# Milltown Redevelopment Project Triad Investigation: Data Management Program

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### Milltown Redevelopment Project Overview

- 22 ac Brownfield Redevelopment Site in Milltown, New Jersey
- Former rubber, tire and pharmaceutical manufacturing facility
- Reuse will be mixed residential, commercial and senior housing
- Triad Investigation performed from mid-October to mid December 2004
- Over 400 sample locations, 800 samples analyzed & 30,000 results generated during 9 week Triad program
- Data management critical component of investigation due to real time measurements & dynamic work structure



### Milltown Redevelopment Project Real Time Measurement Technologies

- GPS Survey Instruments for sample locations based on NJ State Plan Coordinate
- PDAs to record sample information
- Electrical Conductivity for lithology distinction
- Handheld & rapid read instruments for scanning (PID, Niton 700 Series XRF, UV Florescence)
- Mobile laboratories running laboratory grade instrumentation (GC/MS, XRF)
- Rapid Turnaround from Fixed Base Laboratories for select parameters





Download daily survey results to database



**Robotic Survey Station** 

**Real Time Survey Instruments:** Provided Daily Positioning for Sample Locations





PDA Linked to Laptop & Download

PDAs Were Used to Record Sample Information, Which Was Downloaded Daily to the Project Database Niton 700 Series Hand Held XRF Used to Scan Cores for Indication of Zones With Elevated Metals: Particularity Applicable in Urban Fill Soil and Coal Ash Disposal Location



### On Site Mobile Laboratories: Category 2 VOCs, PAHs, Metals & PCBs



## Milltown Redevelopment Project Data Management Issues

- Three fundamental issues needed to be addressed:
  - Data quality of field measurements
    - Collaborative data sets, on-site chemist, pre-approved SOPs, standard method QA/QC procedures
  - Data storage, retrieval & display
    - Relational data base (EPA SCRIBE), PDAs, on site data queries & CAD based mapping

### – Data Communication

 Weekly on site project review meetings, secure web site postings, daily map out puts for field team

# Milltown Redevelopment Project Data Quality Management

- Collaborative Data Sets
  - Overlapping blending of analytical methods of varying accuracy that complement one another
    - Example: Niton 700 XRF, Spectrace QuantX XRF & ICP-MS/AA for metals
- Comparison of results to CSM for compatibility
- Pre-approved SOPs in work plan with established method specific QA/QC procedures
- Review and approval of analytical results by on site chemist on a daily basis
- Direct electronic import of analytical results to data base; no transcribing errors







Once sample data is imported to the SCRIBE database from SCRIBLETS (PDA), Labels are generated for the **Sample Containers** and a Chain of Custody Created. Using HotSync Technology, PDA is connected to Laptop, SCRIBLETS data is uploaded to the hard drive and imported into SCRIBE database



#### **Sample Custody Management**

#### In addition to SCRIBLETS data, SCRIBE's Import Data Wizard enables you to import data in various formats

Scribe import	Data Wizard
1. Choose the type of data to import from	m the list below:
Data Category:	
Soil/Sediment	•
2. Pick the data to import into Scribe:	
Import Data File	browse
Table Manag	
rable Name.	~
3. Select or enter a new script name:	
Script Name:	
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### Typical Scribe Database Screen

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- Property Info		10× 1			A	LL Sa	mples	: 802	10		
- Q Sampling Locations	.~	Sample #	Sample	EventID	Location	Samp	Sam	Samp	Matrix	Remarks	
- Q Analyses	►	MTRD0001	11/20/2003	Site Wide Groundwater	GW002				Ground Wate	Turbid; Well went dry after 2 minutes of purging; only V	
Sampler		MTRD0002	11/20/2003	Site Wide Groundwater	GW004				Ground Wate	Very dark & turbid; Well went dry within 2 minutes of pu	
Instrument List		MTRD0003	11/20/2003	Site Wide Groundwater	GW006				Ground Wate	No sample collected; Well was not purged because the	
Sampling		MTRD0004	11/19/2003	Area South of Powerhouse	GW007				Ground Wate	Very dark & turbid; No difficulties	
Soll/Sediment		MTRD0006	11/19/2003	Coal Storage/100K AST	GW008				Ground Wate	Visible sheen; No difficulties	
Water Sampling		MTRD0008	11/20/2003	Chlorobenzene Plume	GW009				Ground Wate	Very turbid; visible sheen; No difficulties	-
		MTRD0009	11/18/2003	Site Wide Boring	SO001	0.5	1	Feet	Soil		-
Chain of Custody		MTRD0010	11/18/2003	Site Wide Boring	SO001	5	5.5	Feet	Soil		-
I ab Besults		MIRDUUII	11/18/2003	Site Wide Boring	SOUUT	7.5	8	Feet	Soil		-
-S2 Monitoring Data		MTRD0012	11/17/2003	Site Wide Boring	SU002	0.5	0.5	Feet	Soll		-
Custom Data Views		MTRD0013	11/17/2003	Site Wide Boring	50002	5.5	0.5	Feet	Soli		-
🛛 🥖 Data for GIS-Lab		MTRD0014	11/17/2003	Site Wide Boring	80002	10.5	0.5	Feet	Soil		-
🚽 Data For GIS-Monitoring		MTRD0015	11/14/2003	Site Wide Boring	50003	10	11	Foot	Soil		-
FIELDS Export		MTBD0017	11/14/2003	Site Wide Boring	S0003	11	12	Feet	Soil		-
/ HZRESULT		MTBD0018	11/17/2003	Site Wide Boring	S0003	0.5	1	Feet	Soil		-
		MTBD0019	11/17/2003	Site Wide Boring	S0004	3.5	4	Feet	Soil		-
🚽 🖉 LabResults Without Sam		MTBD0020	11/17/2003	Site Wide Boring	SO004	4	4.5	Feet	Soil		-
		MTRD0021	11/17/2003	Site Wide Boring	SO005	0	0.5	Feet	Soil		-
PAH_PCB_TPHSQL		MTRD0022	11/17/2003	Site Wide Boring	SO005	1	1.5	Feet	Soil		
Query2		MTRD0023	11/17/2003	Site Wide Boring	SO005	6	7	Feet	Soil		1
SADA Export		MTRD0024	11/18/2003	Site Wide Boring	SO006	0.5	1	Feet	Soil		
SADATest		MTRD0025	11/18/2003	Site Wide Boring	SO006	14	15	Feet	Soil		
Samples Without LabRe		MTRD0026	11/18/2003	Site Wide Boring	SO006	15	16	Feet	Soil		
test		MTRD0027	11/18/2003	Site Wide Boring	SO006	18.5	19.5	Feet	Soil		
VUCSUL		MTRD0028	11/14/2003	Area South of Powerhouse	SO007	0	0.5	Feet	Soil		
		MTRD0029	11/14/2003	Area South of Powerhouse	SO007	1	1.5	Feet	Soil		
		MTRD0030	11/14/2003	Area South of Powerhouse	SO007	5	6	Feet	Soil		-
		MTRD0031	11/14/2003	Coal Storage/100K AST	SO008	0	0.5	Feet	Soil		-
		MTRD0032	11/14/2003	Coal Storage/100K AST	SO008	1	3	Feet	Soil		-
		MTRD0033	11/14/2003	Coal Storage/100K AS I	SU008	3	5	Feet	Soll		-
		MTRD0034	11/17/2003	Chlorobenzene Plume	50009	1 5	0.5	Feet	Soll		-
		MTRD0035	11/17/2003	Chlorobenzerie Plume	50009	7.5	8	Feet	Soil		-
		MTBD0030	11/17/2003	Chlorobenzene Plume	SOM	10.5	11	Feet	Soil		-
		MTBD0038	11/14/2003	Drainage System	SD001	10.5		Feet	Sediment		
		MTBD0039	11/14/2003	Drainage System	SD002			Feet	Sediment		
		MTRD0040	11/14/2003	Drainage System	SD003	13	13	Feet	Sediment		
		MTRD0045	10/26/2004	Transformer Pads	PAD8W	0	0.5	Feet	Soil	Moist	
	1 T	MTRD0046	10/26/2004	Transformer Pads	PAD8W	1.5	2	Feet	Soil	Moist	-
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		Close		All Samples	<u>P</u> rin	t Label	s				
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### Overview of Typical Data Flow: On Site Display

Maps visualizing data are generated in AutoCAD on site and provided to field team as well as posted to OSC website on a regular basis to facilitate stakeholder review and aid in decision making.

DE	PTHS (	feet)			/	/	1	11.14
RITERIA	O to L5	L5 ta 3.5						111
1	67	20(U)						- 111
630 38			SO031	DEPTHS (feet)				
2	30(U)	30(U)		00001	CRITERIA	0.75 to 125	4 to 4.5	4.5 to 5
	8(U)	8(U)		ANTIMONY	14	62	10(U)	10(0)
	2411757575	10.00 Actually.		ARSENIC	20	260	20(U)	20(U)
				BARIUM	700	780	520	460
			1 / 2	BENZO[A]ANTHRACENE	0.9	1.6	O(U)	O(U)
			11//	BENZO[A]PYRENE	0.66	1.3	O(U)	O(U)
F		(feet)		BENZO[B]FLUORANTHENE	0.9	1.9	O(U)	O(U)
E		0 to 1		LEAD	400 /	420	20(U)	20(U)
_	20	23		MERCURY	14/	30(U)	30(U)	30(U)
-	14	30(1)		THALLINM	2	8(U)	8(U)	8(U)
			014/001	DEPTHS (feet)				
			GWUSI	7 to 12				
				SAMP	LE RETURNE	D NO RESULTS	ABOVE CRIT	ERIA
ſ	Q	0 3000						



Map of Analytical Results Generated On Site Using Scribe database

Detail A

### Milltown Redevelopment Project Data Communication

- Daily review of maps and database by Field Team for dynamic work strategy
- Decisions on sampling locations, depths, parameters
- Weekly project review meetings with regulators to discuss critical data issues
- Postings by Field Team to secure web site of maps and tables of sampling results for review by stakeholders

#### **During 9 Weeks of Sampling:**

Over 400 Sample Locations Over 800 Samples Collected Over 30,000 Results Generated

### **During 6 Weeks Post-Sampling:** Over 200 Maps & Figures Generated





