

GEOTAIX UMWELTTECHNOLOGIE GMBH
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Chemical analysis of bleaching earths

Client: Ashapura Amcol NV.
Date of Delivery: 2011-03-08

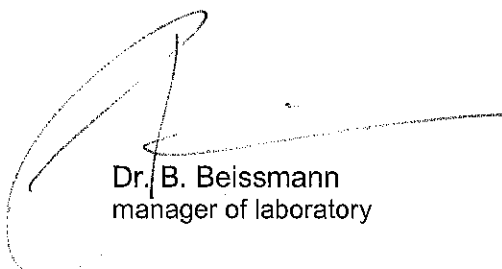
No. of project: ASH 11002 H

Analysis of **Polycyclic Aromatic Hydrocarbons (PAH)**
method of analysis: solvent extraction, HPLC-FD (an. ISO 15302)

Untersuchungsergebnisse:

PAH [$\mu\text{g/kg ds}$]	
Lab.No.	170850
sample	V2
PAH	
fluoranthene	2.1
pyrene	0.66
benzo(a)anthracene	< 0.5
chrysene	0.66
benzo(b)fluoranthene	< 0.5
benzo(k)fluoranthene	< 0.5
benzo(a)pyrene	< 0.5
indeno(1,2,3-cd)pyrene	< 0.5
sum PAH	3.4

Würselen. 25-03-2011



Dr. B. Beissmann
manager of laboratory

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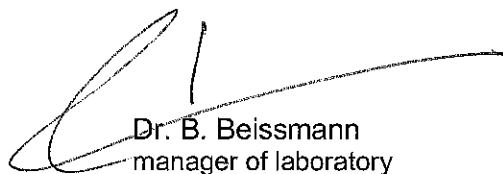
Analysis of **Polycyclic Aromatic Hydrocarbons (PAH)**

method of analysis: solvent extraction, HPLC-FD (an. ISO 15302)

Results:

BaP [µg/kg dry substance]	
Lab.No.	170850
sample	V2
BaP	
benzo(a)pyrene	< 0.5

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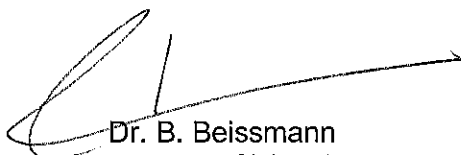
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Analysis of metals
method of analysis: Digestion with HCL/HNO₃, AAS

Untersuchungsergebnisse:

metals [mg/kg ds]	
Lab.No.	170850
sample	V2
cadmium (Cd)	< 0.4
lead (Pb)	8.10
mercury (Hg)	< 0.05

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Client: Ashapura Amcol NV.

No. of project: ASH 11002 H

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Analysis of Polychlorinated Dibenzo-p-Dioxins and Dibenzofurans (PCDD/F)

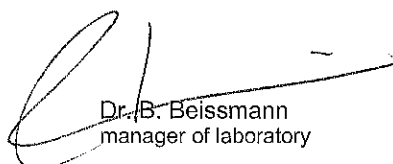
Polychlorinated Biphenyls (WHO-PCB: "dioxin-like PCB")

method of analysis: GC/MS (AbfklärV. Germany) Analysis in cooperation with a specialized laboratory

PCDD/F		ng/kg dry substance
Lab.No.		170850
Sample		V2
TeCDD (2,3,7,8)		< 0.01
PeCDD (1,2,3,7,8)		* < 0.03
HxCDD (1,2,3,4,7,8)		< 0.05
HxCDD (1,2,3,6,7,8)		< 0.05
HxCDD (1,2,3,7,8,9)		< 0.05
HpCDD (1,2,3,4,6,7,8)		0.24
OCDD		2.04
TeCDF (2,3,7,8)		0.16
PeCDF (1,2,3,7,8)		* < 0.03
PeCDF (2,3,4,7,8)		* < 0.05
HxCDF (1,2,3,4,7,8)		< 0.05
HxCDF (1,2,3,6,7,8)		< 0.05
HxCDF (1,2,3,7,8,9)		< 0.05
HxCDF (2,3,4,6,7,8)		< 0.05
HpCDF (1,2,3,4,6,7,8)		< 0.10
HpCDF (1,2,3,4,7,8,9)		< 0.10
OCDF		< 1.00
TEQ (WHO) based on PCDD/F in consideration of 100% detection limit (upperbound level)		0.122
TEQ (WHO) based on PCDD/F without consideration of detection limit (lowerbound level)		0.019
PCB		
PCB 105		* < 5
PCB 114		< 3
PCB 118		* < 10
PCB 123		< 3
PCB 156		< 3
PCB 157		< 3
PCB 167		< 3
PCB 189		< 3
PCB 77		* < 3.0
PCB 81		< 0.5
PCB 126		< 0.5
PCB 169		< 0.5
TEQ (WHO) based on PCBs in consideration of 100% detection limit (upperbound level)		0.062
TEQ (WHO) based on PCB and PCDD/F in consideration of 100% detection limit (upperbound level)		0.184

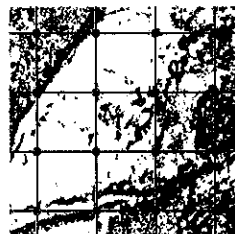
*LOD changed, because of matrix interference

Würselen, 25-03-2011


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Analysis of **Polychlorinated Dibenzo-p-Dioxins and Dibenzofurans (PCDD/F)**
Heavy Metals (Pb. Cd. Hg)
Polycyclic Aromatic Hydrocarbons (PAH). Benzo-a-pyrene (BaP)

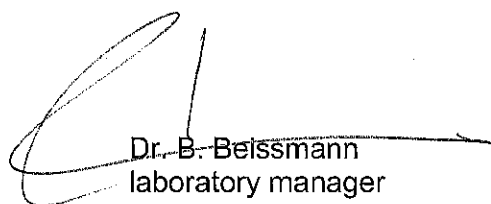
method of analysis: according to Fediol's Code of Practise on the Purchase Conditions of Fresh Bleaching Earth for Oil Refining

appraisal of results

The sample „V2“ (Lab. No. 170850) fulfills the criteria of Fediol's „Code of Practise on the Purchase Conditions of Fresh Bleaching Earth for Oil Refining“ of 2008.

The contents of PCDD/F (dioxins), WHO-PCB's, Heavy Metals (Pb. Cd. Hg) and benzo(a)pyrene are below the maximum levels.

Würselen. 25-03-2011


Dr. B. Beissmann
laboratory manager