DATCP Load Pad/Sump Assessments 2003

Factors leading to DATCP's Testing

- Visual evidence of deteriorated materials
- Unexplained pesticide groundwater monitoring well detects at sites undergoing remediation
- Downgradient private wells impacted by pesticides
- Reports of observed sump failures from Commercial firms


Deteriorated concrete

These results are from a groundwater monitoring well located 50 feet down gradient of a leaking sump:

EPTC	1500 ug/l
Atrazine	1600
Acetochlor	1500
Dimethanamid	5100
Alachlor	37000
Metolachlor	4600
Cyanazine	340
Simazine	64
Propazine	120
Chlorpyrifos	64
Pendimethalin	92


GW plume
C
R3
R5
R14
R4
R6
M1
B2
R5
R4
B1
1
2
3
4
5
6
7
8
9
10
A

Results

- 67 Sumps/facilities tested. Sometimes more than one sump tested per facility
- 22 failed sumps
- Plans for expanded testing in 2004

Maintenance Issues

- Lack of periodic cleaning and inspection.
- Lack of periodic sealing.
- Failure to mitigate the effects of frost and ice.

Design Issues

- Plumbing beneath pad floor
- Plastic drum/pail not surrounded by concrete
- Inadequate interface between pours of concrete or between stainless and concrete

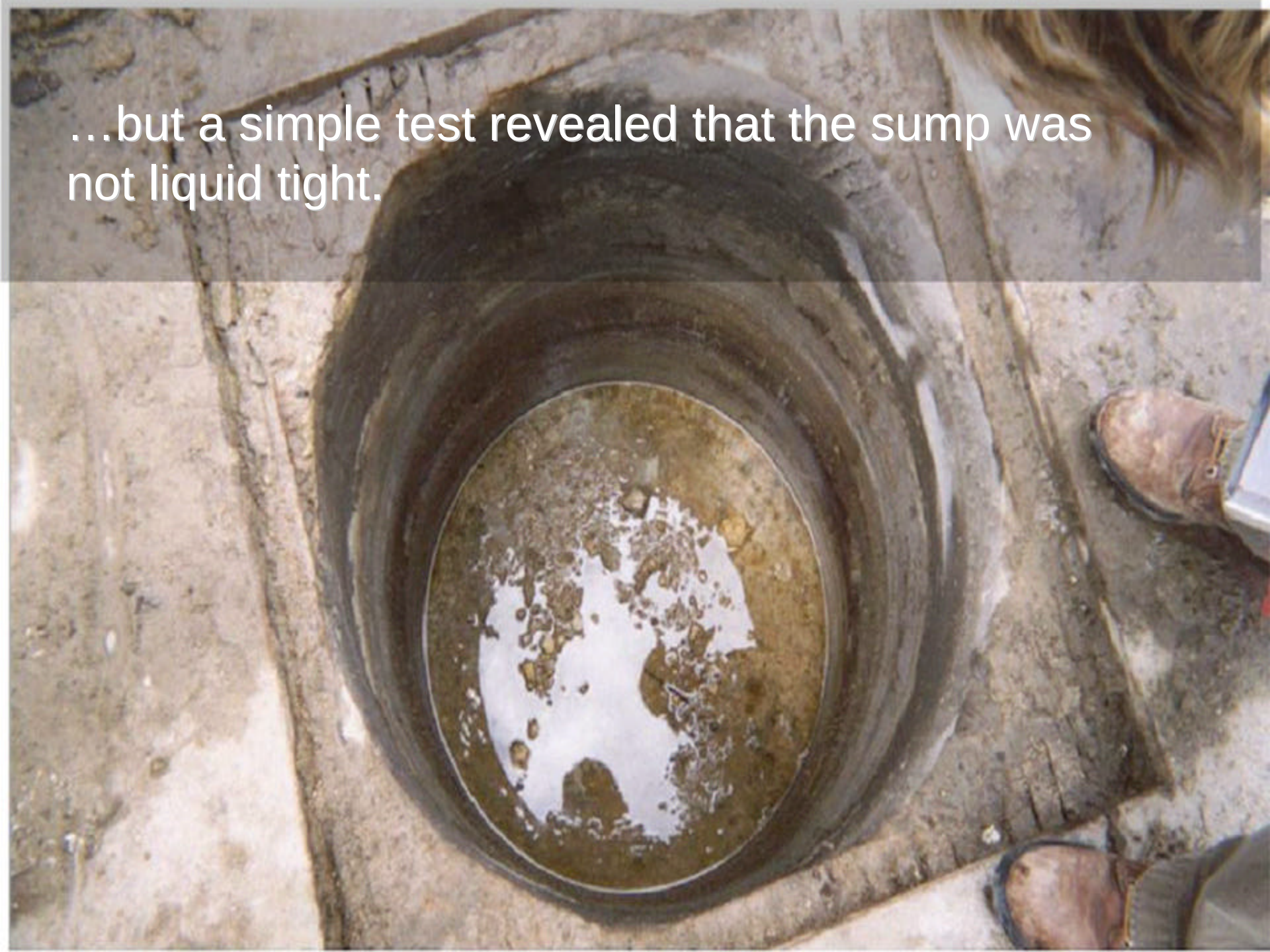

Below floor piping

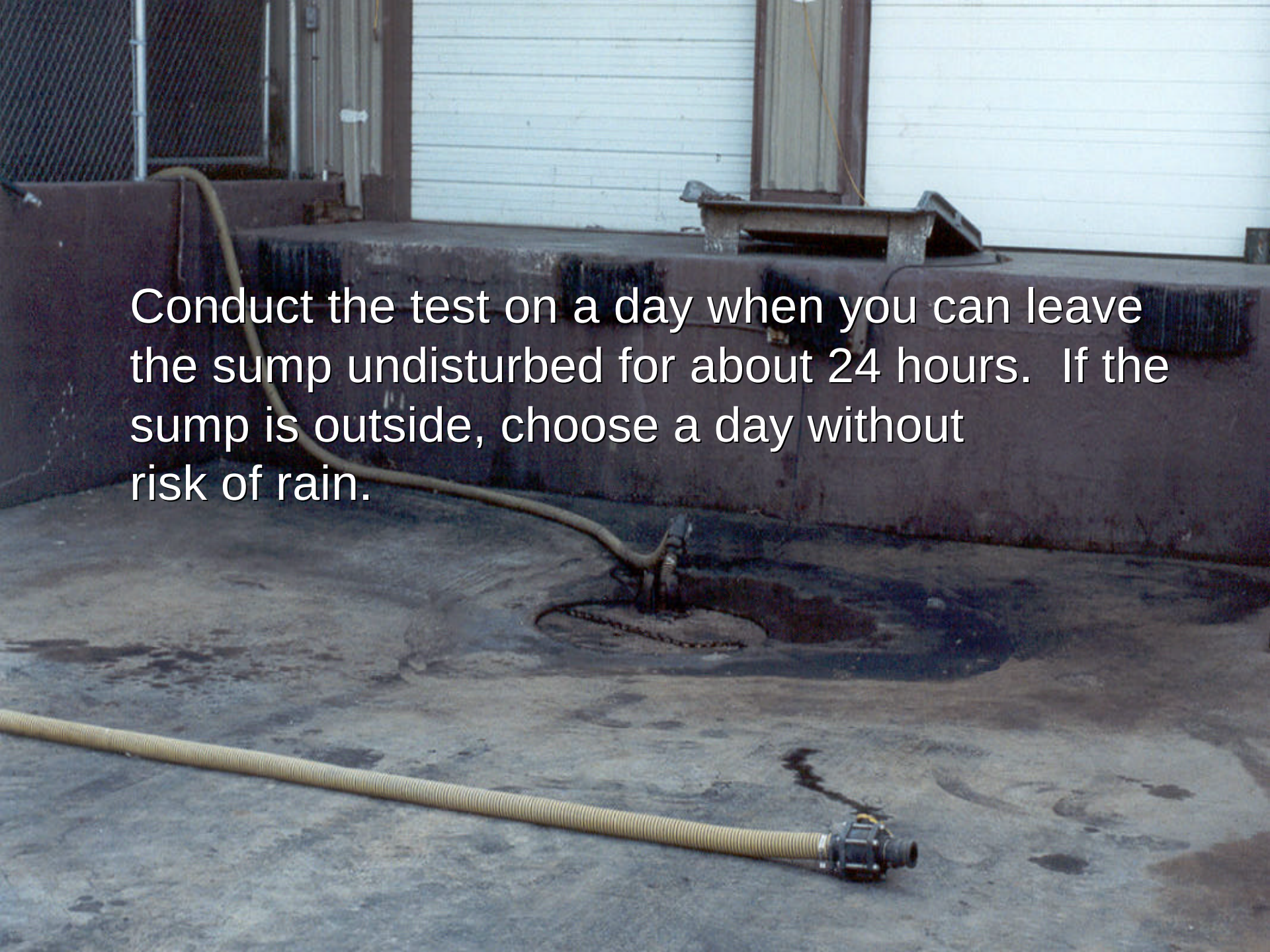
Testing Your Sump

Can you spot trouble at your facility?
You can not always tell by visual inspection alone whether your sump leaks. Perform a simple hydraulic sump test to get a more certain answer. It is worth the time to avoid bigger problems.

Have you ever wondered about sumps at your facility? The following slides demonstrate how you can determine if your sump leaks.

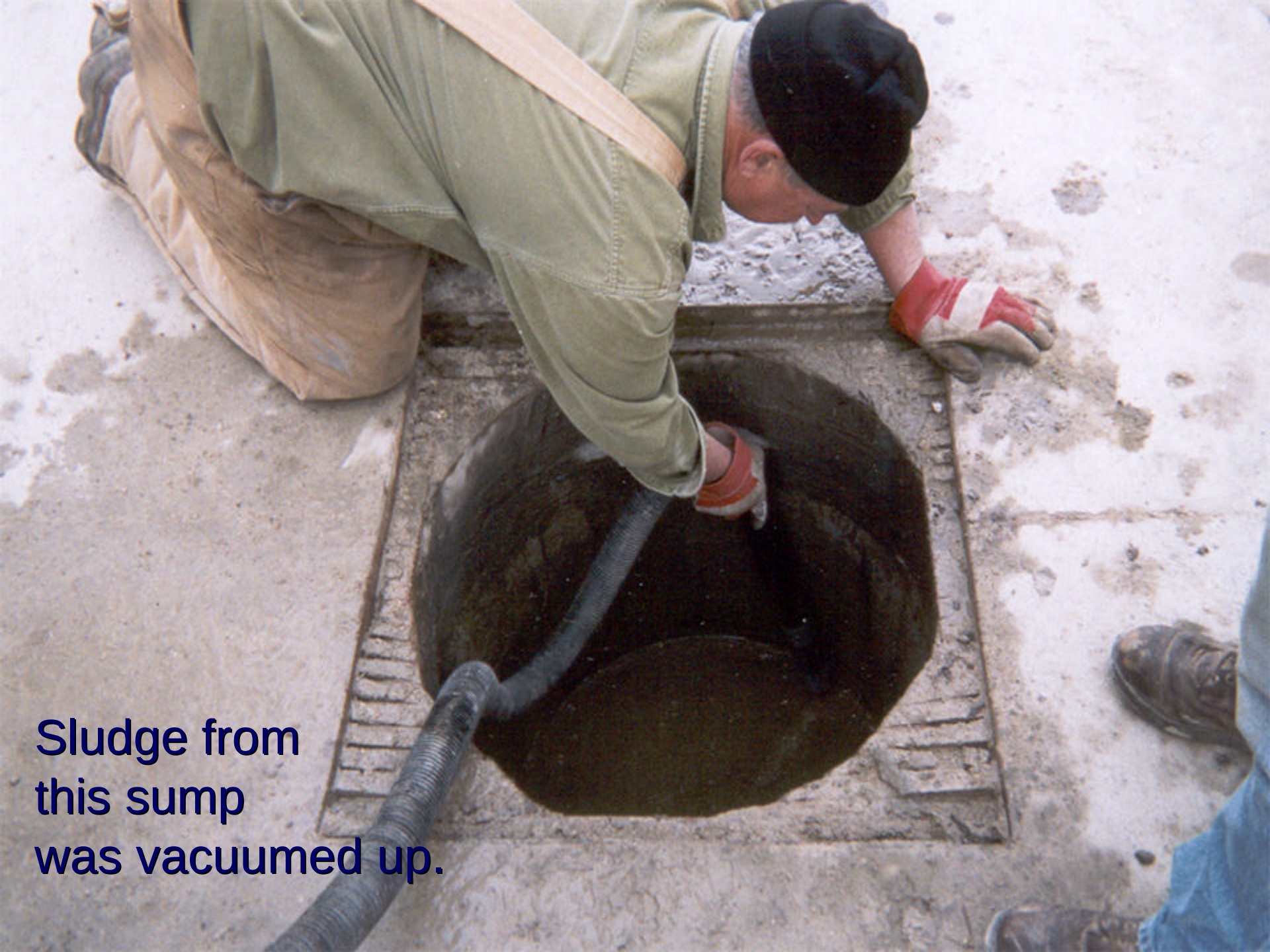

At first glance,
the sump
appeared to
hold liquid...


…but a simple test revealed that the sump was not liquid tight.


Conduct the test on a day when you can leave the sump undisturbed for about 24 hours. If the sump is outside, choose a day without risk of rain.

You will need to remove any sludge prior to inspecting to allow you to view the seams, cracks and joints.

Be sure to ask us about a safe and low-cost sludge disposal option.

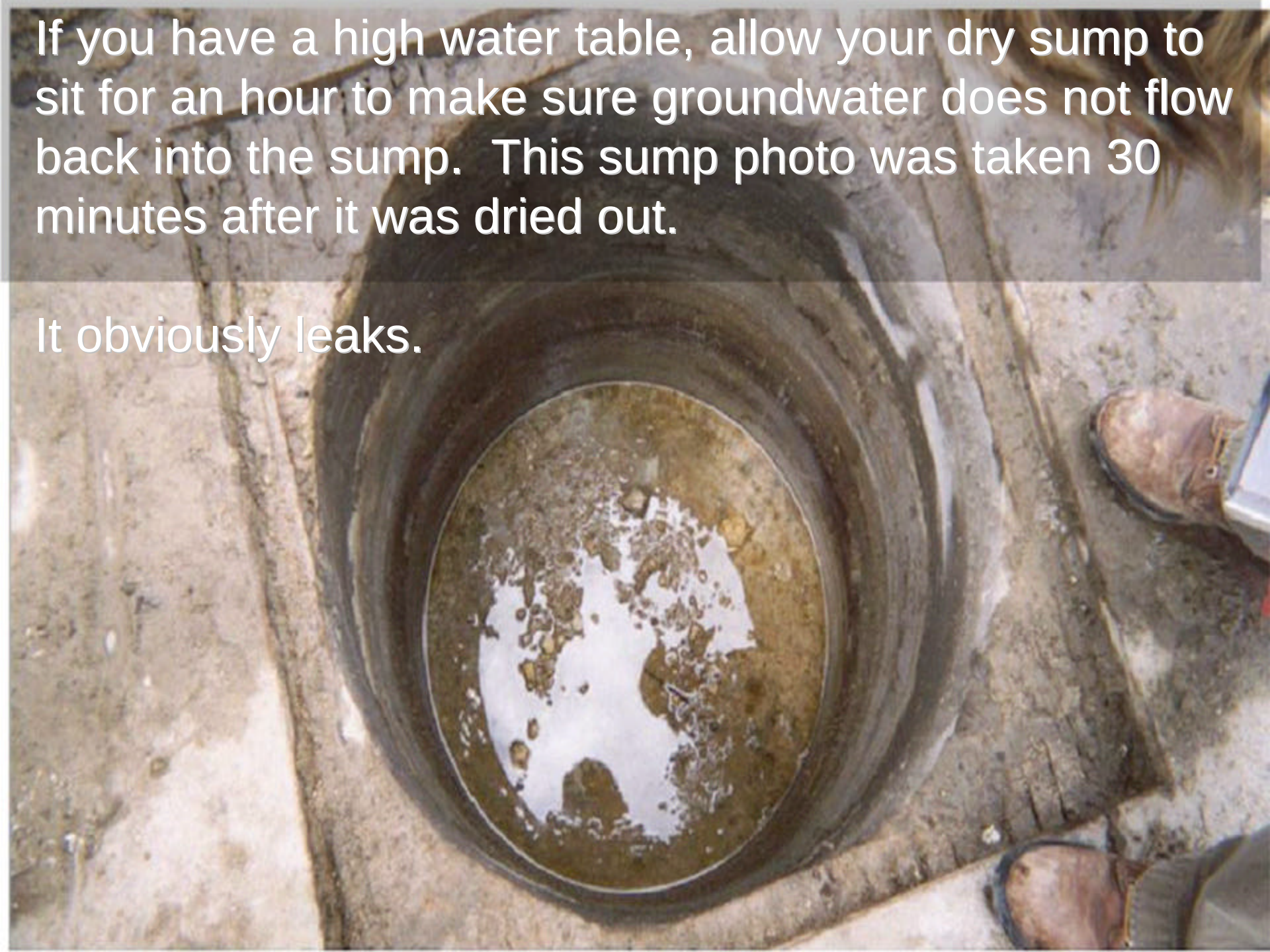

Sludge from
this sump
was vacuumed up.

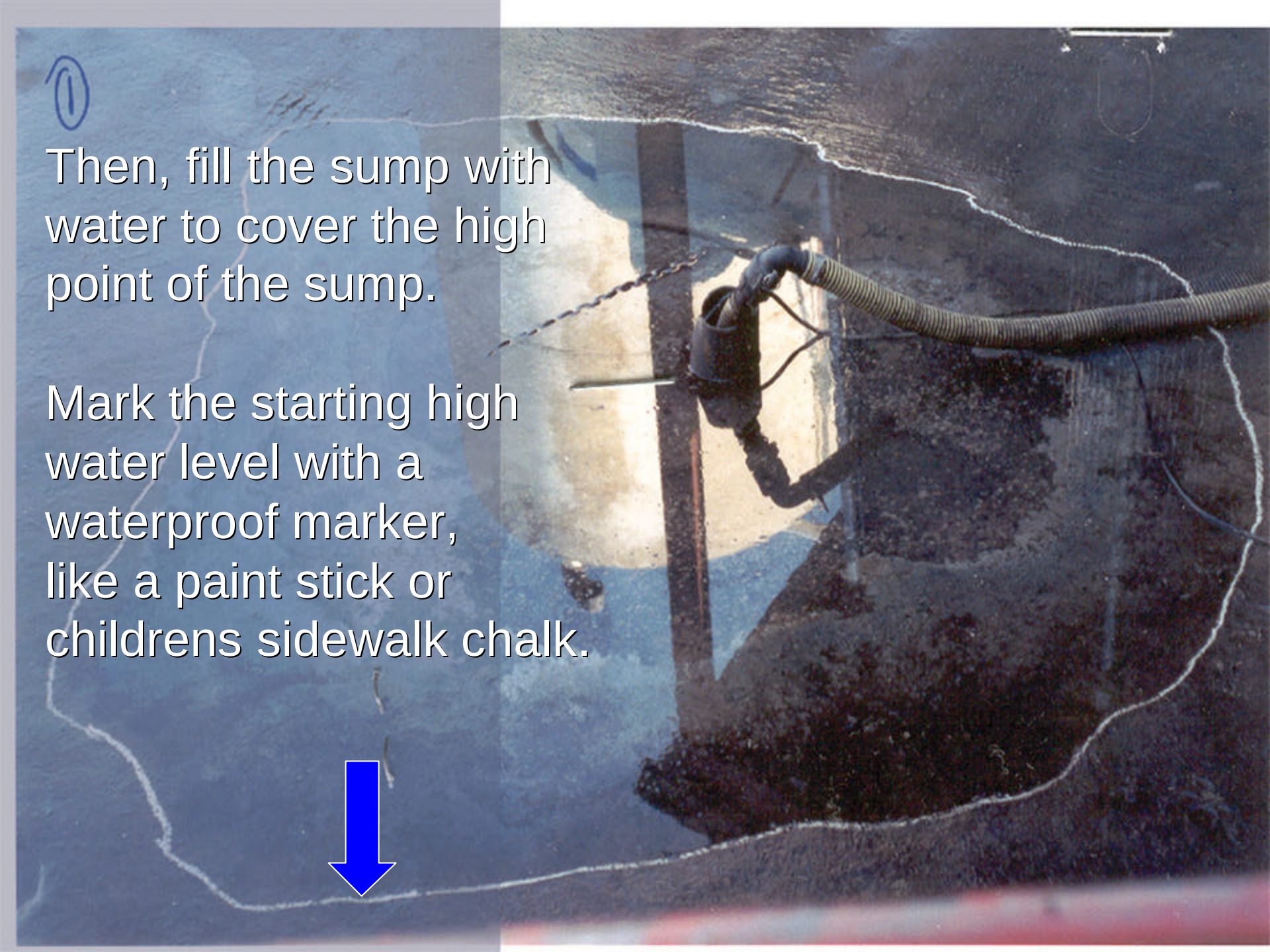
The product removed from the sump contained:

Ammonia	8660 mg/l
Nitrate	4310 mg/l
Atrazine	115000 ug/l
Metolachlor (Dual)	51500 ug/l
Pendimethalin (Prowl)	85200 ug/l

If you have a high water table, allow your dry sump to sit for an hour to make sure groundwater does not flow back into the sump. This sump photo was taken 30 minutes after it was dried out.

It obviously leaks.

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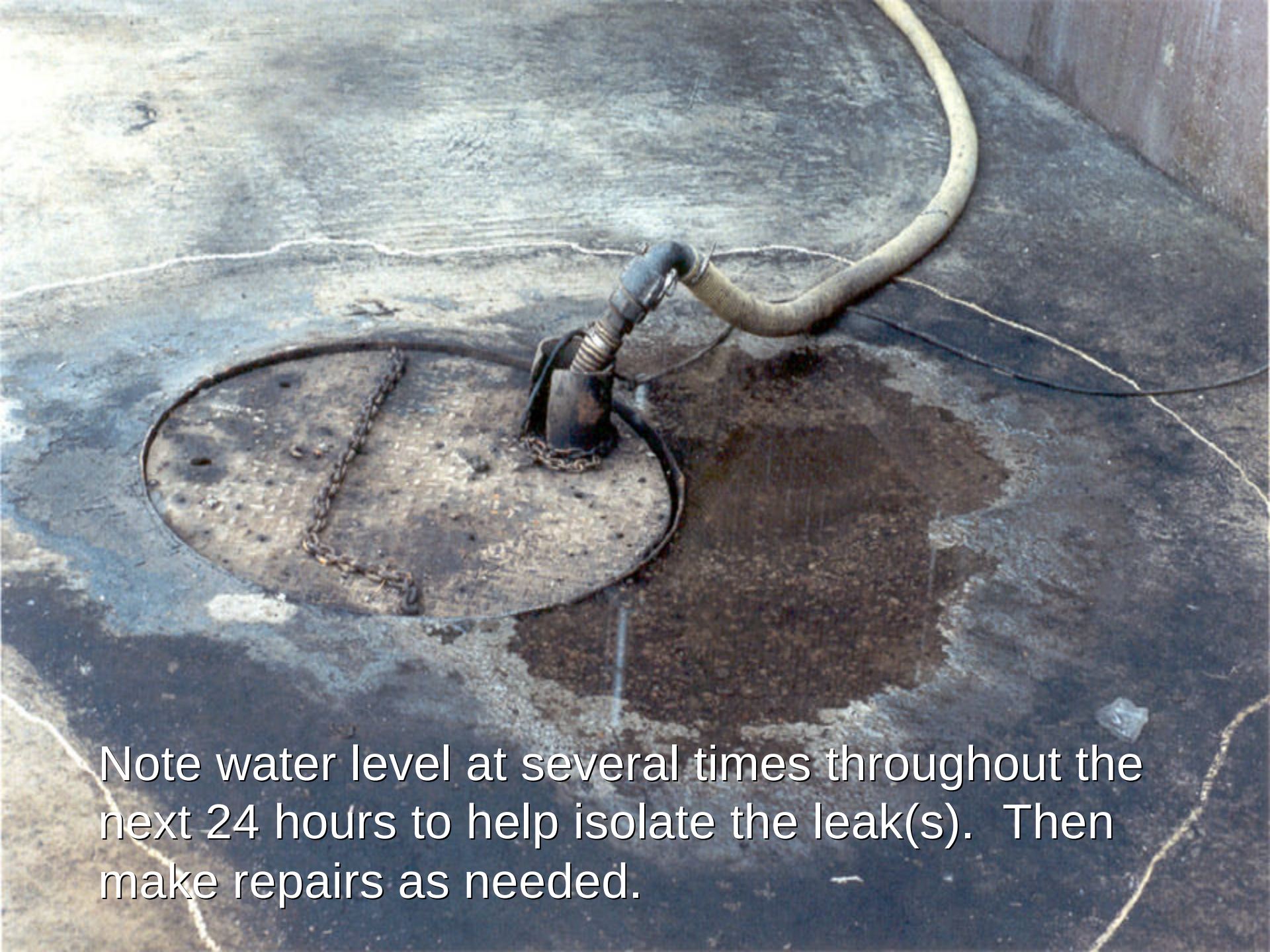
Then, fill the sump with water to cover the high point of the sump.
Mark the starting high water level with a waterproof marker, like a paint stick or childrens sidewalk chalk.

Consider tarping to minimize evaporation.



Note water level at several times throughout the next 24 hours to help isolate the leak(s). Then make repairs as needed.

This sump repaired with an epoxy material surrounding the sump.


Remember, after sump repair...
...be sure to re-test for leaks.


This inexpensive test conducted annually could help you avoid removing your pad and conducting a costly clean-up.

Potential Rule Changes

- New pads/dikes must be DATCP-approved. Use of traditional sumps will be minimized
- Pre-construction soil sampling
- “Old” pads replaced after 15 years unless having leak detection or testing annually
- Notification to DATCP of major pad or dike changes, including tank changes

Need Assistance?

- Visit the DATCP booth here at the conference.
- Visit the DATCP web site
- Matt Laak, DATCP, (608) 224-4518
- David Kammel, UW-Ext., (608) 262-9776
- Jim Schumacher, Agriliance, (651) 451-5240