



Ground Water Contamination In Map Ta Phut Industrial Complex Thailand

Chayawee Wangcharoenrung, PCD, Thailand

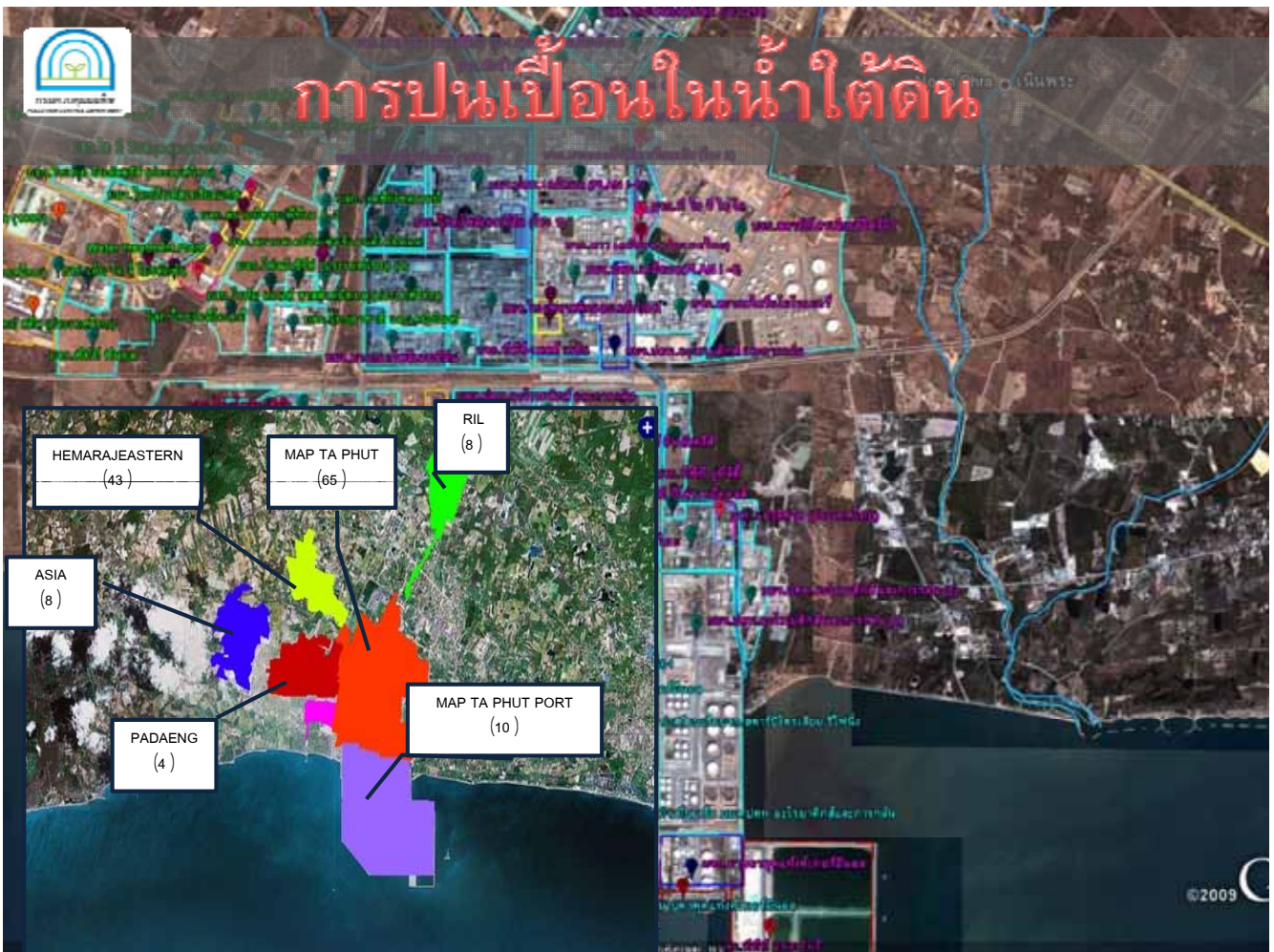


Presentation Topics

- **Background/Overview on Map Ta Phut Industrial Estate groundwater problem**
- **Measures Taken**
- **Challenges**



Overview



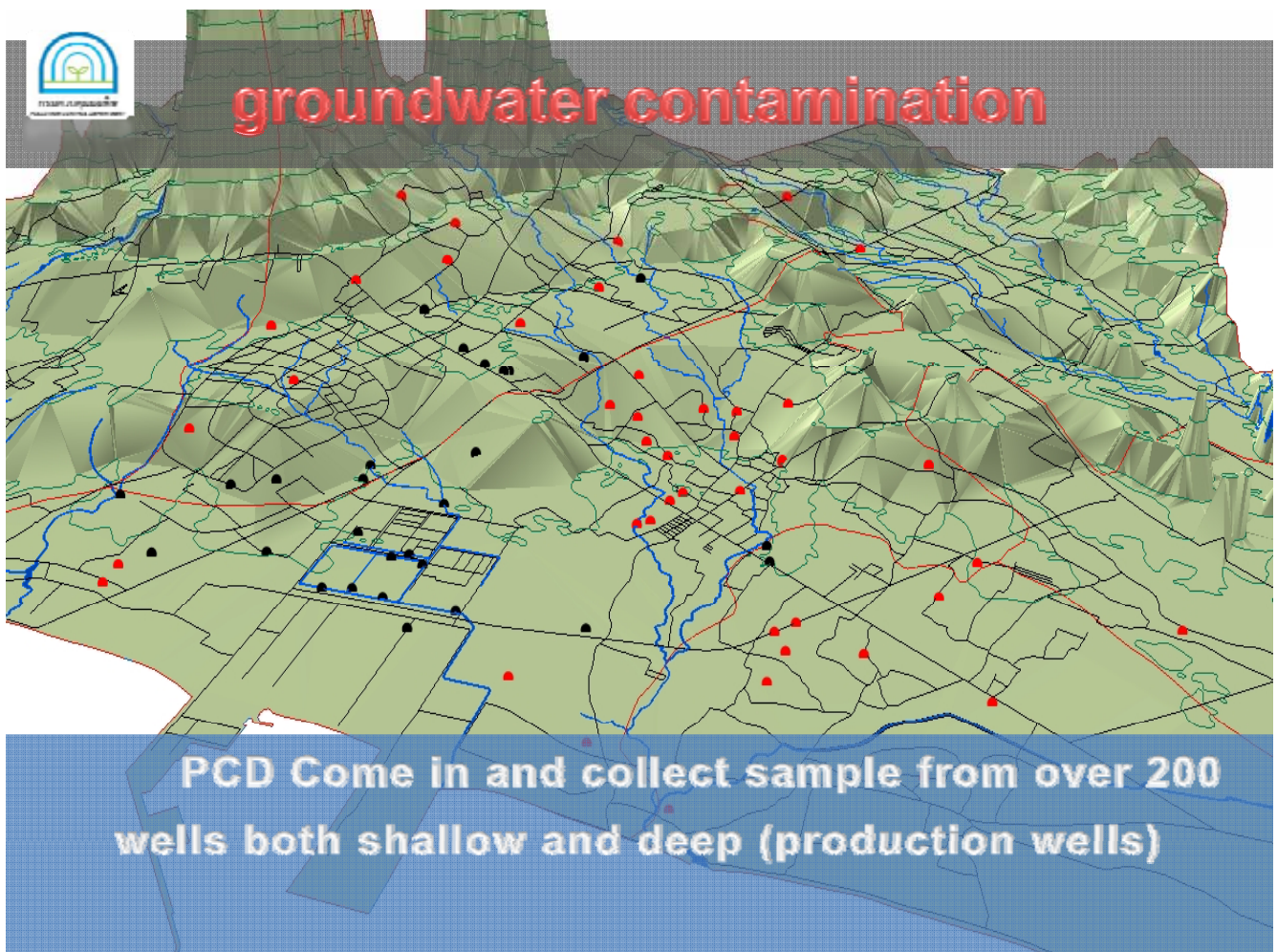


Its groundwater contamination

In 2004 people in the area start to complain about groundwater quality. NGOs come in and collect sample found HM over standard such as Cd (81%) Fe (50%) Mn (36%) Pb (35%)



groundwater contamination





Data Collection



Shallow wells <10 m dept



Data Collection



Ground water production well around 100 m depth



Data Collection



Monitoring Wells



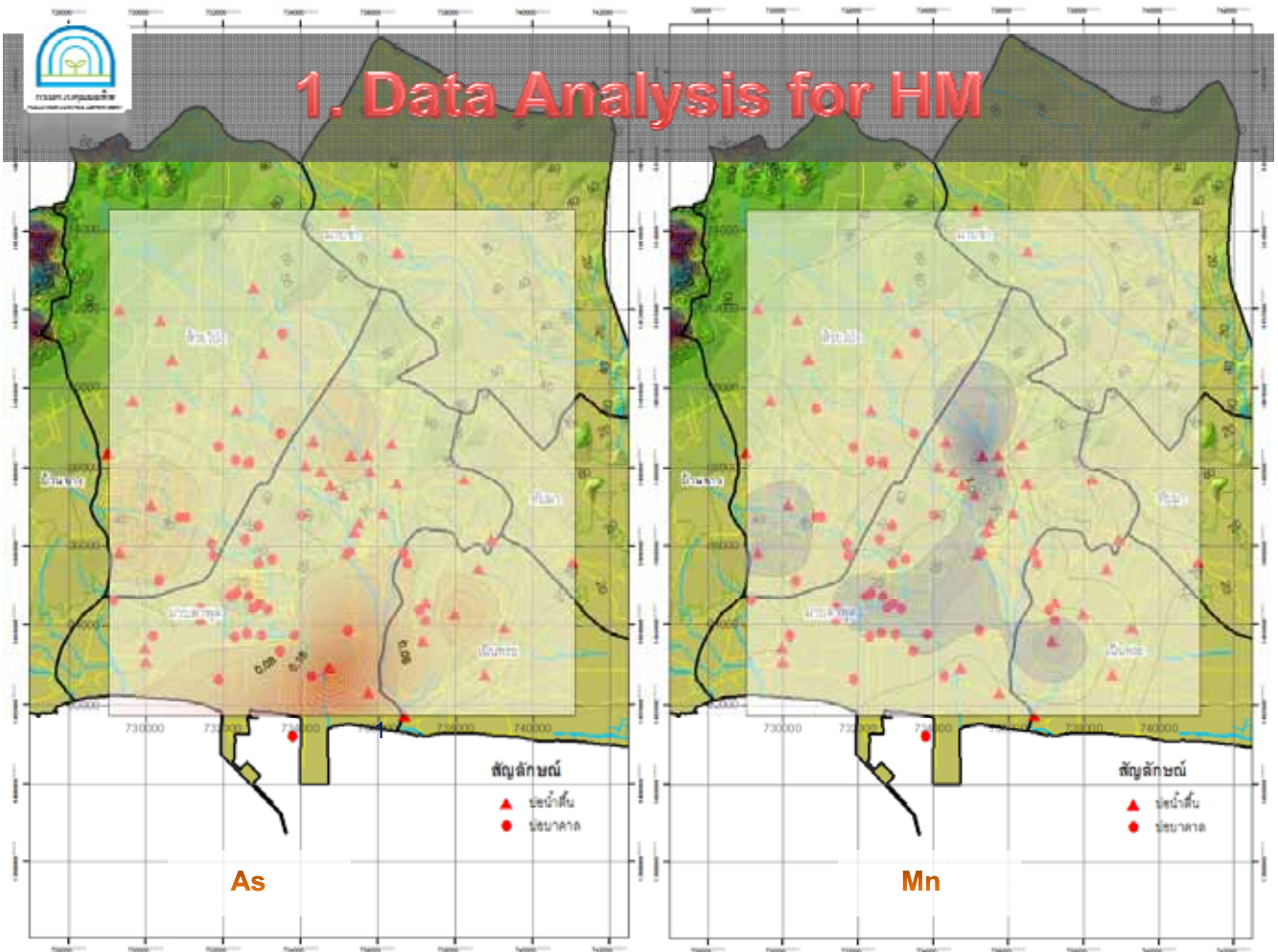
Data Collected

Total Data Collected during 2008-2009 Period

Well Type	HM			VOCs		
	Number Exceeding	Number Measured	Percent Over Std.	Number Exceeding	Number Measured	Percent Over Std.
Deep	30	41	73.17%	10	54	18.51%
Shallow	54	129	41.8%	33	188	17.6%
Total	84	170	49.41%	43	242	17.7%

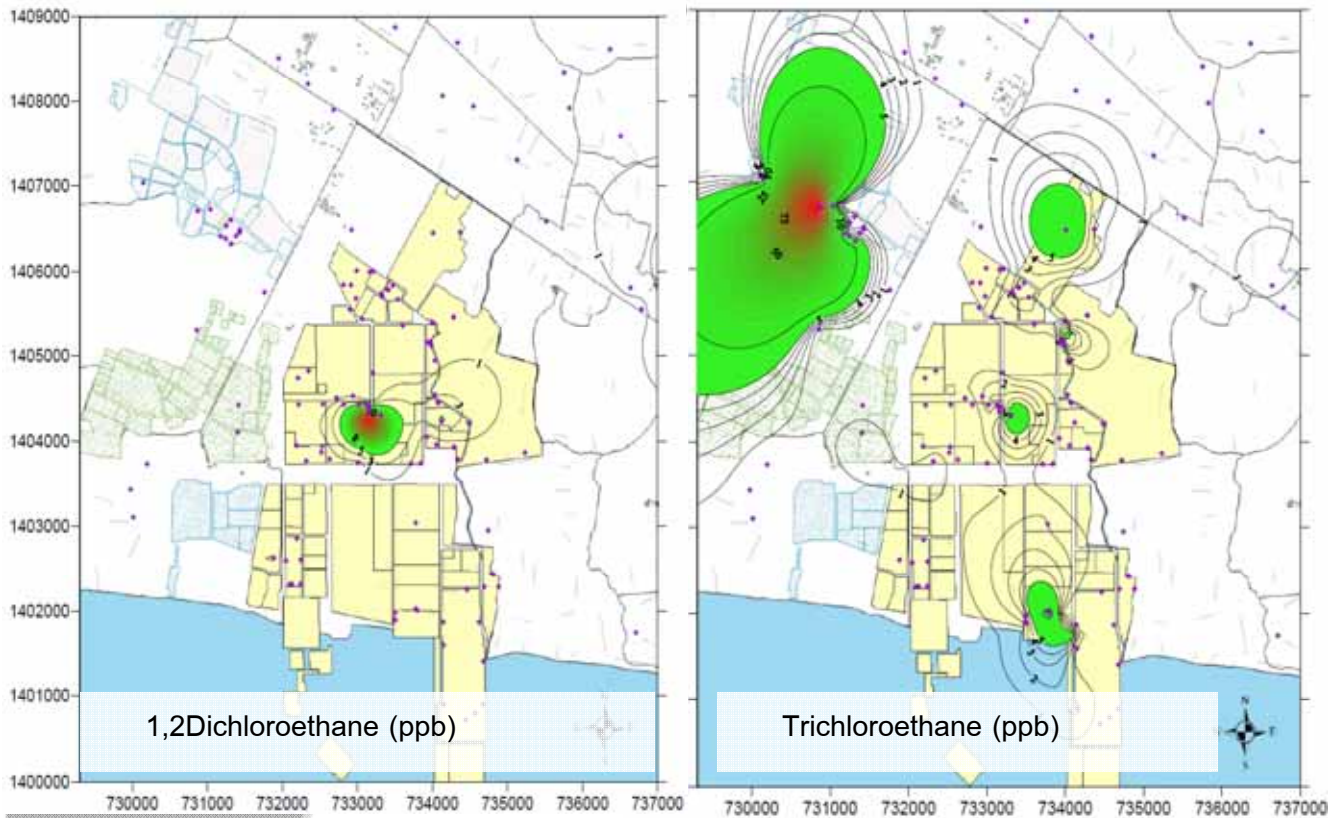


Measure Taken





2. Data Analysis for VOCs

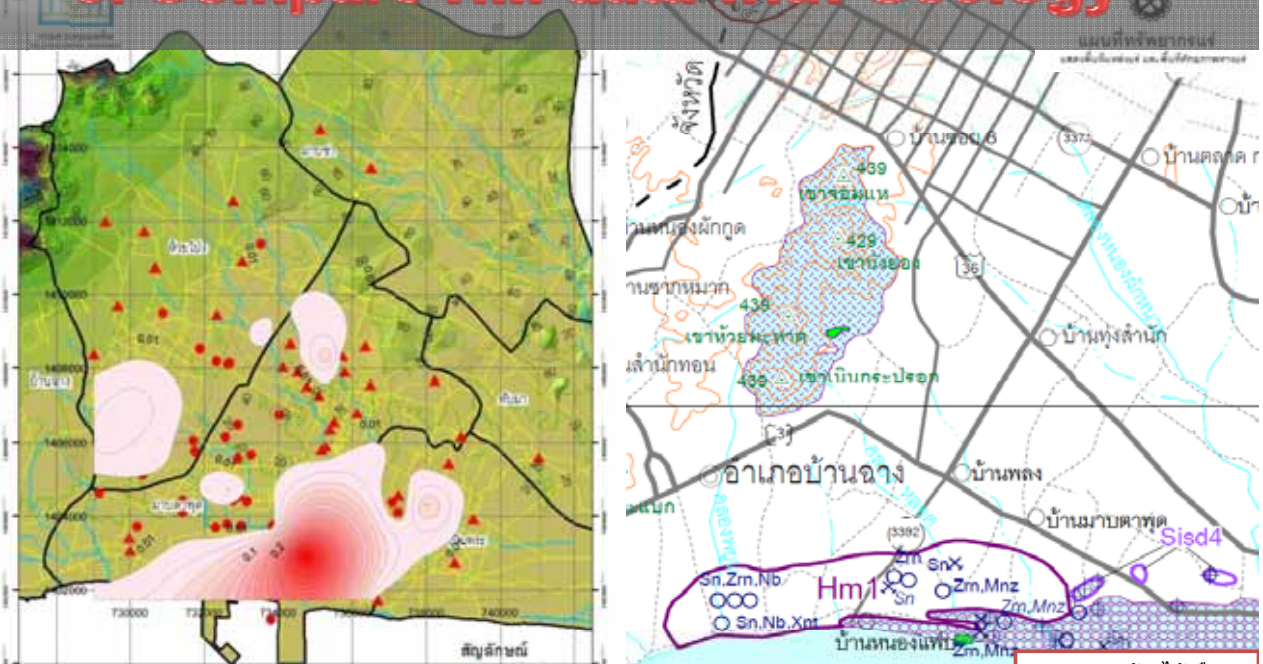


1,2Dichloroethane (ppb)

Trichloroethane (ppb)



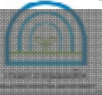
3. Compare HM data with Geology



ขอบเขตการปนเปื้อนสารหนูมีนาคม 51 Qt + Wgr

0 = ตำแหน่งเจาะทดสอบ
 Sn = แร่ดีบุก Mnz = แร่โมนาไซต์
 Zm = แร่เซอร์คอน Nb = โคลัมไบต์
 HM = บริเวณศักยภาพแร่หนัก

ตำแหน่งคั่นไว้คือ
 ตำแหน่งของเหมืองเก่า
 หรือลานกองแร่เก่า
 Hm1 = คือพื้นที่ศักยภาพ
 แร่หนัก



4. Measures for HM contamination



- ❖ Warn the people not to consume groundwater
- ❖ Clean up all highly contaminated wells
- ❖ Expand tap water coverage area



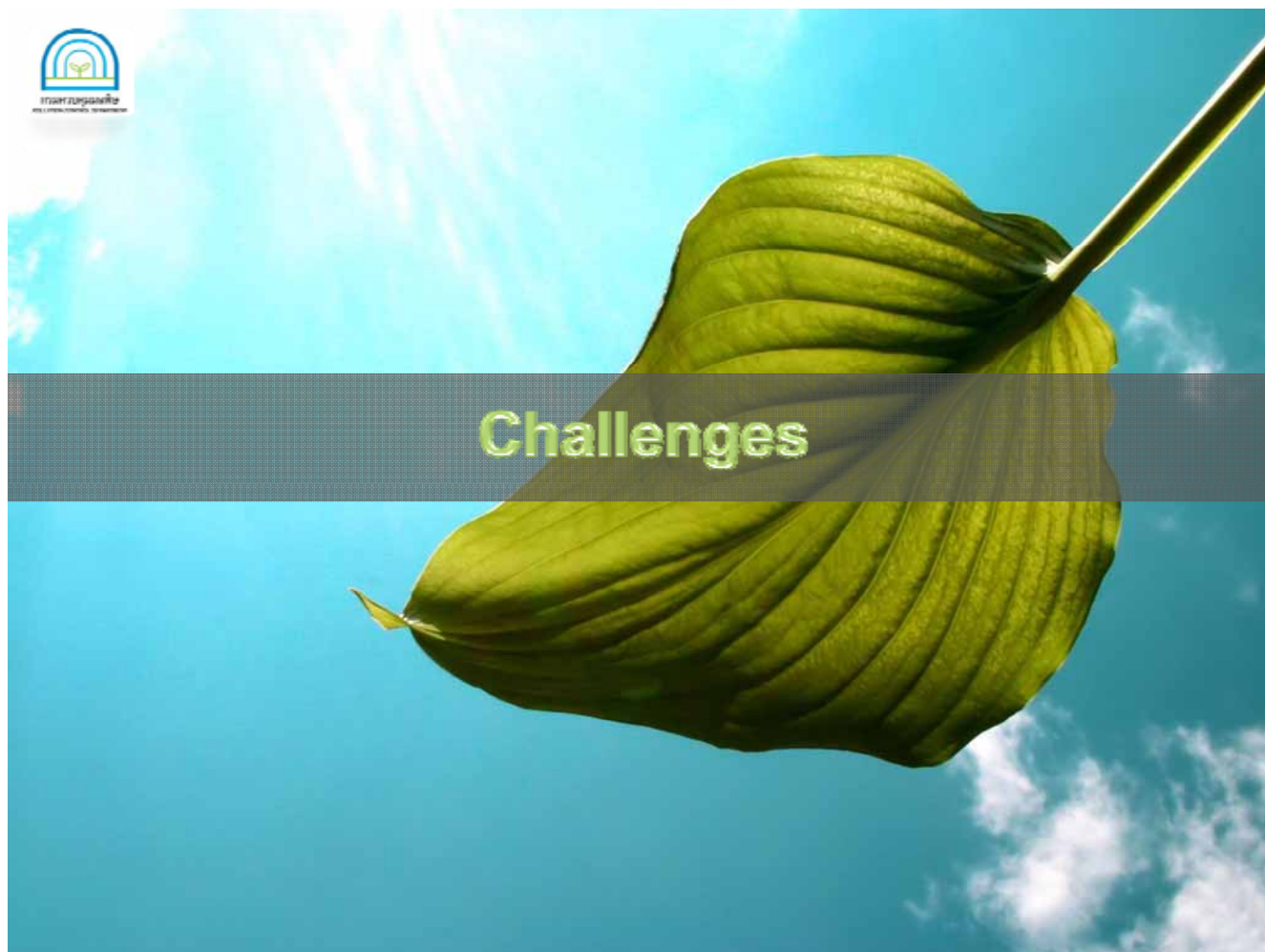
5. Factory inspections



Site Visiting to
determined course of
contaminations



/ initiate a monthly
dialog with factories



Challenges



What Thais' Have = Good News

- 1. Soil Quality Standard**
- 2. Groundwater Quality Standard based on long term consumption**



Bad News

Both of the standard Thailand has were imported without any background level study



More Bad News

- 1. No groundwater monitoring requirement for industries thus no background data**
- 2. No standard on monitoring wells (just guideline) and sometimes just use production/shallow wells**
- 3. It is difficult to determined if the site is actually contaminated – it is very difficult to deal with potential pollutors**



More Bad News – Cont.

4. **PCD has no direct authority over industrial pollution**
5. **No criteria or procedure for site remediation (ie. health risk assessment)**
6. **No action-triggered standard**
7. **No site characterization requirement**
8. **No experience on large scale remediation or decontamination**

Thanks for Listening

