ment plant to get access to MW-4. Well is on USACE property but we are keeping compressor on treatment plant side of fence.

1325 Larry calibrated Micropurge water quality meter. Setup at MW-4

1400 Water level: 7.48' btoc, TD = 18.90' btoc
Note: indicator stopped at ~12' btoc & broke through, but nothing on probe when pulled out.

1430 Begin pumping MW-4.

1515 Sample MW-004: VOCs, SVOCs, Pest/PCBs, Total Cyanide, total metals + Sr & Uranium, dissolved metals + Sr + U.

1630 Complete decon, depart site.
postnote: emailed DCQCR to MBrouwer & M. Gross.

JAK

0740 J. Ray & L. Namba arrive at site. Envirotech contractors already on site (Don Hunt & Scott Lyndsay). They load drums of IDW & Umatilla soil into truck. Bobcat rental arrives.
Setup at MW-3. Larry Namba calibrates Micropurge water ~~leve~~ quality meter.

0800 Water level in MW-3: 5.52' btoc. Grass plug? Obstruction at ~10-12' btoc. Water level probe can't penetrate, but tubing can because it's stiff. Small amount of grass about 6" long on water level probe.

0820 Cannot penetrate plug with pump & also tubing now will not penetrate either. Therefore, pump placed at 9' btoc instead of 13' btoc. This

intake depth is about 1½' above plug & 3½' below water table.

0830 Begin pumping. Envirotech continues loading material. Roll off (20yd) arrives. Umatilla soil & landfill debris will be loaded into it using Bobcat.

0915 Collect sample MW-003: VOCs, SVOCs, Pest/PCBs, Total cyanide, total metals, dissolved metals (TAL + Sr + U)
Also collected duplicate MW-303 for same parameters (time = 1100).

1030 Complete sampling MW-3. Decon pump & put away equipment

1130 Complete disposal work in landfill, signed paperwork for non hazardous

material (4 drums of IDW water & soil, debris from landfill in roll-off)

1045 Lock gate to landfill & haz waste storage building. Envirotech & URS personnel leave site. Purchase ice for samples.

1515 Drop off samples at STL.

Former NPD Lab SI
4/9/03 S. Lillyhub

Weather: 40-60°
Crew: Lillyhub, Nambu
Activity: Mobe, water level collection
Purchase misc. consumables

1410 Have mobed today, including stops at STL (lab) Tacoma and Fort Lewis, Picked up Landfill gate key from Cliff Brown at Cherokee General

1450 Have reconned site, gate key provided by Cliff Brown no good, he did provide an extra lock (keyed to wells) if we have to cut lock will need bolt cutters

1455 Mobe to collect water levels - not plan says to wait 5 minutes after cap is off to collect

Time	TOC	DTW	TD	Notes
MW-1	1509	10.99	21.84	Bottom Sediment
MW-2	1516	8.65	23.09	Bottom Sediment
MW-3	1523	5.15	obstructed	@ 10.5' (Grass)
MW-4	1536	6.75	obstructed	@ 10.8' (Grass)
MW-5	1549	3.52	obstructed	@ 10.4' (Grass)
MW-6	1558	3.64	obstructed	@ 8.6' (Grass)

MW-5 has no monument lid, J-Plug is good / locked

S. Lillyhub 4/9/03

4/9/03 S. Lillyhub

1606 Back at van, need to go to store for ① Bolt cutters ② 1/2 PVC pipe to unblock Grass roots from Screens ③ Deion H_2O ④ Baggies ⑤ Paper Towels

1735 At hotel, went to Home Depot and Gracey store for above items

S. Lillyhub 4/9/03

GW Former NPD Lab SE
4/10/03 S. Lillyquist

Weather 45-55° Rain / Showers
Weath Crew Lillyquist, Nimba
Crew Activity GW Sampling at MW-3, MW-5
Act and MW-2

0645 Leave for site, stop for ice on the way
0708 Arrive at off-site storage shed
0711 Decide to clear out grass at MW-3 using 1/2" PVC pipe 2-10' sticks coupled together with a compression coupling (no glue) We will then load truck, calibrate etc prior to sampling allowing turbidity to settle
0720 "Plug" of grass at bottom of the well, no material inside 1/2" pipe.
0728 Calibrate QED Micropurge # 1659

Sonde # 36866		Standard	Reading
Temp	°C	—	12.72
pH	SU	4.00	3.89
Turb	NTU	0	0
Cond	mS/cm	4.49	4.510
DO	mg/L	Air Saturation	9.04

4/10/03 S. Lillyquist

4/10/03 S. Lillyquist

0744 Meter reads "calibration successful"
0752 Grass still at ≈10.5' unsure if it floated up or if piping went through at MW-3, DTW = 5.16'
0812 Unable to hook grass plug with fishing hook, will have to poke through with the pump.
TD is 19' according to plan (bgs)
Will place pump at 12.5' btoc (mid screen) btoc is ≈ 0.5' less than bgs.
0830 Begin Purging well MW-3
0855 Compressor stops oil low, we recently added a lot of oil at Logram Pt. Lewis Long leaves for oil and will fill ≈ 1/2 tank of fuel while he is at station
0912 Resume Purging, just beginning to fill flow-through cell
0939 First Parameter collection, DTW has been steady at 5.17, Pump running at max Fill/Discharge. Flow rate 20 mL/minute
1002 Dial up Depth Control to 50' obtain flow of 65 mL/minute

S. Lillyquist 4/10/03

Former NPD Lab SI
4/10/03 E. Lillyfield

1042 Collect Samples MW-003 and MW-303 (Replicate, blind time = 1130) at MW-3 VOCs, SVOCs, PCB/Pest, Cyanide, Total Metals, Dissolved Metals. Metals analyses include strontium, uranium.

1238 Finished collecting samples, cleaning purge line of water and decon pump, tubing Citronox wash, rinse DI water Rinse

1303 Gas tank low again, going through much more than during LOGRAM

1328 Got fuel, attendant spilled 1/2 gallon +/- over compressor and gas can (I just bought) while filling. Need to let evaporate before putting in van

1355 Arrive at MW-5, set up

1400 DTW 3.55, TD 17.05 very soft able to poke through with PVC pipe

1420 Begin Purging MW-5

1433 Flow established at 60 mL minute, water level steady at 3.57

1527 Collect Sample MW-005 at MW-5 for VOCs SVOCs, PCB/Pest, Cyanide, Total and Dissolved Metals

4/10/03 E. Lillyfield

Former NPD Lab SI
4/10/03 E. Lillyfield

1629 Finished Sampling MW-5 Decon Pump/tubing Citronox wash, rinse DI water Rinse

1655 Collect Rinsate Sample MW-605 (from MW-5 to MW-2)

1655 Collect the Rinsate from Integra DI ASTM Type II Lot # 6021840 Sample is for VOCs, SVOCs, PCB/Pest Total and Dissolved Metals, Cyanide

1823 Note to MW-2 Rinsate took a long time to fill all the bottles

1826 Arrive at MW-2

1831 DTW at MW-2 = 8.65

1837 Begin Purging MW-37

1853 Begin Parameter collection, DTW = 8.64 and steady

1937 Collect Sample MW-002 at MW-2 VOCs, SVOCs, PCB/Pest, Total and Dissolved Metals, Cyanide

2040 Finished Sampling, pull pump and decon Citronox wash, rinse, DI rinse

2112 Leave Site, will get extra ice at hotel

4/10/03 E. Lillyfield

Former NPD Lab SI
4/11/03 E. Lillystick

Weather: 45-
Crew: Lillystick, Nimba
Activity: GW Sampling at

0645 Check out of hotel and leave to get ice
0710 Call Cherokee General office to see if someone is in for us to give keys to — no answer.
0720 Arrive at site, load up and calibrate instrument
0725 Calibrate QED Micropurge #1659 Sonde # 36866

Parameter	Standard	Value	
Temp	— °C	11.16	°C
pH	4.00 SU	3.98	SU
Turb	0 NTU	0	NTU
Cond	4.49 mS/cm	4.40	mS/cm
DO	Air saturation mg/L	3.58	mg/L

→ DO too low, this sonde was just returned and this is first job after QED performed maintenance on it

0740 Move to MW-6
0745 Arrive at MW-6, set up

4/11/03 E. Lillystick

Former NPD Lab SI
4/11/03 E. Lillystick

0758 TD = 18.13 Soft bottom (grass)
DTW = 3.68
0810 Begin Purging MW-6
0820 Collecting first readings DTW 3.69 and steady.
0924 Collect Sample MW-006 at MW-6, VOCs, SVOCs, PCB/Pest, Total and Dissolved Metals, Cyanide — Note Turbidity did not stabilize after 1 hour (Plan maximum) of purging, in fact started to go up near the 1 hour mark
1035 Finished Sampling pull pump and decon Alconox wash, rinse, DI rinse, note we have enough tubing so that we can dispose of tubing from now on.
1103 Head to Cherokee General to drop off site keys
1120 Drop off keys to Cherokee, Lary phones Janette to check in
1149 Arrive at Trattdale Waste Water Plant to set up at MW-4
1200 TD = 18.90 (Soft) DTW = 6.81

4/11/03 E. Lillystick

Former NPD Lab, SE
4/11/03 E. Lillyquist

1210 Begin Purging MW-4
1222 Begin to get parameter water, DTW is 6.83 and steady
1255 Collect Sample MW-004 at MW-4 VOCs, SVOCs, PCB/Pest, Total and Dissolved Metals and cyanide
1348 Finish Collecting Sample, clean up, clean pump using alconox wash, rinse DI water Rinse
1411 Arrive at MW-1
1416 DTW = 11.02 at MW-1
1421 Begin Purging MW-1
1430 Begin Parameter collection flow real good 120 mL minute DTW = 11.00 came up .02' during purge note let well "rest" after uncapping well.
1515 Collect Sample MW-001 at MW-1 (MS/MSD) VOCs, SVOCs, PCB/Pest Total and Dissolved Metals and Cyanide
Note: ALL Metals Samples for Project include Strontium and Uranium and is noted on the COC.
1710 Finished Sampling, Decon Pump, clean up
4/11/03 E. Lillyquist

4/14/03 E. Lillyquist

1725 At Storage Shed, finish cleaning up and pack up.
Label IDW drum with non-hazardous waste sticker estimate 12 gallons of Purge water and Decon water in the drum.
1750 Leave Site for Seattle
2300 End of day

Jim M
04/11/03

68 Former NPD Lab. SI

14April 03 Larry Nb

Weather: Overcast, Sun breaks, showers 50s, Wind 0-5 knots.

Field Crew: Larry Namba

Activities: Drop off equipment at INW and samples at STL.

0715 Unload van.

0830 Depart from INW after dropping off water level indicator. Heading for STL Laboratory.

0925 Depart laboratory after dropping off samples. Depart for Fort Lewis to drop off equipment.

1030 Depart Ft. Lewis Eastgate after dropping off equipment.

1300 Arrive at Budget. Waiting for ride to office by Dave Lewis. Traffic was really bad around Federal Way Truck scales.

1420 Dave arrives. Depart for office.

1445 Arrive at office. Give Erik paperwork for Troutdale.

Larry Nb
14 April 03

Project: USACE Former NPD Lab Site Investigation
Project Location: Troutdale, Oregon
Project Number: 53-F0074212

Key to Log of Boring

Elevation feet	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows/ 6in.	SAMPLES OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION		REMARKS AND OTHER TESTS
1	2	3	4	5	6	7	8	9	10	12

COLUMN DESCRIPTIONS

1 **Elevation:** Elevation in feet referenced to mean sea level (MSL) or site datum.

2 **Depth:** Depth in feet below the ground surface.

3 **Sample Type:** Type of soil sample collected at depth interval shown; sampler symbols are explained below.

4 **Sample Number:** Sample identification number.

5 **Blows/ 6in.** Number of blows required to advance driven sampler 12 inches beyond first 6-inch interval, or distance noted, using a 300-lb or 140-lb hammer with a 30-inch drop.

6 **OVM:** Organic Vapor Monitor, expressed as parts per million

7 **Graphic Log:** Graphic depiction of subsurface material encountered; typical symbols are explained below.

8 **USCS:** Graphic depiction of subsurface material encountered; typical symbols are explained below.

9 **Material Description:** Description of material encountered; may include color, moisture, grain size, and density/consistency.

10 **Well Completion Schematic:** Graphic depiction of subsurface material encountered; typical symbols are shown below

12 **Remarks and Other Tests:** Comments and observations regarding drilling or sampling made by driller or field personnel. Other field and laboratory test results, using the following abbreviations:

Trace	0 - 10%	Little	10 - 20%
Some	20 - 35%	And	35 - 50%

Descriptions and stratum lines are interpretive; field descriptions may have been modified to reflect lab test results. Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced; they are not warranted to be representative of subsurface conditions at other locations or times.

Unified Soil Classification System

Major Divisions			Symbols Graph	Symbols Letter	Typical Descriptions
Coarse Grained Soils, More than 50% of No. 200 Sieve Size	Gravels, More than 50% of Coarse Fraction Retained in No. 4 Sieve	Clean Gravels (little or no fines)		GW	Well-Graded Gravels, Gravel-Sand Mixtures, Little or no Fines
				GP	Poorly-Graded Gravels, Gravel-Sand Mixtures, Little or no Fines
		Gravels with Fines (appreciable amount of fines)		GM	Silty Gravels, Gravel-Sand-Silt Mixtures
				GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	Sands, More than 50% of Coarse Fraction Passing through No. 4 Sieve	Clean Sand (little or no fines)		SW	Well-Graded Sands, Gravelly Sands, Little or no Fines
				SP	Poorly Graded Sands, Gravelly Sands, Little or no Fines
		Sands with Fines (appreciable amount of fines)		SM	Silty Sands, Sand-Clay Mixtures
				SC	Clayey Sands, Sand-Clay Mixtures
Fine Grained Soils, More than 50% of Material is Smaller than No. 200 Sieve Size	Silts and Clays, Liquid Limit Less than 50%			ML	Inorganic Silts and very Fine Sands, Rock Flour, Silty or Clayey Fine Sands or Clayey Silts with Slight Plasticity
				CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clays, Sandy Clays, Silty Clays, Lean Clays
				OL	Organic Silts and Organic Silty Clays of Low Plasticity
	Silts and Clays, Liquid Limit Greater than 50%			MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sand or Silty Soils
				CH	Inorganic Clays of High Plasticity, Fat Clays
				OH	Organic Clays of Medium to High Plasticity, Organic Silts
Highly Organic Soils				PT	Peat, Humus, Swamp Soils with High Organic Contents

Note: Dual Symbols are used to indicate borderline soil classifications

TYPICAL SAMPLER GRAPHIC SYMBOLS

- Dames & Moore Sampler
- Relatively Undisturbed Sample
- Disturbed Sample
- Standard Penetration Test
- No Recovery
- Grab Sample

TYPICAL WELL GRAPHIC SYMBOLS

- One pipe in bentonite pellets
- One pipe in filter pack
- One slotted pipe in filter pack
- Bentonite Seal

Figure

URS

USCS3-GEOSCI I:\URSJOB-1\53F007-4\TROUTDAL.GPJ URSSEA3.GLB URSSEA3.GDT 4/24/02

Project: USACE Former NPD Lab Site Investigation Project Location: Troutdale, Oregon Project Number: 53-F0074212	**Log of Boring SS-001** Sheet 1 of 1

Date(s) Drilled	**9/6/01**	Logged By	**ALZ**	Checked By	**JAR**
Drilling Method	**Geoprobe®, direct push**	Drilling Contractor	**Geotech, Inc.**	Total Depth of Borehole	**12.5 feet**
Drill Rig Type	**GP-1**	Drill Bit Size/Type		Ground Surface Elevation	**39.02 ft msl**
Groundwater Level	**12 ft bgs**	Sampling Method	**Acetate Lined Split Spoon Sampler**	Hammer Data	**160 lb**
Borehole Backfill	**Hydrated Bentonite**	Location	**Background Area**		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	Number	Recovery (%)	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
	0		1		0		SM	Brown, silty SAND with organic matter	SS-001-01 10:20
								Grading light brown (dry) (no odor, no stain)	10:25
								Samples not collected from 1.5' bgs to 11' bgs	
	5								9/11/01: Boring duplicate advanced 3' away from original to collect deeper sample
	10		2					12 ft ▼	SS-001-12
								Boring was completed to 12.5' bgs. Groundwater was encountered at 12' bgs. Boring was backfilled with bentonite.	
	15								
	20								
	25								
	30								

ENV PROBE I:\URSJOB~1\53F007~4\TROUTDAL.GPJ URSSEA3.GLB URSSEA3.GDT 4/25/02

URS