Phase 4 – Site Validation

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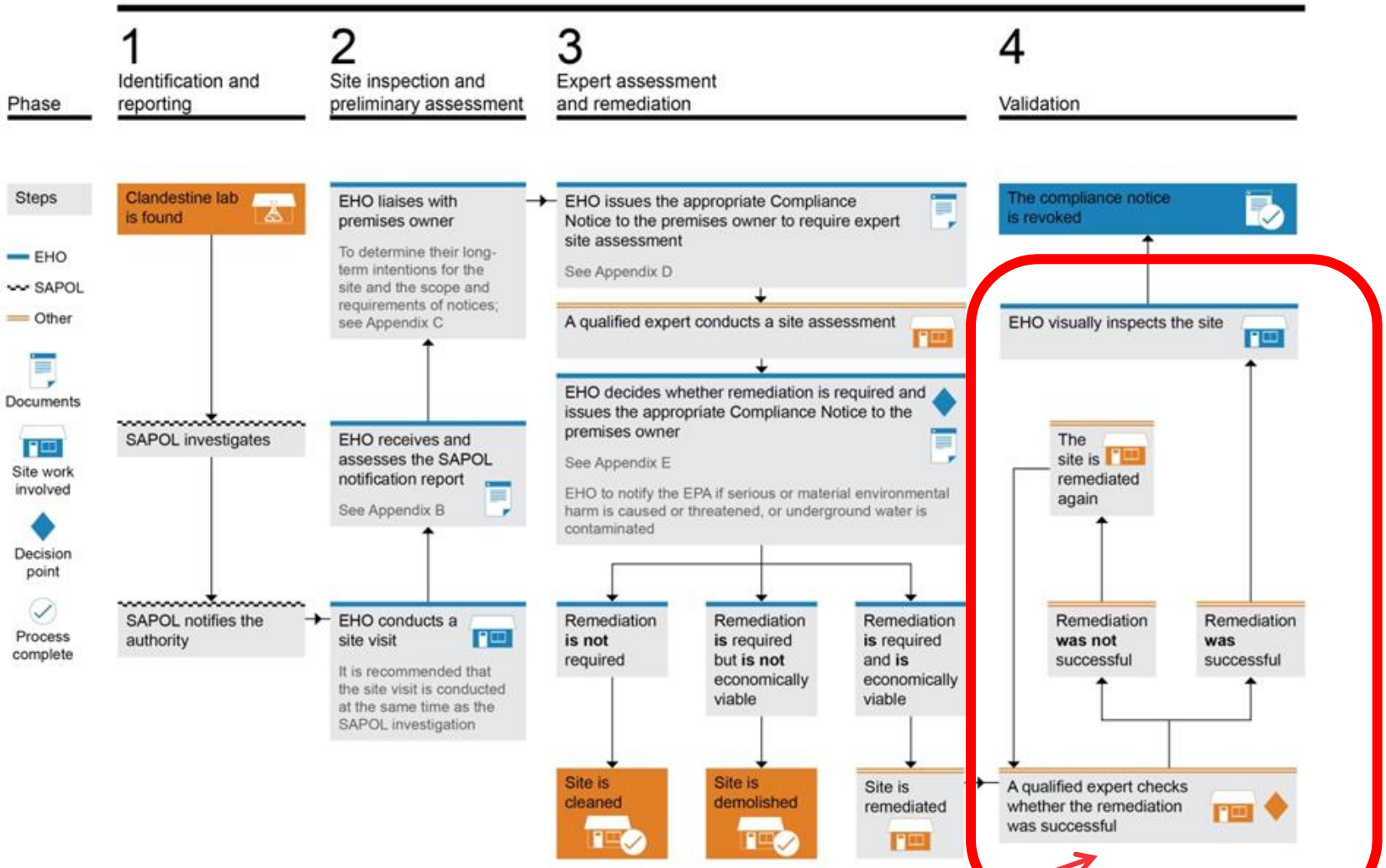
What will be discussed

- What is involved?
- Site Validation
- Validation Report
- Reviewing the Validation Report
- Key Messages

What is involved?

Appendix A Clandestine Drug Laboratory Assessment and Remediation Flow Chart



Start Here

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The process

- Step 1: Property owner engages a Suitably Qualified Expert to conduct site validation,
- **Step 2: Suitably Qualified Expert conducts site validation and provides a validation report to the property owner,**
- Step 3: The property owner provides the validation report to council,
- **Step 4: EHO reviews validation report,**
- Step 5 (optional): EHO visually inspects the site.

Site Validation

Site Validation

- A suitably qualified expert must confirm the remediation process undertaken has been effective.

- The same suitably qualified expert should conduct both the site validation and site assessment (ideally).
  - If not, the site assessment report must be provided.
  - This guides the suitably qualified expert when determining the minimum number of samples for comparison to pre-remediation

- Success is demonstrated by post remediation samples being below ILs set out in Appendix 1 of the National Guideline.

Site Validation

The extent of validation required is dependent upon:

- Type of contamination,
- Concentration of contaminants,
- Quantity of contamination originally present;
- The type of remediation processes that were carried out; and
- The proposed land use. For example: residential, commercial/industrial or public open space.

Validation sampling is required on all areas remediated including buildings, structures, and the environment.

Refer to the National guidelines

Site Validation

Validation sampling of a building or structure

- General inspection of the site to check for re-staining or odours;
- Re-sampling of surfaces from which initial samples were above ILs;
- Sampling of areas which are expected to have frequent contact, e.g. kitchens and bathrooms, and
- A combination of swab sampling and VOCs.
- NIOSH 9111/9106/9109 compliant or equivalent

Validation sampling of land

- Sampling of soils,
- Sampling of surface water,
- Sampling of groundwater (in accordance with the NEPC publication Schedule B(2) *Guideline on Data Collection, Sample Design and Reporting.*

Site Validation

Appendix 1: Summary of Investigation Levels (ILs) – Assessment of Former Clandestine Lab Sites

	Residential (A)			Recreational (E)	Commercial/Industrial (F)			Environmental #	
	Indoor Criteria		Outdoor	Outdoor	Indoor Criteria		Outdoors	Outdoors	
Key Chemical	Surface (µg/100cm²)	Air (mg/m³)	Soil (mg/kg)	Soil (mg/kg)	Surface (µg/100cm²)	Air (mg/m³)	Soil (mg/kg)	Soil (mg/kg)	Water (mg/L)
Methamphetamine	0.5	b	5	5	10	b	45	x	x
MDMA	7	b	60	60	130	b	600	x	x
Pseudo/Ephedrine	600	b	6000	6000	10000	b	50000	x	x-
Ammonia	a	0.1	1800	1800	a	0.3	10000	x	0.9[AFM*]
Iodine	20	0.0008	2	2	450	0.003	6	4[U]	x
Bromide	2000	0.0008	2	2	50000	0.003	4	10[U]	x
Phosphorus	0.07	b	0.6	0.6	2	b	7	x	A[FM**]
N-Methylformamide	10	b	120	120	270	b	1200	x	x
Methylamine	a	0.004	70	70	a	0.01	600	x	x
Nitroethane	a	0.4	4400	4400	a	1	20000	x	x
Boron and compounds	1800	b	3000 (N)	6000 (N)	40000	b	15000 (N)	0.5[U]	0.37[AF], 5.1[AM]
Mercury (inorganic)	35	b	15 (N)	30 (N)	800	b	75 (N)	1 (NE)	0.0006[AF], 0.004[AM]
Lithium	46	b	230	230	1000	b	5700	2[U]	0.014[U]
Benzaldehyde	1500	0.4	6300	6300	35000	1	35000	0.6[O]	0.01[O]
Phosphine	a	0.0004	c	c	a	0.001	c	x	x
Safrole and isosafrole	16	0.0002	1	1	16	0.001	6	0.4[U]	x
Chloroform	a	0.1	240	240	a	0.4	1400	1.2[U], 170[R]	0.37[AFM]
Dichloromethane	a	1	120	120	a	4	3300	4[U,D]	4[AFM]
Benzene	a	0.0095 (A)	1 (S)	1 (S)	a	0.0095 (A)	1 (S)	210[R]	0.95[AF], 0.5[AM]
Toluene	a	0.4 (A)	130 (S)	130 (S)	a	0.4 (A)	130 (S)	1.4 (S)	0.18[AFM]
Ethylbenzene	a	26	50 (S)	50 (S)	a	80	50 (S)	3.1 (S)	0.08[AF], 0.005[AM]
Xylenes	a	0.9 (A)	25 (S)	25 (S)	a	0.9 (A)	25 (S)	14 (S)	0.2 to 0.35[AFM]
TPH									
C6-C9 (aliphatic)^^	a	0.8	1800	1800	a	3	4000	130[C]	x
C10-C14	a	0.2	1000 (S) C10-C36,	1000 (S) C10-C36,	a	0.7	1000 (S) C10-C36,	150[C]	x
C15+	140	b	90 (N)	180 (N)	3000	b	450 (N)	400[C]	x
pH	6.5-8.5	b	6.5-8.5	6.5-8.5	6.5-8.5	b	6.5-8.5	x	(6 to 9) A**

As for Phase 3, sampling should be conducted as per National guideline and testing of all substances as provided above.

Validation Report

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The Validation Report

The validation report should include the following information:

- Sampling program: how validation was undertaken
  - What samples were taken
  - A justification for why the samples were taken
- Sampling testing results of all contaminants
  - Copy of original laboratory results
  - Reference to Appendix 1 of the National guidelines
- Summary of findings: was remediation successful?
  - An explanation of the sample results and what they indicate
  - Not just a statement
- Further recommendations
  - Is further remediation necessary?

Reviewing the Validation Report

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Reviewing the Validation Report

What information do you need?

- SAPOL Notification
- Site Assessment Report
- Remediation Action Plan*
- Remediation/cleaning Report*

AND

- **Validation Report**

Clandestine Drug Laboratory Notification Report

For use by SAPOL for notifying the relevant local health authority (e.g. local council).
Copy sent to SA Health (Health Protection Programs) - HealthProtectionPrograms@health.sa.gov.au

CONTACT INFORMATION	Date: Click here to enter text. SAPOL case management #: Click here to enter text.

SAPOL contact officer: Click here to enter text.
Ph: Click here to enter text.
Email: Click here to enter text.
Local health authority contact officer: Click here to enter text.
Name of local health authority: Click here to enter text.
Ph: Click here to enter text.
Email: Click here to enter text.

PROPERTY DETAILS

Address: Click here to enter text.
GPS (for remote locations): Click here to enter text.
Date and time lab was detected by SAPOL: Click here to enter text.
Type: ☐ Single residence ☐ Duplex ☐ Unit ☐ Hotel ☐ Other: Click here to enter text.
Status: ☐ Owner-occupied ☐ Private rental ☐ Public housing ☐ Unknown ☐ Other: Click here to enter text.
Occupied: ☐ Yes ☐ No
Number of adults: Click here to enter text.
Number of children: Click here to enter text.

CLANDESTINE DRUG LABORATORY CATEGORY

Category A ☐	Category B ☐	Category C ☐
An active clan lab operating at the time of detection with either drug manufacture or precursor production	*A non-active clan lab with either drug manufacture or precursor production*	*A clan lab kit or chemical store that is neither set up nor active but the premises has signs of previous drug manufacture*

DESTRUCTION LIST

Destruction list attached ☐ Yes ☐ No

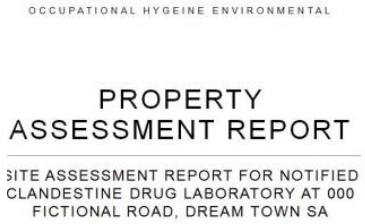
DRUG SYNTHESIS METHOD

Describe: Click here to enter text.

POTENTIAL HAZARDS OR THREATS TO OFFICERS ENTERING THE PREMISES

This may include chemical, environmental, electrical, physical, and biological hazards or threats, and risks associated with the occupants.

Describe: Click here to enter text.



OCCUPATIONAL HYGEINE ENVIRONMENTAL

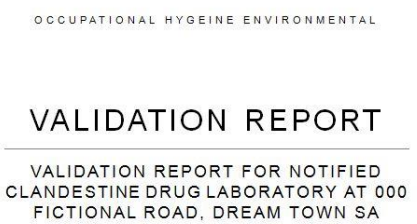
PROPERTY ASSESSMENT REPORT

SITE ASSESSMENT REPORT FOR NOTIFIED CLANDESTINE DRUG LABORATORY AT 000 FICTIONAL ROAD, DREAM TOWN SA

OCCUPATIONAL HYGEINE ENVIRONMENTAL

REMEDIATION ACTION PLAN

REMEDIATION ACTION PLAN FOR NOTIFIED CLANDESTINE DRUG LABORATORY AT 000 FICTIONAL ROAD, DREAM TOWN SA



OCCUPATIONAL HYGEINE ENVIRONMENTAL

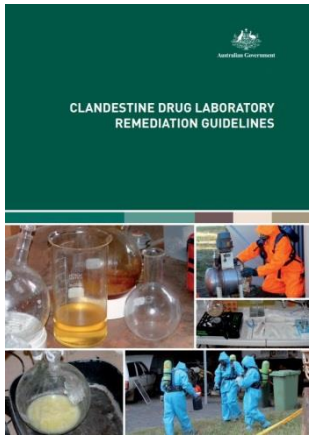
VALIDATION REPORT

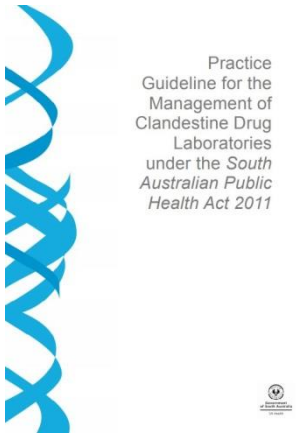
VALIDATION REPORT FOR NOTIFIED CLANDESTINE DRUG LABORATORY AT 000 FICTIONAL ROAD, DREAM TOWN SA

Reviewing the Validation Report

What reference documents are needed?

- National Guideline
  - 6.Guidelines for Phase Four - Validation
  - Appendix 1: Summary of Investigation Levels (ILs) – Assessment of Former Clandestine Lab Sites
- Practice Guideline for the Management of Clandestine Drug Laboratories under the *South Australian Public Health Act 2011*
  - *6.4 Phase 4 – Validation*
  - *7.4 Engaging an assessor and remediation contractor*





Reviewing the Validation Report

Why is this a critical step?

The validation report determines if remediation was successful

> **Scenario 1**

EHO receives Validation Report

- Validation conducted by a suitably qualified expert ✓
- Validation methodology outlined in the National Guideline is followed and the report is comprehensive ✓

What does the report say?

Remediation was **unsuccessful** ✗

- The site must be remediated again
- Validation must be conducted again

Remediation was **successful** ✓

- Continue to closing phase

Reviewing the Validation Report

Scenario 2

EHO receives Validation Report

- Validation conducted by a suitably qualified expert ✓
- Validation methodology outlined in the National Guideline is NOT followed ✗
  - Validation report cannot determine remediation was successful

What does the report say?

- It doesn't matter - Insufficient evidence to determine if remediation was successful

What next?

- Validation must be revisited/conducted again

Reviewing the Validation Report

Scenario 3

EHO receives Validation Report

- Validation was NOT conducted by a suitably qualified expert ✗
  - Validation report cannot determine remediation was successful ✗

What does the report say?

- **It doesn't matter** – Cannot determine if remediation was successful

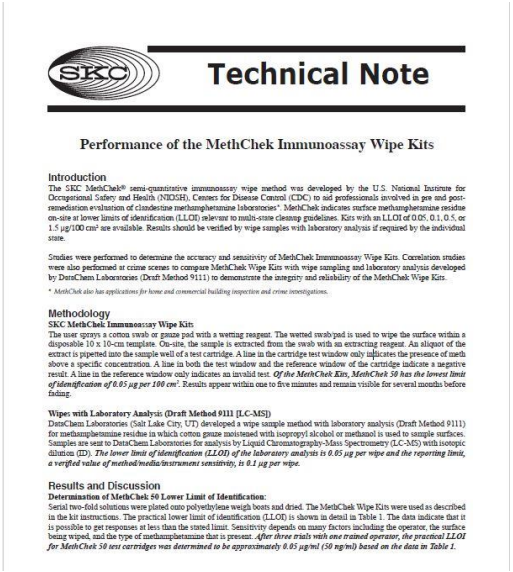
What next?

- Validation must be conducted again but by a suitably qualified expert

Key Messages

Key Messages

- Site validation must be conducted by a **suitably qualified expert**
- Suitably qualified experts must conduct and report site validation in accordance with the National guidelines and Practice guidelines
  - Cases of unsuitably qualified experts and non and suitably qualified experts using MethChek SKC tests.
- MethChek SKC tests – **presumptive screening only**
- Why? Not as per the National and practice guideline methodology



SKC **Technical Note**

Performance of the MethChek Immunoassay Wipe Kits

Introduction

The SKC MethChek® semi-quantitative immunoassay wipe method was developed by the U.S. National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control (CDC) to aid professionals involved in pre and post-remediation evaluation of clandestine methamphetamine laboratories*. MethChek indicates surface methamphetamine residue on-site at lower limits of identification (LLOI) relevant to multi-state cleanup guidelines. Kits with an LLOI of 0.05, 0.1, 0.5, or 1.5 µg/100 cm² are available. Results should be verified by wipe samples with laboratory analysis if required by the individual state.

Studies were performed to determine the accuracy and sensitivity of MethChek Immunoassay Wipe Kits. Correlation studies were also performed at crime scenes to compare MethChek Wipe Kits with wipe sampling and laboratory analysis developed by DataChem Laboratories (Draft Method 9111) to demonstrate the integrity and reliability of the MethChek Wipe Kits.

* *MethChek also has applications for home and commercial building inspection and crime investigations.*

Methodology

SKC MethChek Immunoassay Wipe Kits

The user sprays a cotton swab or gauze pad with a wetting reagent. The wetted swab/pad is used to wipe the surface within a disposable 10 x 10-cm template. On-site, the sample is extracted from the swab with an extracting reagent. An aliquot of the extract is pipetted into the sample well of a test cartridge. A line in the cartridge test window only indicates the presence of meth above a specific concentration. A line in both the test window and the reference window of the cartridge indicate a negative result. A line in the reference window only indicates an invalid test. *Of the MethChek Kits, MethChek 50 has the lowest limit of identification of 0.05 µg per 100 cm².* Results appear within one to five minutes and remain visible for several months before fading.

Wipes with Laboratory Analysis (Draft Method 9111 [LC-MS])

DataChem Laboratories (Salt Lake City, UT) developed a wipe sample method with laboratory analysis (Draft Method 9111) for methamphetamine residue in which cotton gauze moistened with isopropyl alcohol or methanol is used to sample surfaces. Samples are sent to DataChem Laboratories for analysis by Liquid Chromatography-Mass Spectrometry (LC-MS) with isotopic dilution (ID). *The lower limit of identification (LLOI) of the laboratory analysis is 0.05 µg per wipe and the reporting limit, a verified value of method/media/instrument sensitivity, is 0.1 µg per wipe.*

Results and Discussion

Determination of MethChek 50 Lower Limit of Identification:

Serial two-fold solutions were plated onto polyethylene weigh boats and dried. The MethChek Wipe Kits were used as described in the kit instructions. The practical lower limit of identification (LLOI) is shown in denil in Table 1. The data indicate that it is possible to get responses at less than the stated limit. Sensitivity depends on many factors including the operator, the surface being wiped, and the type of methamphetamine that is present. *After three trials with one trained operator, the practical LLOI for MethChek 50 test cartridges was determined to be approximately 0.05 µg/ml (50 ng/ml) based on the data in Table 1.*

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Key Messages

Interferences and cross reactivity

Appendix 1: Summary of Investigation Levels (Ils) – Assessment of Former Clandestine Lab Sites

Key Chemical	Residential (A)		
	Indoor Criteria		Outdoor
	Surface (µg/100cm²)	Air (mg/m³)	Soil (mg/kg)
Methamphetamine	0.5	b	5
MDMA	7	b	60
Pseudo/Ephedrine	600	b	6000

Interferences

MethChek Wipe Kits were tested for cross-reactivity with several substances. MDMA (Ecstasy) is 100% cross-reactive with MethChek. Other drugs of abuse (Heroin, powder cocaine, and street cocaine) and methamphetamine precursors are less than 10% cross-reactive. There are no known negative interferences.

MDMA is 100% cross-reactive with MethChek

Key Messages

False positives and sensitivity

Table 9. Comparison of MethChek Wipe Kits to Wipe Samples with Laboratory Analysis (Draft Method 9111)

Amount of Meth on Surface (ng/100 cm²)	MethChek 500 (n=9)	Draft 9111
0	100% negative	ND*
380	100% positive	400 ± 11 ng
500	100% positive	490 ± 12 ng
630	100% positive	581 ± 31 ng

Table 10. Field Performance Comparison of MethChek Wipe Kits and Wipe Samples with Laboratory Analysis (Draft Method 9111)

	Pre-remediation			During Remediation		
Location	MethChek 50	MethChek 500	Wipes with Analysis (µg/100 cm²)	MethChek 50	MethChek 500	Wipes with Analysis (µg/100 cm²)
Dresser A	Positive	Positive	11.00	Positive	Negative	0.34
Dresser B	Positive	Positive	14.00	Positive	Negative	0.07
TV Stand	Positive	Positive	12.00	Positive	Positive	0.40
TV	Positive	Positive	4.80	Negative	Negative	ND*
AC Vent	Positive	Positive	24.00	Positive	Positive	1.20
AC Return	Positive	Positive	26.00	Positive	Positive	3.20
Wall	Positive	Positive	4.20	Positive	Positive	0.89
Table	Positive	Positive	1500.00	Positive	Positive	4.80
Window	Positive	Positive	2.10	Negative	Negative	ND*
Night Stand	Positive	Positive	5.50	Positive	Negative	1.07
Drapes	Positive	Negative	0.78	Positive	Negative	0.13

* *ND = None detected*

Key Messages

- Remediation contractors should be independent of suitably qualified experts
- It is important that EHOs screen the quality of site validation reports upon receipt against the National and Practice Guidelines
- Must avoid clan labs that upon review need to be remediated and validated again

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Workshop 3

- Validation
- As the investigating EHO, you have just received the Site Validation Report from the property owner. What actions will you take?

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