-14-0.5	17,000	15,030	13
XRF-TP-16-0.5	3,123	252	1,139
XRF-TP-17-3	926	3,783	76
XRF-TP-18-8	159	261	39
XRF-TP-19-3	312	293	6
XRF-TP-24-10	412	373	10
XRF-TP-26-2.5	1,758	1,869	6
XRF-TP-29-5	4,450	2,231	99
XRF-TP-33-1.5	8,125	7,505	8
XRF-TP-43-1.5	596	1,916	69
XRF-TP-43-5	526	742	29

INSITU XRF VS. LAB

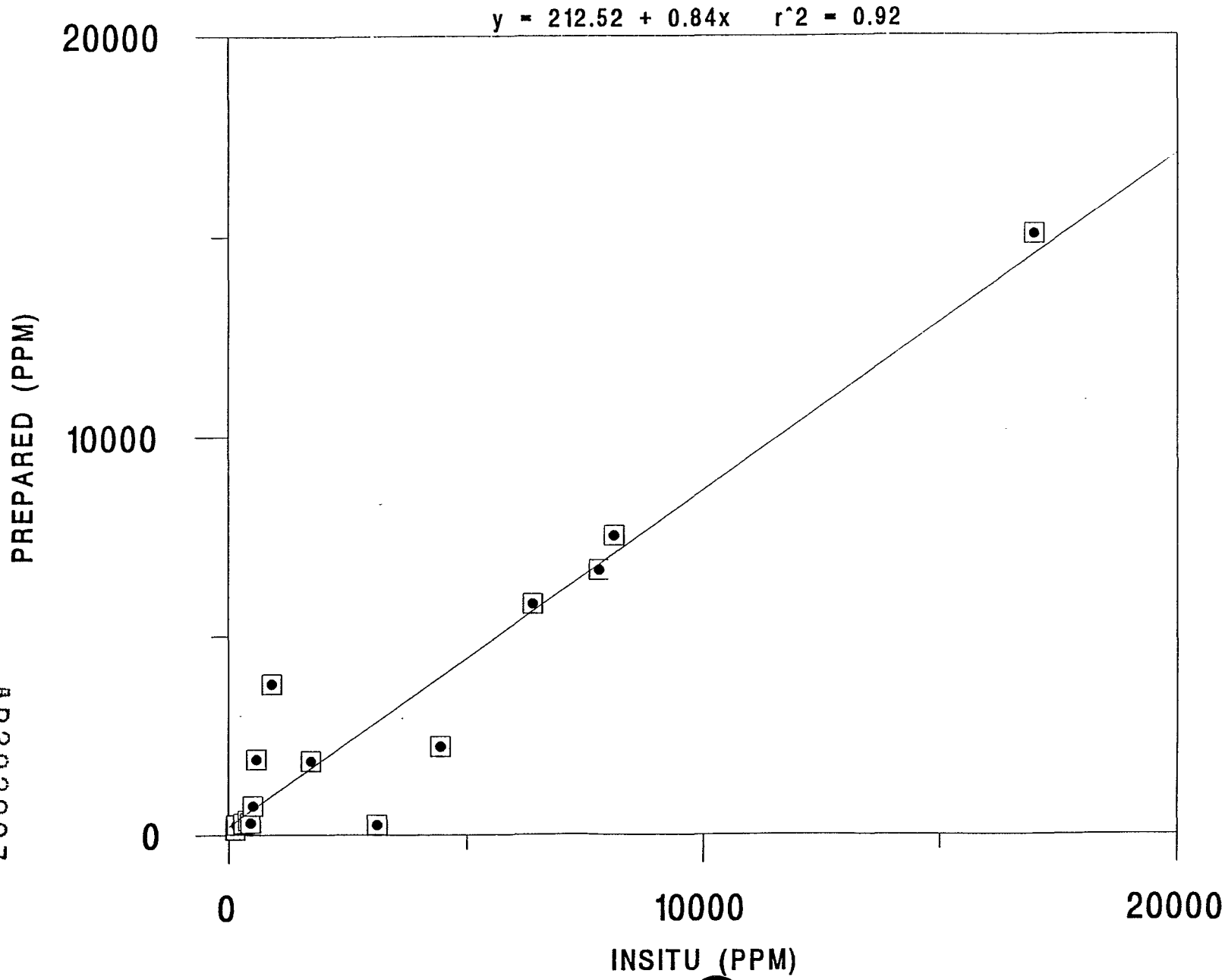
TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA



AR302096

INSITU XRF VS. PREPARED

TONOLLI CORPORATION SUPERFUND SITE
NESQUEHONING, PENNSYLVANIA



AR302097

TABLE 2: XRF Q[illegible]ATISTICS
TONOLLI CORPORAT[illegible]PERFUND SITE
NESQUEHONING, [illegible]SYLVANIA

	QA SU65-SU76	QA SU77-SU86	QA SU87-SU95	QA SU96-SU108	QA SU109-SU120	QA SU121-SU131	QA SU132-SU141	QA SU142-SU156
	READING OF STANDARD 17	READING OF STANDARD 17	READING OF STANDARD 17	READING OF STANDARD 17	READING OF STANDARD 17	READING OF STANDARD 17	READING OF STANDARD 17	READING OF STANDARD 17
	59	82	53	69	79	88	72	69
	66	96	55	67	103	71	75	63
	68	57	72	77	95	81	77	47
	83	63	81	71	81	68	68	80
	77	72	81	93	62	65	61	72
	65	69	76	81	72	69	82	76
	101	80	101	55	68	76	82	87
	101	71	40	72	83	75	79	83
	70	66	67	75	77	91	55	77
	57	74	73	61	59	80	92	82
ST.DEV	16	11	17	11	14	9	11	12
DETECTION LIMIT	47	33	52	32	41	26	32	35
QUANTIFICATION	158	110	172	105	138	86	108	117
MEAN	75	73	70	72	78	76	74	74
CV (%)	21.19	15.05	24.66	14.63	17.66	11.28	14.58	15.95

	QA SU156-SU165	QA SU165	QA TP-20-10'	QA TP-1-5'	QA TP-14-10'	QA TP-24-10'
	READING OF STANDARD 17	READING OF STANDARD 17	READING OF STANDARD 17	READING OF STANDARD 17	READING OF STANDARD 17	READING OF STANDARD 17
	73	77	101	76	57	77
	81	78	103	65	77	76
	69	70	88	63	76	66
	69	65	47	93	86	54
	76	66	73	91	69	93
	71	83	68	81	67	81
	59	91	70	59	77	80
	77	71	58	67	66	72
	101	71	77	72	59	68
	70	63	61	71	81	59
ST.DEV	11	9	18	12	9	11
DETECTION LIMIT	33	26	55	35	28	34
QUANTIFICATION	110	88	182	115	95	114
MEAN	75	74	75	74	72	73
CV (%)	14.74	11.93	24.39	15.59	13.22	15.69

AR302098

NOTES: ALL READING VALUES ARE IN PPM.

REPLICATE PRECISION
STATISTICS

SAMPLE ID	CALIBRATION MODEL	ELEMENT	n	ANALYTICAL RANGE (mg/kg)	STANDARD DEVIATION	COEFFICIENT OF VARIATION (CV %)	MEAN VALUE PPM	DETECTION LIMIT PPM	QUANTIFICATION DETECTION LIMIT PPM
QA SU65-SU76	PB-LOW	Pb	17	0-20,000	16	21.19	75	48	160
QA SU77-SU86	PB-LOW	Pb	17	0-20,000	11	15.05	73	33	110
QA SU87-SU95	PB-LOW	Pb	17	0-20,000	17	24.66	70	51	170
QA SU96-SU108	PB-LOW	Pb	17	0-20,000	11	14.63	72	33	110
QA SU109-SU120	PB-LOW	Pb	17	0-20,000	14	17.66	78	42	140
QA SU121-SU131	PB-LOW	Pb	17	0-20,000	9	11.28	76	27	90
QA SU132-SU141	PB-LOW	Pb	17	0-20,000	11	14.58	74	33	110
QA SU142-SU156	PB-LOW	Pb	17	0-20,000	12	15.95	74	36	120
QA SU156-SU165	PB-LOW	Pb	17	0-20,000	11	14.74	75	33	110
QA SU165	PB LOW	Pb	17	0-20,000	9	11.93	74	27	90
QA TP-20-10'	PB-LOW	Pb	17	0-20,000	18	24.39	75	54	180
QA TP-1-5'	PB-LOW	Pb	17	0-20,000	12	15.59	74	36	120
QA TP-14-10'	PB-LOW	Pb	17	0-20,000	9	13.22	72	27	90
QA TP-24-10'	PB-LOW	Pb	17	0-20,000	11	15.69	73	33	110

STANDARD 17 = 72 PPM

AVERAGE QUANTIFICATION LIMIT 122

AR302099

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~ DAC
DATE: 11 / 9 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 11/9/90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (1000)	LOCATION ~~READING 2 (PPM)~~	VOC's AVERAGE CONCENTRATION (PPM)
TP-1	0-0.5	Pb	ASPHALT ~~[illegible]~~		PID NOT WORKING
TP-1	1-5	Pb	0.216	Pile	"
TP-1	3.0	Pb	1.708	pile	accidentally
TP-1	directly beneath asphalt	Pb	4.783	pit	~~[illegible]~~
	1.1	Pb	0.684	pit side	0
	~~[illegible]~~ 1.7	Pb	0.239	pit side	0
	~~[illegible]~~ 2.9		0.000	pit side	0
	<1.0		0.000	IN PILE	0

REMARKS :

(1) Such as Pb. As. Cu. Mg. Zn. Se

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE
SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~ DAC
DATE: 11 / 2 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 11 / 9 / 90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (1000)	LOCATION READING 2 (~~PPM~~)	VOC's AVERAGE CONCENTRATION (PPM)
TP-2	0-0.5	Pb	1.318	IN PILE	0
TP-2	1.5	Pb	0.479	IN PILE	0
TP-2	2.0	Pb	0.000	IN PILE	0
			<TA = 0.	239	

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

AR302101

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO. PAC
DATE: NOV / 8 / 1990
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 11 / 8 / 90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (1000)	LOCATION READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
TP-3	At 0.5'	Pb	3748	PILE	0
TP-3	1.5	Pb	0.491	PILE	0
TP-3	3	Pb	0.953	PILE	0
TP-3	5	Pb	0.141	PILE	0
TP-3	8'	Pb	0.000	BUCKET	

REMARKS :

(1) Such as Pb. As. Cu. Mg. Zn. Se

AR302102

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE
SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~ PAC
DATE: 10 / 26 / 90
CHECKED BY
DATE:

INSTRUMENT:
INSTRUMENT SERIAL No.
LATEST CALIBRATION

TEST TIME DURATION

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	CONCENTRATION READING 1 (PPM) /10000	READING 2 (PPM)	AVERAGE CONCENTRATION (PPM)
TP-4	0'	Pb	5.365		0
TP-4	[illegible]	Pb	3.247		0
[illegible]	[illegible]	Pb	0.463		0
[illegible]	[illegible]	Pb	[illegible]	[illegible] 0.193	0

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

AR302103

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO~~: DAC
DATE: 11 / 8 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 11 / 9 / 90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE. CONCENTRATION READING 1 (PPM) (1000)	READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
TP-5	0.5	Pb	0.000	PILE	0
	1.5	Pb	1.497	PILE	0
	3.0	Pb	4.327	PILE	0
	3.0	Pb	4.422	SIDE	0
	5.0	Pb	2.181	PILE	0
	8.0	Pb	0.000	PILE	5
	~~[illegible]~~ 8.0	Pb	~~[illegible]~~	~~[illegible]~~	3.8 material pit
	10'	Pb	0.000	PILE	0

REMARKS :

(1) Such as Pb. As. Cu. Mg. Zn. Se

AR302104

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~ CAC
DATE: 11 / 1 / 90
CHECKED BY _____
DATE: ___ / ___ / ___

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION __ / __ / __

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (/1000)	READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
TP-1	0-0.5	Pb	0.969	STA = -0.209	0
TP-2	1.5	Pb	[illegible]		0
TP-	[illegible]	Pb	0.061		0

REMARKS : _____

(1) Such as Pb, As, Cu, Mg, Zn, Se

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~ DAC
DATE: 11 / 6 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 11 / 6 / 90

MICROTIA MP-100
S/N NA 890341

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (/1000)	READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
TP-7	0-0.5'	Pb	0.22		0
	1.5	Pb	.731		0
	3'	Pb	0.473	pile	~151
	3'	Pb	16.06	side of TP	~201
	3'	Pb	3.793	ok	0

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

AR302106

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE
SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~ DAC
DATE: [illegible] / [illegible] / [illegible]
CHECKED BY
DATE: / /

INSTRUMENT: [illegible]
INSTRUMENT SERIAL No. [illegible]
LATEST CALIBRATION / /

MILESTAP MA-[illegible]
S/N NA 590[illegible]

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	CONCENTRATION READING 1 (PPM) /(1000)	CONCENTRATION READING 2 (PPM)	AVERAGE CONCENTRATION (PPM)
[illegible]	[illegible]	[illegible]	7,812	[illegible]	0
[illegible]	[illegible]	[illegible]	0.244		0
[illegible]	[illegible]	[illegible]	0.244		0
[illegible]	[illegible]	[illegible]	0.113		0

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

AR302107

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE
SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO. DAC
DATE: 11 / 12 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 11/12/90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	~~READING 1 (PPM)~~ AVE CONCENTRATION (PPM) (1000)	~~READING 2 (PPM)~~ LOCATION	VOC'S AVERAGE CONCENTRATION (PPM)
TP-9	0-0.5'	Pb	CONCRETE (NA)	STA = 0.298	0
TP-9	1.5'	Pb	0.402	PILE	0
	3.0'	Pb	0.309	PILE	0
	5.0	Pb	0.000	PILE	0
	7.0	Pb	0.000	PILE	0

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

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X-RAY FLUORESCENCE
SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~ DAC
DATE: 10 / 27 / 90
CHECKED BY
DATE: / /

INSTRUMENT: XMET 880
INSTRUMENT SERIAL No. 13740
LATEST CALIBRATION 12 / 11 / 90

MICROTIP MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

VOC's

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	CONCENTRATION READING 1 (PPM) / 1000	READING 2 (PPM)	AVERAGE CONCENTRATION (PPM)
TP-10	0-0.5	Pb	0.410		0
TP-10	1.25	Pb	0.028		0
TP-10	1.5	Pb	0.000		0
TP-10	1.5	Pb	0.027	STA = 0.931	0
TP-10	2.0	Pb	0.057		0

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

AR302109

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO. [illegible]
DATE: 11 / 9 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 11 / 9 / 90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (/1000)	LOCATION READING 2 (~~PPM~~)	VOC's AVERAGE CONCENTRATION (PPM)
TP-11	0 to 0.5'	Pb	1.742	pile	0
	1.5		0.424	pile	0
	2.0		0.041	IN PIT	0
	2.5 Hockline mat'l in pit		0.109	in pit	0
	2.5-3		2.060	pile	0
	5'		0.000	pile	0

REMARKS :

(1) Such as Pb. As. Cu. Mg. Zn. Se

AR302110

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO. DAC
DATE: 11 / 12 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 11/12/90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) X1000	~~READING~~ 2 ~~(PPM)~~	VOC's ~~AVERAGE~~ CONCENTRATION (PPM)
TP-12B	1.5'	Pb	[illegible]	PILE	0
	[illegible]	[illegible]	[illegible]	SIDE PIT	0.7 in pit
	[illegible]		0	PILE	1.3 [illegible] 10%
	5-5.5		[illegible]	PILE	4.9
	[illegible]		[illegible]	PILE	2.0

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

AR302111

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO. DAC
DATE: 11 / 12 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 11 / 12 / 90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (1000)	READING 2 (PPM)	~~AVERAGE~~ VOC's CONCENTRATION (PPM)
TP-15	1.3-1.5'	Pb	2.261	side	0
	2		7.607	bottom	0
	3		0.061	PILE	0
	5		0.031	PILE	0
	6.3		0.000	PILE	0

REMARKS :

(1) Such as Pb. As. Cu. Mg. Zn. Se

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~ PAC
DATE: 10 / 30 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 10 / 30 / 90

MICROTIP MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (X1000)	READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
TP-14	0.5'	Pb	17.01	NOTE: MOSTLY RUBBER	0
TP-14	1.5'	Pb	5.431	MIXED WITH SOIL BATTERY CHIPS	0
TP-14	3.0	Pb	10.41		0
TP-14	5.0	Pb	5.021		0
TP-14	10.0	Pb	0.196	STA = -0.931	0

REMARKS : MACHINE THAT FEL AMMONG IT NO SRC RESPONSE

(1) Such as Pb. As. Cu. Mg, Zn. Se

AR302113

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~ DAC
DATE: [illegible] / [illegible] / [illegible]
CHECKED BY
DATE: / /

INSTRUMENT: [illegible]
INSTRUMENT SERIAL No. [illegible]
LATEST CALIBRATION 10/25/90

MICROTOP-MP-[illegible]
SN NA 590344

TEST TIME DURATION [illegible]

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	CONCENTRATION READING 1 (PPM) / (1000)	READING 2 (PPM)	YOC : AVERAGE CONCENTRATION (PPM)
[illegible]	[illegible]	[illegible]	[illegible]		0
[illegible]	[illegible]	[illegible]	0.113		0
[illegible]	[illegible]	[illegible]	0.122	STA = -0.253	0

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

AR302114

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~ _____
DATE: ___/___/___
CHECKED BY _____
DATE: ___/___/___

INSTRUMENT: _____
INSTRUMENT SERIAL No. _____
LATEST CALIBRATION ___/___/___

MICRO-TIP
S/N DA 39

TEST TIME DURATION _____

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	CONCENTRATION READING 1 (PPM)	~~READING~~ 2 (PPM)	~~AVERAGE~~ CONCENTRATION (PPM)

REMARKS : _____

(1) Such as Pb, As, Cu, Mg, Zn, Se

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~ DAC
DATE: 11 / 8 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 11 / 8 / 90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (1000)	LOCATION ~~READING~~ 2 ~~(PPM)~~	VOC's AVERAGE CONCENTRATION (PPM)
TP-17	0.4 - 0.6	Pb	0.012	side → no "red" soil mat'l.	0.0
	1.5'	Pb	1.912	IN HOLE	0.0
	3'	Pb	0.926	side	0 - 0.3
				bucket @ 3'	1.2 bucket
	3'	Pb	0.111	bucket	
	5	Pb	0.048	bucket	0.3 ~~bucket~~
					to 1.7 PILE
	7	Pb	0.000	bucket	0.0
	10	Pb	0.000	bucket	0.0

REMARKS : 0 - 0.4' IS ASPHALT.

(1) Such as Pb. As. Cu. Mg. Zn. Se

AR302116

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~ DAC
DATE: 10 / 30 / 96
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 10 / 30 / 96

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (1000)	~~READING 2 (PPM)~~	VOC's AVERAGE CONCENTRATION (PPM)
TP-19	0'	Pb	5.772	STA = -1.192	0
TP-19	1.5'	Pb	5.813		0
TP-18	3.0'	Pb	3.419		0
TP-19	5.0'	Pb	1.273		0
TP-18	8.0'	Pb	0.150	STA = -1.586	

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

AR302117

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~ RAL
DATE: 10 / 24 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MAT 220
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 10/24/90

MILLOTIP MAPLIN
S/N. NA 39 0300

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	CONCENTRATION READING 1 (PPM) /1000	CONCENTRATION READING 2 (PPM)	%OC AVERAGE CONCENTRATION (PPM)
TP-19	2.0-.5	FA	0.000		0
TP-19	1.5	FA	2.805		0
TP-19	2.0	FA	2.812	NOTE: [illegible]	0
TP-19	3.0	FA	2.023		0
TP-19	5.0	FA	2.022	STA = -1.19	0

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

AR302118

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~ DAC
DATE: 10 / 30 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 10/30/90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (1000)	READING 2 ~~(PPM)~~	VOC's AVERAGE CONCENTRATION (PPM)
TP-20	0'	Pb	11.700		0
TP-20	1.5'	Pb	7.400		0
TP-20	3.0'	Pb	3.720		0
TP-20	5.0	Pb	1.400		0
TP-20	7.0'	Pb	0.195		0
TP-20	10.0'	Pb	0.032		0

REMARKS : BACKHOE CASE 5 NO-D SOIL SAMPLE @ 5' & 10'
OPERATOR STEVEN ULRICH

(1) Such as Pb. As. Cu. Mg. Zn. Se

AR302119

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO. GAC
DATE: 11 / 2 / 92
CHECKED BY
DATE: / /

INSTRUMENT: V-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION / /

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) X1000	READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
[illegible]	[illegible]		[illegible]		0
[illegible]			[illegible]		0
			[illegible]		[illegible]
[illegible]	[illegible]		0.220		0
[illegible]	[illegible]	[illegible]	0.063		0

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

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X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO. DAC
DATE: 11 / 13 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 11/13/90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (1000)	LOCATION ~~READING 2 (PPM)~~	VOC's AVERAGE CONCENTRATION (PPM)
TP-22	0-0.5	Pb	1.022	PILE	0.0
TP-22	1.5	Pb	0.049	PILE	0.0
TP-22	3.0	Pb	0.00	PILE	0.0

REMARKS :

(1) Such as Pb. As. Cu. Mg. Zn. Se

AR302121

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO. DAC
DATE: 11 / 19 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION / / 90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (1000)	~~READING 2 (PPM)~~ LOCATION	VOC's AVERAGE CONCENTRATION (PPM)
TP-24	0-0.5	Pb	0.007	FILE	0
TP-24	1.5'	Pb	7.129	FILE	0
TP-24	3.0	Pb	4.481	FILE	0
TP-24	5.0	Pb	6.957	FILE	0
TP-24	10-0	Pb	0.412	FILE	0

REMARKS : MATRIX MAP - LEFT AT 10' AT 1545

(1) Such as Pb. As. Cu. Mg. Zn. Se

Paul C. Rizzo Associates, Inc.
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X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO. PAC
DATE: NOV / 8 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 11/3/90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (/1000)	READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
TP-25	0-0.5	Pb	0.209		0
TP-25	1.5'	Pb	0.001		0
TP-25	3.0'	Pb	2.204	oil	0
TP-25	5.0	Pb	0.265	oil (brown)	0
	7.0	Pb	0.025	bucket	
	9.0	Pb	0.012	oil (black)	

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

AR302123

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO: [illegible]
DATE: 11 / [illegible] / [illegible]
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION / /

MICROTIP MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	CONCENTRATION READING 1 (PPM) (AVE)	READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
TP-36	[illegible]		0		0
[illegible]	[illegible]	[illegible]	[illegible]	PIPE	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0
[illegible]		[illegible]	0		0
[illegible]	[illegible]				[illegible]
TP-[illegible]	[illegible]	[illegible]	0		0
[illegible]			[illegible]	STA = 0.227	

REMARKS :

(1) Such as Pb. As. Cu. Mg. Zn. Se

AR302124

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CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~ [illegible]
DATE: 11 / [illegible] / 90
CHECKED BY _____
DATE: ___ / ___ / ___

INSTRUMENT: Y-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION ___ / ___ / ___

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (X1000)	READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
[illegible]	[illegible]	[illegible]	1234		0
[illegible]	[illegible]	[illegible]	2.751	[illegible]	0
[illegible]	[illegible]	[illegible]	0.0005	2.424	0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0
[illegible]			[illegible]	[illegible]	0

REMARKS : _____

(1) Such as Pb, As, Cu, Mg, Zn, Se

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X-RAY FLUORESCENCE
SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~ DAC
DATE: 10 / 26 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 10 / 26 / 90

MICROTIA AF-100
S/N NA 990344

TEST TIME DURATION 30 SECS (5 TIMES)

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	CONCENTRATION READING 1 (PPM) /1000	READING 2 (PPM)	AVERAGE CONCENTRATION (PPM)
					JOC'S
TP-29	0-0.5'	Pb	0.060		0
TP-29	1.5	Pb	5.001		0
TP-29	1.5-3.0'	Pb	2.462		0
TP-29	5'	Pb	[illegible]	STA 0.162	0
TP-29	10'	Pb	0.000		0

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

AR302126

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X-RAY FLUORESCENCE
SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO. [illegible]
DATE: [illegible] / [illegible] / [illegible]
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION / /

MICROTIP MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) X1000	READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
TP-[illegible]	[illegible]	[illegible]	0.075		0
TP-[illegible]	[illegible]	[illegible]	0.636		0
TP-[illegible]	[illegible]	[illegible]	0.276		0
TP-[illegible]	[illegible]	[illegible]	0.272		0
TP-[illegible]	[illegible]	[illegible]	0.[illegible]		0
TP-[illegible]	[illegible]	[illegible]	0.[illegible]3		0

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

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X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO. DAC
DATE: 11 / 2 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION / /

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (1000)	READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
[illegible]	[illegible]	[illegible]	0.673		0
[illegible]	[illegible]	[illegible]	0.117		0
[illegible]	[illegible]	[illegible]	0.00[illegible]		0

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

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X-RAY FLUORESCENCE
SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~: CAC
DATE: 11 / 2 / 89
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 11/2/89

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (X1000)	READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
TP-32	[illegible]	Fe	0.239		0
TP-32	[illegible]	[illegible]	0.011	STA = 0.239	0
TP-32	[illegible]	[illegible]	0.000		0

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

AR302129

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X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO~~. PAC
DATE: 10 / 25 / 95
CHECKED BY
DATE:

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 3786
LATEST CALIBRATION

MICROTIP [illegible]
S/N NA 89[illegible]

TEST TIME DURATION 30 SEC

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	CONCENTRATION READING 1 (PPM) / 1000	CONCENTRATION READING 2 (PPM)	%OC - AVERAGE CONCENTRATION (PPM)
[illegible]	[illegible]	[illegible]	2,525	STA = -1.09	0
[illegible]	[illegible]	[illegible]	2,125		0
[illegible]	[illegible]	[illegible]	0,929		0
[illegible]	[illegible]	[illegible]	2,273		0
[illegible]	[illegible]	Pb	NO LEGALIZ	TO WET	0

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

AR302130

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X-RAY FLUORESCENCE
SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~ [illegible]
DATE: [illegible]
CHECKED BY
DATE:

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (1000)	READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
TP-[illegible]	[illegible]	[illegible]	[illegible] 370		[illegible]
[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]	[illegible]		[illegible]

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

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X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO. DAC
DATE: 11 / 13 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 11 / 13 / 90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	CONCENTRATION READING 1 (PPM) (1000)	LOCATION READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
TP-35	0-0.5'	Pb	0.98	PILE	0
	1.5		0.041	PILE	0
	3.0-3.2'		0.097	PILE	0
	5.0-5.5		0.081	PILE	0

REMARKS :

(1) Such as Pb. As. Cu. Mg. Zn. Se

AR302132

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CONSULTANTS

X-RAY FLUORESCENCE
SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO. DAC
DATE: 11 / 13 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 11/13/90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (1000)	LOCATION READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
TP-36	0-0.5	Pb	0.066	PILE	0
	1.5		0.039	PILE	0
	3.0		0.012	PILE	0
	5.0		0.000	PILE	0
	7.0		0.000	PILE	0
	10.0		TO-WET	PILE	0

REMARKS : SEE AT

(1) Such as Pb. As. Cu. Mg. Zn. Se

AR302133

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X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO. CAC
DATE: 11 / 1 / 20
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION / /

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	CONCENTRATION READING 1 (PPM) (AVE /1000)	READING 2 (PPM)	VOCs AVERAGE CONCENTRATION (PPM)
[illegible]	[illegible]	[illegible]	0		0
[illegible]	[illegible]	[illegible]	0		0
[illegible]	[illegible]	[illegible]	0		0

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

AR302134

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO. DAC
DATE: 11 / 13 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 11/13/90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (1000)	LOCATION ~~READING 2 (PPM)~~	VOC's AVERAGE CONCENTRATION (PPM)
TP-38	0.5	Pb	0.000	PILE	0.0
TP-38	1.5	Pb	0.000	PILE	0.0
TP-38	3.0	Pb	0.000	PILE	0.0
TP-38	4.0	Pb	0.007	PILE	0.0
TP-38	5.0	Pb	0.000	PILE	0.0

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

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X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~ DAC
DATE: 11 / 9 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 11 / 9 / 90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE. CONCENTRATION READING 1 (PPM) (/1000)	LOCATION ~~READING 2 (PPM)~~	VOC's AVERAGE CONCENTRATION (PPM)
TP-39	0-0.5'	Pb	0.187		0
TP-39	1.5	Pb	0.000		0
TP-39	3.0	Pb	0.000		0
TP-39	5.0	Pb	0.000	STA = 0.137	0

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

AR302136

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE
SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO: CAC
DATE: 10 / 31 / [illegible]
CHECKED BY
DATE: / /

INSTRUMENT: V-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 10 / 31 / [illegible]

MICROTIP MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) X1000	READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
TP-[illegible]	[illegible]	Pb	[illegible]		0
TP-[illegible]	[illegible]	Pb	0.53		0
TP-[illegible]	[illegible]	Pb	0.973		0
TP-[illegible]	[illegible]	[illegible]	[illegible]		0
TP-40	[illegible]	Pb	0.473	STA=0.473	0
TP-40	[illegible]	Pb	0.492		0

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

AR302137

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~: DAC
DATE: 10 / 30 / 90
CHECKED BY _____
DATE: ___ / ___ / ___

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 10/30/90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	CONCENTRATION READING 1 (PPM) (Ave x1000)	READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
TP 41	~~0.5~~ 0.5	Pb	0.148		0
TP 41	1.5	Pb	0.039		0

REMARKS : _____

(1) Such as Pb, As, Cu, Mg, Zn, Se

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE
SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO. DAL
DATE: 10 / 31 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 10/31/90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (X1000)	READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
TP42	[illegible]	Pb	0.000		0
TP42	[illegible]	Pb	0.022		0
TP42	[illegible]	Pb	0.000		0
TP42	[illegible]	Pb	[illegible]		0
TP42	[illegible]	Pb	[illegible]		0

REMARKS : [illegible]

(1) Such as Pb, As, Cu, Mg, Zn, Se

AR302139

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO. DAC
DATE: 10 / 31 / 90
CHECKED BY _____
DATE: ___ / ___ / ___

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 10 / 30 / 90

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (/1000)	READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
TP-42	0-0.5	Pb	0.202		0
TP-43	1.5	Pb	0.596		0
TP-43	3.0	Pb	3.950		0
TP-42	5.0	Pb	0.526		0
TP-42	7.0	Pb	TO-WET		

REMARKS : _____

(1) Such as Pb, As, Cu, Mg, Zn, Se

AR302140

Paul C. Rizzo Associates, Inc.
CONSULTANTS

X-RAY FLUORESCENCE
SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./~~GEO.~~ CAC
DATE: 10 / [illegible] / [illegible]
CHECKED BY _____
DATE: ___ / ___ / ___

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION 10/31/[illegible]

MICROTIP MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	CONCENTRATION READING 1 (PPM) (X1000)	READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
TP-44	2.5	[illegible]	.475		0
TP-[illegible]	[illegible]	[illegible]	.736		0
TP-[illegible]	2.0	[illegible]	0.039		0
TP-[illegible]	[illegible]	[illegible]	.403		0
TP-44	[illegible]	[illegible]	[illegible]		0
TP-44	[illegible]	[illegible]			0

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

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CONSULTANTS

X-RAY FLUORESCENCE SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO. DAC
DATE: 11 / 27 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION / /

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 30 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	FIELD ~~AVE.~~ CONCENTRATION READING 1 (PPM)	PREPARED CONCENTRATION READING 2 (PPM)	VOC's AVERAGE CONCENTRATION (PPM)
QA-SU53B-0.5	0.5'	Pb	3.949	3.258	
QA SU54B-0.5	0.5		5.866	3.992	
QA SU73	SURFACE	27.59	[illegible]	0.000	
QA SU83	"	7.816	[illegible]	4.936	
QA SU93	"		13.73	3.216	
QA SU104	"		6.184	4.949	
QA SU108	"		1.246	1.672	
QA SU114	"		0.000	0.000	
QA SU148B-.5	0.5		2.784	2.252	
QA-XRF-154	PILE		268.9	277.4	
QA-XRF-159	PILE	LOW Pb →	16.13	1545	← HIGH Pb
QA-TP-1-3'	3'		[illegible]	0.305	NOTE CONTAMINATED BLACK REFUSE FILTER
QA-TP-1-5'	5'		0.000	0.000	
QA-TP-4-3'	3'		0.463	0.301	
QA-TP-4-5'	5'		0.138	0.137	
QA-TP-8-0.5	0.5		7.812	6.642	
QA-TP-8-5'	5'		0.113	0.081	
QA-TP-10-0.5	0.5'		6.417	5.799	
QA-TP-16-3'	3'		0.057	0.098	
QA-TP-12B-5'	5'		0.000	0.000	
QA-TP-14-0.5'	0.5'		17.008	15.03[illegible]	
QA-TP-14-10'	10'		0.190	6.994	
QA-TP-16-0.5'	0.5'		3.123	0.352	

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

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CONSULTANTS

X-RAY FLUORESCENCE
SOIL SCREENING LOG

TONOLLI CORPORATION
SUPERFUND SITE
PROJECT NUMBER 89-599

FIELD ENG./GEO. DAC
DATE: 11 / 27 / 90
CHECKED BY
DATE: / /

INSTRUMENT: X-MET 880
INSTRUMENT SERIAL No. 143762
LATEST CALIBRATION / /

MICROTIA MP-100
S/N NA 890344

TEST TIME DURATION 200 SECS

SAMPLE LOCATION	DEPTH (FT.)	PARAMETER (1)	AVE CONCENTRATION READING 1 (PPM) (1000) FIELD	READING 2 (PPM) PREPARED	VOCs AVERAGE CONCENTRATION (PPM)
QA-TP-16-22"	1.83'	Pb	0.000	0.000	
QA-TP-16-3'	3.0'	Pb	0.000	0.000	
QA-TP-17-3'	3.0	Pb	0.926	3.783	
QA-TP-18-3	3.0'	Pb	0.159	0.261	
QA-TP-19-3'	3.0'	Pb	0.312	0.293	
QA-TP-19-5'	5.0'	Pb	0.033	0.021	
QA-TP-20-10	10.0'	Pb	0.032	1.029	ORIGINAL SAMPLE WAS [redacted]
QA-TP-24-10'	10.0'	Pb	0.412	0.373	
QA-TP-26-2.5'	2.5'	Pb	1.758	1.369	
QA-TP-29-5'	5.0'	Pb	4.450	[redacted] 2.231	
QA-TP-29-10'	10.0'	Pb	0.000	0.211	
QA-TP-33-1.5'	1.5'	Pb	8.125	7.505	
QA-TP-39-3	3.0'	Pb	0.000	0.000	
QA-TP-41-1.5'	1.5'	Pb	0.000	0.643	
QA-TP-42-0.5'	0.5'	Pb	0.000	0.278	
QA-TP-43-1.5'	1.5'	Pb	0.596	1.916	
QA-TP-43-5'	5.0	Pb	0.526	0.742	

REMARKS :

(1) Such as Pb, As, Cu, Mg, Zn, Se

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