

# **Anlage 5.4**

Proctorversuche

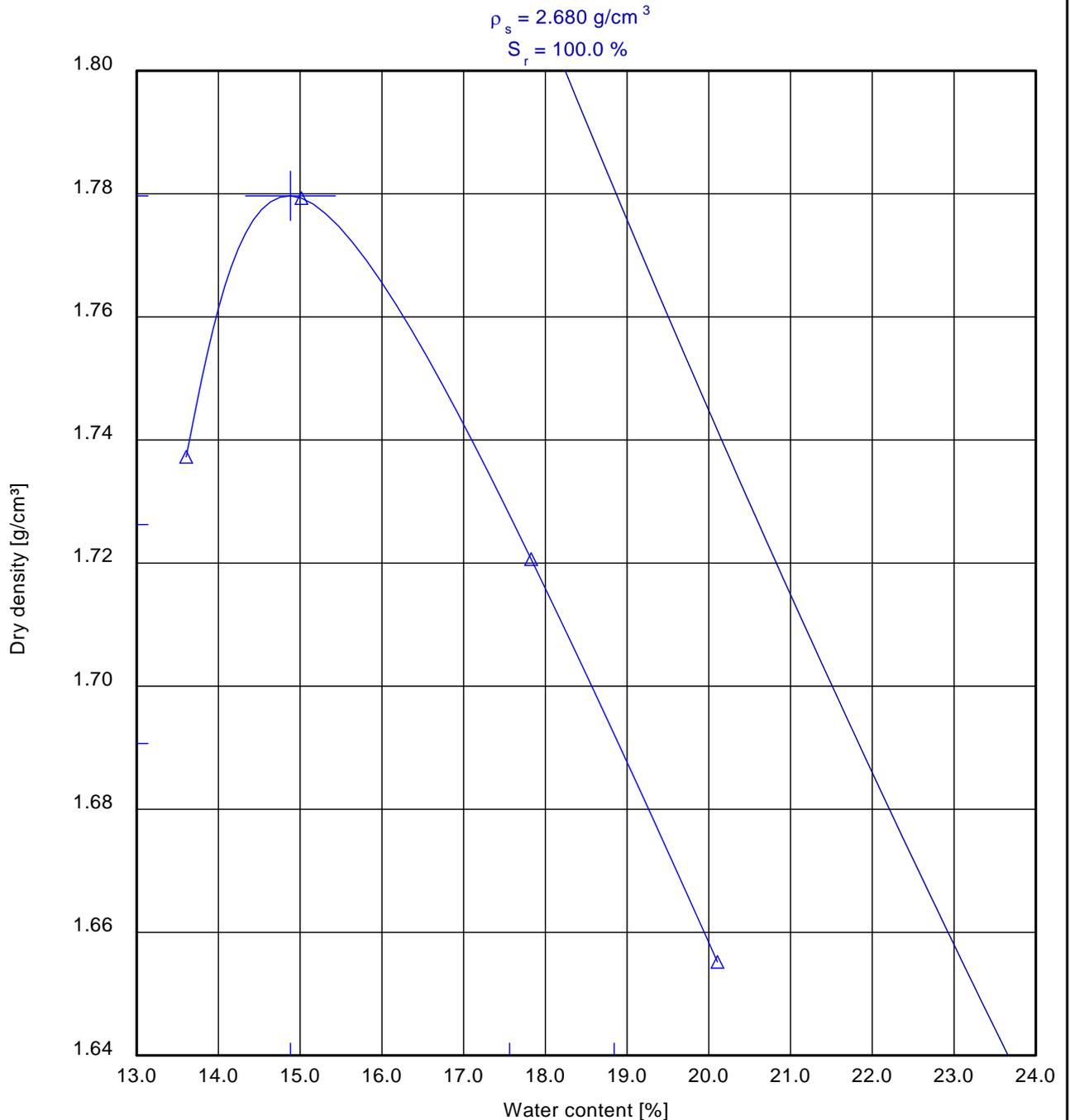
# Proctorkurve nach DIN 18 127

Nachhaltiges Rückstandsmanagement  
 K+S KALI GmbH, Haldenerweiterung Wintershall

Edited by: Ke.

Date: 03.11.2014

Labor Nr.: /Probe Nr.: 5/14  
 Aufschluss-Nr.: TP 85/2014 WI  
 Tiefe: 0,4 - 0,50  
 Art der Entnahme: gestört  
 Bodenart: U, s, t' (Lösslehm)  
 Probe entnommen am: 26.09.2014



100 % proctor density  $\rho_{Pr} = 1.780 \text{ g/cm}^3$

Optimum water content  $w_{Pr} = 14.9 \%$

97.0 % of proctor density  $\rho_d = 1.726 \text{ g/cm}^3$

min/max water content  $w = - / 17.6 \%$

95.0 % of proctor density  $\rho_d = 1.691 \text{ g/cm}^3$

min/max water content  $w = - / 18.8 \%$

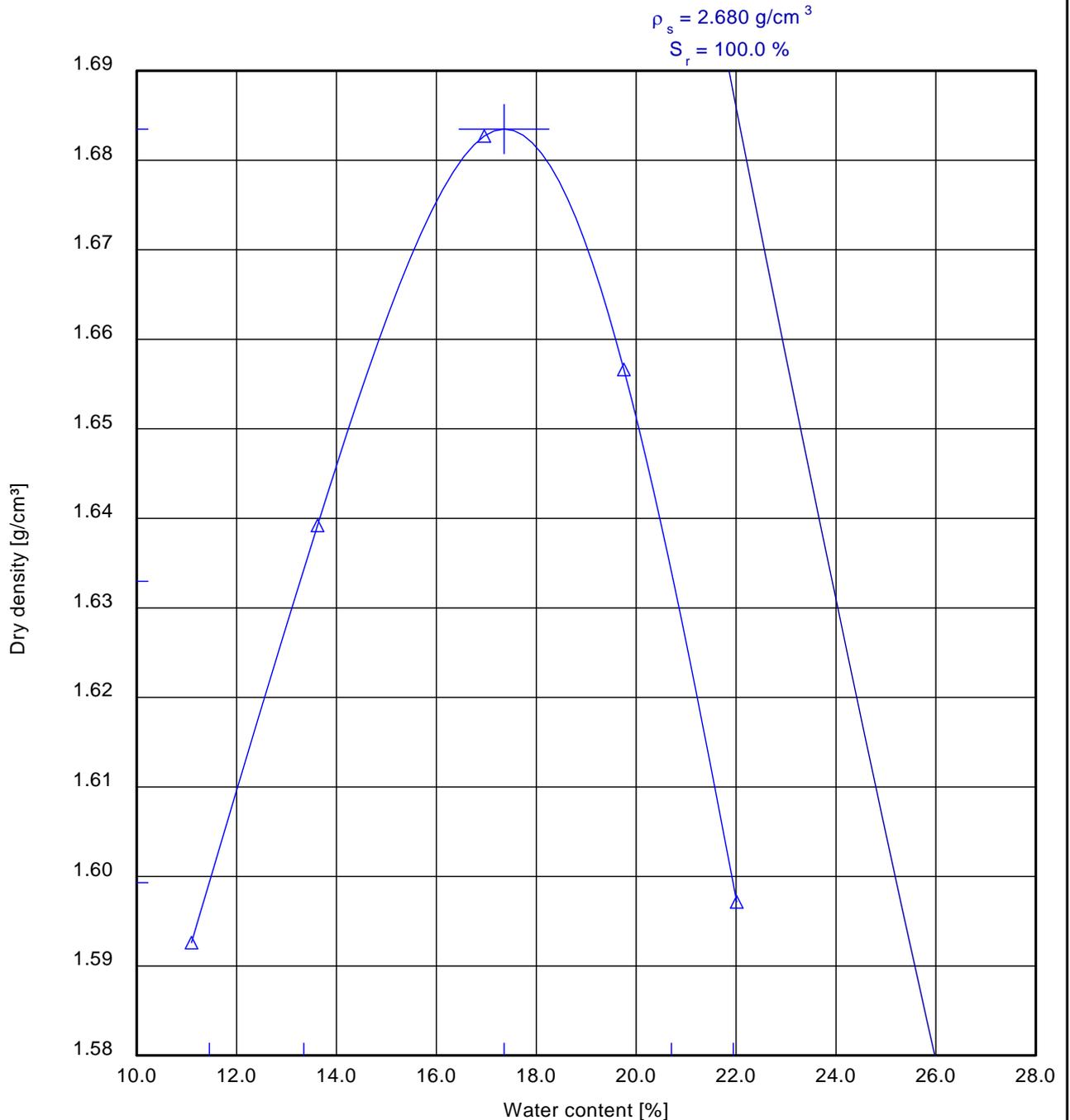
# Proctorkurve nach DIN 18 127

Nachhaltiges Rückstandsmanagement  
 K+S KALI GmbH, Haldenerweiterung Wintershall

Edited by: Ke.

Date: 04.11.2014

Labor Nr.: 29/14  
 Aufschluss-Nr.: TP 90/2014 WI  
 Tiefe: 0,70 - 0,80  
 Art der Entnahme: gestört  
 Bodenart: U, s, t', g' (Lösslehm)  
 Probe entnommen am: 24.09.2014



100 % proctor density  $\rho_{Pr} = 1.683 \text{ g/cm}^3$

Optimum water content  $w_{Pr} = 17.4 \%$

97.0 % of proctor density  $\rho_d = 1.633 \text{ g/cm}^3$

min/max water content  $w = 13.3 / 20.7 \%$

95.0 % of proctor density  $\rho_d = 1.599 \text{ g/cm}^3$

min/max water content  $w = 11.5 / 21.9 \%$

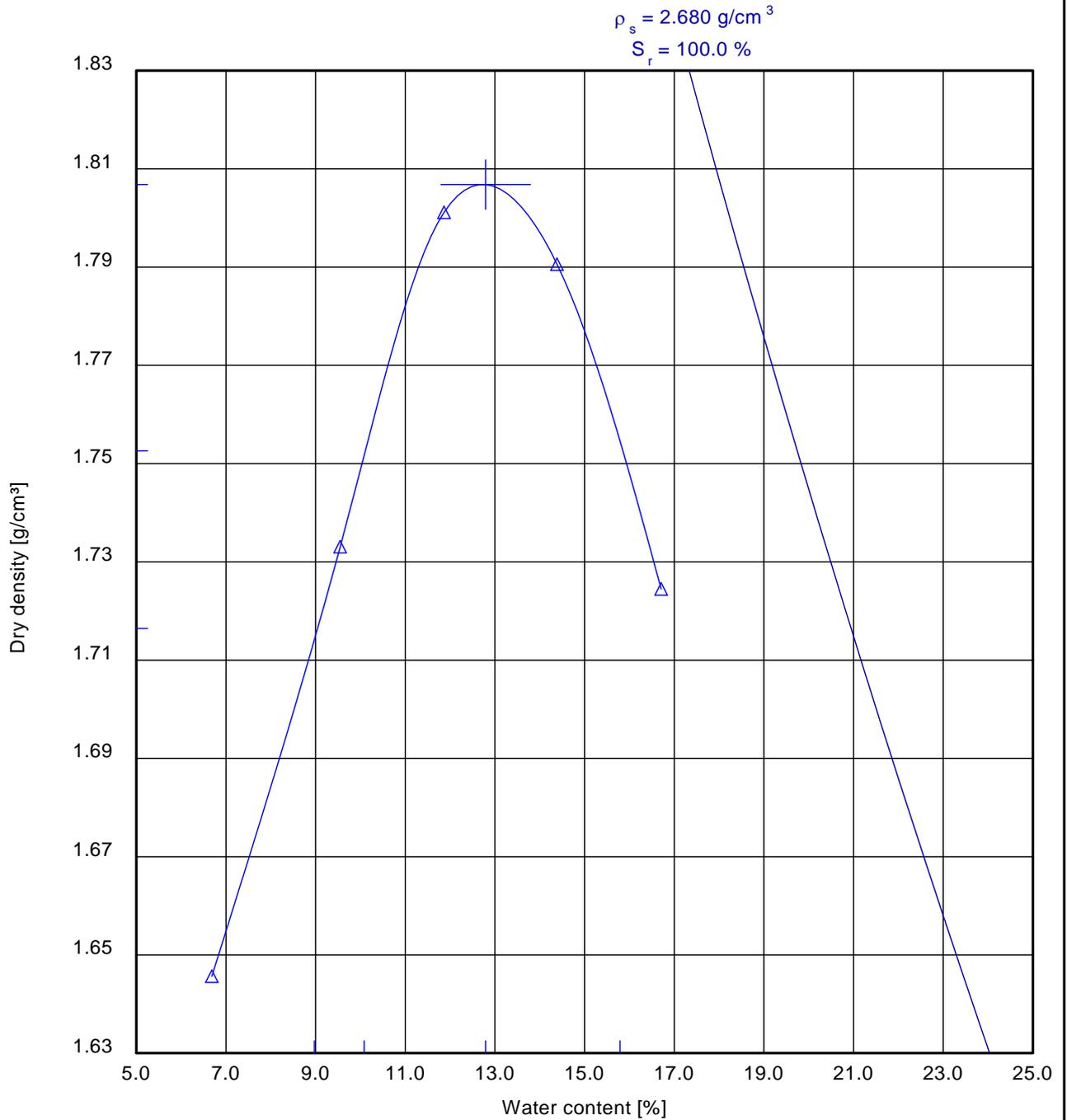
# Proctorkurve nach DIN 18 127

Nachhaltiges Rückstandsmanagement  
 K+S KALI GmbH, Haldenerweiterung Wintershall

Edited by: Ke.

Date: 04.11.2014

Labor Nr.: 57/14  
 Aufschluss-Nr.: TP 95/2014 WI  
 Tiefe: 0,40 - 0,80  
 Art der Entnahme: gestört  
 Bodenart: U, s, t' (Lösslehm)  
 Probe entnommen am: 25.09.2014



100 % proctor density  $\rho_{Pr} = 1.807 \text{ g/cm}^3$

Optimum water content  $w_{Pr} = 12.8 \%$

97.0 % of proctor density  $\rho_d = 1.753 \text{ g/cm}^3$

min/max water content  $w = 10.1 / 15.8 \%$

95.0 % of proctor density  $\rho_d = 1.716 \text{ g/cm}^3$

min/max water content  $w = 9.0 / - \%$

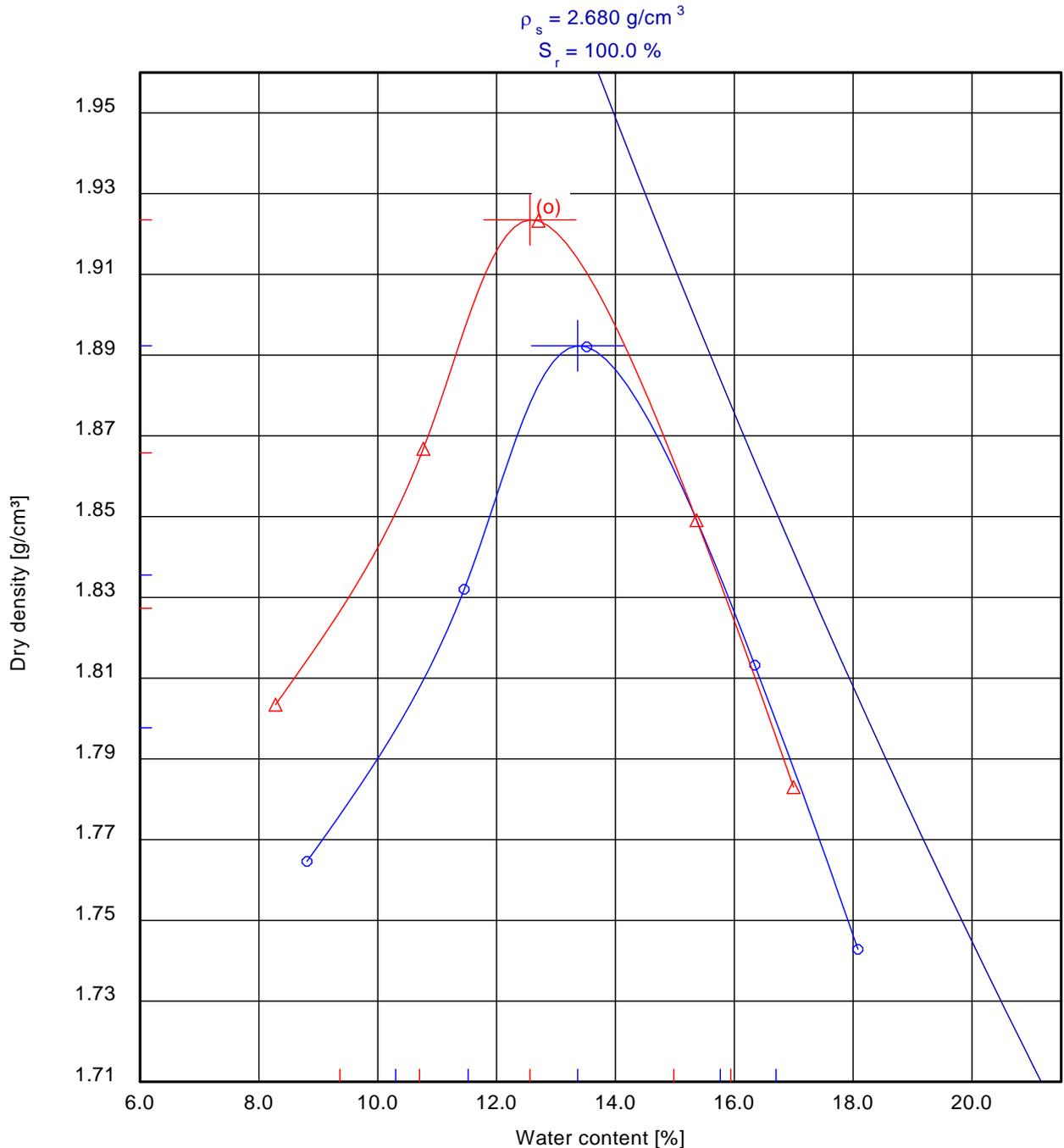
# Proctorkurve nach DIN 18 127

Nachhaltiges Rückstandsmanagement  
 K+S KALI GmbH, Haldenerweiterung Wintershall

Edited by: Ke.

Date: 07.11.2014

Labor Nr.: 25/14  
 Aufschluss-Nr.: TP 89/2014 WI  
 Tiefe: 0,20 - 1,10  
 Art der Entnahme: gestört  
 Bodenart: S, g, u, t' (Hanglehm)  
 Probe entnommen am: 24.09.2014



100 % proctor density  $\rho_{Pr} = 1.892 \text{ g/cm}^3$   
 (o) 100 % proctor density  $\rho_{Pr} = 1.923 \text{ g/cm}^3$

Optimum water content  $w_{Pr} = 13.4 \%$   
 Optimum water content  $w_{Pr} = 12.6 \%$

97.0 % of proctor density  $\rho_d = 1.836 \text{ g/cm}^3$   
 (o) 97.0 % of proctor density  $\rho_d = 1.866 \text{ g/cm}^3$

min/max water content  $w = 11.5 / 15.8 \%$   
 min/max water content  $w = 10.7 / 15.0 \%$

95.0 % of proctor density  $\rho_d = 1.798 \text{ g/cm}^3$   
 (o) 95.0 % of proctor density  $\rho_d = 1.827 \text{ g/cm}^3$

min/max water content  $w = 10.3 / 16.7 \%$   
 min/max water content  $w = 9.4 / 15.9 \%$

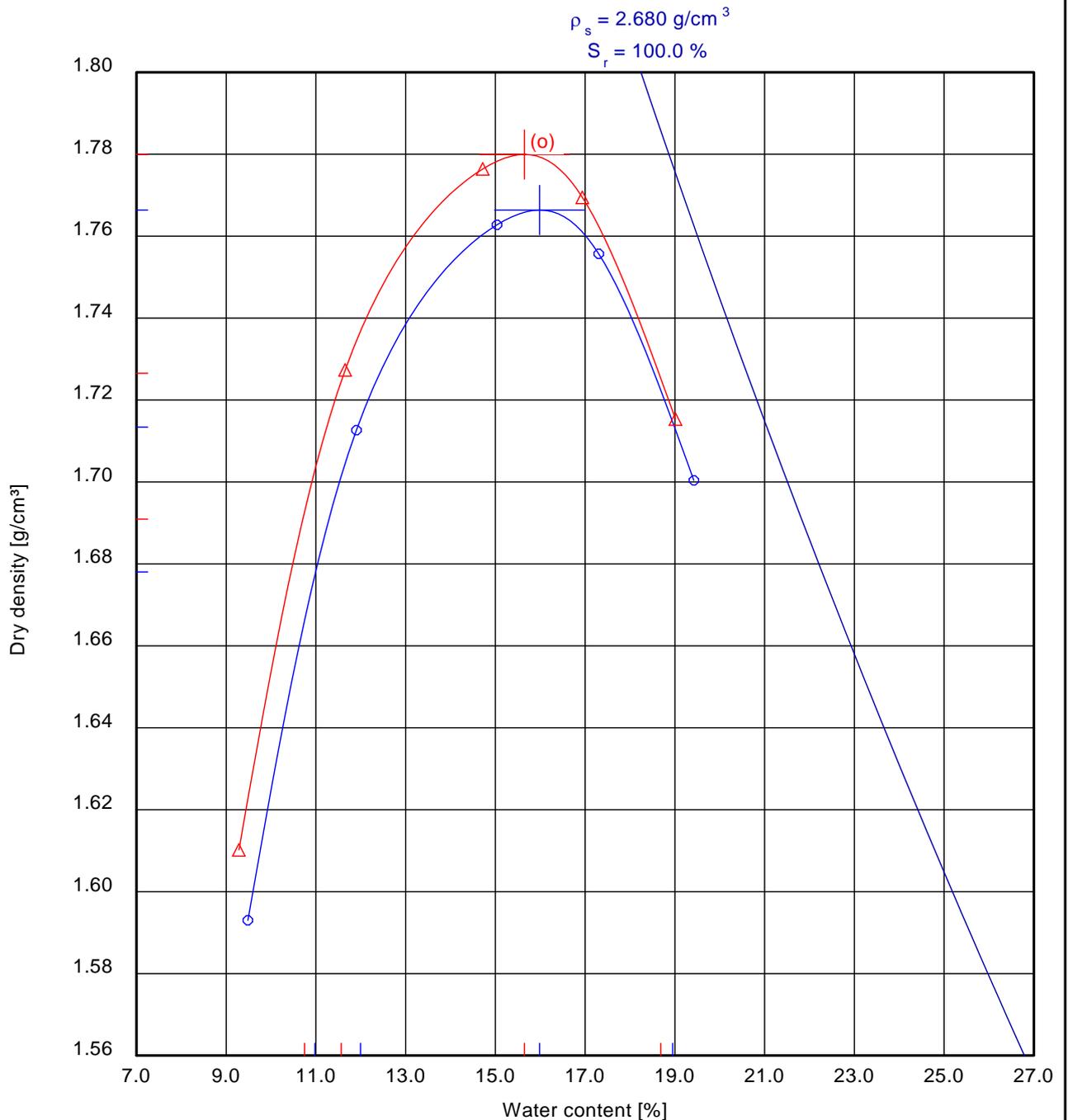
# Proctorkurve nach DIN 18 127

Nachhaltiges Rückstandsmanagement  
 K+S KALI GmbH, Haldenerweiterung Wintershall

Edited by: Ke.

Date: 05.11.2014

Labor Nr.: 50/14  
 Aufschluss-Nr.: TP 93/2014 WI  
 Tiefe: 0,40 - 0,50  
 Art der Entnahme: gestört  
 Bodenart: S, u, t, g (Hanglehm/-schutt)  
 Probe entnommen am: 26.09.2014



100 % proctor density  $\rho_{Pr} = 1.766 \text{ g/cm}^3$   
 (o) 100 % proctor density  $\rho_{Pr} = 1.780 \text{ g/cm}^3$

Optimum water content  $w_{Pr} = 16.0 \%$   
 Optimum water content  $w_{Pr} = 15.6 \%$

97.0 % of proctor density  $\rho_d = 1.713 \text{ g/cm}^3$   
 (o) 97.0 % of proctor density  $\rho_d = 1.727 \text{ g/cm}^3$

min/max water content  $w = 12.0 / 19.0 \%$   
 min/max water content  $w = 11.6 / 18.7 \%$

95.0 % of proctor density  $\rho_d = 1.678 \text{ g/cm}^3$   
 (o) 95.0 % of proctor density  $\rho_d = 1.691 \text{ g/cm}^3$

min/max water content  $w = 11.0 / - \%$   
 min/max water content  $w = 10.7 / - \%$

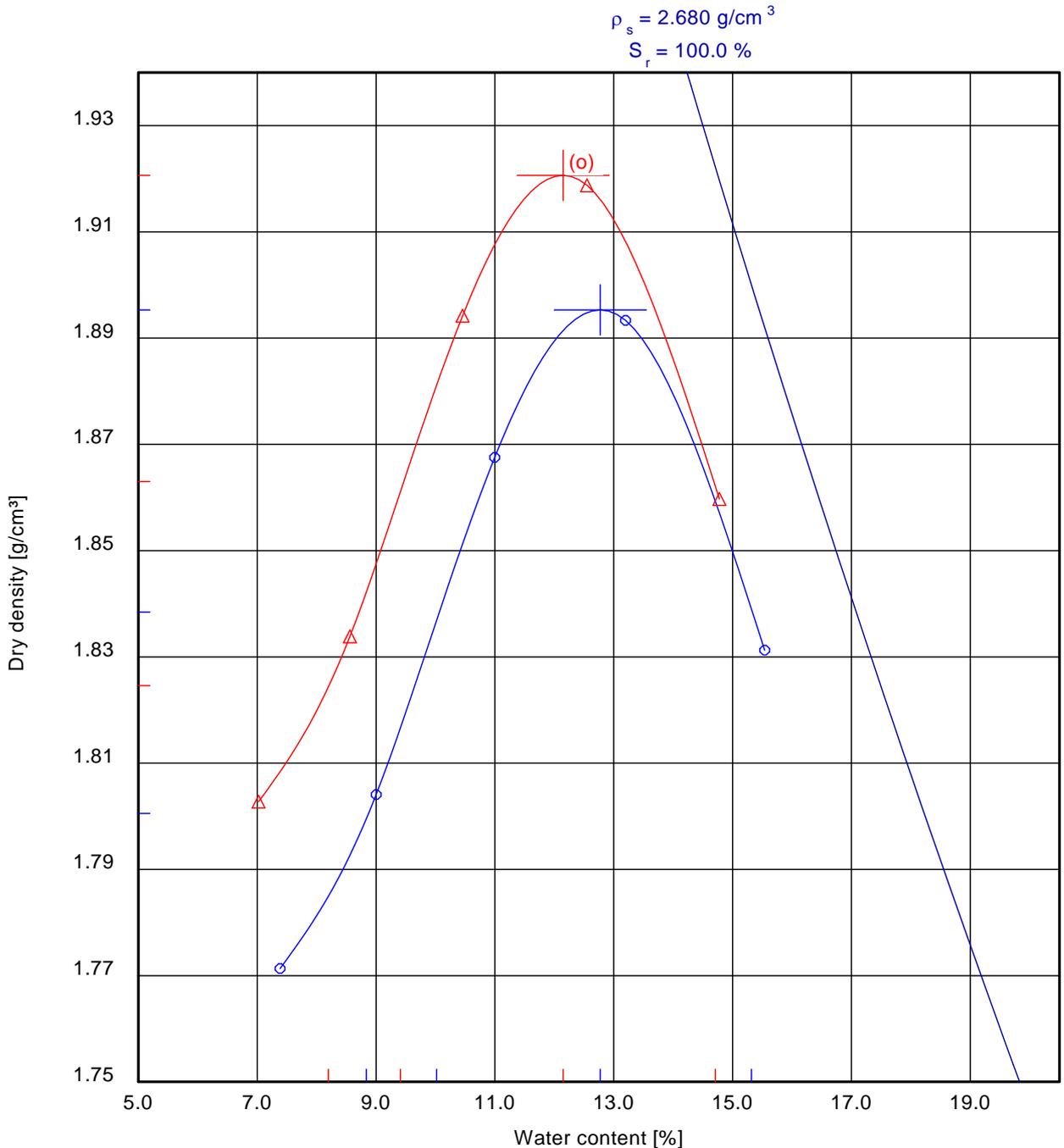
# Proctorkurve nach DIN 18 127

Nachhaltiges Rückstandsmanagement  
 K+S KALI GmbH, Haldenerweiterung Wintershall

Edited by: Ke.

Date: 14.11.2014

Labor Nr.: 62/14  
 Aufschluss-Nr.: TP 96/2014 WI  
 Tiefe: 0,60 - 0,70  
 Art der Entnahme: gestört  
 Bodenart: S,  $\bar{u}$ , t', g' (Hanglehm)  
 Probe entnommen am: 25.09.2014



100 % proctor density  $\rho_{Pr} = 1.895 \text{ g/cm}^3$   
 (o) 100 % proctor density  $\rho_{Pr} = 1.921 \text{ g/cm}^3$

Optimum water content  $w_{Pr} = 12.8 \%$   
 Optimum water content  $w_{Pr} = 12.1 \%$

97.0 % of proctor density  $\rho_d = 1.838 \text{ g/cm}^3$   
 (o) 97.0 % of proctor density  $\rho_d = 1.863 \text{ g/cm}^3$

min/max water content  $w = 10.0 / 15.3 \%$   
 min/max water content  $w = 9.4 / 14.7 \%$

95.0 % of proctor density  $\rho_d = 1.801 \text{ g/cm}^3$   
 (o) 95.0 % of proctor density  $\rho_d = 1.825 \text{ g/cm}^3$

min/max water content  $w = 8.8 / - \%$   
 min/max water content  $w = 8.2 / - \%$

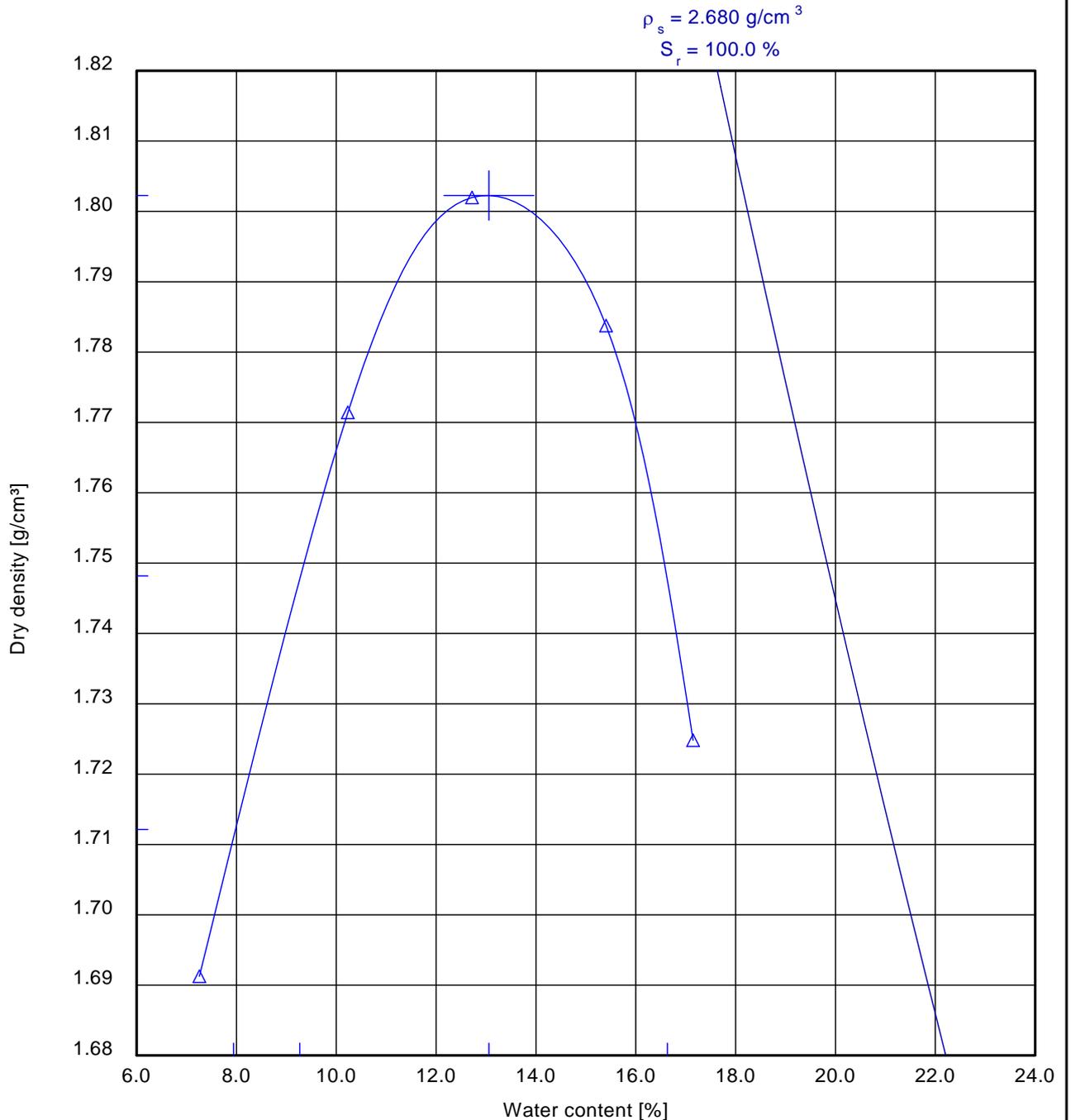
# Proctorkurve nach DIN 18 127

Nachhaltiges Rückstandsmanagement  
 K+S KALI GmbH, Haldenerweiterung Wintershall

Edited by: Ke.

Date: 07.11.2014

Labor Nr.: 70/14  
 Aufschluss-Nr.: TP 98/2014 WI  
 Tiefe: 0,60 - 0,70  
 Art der Entnahme: gestört  
 Bodenart: S,  $\bar{u}$ , g',t' (Hanglehm)  
 Probe entnommen am: 23.09.2014



100 % proctor density  $\rho_{Pr} = 1.802 \text{ g/cm}^3$

Optimum water content  $w_{Pr} = 13.1 \%$

97.0 % of proctor density  $\rho_d = 1.748 \text{ g/cm}^3$

min/max water content  $w = 9.3 / 16.6 \%$

95.0 % of proctor density  $\rho_d = 1.712 \text{ g/cm}^3$

min/max water content  $w = 7.9 / - \%$

# Proctorkurve nach DIN 18 127

Nachhaltiges Rückstandsmanagement  
 K+S KALI GmbH, Haldenerweiterung Wintershall

Edited by: Ke.

Date: 07.11.2014

Labor Nr.: 21/14

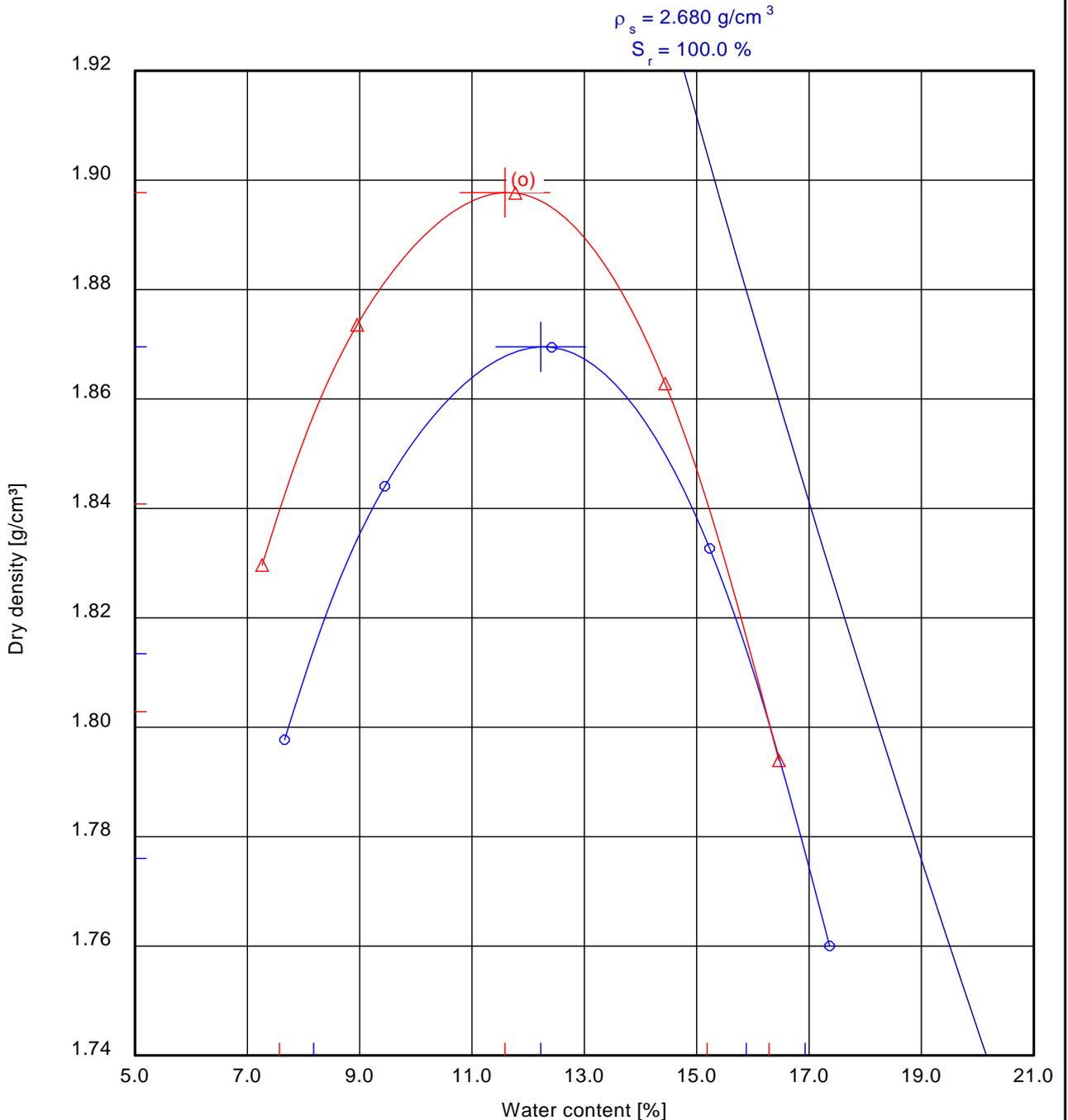
Aufschluss-Nr.: TP 87/2014 WI

Tiefe: 0,40 - 1,50

Art der Entnahme: gestört

Bodenart: S,  $\bar{g}$ , u', t' (Hangschutt)

Probe entnommen am: 23.09.2014



100 % proctor density  $\rho_{Pr} = 1.870 \text{ g/cm}^3$   
 (o) 100 % proctor density  $\rho_{Pr} = 1.898 \text{ g/cm}^3$

Optimum water content  $w_{Pr} = 12.2 \%$   
 Optimum water content  $w_{Pr} = 11.6 \%$

97.0 % of proctor density  $\rho_d = 1.813 \text{ g/cm}^3$   
 (o) 97.0 % of proctor density  $\rho_d = 1.841 \text{ g/cm}^3$

min/max water content  $w = 8.2 / 15.9 \%$   
 min/max water content  $w = 7.6 / 15.2 \%$

95.0 % of proctor density  $\rho_d = 1.776 \text{ g/cm}^3$   
 (o) 95.0 % of proctor density  $\rho_d = 1.803 \text{ g/cm}^3$

min/max water content  $w = - / 16.9 \%$   
 min/max water content  $w = - / 16.3 \%$

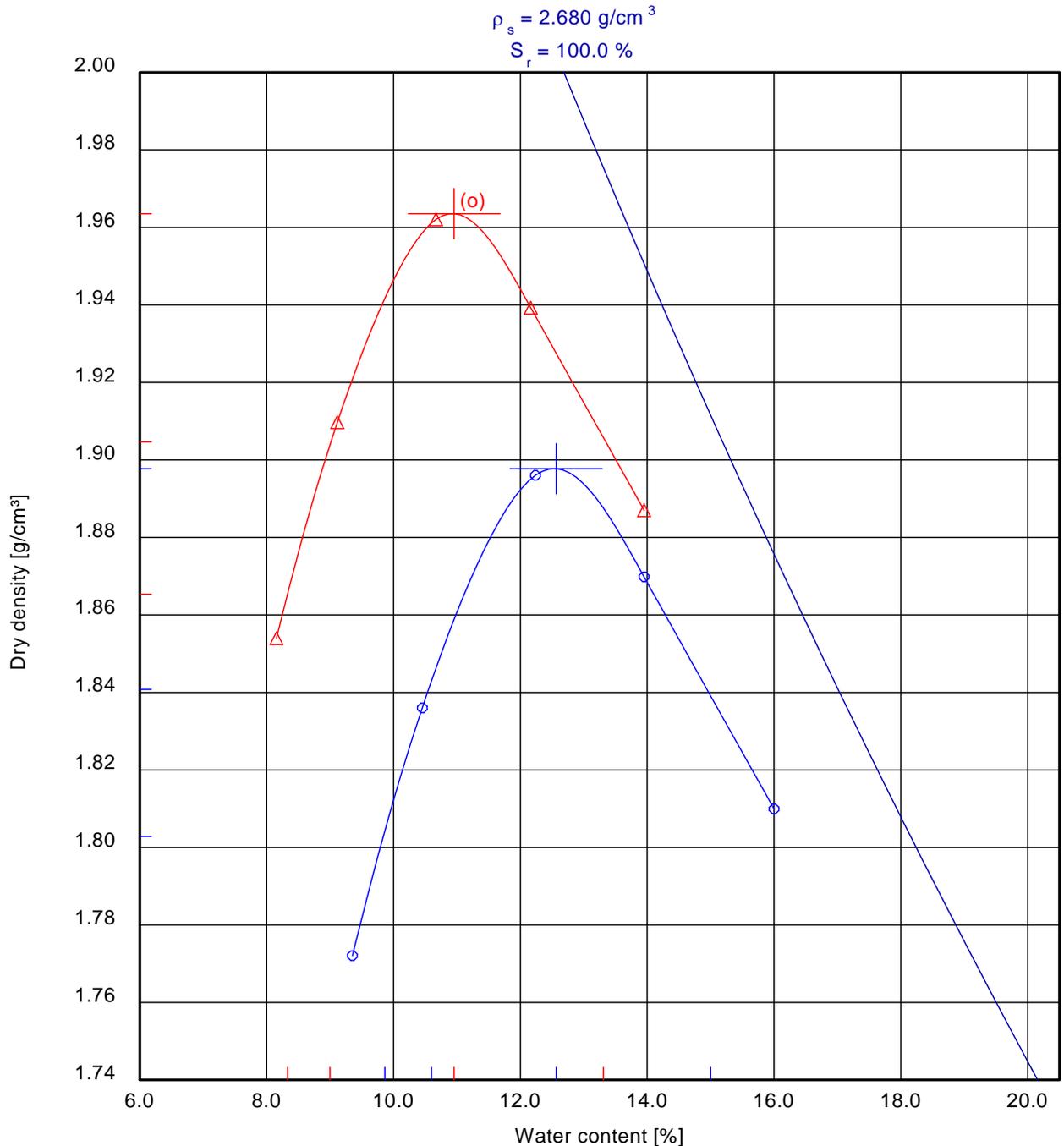
# Proctorkurve nach DIN 18 127

Nachhaltiges Rückstandsmanagement  
 K+S KALI GmbH, Haldenerweiterung Wintershall

Edited by: Ke.

Date: 07.11.2014

Labor Nr.: 54/14  
 Aufschluss-Nr.: TP 94/2014 WI  
 Tiefe: 1,00 - 1,10  
 Art der Entnahme: gestört  
 Bodenart: G, s, u, t' (Hangschutt)  
 Probe entnommen am: 24.09.2014



100 % proctor density  $\rho_{Pr} = 1.898 \text{ g/cm}^3$   
 (o) 100 % proctor density  $\rho_{Pr} = 1.964 \text{ g/cm}^3$

Optimum water content  $w_{Pr} = 12.6 \%$   
 Optimum water content  $w_{Pr} = 11.0 \%$

97.0 % of proctor density  $\rho_d = 1.841 \text{ g/cm}^3$   
 (o) 97.0 % of proctor density  $\rho_d = 1.905 \text{ g/cm}^3$

min/max water content  $w = 10.6 / 15.0 \%$   
 min/max water content  $w = 9.0 / 13.3 \%$

95.0 % of proctor density  $\rho_d = 1.803 \text{ g/cm}^3$   
 (o) 95.0 % of proctor density  $\rho_d = 1.865 \text{ g/cm}^3$

min/max water content  $w = 9.9 / - \%$   
 min/max water content  $w = 8.3 / - \%$