

COMUNE DI PIANORO
Provincia di Bologna

*Discarica per rifiuti inerti "Ca' Cirenaica" con finalità di
recupero geomorfologico*

REV.	DATA	DESCRIZIONE	REDATTO	VERIFICATO	APPROVATO
5					
4					
3					
2					
1	12/11/21	Prima emissione	CDL	FO	GL
0					

COMMITTENTE:



PROGETTISTI:



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GRUPPO DI LAVORO:

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Stefano Orlandi

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Integrazioni prestazioni specialistiche: Giorgio Lupoi

PROGETTO DEFINITIVO DELL'IMPIANTO

Categoria documento Rapporto di Testo	Codice Elaborato 1.2.3	Scala -
Titolo Output verifiche di stabilità dell'abbancamento	Data di emissione 12 Novembre 2021	

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO COMUNE DI PIANORO (BO)

ALLEGATO 3 – VERIFICHE DI STABILITA' GLOBALE – SLV – CER 01.05.99

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE A1 DRENATA – SUPERFICI CIRCOLARI - STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

01_STATICA_GENERICO

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA_D

Model: **Mohr-Coulomb**
Unit Weight: **18 kN/m³**
Cohesion': **0 kPa**
Phi': **33 °**
Phi-B: **0 °**

ABBANCAMENTO_D

Model: **Mohr-Coulomb**
Unit Weight: **17 kN/m³**
Cohesion': **8 kPa**
Phi': **19 °**
Phi-B: **0 °**

PREVAM_D

Model: **Mohr-Coulomb**
Unit Weight: **18 kN/m³**
Cohesion': **8 kPa**
Phi': **16 °**
Phi-B: **0 °**

B2_D

Model: **Mohr-Coulomb**
Unit Weight: **21 kN/m³**
Cohesion': **20 kPa**
Phi': **19 °**
Phi-B: **0 °**

B1_D

Model: **Mohr-Coulomb**
Unit Weight: **20 kN/m³**
Cohesion': **12 kPa**
Phi': **17 °**
Phi-B: **0 °**

A_D

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Model: **Mohr-Coulomb**

Unit Weight: **19 kN/m³**

Cohesion': **8 kPa**

Phi': **20 °**

Phi-B: **0 °**

SLIP SURFACE ENTRY AND EXIT

Left Projection: **Range**

Left-Zone Left Coordinate: **(2'543; 217.2471) m**

Left-Zone Right Coordinate: **(2'735.6513; 263.7442) m**

Left-Zone Increment: **30**

Right Projection: **Range**

Right-Zone Left Coordinate: **(2'742.3895; 266.62446) m**

Right-Zone Right Coordinate: **(2'904; 310.09201) m**

Right-Zone Increment: **30**

Radius Increments: **10**

SLIP SURFACE LIMITS

Left Coordinate: **(2'503.8651; 214.1798) m**

Right Coordinate: **(2'958.6264; 310) m**

POINTS

	X (m)	Y (m)
Point 1	2'684.2087	228.35588
Point 2	2'724.2998	239.95541
Point 3	2'736.3441	239.95541
Point 4	2'758.0362	247.69553
Point 5	2'796.6632	262.95049
Point 6	2'805.7118	264.06507
Point 7	2'826.8057	275.29284
Point 8	2'855.6858	290.17432

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 9	2'819.4267	290.1635
Point 10	2'797.1537	280.1635
Point 11	2'786.0419	280.1635
Point 12	2'763.2592	270.1635
Point 13	2'750.6689	270.1635
Point 14	2'729.6139	261.1635
Point 15	2'726.4983	260.1635
Point 16	2'710.2761	260.1635
Point 17	2'689.0716	250.1635
Point 18	2'679.0181	250.1635
Point 19	2'647.5301	240.1635
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Point 22	2'597.2415	230.1635
Point 23	2'606.9978	222.00483
Point 24	2'621.8409	222.60238
Point 25	2'643.8188	223.12299
Point 26	2'661.1175	223.17482
Point 27	2'662.0909	223.28793
Point 28	2'671.1205	224.38582
Point 29	2'674.4302	225.38974
Point 30	2'663.9335	220.72482
Point 31	2'586.099	221.1635

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 32	2'568.3659	221.1635
Point 33	2'553.8651	218.09868
Point 34	2'503.8651	214.1798
Point 35	2'503.8651	197.44202
Point 36	2'574.8075	207.79982
Point 37	2'616.4235	214.74482
Point 38	2'639.6005	216.75382
Point 39	2'664.6205	218.82482
Point 40	2'668.2129	221.07761
Point 41	2'670.3005	222.38982
Point 42	2'503.8651	193.40893
Point 43	2'575.1505	205.82982
Point 44	2'616.6755	212.75882
Point 45	2'639.8215	214.76582
Point 46	2'840.6827	279.25382
Point 47	2'853.5687	285.97282
Point 48	2'859.9	288.93882
Point 49	2'865.8159	290.26403
Point 50	2'878.1227	298.09482
Point 51	2'888.4944	304.69428
Point 52	2'899.1878	307.25806
Point 53	2'958.6264	307.61471
Point 54	2'958.6264	310

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 55	2'908.6267	310.1635
Point 56	2'894.3544	309.94296
Point 57	2'885.432	307.30817
Point 58	2'868.7689	296.17482
Point 59	2'862.5325	292.00794
Point 60	2'858	291
Point 61	2'503.8651	189.67263
Point 62	2'576.9097	202.38882
Point 63	2'618.2507	209.28682
Point 64	2'650.0603	212.9008
Point 65	2'665.4008	216.44142
Point 66	2'687.5642	225.61062
Point 67	2'724.934	235.67774
Point 68	2'737.6727	236.39808
Point 69	2'753.7327	241.80982
Point 70	2'797.8977	259.48582
Point 71	2'806.9644	261.17663
Point 72	2'503.8651	159.9977
Point 73	2'958.6264	159.9977
Point 74	2'579.2415	221.1635

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

REGIONS

	Material	Points	Area (m²)
Region 1	Abbancamento_d	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23;24;25;26;27;28;29	4'63 2.5
Region 2	Prevam_d	30;29;28;27;26;25;24;23;31;74;32;33;34;35;36;37;38	1'75 4.1
Region 3	A_d	39;40;41;29;30;38;37;36;35;42;43;44;45	408. 51
Region 4	B1_d	46;47;48;49;50;51;52;53;54;55;56;57;58;59;60;8;7;6;5;4;3;2;1;29;41;40;39;45;44;43;42;61;62;63;64;65;66;67;68;69;70;71	1'63 7.7
Region 5	B2_d	53;52;51;50;49;48;47;46;71;70;69;68;67;66;65;64;63;62;61;72;73	38'4 49
Region 6	Unghia_d	22;74;31;23	120. 22

CURRENT SLIP SURFACE

Slip Surface: 1'895
 F of S: 1.361
 Volume: 4'564.5143 m³
 Weight: 78'332.551 kN
 Resisting Moment: 10'325'758 kN-m
 Activating Moment: 7'590'288.2 kN-m
 Resisting Force: 25'215.755 kN
 Activating Force: 18'532.085 kN
 F of S Rank (Analysis): 1 of 10'571 slip surfaces
 F of S Rank (Query): 1 of 10'571 slip surfaces
 Exit: (2'576.2279; 221.1635) m
 Entry: (2'834.8076; 290.16809) m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Radius: 390.53106 m

Center: (2'610.9199; 610.15061) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'577.7347	221.035	-49.035	2.9453597	0.84456831	8
Slice 2	2'582.6703	220.6578	-49.035	41.773055	11.978231	8
Slice 3	2'591.6703	220.13414	- 49.034976	135.91224	38.972208	8
Slice 4	2'602.1197	219.74921	- 49.034983	192.47121	55.190232	8
Slice 5	2'607.7422	219.63319	-49.035	191.45824	54.899767	8
Slice 6	2'611.8252	219.63487	-49.035	214.97941	61.644353	8
Slice 7	2'618.5024	219.70745	-49.035	260.18154	74.605855	8
Slice 8	2'627.952	220.03909	- 49.034978	318.89876	91.442749	8
Slice 9	2'638.941	220.65682	- 49.034991	347.98832	99.784046	8
Slice 10	2'645.6745	221.17354	- 49.034989	337.13556	96.672066	8
Slice 11	2'650.927	221.68918	- 49.034971	344.59399	98.810737	8
Slice	2'657.7207	222.44906	-	364.92573	104.64077	8

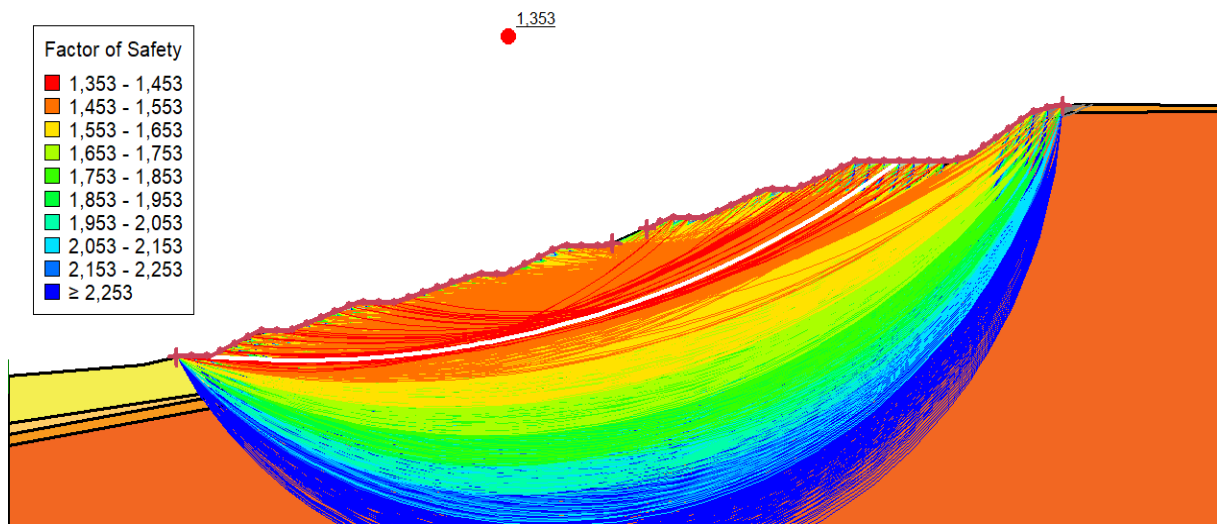
	Committente		Oggetto del servizio
	GE.R.IN		DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

12			49.034984			
Slice 13	2'661.6042	222.92281	-49.035	375.55068	107.68742	8
Slice 14	2'666.6057	223.63697	-49.035	387.45701	111.10151	8
Slice 15	2'671.7633	224.38881	-49.035	399.2294	114.47719	8
Slice 16	2'672.9107	224.57131	-49.035	404.78656	147.33026	8
Slice 17	2'673.9227	224.73539	-49.035	405.62538	124.01212	12
Slice 18	2'676.7242	225.21049	-49.035	412.01269	125.96492	12
Slice 19	2'681.6134	226.08033	-49.035	407.99116	124.73541	12
Slice 20	2'686.6402	227.0386	- 49.035001	390.08394	119.26063	12
Slice 21	2'694.3727	228.67886	- 49.035007	399.93018	122.27093	12
Slice 22	2'704.975	231.15414	-49.03501	433.60715	132.56701	12
Slice 23	2'713.782	233.42698	- 49.034998	430.56836	131.63796	12
Slice 24	2'720.7939	235.4122	- 49.034998	393.92133	120.43384	12
Slice 25	2'725.3991	236.77718	-49.035	368.32352	112.6078	12
Slice 26	2'728.0561	237.60402	-49.035	359.16998	109.80928	12

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Slice 27	2'732.4562	239.02462	-49.035	356.96155	109.1341	12
Slice 28	2'739.1411	241.29116	- 49.035001	358.97377	123.60458	8
Slice 29	2'746.8263	244.0534	- 49.035001	362.30052	124.75007	8
Slice 30	2'756.9641	248.01866	- 49.035002	322.46214	111.03262	8
Slice 31	2'767.0563	252.21378	- 49.035001	281.32154	96.866774	8
Slice 32	2'774.6505	255.62374	- 49.034999	278.26701	95.815014	8
Slice 33	2'782.2448	259.23118	- 49.034993	272.96787	93.990374	8
Slice 34	2'791.5978	263.98484	- 49.034997	227.41985	78.306934	8
Slice 35	2'800.8659	268.95126	- 49.035013	179.76553	61.898236	8
Slice 36	2'808.2902	273.19219	-49.03501	167.08438	57.531765	8
Slice 37	2'815.7145	277.65298	- 49.034994	151.56426	52.187761	8
Slice 38	2'823.2719	282.431	- 49.034971	107.61534	37.054934	8
Slice 39	2'830.9624	287.54534	- 49.035043	34.365934	11.83314	8

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SEZIONE A1 DRENATA – SUPERFICI CIRCOLARI – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Use Passive Mode: **No**

Slip Surface Option: **Entry and Exit**

Critical slip surfaces saved: **1**

Resisting Side Maximum Convex Angle: **1 °**

Driving Side Maximum Convex Angle: **5 °**

Optimize Critical Slip Surface Location: **No**

Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

Phi': **40 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

PREVAM_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **10 kPa**

Phi': **20 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

B1_K

Model: **Mohr-Coulomb**

Unit Weight: **20 kN/m³**

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Cohesion': 15 kPa

Phi': 22 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

B2_K

Model: Mohr-Coulomb

Unit Weight: 21 kN/m³

Cohesion': 25 kPa

Phi': 24 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

A_K

Model: Mohr-Coulomb

Unit Weight: 19 kN/m³

Cohesion': 10 kPa

Phi': 25 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb

Unit Weight: 17 kN/m³

Cohesion': 10 kPa

Phi': 24 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range

Left-Zone Left Coordinate: (2'550.3162; 217.82053) m

Left-Zone Right Coordinate: (2'733; 262.61089) m

Left-Zone Increment: 20

Right Projection: Range

Right-Zone Left Coordinate: (2'744.2019; 267.39917) m

Right-Zone Right Coordinate: (2'883.4741; 306.00001) m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Right-Zone Increment: 20

Radius Increments: 10

SLIP SURFACE LIMITS

Left Coordinate: (2'503.8651; 214.1798) m

Right Coordinate: (2'958.6264; 310) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082

Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
Point 1	2'684.2087	228.35588
Point 2	2'724.2998	239.95541
Point 3	2'736.3441	239.95541
Point 4	2'758.0362	247.69553
Point 5	2'796.6632	262.95049
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Point 14	2'729.6139	261.1635
Point 15	2'726.4983	260.1635
Point 16	2'710.2761	260.1635
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Point 18	2'679.0181	250.1635
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Point 29	2'674.4302	225.38974
Point 30	2'663.9335	220.72482
Point 31	2'586.099	221.1635
Point 32	2'568.3659	221.1635
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Point 34	2'503.8651	214.1798
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Point 36	2'574.8075	207.79982

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Point 37	2'616.4235	214.74482
Point 38	2'639.6005	216.75382
Point 39	2'664.6205	218.82482
Point 40	2'668.2129	221.07761
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Point 45	2'639.8215	214.76582
Point 46	2'840.6827	279.25382
Point 47	2'853.5687	285.97282
Point 48	2'859.9	288.93882
Point 49	2'865.8159	290.26403
Point 50	2'878.1227	298.09482
Point 51	2'888.4944	304.69428
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Point 54	2'958.6264	310
Point 55	2'908.6267	310.1635
Point 56	2'894.3544	309.94296
Point 57	2'885.432	307.30817
Point 58	2'868.7689	296.17482
Point 59	2'862.5325	292.00794

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 60	2'858	291
Point 61	2'503.8651	189.67263
Point 62	2'576.9097	202.38882
Point 63	2'618.2507	209.28682
Point 64	2'650.0603	212.9008
Point 65	2'665.4008	216.44142
Point 66	2'687.5642	225.61062
Point 67	2'724.934	235.67774
Point 68	2'737.6727	236.39808
Point 69	2'753.7327	241.80982
Point 70	2'797.8977	259.48582
Point 71	2'806.9644	261.17663
Point 72	2'503.8651	159.9977
Point 73	2'958.6264	159.9977
Point 74	2'579.2415	221.1635

REGIONS

	Material	Points	Area (m ²)
Region 1	Abbanca mento_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23;24;25;26;27; 28;29	4'63 2.5
Region 2	Prevam_k	30;29;28;27;26;25;24;23;31;74;32;33;34;35;36;37;38	1'75 4.1

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Regi on 3	A_k	39;40;41;29;30;38;37;36;35;42;43;44;45	408. 51
Regi on 4	B1_k	46;47;48;49;50;51;52;53;54;55;56;57;58;59;60;8;7;6;5;4;3;2;1;29;41;40;39 ;45;44;43;42;61;62;63;64;65;66;67;68;69;70;71	1'63 7.7
Regi on 5	B2_k	53;52;51;50;49;48;47;46;71;70;69;68;67;66;65;64;63;62;61;72;73	38'4 49
Regi on 6	Unghia_k	22;74;31;23	120. 22

CURRENT SLIP SURFACE

Slip Surface: 839
 F of S: 1.297
 Volume: 4'644.4718 m³
 Weight: 79'753.985 kN
 Resisting Moment: 13'449'478 kN-m
 Activating Moment: 10'366'801 kN-m
 Resisting Force: 32'954.969 kN
 Activating Force: 25'414.986 kN
 F of S Rank (Analysis): 1 of 4'851 slip surfaces
 F of S Rank (Query): 1 of 4'851 slip surfaces
 Exit: (2'578.6751; 221.1635) m
 Entry: (2'835.9704; 290.16844) m
 Radius: 389.19136 m
 Center: (2'612.5946; 608.87393) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'578.9583	221.13893	-49.035	1.1758205	0	10.352517

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI


Slice 2	2'582.6703	220.84994	-49.035	40.138349	0	23.846212
Slice 3	2'591.6703	220.28552	- 49.034976	139.91984	0	58.331451
Slice 4	2'602.1197	219.85417	- 49.034983	200.80376	0	79.239949
Slice 5	2'607.7422	219.71354	-49.035	200.61419	0	79.063792
Slice 6	2'611.8252	219.69765	-49.035	225.81633	0	87.760656
Slice 7	2'618.5024	219.74174	-49.035	273.97962	0	104.44203
Slice 8	2'627.952	220.03378	- 49.034978	336.30398	0	126.15169
Slice 9	2'638.941	220.60613	- 49.034991	367.21188	0	137.13273
Slice 10	2'645.6745	221.09542	- 49.034989	355.9468	0	133.40892
Slice 11	2'650.927	221.58993	- 49.034972	363.56009	0	136.29703
Slice 12	2'657.7207	222.32269	- 49.034984	384.27116	0	143.9184
Slice 13	2'661.6042	222.78102	-49.035	394.95313	0	147.90808
Slice 14	2'666.6057	223.47552	-49.035	406.71563	0	152.39242
Slice 15	2'671.4454	224.15794	-49.035	417.5397	0	156.5682
Slice	2'672.4273	224.30987	-49.035	426.83298	0	200.35768

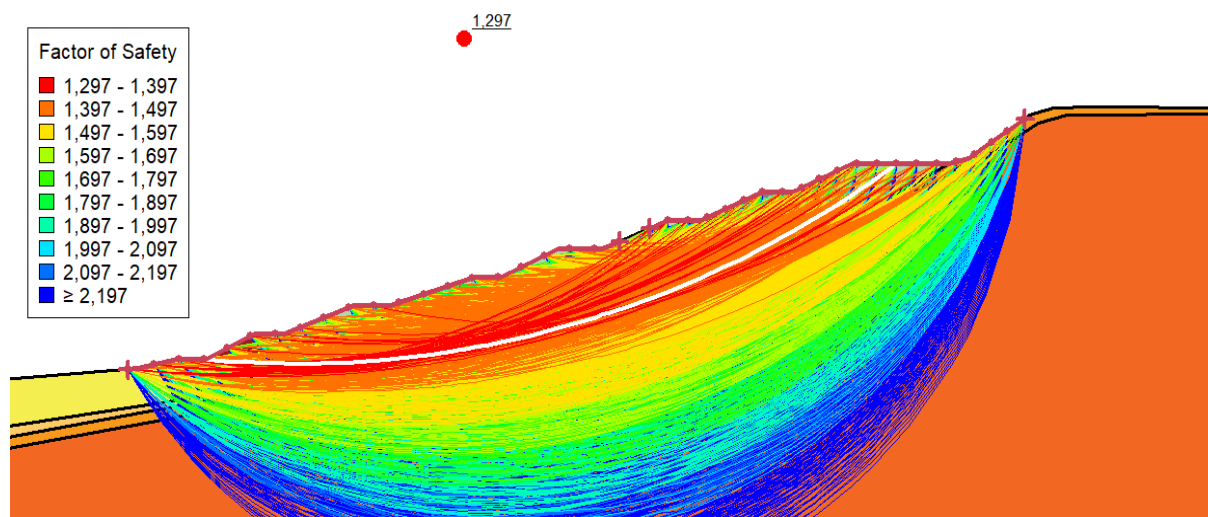
	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

16						
Slice 17	2'673.7573	224.51917	-49.035	426.91402	0	180.79725
Slice 18	2'676.7242	225.00949	-49.035	433.61316	0	183.67698
Slice 19	2'681.6134	225.8604	-49.035	428.70413	0	182.1976
Slice 20	2'686.6402	226.79928	-49.035	409.40252	0	175.08454
Slice 21	2'694.3727	228.40993	- 49.035005	418.06801	0	179.26396
Slice 22	2'704.975	230.84483	- 49.035006	450.22839	0	193.12109
Slice 23	2'713.782	233.08431	- 49.034999	445.07824	0	192.03446
Slice 24	2'720.7939	235.04307	- 49.034999	406.33991	0	177.29464
Slice 25	2'725.3991	236.3907	-49.035	379.50841	0	166.99198
Slice 26	2'728.0561	237.20755	-49.035	369.75747	0	163.31929
Slice 27	2'732.979	238.78611	-49.035	366.54723	0	162.44564
Slice 28	2'739.9253	241.12068	-49.035	367.52799	0	163.388
Slice 29	2'747.0877	243.67951	-49.035	369.62847	0	164.74671
Slice 30	2'751.9502	245.48975	-49.035	361.8337	0	161.90609

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 31	2'758.2453	248.00476	- 49.035001	320.03004	0	153.50008
Slice 32	2'767.0563	251.67037	- 49.035001	286.13033	0	138.82344
Slice 33	2'774.6505	255.05145	- 49.034999	282.64023	0	137.57408
Slice 34	2'782.2448	258.62982	- 49.034995	277.13254	0	135.33474
Slice 35	2'791.5978	263.34734	- 49.034998	232.06122	0	115.22732
Slice 36	2'800.8659	268.2776	- 49.035012	185.28264	0	94.214378
Slice 37	2'808.2902	272.48916	- 49.035011	173.15003	0	88.751467
Slice 38	2'815.7145	276.9202	- 49.034999	158.3594	0	82.046037
Slice 39	2'823.5626	281.85987	- 49.034973	112.96854	0	61.504268
Slice 40	2'831.8345	287.34826	- 49.035038	35.5928	0	26.580283

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI



SEZIONE A1 DRENATA – SCORRIMENTO LUNGO BASE - STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

02_STATICA_BASE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Fully-Specified](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Critical slip surfaces saved: **1**
 Resisting Side Maximum Convex Angle: **1 °**
 Driving Side Maximum Convex Angle: **5 °**
 Optimize Critical Slip Surface Location: **No**
 Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **0.1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_D

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

Phi': **33 °**

Phi-B: **0 °**

ABBANCAMENTO_D

Model: **Mohr-Coulomb**

Unit Weight: **17 kN/m³**

Cohesion': **8 kPa**

Phi': **19 °**

Phi-B: **0 °**

PREVAM_D

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **8 kPa**

Phi': **16 °**

Phi-B: **0 °**

B2_D

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Model: **Mohr-Coulomb**
 Unit Weight: **21 kN/m³**
 Cohesion': **20 kPa**
 Phi': **19 °**
 Phi-B: **0 °**

B1_D

Model: **Mohr-Coulomb**
 Unit Weight: **20 kN/m³**
 Cohesion': **12 kPa**
 Phi': **17 °**
 Phi-B: **0 °**

A_D

Model: **Mohr-Coulomb**
 Unit Weight: **19 kN/m³**
 Cohesion': **8 kPa**
 Phi': **20 °**
 Phi-B: **0 °**

SLIP SURFACE LIMITS

Left Coordinate: **(2'503.8651; 214.1798) m**
 Right Coordinate: **(2'958.6264; 310) m**

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	2'579.2415	221.1635
	2'586.099	221.1635
	2'606.9978	222.00483
	2'621.8409	222.60238
	2'643.8188	223.12299

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	2'661.1175	223.17482
	2'662.0909	223.28793
	2'671.1205	224.38582
	2'674.4302	225.38974
	2'684.2087	228.35588
	2'724.2998	239.95541
	2'736.3441	239.95541
	2'758.0362	247.69553
	2'796.6632	262.95049
	2'805.7118	264.06507
	2'826.8057	275.29284
	2'855.6858	290.17432

POINTS

	X (m)	Y (m)
Point 1	2'684.2087	228.35588
Point 2	2'724.2998	239.95541
Point 3	2'736.3441	239.95541
Point 4	2'758.0362	247.69553
Point 5	2'796.6632	262.95049
Point 6	2'805.7118	264.06507
Point 7	2'826.8057	275.29284
Point 8	2'855.6858	290.17432

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 9	2'819.4267	290.1635
Point 10	2'797.1537	280.1635
Point 11	2'786.0419	280.1635
Point 12	2'763.2592	270.1635
Point 13	2'750.6689	270.1635
Point 14	2'729.6139	261.1635
Point 15	2'726.4983	260.1635
Point 16	2'710.2761	260.1635
Point 17	2'689.0716	250.1635
Point 18	2'679.0181	250.1635
Point 19	2'647.5301	240.1635
Point 20	2'634.0631	240.1635
Point 21	2'608.4867	230.1635
Point 22	2'597.2415	230.1635
Point 23	2'606.9978	222.00483
Point 24	2'621.8409	222.60238
Point 25	2'643.8188	223.12299
Point 26	2'661.1175	223.17482
Point 27	2'662.0909	223.28793
Point 28	2'671.1205	224.38582
Point 29	2'674.4302	225.38974
Point 30	2'663.9335	220.72482
Point 31	2'586.099	221.1635

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 32	2'568.3659	221.1635
Point 33	2'553.8651	218.09868
Point 34	2'503.8651	214.1798
Point 35	2'503.8651	197.44202
Point 36	2'574.8075	207.79982
Point 37	2'616.4235	214.74482
Point 38	2'639.6005	216.75382
Point 39	2'664.6205	218.82482
Point 40	2'668.2129	221.07761
Point 41	2'670.3005	222.38982
Point 42	2'503.8651	193.40893
Point 43	2'575.1505	205.82982
Point 44	2'616.6755	212.75882
Point 45	2'639.8215	214.76582
Point 46	2'840.6827	279.25382
Point 47	2'853.5687	285.97282
Point 48	2'859.9	288.93882
Point 49	2'865.8159	290.26403
Point 50	2'878.1227	298.09482
Point 51	2'888.4944	304.69428
Point 52	2'899.1878	307.25806
Point 53	2'958.6264	307.61471
Point 54	2'958.6264	310

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 55	2'908.6267	310.1635
Point 56	2'894.3544	309.94296
Point 57	2'885.432	307.30817
Point 58	2'868.7689	296.17482
Point 59	2'862.5325	292.00794
Point 60	2'858	291
Point 61	2'503.8651	189.67263
Point 62	2'576.9097	202.38882
Point 63	2'618.2507	209.28682
Point 64	2'650.0603	212.9008
Point 65	2'665.4008	216.44142
Point 66	2'687.5642	225.61062
Point 67	2'724.934	235.67774
Point 68	2'737.6727	236.39808
Point 69	2'753.7327	241.80982
Point 70	2'797.8977	259.48582
Point 71	2'806.9644	261.17663
Point 72	2'503.8651	159.9977
Point 73	2'958.6264	159.9977
Point 74	2'579.2415	221.1635

REGIONS

	Material	Points	Area
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

			(m ²)
Regi on 1	Abbancam ento_d	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23;24;25;26;27; 28;29	4'63 2.5
Regi on 2	Prevam_d	30;29;28;27;26;25;24;23;31;74;32;33;34;35;36;37;38	1'75 4.1
Regi on 3	A_d	39;40;41;29;30;38;37;36;35;42;43;44;45	408. 51
Regi on 4	B1_d	46;47;48;49;50;51;52;53;54;55;56;57;58;59;60;8;7;6;5;4;3;2;1;29;41;40;39 ;45;44;43;42;61;62;63;64;65;66;67;68;69;70;71	1'63 7.7
Regi on 5	B2_d	53;52;51;50;49;48;47;46;71;70;69;68;67;66;65;64;63;62;61;72;73	38'4 49
Regi on 6	Unghia_d	22;74;31;23	120. 22

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 1.555
 Volume: 4'752.7109 m³
 Weight: 80'916.302 kN
 Resisting Moment: 2'315'929.2 kN-m
 Activating Moment: 1'488'637.7 kN-m
 Resisting Force: 29'176.602 kN
 Activating Force: 18'762.477 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (2'579.2415; 221.1635) m
 Entry: (2'855.6858; 290.17432) m
 Radius: 124.96334 m
 Center: (2'704.5429; 307.42703) m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'582.6703	221.1635	-49.035	31.156614	20.233342	0
Slice 2	2'591.6703	221.38778	-49.034974	108.74019	70.616704	0
Slice 3	2'602.1197	221.80845	-49.034977	150.73154	97.886206	0
Slice 4	2'607.7422	222.0348	-49.035	143.17521	49.299179	8
Slice 5	2'615.1638	222.33357	-49.035	184.4297	63.504237	8
Slice 6	2'627.952	222.74714	-49.034973	268.63715	92.499187	8
Slice 7	2'638.941	223.00744	-49.034978	309.11827	106.43796	8
Slice 8	2'645.6745	223.12855	-49.034989	311.78705	107.35689	8
Slice 9	2'654.3238	223.15446	-49.034961	352.12548	121.24653	8
Slice 10	2'661.6042	223.23138	-49.035	372.90343	128.40095	8
Slice 11	2'666.6057	223.83687	-49.035	388.7225	133.84789	8
Slice 12	2'672.7753	224.88778	-49.035	370.85589	127.69592	8
Slice	2'676.7242	226.08557	-49.035	370.87038	127.70091	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

13						
Slice 14	2'681.6134	227.56864	-49.035	358.06149	123.29046	8
Slice 15	2'686.6402	229.05937	-49.035006	336.0229	115.70196	8
Slice 16	2'694.3727	231.29663	-49.035025	338.75804	116.64375	8
Slice 17	2'704.975	234.36417	-49.035044	367.29096	126.46842	8
Slice 18	2'713.782	236.91231	-49.034979	365.18918	125.74472	8
Slice 19	2'720.7939	238.94104	-49.034991	332.41276	114.45889	8
Slice 20	2'725.3991	239.95541	-49.035	367.64894	126.59168	8
Slice 21	2'728.0561	239.95541	-49.035	376.13157	129.51248	8
Slice 22	2'732.979	239.95541	-49.035	409.99176	141.17148	8
Slice 23	2'739.9253	241.23324	-49.035	366.37441	126.15283	8
Slice 24	2'747.0877	243.78891	-49.035	373.57334	128.63161	8
Slice 25	2'754.3526	246.38114	-49.035	357.13921	122.97289	8
Slice 26	2'760.6477	248.72689	-49.035	315.95315	108.79139	8
Slice 27	2'768.9549	252.00764	-49.035	304.59622	104.88089	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 28	2'780.3462	256.50643	-49.035	313.17235	107.83389	8
Slice 29	2'791.3526	260.85316	-49.035	286.69005	98.715302	8
Slice 30	2'796.9084	262.9807	-49.035	284.23832	97.871103	8
Slice 31	2'801.4327	263.53799	-49.035	306.14117	105.41286	8
Slice 32	2'812.5693	267.71512	-49.035032	277.28256	95.476043	8
Slice 33	2'823.1162	273.32901	-49.035017	244.00835	84.018814	8
Slice 34	2'831.619	277.77309	-49.035016	181.76131	62.585439	8
Slice 35	2'841.2458	282.73358	-49.035	109.40849	37.672363	8
Slice 36	2'850.8724	287.69407	-49.034984	35.298208	12.154148	8

SEZIONE A1 DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: **Meters**
 Time(t) Units: **Seconds**
 Force(F) Units: **Kilonewtons**
 Pressure(p) Units: **kPa**
 Strength Units: **kPa**
 Unit Weight of Water: **9.807 kN/m³**
 View: **2D**
 Element Thickness: **1**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)

Parent: [Insitu](#)

Method: [Morgenstern-Price](#)

Settings

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Fully-Specified](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesionⁱ: [0 kPa](#)

Phiⁱ: [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

PREVAM_K

Model: **Mohr-Coulomb**
 Unit Weight: **18 kN/m³**
 Cohesion': **10 kPa**
 Phi': **20 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

B1_K

Model: **Mohr-Coulomb**
 Unit Weight: **20 kN/m³**
 Cohesion': **15 kPa**
 Phi': **22 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

B2_K

Model: **Mohr-Coulomb**
 Unit Weight: **21 kN/m³**
 Cohesion': **25 kPa**
 Phi': **24 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

A_K

Model: **Mohr-Coulomb**
 Unit Weight: **19 kN/m³**
 Cohesion': **10 kPa**
 Phi': **25 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

ABBANCAMENTO_K

Model: **Mohr-Coulomb**
 Unit Weight: **17 kN/m³**
 Cohesion': **10 kPa**
 Phi': **24 °**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °


SLIP SURFACE LIMITS

Left Coordinate: (2'503.8651; 214.1798) m
Right Coordinate: (2'958.6264; 310) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	2'579.2415	221.1635
	2'586.099	221.1635
	2'606.9978	222.00483
	2'621.8409	222.60238
	2'643.8188	223.12299
	2'661.1175	223.17482
	2'662.0909	223.28793
	2'671.1205	224.38582
	2'674.4302	225.38974
	2'684.2087	228.35588
	2'724.2998	239.95541
	2'736.3441	239.95541
	2'758.0362	247.69553
	2'796.6632	262.95049

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	2'805.7118	264.06507
	2'826.8057	275.29284
	2'855.6858	290.17432

SEISMIC COEFFICIENTS

Horz Seismic Coef.: **0.082**

Vert Seismic Coef.: **0.041**

POINTS

	X (m)	Y (m)
Point 1	2'684.2087	228.35588
Point 2	2'724.2998	239.95541
Point 3	2'736.3441	239.95541
Point 4	2'758.0362	247.69553
Point 5	2'796.6632	262.95049
Point 6	2'805.7118	264.06507
Point 7	2'826.8057	275.29284
Point 8	2'855.6858	290.17432
Point 9	2'819.4267	290.1635
Point 10	2'797.1537	280.1635
Point 11	2'786.0419	280.1635
Point 12	2'763.2592	270.1635
Point 13	2'750.6689	270.1635
Point 14	2'729.6139	261.1635

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 15	2'726.4983	260.1635
Point 16	2'710.2761	260.1635
Point 17	2'689.0716	250.1635
Point 18	2'679.0181	250.1635
Point 19	2'647.5301	240.1635
Point 20	2'634.0631	240.1635
Point 21	2'608.4867	230.1635
Point 22	2'597.2415	230.1635
Point 23	2'606.9978	222.00483
Point 24	2'621.8409	222.60238
Point 25	2'643.8188	223.12299
Point 26	2'661.1175	223.17482
Point 27	2'662.0909	223.28793
Point 28	2'671.1205	224.38582
Point 29	2'674.4302	225.38974
Point 30	2'663.9335	220.72482
Point 31	2'586.099	221.1635
Point 32	2'568.3659	221.1635
Point 33	2'553.8651	218.09868
Point 34	2'503.8651	214.1798
Point 35	2'503.8651	197.44202
Point 36	2'574.8075	207.79982
Point 37	2'616.4235	214.74482

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 38	2'639.6005	216.75382
Point 39	2'664.6205	218.82482
Point 40	2'668.2129	221.07761
Point 41	2'670.3005	222.38982
Point 42	2'503.8651	193.40893
Point 43	2'575.1505	205.82982
Point 44	2'616.6755	212.75882
Point 45	2'639.8215	214.76582
Point 46	2'840.6827	279.25382
Point 47	2'853.5687	285.97282
Point 48	2'859.9	288.93882
Point 49	2'865.8159	290.26403
Point 50	2'878.1227	298.09482
Point 51	2'888.4944	304.69428
Point 52	2'899.1878	307.25806
Point 53	2'958.6264	307.61471
Point 54	2'958.6264	310
Point 55	2'908.6267	310.1635
Point 56	2'894.3544	309.94296
Point 57	2'885.432	307.30817
Point 58	2'868.7689	296.17482
Point 59	2'862.5325	292.00794
Point 60	2'858	291

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 61	2'503.8651	189.67263
Point 62	2'576.9097	202.38882
Point 63	2'618.2507	209.28682
Point 64	2'650.0603	212.9008
Point 65	2'665.4008	216.44142
Point 66	2'687.5642	225.61062
Point 67	2'724.934	235.67774
Point 68	2'737.6727	236.39808
Point 69	2'753.7327	241.80982
Point 70	2'797.8977	259.48582
Point 71	2'806.9644	261.17663
Point 72	2'503.8651	159.9977
Point 73	2'958.6264	159.9977
Point 74	2'579.2415	221.1635

REGIONS

	Material	Points	Area (m²)
Region 1	Abbanca mento_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23;24;25;26;27; 28;29	4'63 2.5
Region 2	Prevam_k	30;29;28;27;26;25;24;23;31;74;32;33;34;35;36;37;38	1'75 4.1
Region	A_k	39;40;41;29;30;38;37;36;35;42;43;44;45	408.

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

3			51
Regi on 4	B1_k	46;47;48;49;50;51;52;53;54;55;56;57;58;59;60;8;7;6;5;4;3;2;1;29;41;40;39 ;45;44;43;42;61;62;63;64;65;66;67;68;69;70;71	1'63 7.7
Regi on 5	B2_k	53;52;51;50;49;48;47;46;71;70;69;68;67;66;65;64;63;62;61;72;73	38'4 49
Regi on 6	Unghia_k	22;74;31;23	120. 22

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 1.480
 Volume: 4'752.7109 m³
 Weight: 80'916.302 kN
 Resisting Moment: 2'987'631.8 kN-m
 Activating Moment: 2'018'081.2 kN-m
 Resisting Force: 37'640.697 kN
 Activating Force: 25'429.358 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (2'579.2415; 221.1635) m
 Entry: (2'855.6858; 290.17432) m
 Radius: 124.96334 m
 Center: (2'704.5429; 307.42703) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'582.6703	221.1635	-49.035	32.587701	0	26.188912
Slice 2	2'591.6703	221.38778	-49.034974	114.07117	0	91.360432

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 3	2'602.1197	221.80845	-49.034977	159.8165	0	126.63524
Slice 4	2'607.7422	222.0348	-49.035	151.49373	0	73.816253
Slice 5	2'615.1638	222.33357	-49.035	195.05705	0	92.172972
Slice 6	2'627.952	222.74714	-49.034973	284.7103	0	129.61903
Slice 7	2'638.941	223.00744	-49.034978	328.21343	0	147.59207
Slice 8	2'645.6745	223.12855	-49.034989	332.65102	0	148.73371
Slice 9	2'654.3238	223.15446	-49.034961	375.96957	0	166.62807
Slice 10	2'661.6042	223.23138	-49.035	391.24038	0	175.95572
Slice 11	2'666.6057	223.83687	-49.035	407.2653	0	182.99077
Slice 12	2'672.7753	224.88778	-49.035	377.54745	0	175.13711
Slice 13	2'676.7242	226.08557	-49.035	377.19152	0	175.14802
Slice 14	2'681.6134	227.56864	-49.035	363.83494	0	169.44848
Slice 15	2'686.6402	229.05937	-49.035006	341.9519	0	159.63234
Slice 16	2'694.3727	231.29663	-49.035025	344.14541	0	160.85588
Slice	2'704.975	234.36417	-49.035044	372.25403	0	173.56982

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

17						
Slice 18	2'713.782	236.91231	-49.034979	369.61276	0	172.63691
Slice 19	2'720.7939	238.94104	-49.034991	336.15713	0	158.03979
Slice 20	2'725.3991	239.95541	-49.035	390.81378	0	173.36106
Slice 21	2'728.0561	239.95541	-49.035	399.60577	0	177.13328
Slice 22	2'732.979	239.95541	-49.035	435.06526	0	192.19092
Slice 23	2'739.9253	241.23324	-49.035	365.50819	0	173.21398
Slice 24	2'747.0877	243.78891	-49.035	372.5489	0	176.41784
Slice 25	2'754.3526	246.38114	-49.035	356.04323	0	169.09151
Slice 26	2'760.6477	248.72689	-49.035	313.07965	0	150.74851
Slice 27	2'768.9549	252.00764	-49.035	301.92427	0	145.67766
Slice 28	2'780.3462	256.50643	-49.035	310.88997	0	149.47664
Slice 29	2'791.3526	260.85316	-49.035	285.01507	0	137.66144
Slice 30	2'796.9084	262.9807	-49.035	293.13034	0	136.4711
Slice 31	2'801.4327	263.53799	-49.035	315.51794	0	146.22718

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 32	2'812.5693	267.71512	-49.035032	272.41952	0	133.41258
Slice 33	2'823.1162	273.32901	-49.035017	240.85683	0	118.60855
Slice 34	2'831.619	277.77309	-49.035016	180.25453	0	90.915058
Slice 35	2'841.2458	282.73358	-49.035	108.72055	0	58.718554
Slice 36	2'850.8724	287.69407	-49.034984	34.739276	0	25.740021

SEZIONE A1 NON DRENATA – SUPERFICIE CIRCOLARE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slip Surface

Direction of movement: **Right to Left**

Use Passive Mode: **No**

Slip Surface Option: **Entry and Exit**

Critical slip surfaces saved: **1**

Resisting Side Maximum Convex Angle: **1 °**

Driving Side Maximum Convex Angle: **5 °**

Optimize Critical Slip Surface Location: **No**

Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

Phi': **40 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

PREVAM_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **75 kPa**

Phi': **17 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

B1_K

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Model: **Mohr-Coulomb**
 Unit Weight: **20 kN/m³**
 Cohesion': **50 kPa**
 Phi': **20 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

B2_K

Model: **Mohr-Coulomb**
 Unit Weight: **21 kN/m³**
 Cohesion': **90 kPa**
 Phi': **20 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

A_K

Model: **Mohr-Coulomb**
 Unit Weight: **19 kN/m³**
 Cohesion': **20 kPa**
 Phi': **10 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

ABBANCAMENTO_K

Model: **Mohr-Coulomb**
 Unit Weight: **17 kN/m³**
 Cohesion': **150 kPa**
 Phi': **10 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

SLIP SURFACE ENTRY AND EXIT

Left Projection: **Range**
 Left-Zone Left Coordinate: **(2'524; 215.75793) m**
 Left-Zone Right Coordinate: **(2'769; 272.68331) m**
 Left-Zone Increment: **20**
 Right Projection: **Range**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Right-Zone Left Coordinate: (2'776.5563; 275.99999) m

Right-Zone Right Coordinate: (2'874; 299.66995) m

Right-Zone Increment: 10

Radius Increments: 10

SLIP SURFACE LIMITS

Left Coordinate: (2'503.8651; 214.1798) m

Right Coordinate: (2'958.6264; 310) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082

Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
Point 1	2'684.2087	228.35588
Point 2	2'724.2998	239.95541
Point 3	2'736.3441	239.95541
Point 4	2'758.0362	247.69553
Point 5	2'796.6632	262.95049
Point 6	2'805.7118	264.06507
Point 7	2'826.8057	275.29284
Point 8	2'855.6858	290.17432
Point 9	2'819.4267	290.1635
Point 10	2'797.1537	280.1635
Point 11	2'786.0419	280.1635
Point 12	2'763.2592	270.1635

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 13	2'750.6689	270.1635
Point 14	2'729.6139	261.1635
Point 15	2'726.4983	260.1635
Point 16	2'710.2761	260.1635
Point 17	2'689.0716	250.1635
Point 18	2'679.0181	250.1635
Point 19	2'647.5301	240.1635
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Point 21	2'608.4867	230.1635
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Point 23	2'606.9978	222.00483
Point 24	2'621.8409	222.60238
Point 25	2'643.8188	223.12299
Point 26	2'661.1175	223.17482
Point 27	2'662.0909	223.28793
Point 28	2'671.1205	224.38582
Point 29	2'674.4302	225.38974
Point 30	2'663.9335	220.72482
Point 31	2'586.099	221.1635
Point 32	2'568.3659	221.1635
Point 33	2'553.8651	218.09868
Point 34	2'503.8651	214.1798
Point 35	2'503.8651	197.44202

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 36	2'574.8075	207.79982
Point 37	2'616.4235	214.74482
Point 38	2'639.6005	216.75382
Point 39	2'664.6205	218.82482
Point 40	2'668.2129	221.07761
Point 41	2'670.3005	222.38982
Point 42	2'503.8651	193.40893
Point 43	2'575.1505	205.82982
Point 44	2'616.6755	212.75882
Point 45	2'639.8215	214.76582
Point 46	2'840.6827	279.25382
Point 47	2'853.5687	285.97282
Point 48	2'859.9	288.93882
Point 49	2'865.8159	290.26403
Point 50	2'878.1227	298.09482
Point 51	2'888.4944	304.69428
Point 52	2'899.1878	307.25806
Point 53	2'958.6264	307.61471
Point 54	2'958.6264	310
Point 55	2'908.6267	310.1635
Point 56	2'894.3544	309.94296
Point 57	2'885.432	307.30817
Point 58	2'868.7689	296.17482

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 59	2'862.5325	292.00794
Point 60	2'858	291
Point 61	2'503.8651	189.67263
Point 62	2'576.9097	202.38882
Point 63	2'618.2507	209.28682
Point 64	2'650.0603	212.9008
Point 65	2'665.4008	216.44142
Point 66	2'687.5642	225.61062
Point 67	2'724.934	235.67774
Point 68	2'737.6727	236.39808
Point 69	2'753.7327	241.80982
Point 70	2'797.8977	259.48582
Point 71	2'806.9644	261.17663
Point 72	2'503.8651	159.9977
Point 73	2'958.6264	159.9977
Point 74	2'579.2415	221.1635

REGIONS

	Material	Points	Area (m²)
Region 1	Abbanca mento_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23;24;25;26;27; 28;29	4'63 2.5
Region	Prevam_k	30;29;28;27;26;25;24;23;31;74;32;33;34;35;36;37;38	1'75 4.1

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

2			
Regi on 3	A_k	39;40;41;29;30;38;37;36;35;42;43;44;45	408. 51
Regi on 4	B1_k	46;47;48;49;50;51;52;53;54;55;56;57;58;59;60;8;7;6;5;4;3;2;1;29;41;40;39 ;45;44;43;42;61;62;63;64;65;66;67;68;69;70;71	1'63 7.7
Regi on 5	B2_k	53;52;51;50;49;48;47;46;71;70;69;68;67;66;65;64;63;62;61;72;73	38'4 49
Regi on 6	Unghia_k	22;74;31;23	120. 22

CURRENT SLIP SURFACE

Slip Surface: 333
 F of S: 1.588
 Volume: 6'649.5593 m³
 Weight: 117'886.19 kN
 Resisting Moment: 27'343'622 kN-m
 Activating Moment: 17'215'084 kN-m
 Resisting Force: 58'375.784 kN
 Activating Force: 36'765.137 kN
 F of S Rank (Analysis): 1 of 2'541 slip surfaces
 F of S Rank (Query): 1 of 2'541 slip surfaces
 Exit: (2'549.4958; 217.75622) m
 Entry: (2'855.9538; 290.26995) m
 Radius: 447.0757 m
 Center: (2'606.3771; 661.19866) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice	2'551.6804	217.48692	-49.035008	15.26984	0	78.950968

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

1						
Slice 2	2'561.1155	216.4797	-49.035004	70.64958	0	94.68673
Slice 3	2'573.8037	215.34451	-49.035006	126.66653	0	110.47025
Slice 4	2'582.6703	214.76515	-49.035	173.99924	0	123.9358
Slice 5	2'591.6703	214.3997	-49.03499	270.66447	0	151.90108
Slice 6	2'602.1197	214.16985	-49.034996	326.46144	0	168.01934
Slice 7	2'607.7422	214.12567	-49.035	323.53717	0	167.10162
Slice 8	2'610.7385	214.14991	-49.035	339.18146	0	171.68321
Slice 9	2'614.7069	214.20387	-49.035	352.06732	0	79.079988
Slice 10	2'619.1322	214.31317	-49.035	379.6591	0	83.928828
Slice 11	2'627.952	214.68576	-49.035	429.97481	0	92.862486
Slice 12	2'636.8318	215.17009	-49.035	458.1491	0	98.063439
Slice 13	2'641.7096	215.52635	-49.035	448.83423	0	96.665162
Slice 14	2'645.6745	215.85731	-49.035	440.52962	0	95.398975
Slice 15	2'654.3238	216.75396	-49.035	473.38194	0	214.74979

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

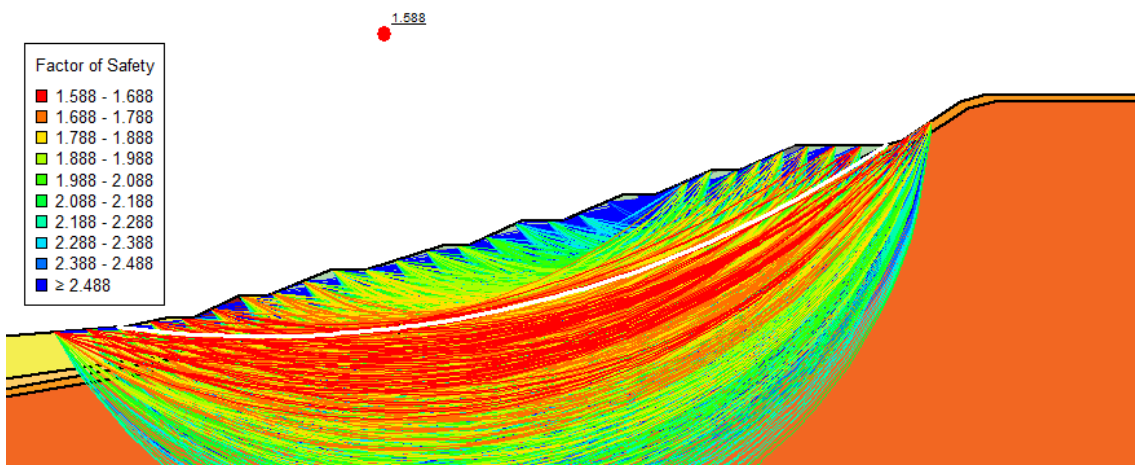
Slice 16	2'661.6042	217.54745	-49.035	494.64497	0	222.77421
Slice 17	2'663.0122	217.72569	-49.035	498.27128	0	224.16715
Slice 18	2'664.277	217.88821	-49.035	501.55216	0	225.42924
Slice 19	2'666.4167	218.1765	-49.035	508.04634	0	227.90538
Slice 20	2'669.2567	218.56821	-49.035	516.57676	0	231.17105
Slice 21	2'670.7105	218.77611	-49.035	520.7792	0	232.78952
Slice 22	2'672.7753	219.08426	-49.035	532.79509	0	276.10294
Slice 23	2'676.7242	219.6983	-49.035	543.46437	0	280.2556
Slice 24	2'681.6134	220.50689	-49.034999	540.34699	0	279.61499
Slice 25	2'685.8865	221.25318	-49.034996	525.90986	0	274.88579
Slice 26	2'688.3179	221.69691	-49.034993	517.13998	0	271.99465
Slice 27	2'694.3727	222.90172	-49.034994	534.12532	0	278.69339
Slice 28	2'704.975	225.16473	-49.035006	569.83996	0	292.66392
Slice 29	2'717.6051	228.24629	-49.034984	547.31278	0	285.93034
Slice	2'725.7162	230.34579	-49.034993	504.70504	0	271.35494


	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

30						
Slice 31	2'728.0561	231.00305	-49.034998	497.44109	0	268.95223
Slice 32	2'732.979	232.43729	-49.035008	495.32062	0	268.65215
Slice 33	2'737.0084	233.63387	-49.035013	496.0228	0	269.28079
Slice 34	2'744.1708	235.94238	-49.035011	501.64264	0	271.95034
Slice 35	2'752.2008	238.5765	-49.034997	497.46207	0	271.08294
Slice 36	2'755.8845	239.86862	-49.034993	474.77303	0	263.07661
Slice 37	2'760.6477	241.59229	-49.034999	445.20818	0	252.60759
Slice 38	2'768.9549	244.7761	-49.035001	429.73748	0	247.46201
Slice 39	2'780.3462	249.40602	-49.035009	428.79814	0	247.69524
Slice 40	2'791.5978	254.34157	-49.034998	385.73298	0	232.34258
Slice 41	2'797.5257	257.04683	-49.035006	344.42013	0	217.38112
Slice 42	2'801.8047	259.12177	-49.035004	335.87427	0	214.37487
Slice 43	2'812.5693	264.58585	-49.034989	328.3056	0	171.3244
Slice 44	2'823.1162	270.19607	-49.035037	292.04493	0	157.84882

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 45	2'831.619	275.04886	-49.035019	219.52558	0	131.21048
Slice 46	2'841.2458	280.82861	-49.035008	130.89857	0	98.878071
Slice 47	2'850.8724	286.94524	-49.034986	33.785579	0	63.810325
Slice 48	2'855.8198	290.17985	-49.035	-18.20338	0	45.188129



	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE A1 NON DRENATA – SCORIMMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Fully-Specified](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [0 kPa](#)
 Phi': [40 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [75 kPa](#)
 Phi': [17 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B1_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [50 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [90 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 19 kN/m³

Cohesion': 20 kPa

Phi': 10 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb

Unit Weight: 17 kN/m³

Cohesion': 150 kPa

Phi': 10 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

SLIP SURFACE LIMITS

Left Coordinate: (2'503.8651; 214.1798) m

Right Coordinate: (2'958.6264; 310) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	2'579.2415	221.1635
	2'586.099	221.1635
	2'606.9978	222.00483
	2'621.8409	222.60238
	2'643.8188	223.12299
	2'661.1175	223.17482
	2'662.0909	223.28793
	2'671.1205	224.38582

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	2'674.4302	225.38974
	2'684.2087	228.35588
	2'724.2998	239.95541
	2'736.3441	239.95541
	2'758.0362	247.69553
	2'796.6632	262.95049
	2'805.7118	264.06507
	2'826.8057	275.29284
	2'855.6858	290.17432

SEISMIC COEFFICIENTS

Horz Seismic Coef.: **0.082**


Vert Seismic Coef.: **0.041**

POINTS

	X (m)	Y (m)
Point 1	2'684.2087	228.35588
Point 2	2'724.2998	239.95541
Point 3	2'736.3441	239.95541
Point 4	2'758.0362	247.69553
Point 5	2'796.6632	262.95049
Point 6	2'805.7118	264.06507
Point 7	2'826.8057	275.29284
Point 8	2'855.6858	290.17432

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 9	2'819.4267	290.1635
Point 10	2'797.1537	280.1635
Point 11	2'786.0419	280.1635
Point 12	2'763.2592	270.1635
Point 13	2'750.6689	270.1635
Point 14	2'729.6139	261.1635
Point 15	2'726.4983	260.1635
Point 16	2'710.2761	260.1635
Point 17	2'689.0716	250.1635
Point 18	2'679.0181	250.1635
Point 19	2'647.5301	240.1635
Point 20	2'634.0631	240.1635
Point 21	2'608.4867	230.1635
Point 22	2'597.2415	230.1635
Point 23	2'606.9978	222.00483
Point 24	2'621.8409	222.60238
Point 25	2'643.8188	223.12299
Point 26	2'661.1175	223.17482
Point 27	2'662.0909	223.28793
Point 28	2'671.1205	224.38582
Point 29	2'674.4302	225.38974
Point 30	2'663.9335	220.72482
Point 31	2'586.099	221.1635

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 32	2'568.3659	221.1635
Point 33	2'553.8651	218.09868
Point 34	2'503.8651	214.1798
Point 35	2'503.8651	197.44202
Point 36	2'574.8075	207.79982
Point 37	2'616.4235	214.74482
Point 38	2'639.6005	216.75382
Point 39	2'664.6205	218.82482
Point 40	2'668.2129	221.07761
Point 41	2'670.3005	222.38982
Point 42	2'503.8651	193.40893
Point 43	2'575.1505	205.82982
Point 44	2'616.6755	212.75882
Point 45	2'639.8215	214.76582
Point 46	2'840.6827	279.25382
Point 47	2'853.5687	285.97282
Point 48	2'859.9	288.93882
Point 49	2'865.8159	290.26403
Point 50	2'878.1227	298.09482
Point 51	2'888.4944	304.69428
Point 52	2'899.1878	307.25806
Point 53	2'958.6264	307.61471
Point 54	2'958.6264	310

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 55	2'908.6267	310.1635
Point 56	2'894.3544	309.94296
Point 57	2'885.432	307.30817
Point 58	2'868.7689	296.17482
Point 59	2'862.5325	292.00794
Point 60	2'858	291
Point 61	2'503.8651	189.67263
Point 62	2'576.9097	202.38882
Point 63	2'618.2507	209.28682
Point 64	2'650.0603	212.9008
Point 65	2'665.4008	216.44142
Point 66	2'687.5642	225.61062
Point 67	2'724.934	235.67774
Point 68	2'737.6727	236.39808
Point 69	2'753.7327	241.80982
Point 70	2'797.8977	259.48582
Point 71	2'806.9644	261.17663
Point 72	2'503.8651	159.9977
Point 73	2'958.6264	159.9977
Point 74	2'579.2415	221.1635

REGIONS

	Material	Points	Area
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

			(m ²)
Regi on 1	Abbanca mento_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23;24;25;26;27; 28;29	4'63 2.5
Regi on 2	Prevam_k	30;29;28;27;26;25;24;23;31;74;32;33;34;35;36;37;38	1'75 4.1
Regi on 3	A_k	39;40;41;29;30;38;37;36;35;42;43;44;45	408. 51
Regi on 4	B1_k	46;47;48;49;50;51;52;53;54;55;56;57;58;59;60;8;7;6;5;4;3;2;1;29;41;40;39 ;45;44;43;42;61;62;63;64;65;66;67;68;69;70;71	1'63 7.7
Regi on 5	B2_k	53;52;51;50;49;48;47;46;71;70;69;68;67;66;65;64;63;62;61;72;73	38'4 49
Regi on 6	Unghia_k	22;74;31;23	120. 22

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 2.077
 Volume: 4'752.7109 m³
 Weight: 80'916.302 kN
 Resisting Moment: 4'233'850.8 kN-m
 Activating Moment: 2'037'990.3 kN-m
 Resisting Force: 52'618.413 kN
 Activating Force: 25'338.874 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (2'579.2415; 221.1635) m
 Entry: (2'855.6858; 290.17432) m
 Radius: 124.96334 m
 Center: (2'704.5429; 307.42703) m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'582.6703	221.1635	-49.035	32.403882	0	26.043154
Slice 2	2'591.6703	221.38778	- 49.034974	112.97262	0	90.708201
Slice 3	2'602.1197	221.80845	- 49.034977	156.14654	0	124.5938
Slice 4	2'607.7422	222.0348	-49.035	151.44643	0	175.0802
Slice 5	2'615.1638	222.33357	-49.035	195.58287	0	182.38032
Slice 6	2'627.952	222.74714	- 49.034973	283.97052	0	197.04732
Slice 7	2'638.941	223.00744	- 49.034978	325.58657	0	203.94684
Slice 8	2'645.6745	223.12855	- 49.034989	329.38488	0	204.30361
Slice 9	2'654.3238	223.15446	- 49.034961	369.61393	0	211.06934
Slice 10	2'661.6042	223.23138	-49.035	386.08126	0	215.03161
Slice 11	2'666.6057	223.83687	-49.035	401.2969	0	217.76637
Slice 12	2'672.7753	224.88778	-49.035	376.65691	0	215.44976
Slice	2'676.7242	226.08557	-49.035	376.27052	0	215.46391

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

13						
Slice 14	2'681.6134	227.56864	-49.035	362.9502	0	213.19016
Slice 15	2'686.6402	229.05937	- 49.035006	340.99909	0	209.22898
Slice 16	2'694.3727	231.29663	- 49.035025	343.39341	0	209.76033
Slice 17	2'704.975	234.36417	- 49.035044	371.56079	0	214.9022
Slice 18	2'713.782	236.91231	- 49.034979	369.29864	0	214.58392
Slice 19	2'720.7939	238.94104	- 49.034991	336.57009	0	208.80167
Slice 20	2'725.3991	239.95541	-49.035	383.23149	0	213.7328
Slice 21	2'728.0561	239.95541	-49.035	391.51928	0	215.18371
Slice 22	2'732.979	239.95541	-49.035	424.6067	0	220.92626
Slice 23	2'739.9253	241.23324	-49.035	368.53387	0	215.31524
Slice 24	2'747.0877	243.78891	-49.035	376.26893	0	216.68343
Slice 25	2'754.3526	246.38114	-49.035	360.31472	0	213.7866
Slice 26	2'760.6477	248.72689	-49.035	317.78156	0	206.47791
Slice 27	2'768.9549	252.00764	-49.035	306.86354	0	204.44851

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 28	2'780.3462	256.50643	-49.035	316.64417	0	206.05153
Slice 29	2'791.3526	260.85316	-49.035	290.34069	0	201.21859
Slice 30	2'796.9084	262.9807	-49.035	298.31784	0	200.56207
Slice 31	2'801.4327	263.53799	-49.035	320.53748	0	204.44345
Slice 32	2'812.5693	267.71512	- 49.035032	277.24822	0	199.48937
Slice 33	2'823.1162	273.32901	- 49.035017	242.37268	0	193.08059
Slice 34	2'831.619	277.77309	- 49.035016	175.35107	0	181.18046
Slice 35	2'841.2458	282.73358	-49.035	94.369027	0	167.19667
Slice 36	2'850.8724	287.69407	- 49.034984	8.5768024	0	152.71911

SEZIONE A2 DRENATA – SUPERFICIE CIRCOLARE - STATICA

PROJECT SETTINGS

Length(L) Units: **Meters**
 Time(t) Units: **Seconds**
 Force(F) Units: **Kilonewtons**
 Pressure(p) Units: **kPa**
 Strength Units: **kPa**
 Unit Weight of Water: **9.807 kN/m³**
 View: **2D**
 Element Thickness: **1**

ANALYSIS SETTINGS

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

01_STATICA_GENERICO

Kind: [SLOPE/W](#)

Parent: [Insitu](#)

Method: [Morgenstern-Price](#)

Settings

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Entry and Exit](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_STATICHE

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [33 °](#)

Phi-B: [0 °](#)

010599_STATICHE

Model: [Mohr-Coulomb](#)

Unit Weight: [17 kN/m³](#)

Cohesion': [8 kPa](#)

Phi': [19 °](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi-B: 0 °

PREVAM_STATICHE

Model: **Mohr-Coulomb**
Unit Weight: 18 kN/m³
Cohesion': 8 kPa
Phi': 16 °
Phi-B: 0 °

B2_STATICHE

Model: **Mohr-Coulomb**
Unit Weight: 21 kN/m³
Cohesion': 20 kPa
Phi': 19 °
Phi-B: 0 °

B1_STATICHE


Model: **Mohr-Coulomb**
Unit Weight: 20 kN/m³
Cohesion': 12 kPa
Phi': 17 °
Phi-B: 0 °

A_STATICHE

Model: **Mohr-Coulomb**
Unit Weight: 19 kN/m³
Cohesion': 8 kPa
Phi': 20 °
Phi-B: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: **Range**
Left-Zone Left Coordinate: (3'393.7254; 220.34283) m
Left-Zone Right Coordinate: (3'570; 264.67712) m
Left-Zone Increment: 25
Right Projection: **Range**
Right-Zone Left Coordinate: (3'576.2286; 267.99998) m
Right-Zone Right Coordinate: (3'655.4859; 288) m
Right-Zone Increment: 20
Radius Increments: 10

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SLIP SURFACE LIMITS

Left Coordinate: (3'286.6419; 215.93536) m

Right Coordinate: (3'741.4032; 297) m

POINTS

	X (m)	Y (m)
Point 1	3'492.0756	231.19331
Point 2	3'504.6379	232.49738
Point 3	3'525.3431	237.97475
Point 4	3'551.7864	252.97475
Point 5	3'572.5103	264.22475
Point 6	3'582.6617	265.67593
Point 7	3'615.6013	275.97475
Point 8	3'627.4351	275.97475
Point 9	3'635.7102	279.52223
Point 10	3'607.0603	279.67693
Point 11	3'583.7531	269.67693
Point 12	3'579.372	269.67693
Point 13	3'560.6273	259.67693
Point 14	3'552.602	259.67693
Point 15	3'529.5602	249.67693
Point 16	3'515.45	249.67693
Point 17	3'494.2461	239.67693
Point 18	3'483.9042	239.67693

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 19	3'458.1066	229.67693
Point 20	3'452.3584	229.67693
Point 21	3'462.224	221.67205
Point 22	3'466.6714	222.47475
Point 23	3'476.3183	226.95506
Point 24	3'435.0351	220.84913
Point 25	3'443.033	220.97475
Point 26	3'460.6763	221.46118
Point 27	3'461.1308	221.47475
Point 28	3'446.4826	209.32266
Point 29	3'477.0077	223.32587
Point 30	3'494.3661	227.90325
Point 31	3'504.076	228.35863
Point 32	3'526.7423	233.60944
Point 33	3'532.554	236.84586
Point 34	3'540.9087	241.65913
Point 35	3'551.3043	247.31989
Point 36	3'573.9336	259.98258
Point 37	3'582.4924	260.69426
Point 38	3'590.3869	263.45452
Point 39	3'617.6671	271.63675
Point 40	3'627.5468	271.85892
Point 41	3'677.9248	293.06174

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 42	3'741.4032	293.27558
Point 43	3'741.4032	297
Point 44	3'678.8645	297.15151
Point 45	3'666.4418	292.52525
Point 46	3'661.7158	290.67074
Point 47	3'445.3833	212.43942
Point 48	3'376.9488	194.95058
Point 49	3'363.4632	192.26977
Point 50	3'286.6554	184.84873
Point 51	3'286.6419	182.24442
Point 52	3'364.7694	189.71237
Point 53	3'444.7438	214.39855
Point 54	3'424.7421	208.88691
Point 55	3'376.6739	196.99835
Point 56	3'363.4954	194.43155
Point 57	3'286.6419	187.43791
Point 58	3'411.824	220.48458
Point 59	3'394.488	220.35902
Point 60	3'379.6366	220.0438
Point 61	3'362.4358	219.93872
Point 62	3'348.8305	219.78957
Point 63	3'299.1781	216.69742
Point 64	3'286.6419	215.93536

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 65	3'286.6419	147
Point 66	3'741.4032	147

REGIONS

	Material	Points	Area (m²)
Region 1	010599_STATICHE	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23	1'271.9
Region 2	UNGHIA_STATICHE	20;24;25;26;27;21	115.99
Region 3	B1_STATICHE	28;29;30;31;32;33;34;35;36;37;38;39;40;41;42;43;44;45;46;9;8;7;6;5;4;3;2;1;23;22;47;48;49;50;51;52	1'713.1
Region 4	A_STATICHE	47;22;21;27;26;53;54;55;56;57;50;49;48	378.93
Region 5	PREVAM_STATICHE	54;53;26;25;24;58;59;60;61;62;63;64;57;56;55	3'493
Region 6	B2_STATICHE	42;41;40;39;38;37;36;35;34;33;32;31;30;29;28;52;51;65;66	40'721

CURRENT SLIP SURFACE

Slip Surface: 5'416
 F of S: 1.237
 Volume: 281.03451 m³
 Weight: 5'082.828 kN
 Resisting Moment: 147'815.59 kN-m
 Activating Moment: 119'530.78 kN-m
 Resisting Force: 1'988.8276 kN
 Activating Force: 1'608.0399 kN
 F of S Rank (Analysis): 1 of 6'006 slip surfaces
 F of S Rank (Query): 1 of 6'006 slip surfaces
 Exit: (3'556.3836; 259.67693) m
 Entry: (3'611.3171; 279.65394) m
 Radius: 68.474712 m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Center: (3'562.6871; 327.86089) m

SLIP SLICES

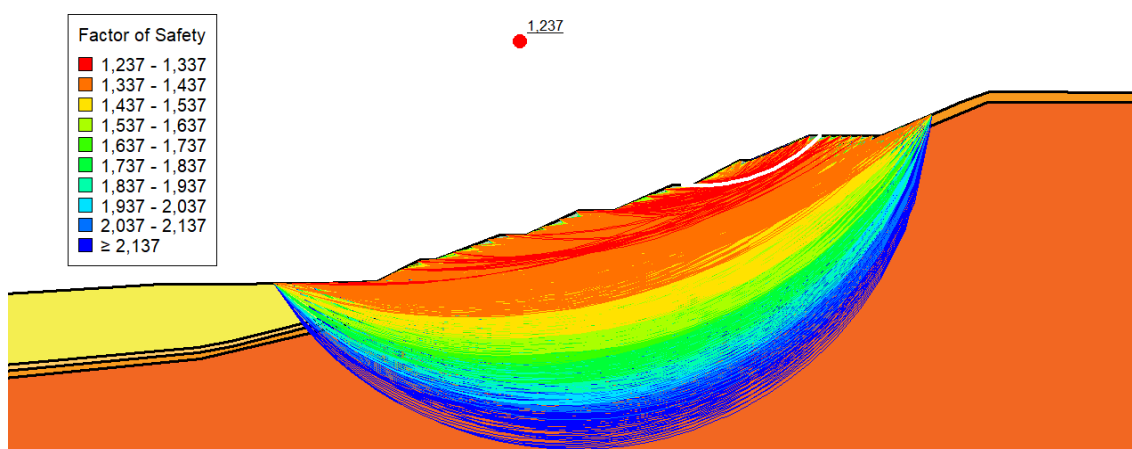
	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'557.4445	259.59545	-49.035	2.2998261	0.79189364	8
Slice 2	3'559.5664	259.46557	-49.035	5.1351394	1.7681703	8
Slice 3	3'561.3726	259.40285	-49.035	13.793507	4.7494855	8
Slice 4	3'562.8632	259.39046	-49.035	28.605862	9.8497881	8
Slice 5	3'564.4987	259.41594	- 49.035002	45.956462	14.0503	12
Slice 6	3'566.279	259.48626	- 49.035006	64.742397	19.793737	12
Slice 7	3'568.0594	259.60309	- 49.035008	82.125663	25.108335	12
Slice 8	3'569.8398	259.76666	- 49.035008	97.934378	29.941544	12
Slice 9	3'571.6201	259.97731	- 49.035006	112.04853	34.256675	12
Slice 10	3'573.368	260.22991	- 49.035001	123.18284	37.660772	12
Slice 11	3'575.0834	260.52327	-49.035	131.44482	40.186713	12
Slice 12	3'576.7989	260.86182	-49.035	138.1627	42.240578	12

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 13	3'578.5143	261.24627	-49.035	143.41442	43.846187	12
Slice 14	3'580.1944	261.66758	-49.035	140.29016	42.891007	12
Slice 15	3'581.8393	262.12471	-49.035	129.30331	39.531989	12
Slice 16	3'583.2074	262.53574	-49.035	120.02435	36.695125	12
Slice 17	3'584.6559	263.01301	-49.035	115.92478	35.441761	12
Slice 18	3'586.4615	263.65313	-49.035	114.50913	35.008954	12
Slice 19	3'588.2671	264.35103	-49.035	112.1971	34.302096	12
Slice 20	3'590.0727	265.10864	-49.035	109.07502	33.347581	12
Slice 21	3'591.8782	265.92814	-49.035	105.20736	32.165119	12
Slice 22	3'593.6838	266.81205	-49.035	100.63361	30.766783	12
Slice 23	3'595.4894	267.76319	-49.035	95.365625	29.156197	12
Slice 24	3'597.295	268.78482	-49.035	89.385035	27.327748	12
Slice 25	3'599.1006	269.88068	-49.035	82.64028	25.265669	12
Slice 26	3'600.9062	271.05507	-49.035	75.042795	22.942885	12
Slice	3'602.6842	272.29244	-	67.935047	23.391913	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

27			49.034998			
Slice 28	3'604.4346	273.59574	- 49.034997	60.566592	20.85475	8
Slice 29	3'606.1851	274.98912	- 49.035001	52.221509	17.981308	8
Slice 30	3'608.1245	276.65345	- 49.035004	35.337712	12.16775	8
Slice 31	3'610.2529	278.62583	-49.03501	8.9422875	3.0790765	8



SEZIONE A2 DRENATA – SUPERFICIE CIRCOLARE – PSEUSO-STATICA

PROJECT SETTINGS

Length(L) Units: **Meters**
 Time(t) Units: **Seconds**
 Force(F) Units: **Kilonewtons**
 Pressure(p) Units: **kPa**
 Strength Units: **kPa**
 Unit Weight of Water: **9.807 kN/m³**
 View: **2D**
 Element Thickness: **1**

ANALYSIS SETTINGS

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)

Parent: [Insitu](#)

Method: [Morgenstern-Price](#)

Settings

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Entry and Exit](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

PREVAM

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 18 kN/m³
 Cohesion': 10 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B1

Model: Mohr-Coulomb
 Unit Weight: 20 kN/m³
 Cohesion': 15 kPa
 Phi': 22 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B2


Model: Mohr-Coulomb
 Unit Weight: 21 kN/m³
 Cohesion': 25 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 10 kPa
 Phi': 25 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

010599

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 10 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SLIP SURFACE ENTRY AND EXIT

Left Projection: [Range](#)
 Left-Zone Left Coordinate: [\(3'403.7189; 220.42588\) m](#)
 Left-Zone Right Coordinate: [\(3'566.8563; 263\) m](#)
 Left-Zone Increment: [30](#)
 Right Projection: [Range](#)
 Right-Zone Left Coordinate: [\(3'574.1935; 266.91428\) m](#)
 Right-Zone Right Coordinate: [\(3'688; 297.12938\) m](#)
 Right-Zone Increment: [20](#)
 Radius Increments: [20](#)

SLIP SURFACE LIMITS

Left Coordinate: [\(3'286.6419; 215.93536\) m](#)
 Right Coordinate: [\(3'741.4032; 297\) m](#)

SEISMIC COEFFICIENTS

Horz Seismic Coef.: [0.082](#)
 Vert Seismic Coef.: [0.041](#)

POINTS

	X (m)	Y (m)
Point 1	3'492.0756	231.19331
Point 2	3'504.6379	232.49738
Point 3	3'525.3431	237.97475
Point 4	3'551.7864	252.97475
Point 5	3'572.5103	264.22475
Point 6	3'582.6617	265.67593
Point 7	3'615.6013	275.97475
Point 8	3'627.4351	275.97475
Point 9	3'635.7102	279.52223

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 10	3'607.0603	279.67693
Point 11	3'583.7531	269.67693
Point 12	3'579.372	269.67693
Point 13	3'560.6273	259.67693
Point 14	3'552.602	259.67693
Point 15	3'529.5602	249.67693
Point 16	3'515.45	249.67693
Point 17	3'494.2461	239.67693
Point 18	3'483.9042	239.67693
Point 19	3'458.1066	229.67693
Point 20	3'452.3584	229.67693
Point 21	3'462.224	221.67205
Point 22	3'466.6714	222.47475
Point 23	3'476.3183	226.95506
Point 24	3'435.0351	220.84913
Point 25	3'443.033	220.97475
Point 26	3'460.6763	221.46118
Point 27	3'461.1308	221.47475
Point 28	3'446.4826	209.32266
Point 29	3'477.0077	223.32587
Point 30	3'494.3661	227.90325
Point 31	3'504.076	228.35863
Point 32	3'526.7423	233.60944

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 33	3'532.554	236.84586
Point 34	3'540.9087	241.65913
Point 35	3'551.3043	247.31989
Point 36	3'573.9336	259.98258
Point 37	3'582.4924	260.69426
Point 38	3'590.3869	263.45452
Point 39	3'617.6671	271.63675
Point 40	3'627.5468	271.85892
Point 41	3'677.9248	293.06174
Point 42	3'741.4032	293.27558
Point 43	3'741.4032	297
Point 44	3'678.8645	297.15151
Point 45	3'666.4418	292.52525
Point 46	3'661.7158	290.67074
Point 47	3'445.3833	212.43942
Point 48	3'376.9488	194.95058
Point 49	3'363.4632	192.26977
Point 50	3'286.6554	184.84873
Point 51	3'286.6419	182.24442
Point 52	3'364.7694	189.71237
Point 53	3'444.7438	214.39855
Point 54	3'424.7421	208.88691
Point 55	3'376.6739	196.99835

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 56	3'363.4954	194.43155
Point 57	3'286.6419	187.43791
Point 58	3'411.824	220.48458
Point 59	3'394.488	220.35902
Point 60	3'379.6366	220.0438
Point 61	3'362.4358	219.93872
Point 62	3'348.8305	219.78957
Point 63	3'299.1781	216.69742
Point 64	3'286.6419	215.93536
Point 65	3'286.6419	147
Point 66	3'741.4032	147

REGIONS

	Mater ial	Points	Area (m²)
Regi on 1	01059 9	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23	1'271. 9
Regi on 2	UNGH IA	20;24;25;26;27;21	115.9 9
Regi on 3	B1	28;29;30;31;32;33;34;35;36;37;38;39;40;41;42;43;44;45;46;9;8;7;6;5;4;3;2;1 ;23;22;47;48;49;50;51;52	1'713. 1
Regi on 4	A	47;22;21;27;26;53;54;55;56;57;50;49;48	378.9 3
Regi on 5	PREV AM	54;53;26;25;24;58;59;60;61;62;63;64;57;56;55	3'493

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Regi on 6	B2	42;41;40;39;38;37;36;35;34;33;32;31;30;29;28;52;51;65;66	40'72 1
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CURRENT SLIP SURFACE

Slip Surface: 12'502
 F of S: 1.282
 Volume: 324.4948 m³
 Weight: 5'903.6009 kN
 Resisting Moment: 222'995.35 kN-m
 Activating Moment: 173'912.88 kN-m
 Resisting Force: 2'939.8794 kN
 Activating Force: 2'293.0084 kN
 F of S Rank (Analysis): 1 of 13'671 slip surfaces
 F of S Rank (Query): 1 of 13'671 slip surfaces
 Exit: (3'556.2021; 259.67693) m
 Entry: (3'613.4569; 279.64239) m
 Radius: 70.13449 m
 Center: (3'564.0057; 329.37593) m

SLIP SLICES


	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'557.3084	259.57079	-49.035	3.292689	0	11.26132
Slice 2	3'559.521	259.39375	-49.035	7.5052156	0	12.89469
Slice 3	3'561.9818	259.28375	-49.035	24.291879	0	19.823262
Slice 4	3'564.2537	259.24788	- 49.035003	51.130356	0	33.994868
Slice 5	3'566.0885	259.27839	- 49.035007	72.867069	0	42.257666
Slice	3'567.9233	259.35697	-	92.954511	0	49.955913

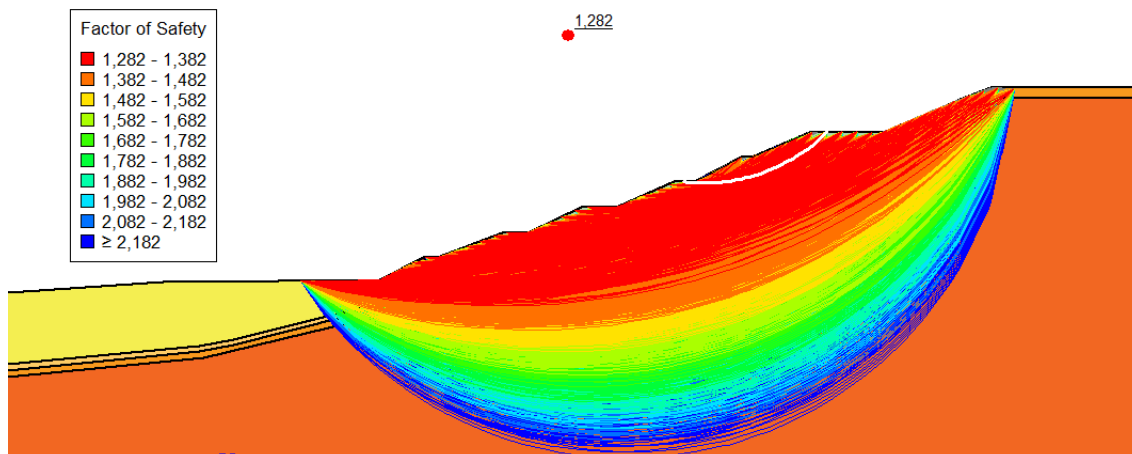
	Committente		Oggetto del servizio
	GE.R.IN		DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

6			49.035009			
Slice 7	3'569.7581	259.48381	- 49.035009	111.13721	0	57.010602
Slice 8	3'571.5929	259.65916	- 49.035007	127.23506	0	63.363104
Slice 9	3'573.1801	259.84738	- 49.035003	138.6373	0	67.963883
Slice 10	3'573.8918	259.94172	-49.035	146.31636	0	86.084147
Slice 11	3'574.2069	259.98785	-49.035	148.06262	0	86.870991
Slice 12	3'575.2955	260.16101	-49.035	149.79292	0	72.623526
Slice 13	3'576.9261	260.44682	-49.035	156.45643	0	75.551212
Slice 14	3'578.5567	260.77258	-49.035	161.59575	0	77.936532
Slice 15	3'580.1944	261.14063	-49.035	158.15091	0	76.957274
Slice 16	3'581.8393	261.552	-49.035	146.67842	0	72.77922
Slice 17	3'583.2074	261.92359	-49.035	137.01097	0	69.229038
Slice 18	3'584.7398	262.38432	-49.035	132.59975	0	67.803272
Slice 19	3'586.7131	263.02738	-49.035	130.74335	0	67.485345
Slice 20	3'588.6865	263.73606	-49.035	127.85452	0	66.719362

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 21	3'590.6598	264.51251	-49.035	124.09621	0	65.555523
Slice 22	3'592.6332	265.35919	-49.035	119.59483	0	64.033818
Slice 23	3'594.6066	266.27895	-49.035	114.43578	0	62.18213
Slice 24	3'596.5799	267.27502	-49.035	108.66046	0	60.014747
Slice 25	3'598.5533	268.35115	-49.035	102.26421	0	57.531044
Slice 26	3'600.5266	269.51167	-49.035	95.194337	0	54.71407
Slice 27	3'602.5	270.76159	-49.035	87.347148	0	51.528775
Slice 28	3'604.4733	272.10679	-49.035	78.562183	0	47.919611
Slice 29	3'606.2602	273.40809	-49.035	71.185251	0	42.873919
Slice 30	3'608.1264	274.87523	- 49.035002	56.855724	0	36.29714
Slice 31	3'610.2586	276.67392	- 49.035007	33.690167	0	25.724131
Slice 32	3'612.3908	278.62597	- 49.035015	7.7832215	0	14.035468

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI



SEZIONE A2 DRENATA – SCORRIMENTO LUNGO BASE - STATICA

PROJECT SETTINGS

Length(L) Units: **Meters**
 Time(t) Units: **Seconds**
 Force(F) Units: **Kilonewtons**
 Pressure(p) Units: **kPa**
 Strength Units: **kPa**
 Unit Weight of Water: **9.807 kN/m³**
 View: **2D**
 Element Thickness: **1**

ANALYSIS SETTINGS

02_STATICA_BASE

Kind: **SLOPE/W**
 Parent: **Insitu**
 Method: **Morgenstern-Price**
 Settings
 Side Function
 Interslice force function option: **Half-Sine**
 PWP Conditions Source: **Parent Analysis**
 Slip Surface
 Direction of movement: **Right to Left**
 Use Passive Mode: **No**
 Slip Surface Option: **Fully-Specified**
 Critical slip surfaces saved: **1**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Resisting Side Maximum Convex Angle: 1 °

Driving Side Maximum Convex Angle: 5 °

Optimize Critical Slip Surface Location: No

Tension Crack

Tension Crack Option: (none)

F of S Distribution

F of S Calculation Option: Constant

Advanced

Number of Slices: 30

F of S Tolerance: 0.001

Minimum Slip Surface Depth: 0.1 m

Search Method: Root Finder

Tolerable difference between starting and converged F of S: 3

Maximum iterations to calculate converged lambda: 20

Max Absolute Lambda: 2

MATERIALS

UNGHIA_STATICHE

Model: Mohr-Coulomb

Unit Weight: 18 kN/m³

Cohesion': 0 kPa

Phi': 33 °

Phi-B: 0 °

010599_STATICHE

Model: Mohr-Coulomb

Unit Weight: 17 kN/m³

Cohesion': 8 kPa

Phi': 19 °

Phi-B: 0 °

PREVAM_STATICHE

Model: Mohr-Coulomb

Unit Weight: 18 kN/m³

Cohesion': 8 kPa

Phi': 16 °

Phi-B: 0 °

B2_STATICHE

Model: Mohr-Coulomb

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 21 kN/m³

Cohesion': 20 kPa

Phi': 19 °

Phi-B: 0 °

B1_STATICHE

Model: Mohr-Coulomb

Unit Weight: 20 kN/m³

Cohesion': 12 kPa

Phi': 17 °

Phi-B: 0 °

A_STATICHE

Model: Mohr-Coulomb

Unit Weight: 19 kN/m³

Cohesion': 8 kPa

Phi': 20 °

Phi-B: 0 °

SLIP SURFACE LIMITS

Left Coordinate: (3'286.6419; 215.93536) m

Right Coordinate: (3'741.4032; 297) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	3'435.0351	220.84913
	3'443.033	220.97475
	3'460.6763	221.46118
	3'461.1308	221.47475
	3'462.224	221.67205
	3'466.6714	222.47475

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	3'476.3183	226.95506
	3'492.0756	231.19331
	3'504.6379	232.49738
	3'525.3431	237.97475
	3'551.7864	252.97475
	3'572.5103	264.22475
	3'582.6617	265.67593
	3'615.6013	275.97475
	3'627.4351	275.97475
	3'635.7102	279.52223

POINTS

	X (m)	Y (m)
Point 1	3'492.0756	231.19331
Point 2	3'504.6379	232.49738
Point 3	3'525.3431	237.97475
Point 4	3'551.7864	252.97475
Point 5	3'572.5103	264.22475
Point 6	3'582.6617	265.67593
Point 7	3'615.6013	275.97475
Point 8	3'627.4351	275.97475
Point 9	3'635.7102	279.52223
Point 10	3'607.0603	279.67693

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 11	3'583.7531	269.67693
Point 12	3'579.372	269.67693
Point 13	3'560.6273	259.67693
Point 14	3'552.602	259.67693
Point 15	3'529.5602	249.67693
Point 16	3'515.45	249.67693
Point 17	3'494.2461	239.67693
Point 18	3'483.9042	239.67693
Point 19	3'458.1066	229.67693
Point 20	3'452.3584	229.67693
Point 21	3'462.224	221.67205
Point 22	3'466.6714	222.47475
Point 23	3'476.3183	226.95506
Point 24	3'435.0351	220.84913
Point 25	3'443.033	220.97475
Point 26	3'460.6763	221.46118
Point 27	3'461.1308	221.47475
Point 28	3'446.4826	209.32266
Point 29	3'477.0077	223.32587
Point 30	3'494.3661	227.90325
Point 31	3'504.076	228.35863
Point 32	3'526.7423	233.60944
Point 33	3'532.554	236.84586

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 34	3'540.9087	241.65913
Point 35	3'551.3043	247.31989
Point 36	3'573.9336	259.98258
Point 37	3'582.4924	260.69426
Point 38	3'590.3869	263.45452
Point 39	3'617.6671	271.63675
Point 40	3'627.5468	271.85892
Point 41	3'677.9248	293.06174
Point 42	3'741.4032	293.27558
Point 43	3'741.4032	297
Point 44	3'678.8645	297.15151
Point 45	3'666.4418	292.52525
Point 46	3'661.7158	290.67074
Point 47	3'445.3833	212.43942
Point 48	3'376.9488	194.95058
Point 49	3'363.4632	192.26977
Point 50	3'286.6554	184.84873
Point 51	3'286.6419	182.24442
Point 52	3'364.7694	189.71237
Point 53	3'444.7438	214.39855
Point 54	3'424.7421	208.88691
Point 55	3'376.6739	196.99835
Point 56	3'363.4954	194.43155

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 57	3'286.6419	187.43791
Point 58	3'411.824	220.48458
Point 59	3'394.488	220.35902
Point 60	3'379.6366	220.0438
Point 61	3'362.4358	219.93872
Point 62	3'348.8305	219.78957
Point 63	3'299.1781	216.69742
Point 64	3'286.6419	215.93536
Point 65	3'286.6419	147
Point 66	3'741.4032	147

REGIONS

	Material	Points	Area (m²)
Region 1	010599_STATICHE	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23	1'271.9
Region 2	UNGHIA_STATICHE	20;24;25;26;27;21	115.99
Region 3	B1_STATICHE	28;29;30;31;32;33;34;35;36;37;38;39;40;41;42;43;44;45;46;9;8;7;6;5;4;3;2;1;23;22;47;48;49;50;51;52	1'713.1
Region 4	A_STATICHE	47;22;21;27;26;53;54;55;56;57;50;49;48	378.93
Region 5	PREVAM_STATICHE	54;53;26;25;24;58;59;60;61;62;63;64;57;56;55	3'493
Region 6	B2_STATICHE	42;41;40;39;38;37;36;35;34;33;32;31;30;29;28;52;51;65;66	40'721

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 1.626
 Volume: 1'387.8925 m³
 Weight: 23'710.158 kN
 Resisting Moment: 556'170.92 kN-m
 Activating Moment: 342'139.27 kN-m
 Resisting Force: 9'896.1969 kN
 Activating Force: 6'087.9998 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (3'435.0351; 220.84913) m
 Entry: (3'635.7102; 279.52223) m
 Radius: 93.479605 m
 Center: (3'522.5066; 294.1905) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'439.0341	220.91194	-49.035	35.983765	23.36813	0
Slice 2	3'447.6957	221.1033	-49.035026	114.94604	74.646829	0
Slice 3	3'455.2325	221.31109	-49.03503	156.31024	101.50905	0
Slice 4	3'459.3915	221.42576	-49.035007	161.87201	105.12091	0
Slice 5	3'460.9036	221.46796	-49.035	170.83122	110.93909	0
Slice 6	3'461.6774	221.5734	-49.035	160.42995	104.18443	0
Slice 7	3'464.4477	222.0734	-49.035	170.53712	58.72064	8

	Committente		Oggetto del servizio	
	GE.R.IN		DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI	

Slice 8	3'471.4949	224.7149	-49.035	153.19909	52.750677	8
Slice 9	3'480.1112	227.97525	-49.034976	165.3579	56.93729	8
Slice 10	3'487.9899	230.09438	-49.034975	154.48824	53.194565	8
Slice 11	3'493.1609	231.30597	-49.035	146.62526	50.487127	8
Slice 12	3'496.8441	231.68831	-49.035	161.35354	55.558481	8
Slice 13	3'502.0399	232.22769	-49.035	194.49733	66.970803	8
Slice 14	3'507.3409	233.21244	-49.034987	202.7447	69.810597	8
Slice 15	3'512.747	234.64256	-49.034962	219.9782	75.744568	8
Slice 16	3'520.3965	236.66619	-49.034977	207.44034	71.427438	8
Slice 17	3'527.4517	239.17083	-49.035	143.34533	49.357757	8
Slice 18	3'533.2646	242.46821	-49.035	119.81426	41.255359	8
Slice 19	3'540.6733	246.67083	-49.035	106.15811	36.553168	8
Slice 20	3'548.082	250.87344	-49.035	92.824668	31.962096	8
Slice 21	3'552.1942	253.19612	-49.035	86.697671	29.852402	8
Slice	3'556.6147	255.59577	-49.035	56.038061	19.295452	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

22						
Slice 23	3'563.5981	259.38672	-49.035	25.56804	8.8037822	8
Slice 24	3'569.5396	262.61207	-49.035	24.9414	8.5880128	8
Slice 25	3'575.9412	264.7152	-49.035	53.781722	18.518532	8
Slice 26	3'581.0169	265.44079	-49.035	72.087253	24.821632	8
Slice 27	3'583.2074	265.84655	-49.035	59.762022	20.577714	8
Slice 28	3'587.6376	267.23169	-49.035	64.219599	22.112581	8
Slice 29	3'595.4067	269.66075	-49.035	78.525565	27.03852	8
Slice 30	3'603.1758	272.08981	-49.035	92.981167	32.015983	8
Slice 31	3'611.3308	274.63955	-49.035	79.047352	27.218186	8
Slice 32	3'618.5597	275.97475	-49.035	64.328654	22.150132	8
Slice 33	3'624.4767	275.97475	-49.035	62.6552	21.573915	8
Slice 34	3'631.5727	277.74849	-49.035	26.023866	8.9607357	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE A2 DRENATA – SCORRIMENTO LUNGO BASE – PSEUSO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Fully-Specified](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [0 kPa](#)
 Phi': [40 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

PREVAM

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [10 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B1

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [15 kPa](#)
 Phi': [22 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [25 kPa](#)
 Phi': [24 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 19 kN/m³

Cohesion': 10 kPa

Phi': 25 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

010599

Model: Mohr-Coulomb

Unit Weight: 17 kN/m³

Cohesion': 10 kPa

Phi': 24 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

SLIP SURFACE LIMITS


Left Coordinate: (3'286.6419; 215.93536) m

Right Coordinate: (3'741.4032; 297) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	3'435.0351	220.84913
	3'443.033	220.97475
	3'460.6763	221.46118
	3'461.1308	221.47475
	3'462.224	221.67205
	3'466.6714	222.47475
	3'476.3183	226.95506
	3'492.0756	231.19331

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	3'504.6379	232.49738
	3'525.3431	237.97475
	3'551.7864	252.97475
	3'572.5103	264.22475
	3'582.6617	265.67593
	3'615.6013	275.97475
	3'627.4351	275.97475
	3'635.7102	279.52223

SEISMIC COEFFICIENTS

Horz Seismic Coef.: **0.082**

Vert Seismic Coef.: **0.041**

POINTS


	X (m)	Y (m)
Point 1	3'492.0756	231.19331
Point 2	3'504.6379	232.49738
Point 3	3'525.3431	237.97475
Point 4	3'551.7864	252.97475
Point 5	3'572.5103	264.22475
Point 6	3'582.6617	265.67593
Point 7	3'615.6013	275.97475
Point 8	3'627.4351	275.97475
Point 9	3'635.7102	279.52223

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 10	3'607.0603	279.67693
Point 11	3'583.7531	269.67693
Point 12	3'579.372	269.67693
Point 13	3'560.6273	259.67693
Point 14	3'552.602	259.67693
Point 15	3'529.5602	249.67693
Point 16	3'515.45	249.67693
Point 17	3'494.2461	239.67693
Point 18	3'483.9042	239.67693
Point 19	3'458.1066	229.67693
Point 20	3'452.3584	229.67693
Point 21	3'462.224	221.67205
Point 22	3'466.6714	222.47475
Point 23	3'476.3183	226.95506
Point 24	3'435.0351	220.84913
Point 25	3'443.033	220.97475
Point 26	3'460.6763	221.46118
Point 27	3'461.1308	221.47475
Point 28	3'446.4826	209.32266
Point 29	3'477.0077	223.32587
Point 30	3'494.3661	227.90325
Point 31	3'504.076	228.35863
Point 32	3'526.7423	233.60944

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 33	3'532.554	236.84586
Point 34	3'540.9087	241.65913
Point 35	3'551.3043	247.31989
Point 36	3'573.9336	259.98258
Point 37	3'582.4924	260.69426
Point 38	3'590.3869	263.45452
Point 39	3'617.6671	271.63675
Point 40	3'627.5468	271.85892
Point 41	3'677.9248	293.06174
Point 42	3'741.4032	293.27558
Point 43	3'741.4032	297
Point 44	3'678.8645	297.15151
Point 45	3'666.4418	292.52525
Point 46	3'661.7158	290.67074
Point 47	3'445.3833	212.43942
Point 48	3'376.9488	194.95058
Point 49	3'363.4632	192.26977
Point 50	3'286.6554	184.84873
Point 51	3'286.6419	182.24442
Point 52	3'364.7694	189.71237
Point 53	3'444.7438	214.39855
Point 54	3'424.7421	208.88691
Point 55	3'376.6739	196.99835

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 56	3'363.4954	194.43155
Point 57	3'286.6419	187.43791
Point 58	3'411.824	220.48458
Point 59	3'394.488	220.35902
Point 60	3'379.6366	220.0438
Point 61	3'362.4358	219.93872
Point 62	3'348.8305	219.78957
Point 63	3'299.1781	216.69742
Point 64	3'286.6419	215.93536
Point 65	3'286.6419	147
Point 66	3'741.4032	147

REGIONS

	Mater ial	Points	Area (m²)
Regi on 1	01059 9	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23	1'271. 9
Regi on 2	UNGH IA	20;24;25;26;27;21	115.9 9
Regi on 3	B1	28;29;30;31;32;33;34;35;36;37;38;39;40;41;42;43;44;45;46;9;8;7;6;5;4;3;2;1 ;23;22;47;48;49;50;51;52	1'713. 1
Regi on 4	A	47;22;21;27;26;53;54;55;56;57;50;49;48	378.9 3
Regi on 5	PREV AM	54;53;26;25;24;58;59;60;61;62;63;64;57;56;55	3'493

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Regi on 6	B2	42;41;40;39;38;37;36;35;34;33;32;31;30;29;28;52;51;65;66	40'72 1
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CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 1.587
 Volume: 1'387.8925 m³
 Weight: 23'710.158 kN
 Resisting Moment: 716'079.66 kN-m
 Activating Moment: 451'298.66 kN-m
 Resisting Force: 12'736.876 kN
 Activating Force: 8'029.0001 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (3'435.0351; 220.84913) m
 Entry: (3'635.7102; 279.52223) m
 Radius: 93.479605 m
 Center: (3'522.5066; 294.1905) m

SLIP SLICES


	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'439.0341	220.91194	-49.035	37.700541	0	30.153252
Slice 2	3'447.6957	221.1033	-49.035026	122.05044	0	96.454928
Slice 3	3'455.2325	221.31109	-49.03503	168.36132	0	131.32824
Slice 4	3'459.3915	221.42576	-49.035007	175.92342	0	136.10603
Slice 5	3'460.9036	221.46796	-49.035	186.04274	0	143.68216
Slice	3'461.6774	221.5734	-49.035	170.32193	0	134.75918

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

6						
Slice 7	3'464.4477	222.0734	-49.035	178.87266	0	85.984261
Slice 8	3'471.4949	224.7149	-49.035	153.91946	0	78.21781
Slice 9	3'480.1112	227.97525	-49.034976	169.7707	0	83.641826
Slice 10	3'487.9899	230.09438	-49.034975	158.25971	0	78.797755
Slice 11	3'493.1609	231.30597	-49.035	155.16248	0	75.403809
Slice 12	3'496.8441	231.68831	-49.035	170.61007	0	81.983188
Slice 13	3'502.0399	232.22769	-49.035	205.27573	0	96.781602
Slice 14	3'507.3409	233.21244	-49.034987	206.36047	0	100.26569
Slice 15	3'512.747	234.64256	-49.034962	223.36544	0	107.92498
Slice 16	3'520.3965	236.66619	-49.034977	210.317	0	102.33535
Slice 17	3'527.4517	239.17083	-49.035	137.00745	0	73.694878
Slice 18	3'533.2646	242.46821	-49.035	114.46686	0	63.235554
Slice 19	3'540.6733	246.67083	-49.035	101.43203	0	57.163514
Slice 20	3'548.082	250.87344	-49.035	88.850301	0	51.241231

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 21	3'552.1942	253.19612	-49.035	83.483634	0	48.519396
Slice 22	3'556.6147	255.59577	-49.035	54.27483	0	34.908365
Slice 23	3'563.5981	259.38672	-49.035	25.210593	0	21.381013
Slice 24	3'569.5396	262.61207	-49.035	24.654107	0	21.105216
Slice 25	3'575.9412	264.7152	-49.035	56.857304	0	33.99843
Slice 26	3'581.0169	265.44079	-49.035	75.643491	0	42.151269
Slice 27	3'583.2074	265.84655	-49.035	60.718789	0	36.604944
Slice 28	3'587.6376	267.23169	-49.035	65.234619	0	38.591058
Slice 29	3'595.4067	269.66075	-49.035	79.737935	0	44.962037
Slice 30	3'603.1758	272.08981	-49.035	94.519994	0	51.401944
Slice 31	3'611.3308	274.63955	-49.035	80.690139	0	45.21127
Slice 32	3'618.5597	275.97475	-49.035	68.342405	0	38.690221
Slice 33	3'624.4767	275.97475	-49.035	65.98189	0	37.920909
Slice 34	3'631.5727	277.74849	-49.035	25.950561	0	21.606561

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE A2 NON DRENATA – SUPERFICI CIRCOLARI – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [0 kPa](#)
 Phi': [40 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [75 kPa](#)
 Phi': [17 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B1_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [50 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [90 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 19 kN/m³
 Cohesion': 20 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 150 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range
 Left-Zone Left Coordinate: (3'379; 220.03991) m
 Left-Zone Right Coordinate: (3'537; 252.90576) m
 Left-Zone Increment: 30
 Right Projection: Range
 Right-Zone Left Coordinate: (3'541.8255; 255) m
 Right-Zone Right Coordinate: (3'741.4032; 297) m
 Right-Zone Increment: 20
 Radius Increments: 20

SLIP SURFACE LIMITS

Left Coordinate: (3'286.6419; 215.93536) m
 Right Coordinate: (3'741.4032; 297) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082
 Vert Seismic Coef.: 0.041

POINTS


	X (m)	Y (m)
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 1	3'492.0756	231.19331
Point 2	3'504.6379	232.49738
Point 3	3'525.3431	237.97475
Point 4	3'551.7864	252.97475
Point 5	3'572.5103	264.22475
Point 6	3'582.6617	265.67593
Point 7	3'615.6013	275.97475
Point 8	3'627.4351	275.97475
Point 9	3'635.7102	279.52223
Point 10	3'607.0603	279.67693
Point 11	3'583.7531	269.67693
Point 12	3'579.372	269.67693
Point 13	3'560.6273	259.67693
Point 14	3'552.602	259.67693
Point 15	3'529.5602	249.67693
Point 16	3'515.45	249.67693
Point 17	3'494.2461	239.67693
Point 18	3'483.9042	239.67693
Point 19	3'458.1066	229.67693
Point 20	3'452.3584	229.67693
Point 21	3'462.224	221.67205
Point 22	3'466.6714	222.47475
Point 23	3'476.3183	226.95506

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 24	3'435.0351	220.84913
Point 25	3'443.033	220.97475
Point 26	3'460.6763	221.46118
Point 27	3'461.1308	221.47475
Point 28	3'446.4826	209.32266
Point 29	3'477.0077	223.32587
Point 30	3'494.3661	227.90325
Point 31	3'504.076	228.35863
Point 32	3'526.7423	233.60944
Point 33	3'532.554	236.84586
Point 34	3'540.9087	241.65913
Point 35	3'551.3043	247.31989
Point 36	3'573.9336	259.98258
Point 37	3'582.4924	260.69426
Point 38	3'590.3869	263.45452
Point 39	3'617.6671	271.63675
Point 40	3'627.5468	271.85892
Point 41	3'677.9248	293.06174
Point 42	3'741.4032	293.27558
Point 43	3'741.4032	297
Point 44	3'678.8645	297.15151
Point 45	3'666.4418	292.52525
Point 46	3'661.7158	290.67074

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 47	3'445.3833	212.43942
Point 48	3'376.9488	194.95058
Point 49	3'363.4632	192.26977
Point 50	3'286.6554	184.84873
Point 51	3'286.6419	182.24442
Point 52	3'364.7694	189.71237
Point 53	3'444.7438	214.39855
Point 54	3'424.7421	208.88691
Point 55	3'376.6739	196.99835
Point 56	3'363.4954	194.43155
Point 57	3'286.6419	187.43791
Point 58	3'411.824	220.48458
Point 59	3'394.488	220.35902
Point 60	3'379.6366	220.0438
Point 61	3'362.4358	219.93872
Point 62	3'348.8305	219.78957
Point 63	3'299.1781	216.69742
Point 64	3'286.6419	215.93536
Point 65	3'286.6419	147
Point 66	3'741.4032	147

REGIONS

	Material	Points	Area
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

			(m ²)
Regi on 1	Abbancame nto_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23	1'271. 9
Regi on 2	Unghia_k	20;24;25;26;27;21	115.9 9
Regi on 3	B1_k	28;29;30;31;32;33;34;35;36;37;38;39;40;41;42;43;44;45;46;9;8;7;6;5;4; 3;2;1;23;22;47;48;49;50;51;52	1'713. 1
Regi on 4	A_k	47;22;21;27;26;53;54;55;56;57;50;49;48	378.9 3
Regi on 5	Prevam_k	54;53;26;25;24;58;59;60;61;62;63;64;57;56;55	3'493
Regi on 6	B2_k	42;41;40;39;38;37;36;35;34;33;32;31;30;29;28;52;51;65;66	40'72 1

CURRENT SLIP SURFACE

Slip Surface: 3'011
 F of S: 1.480
 Volume: 9'723.673 m³
 Weight: 196'929.19 kN
 Resisting Moment: 29'052'272 kN-m
 Activating Moment: 19'622'785 kN-m
 Resisting Force: 92'486.018 kN
 Activating Force: 62'492.443 kN
 F of S Rank (Analysis): 1 of 13'671 slip surfaces
 F of S Rank (Query): 1 of 13'671 slip surfaces
 Exit: (3'411.9775; 220.48699) m
 Entry: (3'710.1166; 297.0758) m
 Radius: 293.62699 m
 Center: (3'498.8301; 500.97485) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 1	3'417.7419	218.83031	- 49.034978	53.566625	0	89.27751
Slice 2	3'429.2707	215.76775	- 49.034987	124.09697	0	109.05732
Slice 3	3'437.737	213.78709	-49.035	198.35857	0	130.04703
Slice 4	3'441.736	212.9552	- 49.035004	239.75125	0	59.453237
Slice 5	3'443.8884	212.53516	- 49.035004	271.45146	0	64.771156
Slice 6	3'444.8525	212.35189	- 49.035002	285.56751	0	67.140679
Slice 7	3'445.1723	212.29233	- 49.035001	309.49748	0	153.64936
Slice 8	3'448.0913	211.778	- 49.034992	356.63926	0	169.63829
Slice 9	3'451.5788	211.17578	- 49.034984	422.70686	0	231.10777
Slice 10	3'455.2325	210.61712	- 49.034979	449.71938	0	240.09716
Slice 11	3'459.3915	210.01142	- 49.034983	478.85914	0	249.82254
Slice 12	3'460.9036	209.80766	- 49.034986	496.66938	0	255.85029
Slice 13	3'461.6774	209.70834	- 49.034987	505.42121	0	258.81379
Slice 14	3'464.4477	209.37642	- 49.034986	538.66129	0	270.09854
Slice	3'471.4949	208.66317	-	623.23036	0	298.9693

	Committente		Oggetto del servizio
	GE.R.IN		DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

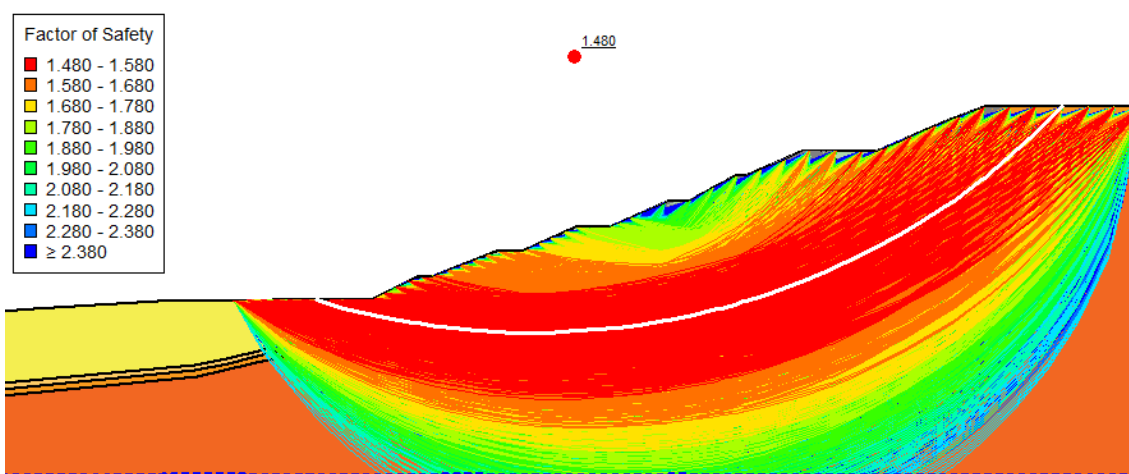
15			49.034961			
Slice 16	3'476.663	208.18601	- 49.034964	683.4361	0	319.67116
Slice 17	3'480.456	207.94369	- 49.034965	720.8994	0	332.66013
Slice 18	3'487.9899	207.57652	- 49.034968	759.82127	0	346.45279
Slice 19	3'493.1609	207.40461	- 49.035003	765.04747	0	348.64818
Slice 20	3'499.1611	207.38919	- 49.035039	804.44056	0	362.95315
Slice 21	3'504.3569	207.40002	- 49.035005	844.35921	0	377.50878
Slice 22	3'510.044	207.61196	- 49.034975	884.93856	0	392.58921
Slice 23	3'520.3965	208.18296	- 49.034966	907.83868	0	402.63409
Slice 24	3'526.0427	208.61243	- 49.034978	891.69055	0	398.21103
Slice 25	3'528.1512	208.81895	- 49.034981	886.6016	0	396.91081
Slice 26	3'531.0571	209.12564	- 49.034984	890.6765	0	399.04031
Slice 27	3'536.7314	209.83475	- 49.034983	916.1206	0	409.45651
Slice 28	3'546.3476	211.27065	- 49.035032	950.4531	0	424.22365
Slice 29	3'552.1942	212.23811	- 49.035017	968.60651	0	432.33338

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 30	3'556.6147	213.11898	- 49.034994	948.95503	0	426.57006
Slice 31	3'566.5688	215.33349	-49.035	945.89582	0	428.26065
Slice 32	3'573.222	216.92887	- 49.034981	963.57554	0	436.46247
Slice 33	3'576.6528	217.86271	- 49.034967	965.72121	0	438.16265
Slice 34	3'580.9322	219.06456	- 49.034989	954.22632	0	435.12827
Slice 35	3'582.577	219.54414	- 49.034996	940.8317	0	430.69417
Slice 36	3'583.2074	219.73304	- 49.034998	936.03617	0	429.11365
Slice 37	3'587.07	220.94194	- 49.034995	928.44377	0	427.30185
Slice 38	3'594.5552	223.42475	-49.03499	918.81015	0	425.5166
Slice 39	3'602.892	226.4424	-49.03498	904.83676	0	422.13749
Slice 40	3'611.3308	229.79406	- 49.034966	859.82732	0	407.14434
Slice 41	3'616.6342	232.01811	- 49.034962	813.36418	0	390.88357
Slice 42	3'622.5511	234.74015	- 49.034985	754.0686	0	369.82771
Slice 43	3'631.5727	239.10713	- 49.035004	668.91436	0	339.36196
Slice	3'640.0445	243.58241	-	619.16872	0	321.63896

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

44			49.034981			
Slice 45	3'648.713	248.53374	-49.03501	590.71219	0	311.58686
Slice 46	3'657.3815	253.88837	-49.03499	557.72501	0	299.65576
Slice 47	3'664.0788	258.27853	- 49.034992	528.0099	0	288.7504
Slice 48	3'672.1833	264.0891	- 49.035008	480.05185	0	271.00012
Slice 49	3'678.3947	268.65389	- 49.035012	441.59871	0	256.70634
Slice 50	3'683.431	272.71005	- 49.034995	374.75054	0	231.92576
Slice 51	3'692.564	280.41413	-49.03501	241.72114	0	182.77828
Slice 52	3'701.697	288.79121	- 49.035007	93.921888	0	128.65266
Slice 53	3'708.1901	295.1165	- 49.034977	4.1900647	0	54.105475



	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE A2 NON DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Fully-Specified](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [0 kPa](#)
 Phi': [40 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [75 kPa](#)
 Phi': [17 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B1_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [50 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [90 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 19 kN/m³

Cohesion': 20 kPa

Phi': 10 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb

Unit Weight: 17 kN/m³

Cohesion': 150 kPa

Phi': 10 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

SLIP SURFACE LIMITS


Left Coordinate: (3'286.6419; 215.93536) m

Right Coordinate: (3'741.4032; 297) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	3'435.0351	220.84913
	3'443.033	220.97475
	3'460.6763	221.46118
	3'461.1308	221.47475
	3'462.224	221.67205
	3'466.6714	222.47475
	3'476.3183	226.95506
	3'492.0756	231.19331

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	3'504.6379	232.49738
	3'525.3431	237.97475
	3'551.7864	252.97475
	3'572.5103	264.22475
	3'582.6617	265.67593
	3'615.6013	275.97475
	3'627.4351	275.97475
	3'635.7102	279.52223


SEISMIC COEFFICIENTS

Horz Seismic Coef.: **0.082**

Vert Seismic Coef.: **0.041**

POINTS

	X (m)	Y (m)
Point 1	3'492.0756	231.19331
Point 2	3'504.6379	232.49738
Point 3	3'525.3431	237.97475
Point 4	3'551.7864	252.97475
Point 5	3'572.5103	264.22475
Point 6	3'582.6617	265.67593
Point 7	3'615.6013	275.97475
Point 8	3'627.4351	275.97475
Point 9	3'635.7102	279.52223

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 10	3'607.0603	279.67693
Point 11	3'583.7531	269.67693
Point 12	3'579.372	269.67693
Point 13	3'560.6273	259.67693
Point 14	3'552.602	259.67693
Point 15	3'529.5602	249.67693
Point 16	3'515.45	249.67693
Point 17	3'494.2461	239.67693
Point 18	3'483.9042	239.67693
Point 19	3'458.1066	229.67693
Point 20	3'452.3584	229.67693
Point 21	3'462.224	221.67205
Point 22	3'466.6714	222.47475
Point 23	3'476.3183	226.95506
Point 24	3'435.0351	220.84913
Point 25	3'443.033	220.97475
Point 26	3'460.6763	221.46118
Point 27	3'461.1308	221.47475
Point 28	3'446.4826	209.32266
Point 29	3'477.0077	223.32587
Point 30	3'494.3661	227.90325
Point 31	3'504.076	228.35863
Point 32	3'526.7423	233.60944

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 33	3'532.554	236.84586
Point 34	3'540.9087	241.65913
Point 35	3'551.3043	247.31989
Point 36	3'573.9336	259.98258
Point 37	3'582.4924	260.69426
Point 38	3'590.3869	263.45452
Point 39	3'617.6671	271.63675
Point 40	3'627.5468	271.85892
Point 41	3'677.9248	293.06174
Point 42	3'741.4032	293.27558
Point 43	3'741.4032	297
Point 44	3'678.8645	297.15151
Point 45	3'666.4418	292.52525
Point 46	3'661.7158	290.67074
Point 47	3'445.3833	212.43942
Point 48	3'376.9488	194.95058
Point 49	3'363.4632	192.26977
Point 50	3'286.6554	184.84873
Point 51	3'286.6419	182.24442
Point 52	3'364.7694	189.71237
Point 53	3'444.7438	214.39855
Point 54	3'424.7421	208.88691
Point 55	3'376.6739	196.99835

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 56	3'363.4954	194.43155
Point 57	3'286.6419	187.43791
Point 58	3'411.824	220.48458
Point 59	3'394.488	220.35902
Point 60	3'379.6366	220.0438
Point 61	3'362.4358	219.93872
Point 62	3'348.8305	219.78957
Point 63	3'299.1781	216.69742
Point 64	3'286.6419	215.93536
Point 65	3'286.6419	147
Point 66	3'741.4032	147

REGIONS

	Material	Points	Area (m²)
Region 1	Abbancame nto_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23	1'271. 9
Region 2	Unghia_k	20;24;25;26;27;21	115.9 9
Region 3	B1_k	28;29;30;31;32;33;34;35;36;37;38;39;40;41;42;43;44;45;46;9;8;7;6;5;4; 3;2;1;23;22;47;48;49;50;51;52	1'713. 1
Region 4	A_k	47;22;21;27;26;53;54;55;56;57;50;49;48	378.9 3
Region 5	Prevam_k	54;53;26;25;24;58;59;60;61;62;63;64;57;56;55	3'493

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Regi on 6	B2_k	42;41;40;39;38;37;36;35;34;33;32;31;30;29;28;52;51;65;66	40'72 1
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CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 3.982
 Volume: 1'387.8925 m³
 Weight: 23'710.158 kN
 Resisting Moment: 1'681'726 kN-m
 Activating Moment: 422'385 kN-m
 Resisting Force: 31'784.174 kN
 Activating Force: 7'982.95 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (3'435.0351; 220.84913) m
 Entry: (3'635.7102; 279.52223) m
 Radius: 93.479605 m
 Center: (3'522.5066; 294.1905) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'439.0341	220.91194	-49.035	37.096082	0	30.033399
Slice 2	3'447.6957	221.1033	-49.035026	116.93781	0	95.194206
Slice 3	3'455.2325	221.31109	-49.03503	156.56432	0	128.0699
Slice 4	3'459.3915	221.42576	-49.035007	160.53675	0	131.71406
Slice 5	3'460.9036	221.46796	-49.035	169.07133	0	138.82344
Slice	3'461.6774	221.5734	-49.035	162.52037	0	133.55651

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

6						
Slice 7	3'464.4477	222.0734	-49.035	171.4896	0	179.68479
Slice 8	3'471.4949	224.7149	-49.035	150.73075	0	176.17611
Slice 9	3'480.1112	227.97525	-49.034976	164.56794	0	178.46931
Slice 10	3'487.9899	230.09438	-49.034975	153.43318	0	176.5691
Slice 11	3'493.1609	231.30597	-49.035	147.96418	0	175.69931
Slice 12	3'496.8441	231.68831	-49.035	162.64954	0	178.25275
Slice 13	3'502.0399	232.22769	-49.035	195.25947	0	183.91026
Slice 14	3'507.3409	233.21244	-49.034987	201.77547	0	184.83488
Slice 15	3'512.747	234.64256	-49.034962	218.79282	0	187.72876
Slice 16	3'520.3965	236.66619	-49.034977	206.69716	0	185.64357
Slice 17	3'527.4517	239.17083	-49.035	140.06962	0	174.06862
Slice 18	3'533.2646	242.46821	-49.035	116.92651	0	170.17729
Slice 19	3'540.6733	246.67083	-49.035	104.01434	0	168.001
Slice 20	3'548.082	250.87344	-49.035	91.385793	0	165.88515

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 21	3'552.1942	253.19612	-49.035	86.049593	0	164.99296
Slice 22	3'556.6147	255.59577	-49.035	55.298689	0	159.85039
Slice 23	3'563.5981	259.38672	-49.035	24.468649	0	154.70152
Slice 24	3'569.5396	262.61207	-49.035	23.576739	0	154.56935
Slice 25	3'575.9412	264.7152	-49.035	62.80735	0	160.93023
Slice 26	3'581.0169	265.44079	-49.035	80.578514	0	163.97676
Slice 27	3'583.2074	265.84655	-49.035	63.797548	0	161.20796
Slice 28	3'587.6376	267.23169	-49.035	67.993402	0	161.93031
Slice 29	3'595.4067	269.66075	-49.035	82.057905	0	164.3377
Slice 30	3'603.1758	272.08981	-49.035	96.548976	0	166.819
Slice 31	3'611.3308	274.63955	-49.035	81.328688	0	164.25841
Slice 32	3'618.5597	275.97475	-49.035	71.709885	0	162.26247
Slice 33	3'624.4767	275.97475	-49.035	68.564055	0	161.67012
Slice 34	3'631.5727	277.74849	-49.035	16.788251	0	153.44864

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE A3 DRENATA – SUPERFICI CIRCOLARI - STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

01_STATICA_GENERICO

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA_D

Model: **Mohr-Coulomb**
 Unit Weight: **18 kN/m³**
 Cohesion': **0 kPa**
 Phi': **33 °**
 Phi-B: **0 °**

ABBANCAMENTO_D

Model: **Mohr-Coulomb**
 Unit Weight: **17 kN/m³**
 Cohesion': **8 kPa**
 Phi': **19 °**
 Phi-B: **0 °**

PREVAM_D

Model: **Mohr-Coulomb**
 Unit Weight: **18 kN/m³**
 Cohesion': **8 kPa**
 Phi': **16 °**
 Phi-B: **0 °**

B2_D

Model: **Mohr-Coulomb**
 Unit Weight: **21 kN/m³**
 Cohesion': **20 kPa**
 Phi': **19 °**
 Phi-B: **0 °**

B1_D

Model: **Mohr-Coulomb**
 Unit Weight: **20 kN/m³**
 Cohesion': **12 kPa**
 Phi': **17 °**
 Phi-B: **0 °**

A_D

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Model: **Mohr-Coulomb**

Unit Weight: **19 kN/m³**

Cohesion': **8 kPa**

Phi': **20 °**

Phi-B: **0 °**

SLIP SURFACE ENTRY AND EXIT

Left Projection: **Range**

Left-Zone Left Coordinate: **(2'751.3418; 220.36382) m**

Left-Zone Right Coordinate: **(2'937; 264.29333) m**

Left-Zone Increment: **30**

Right Projection: **Range**

Right-Zone Left Coordinate: **(2'945.9481; 268.48124) m**

Right-Zone Right Coordinate: **(3'064.7599; 298.99999) m**

Right-Zone Increment: **20**

Radius Increments: **10**

SLIP SURFACE LIMITS

Left Coordinate: **(2'711.7831; 217.29801) m**

Right Coordinate: **(3'166.5444; 307) m**

POINTS

	X (m)	Y (m)
Point 1	2'780.3189	230.24756
Point 2	2'761.5777	221.11201
Point 3	2'770.0323	221.24756
Point 4	2'771.1352	222.24756
Point 5	2'791.3256	222.41238
Point 6	3'166.5444	303.01257
Point 7	3'080.3246	302.38842
Point 8	3'049.2693	285.76317

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 9	3'023.5906	275.83199
Point 10	3'017.0134	274.96252
Point 11	3'003.5041	269.46226
Point 12	2'997.1767	267.769
Point 13	2'980.0278	265.17352
Point 14	2'971.3858	263.29635
Point 15	2'969.083	262.6869
Point 16	2'958.9575	257.24266
Point 17	2'932.6225	250.22585
Point 18	2'917.6895	246.81467
Point 19	2'904.39	240.65645
Point 20	2'900.8284	240.14298
Point 21	2'897.8768	239.63768
Point 22	2'876.353	232.93888
Point 23	2'836.6834	219.79672
Point 24	2'834.1466	219.09019
Point 25	2'812.8195	209.40816
Point 26	2'792.3136	203.4954
Point 27	2'782.4947	199.44034
Point 28	2'762.9184	196.89394
Point 29	2'711.7831	191.66118
Point 30	2'711.7831	153.08176
Point 31	3'166.5444	153.08176

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 32	3'166.5444	307
Point 33	3'078.4196	306.39091
Point 34	3'048.5839	290.24756
Point 35	3'022.709	279.74756
Point 36	3'016.6199	278.99756
Point 37	2'996.9899	271.74756
Point 38	2'985.8129	269.99756
Point 39	2'966.9558	266.74756
Point 40	2'956.6862	260.99756
Point 41	2'948.2498	258.74756
Point 42	2'930.5289	253.74756
Point 43	2'915.4353	250.74756
Point 44	2'902.3925	244.49756
Point 45	2'895.9478	243.74756
Point 46	2'881.4341	239.49756
Point 47	2'832.3851	222.74756
Point 48	2'830.223	222.72991
Point 49	2'811.4482	213.17936
Point 50	2'791.4405	207.66609
Point 51	2'781.4223	203.33454
Point 52	2'767.9566	201.58299
Point 53	2'711.7831	194.88956
Point 54	2'825.4031	222.69057

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 55	2'810.7663	215.04705
Point 56	2'796.5599	211.19433
Point 57	2'790.7748	209.55719
Point 58	2'788.672	208.64801
Point 59	2'780.8861	205.28164
Point 60	2'711.7831	197.26143
Point 61	2'755.2558	220.81593
Point 62	2'741.4729	219.22387
Point 63	2'736.6835	219.04398
Point 64	2'711.7831	217.29801
Point 65	2'790.2627	209.33577
Point 66	2'982.1724	269.37012
Point 67	3'011.149	290.24756
Point 68	2'990.649	280.24756
Point 69	2'980.6698	280.24756
Point 70	2'959.0565	270.24756
Point 71	2'949.7221	270.24756
Point 72	2'928.3556	260.24756
Point 73	2'903.0593	260.24756
Point 74	2'880.8345	250.24756
Point 75	2'869.84	250.24757
Point 76	2'842.6494	241.25875
Point 77	2'835.8826	240.24756

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 78	2'817.4082	240.24756
Point 79	2'798.7905	232.31639
Point 80	2'790.7871	230.24756

REGIONS

	Material	Points	Area (m ²)
Reg ion 1	Unghia_d	1;2;3;4;5	117. 17
Reg ion 2	B2_d	6;7;8;9;10;11;12;13;15;16;17;18;19;21;22;23;24;25;26;27;28;29;30;31	44'5 21
Reg ion 3	B1_d	24;23;22;21;19;18;17;16;15;13;12;11;10;9;8;7;6;32;33;34;35;36;37;38;66;39 ;40;41;42;43;44;45;46;47;48;49;50;51;52;53;29;28;27;26;25	1'96 1.2
Reg ion 4	A_d	48;54;55;56;57;65;58;59;60;53;52;51;50;49	258. 53
Reg ion 5	Prevam_d	54;5;4;3;2;61;62;63;64;60;59;58;65;57;56;55	1'69 1.1
Reg ion 6	Abbanca mento_d	46;45;44;43;42;41;40;39;66;38;37;36;35;34;67;68;69;70;71;72;73;74;75;76; 77;78;79;80;1;5;54;48;47	2'97 0.1

CURRENT SLIP SURFACE

Slip Surface: 6'604

F of S: 1.314

Volume: 751.24004 m³

Weight: 13'016.567 kN

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Resisting Moment: 553'762.65 kN-m
 Activating Moment: 421'587.69 kN-m
 Resisting Force: 4'723.6672 kN
 Activating Force: 3'593.9722 kN
 F of S Rank (Analysis): 1 of 7'161 slip surfaces
 F of S Rank (Query): 1 of 7'161 slip surfaces
 Exit: (2'924.9499; 260.24756) m
 Entry: (3'016.6036; 290.24756) m
 Radius: 109.52958 m
 Center: (2'940.1838; 368.71256) m

SLIP SLICES

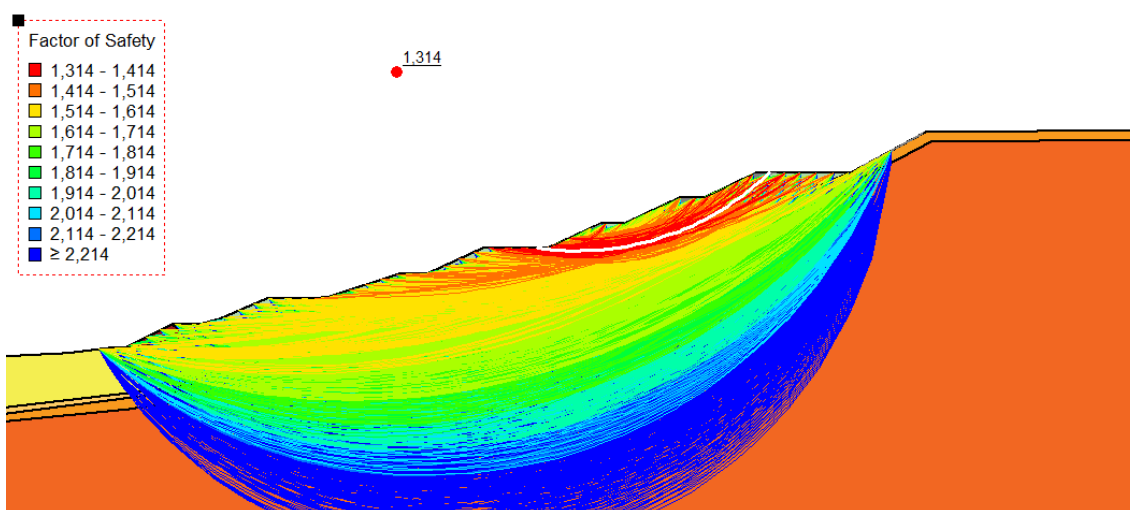
	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'926.6528	260.03555	-49.035	4.8703346	1.6769907	8
Slice 2	2'929.8818	259.67933	-49.035	24.556916	8.4556244	8
Slice 3	2'932.9341	259.43388	-49.035	55.455742	19.094943	8
Slice 4	2'935.9865	259.27409	-49.035	85.07764	29.294581	8
Slice 5	2'939.0388	259.1996	-49.035	113.04413	38.924216	8
Slice 6	2'942.0912	259.21023	-49.035	139.00259	47.862431	8
Slice 7	2'945.1436	259.306	-49.035	162.65175	56.005487	8
Slice 8	2'948.1959	259.48714	-49.035	183.76156	63.274178	8
Slice 9	2'951.0998	259.73709	-49.035	190.17278	65.481739	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 10	2'954.5819	260.15419	- 49.035001	180.34812	55.137953	12
Slice 11	2'957.8713	260.62723	-49.035	171.10181	52.311073	12
Slice 12	2'960.3731	261.0681	-49.035	173.64614	53.088951	12
Slice 13	2'963.0062	261.59553	-49.035	184.10146	56.285464	12
Slice 14	2'965.6393	262.19065	-49.035	192.68246	58.908941	12
Slice 15	2'968.6701	262.96705	-49.035	198.42555	60.664778	12
Slice 16	2'972.0986	263.95108	-49.035	201.00304	61.452795	12
Slice 17	2'975.5271	265.05782	-49.035	201.28445	61.538832	12
Slice 18	2'978.9556	266.29126	-49.035	199.52684	61.001478	12
Slice 19	2'981.4211	267.24553	-49.035	192.22846	58.770137	12
Slice 20	2'983.9927	268.34537	-49.035	171.27143	52.362931	12
Slice 21	2'987.1603	269.77969	-49.035	145.08274	44.356246	12
Slice 22	2'989.5784	270.96049	-49.035	125.15516	43.094378	8
Slice 23	2'992.1133	272.29008	-49.035	114.89492	39.561493	8
Slice	2'995.0419	273.92615	-49.035	110.56756	38.071465	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

24						
Slice 25	2'997.9704	275.68317	-49.035	105.05513	36.173381	8
Slice 26	3'000.899	277.56816	-49.035	98.270809	33.837353	8
Slice 27	3'003.8276	279.58924	-49.035	90.079295	31.016789	8
Slice 28	3'006.7561	281.75593	-49.035	80.288885	27.64568	8
Slice 29	3'009.6847	284.07943	-49.035	68.641077	23.635018	8
Slice 30	3'012.5126	286.48133	-49.035	46.326857	15.951616	8
Slice 31	3'015.2399	288.96416	-49.035	12.83152	4.4182465	8



	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE A3 DRENATA – SUPERFICI CIRCOLARI – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [0 kPa](#)
 Phi': [40 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [10 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B1_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [15 kPa](#)
 Phi': [22 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [25 kPa](#)
 Phi': [24 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 19 kN/m³
 Cohesion': 10 kPa
 Phi': 25 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 10 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range
 Left-Zone Left Coordinate: (2'752.6391; 220.51368) m
 Left-Zone Right Coordinate: (2'932; 261.95322) m
 Left-Zone Increment: 30
 Right Projection: Range
 Right-Zone Left Coordinate: (2'938.843; 265.1559) m
 Right-Zone Right Coordinate: (3'086; 306.4433) m
 Right-Zone Increment: 20
 Radius Increments: 20

SLIP SURFACE LIMITS

Left Coordinate: (2'711.7831; 217.29801) m
 Right Coordinate: (3'166.5444; 307) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082
 Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 1	2'780.3189	230.24756
Point 2	2'761.5777	221.11201
Point 3	2'770.0323	221.24756
Point 4	2'771.1352	222.24756
Point 5	2'791.3256	222.41238
Point 6	3'166.5444	303.01257
Point 7	3'080.3246	302.38842
Point 8	3'049.2693	285.76317
Point 9	3'023.5906	275.83199
Point 10	3'017.0134	274.96252
Point 11	3'003.5041	269.46226
Point 12	2'997.1767	267.769
Point 13	2'980.0278	265.17352
Point 14	2'971.3858	263.29635
Point 15	2'969.083	262.6869
Point 16	2'958.9575	257.24266
Point 17	2'932.6225	250.22585
Point 18	2'917.6895	246.81467
Point 19	2'904.39	240.65645
Point 20	2'900.8284	240.14298
Point 21	2'897.8768	239.63768
Point 22	2'876.353	232.93888
Point 23	2'836.6834	219.79672

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 24	2'834.1466	219.09019
Point 25	2'812.8195	209.40816
Point 26	2'792.3136	203.4954
Point 27	2'782.4947	199.44034
Point 28	2'762.9184	196.89394
Point 29	2'711.7831	191.66118
Point 30	2'711.7831	153.08176
Point 31	3'166.5444	153.08176
Point 32	3'166.5444	307
Point 33	3'078.4196	306.39091
Point 34	3'048.5839	290.24756
Point 35	3'022.709	279.74756
Point 36	3'016.6199	278.99756
Point 37	2'996.9899	271.74756
Point 38	2'985.8129	269.99756
Point 39	2'966.9558	266.74756
Point 40	2'956.6862	260.99756
Point 41	2'948.2498	258.74756
Point 42	2'930.5289	253.74756
Point 43	2'915.4353	250.74756
Point 44	2'902.3925	244.49756
Point 45	2'895.9478	243.74756
Point 46	2'881.4341	239.49756

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 47	2'832.3851	222.74756
Point 48	2'830.223	222.72991
Point 49	2'811.4482	213.17936
Point 50	2'791.4405	207.66609
Point 51	2'781.4223	203.33454
Point 52	2'767.9566	201.58299
Point 53	2'711.7831	194.88956
Point 54	2'825.4031	222.69057
Point 55	2'810.7663	215.04705
Point 56	2'796.5599	211.19433
Point 57	2'790.7748	209.55719
Point 58	2'788.672	208.64801
Point 59	2'780.8861	205.28164
Point 60	2'711.7831	197.26143
Point 61	2'755.2558	220.81593
Point 62	2'741.4729	219.22387
Point 63	2'736.6835	219.04398
Point 64	2'711.7831	217.29801
Point 65	2'790.2627	209.33577
Point 66	2'982.1724	269.37012
Point 67	3'011.149	290.24756
Point 68	2'990.649	280.24756
Point 69	2'980.6698	280.24756

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 70	2'959.0565	270.24756
Point 71	2'949.7221	270.24756
Point 72	2'928.3556	260.24756
Point 73	2'903.0593	260.24756
Point 74	2'880.8345	250.24756
Point 75	2'869.84	250.24757
Point 76	2'842.6494	241.25875
Point 77	2'835.8826	240.24756
Point 78	2'817.4082	240.24756
Point 79	2'798.7905	232.31639
Point 80	2'790.7871	230.24756

REGIONS

	Material	Points	Area (m ²)
Reg ion 1	Unghia_k	1;2;3;4;5	117. 17
Reg ion 2	B2_k	6;7;8;9;10;11;12;13;15;16;17;18;19;21;22;23;24;25;26;27;28;29;30;31	44'5 21
Reg ion 3	B1_k	24;23;22;21;19;18;17;16;15;13;12;11;10;9;8;7;6;32;33;34;35;36;37;38;66;39 ;40;41;42;43;44;45;46;47;48;49;50;51;52;53;29;28;27;26;25	1'96 1.2
Reg ion 4	A_k	48;54;55;56;57;65;58;59;60;53;52;51;50;49	258. 53

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Reg ion 5	Prevam_ k	54;5;4;3;2;61;62;63;64;60;59;58;65;57;56;55	1'69 1.1
Reg ion 6	Abbanca mento_k	46;45;44;43;42;41;40;39;66;38;37;36;35;34;67;68;69;70;71;72;73;74;75;76; 77;78;79;80;1;5;54;48;47	2'97 0.1

CURRENT SLIP SURFACE

Slip Surface: 13'026
 F of S: 1.322
 Volume: 733.31323 m³
 Weight: 12'638.263 kN
 Resisting Moment: 814'398.73 kN-m
 Activating Moment: 616'121.78 kN-m
 Resisting Force: 6'010.4455 kN
 Activating Force: 4'547.4092 kN
 F of S Rank (Analysis): 1 of 13'671 slip surfaces
 F of S Rank (Query): 1 of 13'671 slip surfaces
 Exit: (2'926.132; 260.24756) m
 Entry: (3'019.4882; 290.24756) m
 Radius: 127.19439 m
 Center: (2'936.9033; 386.98505) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'927.2438	260.16288	-49.035	2.4258211	0	10.940463
Slice 2	2'929.8818	259.99381	-49.035	19.300331	0	18.008658
Slice 3	2'932.9341	259.86177	-49.035	49.1755	0	30.553864
Slice 4	2'935.9865	259.80312	-49.035	78.015806	0	42.64586

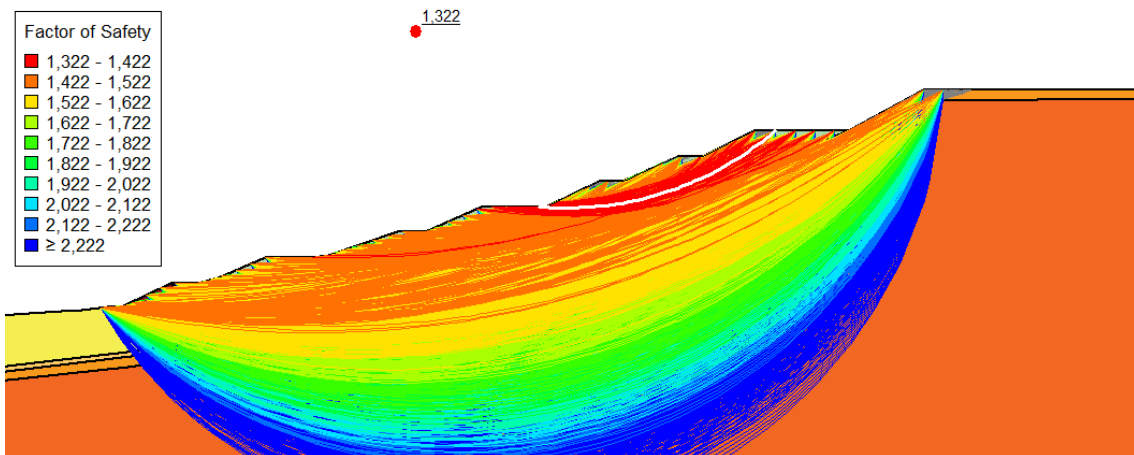
	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 5	2'939.0388	259.81775	-49.035	105.43412	0	54.154954
Slice 6	2'942.0912	259.90568	-49.035	131.0591	0	64.95674
Slice 7	2'945.1436	260.06707	-49.035	154.56277	0	74.940466
Slice 8	2'948.1959	260.30221	-49.035	175.6835	0	84.016045
Slice 9	2'951.0252	260.58384	-49.035	182.09051	0	86.90097
Slice 10	2'953.6315	260.90232	-49.035	174.47865	0	83.835082
Slice 11	2'956.2377	261.27563	-49.035	165.4674	0	80.204593
Slice 12	2'958.2987	261.60538	-49.035	158.2052	0	76.107149
Slice 13	2'960.3731	261.98189	-49.035	162.036	0	77.840817
Slice 14	2'963.0062	262.50515	-49.035	172.957	0	82.47615
Slice 15	2'965.6393	263.08657	-49.035	182.05565	0	86.443439
Slice 16	2'968.6701	263.83411	-49.035	188.43739	0	89.431019
Slice 17	2'972.0986	264.76997	-49.035	191.80633	0	91.301236
Slice 18	2'975.5271	265.81004	-49.035	193.03229	0	92.310832
Slice	2'978.9556	266.95704	-49.035	192.40771	0	92.54791

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

19						
Slice 20	2'981.4211	267.83835	-49.035	185.96249	0	90.262609
Slice 21	2'983.9927	268.84459	-49.035	166.00336	0	82.457334
Slice 22	2'986.6104	269.9087	-49.035	145.7466	0	74.468154
Slice 23	2'989.0284	270.97544	-49.035	127.42911	0	67.509773
Slice 24	2'992.1133	272.40918	-49.035	114.71019	0	62.013258
Slice 25	2'995.0419	273.86736	-49.035	112.43292	0	61.153716
Slice 26	2'997.9704	275.42146	-49.035	109.30318	0	59.863829
Slice 27	3'000.899	277.07557	-49.035	105.29984	0	58.132898
Slice 28	3'003.8276	278.83427	-49.035	100.36528	0	55.936763
Slice 29	3'006.7561	280.70276	-49.035	94.401303	0	53.236197
Slice 30	3'009.6847	282.68696	-49.035	87.264902	0	49.974992
Slice 31	3'012.5389	284.73689	-49.035	69.77258	0	42.011124
Slice 32	3'015.3186	286.85346	-49.035	41.477883	0	29.190904
Slice 33	3'018.0984	289.09473	-49.035	10.79774	0	15.380169

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI



SEZIONE A3 DRENATA – SCORRIMENTO LUNGO BASE – STATICA

PROJECT SETTINGS

Length(L) Units: **Meters**
 Time(t) Units: **Seconds**
 Force(F) Units: **Kilonewtons**
 Pressure(p) Units: **kPa**
 Strength Units: **kPa**
 Unit Weight of Water: **9.807 kN/m³**
 View: **2D**
 Element Thickness: **1**

ANALYSIS SETTINGS

02_STATIC_BASE

Kind: **SLOPE/W**
 Parent: **Insitu**
 Method: **Morgenstern-Price**
 Settings
 Side Function
 Interslice force function option: **Half-Sine**
 PWP Conditions Source: **Parent Analysis**
 Slip Surface
 Direction of movement: **Right to Left**
 Use Passive Mode: **No**
 Slip Surface Option: **Fully-Specified**
 Critical slip surfaces saved: **1**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Resisting Side Maximum Convex Angle: 1 °

Driving Side Maximum Convex Angle: 5 °

Optimize Critical Slip Surface Location: No

Tension Crack

Tension Crack Option: (none)

F of S Distribution

F of S Calculation Option: Constant

Advanced

Number of Slices: 30

F of S Tolerance: 0.001

Minimum Slip Surface Depth: 0.1 m

Search Method: Root Finder

Tolerable difference between starting and converged F of S: 3

Maximum iterations to calculate converged lambda: 20

Max Absolute Lambda: 2

MATERIALS

UNGHIA_D

Model: Mohr-Coulomb

Unit Weight: 18 kN/m³

Cohesion': 0 kPa

Phi': 33 °

Phi-B: 0 °

ABBANCAMENTO_D

Model: Mohr-Coulomb

Unit Weight: 17 kN/m³

Cohesion': 8 kPa

Phi': 19 °

Phi-B: 0 °

PREVAM_D

Model: Mohr-Coulomb

Unit Weight: 18 kN/m³

Cohesion': 8 kPa

Phi': 16 °

Phi-B: 0 °

B2_D

Model: Mohr-Coulomb

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 21 kN/m³

Cohesion': 20 kPa

Phi': 19 °

Phi-B: 0 °

B1_D

Model: Mohr-Coulomb

Unit Weight: 20 kN/m³

Cohesion': 12 kPa

Phi': 17 °

Phi-B: 0 °

A_D

Model: Mohr-Coulomb

Unit Weight: 19 kN/m³

Cohesion': 8 kPa

Phi': 20 °

Phi-B: 0 °

SLIP SURFACE LIMITS

Left Coordinate: (2'711.7831; 217.29801) m

Right Coordinate: (3'166.5444; 307) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	2'761.5777	221.11201
	2'770.0323	221.24756
	2'771.1352	222.24756
	2'791.3256	222.41238
	2'825.4031	222.69057
	2'830.223	222.72991

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI


	2'832.3851	222.74756
	2'881.4341	239.49756
	2'895.9478	243.74756
	2'902.3925	244.49756
	2'915.4353	250.74756
	2'930.5289	253.74756
	2'948.2498	258.74756
	2'956.6862	260.99756
	2'966.9558	266.74756
	2'982.1724	269.37012
	2'985.8129	269.99756
	2'996.9899	271.74756
	3'016.6199	278.99756
	3'022.709	279.74756
	3'048.5839	290.24756

POINTS

	X (m)	Y (m)
Point 1	2'780.3189	230.24756
Point 2	2'761.5777	221.11201
Point 3	2'770.0323	221.24756
Point 4	2'771.1352	222.24756
Point 5	2'791.3256	222.41238

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 6	3'166.5444	303.01257
Point 7	3'080.3246	302.38842
Point 8	3'049.2693	285.76317
Point 9	3'023.5906	275.83199
Point 10	3'017.0134	274.96252
Point 11	3'003.5041	269.46226
Point 12	2'997.1767	267.769
Point 13	2'980.0278	265.17352
Point 14	2'971.3858	263.29635
Point 15	2'969.083	262.6869
Point 16	2'958.9575	257.24266
Point 17	2'932.6225	250.22585
Point 18	2'917.6895	246.81467
Point 19	2'904.39	240.65645
Point 20	2'900.8284	240.14298
Point 21	2'897.8768	239.63768
Point 22	2'876.353	232.93888
Point 23	2'836.6834	219.79672
Point 24	2'834.1466	219.09019
Point 25	2'812.8195	209.40816
Point 26	2'792.3136	203.4954
Point 27	2'782.4947	199.44034
Point 28	2'762.9184	196.89394

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 29	2'711.7831	191.66118
Point 30	2'711.7831	153.08176
Point 31	3'166.5444	153.08176
Point 32	3'166.5444	307
Point 33	3'078.4196	306.39091
Point 34	3'048.5839	290.24756
Point 35	3'022.709	279.74756
Point 36	3'016.6199	278.99756
Point 37	2'996.9899	271.74756
Point 38	2'985.8129	269.99756
Point 39	2'966.9558	266.74756
Point 40	2'956.6862	260.99756
Point 41	2'948.2498	258.74756
Point 42	2'930.5289	253.74756
Point 43	2'915.4353	250.74756
Point 44	2'902.3925	244.49756
Point 45	2'895.9478	243.74756
Point 46	2'881.4341	239.49756
Point 47	2'832.3851	222.74756
Point 48	2'830.223	222.72991
Point 49	2'811.4482	213.17936
Point 50	2'791.4405	207.66609
Point 51	2'781.4223	203.33454

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 52	2'767.9566	201.58299
Point 53	2'711.7831	194.88956
Point 54	2'825.4031	222.69057
Point 55	2'810.7663	215.04705
Point 56	2'796.5599	211.19433
Point 57	2'790.7748	209.55719
Point 58	2'788.672	208.64801
Point 59	2'780.8861	205.28164
Point 60	2'711.7831	197.26143
Point 61	2'755.2558	220.81593
Point 62	2'741.4729	219.22387
Point 63	2'736.6835	219.04398
Point 64	2'711.7831	217.29801
Point 65	2'790.2627	209.33577
Point 66	2'982.1724	269.37012
Point 67	3'011.149	290.24756
Point 68	2'990.649	280.24756
Point 69	2'980.6698	280.24756
Point 70	2'959.0565	270.24756
Point 71	2'949.7221	270.24756
Point 72	2'928.3556	260.24756
Point 73	2'903.0593	260.24756
Point 74	2'880.8345	250.24756

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 75	2'869.84	250.24757
Point 76	2'842.6494	241.25875
Point 77	2'835.8826	240.24756
Point 78	2'817.4082	240.24756
Point 79	2'798.7905	232.31639
Point 80	2'790.7871	230.24756

REGIONS

	Material	Points	Area (m ²)
Reg ion 1	Unghia_d	1;2;3;4;5	117. 17
Reg ion 2	B2_d	6;7;8;9;10;11;12;13;15;16;17;18;19;21;22;23;24;25;26;27;28;29;30;31	44'5 21
Reg ion 3	B1_d	24;23;22;21;19;18;17;16;15;13;12;11;10;9;8;7;6;32;33;34;35;36;37;38;66;39 ;40;41;42;43;44;45;46;47;48;49;50;51;52;53;29;28;27;26;25	1'96 1.2
Reg ion 4	A_d	48;54;55;56;57;65;58;59;60;53;52;51;50;49	258. 53
Reg ion 5	Prevam_d	54;5;4;3;2;61;62;63;64;60;59;58;65;57;56;55	1'69 1.1
Reg ion 6	Abbanca mento_d	46;45;44;43;42;41;40;39;66;38;37;36;35;34;67;68;69;70;71;72;73;74;75;76; 77;78;79;80;1;5;54;48;47	2'97 0.1

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 1.776
 Volume: 3'087.2703 m³
 Weight: 52'600.768 kN
 Resisting Moment: 1'419'241.1 kN-m
 Activating Moment: 799'076.55 kN-m
 Resisting Force: 20'190.052 kN
 Activating Force: 11'368.578 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (2'761.5777; 221.11201) m
 Entry: (3'048.5839; 290.24756) m
 Radius: 125.63077 m
 Center: (2'892.5905; 307.53145) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'765.805	221.17979	-49.035	36.017683	23.390157	0
Slice 2	2'770.5837	221.74756	-49.035	50.367849	32.709263	0
Slice 3	2'775.7271	222.28504	-49.035	105.33016	68.402205	0
Slice 4	2'785.553	222.36526	-49.035	144.06729	93.558395	0
Slice 5	2'791.0563	222.41018	-49.035	142.25061	92.378627	0
Slice 6	2'795.0581	222.44285	-49.035	158.38848	54.537526	8
Slice 7	2'803.4449	222.51132	-49.035	210.28344	72.406395	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 8	2'812.7538	222.58731	-49.035	280.69414	96.650744	8
Slice 9	2'821.4057	222.65794	-49.035	316.77421	109.07411	8
Slice 10	2'827.8131	222.71024	-49.035	317.63031	109.36889	8
Slice 11	2'831.3041	222.73873	-49.035	318.002	109.49687	8
Slice 12	2'834.1339	223.34475	-49.035	267.64187	92.156485	8
Slice 13	2'839.266	225.09735	-49.035	247.27731	85.144407	8
Slice 14	2'847.1812	227.80035	-49.035	234.98012	80.910142	8
Slice 15	2'856.2447	230.8955	-49.035	231.91549	79.854906	8
Slice 16	2'865.3082	233.99065	-49.035	229.04229	78.865585	8
Slice 17	2'875.3373	237.41551	-49.035	198.27107	68.270204	8
Slice 18	2'881.1343	239.39518	-49.035	169.43	58.339428	8
Slice 19	2'885.0625	240.56006	-49.035	182.49105	62.836709	8
Slice 20	2'892.3194	242.68506	-49.035	199.83018	68.80705	8
Slice 21	2'899.1701	244.12256	-49.035	245.84339	84.650668	8
Slice	2'902.7259	244.65732	-49.035	221.84168	76.386217	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

22						
Slice 23	2'909.2473	247.78232	-49.035	178.74108	61.545489	8
Slice 24	2'921.8955	252.03158	-49.035	134.12099	46.181561	8
Slice 25	2'929.4423	253.53158	-49.035	117.59968	40.492816	8
Slice 26	2'934.9591	254.99756	-49.035	130.23421	44.843234	8
Slice 27	2'943.8196	257.49756	-49.035	156.04177	53.729489	8
Slice 28	2'948.9859	258.94389	-49.035	172.54527	59.4121	8
Slice 29	2'953.2042	260.06889	-49.035	160.14126	55.141059	8
Slice 30	2'957.8713	261.66113	-49.035	118.99411	40.972958	8
Slice 31	2'963.0062	264.53613	-49.035	104.65532	36.035717	8
Slice 32	2'973.8128	267.92935	-49.035	150.10833	51.686442	8
Slice 33	2'981.4211	269.24063	-49.035	180.47427	62.142273	8
Slice 34	2'983.9927	269.68384	-49.035	173.00938	59.571907	8
Slice 35	2'988.231	270.37616	-49.035	162.34103	55.898499	8
Slice 36	2'993.8195	271.25116	-49.035	173.09034	59.599785	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 37	3'004.0695	274.36227	-49.035	190.21023	65.494635	8
Slice 38	3'013.8845	277.98727	-49.035	189.04502	65.09342	8
Slice 39	3'019.6645	279.37256	-49.035	180.79029	62.251088	8
Slice 40	3'027.0215	281.49756	-49.035	133.95652	46.124927	8
Slice 41	3'035.6465	284.99756	-49.035	80.351873	27.667369	8
Slice 42	3'044.2714	288.49756	-49.035	25.859679	8.9042014	8

SEZIONE A3 DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: **Meters**
 Time(t) Units: **Seconds**
 Force(F) Units: **Kilonewtons**
 Pressure(p) Units: **kPa**
 Strength Units: **kPa**
 Unit Weight of Water: **9.807 kN/m³**
 View: **2D**
 Element Thickness: **1**

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: **SLOPE/W**
 Parent: **Insitu**
 Method: **Morgenstern-Price**
 Settings

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Fully-Specified](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [10 kPa](#)

Phi': [20 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

B1_K

Model: **Mohr-Coulomb**
 Unit Weight: **20 kN/m³**
 Cohesion': **15 kPa**
 Phi': **22 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

B2_K

Model: **Mohr-Coulomb**
 Unit Weight: **21 kN/m³**
 Cohesion': **25 kPa**
 Phi': **24 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

A_K

Model: **Mohr-Coulomb**
 Unit Weight: **19 kN/m³**
 Cohesion': **10 kPa**
 Phi': **25 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

ABBANCAMENTO_K

Model: **Mohr-Coulomb**
 Unit Weight: **17 kN/m³**
 Cohesion': **10 kPa**
 Phi': **24 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

SLIP SURFACE LIMITS

Left Coordinate: **(2'711.7831; 217.29801) m**
 Right Coordinate: **(3'166.5444; 307) m**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	2'761.5777	221.11201
	2'770.0323	221.24756
	2'771.1352	222.24756
	2'791.3256	222.41238
	2'825.4031	222.69057
	2'830.223	222.72991
	2'832.3851	222.74756
	2'881.4341	239.49756
	2'895.9478	243.74756
	2'902.3925	244.49756
	2'915.4353	250.74756
	2'930.5289	253.74756
	2'948.2498	258.74756
	2'956.6862	260.99756
	2'966.9558	266.74756
	2'982.1724	269.37012
	2'985.8129	269.99756
	2'996.9899	271.74756
	3'016.6199	278.99756

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	3'022.709	279.74756
	3'048.5839	290.24756


SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082

Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
Point 1	2'780.3189	230.24756
Point 2	2'761.5777	221.11201
Point 3	2'770.0323	221.24756
Point 4	2'771.1352	222.24756
Point 5	2'791.3256	222.41238
Point 6	3'166.5444	303.01257
Point 7	3'080.3246	302.38842
Point 8	3'049.2693	285.76317
Point 9	3'023.5906	275.83199
Point 10	3'017.0134	274.96252
Point 11	3'003.5041	269.46226
Point 12	2'997.1767	267.769
Point 13	2'980.0278	265.17352
Point 14	2'971.3858	263.29635
Point 15	2'969.083	262.6869

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 16	2'958.9575	257.24266
Point 17	2'932.6225	250.22585
Point 18	2'917.6895	246.81467
Point 19	2'904.39	240.65645
Point 20	2'900.8284	240.14298
Point 21	2'897.8768	239.63768
Point 22	2'876.353	232.93888
Point 23	2'836.6834	219.79672
Point 24	2'834.1466	219.09019
Point 25	2'812.8195	209.40816
Point 26	2'792.3136	203.4954
Point 27	2'782.4947	199.44034
Point 28	2'762.9184	196.89394
Point 29	2'711.7831	191.66118
Point 30	2'711.7831	153.08176
Point 31	3'166.5444	153.08176
Point 32	3'166.5444	307
Point 33	3'078.4196	306.39091
Point 34	3'048.5839	290.24756
Point 35	3'022.709	279.74756
Point 36	3'016.6199	278.99756
Point 37	2'996.9899	271.74756
Point 38	2'985.8129	269.99756

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 39	2'966.9558	266.74756
Point 40	2'956.6862	260.99756
Point 41	2'948.2498	258.74756
Point 42	2'930.5289	253.74756
Point 43	2'915.4353	250.74756
Point 44	2'902.3925	244.49756
Point 45	2'895.9478	243.74756
Point 46	2'881.4341	239.49756
Point 47	2'832.3851	222.74756
Point 48	2'830.223	222.72991
Point 49	2'811.4482	213.17936
Point 50	2'791.4405	207.66609
Point 51	2'781.4223	203.33454
Point 52	2'767.9566	201.58299
Point 53	2'711.7831	194.88956
Point 54	2'825.4031	222.69057
Point 55	2'810.7663	215.04705
Point 56	2'796.5599	211.19433
Point 57	2'790.7748	209.55719
Point 58	2'788.672	208.64801
Point 59	2'780.8861	205.28164
Point 60	2'711.7831	197.26143
Point 61	2'755.2558	220.81593

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 62	2'741.4729	219.22387
Point 63	2'736.6835	219.04398
Point 64	2'711.7831	217.29801
Point 65	2'790.2627	209.33577
Point 66	2'982.1724	269.37012
Point 67	3'011.149	290.24756
Point 68	2'990.649	280.24756
Point 69	2'980.6698	280.24756
Point 70	2'959.0565	270.24756
Point 71	2'949.7221	270.24756
Point 72	2'928.3556	260.24756
Point 73	2'903.0593	260.24756
Point 74	2'880.8345	250.24756
Point 75	2'869.84	250.24757
Point 76	2'842.6494	241.25875
Point 77	2'835.8826	240.24756
Point 78	2'817.4082	240.24756
Point 79	2'798.7905	232.31639
Point 80	2'790.7871	230.24756

REGIONS

	Material	Points	Area (m ²)
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Reg ion 1	Unghia_k	1;2;3;4;5	117. 17
Reg ion 2	B2_k	6;7;8;9;10;11;12;13;15;16;17;18;19;21;22;23;24;25;26;27;28;29;30;31	44'5 21
Reg ion 3	B1_k	24;23;22;21;19;18;17;16;15;13;12;11;10;9;8;7;6;32;33;34;35;36;37;38;66;39 ;40;41;42;43;44;45;46;47;48;49;50;51;52;53;29;28;27;26;25	1'96 1.2
Reg ion 4	A_k	48;54;55;56;57;65;58;59;60;53;52;51;50;49	258. 53
Reg ion 5	Prevam_ k	54;5;4;3;2;61;62;63;64;60;59;58;65;57;56;55	1'69 1.1
Reg ion 6	Abbanca mento_k	46;45;44;43;42;41;40;39;66;38;37;36;35;34;67;68;69;70;71;72;73;74;75;76; 77;78;79;80;1;5;54;48;47	2'97 0.1

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 1.651
 Volume: 3'087.2703 m³
 Weight: 52'600.768 kN
 Resisting Moment: 1'828'958.5 kN-m
 Activating Moment: 1'107'361.9 kN-m
 Resisting Force: 26'016.657 kN
 Activating Force: 15'758.786 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (2'761.5777; 221.11201) m
 Entry: (3'048.5839; 290.24756) m
 Radius: 125.63077 m
 Center: (2'892.5905; 307.53145) m

SLIP SLICES

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI


	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'765.805	221.17979	-49.035	37.591985	0	30.222689
Slice 2	2'770.5837	221.74756	-49.035	46.781505	0	42.236402
Slice 3	2'775.7271	222.28504	-49.035	110.83725	0	88.387762
Slice 4	2'785.553	222.36526	-49.035	152.94045	0	120.89957
Slice 5	2'791.0563	222.41018	-49.035	151.90243	0	119.37796
Slice 6	2'795.0581	222.44285	-49.035	167.54992	0	80.521459
Slice 7	2'803.4449	222.51132	-49.035	222.34275	0	103.62895
Slice 8	2'812.7538	222.58731	-49.035	296.73204	0	134.98363
Slice 9	2'821.4057	222.65794	-49.035	335.22426	0	151.05293
Slice 10	2'827.8131	222.71024	-49.035	336.59997	0	151.43657
Slice 11	2'831.3041	222.73873	-49.035	337.2254	0	151.60343
Slice 12	2'834.1339	223.34475	-49.035	271.63602	0	129.16443
Slice 13	2'839.266	225.09735	-49.035	250.75729	0	120.0981
Slice	2'847.1812	227.80035	-49.035	237.83631	0	114.62294

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

14						
Slice 15	2'856.2447	230.8955	-49.035	234.17885	0	113.25791
Slice 16	2'865.3082	233.99065	-49.035	230.79214	0	111.97808
Slice 17	2'875.3373	237.41551	-49.035	199.52909	0	98.277707
Slice 18	2'881.1343	239.39518	-49.035	170.45216	0	85.436887
Slice 19	2'885.0625	240.56006	-49.035	184.77139	0	91.252532
Slice 20	2'892.3194	242.68506	-49.035	202.05571	0	98.971752
Slice 21	2'899.1701	244.12256	-49.035	255.42031	0	119.46587
Slice 22	2'902.7259	244.65732	-49.035	217.96489	0	108.75963
Slice 23	2'909.2473	247.78232	-49.035	175.58567	0	89.573702
Slice 24	2'921.8955	252.03158	-49.035	137.47437	0	69.713144
Slice 25	2'929.4423	253.53158	-49.035	120.48601	0	62.35631
Slice 26	2'934.9591	254.99756	-49.035	131.59174	0	67.982287
Slice 27	2'943.8196	257.49756	-49.035	157.61539	0	79.472232
Slice 28	2'948.9859	258.94389	-49.035	174.68482	0	86.819959

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 29	2'953.2042	260.06889	-49.035	162.12843	0	81.297158
Slice 30	2'957.8713	261.66113	-49.035	115.66632	0	62.975042
Slice 31	2'963.0062	264.53613	-49.035	101.79491	0	56.594297
Slice 32	2'973.8128	267.92935	-49.035	154.11038	0	76.831118
Slice 33	2'981.4211	269.24063	-49.035	185.20139	0	90.35142
Slice 34	2'983.9927	269.68384	-49.035	177.50613	0	87.027602
Slice 35	2'988.231	270.37616	-49.035	166.8371	0	82.277541
Slice 36	2'993.8195	271.25116	-49.035	177.81002	0	87.063422
Slice 37	3'004.0695	274.36227	-49.035	190.87854	0	94.683721
Slice 38	3'013.8845	277.98727	-49.035	190.23832	0	94.16552
Slice 39	3'019.6645	279.37256	-49.035	186.66884	0	90.491365
Slice 40	3'027.0215	281.49756	-49.035	134.55884	0	69.644289
Slice 41	3'035.6465	284.99756	-49.035	80.74676	0	45.784984
Slice 42	3'044.2714	288.49756	-49.035	25.687578	0	21.531712

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE A3 NON DRENATA – SUPERFICIE CIRCOLARE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [0 kPa](#)
 Phi': [40 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [75 kPa](#)
 Phi': [17 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B1_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [50 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [90 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 19 kN/m³
 Cohesion': 20 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 150 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range
 Left-Zone Left Coordinate: (2'736.9291; 219.0532) m
 Left-Zone Right Coordinate: (2'934.2366; 263) m
 Left-Zone Increment: 10
 Right Projection: Range
 Right-Zone Left Coordinate: (2'941.1479; 266.23464) m
 Right-Zone Right Coordinate: (3'064; 298.58883) m
 Right-Zone Increment: 10
 Radius Increments: 10

SLIP SURFACE LIMITS

Left Coordinate: (2'711.7831; 217.29801) m
 Right Coordinate: (3'166.5444; 307) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082
 Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 1	2'780.3189	230.24756
Point 2	2'761.5777	221.11201
Point 3	2'770.0323	221.24756
Point 4	2'771.1352	222.24756
Point 5	2'791.3256	222.41238
Point 6	3'166.5444	303.01257
Point 7	3'080.3246	302.38842
Point 8	3'049.2693	285.76317
Point 9	3'023.5906	275.83199
Point 10	3'017.0134	274.96252
Point 11	3'003.5041	269.46226
Point 12	2'997.1767	267.769
Point 13	2'980.0278	265.17352
Point 14	2'971.3858	263.29635
Point 15	2'969.083	262.6869
Point 16	2'958.9575	257.24266
Point 17	2'932.6225	250.22585
Point 18	2'917.6895	246.81467
Point 19	2'904.39	240.65645
Point 20	2'900.8284	240.14298
Point 21	2'897.8768	239.63768
Point 22	2'876.353	232.93888
Point 23	2'836.6834	219.79672

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 24	2'834.1466	219.09019
Point 25	2'812.8195	209.40816
Point 26	2'792.3136	203.4954
Point 27	2'782.4947	199.44034
Point 28	2'762.9184	196.89394
Point 29	2'711.7831	191.66118
Point 30	2'711.7831	153.08176
Point 31	3'166.5444	153.08176
Point 32	3'166.5444	307
Point 33	3'078.4196	306.39091
Point 34	3'048.5839	290.24756
Point 35	3'022.709	279.74756
Point 36	3'016.6199	278.99756
Point 37	2'996.9899	271.74756
Point 38	2'985.8129	269.99756
Point 39	2'966.9558	266.74756
Point 40	2'956.6862	260.99756
Point 41	2'948.2498	258.74756
Point 42	2'930.5289	253.74756
Point 43	2'915.4353	250.74756
Point 44	2'902.3925	244.49756
Point 45	2'895.9478	243.74756
Point 46	2'881.4341	239.49756

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 47	2'832.3851	222.74756
Point 48	2'830.223	222.72991
Point 49	2'811.4482	213.17936
Point 50	2'791.4405	207.66609
Point 51	2'781.4223	203.33454
Point 52	2'767.9566	201.58299
Point 53	2'711.7831	194.88956
Point 54	2'825.4031	222.69057
Point 55	2'810.7663	215.04705
Point 56	2'796.5599	211.19433
Point 57	2'790.7748	209.55719
Point 58	2'788.672	208.64801
Point 59	2'780.8861	205.28164
Point 60	2'711.7831	197.26143
Point 61	2'755.2558	220.81593
Point 62	2'741.4729	219.22387
Point 63	2'736.6835	219.04398
Point 64	2'711.7831	217.29801
Point 65	2'790.2627	209.33577
Point 66	2'982.1724	269.37012
Point 67	3'011.149	290.24756
Point 68	2'990.649	280.24756
Point 69	2'980.6698	280.24756

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 70	2'959.0565	270.24756
Point 71	2'949.7221	270.24756
Point 72	2'928.3556	260.24756
Point 73	2'903.0593	260.24756
Point 74	2'880.8345	250.24756
Point 75	2'869.84	250.24757
Point 76	2'842.6494	241.25875
Point 77	2'835.8826	240.24756
Point 78	2'817.4082	240.24756
Point 79	2'798.7905	232.31639
Point 80	2'790.7871	230.24756

REGIONS

	Material	Points	Area (m ²)
Reg ion 1	Unghia_k	1;2;3;4;5	117. 17
Reg ion 2	B2_k	6;7;8;9;10;11;12;13;15;16;17;18;19;21;22;23;24;25;26;27;28;29;30;31	44'5 21
Reg ion 3	B1_k	24;23;22;21;19;18;17;16;15;13;12;11;10;9;8;7;6;32;33;34;35;36;37;38;66;39 ;40;41;42;43;44;45;46;47;48;49;50;51;52;53;29;28;27;26;25	1'96 1.2
Reg ion 4	A_k	48;54;55;56;57;65;58;59;60;53;52;51;50;49	258. 53

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Reg ion 5	Prevam_ k	54;5;4;3;2;61;62;63;64;60;59;58;65;57;56;55	1'69 1.1
Reg ion 6	Abbanca mento_k	46;45;44;43;42;41;40;39;66;38;37;36;35;34;67;68;69;70;71;72;73;74;75;76; 77;78;79;80;1;5;54;48;47	2'97 0.1

CURRENT SLIP SURFACE

Slip Surface: 115
 F of S: 1.647
 Volume: 12'014.046 m³
 Weight: 236'198.4 kN
 Resisting Moment: 33'606'806 kN-m
 Activating Moment: 20'410'778 kN-m
 Resisting Force: 108'919.31 kN
 Activating Force: 66'131.112 kN
 F of S Rank (Analysis): 1 of 1'331 slip surfaces
 F of S Rank (Query): 1 of 1'331 slip surfaces
 Exit: (2'736.9291; 219.0532) m
 Entry: (3'064; 298.58883) m
 Radius: 288.25475 m
 Center: (2'845.168; 486.21445) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'739.201	218.1551	-49.034999	39.880551	0	85.171965
Slice 2	2'748.3643	214.79906	-49.034992	129.19818	0	110.49824
Slice 3	2'758.4167	211.34352	-49.034982	223.72985	0	137.18834
Slice 4	2'765.805	209.13509	-49.034978	318.60091	0	164.05496

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 5	2'770.5837	207.77656	-49.03496	397.14655	0	186.38088
Slice 6	2'775.7271	206.48894	-49.034979	478.41363	0	209.46862
Slice 7	2'780.5113	205.30474	-49.034998	551.24484	0	230.19202
Slice 8	2'780.7949	205.23956	-49.035	523.55339	0	106.38904
Slice 9	2'782.5011	204.85895	-49.035	531.50598	0	107.72283
Slice 10	2'786.394	204.02479	-49.035	581.93807	0	244.96472
Slice 11	2'789.4673	203.3937	-49.035	598.17582	0	250.39273
Slice 12	2'790.5249	203.18644	-49.035	603.46293	0	252.16523
Slice 13	2'791.0112	203.09295	-49.035	606.93499	0	253.33725
Slice 14	2'791.2805	203.04149	-49.035	619.24583	0	296.45634
Slice 15	2'791.383	203.02199	-49.035	620.3674	0	296.83505
Slice 16	2'791.8771	202.92895	-49.035	625.84296	0	298.68483
Slice 17	2'794.4367	202.46723	-49.035001	653.21998	0	307.94563
Slice 18	2'797.6752	201.90133	-49.034999	686.96477	0	319.39483
Slice	2'804.7784	200.86746	-49.034991	773.7693	0	349.07127

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

19						
Slice 20	2'811.1073	199.97933	-49.035003	851.56267	0	375.88075
Slice 21	2'812.1339	199.85966	-49.035005	863.82342	0	380.13197
Slice 22	2'815.1139	199.54003	-49.035015	899.06118	0	392.39153
Slice 23	2'821.4057	198.96881	-49.035007	936.80544	0	405.85714
Slice 24	2'827.8131	198.49275	-49.034998	950.31974	0	411.19243
Slice 25	2'831.3041	198.29533	-49.034997	953.53162	0	412.75069
Slice 26	2'833.2658	198.20688	-49.035004	954.77452	0	413.45781
Slice 27	2'835.0146	198.13989	-49.035009	956.35416	0	414.26574
Slice 28	2'836.283	198.09695	-49.035013	958.28278	0	415.13078
Slice 29	2'839.6664	198.02765	-49.035014	968.57308	0	419.26432
Slice 30	2'849.4471	198.07165	-49.035003	1'012.2473	0	436.36924
Slice 31	2'863.0424	198.59504	-49.035031	1'068.4829	0	459.29346
Slice 32	2'873.0965	199.33452	-49.035	1'078.2766	0	465.49933
Slice 33	2'878.5938	199.91315	-49.034994	1'057.1949	0	459.6441

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

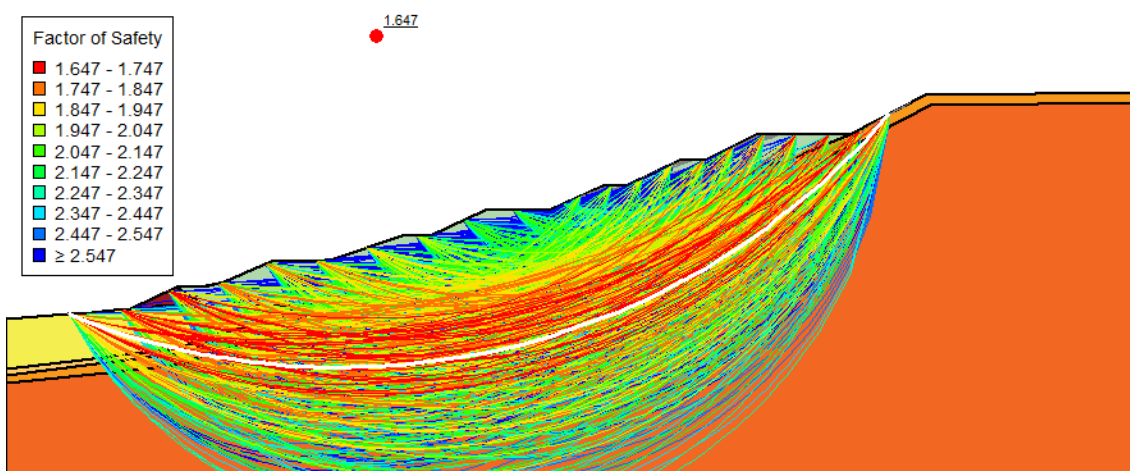
Slice 34	2'888.3911	201.32123	-49.03501	1'068.3497	0	466.51321
Slice 35	2'896.9123	202.6437	-49.035008	1'087.9815	0	476.09008
Slice 36	2'900.1347	203.2583	-49.035001	1'090.9768	0	478.14545
Slice 37	2'902.7259	203.76485	-49.034994	1'093.3072	0	479.76948
Slice 38	2'903.7247	203.97083	-49.034991	1'089.9461	0	478.86858
Slice 39	2'909.9127	205.38209	-49.034972	1'053.1293	0	467.48804
Slice 40	2'916.5624	206.94345	-49.034988	1'013.0133	0	454.92485
Slice 41	2'923.0226	208.72788	-49.035007	964.64077	0	439.15838
Slice 42	2'929.4423	210.55639	-49.035006	924.69652	0	426.27267
Slice 43	2'931.5757	211.21752	-49.035001	923.9434	0	426.50172
Slice 44	2'940.4362	214.28387	-49.03501	916.97434	0	425.91925
Slice 45	2'948.9859	217.30551	-49.035012	910.2501	0	425.19927
Slice 46	2'953.2042	218.99751	-49.035005	879.20134	0	414.58644
Slice 47	2'957.8713	220.90876	-49.035008	840.10679	0	401.01485
Slice	2'963.0062	223.18166	-49.034991	826.48085	0	396.77022

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

48						
Slice 49	2'968.0194	225.45218	-49.034965	819.94968	0	395.0463
Slice 50	2'974.5554	228.70289	-49.034989	800.899	0	388.77174
Slice 51	2'980.3488	231.62295	-49.035024	784.0638	0	383.1269
Slice 52	2'981.4211	232.19638	-49.03503	775.40548	0	380.01684
Slice 53	2'983.9927	233.59969	-49.035024	749.19063	0	370.52294
Slice 54	2'988.231	235.98246	-49.035009	705.27705	0	354.55953
Slice 55	2'993.8195	239.27343	-49.035011	667.92917	0	341.04028
Slice 56	3'000.247	243.26098	-49.035006	644.20343	0	332.51957
Slice 57	3'007.3266	247.94141	-49.034999	616.89034	0	322.57286
Slice 58	3'013.8845	252.51766	-49.035042	570.24341	0	305.31852
Slice 59	3'016.8167	254.63834	-49.035033	536.6261	0	292.8263
Slice 60	3'019.8612	256.95416	-49.035018	497.45369	0	278.2707
Slice 61	3'023.1498	259.47014	-49.034996	455.40401	0	262.63
Slice 62	3'029.8389	265.03306	-49.035035	367.29184	0	229.93052

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 63	3'042.3356	276.11366	-49.034966	190.72183	0	164.5647
Slice 64	3'048.9266	282.31983	-49.034993	93.229013	0	128.63492
Slice 65	3'052.3767	285.87626	-49.035007	61.95935	0	117.33111
Slice 66	3'059.742	293.83952	-49.034977	12.491544	0	57.431501



SEZIONE A3 NON DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: **Meters**
 Time(t) Units: **Seconds**
 Force(F) Units: **Kilonewtons**
 Pressure(p) Units: **kPa**
 Strength Units: **kPa**
 Unit Weight of Water: **9.807 kN/m³**
 View: **2D**
 Element Thickness: **1**

ANALYSIS SETTINGS

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

03_PSEUDO-STATICA_GENERICO_DRE (2)

Kind: [SLOPE/W](#)

Parent: [Insitu](#)

Method: [Morgenstern-Price](#)

Settings

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Fully-Specified](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 18 kN/m³
 Cohesion': 75 kPa
 Phi': 17 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B1_K

Model: Mohr-Coulomb
 Unit Weight: 20 kN/m³
 Cohesion': 50 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B2_K

Model: Mohr-Coulomb
 Unit Weight: 21 kN/m³
 Cohesion': 90 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A_K

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 20 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 150 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SLIP SURFACE LIMITS

Left Coordinate: (2'711.7831; 217.29801) m

Right Coordinate: (3'166.5444; 307) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	2'761.5777	221.11201
	2'770.0323	221.24756
	2'771.1352	222.24756
	2'791.3256	222.41238
	2'825.4031	222.69057
	2'830.223	222.72991
	2'832.3851	222.74756
	2'881.4341	239.49756
	2'895.9478	243.74756
	2'902.3925	244.49756
	2'915.4353	250.74756
	2'930.5289	253.74756
	2'948.2498	258.74756
	2'956.6862	260.99756
	2'966.9558	266.74756
	2'982.1724	269.37012

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	2'985.8129	269.99756
	2'996.9899	271.74756
	3'016.6199	278.99756
	3'022.709	279.74756
	3'048.5839	290.24756

SEISMIC COEFFICIENTS

Horz Seismic Coef.: **0.082**

Vert Seismic Coef.: **0.041**

POINTS

	X (m)	Y (m)
Point 1	2'780.3189	230.24756
Point 2	2'761.5777	221.11201
Point 3	2'770.0323	221.24756
Point 4	2'771.1352	222.24756
Point 5	2'791.3256	222.41238
Point 6	3'166.5444	303.01257
Point 7	3'080.3246	302.38842
Point 8	3'049.2693	285.76317
Point 9	3'023.5906	275.83199
Point 10	3'017.0134	274.96252
Point 11	3'003.5041	269.46226
Point 12	2'997.1767	267.769

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 13	2'980.0278	265.17352
Point 14	2'971.3858	263.29635
Point 15	2'969.083	262.6869
Point 16	2'958.9575	257.24266
Point 17	2'932.6225	250.22585
Point 18	2'917.6895	246.81467
Point 19	2'904.39	240.65645
Point 20	2'900.8284	240.14298
Point 21	2'897.8768	239.63768
Point 22	2'876.353	232.93888
Point 23	2'836.6834	219.79672
Point 24	2'834.1466	219.09019
Point 25	2'812.8195	209.40816
Point 26	2'792.3136	203.4954
Point 27	2'782.4947	199.44034
Point 28	2'762.9184	196.89394
Point 29	2'711.7831	191.66118
Point 30	2'711.7831	153.08176
Point 31	3'166.5444	153.08176
Point 32	3'166.5444	307
Point 33	3'078.4196	306.39091
Point 34	3'048.5839	290.24756
Point 35	3'022.709	279.74756

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 36	3'016.6199	278.99756
Point 37	2'996.9899	271.74756
Point 38	2'985.8129	269.99756
Point 39	2'966.9558	266.74756
Point 40	2'956.6862	260.99756
Point 41	2'948.2498	258.74756
Point 42	2'930.5289	253.74756
Point 43	2'915.4353	250.74756
Point 44	2'902.3925	244.49756
Point 45	2'895.9478	243.74756
Point 46	2'881.4341	239.49756
Point 47	2'832.3851	222.74756
Point 48	2'830.223	222.72991
Point 49	2'811.4482	213.17936
Point 50	2'791.4405	207.66609
Point 51	2'781.4223	203.33454
Point 52	2'767.9566	201.58299
Point 53	2'711.7831	194.88956
Point 54	2'825.4031	222.69057
Point 55	2'810.7663	215.04705
Point 56	2'796.5599	211.19433
Point 57	2'790.7748	209.55719
Point 58	2'788.672	208.64801

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 59	2'780.8861	205.28164
Point 60	2'711.7831	197.26143
Point 61	2'755.2558	220.81593
Point 62	2'741.4729	219.22387
Point 63	2'736.6835	219.04398
Point 64	2'711.7831	217.29801
Point 65	2'790.2627	209.33577
Point 66	2'982.1724	269.37012
Point 67	3'011.149	290.24756
Point 68	2'990.649	280.24756
Point 69	2'980.6698	280.24756
Point 70	2'959.0565	270.24756
Point 71	2'949.7221	270.24756
Point 72	2'928.3556	260.24756
Point 73	2'903.0593	260.24756
Point 74	2'880.8345	250.24756
Point 75	2'869.84	250.24757
Point 76	2'842.6494	241.25875
Point 77	2'835.8826	240.24756
Point 78	2'817.4082	240.24756
Point 79	2'798.7905	232.31639
Point 80	2'790.7871	230.24756

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

REGIONS

	Material	Points	Area (m ²)
Reg ion 1	Unghia_k	1;2;3;4;5	117. 17
Reg ion 2	B2_k	6;7;8;9;10;11;12;13;15;16;17;18;19;21;22;23;24;25;26;27;28;29;30;31	44'5 21
Reg ion 3	B1_k	24;23;22;21;19;18;17;16;15;13;12;11;10;9;8;7;6;32;33;34;35;36;37;38;66;39 ;40;41;42;43;44;45;46;47;48;49;50;51;52;53;29;28;27;26;25	1'96 1.2
Reg ion 4	A_k	48;54;55;56;57;65;58;59;60;53;52;51;50;49	258. 53
Reg ion 5	Prevam_k	54;5;4;3;2;61;62;63;64;60;59;58;65;57;56;55	1'69 1.1
Reg ion 6	Abbanca mento_k	46;45;44;43;42;41;40;39;66;38;37;36;35;34;67;68;69;70;71;72;73;74;75;76; 77;78;79;80;1;5;54;48;47	2'97 0.1

CURRENT SLIP SURFACE

Slip Surface: 1

F of S: >5

Volume: 3'087.2703 m³

Weight: 52'600.768 kN

F of S Rank (Analysis): 1 of 1 slip surfaces

F of S Rank (Query): 1 of 1 slip surfaces

Exit: (2'761.5777; 221.11201) m

Entry: (3'048.5839; 290.24756) m

Radius: 125.63077 m

Center: (2'892.5905; 307.53145) m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)
Slice 1	2'765.805	221.17979	-49.035
Slice 2	2'770.5837	221.74756	-49.035
Slice 3	2'775.7271	222.28504	-49.035
Slice 4	2'785.553	222.36526	-49.035
Slice 5	2'791.0563	222.41018	-49.035
Slice 6	2'795.0581	222.44285	-49.035
Slice 7	2'803.4449	222.51132	-49.035
Slice 8	2'812.7538	222.58731	-49.035
Slice 9	2'821.4057	222.65794	-49.035
Slice 10	2'827.8131	222.71024	-49.035
Slice 11	2'831.3041	222.73873	-49.035
Slice 12	2'834.1339	223.34475	-49.035
Slice 13	2'839.266	225.09735	-49.035
Slice 14	2'847.1812	227.80035	-49.035
Slice 15	2'856.2447	230.8955	-49.035
Slice 16	2'865.3082	233.99065	-49.035
Slice 17	2'875.3373	237.41551	-49.035
Slice 18	2'881.1343	239.39518	-49.035
Slice 19	2'885.0625	240.56006	-49.035
Slice 20	2'892.3194	242.68506	-49.035
Slice 21	2'899.1701	244.12256	-49.035

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 22	2'902.7259	244.65732	-49.035
Slice 23	2'909.2473	247.78232	-49.035
Slice 24	2'921.8955	252.03158	-49.035
Slice 25	2'929.4423	253.53158	-49.035
Slice 26	2'934.9591	254.99756	-49.035
Slice 27	2'943.8196	257.49756	-49.035
Slice 28	2'948.9859	258.94389	-49.035
Slice 29	2'953.2042	260.06889	-49.035
Slice 30	2'957.8713	261.66113	-49.035
Slice 31	2'963.0062	264.53613	-49.035
Slice 32	2'973.8128	267.92935	-49.035
Slice 33	2'981.4211	269.24063	-49.035
Slice 34	2'983.9927	269.68384	-49.035
Slice 35	2'988.231	270.37616	-49.035
Slice 36	2'993.8195	271.25116	-49.035
Slice 37	3'004.0695	274.36227	-49.035
Slice 38	3'013.8845	277.98727	-49.035
Slice 39	3'019.6645	279.37256	-49.035
Slice 40	3'027.0215	281.49756	-49.035
Slice 41	3'035.6465	284.99756	-49.035
Slice 42	3'044.2714	288.49756	-49.035

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE A4 DRENATA – SUPERFICI CIRCOLARI - STATICA


PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

01_STATICA_GENERICO

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA_D

Model: **Mohr-Coulomb**
Unit Weight: **18 kN/m³**
Cohesion': **0 kPa**
Phi': **33 °**
Phi-B: **0 °**

ABBANCAMENTO_D

Model: **Mohr-Coulomb**
Unit Weight: **17 kN/m³**
Cohesion': **8 kPa**
Phi': **19 °**
Phi-B: **0 °**

PREVAM_D

Model: **Mohr-Coulomb**
Unit Weight: **18 kN/m³**
Cohesion': **8 kPa**
Phi': **16 °**
Phi-B: **0 °**

B2_D

Model: **Mohr-Coulomb**
Unit Weight: **21 kN/m³**
Cohesion': **20 kPa**
Phi': **19 °**
Phi-B: **0 °**

B1_D

Model: **Mohr-Coulomb**
Unit Weight: **20 kN/m³**
Cohesion': **12 kPa**
Phi': **17 °**
Phi-B: **0 °**

A_D

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Model: **Mohr-Coulomb**

Unit Weight: **19 kN/m³**

Cohesion': **8 kPa**

Phi': **20 °**

Phi-B: **0 °**

SLIP SURFACE ENTRY AND EXIT

Left Projection: **Range**

Left-Zone Left Coordinate: **(2'785.7853; 213.23189) m**

Left-Zone Right Coordinate: **(3'014; 266.94081) m**

Left-Zone Increment: **30**

Right Projection: **Range**

Right-Zone Left Coordinate: **(3'020; 270.11797) m**

Right-Zone Right Coordinate: **(3'156.6514; 306.99999) m**

Right-Zone Increment: **20**

Radius Increments: **10**

SLIP SURFACE LIMITS

Left Coordinate: **(2'727.5266; 204.85355) m**

Right Coordinate: **(3'220.2729; 310) m**

POINTS

	X (m)	Y (m)
Point 1	2'843.6155	232.25048
Point 2	2'835.4023	228.14388
Point 3	2'818.7979	219.17975
Point 4	2'852.9875	223.59905
Point 5	3'020.7119	248.95247
Point 6	3'064.3063	259.42029
Point 7	3'134.3395	292.54587
Point 8	3'101.1574	292.47157

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 9	3'082.0485	282.28764
Point 10	3'070.22	282.28764
Point 11	3'051.3472	272.25048
Point 12	3'024.0272	272.25048
Point 13	3'005.1424	262.25048
Point 14	2'988.7526	262.25048
Point 15	2'970.0575	252.25048
Point 16	2'944.7846	252.25048
Point 17	2'926.0509	242.25048
Point 18	2'882.981	242.25048
Point 19	2'864.232	232.25048
Point 20	2'910.7065	225.17729
Point 21	2'915.774	225.31585
Point 22	2'923.11	225.51644
Point 23	3'220.2729	306
Point 24	3'161.8501	305.54294
Point 25	3'136.7068	289.73087
Point 26	3'068.3767	257.48721
Point 27	2'916.2965	219.28444
Point 28	2'898.3504	212.96584
Point 29	2'877.8711	206.87817
Point 30	2'868.0812	202.37698
Point 31	2'727.5266	181.54206

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 32	2'727.5266	96.5976
Point 33	3'220.2729	96.5976
Point 34	3'220.2729	310
Point 35	3'159.9548	309.38742
Point 36	3'151.5696	303.32728
Point 37	2'897.9163	215.982
Point 38	2'876.9915	210.25203
Point 39	2'868.0361	206.2166
Point 40	2'853.5076	204.16892
Point 41	2'727.5266	184.89182
Point 42	2'896.2548	217.73467
Point 43	2'882.0484	213.88196
Point 44	2'876.2633	212.24481
Point 45	2'875.7512	212.02339
Point 46	2'874.1605	211.33563
Point 47	2'866.3746	207.96927
Point 48	2'727.5266	187.11451
Point 49	2'780.966	212.3636
Point 50	2'727.5266	204.85355

REGIONS

	Material	Points	Area (m²)
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Regio n 1	Unghia_d	1;2;3;4	171.32
Regio n 2	Abbancamento_ d	5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;1;4;20;21;22	4'592.7
Regio n 3	B2_d	23;24;25;26;27;28;29;30;31;32;33	69'861
Regio n 4	B1_d	30;29;28;27;26;25;24;23;34;35;36;7;6;5;22;21;37;38;39;40;41; 31	1'893.7
Regio n 5	A_d	40;39;38;37;21;20;42;43;44;45;46;47;48;41	393.48
Regio n 6	Prevam_d	46;45;44;43;42;20;4;3;49;50;48;47	2'826.8

CURRENT SLIP SURFACE

Slip Surface: 6'716
 F of S: 1.292
 Volume: 64.711336 m³
 Weight: 1'100.0927 kN
 Resisting Moment: 10'306.789 kN-m
 Activating Moment: 7'977.6926 kN-m
 Resisting Force: 484.16694 kN
 Activating Force: 374.88797 kN
 F of S Rank (Analysis): 1 of 7'161 slip surfaces
 F of S Rank (Query): 1 of 7'161 slip surfaces
 Exit: (3'006.9107; 263.18687) m
 Entry: (3'026.7958; 272.25048) m
 Radius: 18.745441 m
 Center: (3'010.536; 281.57841) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice	3'007.2399	263.12806	-49.035	5.7543167	1.9813701	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

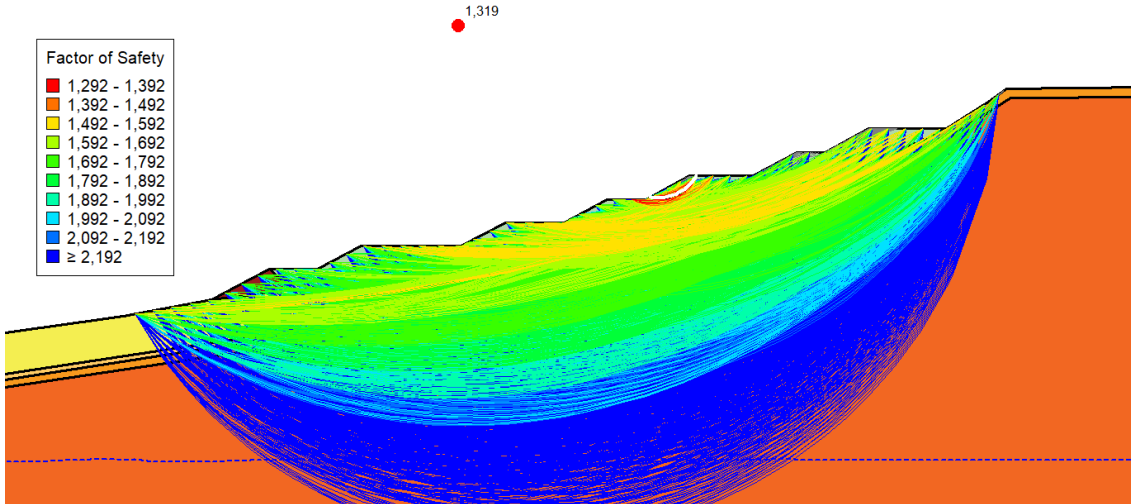
1						
Slice 2	3'007.8982	263.02247	-49.035	14.666268	5.0500011	8
Slice 3	3'008.5566	262.94072	-49.035	23.340501	8.0367791	8
Slice 4	3'009.2149	262.8825	-49.035	31.607732	10.883415	8
Slice 5	3'009.8732	262.84759	-49.035	39.300607	13.532284	8
Slice 6	3'010.5315	262.83586	-49.035	46.268093	15.931382	8
Slice 7	3'011.1899	262.84727	- 49.034999	52.387979	18.038628	8
Slice 8	3'011.8482	262.88186	- 49.034999	57.575796	19.824936	8
Slice 9	3'012.5065	262.93976	- 49.034998	61.789132	21.275704	8
Slice 10	3'013.1648	263.02119	- 49.034997	65.027203	22.390662	8
Slice 11	3'013.8232	263.12646	- 49.034997	67.326319	23.182311	8
Slice 12	3'014.4815	263.25598	- 49.034996	68.752448	23.673366	8
Slice 13	3'015.1398	263.41027	- 49.034995	69.392268	23.893674	8
Slice 14	3'015.7981	263.58997	- 49.034994	69.34402	23.877061	8
Slice 15	3'016.4565	263.79584	- 49.034994	68.70915	23.658457	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 16	3'017.1148	264.02883	- 49.034994	67.585341	23.271499	8
Slice 17	3'017.7731	264.29001	- 49.034993	66.061168	22.746684	8
Slice 18	3'018.4314	264.58069	- 49.034993	64.212295	22.110066	8
Slice 19	3'019.0898	264.90243	- 49.034993	62.098957	21.382386	8
Slice 20	3'019.7481	265.25705	- 49.034993	59.764364	20.578521	8
Slice 21	3'020.4064	265.64677	- 49.034994	57.233593	19.707107	8
Slice 22	3'021.0647	266.07423	- 49.034994	54.512549	18.770176	8
Slice 23	3'021.7231	266.54267	- 49.034994	51.586552	17.762674	8
Slice 24	3'022.3814	267.05606	- 49.034994	48.418039	16.671668	8
Slice 25	3'023.0397	267.61939	- 49.034995	44.942702	15.475013	8
Slice 26	3'023.698	268.23902	- 49.034995	41.06298	14.139118	8
Slice 27	3'024.3733	268.9428	- 49.034995	34.296522	11.80924	8
Slice 28	3'025.0654	269.74678	- 49.034996	24.37058	8.3914636	8
Slice 29	3'025.7576	270.65398	- 49.034997	13.114689	4.5157497	8
Slice	3'026.4498	271.69334	-	-0.12660748	-0.043594453	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

30			49.034999			
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SEZIONE A4 DRENATA – SUPERFICI CIRCOLARI – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Staged Pseudo Static Analysis Option: **Effective Stress Strengths**

Slip Surface

Direction of movement: **Right to Left**

Use Passive Mode: **No**

Slip Surface Option: **Entry and Exit**

Critical slip surfaces saved: **1**

Resisting Side Maximum Convex Angle: **1 °**

Driving Side Maximum Convex Angle: **5 °**

Optimize Critical Slip Surface Location: **No**

Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

Phi': **40 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

PREVAM_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **10 kPa**

Phi': **20 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

B1_K

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [15 kPa](#)
 Phi': [22 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [25 kPa](#)
 Phi': [24 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [19 kN/m³](#)
 Cohesion': [10 kPa](#)
 Phi': [25 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

ABBANCAMENTO_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [17 kN/m³](#)
 Cohesion': [10 kPa](#)
 Phi': [24 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

SLIP SURFACE ENTRY AND EXIT

Left Projection: [Range](#)
 Left-Zone Left Coordinate: [\(2'791.1754; 214.20302\) m](#)
 Left-Zone Right Coordinate: [\(3'014; 266.94081\) m](#)
 Left-Zone Increment: [30](#)
 Right Projection: [Range](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Right-Zone Left Coordinate: (3'021; 270.6475) m
 Right-Zone Right Coordinate: (3'156; 306.52921) m
 Right-Zone Increment: 20
 Radius Increments: 20

SLIP SURFACE LIMITS

Left Coordinate: (2'727.5266; 204.85355) m
 Right Coordinate: (3'220.2729; 310) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082
 Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
Point 1	2'843.6155	232.25048
Point 2	2'835.4023	228.14388
Point 3	2'818.7979	219.17975
Point 4	2'852.9875	223.59905
Point 5	3'020.7119	248.95247
Point 6	3'064.3063	259.42029
Point 7	3'134.3395	292.54587
Point 8	3'101.1574	292.47157
Point 9	3'082.0485	282.28764
Point 10	3'070.22	282.28764
Point 11	3'051.3472	272.25048
Point 12	3'024.0272	272.25048

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 13	3'005.1424	262.25048
Point 14	2'988.7526	262.25048
Point 15	2'970.0575	252.25048
Point 16	2'944.7846	252.25048
Point 17	2'926.0509	242.25048
Point 18	2'882.981	242.25048
Point 19	2'864.232	232.25048
Point 20	2'910.7065	225.17729
Point 21	2'915.774	225.31585
Point 22	2'923.11	225.51644
Point 23	3'220.2729	306
Point 24	3'161.8501	305.54294
Point 25	3'136.7068	289.73087
Point 26	3'068.3767	257.48721
Point 27	2'916.2965	219.28444
Point 28	2'898.3504	212.96584
Point 29	2'877.8711	206.87817
Point 30	2'868.0812	202.37698
Point 31	2'727.5266	181.54206
Point 32	2'727.5266	96.5976
Point 33	3'220.2729	96.5976
Point 34	3'220.2729	310
Point 35	3'159.9548	309.38742

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 36	3'151.5696	303.32728
Point 37	2'897.9163	215.982
Point 38	2'876.9915	210.25203
Point 39	2'868.0361	206.2166
Point 40	2'853.5076	204.16892
Point 41	2'727.5266	184.89182
Point 42	2'896.2548	217.73467
Point 43	2'882.0484	213.88196
Point 44	2'876.2633	212.24481
Point 45	2'875.7512	212.02339
Point 46	2'874.1605	211.33563
Point 47	2'866.3746	207.96927
Point 48	2'727.5266	187.11451
Point 49	2'780.966	212.3636
Point 50	2'727.5266	204.85355

REGIONS

	Material	Points	Area (m²)
Regio n 1	Unghia_k	1;2;3;4	171.32
Regio n 2	Abbancamento _k	5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;1;4;20;21;22	4'592.7
Regio n 3	B2_k	23;24;25;26;27;28;29;30;31;32;33	69'861

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Regio n 4	B1_k	30;29;28;27;26;25;24;23;34;35;36;7;6;5;22;21;37;38;39;40;41;3 1	1'893.7
Regio n 5	A_k	40;39;38;37;21;20;42;43;44;45;46;47;48;41	393.48
Regio n 6	Prevam_k	46;45;44;43;42;20;4;3;49;50;48;47	2'826.8

CURRENT SLIP SURFACE

Slip Surface: 12'819
 F of S: 1.374
 Volume: 63.60311 m³
 Weight: 1'081.2529 kN
 Resisting Moment: 15'632.712 kN-m
 Activating Moment: 11'380.517 kN-m
 Resisting Force: 620.78134 kN
 Activating Force: 451.98436 kN
 F of S Rank (Analysis): 1 of 13'671 slip surfaces
 F of S Rank (Query): 1 of 13'671 slip surfaces
 Exit: (3'007.0721; 263.2723) m
 Entry: (3'027.8306; 272.25048) m
 Radius: 22.513108 m
 Center: (3'009.7236; 285.62872) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'007.4112	263.23728	-49.035	5.2479582	0	12.114805
Slice 2	3'008.0894	263.17758	-49.035	13.940745	0	15.668469
Slice 3	3'008.7676	263.13848	-49.035	22.402375	0	19.115726
Slice	3'009.4458	263.11988	-49.035	30.457043	0	22.400743

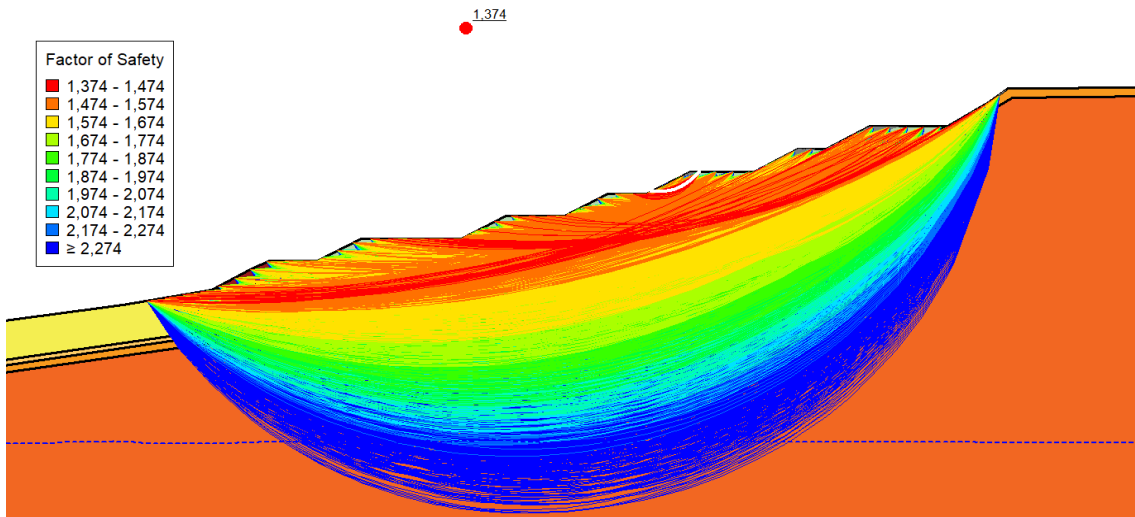
	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

4						
Slice 5	3'010.124	263.12172	-49.035	37.932801	0	25.468746
Slice 6	3'010.8022	263.14402	-49.035	44.676565	0	28.270245
Slice 7	3'011.4804	263.18683	- 49.034999	50.56684	0	30.764705
Slice 8	3'012.1586	263.25028	- 49.034999	55.522473	0	32.923207
Slice 9	3'012.8368	263.33453	- 49.034998	59.506476	0	34.729859
Slice 10	3'013.515	263.43982	- 49.034997	62.524947	0	36.181877
Slice 11	3'014.1932	263.56646	- 49.034997	64.621863	0	37.288484
Slice 12	3'014.8714	263.71482	- 49.034996	65.871066	0	38.068917
Slice 13	3'015.5496	263.88534	- 49.034995	66.366901	0	38.549901
Slice 14	3'016.2278	264.07855	- 49.034994	66.214814	0	38.762933
Slice 15	3'016.9061	264.29506	- 49.034994	65.522909	0	38.741676
Slice 16	3'017.5843	264.5356	- 49.034994	64.395042	0	38.519672
Slice 17	3'018.2625	264.80099	- 49.034994	62.925665	0	38.128464
Slice 18	3'018.9407	265.09221	- 49.034994	61.196335	0	37.596164

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 19	3'019.6189	265.41036	- 49.034994	59.273638	0	36.946422
Slice 20	3'020.2971	265.75675	- 49.034994	57.208154	0	36.197717
Slice 21	3'020.9753	266.13289	- 49.034994	55.034068	0	35.362864
Slice 22	3'021.6535	266.54053	- 49.034994	52.769013	0	34.448635
Slice 23	3'022.3317	266.98175	- 49.034994	50.413755	0	33.455376
Slice 24	3'023.0099	267.45899	- 49.034994	47.951395	0	32.376498
Slice 25	3'023.6881	267.97519	- 49.034995	45.345782	0	31.197732
Slice 26	3'024.4075	268.57084	- 49.034995	39.89205	0	28.672097
Slice 27	3'025.1682	269.25705	- 49.034995	31.42064	0	24.738561
Slice 28	3'025.9289	270.0105	- 49.034996	22.183484	0	20.474109
Slice 29	3'026.6896	270.84152	- 49.034997	11.755639	0	15.727034
Slice 30	3'027.4503	271.76419	- 49.034999	-0.4763269	0	10.289506

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI



SEZIONE A4 DRENATA – SCORRIMENTO LUNGO BASE - STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

02_STATICA_BASE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slip Surface Option: **Fully-Specified**

Critical slip surfaces saved: **1**

Resisting Side Maximum Convex Angle: **1 °**

Driving Side Maximum Convex Angle: **5 °**

Optimize Critical Slip Surface Location: **No**

Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **0.1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_D

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

Phi': **33 °**

Phi-B: **0 °**

ABBANCAMENTO_D

Model: **Mohr-Coulomb**

Unit Weight: **17 kN/m³**

Cohesion': **8 kPa**

Phi': **19 °**

Phi-B: **0 °**

PREVAM_D

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **8 kPa**

Phi': **16 °**

Phi-B: **0 °**

B2_D

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Model: **Mohr-Coulomb**
 Unit Weight: **21 kN/m³**
 Cohesion': **20 kPa**
 Phi': **19 °**
 Phi-B: **0 °**

B1_D

Model: **Mohr-Coulomb**
 Unit Weight: **20 kN/m³**
 Cohesion': **12 kPa**
 Phi': **17 °**
 Phi-B: **0 °**

A_D

Model: **Mohr-Coulomb**
 Unit Weight: **19 kN/m³**
 Cohesion': **8 kPa**
 Phi': **20 °**
 Phi-B: **0 °**

SLIP SURFACE LIMITS

Left Coordinate: **(2'727.5266; 204.85355) m**
 Right Coordinate: **(3'220.2729; 310) m**

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	2'818.7979	219.17975
	2'852.9875	223.59905
	2'910.7065	225.17729
	2'915.774	225.31585
	2'923.11	225.51644

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	3'020.7119	248.95247
	3'064.3063	259.42029
	3'134.3395	292.54587

POINTS

	X (m)	Y (m)
Point 1	2'843.6155	232.25048
Point 2	2'835.4023	228.14388
Point 3	2'818.7979	219.17975
Point 4	2'852.9875	223.59905
Point 5	3'020.7119	248.95247
Point 6	3'064.3063	259.42029
Point 7	3'134.3395	292.54587
Point 8	3'101.1574	292.47157
Point 9	3'082.0485	282.28764
Point 10	3'070.22	282.28764
Point 11	3'051.3472	272.25048
Point 12	3'024.0272	272.25048
Point 13	3'005.1424	262.25048
Point 14	2'988.7526	262.25048
Point 15	2'970.0575	252.25048
Point 16	2'944.7846	252.25048
Point 17	2'926.0509	242.25048

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 18	2'882.981	242.25048
Point 19	2'864.232	232.25048
Point 20	2'910.7065	225.17729
Point 21	2'915.774	225.31585
Point 22	2'923.11	225.51644
Point 23	3'220.2729	306
Point 24	3'161.8501	305.54294
Point 25	3'136.7068	289.73087
Point 26	3'068.3767	257.48721
Point 27	2'916.2965	219.28444
Point 28	2'898.3504	212.96584
Point 29	2'877.8711	206.87817
Point 30	2'868.0812	202.37698
Point 31	2'727.5266	181.54206
Point 32	2'727.5266	96.5976
Point 33	3'220.2729	96.5976
Point 34	3'220.2729	310
Point 35	3'159.9548	309.38742
Point 36	3'151.5696	303.32728
Point 37	2'897.9163	215.982
Point 38	2'876.9915	210.25203
Point 39	2'868.0361	206.2166
Point 40	2'853.5076	204.16892

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 41	2'727.5266	184.89182
Point 42	2'896.2548	217.73467
Point 43	2'882.0484	213.88196
Point 44	2'876.2633	212.24481
Point 45	2'875.7512	212.02339
Point 46	2'874.1605	211.33563
Point 47	2'866.3746	207.96927
Point 48	2'727.5266	187.11451
Point 49	2'780.966	212.3636
Point 50	2'727.5266	204.85355

REGIONS

	Material	Points	Area (m²)
Regio n 1	Unghia_d	1;2;3;4	171.32
Regio n 2	Abbancamento_ d	5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;1;4;20;21;22	4'592.7
Regio n 3	B2_d	23;24;25;26;27;28;29;30;31;32;33	69'861
Regio n 4	B1_d	30;29;28;27;26;25;24;23;34;35;36;7;6;5;22;21;37;38;39;40;41; 31	1'893.7
Regio n 5	A_d	40;39;38;37;21;20;42;43;44;45;46;47;48;41	393.48
Regio n 6	Prevam_d	46;45;44;43;42;20;4;3;49;50;48;47	2'826.8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 1.740
 Volume: 4'764.0242 m³
 Weight: 81'159.733 kN
 Resisting Moment: 2'438'772.6 kN-m
 Activating Moment: 1'401'450.7 kN-m
 Resisting Force: 30'005.346 kN
 Activating Force: 17'243.721 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (2'818.7979; 219.17975) m
 Entry: (3'134.3395; 292.54587) m
 Radius: 138.91661 m
 Center: (2'963.775; 310.8874) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'822.949	219.71632	-49.035	29.420546	19.105926	0
Slice 2	2'831.2512	220.78945	-49.035	88.870307	57.713052	0
Slice 3	2'839.5089	221.85682	-49.035	146.04674	94.843865	0
Slice 4	2'848.3015	222.99334	-49.035	159.45695	103.55255	0
Slice 5	2'858.6098	223.75278	-49.035	149.25985	51.394287	8
Slice 6	2'868.9192	224.03468	-49.035	189.04311	65.092764	8
Slice 7	2'878.2937	224.29101	-49.035	272.88757	93.962726	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 8	2'887.6019	224.54553	-49.035	313.82276	108.05784	8
Slice 9	2'896.8438	224.79823	-49.035	311.15755	107.14014	8
Slice 10	2'906.0856	225.05094	-49.035	308.13613	106.09978	8
Slice 11	2'913.2402	225.24657	-49.035	305.54653	105.20811	8
Slice 12	2'919.442	225.41615	-49.035	303.09211	104.36298	8
Slice 13	2'924.5804	225.86952	-49.035004	268.77281	92.5459	8
Slice 14	2'930.7343	227.34718	-49.035023	284.51189	97.965301	8
Slice 15	2'940.1012	229.59634	-49.034979	327.64113	112.81589	8
Slice 16	2'951.1028	232.23804	-49.034986	324.11363	111.60127	8
Slice 17	2'963.7393	235.27228	-49.035008	274.02194	94.35332	8
Slice 18	2'974.7313	237.91167	-49.034959	270.65923	93.195446	8
Slice 19	2'984.0788	240.15619	-49.034988	313.99453	108.11699	8
Slice 20	2'992.8501	242.26232	-49.035014	319.52596	110.02161	8
Slice 21	3'001.045	244.23007	-49.035039	287.236	98.903288	8
Slice	3'012.9272	247.08321	-49.034977	306.72436	105.61367	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

22						
Slice 23	3'022.3695	249.3505	-49.034993	350.01808	120.52089	8
Slice 24	3'028.5805	250.84187	-49.034965	339.81742	117.00852	8
Slice 25	3'037.6872	253.02855	-49.034978	304.20442	104.74598	8
Slice 26	3'046.7939	255.21523	-49.034981	268.61498	92.491555	8
Slice 27	3'057.8268	257.86443	-49.034971	281.05028	96.773371	8
Slice 28	3'067.2632	260.81887	-49.034992	290.16026	99.910191	8
Slice 29	3'076.1343	265.01489	-49.034967	252.94681	87.09657	8
Slice 30	3'086.8257	270.07194	-49.034993	217.55097	74.908806	8
Slice 31	3'096.3802	274.59118	-49.035008	228.41801	78.65063	8
Slice 32	3'106.6878	279.46664	-49.034979	195.58177	67.344204	8
Slice 33	3'117.7485	284.69833	-49.034959	117.78016	40.554961	8
Slice 34	3'128.8092	289.93002	-49.035015	38.32374	13.195922	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE A4 DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Fully-Specified](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [0 kPa](#)
 Phi': [40 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [10 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B1_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [15 kPa](#)
 Phi': [22 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [25 kPa](#)
 Phi': [24 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 19 kN/m³

Cohesion': 10 kPa

Phi': 25 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb

Unit Weight: 17 kN/m³

Cohesion': 10 kPa

Phi': 24 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

SLIP SURFACE LIMITS


Left Coordinate: (2'727.5266; 204.85355) m

Right Coordinate: (3'220.2729; 310) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	2'818.7979	219.17975
	2'852.9875	223.59905
	2'910.7065	225.17729
	2'915.774	225.31585
	2'923.11	225.51644
	3'020.7119	248.95247
	3'064.3063	259.42029
	3'134.3395	292.54587

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082

Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
Point 1	2'843.6155	232.25048
Point 2	2'835.4023	228.14388
Point 3	2'818.7979	219.17975
Point 4	2'852.9875	223.59905
Point 5	3'020.7119	248.95247
Point 6	3'064.3063	259.42029
Point 7	3'134.3395	292.54587
Point 8	3'101.1574	292.47157
Point 9	3'082.0485	282.28764
Point 10	3'070.22	282.28764
Point 11	3'051.3472	272.25048
Point 12	3'024.0272	272.25048
Point 13	3'005.1424	262.25048
Point 14	2'988.7526	262.25048
Point 15	2'970.0575	252.25048
Point 16	2'944.7846	252.25048
Point 17	2'926.0509	242.25048
Point 18	2'882.981	242.25048

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 19	2'864.232	232.25048
Point 20	2'910.7065	225.17729
Point 21	2'915.774	225.31585
Point 22	2'923.11	225.51644
Point 23	3'220.2729	306
Point 24	3'161.8501	305.54294
Point 25	3'136.7068	289.73087
Point 26	3'068.3767	257.48721
Point 27	2'916.2965	219.28444
Point 28	2'898.3504	212.96584
Point 29	2'877.8711	206.87817
Point 30	2'868.0812	202.37698
Point 31	2'727.5266	181.54206
Point 32	2'727.5266	96.5976
Point 33	3'220.2729	96.5976
Point 34	3'220.2729	310
Point 35	3'159.9548	309.38742
Point 36	3'151.5696	303.32728
Point 37	2'897.9163	215.982
Point 38	2'876.9915	210.25203
Point 39	2'868.0361	206.2166
Point 40	2'853.5076	204.16892
Point 41	2'727.5266	184.89182

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 42	2'896.2548	217.73467
Point 43	2'882.0484	213.88196
Point 44	2'876.2633	212.24481
Point 45	2'875.7512	212.02339
Point 46	2'874.1605	211.33563
Point 47	2'866.3746	207.96927
Point 48	2'727.5266	187.11451
Point 49	2'780.966	212.3636
Point 50	2'727.5266	204.85355

REGIONS

	Material	Points	Area (m ²)
Regio n 1	Unghia_k	1;2;3;4	171.32
Regio n 2	Abbancamento _k	5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;1;4;20;21;22	4'592.7
Regio n 3	B2_k	23;24;25;26;27;28;29;30;31;32;33	69'861
Regio n 4	B1_k	30;29;28;27;26;25;24;23;34;35;36;7;6;5;22;21;37;38;39;40;41;3 1	1'893.7
Regio n 5	A_k	40;39;38;37;21;20;42;43;44;45;46;47;48;41	393.48
Regio n 6	Prevam_k	46;45;44;43;42;20;4;3;49;50;48;47	2'826.8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 1.607
 Volume: 4'764.0242 m³
 Weight: 81'159.733 kN
 Resisting Moment: 3'145'217 kN-m
 Activating Moment: 1'956'853.8 kN-m
 Resisting Force: 38'700.141 kN
 Activating Force: 24'082.25 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (2'818.7979; 219.17975) m
 Entry: (3'134.3395; 292.54587) m
 Radius: 138.91661 m
 Center: (2'963.775; 310.8874) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'822.949	219.71632	-49.035	30.207793	0	24.702774
Slice 2	2'831.2512	220.78945	-49.035	91.609594	0	74.612874
Slice 3	2'839.5089	221.85682	-49.035	151.19236	0	122.60447
Slice 4	2'848.3015	222.99334	-49.035	165.99021	0	133.87023
Slice 5	2'858.6098	223.75278	-49.035	157.39163	0	76.485564
Slice 6	2'868.9192	224.03468	-49.035	199.35002	0	94.186451
Slice 7	2'878.2937	224.29101	-49.035	287.39308	0	131.49062

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 8	2'887.6019	224.54553	-49.035	330.69382	0	149.69046
Slice 9	2'896.8438	224.79823	-49.035	328.36221	0	148.4843
Slice 10	2'906.0856	225.05094	-49.035	325.55834	0	147.11951
Slice 11	2'913.2402	225.24657	-49.035	323.05358	0	145.95195
Slice 12	2'919.442	225.41615	-49.035	320.60147	0	144.84738
Slice 13	2'924.5804	225.86952	-49.035004	275.95547	0	129.6647
Slice 14	2'930.7343	227.34718	-49.035023	291.6964	0	136.67541
Slice 15	2'940.1012	229.59634	-49.034979	335.15355	0	155.88449
Slice 16	2'951.1028	232.23804	-49.034986	331.0772	0	154.31764
Slice 17	2'963.7393	235.27228	-49.035008	279.62076	0	132.01468
Slice 18	2'974.7313	237.91167	-49.034959	275.80148	0	130.51938
Slice 19	2'984.0788	240.15619	-49.034988	319.56468	0	149.81843
Slice 20	2'992.8501	242.26232	-49.035014	324.93609	0	152.28203
Slice 21	3'001.045	244.23007	-49.035039	291.88551	0	137.90267
Slice	3'012.9272	247.08321	-49.034977	311.46525	0	146.57958

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

22						
Slice 23	3'022.3695	249.3505	-49.034993	355.37469	0	165.85628
Slice 24	3'028.5805	250.84187	-49.034965	344.93688	0	161.31189
Slice 25	3'037.6872	253.02855	-49.034978	308.6201	0	145.45058
Slice 26	3'046.7939	255.21523	-49.034981	272.32801	0	129.60018
Slice 27	3'057.8268	257.86443	-49.034971	284.97671	0	135.1335
Slice 28	3'067.2632	260.81887	-49.034992	286.63453	0	139.18045
Slice 29	3'076.1343	265.01489	-49.034967	250.23057	0	122.60977
Slice 30	3'086.8257	270.07194	-49.034993	215.66219	0	106.85037
Slice 31	3'096.3802	274.59118	-49.035008	227.15628	0	111.68721
Slice 32	3'106.6878	279.46664	-49.034979	195.02471	0	97.072986
Slice 33	3'117.7485	284.69833	-49.034959	117.58423	0	62.445924
Slice 34	3'128.8092	289.93002	-49.035015	37.925809	0	27.08331

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE A4 NON DRENATA – SUPERFICIE CIRCOLARE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [0 kPa](#)
 Phi': [40 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [75 kPa](#)
 Phi': [17 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B1_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [50 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [90 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 19 kN/m³
 Cohesion': 20 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 150 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range
 Left-Zone Left Coordinate: (2'739; 206.46595) m
 Left-Zone Right Coordinate: (3'012; 265.88176) m
 Left-Zone Increment: 10
 Right Projection: Range
 Right-Zone Left Coordinate: (3'019.7772; 269.99999) m
 Right-Zone Right Coordinate: (3'162; 309.40819) m
 Right-Zone Increment: 20
 Radius Increments: 10

SLIP SURFACE LIMITS


Left Coordinate: (2'727.5266; 204.85355) m
 Right Coordinate: (3'220.2729; 310) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082
 Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 1	2'843.6155	232.25048
Point 2	2'835.4023	228.14388
Point 3	2'818.7979	219.17975
Point 4	2'852.9875	223.59905
Point 5	3'020.7119	248.95247
Point 6	3'064.3063	259.42029
Point 7	3'134.3395	292.54587
Point 8	3'101.1574	292.47157
Point 9	3'082.0485	282.28764
Point 10	3'070.22	282.28764
Point 11	3'051.3472	272.25048
Point 12	3'024.0272	272.25048
Point 13	3'005.1424	262.25048
Point 14	2'988.7526	262.25048
Point 15	2'970.0575	252.25048
Point 16	2'944.7846	252.25048
Point 17	2'926.0509	242.25048
Point 18	2'882.981	242.25048
Point 19	2'864.232	232.25048
Point 20	2'910.7065	225.17729
Point 21	2'915.774	225.31585
Point 22	2'923.11	225.51644
Point 23	3'220.2729	306

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 24	3'161.8501	305.54294
Point 25	3'136.7068	289.73087
Point 26	3'068.3767	257.48721
Point 27	2'916.2965	219.28444
Point 28	2'898.3504	212.96584
Point 29	2'877.8711	206.87817
Point 30	2'868.0812	202.37698
Point 31	2'727.5266	181.54206
Point 32	2'727.5266	96.5976
Point 33	3'220.2729	96.5976
Point 34	3'220.2729	310
Point 35	3'159.9548	309.38742
Point 36	3'151.5696	303.32728
Point 37	2'897.9163	215.982
Point 38	2'876.9915	210.25203
Point 39	2'868.0361	206.2166
Point 40	2'853.5076	204.16892
Point 41	2'727.5266	184.89182
Point 42	2'896.2548	217.73467
Point 43	2'882.0484	213.88196
Point 44	2'876.2633	212.24481
Point 45	2'875.7512	212.02339
Point 46	2'874.1605	211.33563

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 47	2'866.3746	207.96927
Point 48	2'727.5266	187.11451
Point 49	2'780.966	212.3636
Point 50	2'727.5266	204.85355

REGIONS

	Material	Points	Area (m²)
Regio n 1	Unghia_k	1;2;3;4	171.32
Regio n 2	Abbancamento_k	5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;1;4;20;21;22	4'592.7
Regio n 3	B2_k	23;24;25;26;27;28;29;30;31;32;33	69'861
Regio n 4	B1_k	30;29;28;27;26;25;24;23;34;35;36;7;6;5;22;21;37;38;39;40;41;31	1'893.7
Regio n 5	A_k	40;39;38;37;21;20;42;43;44;45;46;47;48;41	393.48
Regio n 6	Prevam_k	46;45;44;43;42;20;4;3;49;50;48;47	2'826.8

CURRENT SLIP SURFACE

Slip Surface: 225
 F of S: 1.668
 Volume: 18'568.484 m³
 Weight: 362'062.06 kN
 Resisting Moment: 64'456'001 kN-m
 Activating Moment: 38'654'220 kN-m
 Resisting Force: 162'116.27 kN
 Activating Force: 97'187.182 kN
 F of S Rank (Analysis): 1 of 2'541 slip surfaces

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

F of S Rank (Query): 1 of 2'541 slip surfaces

Exit: (2'739; 206.46595) m

Entry: (3'162; 309.40819) m

Radius: 372.8701 m

Center: (2'878.9142; 552.0902) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'744.9047	204.1915	-49.035004	83.224093	0	97.509958
Slice 2	2'756.714	199.86847	-49.035044	208.64164	0	133.19126
Slice 3	2'768.5233	195.98946	-49.03501	327.26065	0	166.7886
Slice 4	2'776.8159	193.47915	-49.03499	382.70093	0	83.138486
Slice 5	2'780.085	192.55709	-49.035009	438.70536	0	196.97187
Slice 6	2'784.4419	191.40449	-49.035019	484.68613	0	212.42762
Slice 7	2'795.6378	188.72479	-49.034992	611.11031	0	293.93111
Slice 8	2'811.0779	185.52683	-49.035029	759.3125	0	343.92984
Slice 9	2'827.1001	182.93288	-49.035009	950.83411	0	409.4165
Slice 10	2'839.5089	181.33114	-49.035	1'123.6269	0	469.20098
Slice	2'848.3015	180.50863	-49.035007	1'177.3975	0	488.38482

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

11						
Slice 12	2'858.6098	179.81592	-49.035006	1'183.0058	0	491.4484
Slice 13	2'865.3033	179.47015	-49.035001	1'196.2052	0	496.90317
Slice 14	2'867.2279	179.40426	-49.034996	1'215.2813	0	503.7955
Slice 15	2'871.1208	179.31395	-49.034986	1'255.089	0	518.21908
Slice 16	2'874.9558	179.24196	-49.034978	1'293.7609	0	532.30549
Slice 17	2'876.0073	179.23152	-49.034978	1'304.0129	0	536.05909
Slice 18	2'876.6274	179.22729	-49.034978	1'309.929	0	538.23028
Slice 19	2'877.4313	179.22331	-49.034978	1'317.397	0	540.97765
Slice 20	2'879.9598	179.22742	-49.034978	1'339.6957	0	549.22644
Slice 21	2'882.5147	179.23777	-49.034977	1'361.719	0	557.41085
Slice 22	2'889.6179	179.43291	-49.034978	1'352.9456	0	555.90559
Slice 23	2'897.0855	179.66407	-49.034995	1'337.8031	0	552.31632
Slice 24	2'904.3114	180.14127	-49.034991	1'320.2904	0	547.93738
Slice 25	2'913.2402	180.81219	-49.034986	1'294.5618	0	541.12191

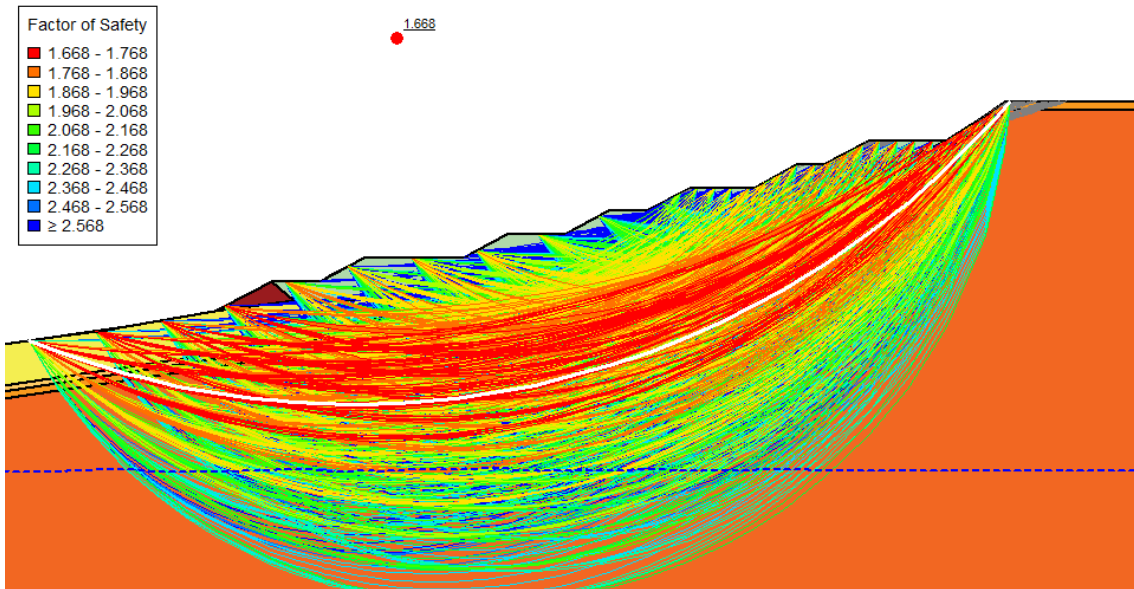
	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 26	2'916.0352	181.07258	-49.034985	1'284.2034	0	538.18444
Slice 27	2'919.7033	181.47366	-49.034979	1'267.1856	0	533.12348
Slice 28	2'924.5804	182.03005	-49.034977	1'245.0262	0	526.54536
Slice 29	2'935.4178	183.64799	-49.035027	1'277.6748	0	540.98375
Slice 30	2'951.1028	186.33148	-49.034992	1'277.5702	0	545.13442
Slice 31	2'963.7393	189.05477	-49.03502	1'199.9396	0	520.54219
Slice 32	2'979.405	193.14803	-49.034998	1'173.7925	0	514.8347
Slice 33	2'996.9475	198.50058	-49.035004	1'123.7764	0	500.42002
Slice 34	3'012.9272	204.23527	-49.034957	1'060.5144	0	480.212
Slice 35	3'022.3695	207.92533	-49.034979	1'058.9012	0	481.08993
Slice 36	3'030.8572	211.66473	-49.034994	997.25011	0	459.57942
Slice 37	3'044.5172	218.09971	-49.034999	874.26186	0	415.75125
Slice 38	3'057.8268	225.03077	-49.034988	798.40667	0	388.78658
Slice 39	3'066.3415	229.75871	-49.034999	781.63843	0	383.09986
Slice	3'069.2984	231.48944	-49.034997	776.10917	0	381.20061

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

40						
Slice 41	3'076.1343	235.72364	-49.034989	715.68681	0	359.07682
Slice 42	3'091.603	246.05059	-49.035007	626.35653	0	326.32487
Slice 43	3'109.4529	259.22067	-49.035021	495.23564	0	277.75987
Slice 44	3'126.044	273.09882	-49.03501	280.30418	0	197.96007
Slice 45	3'135.5232	281.56975	-49.03499	158.53947	0	152.86938
Slice 46	3'144.1382	290.21908	-49.034994	98.865459	0	131.18893
Slice 47	3'153.0315	299.33104	-49.034999	36.02473	0	108.44455
Slice 48	3'157.2241	303.97954	-49.035	28.846577	0	63.714656
Slice 49	3'160.9774	308.22541	-49.034999	-9.7603927	0	49.549614

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI



SEZIONE A4 NON DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Direction of movement: **Right to Left**

Use Passive Mode: **No**

Slip Surface Option: **Fully-Specified**

Critical slip surfaces saved: **1**

Resisting Side Maximum Convex Angle: **1 °**

Driving Side Maximum Convex Angle: **5 °**

Optimize Critical Slip Surface Location: **No**

Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

Phi': **40 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

PREVAM_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **75 kPa**

Phi': **17 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

B1_K

Model: **Mohr-Coulomb**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 20 kN/m³
 Cohesion': 50 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B2_K

Model: Mohr-Coulomb
 Unit Weight: 21 kN/m³
 Cohesion': 90 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A_K

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 20 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 150 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE LIMITS

Left Coordinate: (2'727.5266; 204.85355) m
 Right Coordinate: (3'220.2729; 310) m

FULLY SPECIFIED SLIP SURFACES

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	2'818.7979	219.17975
	2'852.9875	223.59905
	2'910.7065	225.17729
	2'915.774	225.31585
	2'923.11	225.51644
	3'020.7119	248.95247
	3'064.3063	259.42029
	3'134.3395	292.54587

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082

Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
Point 1	2'843.6155	232.25048
Point 2	2'835.4023	228.14388
Point 3	2'818.7979	219.17975
Point 4	2'852.9875	223.59905
Point 5	3'020.7119	248.95247
Point 6	3'064.3063	259.42029
Point 7	3'134.3395	292.54587

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 8	3'101.1574	292.47157
Point 9	3'082.0485	282.28764
Point 10	3'070.22	282.28764
Point 11	3'051.3472	272.25048
Point 12	3'024.0272	272.25048
Point 13	3'005.1424	262.25048
Point 14	2'988.7526	262.25048
Point 15	2'970.0575	252.25048
Point 16	2'944.7846	252.25048
Point 17	2'926.0509	242.25048
Point 18	2'882.981	242.25048
Point 19	2'864.232	232.25048
Point 20	2'910.7065	225.17729
Point 21	2'915.774	225.31585
Point 22	2'923.11	225.51644
Point 23	3'220.2729	306
Point 24	3'161.8501	305.54294
Point 25	3'136.7068	289.73087
Point 26	3'068.3767	257.48721
Point 27	2'916.2965	219.28444
Point 28	2'898.3504	212.96584
Point 29	2'877.8711	206.87817
Point 30	2'868.0812	202.37698

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 31	2'727.5266	181.54206
Point 32	2'727.5266	96.5976
Point 33	3'220.2729	96.5976
Point 34	3'220.2729	310
Point 35	3'159.9548	309.38742
Point 36	3'151.5696	303.32728
Point 37	2'897.9163	215.982
Point 38	2'876.9915	210.25203
Point 39	2'868.0361	206.2166
Point 40	2'853.5076	204.16892
Point 41	2'727.5266	184.89182
Point 42	2'896.2548	217.73467
Point 43	2'882.0484	213.88196
Point 44	2'876.2633	212.24481
Point 45	2'875.7512	212.02339
Point 46	2'874.1605	211.33563
Point 47	2'866.3746	207.96927
Point 48	2'727.5266	187.11451
Point 49	2'780.966	212.3636
Point 50	2'727.5266	204.85355

REGIONS

	Material	Points	Area
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

			(m²)
Regio n 1	Unghia_k	1;2;3;4	171.32
Regio n 2	Abbancamento _k	5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;1;4;20;21;22	4'592.7
Regio n 3	B2_k	23;24;25;26;27;28;29;30;31;32;33	69'861
Regio n 4	B1_k	30;29;28;27;26;25;24;23;34;35;36;7;6;5;22;21;37;38;39;40;41;3 1	1'893.7
Regio n 5	A_k	40;39;38;37;21;20;42;43;44;45;46;47;48;41	393.48
Regio n 6	Prevam_k	46;45;44;43;42;20;4;3;49;50;48;47	2'826.8

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 2.429
 Volume: 4'764.0242 m³
 Weight: 81'159.733 kN
 Resisting Moment: 4'812'724.4 kN-m
 Activating Moment: 1'981'201.5 kN-m
 Resisting Force: 58'247.085 kN
 Activating Force: 23'979.091 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (2'818.7979; 219.17975) m
 Entry: (3'134.3395; 292.54587) m
 Radius: 138.91661 m
 Center: (2'963.775; 310.8874) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 1	2'822.949	219.71632	-49.035	30.709855	0	25.001789
Slice 2	2'831.2512	220.78945	-49.035	92.524418	0	75.227072
Slice 3	2'839.5089	221.85682	-49.035	151.61885	0	123.09626
Slice 4	2'848.3015	222.99334	-49.035	164.9184	0	133.64178
Slice 5	2'858.6098	223.75278	-49.035	157.78722	0	176.25544
Slice 6	2'868.9192	224.03468	-49.035	199.95767	0	183.26522
Slice 7	2'878.2937	224.29101	-49.035	285.75589	0	197.8084
Slice 8	2'887.6019	224.54553	-49.035	327.24887	0	204.82669
Slice 9	2'896.8438	224.79823	-49.035	324.5682	0	204.30144
Slice 10	2'906.0856	225.05094	-49.035	321.55108	0	203.73073
Slice 11	2'913.2402	225.24657	-49.035	318.97494	0	203.25676
Slice 12	2'919.442	225.41615	-49.035	316.5375	0	202.81883
Slice 13	2'924.5804	225.86952	-49.035004	274.86787	0	197.23131
Slice 14	2'930.7343	227.34718	-49.035023	290.61847	0	200.04356
Slice	2'940.1012	229.59634	-49.034979	333.75592	0	207.70653

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

15						
Slice 16	2'951.1028	232.23804	-49.034986	329.83304	0	207.10852
Slice 17	2'963.7393	235.27228	-49.035008	279.3738	0	198.30023
Slice 18	2'974.7313	237.91167	-49.034959	275.96133	0	197.75425
Slice 19	2'984.0788	240.15619	-49.034988	319.40651	0	205.45269
Slice 20	2'992.8501	242.26232	-49.035014	325.0476	0	206.4738
Slice 21	3'001.045	244.23007	-49.035039	292.77192	0	200.80678
Slice 22	3'012.9272	247.08321	-49.034977	312.64913	0	204.31797
Slice 23	3'022.3695	249.3505	-49.034993	356.68758	0	212.04836
Slice 24	3'028.5805	250.84187	-49.034965	346.80462	0	210.28978
Slice 25	3'037.6872	253.02855	-49.034978	311.30647	0	204.03323
Slice 26	3'046.7939	255.21523	-49.034981	275.52129	0	197.75098
Slice 27	3'057.8268	257.86443	-49.034971	288.60197	0	200.01202
Slice 28	3'067.2632	260.81887	-49.034992	292.04154	0	201.97772
Slice 29	3'076.1343	265.01489	-49.034967	253.66429	0	195.066

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 30	3'086.8257	270.07194	-49.034993	216.63569	0	188.43193
Slice 31	3'096.3802	274.59118	-49.035008	228.33685	0	190.37082
Slice 32	3'106.6878	279.46664	-49.034979	193.01585	0	184.13285
Slice 33	3'117.7485	284.69833	-49.034959	107.60919	0	169.38281
Slice 34	3'128.8092	289.93002	-49.035015	17.884934	0	154.16932

SEZIONE B1 DRENATA – SUPERFICI CIRCOLARI – STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

01_STATICA_GENERICO

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Slip Surface

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Direction of movement: **Right to Left**

Use Passive Mode: **No**

Slip Surface Option: **Entry and Exit**

Critical slip surfaces saved: **1**

Resisting Side Maximum Convex Angle: **1 °**

Driving Side Maximum Convex Angle: **5 °**

Optimize Critical Slip Surface Location: **No**

Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_D

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

Phi': **33 °**

Phi-B: **0 °**

ABBANCAMENTO_D

Model: **Mohr-Coulomb**

Unit Weight: **17 kN/m³**

Cohesion': **8 kPa**

Phi': **19 °**

Phi-B: **0 °**

PREVAM_D

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **8 kPa**

Phi': **16 °**

Phi-B: **0 °**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

B2_D

Model: [Mohr-Coulomb](#)
Unit Weight: [21 kN/m³](#)
Cohesion': [20 kPa](#)
Phi': [19 °](#)
Phi-B: [0 °](#)

B1_D

Model: [Mohr-Coulomb](#)
Unit Weight: [20 kN/m³](#)
Cohesion': [12 kPa](#)
Phi': [17 °](#)
Phi-B: [0 °](#)

A_D

Model: [Mohr-Coulomb](#)
Unit Weight: [19 kN/m³](#)
Cohesion': [8 kPa](#)
Phi': [20 °](#)
Phi-B: [0 °](#)


SLIP SURFACE ENTRY AND EXIT

Left Projection: [Range](#)
Left-Zone Left Coordinate: [\(3'408; 207.84298\) m](#)
Left-Zone Right Coordinate: [\(3'437; 212.42751\) m](#)
Left-Zone Increment: [5](#)
Right Projection: [Range](#)
Right-Zone Left Coordinate: [\(3'444.503; 216.00002\) m](#)
Right-Zone Right Coordinate: [\(3'532; 223.22879\) m](#)
Right-Zone Increment: [10](#)
Radius Increments: [10](#)

SLIP SURFACE LIMITS

Left Coordinate: [\(3'354.132; 204.24857\) m](#)
Right Coordinate: [\(3'808.8933; 275\) m](#)

POINTS

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	X (m)	Y (m)
Point 1	3'456.0961	221.52001
Point 2	3'430.5287	209.34624
Point 3	3'433.2936	209.53073
Point 4	3'444.0403	210.53218
Point 5	3'469.6582	211.25017
Point 6	3'808.8933	270.94428
Point 7	3'728.3794	270.75976
Point 8	3'662.0903	261.56488
Point 9	3'630.2127	253.68683
Point 10	3'602.9033	247.16348
Point 11	3'588.0446	240.38389
Point 12	3'575.7686	234.45382
Point 13	3'549.7511	226.082
Point 14	3'501.5386	208.10225
Point 15	3'472.8929	196.34239
Point 16	3'452.8793	190.82745
Point 17	3'442.6039	186.38473
Point 18	3'354.132	173.90883
Point 19	3'354.132	125
Point 20	3'808.8933	125
Point 21	3'808.8933	275
Point 22	3'728.238	274.49147

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 23	3'663.0628	265.265
Point 24	3'599.1276	249.57407
Point 25	3'572.4604	236.20716
Point 26	3'532.5677	223.49046
Point 27	3'528.2309	221.49147
Point 28	3'500.8888	210.53218
Point 29	3'497.6775	210.53218
Point 30	3'471.0748	198.82952
Point 31	3'451.1817	193.34779
Point 32	3'441.1805	189.04112
Point 33	3'354.132	176.15002
Point 34	3'493.7974	211.53218
Point 35	3'470.8148	200.81254
Point 36	3'450.9216	195.33081
Point 37	3'440.9205	191.02414
Point 38	3'354.132	178.69492
Point 39	3'354.132	204.24857

REGIONS

	Material	Points	Area (m ²)
Regio n 1	Unghia_d	1;2;3;4;5	203.89
Regio	B2_d	6;7;8;9;10;12;13;14;15;16;17;18;19;20	48'192

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

n 2			
Regio n 3	B1_d	15;14;13;12;10;8;7;6;21;22;23;24;25;26;27;28;29;30;31;32;33;18 ;17;16	1'512.7
Regio n 4	A_d	30;29;34;35;36;37;38;33;32;31	320.43
Regio n 5	Prevam_d	34;5;4;3;2;39;38;37;36;35	2'485.9
Regio n 6	Abbancamento _d	27;1;5;34;29;28	539.7

CURRENT SLIP SURFACE

Slip Surface: 392
 F of S: 1.327
 Volume: 207.3549 m³
 Weight: 3'725.7266 kN
 Resisting Moment: 42'130.303 kN-m
 Activating Moment: 31'740.437 kN-m
 Resisting Force: 1'388.5728 kN
 Activating Force: 1'046.4527 kN
 F of S Rank (Analysis): 1 of 726 slip surfaces
 F of S Rank (Query): 1 of 726 slip surfaces
 Exit: (3'425.8081; 209.03125) m
 Entry: (3'461.081; 221.51804) m
 Radius: 26.332872 m
 Center: (3'437.2605; 232.74333) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'426.3982	208.76396	- 49.035005	9.6580884	2.7694123	8
Slice 2	3'427.5783	208.26328	- 49.035002	22.129299	6.3454744	8

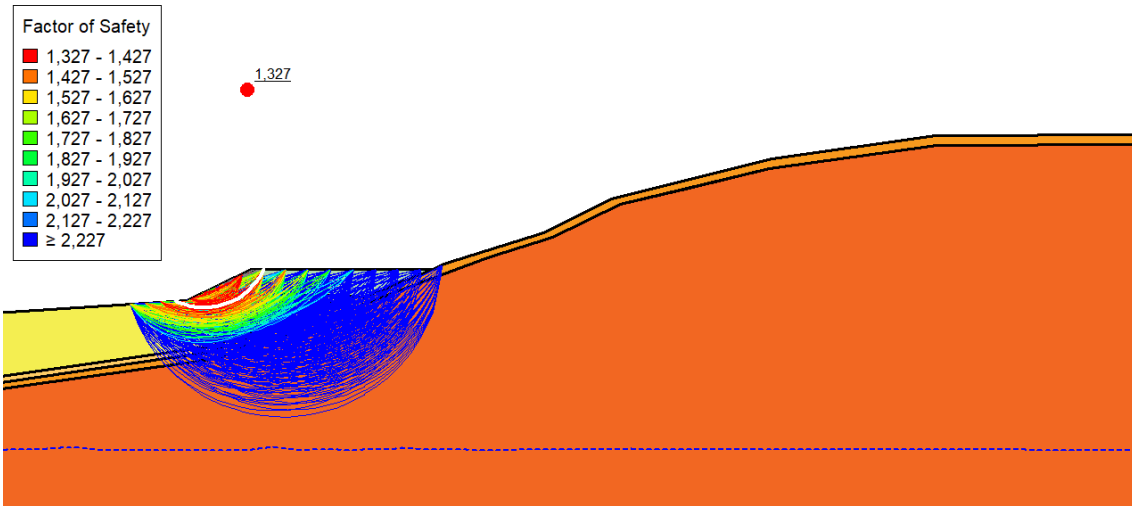
	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 3	3'428.7585	207.82854	- 49.034999	33.599526	9.6345089	8
Slice 4	3'429.9386	207.45633	- 49.034996	43.852719	12.574565	8
Slice 5	3'431.2199	207.1225	- 49.034993	59.203735	16.976398	8
Slice 6	3'432.6024	206.83526	-49.03499	79.093052	22.679568	8
Slice 7	3'433.8906	206.63392	- 49.034987	95.40086	27.355757	8
Slice 8	3'435.0847	206.50734	- 49.034984	108.29431	31.052895	8
Slice 9	3'436.2788	206.43555	- 49.034983	119.00196	34.123264	8
Slice 10	3'437.4729	206.41809	- 49.034982	127.52709	36.567805	8
Slice 11	3'438.6669	206.45484	- 49.034981	133.9533	38.41049	8
Slice 12	3'439.861	206.54605	- 49.034981	138.42722	39.693366	8
Slice 13	3'441.0551	206.69228	-49.03498	141.13844	40.470797	8
Slice 14	3'442.2492	206.89447	-49.03498	142.29939	40.803694	8
Slice 15	3'443.4433	207.15395	- 49.034981	142.12721	40.754322	8
Slice 16	3'444.5902	207.4576	- 49.034981	140.91836	40.40769	8
Slice	3'445.69	207.80286	-	138.91714	39.83385	8

	Committente		Oggetto del servizio			
	GE.R.IN		DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI			

17			49.034983			
Slice 18	3'446.7898	208.20224	- 49.034985	136.2356	39.064929	8
Slice 19	3'447.8896	208.65845	- 49.034988	132.97143	38.128944	8
Slice 20	3'448.9894	209.17478	- 49.034991	129.19378	37.045719	8
Slice 21	3'450.0892	209.75532	- 49.034994	124.94058	35.826135	8
Slice 22	3'451.189	210.40507	- 49.034998	120.21571	34.471301	8
Slice 23	3'452.2836	211.12646	-49.035	106.65874	69.264998	0
Slice 24	3'453.3729	211.92654	-49.035	99.444649	64.58011	0
Slice 25	3'454.4621	212.81831	-49.035	91.707823	59.555756	0
Slice 26	3'455.5514	213.81482	-49.035	83.334908	54.118322	0
Slice 27	3'456.6847	214.98489	-49.035	70.309566	45.659566	0
Slice 28	3'457.8618	216.36917	-49.035	52.703992	34.226373	0
Slice 29	3'459.0389	217.97778	-49.035	33.976974	22.064905	0
Slice 30	3'460.3542	220.18196	- 49.035007	7.6962168	2.65002	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI



SEZIONE B1 DRENATA – SUPERFICI CIRCOLARI – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slip Surface Option: [Entry and Exit](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [10 kPa](#)

Phi': [20 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

B1_K

Model: [Mohr-Coulomb](#)

Unit Weight: [20 kN/m³](#)

Cohesion': [15 kPa](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi': 22 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B2_K

Model: Mohr-Coulomb
 Unit Weight: 21 kN/m³
 Cohesion': 25 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A_K

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 10 kPa
 Phi': 25 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 10 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range
 Left-Zone Left Coordinate: (3'396.4127; 207.06981) m
 Left-Zone Right Coordinate: (3'441; 214.33209) m
 Left-Zone Increment: 10
 Right Projection: Range
 Right-Zone Left Coordinate: (3'447.9035; 217.61915) m
 Right-Zone Right Coordinate: (3'549.8513; 229) m
 Right-Zone Increment: 20

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Radius Increments: 20

SLIP SURFACE LIMITS

Left Coordinate: (3'354.132; 204.24857) m

Right Coordinate: (3'808.8933; 275) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082

Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
Point 1	3'456.0961	221.52001
Point 2	3'430.5287	209.34624
Point 3	3'433.2936	209.53073
Point 4	3'444.0403	210.53218
Point 5	3'469.6582	211.25017
Point 6	3'808.8933	270.94428
Point 7	3'728.3794	270.75976
Point 8	3'662.0903	261.56488
Point 9	3'630.2127	253.68683
Point 10	3'602.9033	247.16348
Point 11	3'588.0446	240.38389
Point 12	3'575.7686	234.45382
Point 13	3'549.7511	226.082
Point 14	3'501.5386	208.10225

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 15	3'472.8929	196.34239
Point 16	3'452.8793	190.82745
Point 17	3'442.6039	186.38473
Point 18	3'354.132	173.90883
Point 19	3'354.132	125
Point 20	3'808.8933	125
Point 21	3'808.8933	275
Point 22	3'728.238	274.49147
Point 23	3'663.0628	265.265
Point 24	3'599.1276	249.57407
Point 25	3'572.4604	236.20716
Point 26	3'532.5677	223.49046
Point 27	3'528.2309	221.49147
Point 28	3'500.8888	210.53218
Point 29	3'497.6775	210.53218
Point 30	3'471.0748	198.82952
Point 31	3'451.1817	193.34779
Point 32	3'441.1805	189.04112
Point 33	3'354.132	176.15002
Point 34	3'493.7974	211.53218
Point 35	3'470.8148	200.81254
Point 36	3'450.9216	195.33081
Point 37	3'440.9205	191.02414

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 38	3'354.132	178.69492
Point 39	3'354.132	204.24857

REGIONS

	Material	Points	Area (m²)
Regio n 1	Unghia_k	1;2;3;4;5	203.89
Regio n 2	B2_k	6;7;8;9;10;12;13;14;15;16;17;18;19;20	48'192
Regio n 3	B1_k	15;14;13;12;10;8;7;6;21;22;23;24;25;26;27;28;29;30;31;32;33;18 ;17;16	1'512.7
Regio n 4	A_k	30;29;34;35;36;37;38;33;32;31	320.43
Regio n 5	Prevam_k	34;5;4;3;2;39;38;37;36;35	2'485.9
Regio n 6	Abbancamento _k	27;1;5;34;29;28	539.7

CURRENT SLIP SURFACE

Slip Surface: 3'143
 F of S: 1.349
 Volume: 141.11751 m³
 Weight: 2'539.5988 kN
 Resisting Moment: 32'119.35 kN-m
 Activating Moment: 23'810.144 kN-m
 Resisting Force: 1'247.5691 kN
 Activating Force: 924.45504 kN
 F of S Rank (Analysis): 1 of 4'851 slip surfaces
 F of S Rank (Query): 1 of 4'851 slip surfaces
 Exit: (3'428.3943; 209.20382) m
 Entry: (3'457.4347; 221.51948) m
 Radius: 22.071815 m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Center: (3'436.886; 229.57672) m

SLIP SLICES

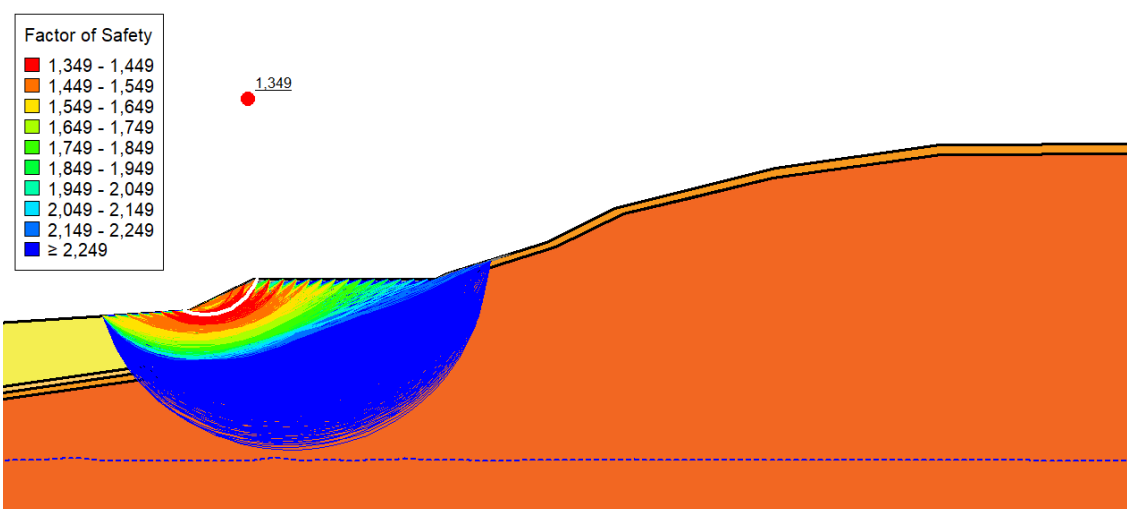
	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'428.9279	208.99747	- 49.035002	9.0341157	0	12.886892
Slice 2	3'429.9951	208.6157	- 49.034999	20.093207	0	16.520898
Slice 3	3'430.9895	208.31249	- 49.034997	33.814053	0	21.044768
Slice 4	3'431.9111	208.07807	- 49.034995	50.149384	0	26.465482
Slice 5	3'432.8328	207.88533	- 49.034994	65.407961	0	31.542193
Slice 6	3'433.7821	207.72982	- 49.034992	79.566594	0	36.299601
Slice 7	3'434.7591	207.61311	-49.03499	92.155464	0	40.611292
Slice 8	3'435.736	207.54031	- 49.034989	102.47539	0	44.258496
Slice 9	3'436.713	207.51099	- 49.034988	110.42491	0	47.207991
Slice 10	3'437.69	207.52497	- 49.034987	116.04231	0	49.460605
Slice 11	3'438.6669	207.58233	- 49.034987	119.48258	0	51.046833
Slice 12	3'439.6439	207.68341	- 49.034987	120.98465	0	52.020014

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 13	3'440.6209	207.82884	- 49.034987	120.83598	0	52.448471
Slice 14	3'441.5979	208.0195	- 49.034987	119.34004	0	52.407803
Slice 15	3'442.5748	208.25661	- 49.034988	116.78996	0	51.97415
Slice 16	3'443.5518	208.54175	- 49.034989	113.44973	0	51.218869
Slice 17	3'444.5654	208.8915	-49.03499	109.37245	0	50.156672
Slice 18	3'445.6157	209.31267	- 49.034992	104.72755	0	48.828954
Slice 19	3'446.6659	209.79855	- 49.034995	99.789021	0	47.310079
Slice 20	3'447.7162	210.35406	- 49.034998	94.644238	0	45.628388
Slice 21	3'448.7322	210.96235	- 49.034999	85.825917	0	74.177266
Slice 22	3'449.7141	211.62559	- 49.034999	78.520078	0	68.691629
Slice 23	3'450.6959	212.37043	- 49.034998	71.097507	0	62.931271
Slice 24	3'451.6778	213.20808	- 49.034998	63.482083	0	56.833829
Slice 25	3'452.6596	214.1538	- 49.034999	55.541136	0	50.2895
Slice 26	3'453.6415	215.22921	- 49.034999	47.079148	0	43.131143
Slice	3'454.6233	216.46673	-49.035	37.825929	0	35.116146

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

27						
Slice 28	3'455.6052	217.91924	-49.035	27.421826	0	25.894384
Slice 29	3'456.6057	219.72789	-49.035	13.138433	0	12.732114
Slice 30	3'457.275	221.13385	- 49.035002	-6.8472801	0	7.8696741



SEZIONE B1 DRENATA – SCORRIMENTO LUNGO BASE - STATICA

PROJECT SETTINGS

Length(L) Units: **Meters**
 Time(t) Units: **Seconds**
 Force(F) Units: **Kilonewtons**
 Pressure(p) Units: **kPa**
 Strength Units: **kPa**
 Unit Weight of Water: **9.807 kN/m³**
 View: **2D**
 Element Thickness: **1**

ANALYSIS SETTINGS

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

02_STATICA_BASE

Kind: [SLOPE/W](#)

Parent: [Insitu](#)

Method: [Morgenstern-Price](#)

Settings

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Fully-Specified](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [0.1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_D

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [33 °](#)

Phi-B: [0 °](#)

ABBANCAMENTO_D

Model: [Mohr-Coulomb](#)

Unit Weight: [17 kN/m³](#)

Cohesion': [8 kPa](#)

Phi': [19 °](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi-B: 0 °

PREVAM_D

Model: Mohr-Coulomb
Unit Weight: 18 kN/m³
Cohesion': 8 kPa
Phi': 16 °
Phi-B: 0 °

B2_D

Model: Mohr-Coulomb
Unit Weight: 21 kN/m³
Cohesion': 20 kPa
Phi': 19 °
Phi-B: 0 °

B1_D

Model: Mohr-Coulomb
Unit Weight: 20 kN/m³
Cohesion': 12 kPa
Phi': 17 °
Phi-B: 0 °

A_D

Model: Mohr-Coulomb
Unit Weight: 19 kN/m³
Cohesion': 8 kPa
Phi': 20 °
Phi-B: 0 °

SLIP SURFACE LIMITS

Left Coordinate: (3'354.132; 204.24857) m
Right Coordinate: (3'808.8933; 275) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	X (m)	Y (m)
	3'430.5287	209.34624
	3'433.2936	209.53073
	3'444.0403	210.53218
	3'469.6582	211.25017
	3'493.7974	211.53218
	3'497.6775	210.53218
	3'500.8888	210.53218
	3'528.2309	221.49147

POINTS

	X (m)	Y (m)
Point 1	3'456.0961	221.52001
Point 2	3'430.5287	209.34624
Point 3	3'433.2936	209.53073
Point 4	3'444.0403	210.53218
Point 5	3'469.6582	211.25017
Point 6	3'808.8933	270.94428
Point 7	3'728.3794	270.75976
Point 8	3'662.0903	261.56488
Point 9	3'630.2127	253.68683
Point 10	3'602.9033	247.16348
Point 11	3'588.0446	240.38389

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 12	3'575.7686	234.45382
Point 13	3'549.7511	226.082
Point 14	3'501.5386	208.10225
Point 15	3'472.8929	196.34239
Point 16	3'452.8793	190.82745
Point 17	3'442.6039	186.38473
Point 18	3'354.132	173.90883
Point 19	3'354.132	125
Point 20	3'808.8933	125
Point 21	3'808.8933	275
Point 22	3'728.238	274.49147
Point 23	3'663.0628	265.265
Point 24	3'599.1276	249.57407
Point 25	3'572.4604	236.20716
Point 26	3'532.5677	223.49046
Point 27	3'528.2309	221.49147
Point 28	3'500.8888	210.53218
Point 29	3'497.6775	210.53218
Point 30	3'471.0748	198.82952
Point 31	3'451.1817	193.34779
Point 32	3'441.1805	189.04112
Point 33	3'354.132	176.15002
Point 34	3'493.7974	211.53218

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 35	3'470.8148	200.81254
Point 36	3'450.9216	195.33081
Point 37	3'440.9205	191.02414
Point 38	3'354.132	178.69492
Point 39	3'354.132	204.24857

REGIONS

	Material	Points	Area (m²)
Regio n 1	Unghia_d	1;2;3;4;5	203.89
Regio n 2	B2_d	6;7;8;9;10;12;13;14;15;16;17;18;19;20	48'192
Regio n 3	B1_d	15;14;13;12;10;8;7;6;21;22;23;24;25;26;27;28;29;30;31;32;33;18;17;16	1'512.7
Regio n 4	A_d	30;29;34;35;36;37;38;33;32;31	320.43
Regio n 5	Prevam_d	34;5;4;3;2;39;38;37;36;35	2'485.9
Regio n 6	Abbancamento_d	27;1;5;34;29;28	539.7

CURRENT SLIP SURFACE

Slip Surface: 1

F of S: 6.302

Volume: 743.58787 m³

Weight: 12'844.884 kN

Resisting Moment: 91'742.209 kN-m

Activating Moment: 14'556.625 kN-m

Resisting Force: 6'350.7778 kN

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Activating Force: 1'007.6881 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (3'430.5287; 209.34624) m
 Entry: (3'528.2309; 221.49147) m
 Radius: 37.787918 m
 Center: (3'478.2475; 224.52778) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'431.9111	209.43848	-49.035	10.122114	6.5733776	0
Slice 2	3'435.0847	209.69764	-49.035	32.422284	21.055278	0
Slice 3	3'438.6669	210.03145	-49.035	56.896995	36.94934	0
Slice 4	3'442.2492	210.36527	-49.035	81.379908	52.84873	0
Slice 5	3'445.5473	210.57442	-49.035	106.78529	69.347176	0
Slice 6	3'448.5612	210.65889	-49.035	131.2937	85.263123	0
Slice 7	3'451.5752	210.74336	-49.035	155.83418	101.1999	0
Slice 8	3'454.5891	210.82783	-49.035	180.39643	117.15081	0
Slice 9	3'457.7914	210.91758	-49.035	190.61713	123.78821	0
Slice 10	3'461.1819	211.01261	-49.035	186.44934	121.08162	0

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 11	3'464.5724	211.10763	-49.035	182.22291	118.33694	0
Slice 12	3'467.9629	211.20266	-49.035	177.93675	115.55348	0
Slice 13	3'471.3824	211.27031	-49.034993	175.29264	60.358096	8
Slice 14	3'474.8309	211.3106	-49.034979	174.48509	60.080036	8
Slice 15	3'478.2793	211.35089	-49.034965	173.63863	59.788576	8
Slice 16	3'481.7278	211.39118	-49.034951	172.75497	59.484307	8
Slice 17	3'485.1763	211.43146	-49.034965	171.8366	59.168086	8
Slice 18	3'488.6247	211.47175	-49.034979	170.88675	58.841027	8
Slice 19	3'492.0732	211.51204	-49.034993	169.90934	58.504478	8
Slice 20	3'495.7375	211.03218	-49.035	185.57425	63.89834	8
Slice 21	3'499.2832	210.53218	-49.035	185.83802	63.989162	8
Slice 22	3'502.5977	211.21714	-49.034994	164.36246	56.594535	8
Slice 23	3'506.0154	212.58705	-49.034982	142.86211	49.191369	8
Slice 24	3'509.4332	213.95696	-49.03497	121.30196	41.767616	8
Slice	3'512.851	215.32687	-49.034988	99.626252	34.30407	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

25						
Slice 26	3'516.2687	216.69678	-49.035012	77.784864	26.783477	8
Slice 27	3'519.6865	218.06669	-49.03503	55.734674	19.190987	8
Slice 28	3'523.1043	219.4366	-49.035018	33.440792	11.514588	8
Slice 29	3'526.522	220.80651	-49.035006	10.877714	3.7454971	8

SEZIONE B1 DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Direction of movement: **Right to Left**

Use Passive Mode: **No**

Slip Surface Option: **Fully-Specified**

Critical slip surfaces saved: **1**

Resisting Side Maximum Convex Angle: **1 °**

Driving Side Maximum Convex Angle: **5 °**

Optimize Critical Slip Surface Location: **No**

Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

Phi': **40 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

PREVAM_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **10 kPa**

Phi': **20 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

B1_K

Model: **Mohr-Coulomb**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 20 kN/m³
 Cohesion': 15 kPa
 Phi': 22 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B2_K

Model: Mohr-Coulomb
 Unit Weight: 21 kN/m³
 Cohesion': 25 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A_K

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 10 kPa
 Phi': 25 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 10 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE LIMITS

Left Coordinate: (3'354.132; 204.24857) m
 Right Coordinate: (3'808.8933; 275) m

FULLY SPECIFIED SLIP SURFACES

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	3'430.5287	209.34624
	3'433.2936	209.53073
	3'444.0403	210.53218
	3'469.6582	211.25017
	3'493.7974	211.53218
	3'497.6775	210.53218
	3'500.8888	210.53218
	3'528.2309	221.49147

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082

Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
Point 1	3'456.0961	221.52001
Point 2	3'430.5287	209.34624
Point 3	3'433.2936	209.53073
Point 4	3'444.0403	210.53218
Point 5	3'469.6582	211.25017
Point 6	3'808.8933	270.94428
Point 7	3'728.3794	270.75976

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 8	3'662.0903	261.56488
Point 9	3'630.2127	253.68683
Point 10	3'602.9033	247.16348
Point 11	3'588.0446	240.38389
Point 12	3'575.7686	234.45382
Point 13	3'549.7511	226.082
Point 14	3'501.5386	208.10225
Point 15	3'472.8929	196.34239
Point 16	3'452.8793	190.82745
Point 17	3'442.6039	186.38473
Point 18	3'354.132	173.90883
Point 19	3'354.132	125
Point 20	3'808.8933	125
Point 21	3'808.8933	275
Point 22	3'728.238	274.49147
Point 23	3'663.0628	265.265
Point 24	3'599.1276	249.57407
Point 25	3'572.4604	236.20716
Point 26	3'532.5677	223.49046
Point 27	3'528.2309	221.49147
Point 28	3'500.8888	210.53218
Point 29	3'497.6775	210.53218
Point 30	3'471.0748	198.82952

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 31	3'451.1817	193.34779
Point 32	3'441.1805	189.04112
Point 33	3'354.132	176.15002
Point 34	3'493.7974	211.53218
Point 35	3'470.8148	200.81254
Point 36	3'450.9216	195.33081
Point 37	3'440.9205	191.02414
Point 38	3'354.132	178.69492
Point 39	3'354.132	204.24857

REGIONS

	Material	Points	Area (m ²)
Regio n 1	Unghia_k	1;2;3;4;5	203.89
Regio n 2	B2_k	6;7;8;9;10;12;13;14;15;16;17;18;19;20	48'192
Regio n 3	B1_k	15;14;13;12;10;8;7;6;21;22;23;24;25;26;27;28;29;30;31;32;33;18 ;17;16	1'512.7
Regio n 4	A_k	30;29;34;35;36;37;38;33;32;31	320.43
Regio n 5	Prevam_k	34;5;4;3;2;39;38;37;36;35	2'485.9
Regio n 6	Abbancamento _k	27;1;5;34;29;28	539.7

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 4.049
 Volume: 743.58787 m³
 Weight: 12'844.884 kN
 Resisting Moment: 118'236.79 kN-m
 Activating Moment: 29'197.337 kN-m
 Resisting Force: 8'188.7903 kN
 Activating Force: 2'022.3042 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (3'430.5287; 209.34624) m
 Entry: (3'528.2309; 221.49147) m
 Radius: 37.787918 m
 Center: (3'478.2475; 224.52778) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'431.9111	209.43848	-49.035	10.480694	0	8.4933549
Slice 2	3'435.0847	209.69764	-49.035	33.508185	0	27.205126
Slice 3	3'438.6669	210.03145	-49.035	58.865362	0	47.741744
Slice 4	3'442.2492	210.36527	-49.035	84.283683	0	68.285406
Slice 5	3'445.5473	210.57442	-49.035	112.06872	0	89.604408
Slice 6	3'448.5612	210.65889	-49.035	138.13314	0	110.16989
Slice 7	3'451.5752	210.74336	-49.035	164.30521	0	130.76236

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 8	3'454.5891	210.82783	-49.035	190.55026	0	151.37315
Slice 9	3'457.7914	210.91758	-49.035	201.72555	0	159.94984
Slice 10	3'461.1819	211.01261	-49.035	197.67261	0	156.45293
Slice 11	3'464.5724	211.10763	-49.035	193.42116	0	152.90667
Slice 12	3'467.9629	211.20266	-49.035	188.96759	0	149.31017
Slice 13	3'471.3824	211.27031	- 49.034993	183.61664	0	88.045188
Slice 14	3'474.8309	211.3106	- 49.034979	182.48445	0	87.685438
Slice 15	3'478.2793	211.35089	- 49.034965	181.28575	0	87.308381
Slice 16	3'481.7278	211.39118	- 49.034951	180.0262	0	86.914784
Slice 17	3'485.1763	211.43146	- 49.034965	178.71283	0	86.505757
Slice 18	3'488.6247	211.47175	- 49.034979	177.3539	0	86.082742
Slice 19	3'492.0732	211.51204	- 49.034993	175.95879	0	85.647485
Slice 20	3'495.7375	211.03218	-49.035	203.63724	0	92.620411
Slice 21	3'499.2832	210.53218	-49.035	191.39057	0	92.739351
Slice	3'502.5977	211.21714	-	156.74691	0	83.180322

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

22			49.034994			
Slice 23	3'506.0154	212.58705	- 49.034982	136.99765	0	73.60811
Slice 24	3'509.4332	213.95696	-49.03497	117.1008	0	64.009374
Slice 25	3'512.851	215.32687	- 49.034988	96.908396	0	54.359295
Slice 26	3'516.2687	216.69678	- 49.035012	76.281595	0	44.635565
Slice 27	3'519.6865	218.06669	-49.03503	55.093831	0	34.818985
Slice 28	3'523.1043	219.4366	- 49.035018	33.234589	0	24.894017
Slice 29	3'526.522	220.80651	- 49.035006	10.61369	0	14.8493

SEZIONE B1 NON DRENATA – SUPERFICI CIRCOLARI – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: **Meters**
 Time(t) Units: **Seconds**
 Force(F) Units: **Kilonewtons**
 Pressure(p) Units: **kPa**
 Strength Units: **kPa**
 Unit Weight of Water: **9.807 kN/m³**
 View: **2D**
 Element Thickness: **1**

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: **SLOPE/W**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Parent: [Insitu](#)

Method: [Morgenstern-Price](#)

Settings

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Entry and Exit](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [75 kPa](#)

Phi': [17 °](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

B1_K

Model: Mohr-Coulomb
Unit Weight: 20 kN/m³
Cohesion': 50 kPa
Phi': 20 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

B2_K

Model: Mohr-Coulomb
Unit Weight: 21 kN/m³
Cohesion': 90 kPa
Phi': 20 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °


A_K

Model: Mohr-Coulomb
Unit Weight: 19 kN/m³
Cohesion': 20 kPa
Phi': 10 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
Unit Weight: 17 kN/m³
Cohesion': 150 kPa
Phi': 10 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Left Projection: [Range](#)
 Left-Zone Left Coordinate: [\(3'396.4127; 207.06981\) m](#)
 Left-Zone Right Coordinate: [\(3'441; 214.33209\) m](#)
 Left-Zone Increment: [10](#)
 Right Projection: [Range](#)
 Right-Zone Left Coordinate: [\(3'447.9035; 217.61915\) m](#)
 Right-Zone Right Coordinate: [\(3'549.8513; 229\) m](#)
 Right-Zone Increment: [20](#)
 Radius Increments: [20](#)

SLIP SURFACE LIMITS

Left Coordinate: [\(3'354.132; 204.24857\) m](#)
 Right Coordinate: [\(3'808.8933; 275\) m](#)

SEISMIC COEFFICIENTS

Horz Seismic Coef.: [0.082](#)
 Vert Seismic Coef.: [0.041](#)

POINTS

	X (m)	Y (m)
Point 1	3'456.0961	221.52001
Point 2	3'430.5287	209.34624
Point 3	3'433.2936	209.53073
Point 4	3'444.0403	210.53218
Point 5	3'469.6582	211.25017
Point 6	3'808.8933	270.94428
Point 7	3'728.3794	270.75976
Point 8	3'662.0903	261.56488
Point 9	3'630.2127	253.68683
Point 10	3'602.9033	247.16348

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 11	3'588.0446	240.38389
Point 12	3'575.7686	234.45382
Point 13	3'549.7511	226.082
Point 14	3'501.5386	208.10225
Point 15	3'472.8929	196.34239
Point 16	3'452.8793	190.82745
Point 17	3'442.6039	186.38473
Point 18	3'354.132	173.90883
Point 19	3'354.132	125
Point 20	3'808.8933	125
Point 21	3'808.8933	275
Point 22	3'728.238	274.49147
Point 23	3'663.0628	265.265
Point 24	3'599.1276	249.57407
Point 25	3'572.4604	236.20716
Point 26	3'532.5677	223.49046
Point 27	3'528.2309	221.49147
Point 28	3'500.8888	210.53218
Point 29	3'497.6775	210.53218
Point 30	3'471.0748	198.82952
Point 31	3'451.1817	193.34779
Point 32	3'441.1805	189.04112
Point 33	3'354.132	176.15002

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 34	3'493.7974	211.53218
Point 35	3'470.8148	200.81254
Point 36	3'450.9216	195.33081
Point 37	3'440.9205	191.02414
Point 38	3'354.132	178.69492
Point 39	3'354.132	204.24857

REGIONS

	Material	Points	Area (m ²)
Regio n 1	Unghia_k	1;2;3;4;5	203.89
Regio n 2	B2_k	6;7;8;9;10;12;13;14;15;16;17;18;19;20	48'192
Regio n 3	B1_k	15;14;13;12;10;8;7;6;21;22;23;24;25;26;27;28;29;30;31;32;33;18 ;17;16	1'512.7
Regio n 4	A_k	30;29;34;35;36;37;38;33;32;31	320.43
Regio n 5	Prevam_k	34;5;4;3;2;39;38;37;36;35	2'485.9
Regio n 6	Abbancamento _k	27;1;5;34;29;28	539.7

CURRENT SLIP SURFACE

Slip Surface: 908

F of S: 1.471

Volume: 13.776418 m³

Weight: 247.97553 kN

Resisting Moment: 13'292.799 kN-m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Activating Moment: 9'035.048 kN-m
 Resisting Force: 170.41969 kN
 Activating Force: 115.85878 kN
 F of S Rank (Analysis): 1 of 4'851 slip surfaces
 F of S Rank (Query): 1 of 4'851 slip surfaces
 Exit: (3'432.188; 210.13631) m
 Entry: (3'452.6041; 219.85731) m
 Radius: 70.407511 m
 Center: (3'412.5207; 277.74115) m

SLIP SLICES

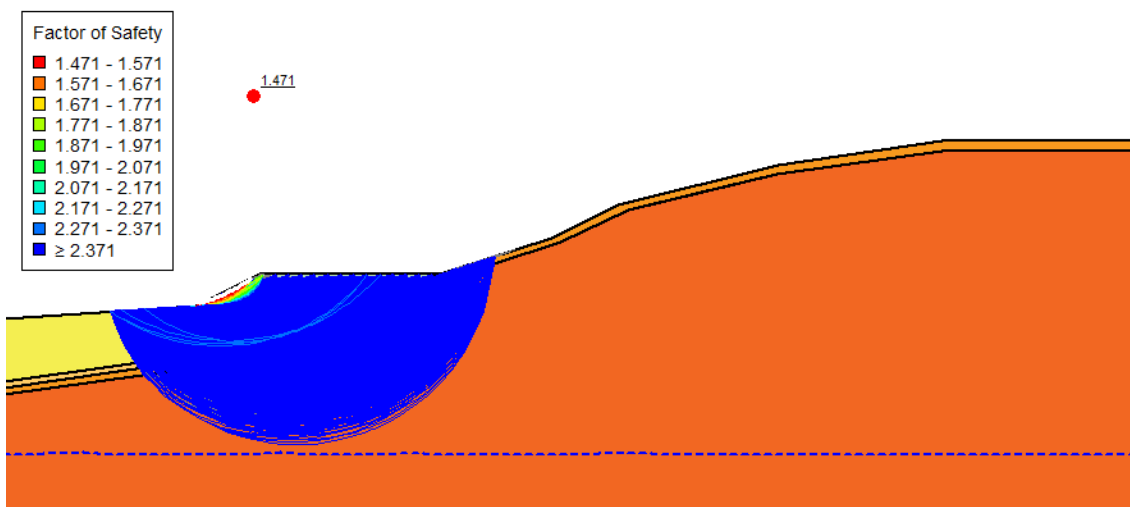
	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'432.5283	210.23716	- 49.035007	0.99286188	0	0.81834408
Slice 2	3'433.2088	210.44262	- 49.035009	2.9379168	0	2.4205396
Slice 3	3'433.8893	210.6556	-49.03501	4.7829987	0	3.9392803
Slice 4	3'434.5699	210.87619	- 49.035012	6.5117576	0	5.362342
Slice 5	3'435.2504	211.10446	- 49.035013	8.1080385	0	6.6777547
Slice 6	3'435.931	211.34049	- 49.035015	9.5570505	0	7.8745563
Slice 7	3'436.6115	211.58437	- 49.035017	10.846387	0	8.9434469
Slice 8	3'437.292	211.83617	- 49.035019	11.966791	0	9.8772936
Slice 9	3'437.9726	212.09599	- 49.035021	12.912606	0	10.671451
Slice	3'438.6531	212.36393	-	13.681872	0	11.323878

	Committente		Oggetto del servizio
	GE.R.IN		DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

10			49.035023			
Slice 11	3'439.3336	212.64009	- 49.035025	14.276108	0	11.835069
Slice 12	3'440.0142	212.92456	- 49.035026	14.699819	0	12.207805
Slice 13	3'440.6947	213.21747	- 49.035021	14.959835	0	12.446776
Slice 14	3'441.3752	213.51893	- 49.035016	15.064588	0	12.558118
Slice 15	3'442.0558	213.82905	- 49.035011	15.023418	0	12.548897
Slice 16	3'442.7363	214.14797	- 49.035005	14.845988	0	12.426587
Slice 17	3'443.4168	214.47582	-49.035	14.541834	0	12.198582
Slice 18	3'444.0974	214.81274	- 49.034995	14.120013	0	11.871741
Slice 19	3'444.7779	215.15886	-49.03499	13.588802	0	11.452004
Slice 20	3'445.4585	215.51436	- 49.034985	12.955361	0	10.944069
Slice 21	3'446.139	215.87939	- 49.034979	12.225303	0	10.351128
Slice 22	3'446.8195	216.25411	- 49.034974	11.402185	0	9.6746703
Slice 23	3'447.5001	216.63872	- 49.034974	10.48697	0	8.9143379
Slice 24	3'448.1806	217.03338	- 49.034975	9.4775759	0	8.0678307

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 25	3'448.8611	217.43831	- 49.034977	8.3686363	0	7.1308554
Slice 26	3'449.5417	217.85372	- 49.034978	7.1515475	0	6.0971124
Slice 27	3'450.2222	218.27981	-49.03498	5.8148005	0	4.9583141
Slice 28	3'450.9027	218.71682	- 49.034982	4.3444941	0	3.7042319
Slice 29	3'451.5833	219.16501	- 49.034984	2.7248667	0	2.3227729
Slice 30	3'452.2638	219.62461	- 49.034986	0.93870327	0	0.80009399



SEZIONE B1 NON DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: Meters
Time(t) Units: Seconds
Force(F) Units: Kilonewtons
Pressure(p) Units: kPa

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Strength Units: **kPa**

Unit Weight of Water: **9.807 kN/m³**

View: **2D**

Element Thickness: **1**

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: **SLOPE/W**

Parent: **Insitu**

Method: **Morgenstern-Price**

Settings

Side Function

Interslice force function option: **Half-Sine**

PWP Conditions Source: **Parent Analysis**

Staged Pseudo Static Analysis Option: **Effective Stress Strengths**

Slip Surface

Direction of movement: **Right to Left**

Use Passive Mode: **No**

Slip Surface Option: **Fully-Specified**

Critical slip surfaces saved: **1**

Resisting Side Maximum Convex Angle: **1 °**

Driving Side Maximum Convex Angle: **5 °**

Optimize Critical Slip Surface Location: **No**

Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi': 40 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

PREVAM_K

Model: Mohr-Coulomb
Unit Weight: 18 kN/m³
Cohesion': 75 kPa
Phi': 17 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

B1_K

Model: Mohr-Coulomb
Unit Weight: 20 kN/m³
Cohesion': 50 kPa
Phi': 20 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

B2_K

Model: Mohr-Coulomb
Unit Weight: 21 kN/m³
Cohesion': 90 kPa
Phi': 20 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

A_K

Model: Mohr-Coulomb
Unit Weight: 19 kN/m³
Cohesion': 20 kPa
Phi': 10 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

ABBANCAMENTO_K

Model: **Mohr-Coulomb**

Unit Weight: **17 kN/m³**

Cohesion': **150 kPa**

Phi': **10 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

SLIP SURFACE LIMITS

Left Coordinate: **(3'354.132; 204.24857) m**

Right Coordinate: **(3'808.8933; 275) m**

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	3'430.5287	209.34624
	3'433.2936	209.53073
	3'444.0403	210.53218
	3'469.6582	211.25017
	3'493.7974	211.53218
	3'497.6775	210.53218
	3'500.8888	210.53218
	3'528.2309	221.49147

SEISMIC COEFFICIENTS

Horz Seismic Coef.: **0.082**

Vert Seismic Coef.: **0.041**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

POINTS

	X (m)	Y (m)
Point 1	3'456.0961	221.52001
Point 2	3'430.5287	209.34624
Point 3	3'433.2936	209.53073
Point 4	3'444.0403	210.53218
Point 5	3'469.6582	211.25017
Point 6	3'808.8933	270.94428
Point 7	3'728.3794	270.75976
Point 8	3'662.0903	261.56488
Point 9	3'630.2127	253.68683
Point 10	3'602.9033	247.16348
Point 11	3'588.0446	240.38389
Point 12	3'575.7686	234.45382
Point 13	3'549.7511	226.082
Point 14	3'501.5386	208.10225
Point 15	3'472.8929	196.34239
Point 16	3'452.8793	190.82745
Point 17	3'442.6039	186.38473
Point 18	3'354.132	173.90883
Point 19	3'354.132	125
Point 20	3'808.8933	125
Point 21	3'808.8933	275

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 22	3'728.238	274.49147
Point 23	3'663.0628	265.265
Point 24	3'599.1276	249.57407
Point 25	3'572.4604	236.20716
Point 26	3'532.5677	223.49046
Point 27	3'528.2309	221.49147
Point 28	3'500.8888	210.53218
Point 29	3'497.6775	210.53218
Point 30	3'471.0748	198.82952
Point 31	3'451.1817	193.34779
Point 32	3'441.1805	189.04112
Point 33	3'354.132	176.15002
Point 34	3'493.7974	211.53218
Point 35	3'470.8148	200.81254
Point 36	3'450.9216	195.33081
Point 37	3'440.9205	191.02414
Point 38	3'354.132	178.69492
Point 39	3'354.132	204.24857

REGIONS

	Material	Points	Area (m ²)
Regio n 1	Unghia_k	1;2;3;4;5	203.89

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Regio n 2	B2_k	6;7;8;9;10;12;13;14;15;16;17;18;19;20	48'192
Regio n 3	B1_k	15;14;13;12;10;8;7;6;21;22;23;24;25;26;27;28;29;30;31;32;33;18 ;17;16	1'512.7
Regio n 4	A_k	30;29;34;35;36;37;38;33;32;31	320.43
Regio n 5	Prevam_k	34;5;4;3;2;39;38;37;36;35	2'485.9
Regio n 6	Abbancamento _k	27;1;5;34;29;28	539.7

CURRENT SLIP SURFACE

Slip Surface: 0
 F of S: >5
 Volume: 251.3458 m³
 Weight: 3'808.8933 kN
 Resisting Moment: 261.21466 kN-m
 Activating Moment: -4.7488462e-270 kN-m
 Resisting Force: 251.48504 kN
 Activating Force: 3'808.8933 kN

SEZIONE B2 DRENATA – SUPERFICI CIRCOLARI – STATICA

PROJECT SETTINGS

Length(L) Units: Meters
 Time(t) Units: Seconds
 Force(F) Units: Kilonewtons
 Pressure(p) Units: kPa
 Strength Units: kPa
 Unit Weight of Water: 9.807 kN/m³
 View: 2D
 Element Thickness: 1

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

ANALYSIS SETTINGS

01_STATICA_GENERICO

Kind: [SLOPE/W](#)

Parent: [Insitu](#)

Method: [Morgenstern-Price](#)

Settings

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Entry and Exit](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_D

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [33 °](#)

Phi-B: [0 °](#)

PREVAM_D

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 18 kN/m³

Cohesion': 8 kPa

Phi': 16 °

Phi-B: 0 °

B1_D

Model: Mohr-Coulomb

Unit Weight: 20 kN/m³

Cohesion': 12 kPa

Phi': 17 °

Phi-B: 0 °

B2_D

Model: Mohr-Coulomb

Unit Weight: 21 kN/m³

Cohesion': 20 kPa

Phi': 19 °

Phi-B: 0 °

A_D

Model: Mohr-Coulomb

Unit Weight: 19 kN/m³

Cohesion': 8 kPa

Phi': 20 °

Phi-B: 0 °

ABBANCAMENTO_D

Model: Mohr-Coulomb

Unit Weight: 17 kN/m³

Cohesion': 8 kPa

Phi': 19 °

Phi-B: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range

Left-Zone Left Coordinate: (3'201.7029; 209.80718) m

Left-Zone Right Coordinate: (3'241; 215.69128) m

Left-Zone Increment: 5

Right Projection: Range

Right-Zone Left Coordinate: (3'245.4194; 217.91457) m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Right-Zone Right Coordinate: (3'333; 227.87629) m

Right-Zone Increment: 10

Radius Increments: 10

SLIP SURFACE LIMITS

Left Coordinate: (3'183.6014; 208.80929) m

Right Coordinate: (3'579.3799; 264) m

POINTS

	X (m)	Y (m)
Point 1	3'579.3799	260.27576
Point 2	3'509.6435	260.27576
Point 3	3'501.9873	257.89303
Point 4	3'477.8365	256.24712
Point 5	3'450.3579	252.54153
Point 6	3'435.1272	249.48888
Point 7	3'414.3346	245.89168
Point 8	3'393.5734	239.77832
Point 9	3'388.9474	239.56109
Point 10	3'368.1851	234.30234
Point 11	3'311.0459	217.48212
Point 12	3'297.0647	214.50366
Point 13	3'286.5293	209.52162
Point 14	3'231.0214	193.17111
Point 15	3'183.6014	182.10445
Point 16	3'183.6014	131.95917

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 17	3'579.3799	131.95917
Point 18	3'295.8032	218.19721
Point 19	3'313.8613	222.125
Point 20	3'253.7888	222.125
Point 21	3'263.5204	211.97579
Point 22	3'281.8299	212.125
Point 23	3'282.936	212.43591
Point 24	3'579.3799	264
Point 25	3'508.5257	264.12467
Point 26	3'501.387	261.32207
Point 27	3'477.1529	260.13066
Point 28	3'450.1065	256.4284
Point 29	3'414.2473	250.35949
Point 30	3'393.0752	243.65478
Point 31	3'384.2228	242.84878
Point 32	3'360.3639	236.09925
Point 33	3'313.8601	222.12467
Point 34	3'295.802	218.19688
Point 35	3'282.9348	212.43558
Point 36	3'281.8287	212.12467
Point 37	3'231.0214	196.80262
Point 38	3'183.6014	185.8656
Point 39	3'313.8612	222.125

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 40	3'313.8609	222.12492
Point 41	3'295.8029	218.19708
Point 42	3'279.3051	212.1041
Point 43	3'231.0214	198.05749
Point 44	3'183.6014	187.54822
Point 45	3'263.5192	211.97545
Point 46	3'232.7005	211.51601
Point 47	3'183.6014	208.80929
Point 48	3'263.5207	211.97548

REGIONS

	Material	Points	Area (m ²)
Region 1	B2_d	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17	39'38 4
Region 2	Abbancame nto_d	18;40;39;20;21;22;35;34;41	367.8
Region 3	B1_d	13;12;11;10;9;8;7;5;4;3;2;1;24;25;26;27;28;29;30;31;32;39;40;33;41;3 4;35;22;36;37;38;15;14	1'554. 3
Region 4	A_d	37;36;42;43;44;38	118.7 5
Region 5	Prevam_d	42;45;46;47;44;43	1'147
Region 6	Unghia_d	20;46;48;21	158.6 4

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

CURRENT SLIP SURFACE

Slip Surface: 497
 F of S: 1.310
 Volume: 13.871287 m³
 Weight: 249.68317 kN
 Resisting Moment: 9'338.5603 kN-m
 Activating Moment: 7'127.4652 kN-m
 Resisting Force: 130.14938 kN
 Activating Force: 99.387864 kN
 F of S Rank (Analysis): 1 of 726 slip surfaces
 F of S Rank (Query): 1 of 726 slip surfaces
 Exit: (3'233.7935; 212.06587) m
 Entry: (3'253.408; 221.93343) m
 Radius: 64.088833 m
 Center: (3'215.2243; 273.40562) m

SLIP SLICES

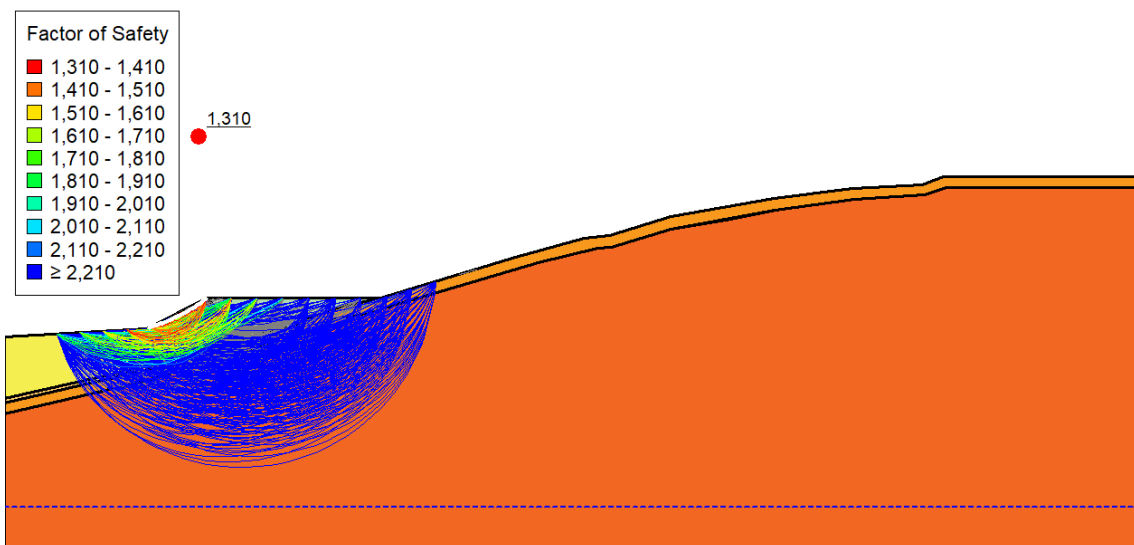
	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'234.1204	212.16674	- 49.034994	1.0023248	0.65091736	0
Slice 2	3'234.7742	212.37233	- 49.034991	2.9654834	1.9258074	0
Slice 3	3'235.428	212.58564	- 49.034988	4.8279089	3.1352807	0
Slice 4	3'236.0819	212.80675	- 49.034986	6.5740845	4.2692604	0
Slice 5	3'236.7357	213.03576	- 49.034983	8.1887764	5.3178536	0
Slice 6	3'237.3895	213.27274	-49.03498	9.6580051	6.2719818	0
Slice 7	3'238.0433	213.5178	- 49.034977	10.969892	7.1239314	0


	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 8	3'238.6971	213.77104	- 49.034974	12.115315	7.8677775	0
Slice 9	3'239.3509	214.03255	- 49.034972	13.088321	8.4996548	0
Slice 10	3'240.0048	214.30246	- 49.034969	13.886287	9.0178604	0
Slice 11	3'240.6586	214.58087	- 49.034966	14.509832	9.4227948	0
Slice 12	3'241.3124	214.86791	- 49.034963	14.962498	9.7167599	0
Slice 13	3'241.9662	215.1637	-49.03496	15.250276	9.9036453	0
Slice 14	3'242.62	215.46838	- 49.034957	15.381002	9.9885392	0
Slice 15	3'243.2738	215.78209	- 49.034955	15.363694	9.9772998	0
Slice 16	3'243.9277	216.10497	- 49.034958	15.207894	9.8761217	0
Slice 17	3'244.5815	216.43719	- 49.034961	14.923022	9.691124	0
Slice 18	3'245.2353	216.77891	- 49.034964	14.517813	9.4279782	0
Slice 19	3'245.8891	217.1303	- 49.034967	13.999817	9.0915877	0
Slice 20	3'246.5429	217.49154	-49.03497	13.374994	8.6858229	0
Slice 21	3'247.1967	217.86283	- 49.034973	12.64739	8.213311	0
Slice	3'247.8506	218.24437	-	11.818889	7.675276	0

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

22			49.034976			
Slice 23	3'248.5044	218.63637	- 49.034978	10.889039	7.0714245	0
Slice 24	3'249.1582	219.03906	- 49.034981	9.8549327	6.3998681	0
Slice 25	3'249.812	219.45267	- 49.034984	8.7111367	5.6570783	0
Slice 26	3'250.4658	219.87747	- 49.034987	7.4496621	4.8378672	0
Slice 27	3'251.1197	220.31372	- 49.034989	6.0599678	3.9353891	0
Slice 28	3'251.7735	220.76171	- 49.034992	4.5289958	2.9411643	0
Slice 29	3'252.4273	221.22173	- 49.034994	2.8412454	1.8451264	0
Slice 30	3'253.0811	221.69411	- 49.034997	0.97890514	0.63570843	0



	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE B2 DRENATA – SUPERFICI CIRCOLARI – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [0 kPa](#)
 Phi': [40 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

ABBANCAMENTO_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [17 kN/m³](#)
 Cohesion': [10 kPa](#)
 Phi': [24 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [10 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [25 kPa](#)
 Phi': [24 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B1_K

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 20 kN/m³
 Cohesion': 15 kPa
 Phi': 22 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A_K

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 10 kPa
 Phi': 25 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range
 Left-Zone Left Coordinate: (3'207.5277; 210.12829) m
 Left-Zone Right Coordinate: (3'241.6137; 216.00001) m
 Left-Zone Increment: 4
 Right Projection: Range
 Right-Zone Left Coordinate: (3'246.3953; 218.40552) m
 Right-Zone Right Coordinate: (3'328; 226.37377) m
 Right-Zone Increment: 10
 Radius Increments: 10

SLIP SURFACE LIMITS

Left Coordinate: (3'183.6014; 208.80929) m
 Right Coordinate: (3'579.3799; 264) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082
 Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 1	3'579.3799	260.27576
Point 2	3'509.6435	260.27576
Point 3	3'501.9873	257.89303
Point 4	3'477.8365	256.24712
Point 5	3'450.3579	252.54153
Point 6	3'435.1272	249.48888
Point 7	3'414.3346	245.89168
Point 8	3'393.5734	239.77832
Point 9	3'388.9474	239.56109
Point 10	3'368.1851	234.30234
Point 11	3'311.0459	217.48212
Point 12	3'297.0647	214.50366
Point 13	3'286.5293	209.52162
Point 14	3'231.0214	193.17111
Point 15	3'183.6014	182.10445
Point 16	3'183.6014	131.95917
Point 17	3'579.3799	131.95917
Point 18	3'295.8032	218.19721
Point 19	3'313.8613	222.125
Point 20	3'253.7888	222.125
Point 21	3'263.5204	211.97579
Point 22	3'281.8299	212.125
Point 23	3'282.936	212.43591

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 24	3'579.3799	264
Point 25	3'508.5257	264.12467
Point 26	3'501.387	261.32207
Point 27	3'477.1529	260.13066
Point 28	3'450.1065	256.4284
Point 29	3'414.2473	250.35949
Point 30	3'393.0752	243.65478
Point 31	3'384.2228	242.84878
Point 32	3'360.3639	236.09925
Point 33	3'313.8601	222.12467
Point 34	3'295.802	218.19688
Point 35	3'282.9348	212.43558
Point 36	3'281.8287	212.12467
Point 37	3'231.0214	196.80262
Point 38	3'183.6014	185.8656
Point 39	3'313.8612	222.125
Point 40	3'313.8609	222.12492
Point 41	3'295.8029	218.19708
Point 42	3'279.3051	212.1041
Point 43	3'231.0214	198.05749
Point 44	3'183.6014	187.54822
Point 45	3'263.5192	211.97545
Point 46	3'232.7005	211.51601

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 47	3'183.6014	208.80929
Point 48	3'263.5207	211.97548

REGIONS

	Material	Points	Area (m²)
Regi on 1	B2_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17	39'38 4
Regi on 2	Abbancame nto_k	18;40;39;20;21;22;35;34;41	367.8
Regi on 3	B1_k	13;12;11;10;9;8;7;5;4;3;2;1;24;25;26;27;28;29;30;31;32;39;40;33;41;3 4;35;22;36;37;38;15;14	1'554. 3
Regi on 4	A_k	37;36;42;43;44;38	118.7 5
Regi on 5	Prevam_k	42;45;46;47;44;43	1'147
Regi on 6	Unghia_k	20;46;48;21	158.6 4

CURRENT SLIP SURFACE

Slip Surface: 376
 F of S: 1.408
 Volume: 14.697927 m³
 Weight: 264.56242 kN
 Resisting Moment: 13'084.883 kN-m
 Activating Moment: 9'292.0261 kN-m
 Resisting Force: 178.44222 kN
 Activating Force: 126.7833 kN
 F of S Rank (Analysis): 1 of 605 slip surfaces
 F of S Rank (Query): 1 of 605 slip surfaces
 Exit: (3'233.755; 212.04649) m
 Entry: (3'253.8236; 222.125) m
 Radius: 65.49937 m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Center: (3'214.8292; 274.75202) m

SLIP SLICES

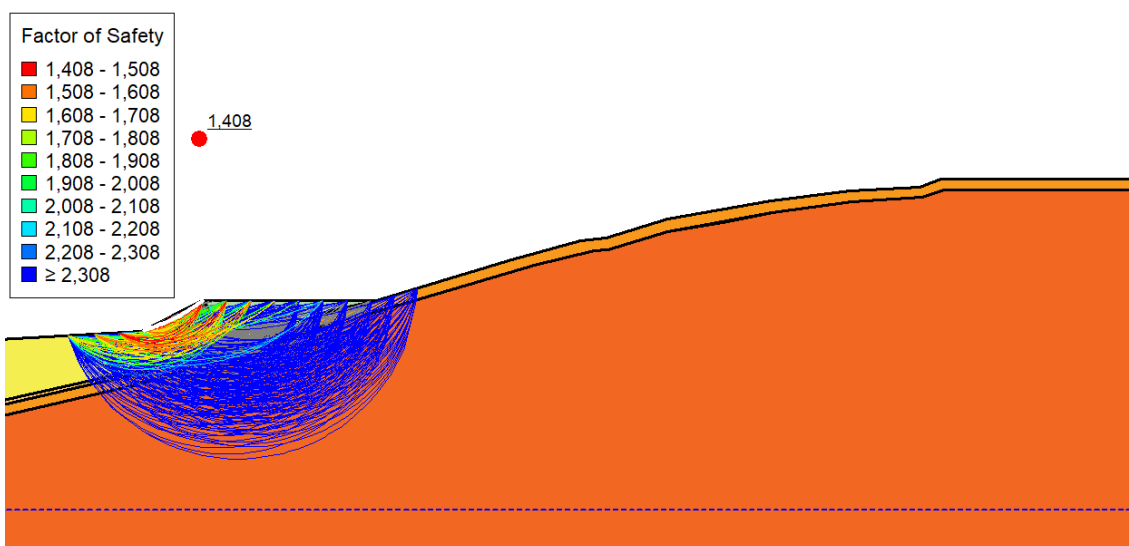
	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'234.0889	212.14922	- 49.034994	1.0473191	0	0.86421966
Slice 2	3'234.7567	212.35858	- 49.034991	3.1018672	0	2.5595133
Slice 3	3'235.4245	212.57582	- 49.034988	5.0557688	0	4.1713521
Slice 4	3'236.0923	212.80102	- 49.034986	6.890998	0	5.6853248
Slice 5	3'236.7601	213.03427	- 49.034983	8.5893852	0	7.0872263
Slice 6	3'237.4279	213.27566	-49.03498	10.133888	0	8.3639807
Slice 7	3'238.0956	213.52528	- 49.034977	11.509751	0	9.504452
Slice 8	3'238.7634	213.78324	- 49.034974	12.705437	0	10.500073
Slice 9	3'239.4312	214.04964	- 49.034971	13.713277	0	11.345248
Slice 10	3'240.099	214.3246	- 49.034968	14.529786	0	12.037506
Slice 11	3'240.7668	214.60822	- 49.034965	15.15566	0	12.577409
Slice 12	3'241.4346	214.90064	- 49.034962	15.595498	0	12.968259

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 13	3'242.1024	215.20199	- 49.034959	15.857267	0	13.215634
Slice 14	3'242.7702	215.5124	- 49.034956	15.951588	0	13.326817
Slice 15	3'243.438	215.83201	- 49.034956	15.890857	0	13.31018
Slice 16	3'244.1058	216.16097	- 49.034959	15.688278	0	13.174559
Slice 17	3'244.7736	216.49945	- 49.034962	15.356842	0	12.928676
Slice 18	3'245.4414	216.84761	- 49.034965	14.908377	0	12.580611
Slice 19	3'246.1092	217.20562	- 49.034968	14.352732	0	12.137362
Slice 20	3'246.777	217.57367	- 49.034971	13.697219	0	11.604472
Slice 21	3'247.4448	217.95196	- 49.034974	12.946343	0	10.985742
Slice 22	3'248.1126	218.3407	- 49.034977	12.101786	0	10.283005
Slice 23	3'248.7803	218.74009	-49.03498	11.162563	0	9.4959659
Slice 24	3'249.4481	219.15037	- 49.034983	10.125174	0	8.6220971
Slice 25	3'250.1159	219.57178	- 49.034985	8.9836563	0	7.6565744
Slice 26	3'250.7837	220.00458	- 49.034988	7.7294756	0	6.5922546
Slice	3'251.4515	220.44905	-	6.351337	0	5.4196793

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

27			49.034991			
Slice 28	3'252.1193	220.90546	- 49.034994	4.835072	0	4.1270976
Slice 29	3'252.7871	221.37413	- 49.034996	3.1637645	0	2.7005062
Slice 30	3'253.4549	221.85539	- 49.034999	1.3182008	0	1.1237118
Slice 31	3'253.796	222.10456	-49.035	0.2732376	0	0.23012745
Slice 32	3'253.8135	222.11746	-49.035	-4.2786091	0	8.4251317



SEZIONE B2 DRENATA – SCORRIMENTO LUNGO BASE - STATICA

PROJECT SETTINGS

Length(L) Units: **Meters**
Time(t) Units: **Seconds**
Force(F) Units: **Kilonewtons**
Pressure(p) Units: **kPa**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Strength Units: **kPa**

Unit Weight of Water: **9.807 kN/m³**

View: **2D**

Element Thickness: **1**

ANALYSIS SETTINGS

02_STATIC_BASE

Kind: **SLOPE/W**

Parent: **Insitu**

Method: **Morgenstern-Price**

Settings

Side Function

Interslice force function option: **Half-Sine**

PWP Conditions Source: **Parent Analysis**

Slip Surface

Direction of movement: **Right to Left**

Use Passive Mode: **No**

Slip Surface Option: **Fully-Specified**

Critical slip surfaces saved: **1**

Resisting Side Maximum Convex Angle: **1 °**

Driving Side Maximum Convex Angle: **5 °**

Optimize Critical Slip Surface Location: **No**

Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **0.1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_D

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

Phi': **33 °**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi-B: 0 °

PREVAM_D

Model: Mohr-Coulomb
Unit Weight: 18 kN/m³
Cohesion': 8 kPa
Phi': 16 °
Phi-B: 0 °

B1_D

Model: Mohr-Coulomb
Unit Weight: 20 kN/m³
Cohesion': 12 kPa
Phi': 17 °
Phi-B: 0 °

B2_D

Model: Mohr-Coulomb
Unit Weight: 21 kN/m³
Cohesion': 20 kPa
Phi': 19 °
Phi-B: 0 °

A_D

Model: Mohr-Coulomb
Unit Weight: 19 kN/m³
Cohesion': 8 kPa
Phi': 20 °
Phi-B: 0 °

ABBANCAMENTO_D

Model: Mohr-Coulomb
Unit Weight: 17 kN/m³
Cohesion': 8 kPa
Phi': 19 °
Phi-B: 0 °

SLIP SURFACE LIMITS

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Left Coordinate: (3'183.6014; 208.80929) m

Right Coordinate: (3'579.3799; 264) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	3'232.7005	211.51601
	3'263.5204	211.97579
	3'279.3051	212.1041
	3'281.8287	212.12467
	3'282.9348	212.43558
	3'295.8032	218.19721
	3'313.8613	222.125

POINTS

	X (m)	Y (m)
Point 1	3'579.3799	260.27576
Point 2	3'509.6435	260.27576
Point 3	3'501.9873	257.89303
Point 4	3'477.8365	256.24712
Point 5	3'450.3579	252.54153
Point 6	3'435.1272	249.48888
Point 7	3'414.3346	245.89168
Point 8	3'393.5734	239.77832

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 9	3'388.9474	239.56109
Point 10	3'368.1851	234.30234
Point 11	3'311.0459	217.48212
Point 12	3'297.0647	214.50366
Point 13	3'286.5293	209.52162
Point 14	3'231.0214	193.17111
Point 15	3'183.6014	182.10445
Point 16	3'183.6014	131.95917
Point 17	3'579.3799	131.95917
Point 18	3'295.8032	218.19721
Point 19	3'313.8613	222.125
Point 20	3'253.7888	222.125
Point 21	3'263.5204	211.97579
Point 22	3'281.8299	212.125
Point 23	3'282.936	212.43591
Point 24	3'579.3799	264
Point 25	3'508.5257	264.12467
Point 26	3'501.387	261.32207
Point 27	3'477.1529	260.13066
Point 28	3'450.1065	256.4284
Point 29	3'414.2473	250.35949
Point 30	3'393.0752	243.65478
Point 31	3'384.2228	242.84878

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 32	3'360.3639	236.09925
Point 33	3'313.8601	222.12467
Point 34	3'295.802	218.19688
Point 35	3'282.9348	212.43558
Point 36	3'281.8287	212.12467
Point 37	3'231.0214	196.80262
Point 38	3'183.6014	185.8656
Point 39	3'313.8612	222.125
Point 40	3'313.8609	222.12492
Point 41	3'295.8029	218.19708
Point 42	3'279.3051	212.1041
Point 43	3'231.0214	198.05749
Point 44	3'183.6014	187.54822
Point 45	3'263.5192	211.97545
Point 46	3'232.7005	211.51601
Point 47	3'183.6014	208.80929
Point 48	3'263.5207	211.97548

REGIONS

	Material	Points	Area (m²)
Region 1	B2_d	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17	39'38 4
Region	Abbancame	18;40;39;20;21;22;35;34;41	367.8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

on 2	nto_d		
Regi on 3	B1_d	13;12;11;10;9;8;7;5;4;3;2;1;24;25;26;27;28;29;30;31;32;39;40;33;41;3 4;35;22;36;37;38;15;14	1'554. 3
Regi on 4	A_d	37;36;42;43;44;38	118.7 5
Regi on 5	Prevam_d	42;45;46;47;44;43	1'147
Regi on 6	Unghia_d	20;46;48;21	158.6 4

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 5.309
 Volume: 526.43813 m³
 Weight: 9'108.0874 kN
 Resisting Moment: 61'421.758 kN-m
 Activating Moment: 11'568.121 kN-m
 Resisting Force: 4'650.4093 kN
 Activating Force: 875.88785 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (3'232.7005; 211.51601) m
 Entry: (3'313.8612; 222.125) m
 Radius: 32.058083 m
 Center: (3'272.2408; 224.77725) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'234.0185	211.53567	-49.034996	11.575667	7.5173259	0
Slice 2	3'236.6546	211.575	-49.034988	34.788796	22.592108	0

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 3	3'239.2906	211.61432	-49.034979	58.092069	37.725431	0
Slice 4	3'241.9266	211.65365	-49.034971	81.479519	52.913418	0
Slice 5	3'244.5627	211.69297	-49.034978	104.94205	68.150162	0
Slice 6	3'247.1987	211.7323	-49.034994	128.4676	83.427835	0
Slice 7	3'249.8347	211.77162	-49.035011	152.04141	98.736849	0
Slice 8	3'252.4708	211.81095	-49.035027	175.64633	114.06606	0
Slice 9	3'255.0053	211.84876	-49.035027	185.96239	120.76539	0
Slice 10	3'257.4382	211.88505	-49.035019	182.93513	118.79946	0
Slice 11	3'259.8711	211.92135	-49.035011	179.84126	116.79028	0
Slice 12	3'262.304	211.95764	-49.035004	176.67915	114.73678	0
Slice 13	3'264.8358	211.98651	-49.034993	174.21305	59.986363	8
Slice 14	3'267.4666	212.00795	-49.034979	173.722	59.817281	8
Slice 15	3'270.0974	212.02939	-49.034965	173.18316	59.631744	8
Slice 16	3'272.7281	212.05083	-49.034951	172.59801	59.430261	8
Slice	3'275.3589	212.07227	-49.034965	171.96884	59.213622	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

17						
Slice 18	3'277.9897	212.09371	-49.034979	171.29874	58.982888	8
Slice 19	3'280.5669	212.11471	-49.034993	170.6064	58.744494	8
Slice 20	3'282.3818	212.28029	-49.035	159.26645	54.839837	8
Slice 21	3'284.2215	213.01169	-49.035	143.22497	43.788268	12
Slice 22	3'286.795	214.16391	-49.035	125.24287	38.290587	12
Slice 23	3'289.3684	215.31613	-49.035	107.2871	32.800958	12
Slice 24	3'291.9418	216.46834	-49.035	89.307828	27.304143	12
Slice 25	3'294.5159	217.62083	-49.035	71.252751	21.784152	12
Slice 26	3'297.0931	218.47777	-49.034993	60.060927	20.680636	8
Slice 27	3'299.6728	219.03888	-49.034979	50.878272	17.518794	8
Slice 28	3'302.2525	219.59999	-49.034965	41.665701	14.346651	8
Slice 29	3'304.8322	220.1611	-49.034951	32.415891	11.161686	8
Slice 30	3'307.4119	220.72222	-49.034965	23.122818	7.9618249	8
Slice 31	3'309.9916	221.28333	-49.034979	13.781905	4.7454903	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 32	3'312.5713	221.84444	-49.034993	4.390137	1.5116454	8
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SEZIONE B2 DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Fully-Specified](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Number of Slices: 30
 F of S Tolerance: 0.001
 Minimum Slip Surface Depth: 1 m
 Search Method: Root Finder
 Tolerable difference between starting and converged F of S: 3
 Maximum iterations to calculate converged lambda: 20
 Max Absolute Lambda: 2

MATERIALS

UNGHIA_K

Model: Mohr-Coulomb
 Unit Weight: 18 kN/m³
 Cohesion': 0 kPa
 Phi': 40 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 10 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

PREVAM_K

Model: Mohr-Coulomb
 Unit Weight: 18 kN/m³
 Cohesion': 10 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B2_K

Model: Mohr-Coulomb
 Unit Weight: 21 kN/m³
 Cohesion': 25 kPa

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B1_K

Model: Mohr-Coulomb
 Unit Weight: 20 kN/m³
 Cohesion': 15 kPa
 Phi': 22 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A_K

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 10 kPa
 Phi': 25 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE LIMITS

Left Coordinate: (3'183.6014; 208.80929) m
 Right Coordinate: (3'579.3799; 264) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	3'232.7005	211.51601
	3'263.5204	211.97579
	3'279.3051	212.1041
	3'281.8287	212.12467

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	3'282.9348	212.43558
	3'295.802	218.19688
	3'313.8613	222.125

SEISMIC COEFFICIENTS

Horz Seismic Coef.: **0.082**

Vert Seismic Coef.: **0.041**

POINTS

	X (m)	Y (m)
Point 1	3'579.3799	260.27576
Point 2	3'509.6435	260.27576
Point 3	3'501.9873	257.89303
Point 4	3'477.8365	256.24712
Point 5	3'450.3579	252.54153
Point 6	3'435.1272	249.48888
Point 7	3'414.3346	245.89168
Point 8	3'393.5734	239.77832
Point 9	3'388.9474	239.56109
Point 10	3'368.1851	234.30234
Point 11	3'311.0459	217.48212
Point 12	3'297.0647	214.50366
Point 13	3'286.5293	209.52162
Point 14	3'231.0214	193.17111

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 15	3'183.6014	182.10445
Point 16	3'183.6014	131.95917
Point 17	3'579.3799	131.95917
Point 18	3'295.8032	218.19721
Point 19	3'313.8613	222.125
Point 20	3'253.7888	222.125
Point 21	3'263.5204	211.97579
Point 22	3'281.8299	212.125
Point 23	3'282.936	212.43591
Point 24	3'579.3799	264
Point 25	3'508.5257	264.12467
Point 26	3'501.387	261.32207
Point 27	3'477.1529	260.13066
Point 28	3'450.1065	256.4284
Point 29	3'414.2473	250.35949
Point 30	3'393.0752	243.65478
Point 31	3'384.2228	242.84878
Point 32	3'360.3639	236.09925
Point 33	3'313.8601	222.12467
Point 34	3'295.802	218.19688
Point 35	3'282.9348	212.43558
Point 36	3'281.8287	212.12467
Point 37	3'231.0214	196.80262

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 38	3'183.6014	185.8656
Point 39	3'313.8612	222.125
Point 40	3'313.8609	222.12492
Point 41	3'295.8029	218.19708
Point 42	3'279.3051	212.1041
Point 43	3'231.0214	198.05749
Point 44	3'183.6014	187.54822
Point 45	3'263.5192	211.97545
Point 46	3'232.7005	211.51601
Point 47	3'183.6014	208.80929
Point 48	3'263.5207	211.97548

REGIONS

	Material	Points	Area (m²)
Regi on 1	B2_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17	39'38 4
Regi on 2	Abbancame nto_k	18;40;39;20;21;22;35;34;41	367.8
Regi on 3	B1_k	13;12;11;10;9;8;7;5;4;3;2;1;24;25;26;27;28;29;30;31;32;39;40;33;41;3 4;35;22;36;37;38;15;14	1'554. 3
Regi on 4	A_k	37;36;42;43;44;38	118.7 5
Regi on 5	Prevam_k	42;45;46;47;44;43	1'147

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Regi on 6	Unghia_k	20;46;48;21	158.6 4
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CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 3.750
 Volume: 526.43693 m³
 Weight: 9'108.0639 kN
 Resisting Moment: 79'198.309 kN-m
 Activating Moment: 21'121.097 kN-m
 Resisting Force: 5'996.0308 kN
 Activating Force: 1'599.1423 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (3'232.7005; 211.51601) m
 Entry: (3'313.8612; 222.125) m
 Radius: 32.058083 m
 Center: (3'272.2408; 224.77725) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'234.0185	211.53567	- 49.034996	12.061092	0	9.7131681
Slice 2	3'236.6546	211.575	- 49.034988	36.356788	0	29.191623
Slice 3	3'239.2906	211.61432	- 49.034979	60.906053	0	48.746108
Slice 4	3'241.9266	211.65365	- 49.034971	85.692662	0	68.371591
Slice 5	3'244.5627	211.69297	- 49.034978	110.69147	0	88.0604
Slice	3'247.1987	211.7323	-	135.86887	0	107.80237

	Committente		Oggetto del servizio
	GE.R.IN		DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

6			49.034994			
Slice 7	3'249.8347	211.77162	- 49.035011	161.18339	0	127.58505
Slice 8	3'252.4708	211.81095	- 49.035027	186.58666	0	147.39397
Slice 9	3'255.0053	211.84876	- 49.035027	197.93384	0	156.05167
Slice 10	3'257.4382	211.88505	- 49.035019	195.07057	0	153.5122
Slice 11	3'259.8711	211.92135	- 49.035011	192.01895	0	150.91654
Slice 12	3'262.304	211.95764	- 49.035004	188.77405	0	148.26334
Slice 13	3'264.8358	211.98651	- 49.034993	183.14384	0	87.567019
Slice 14	3'267.4666	212.00795	- 49.034979	182.33453	0	87.347989
Slice 15	3'270.0974	212.02939	- 49.034965	181.44159	0	87.107642
Slice 16	3'272.7281	212.05083	- 49.034951	180.46987	0	86.84664
Slice 17	3'275.3589	212.07227	- 49.034965	179.42567	0	86.566011
Slice 18	3'277.9897	212.09371	- 49.034979	178.31667	0	86.267133
Slice 19	3'280.5669	212.11471	- 49.034993	177.17623	0	85.958344
Slice 20	3'282.3818	212.28029	-49.035	155.93127	0	80.905084

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 21	3'284.2215	213.01171	-49.035	135.72339	0	73.721321
Slice 22	3'286.795	214.16397	-49.035	118.99998	0	65.733678
Slice 23	3'289.3684	215.31623	-49.035	102.34027	0	57.758719
Slice 24	3'291.9418	216.46849	-49.035	85.631932	0	49.77466
Slice 25	3'294.5153	217.62075	-49.035	68.765012	0	41.760598
Slice 26	3'295.8025	218.19698	-49.035	64.885212	0	38.760935
Slice 27	3'296.2058	218.28474	0	63.575772	0	38.144717
Slice 28	3'298.0158	218.67848	- 49.034988	57.231339	0	35.279961
Slice 29	3'300.8303	219.29064	- 49.034973	47.294266	0	30.814885
Slice 30	3'303.6447	219.9028	- 49.034957	37.240666	0	26.33218
Slice 31	3'306.4591	220.51496	-49.03496	27.045145	0	21.827961
Slice 32	3'309.2735	221.12712	- 49.034975	16.68737	0	17.29921
Slice 33	3'312.2709	221.7791	- 49.034991	5.4590152	0	12.446267

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE B2 NON DRENATA – SUPERFICI CIRCOLARI – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [0 kPa](#)
 Phi': [40 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

ABBANAMENTO_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [17 kN/m³](#)
 Cohesion': [150 kPa](#)
 Phi': [10 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [75 kPa](#)
 Phi': [17 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [90 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B1_K

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 20 kN/m³
 Cohesion': 50 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A_K

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 20 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range
 Left-Zone Left Coordinate: (3'207.5277; 210.12829) m
 Left-Zone Right Coordinate: (3'241.6137; 216.00001) m
 Left-Zone Increment: 4
 Right Projection: Range
 Right-Zone Left Coordinate: (3'246.3953; 218.40552) m
 Right-Zone Right Coordinate: (3'328; 226.37377) m
 Right-Zone Increment: 10
 Radius Increments: 10

SLIP SURFACE LIMITS

Left Coordinate: (3'183.6014; 208.80929) m
 Right Coordinate: (3'579.3799; 264) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082
 Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 1	3'579.3799	260.27576
Point 2	3'509.6435	260.27576
Point 3	3'501.9873	257.89303
Point 4	3'477.8365	256.24712
Point 5	3'450.3579	252.54153
Point 6	3'435.1272	249.48888
Point 7	3'414.3346	245.89168
Point 8	3'393.5734	239.77832
Point 9	3'388.9474	239.56109
Point 10	3'368.1851	234.30234
Point 11	3'311.0459	217.48212
Point 12	3'297.0647	214.50366
Point 13	3'286.5293	209.52162
Point 14	3'231.0214	193.17111
Point 15	3'183.6014	182.10445
Point 16	3'183.6014	131.95917
Point 17	3'579.3799	131.95917
Point 18	3'295.8032	218.19721
Point 19	3'313.8613	222.125
Point 20	3'253.7888	222.125
Point 21	3'263.5204	211.97579
Point 22	3'281.8299	212.125
Point 23	3'282.936	212.43591

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 24	3'579.3799	264
Point 25	3'508.5257	264.12467
Point 26	3'501.387	261.32207
Point 27	3'477.1529	260.13066
Point 28	3'450.1065	256.4284
Point 29	3'414.2473	250.35949
Point 30	3'393.0752	243.65478
Point 31	3'384.2228	242.84878
Point 32	3'360.3639	236.09925
Point 33	3'313.8601	222.12467
Point 34	3'295.802	218.19688
Point 35	3'282.9348	212.43558
Point 36	3'281.8287	212.12467
Point 37	3'231.0214	196.80262
Point 38	3'183.6014	185.8656
Point 39	3'313.8612	222.125
Point 40	3'313.8609	222.12492
Point 41	3'295.8029	218.19708
Point 42	3'279.3051	212.1041
Point 43	3'231.0214	198.05749
Point 44	3'183.6014	187.54822
Point 45	3'263.5192	211.97545
Point 46	3'232.7005	211.51601

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 47	3'183.6014	208.80929
Point 48	3'263.5207	211.97548

REGIONS

	Material	Points	Area (m²)
Region 1	B2_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17	39'38 4
Region 2	Abbanamen to_k	18;40;39;20;21;22;35;34;41	367.8
Region 3	B1_k	13;12;11;10;9;8;7;5;4;3;2;1;24;25;26;27;28;29;30;31;32;39;40;33;41;3 4;35;22;36;37;38;15;14	1'554. 3
Region 4	A_k	37;36;42;43;44;38	118.7 5
Region 5	Prevam_k	42;45;46;47;44;43	1'147
Region 6	Unghia_k	20;46;48;21	158.6 4

CURRENT SLIP SURFACE

Slip Surface: 376
 F of S: 1.437
 Volume: 14.697927 m³
 Weight: 264.56242 kN
 Resisting Moment: 13'355.038 kN-m
 Activating Moment: 9'292.0261 kN-m
 Resisting Force: 181.74146 kN
 Activating Force: 126.50303 kN
 F of S Rank (Analysis): 1 of 605 slip surfaces
 F of S Rank (Query): 1 of 605 slip surfaces
 Exit: (3'233.755; 212.04649) m
 Entry: (3'253.8236; 222.125) m
 Radius: 65.49937 m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Center: (3'214.8292; 274.75202) m

SLIP SLICES

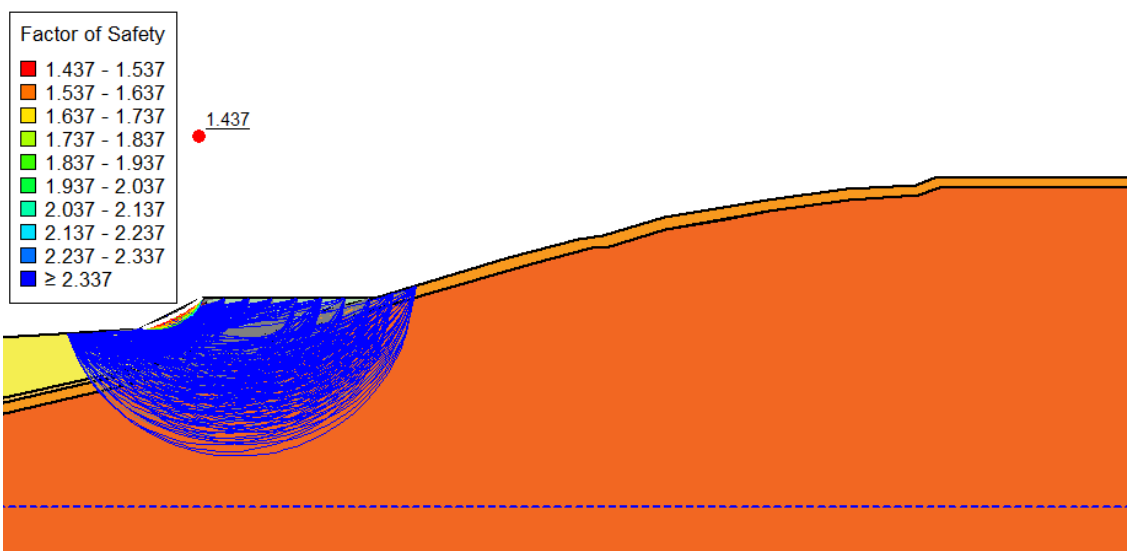
	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'234.0889	212.14922	- 49.034994	1.0490466	0	0.86495204
Slice 2	3'234.7567	212.35858	- 49.034991	3.1011852	0	2.5561273
Slice 3	3'235.4245	212.57582	- 49.034988	5.0447396	0	4.1568771
Slice 4	3'236.0923	212.80102	- 49.034986	6.8635161	0	5.6550411
Slice 5	3'236.7601	213.03427	- 49.034983	8.5416482	0	7.0388223
Slice 6	3'237.4279	213.27566	-49.03498	10.064647	0	8.2975209
Slice 7	3'238.0956	213.52528	- 49.034977	11.420317	0	9.4221628
Slice 8	3'238.7634	213.78324	- 49.034974	12.599459	0	10.405975
Slice 9	3'239.4312	214.04964	- 49.034971	13.596328	0	11.244679
Slice 10	3'240.099	214.3246	- 49.034968	14.408807	0	11.936584
Slice 11	3'240.7668	214.60822	- 49.034965	15.038334	0	12.482493
Slice 12	3'241.4346	214.90064	- 49.034962	15.489594	0	12.88545

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 13	3'242.1024	215.20199	- 49.034959	15.770028	0	13.150356
Slice 14	3'242.7702	215.5124	- 49.034956	15.889185	0	13.283497
Slice 15	3'243.438	215.83201	- 49.034956	15.857977	0	13.292038
Slice 16	3'244.1058	216.16097	- 49.034959	15.687867	0	13.183507
Slice 17	3'244.7736	216.49945	- 49.034962	15.390043	0	12.9653
Slice 18	3'245.4414	216.84761	- 49.034965	14.974659	0	12.644243
Slice 19	3'246.1092	217.20562	- 49.034968	14.450182	0	12.2262
Slice 20	3'246.777	217.57367	- 49.034971	13.822937	0	11.715749
Slice 21	3'247.4448	217.95196	- 49.034974	13.096842	0	11.115917
Slice 22	3'248.1126	218.3407	- 49.034977	12.273325	0	10.427982
Slice 23	3'248.7803	218.74009	-49.03498	11.351351	0	9.6513123
Slice 24	3'249.4481	219.15037	- 49.034983	10.327464	0	8.7832756
Slice 25	3'250.1159	219.57178	- 49.034985	9.19577	0	7.8191742
Slice 26	3'250.7837	220.00458	- 49.034988	7.9478325	0	6.7522261
Slice	3'251.4515	220.44905	-	6.5725478	0	5.5735739

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

27			49.034991			
Slice 28	3'252.1193	220.90546	- 49.034994	5.0560766	0	4.2723213
Slice 29	3'252.7871	221.37413	- 49.034996	3.381941	0	2.8355968
Slice 30	3'253.4549	221.85539	- 49.034999	1.5313265	0	1.2486536
Slice 31	3'253.796	222.10456	-49.035	0.48279726	0	0.35013933
Slice 32	3'253.8135	222.11746	-49.035	-71.481827	0	139.53018



SEZIONE B2 NON DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: Meters
Time(t) Units: Seconds
Force(F) Units: Kilonewtons
Pressure(p) Units: kPa

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Strength Units: **kPa**

Unit Weight of Water: **9.807 kN/m³**

View: **2D**

Element Thickness: **1**

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: **SLOPE/W**

Parent: **Insitu**

Method: **Morgenstern-Price**

Settings

Side Function

Interslice force function option: **Half-Sine**

PWP Conditions Source: **Parent Analysis**

Staged Pseudo Static Analysis Option: **Effective Stress Strengths**

Slip Surface

Direction of movement: **Right to Left**

Use Passive Mode: **No**

Slip Surface Option: **Fully-Specified**

Critical slip surfaces saved: **1**

Resisting Side Maximum Convex Angle: **1 °**

Driving Side Maximum Convex Angle: **5 °**

Optimize Critical Slip Surface Location: **No**

Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi': 40 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

PREVAM_K

Model: Mohr-Coulomb
 Unit Weight: 18 kN/m³
 Cohesion': 75 kPa
 Phi': 17 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B1_K

Model: Mohr-Coulomb
 Unit Weight: 20 kN/m³
 Cohesion': 50 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B2_K

Model: Mohr-Coulomb
 Unit Weight: 21 kN/m³
 Cohesion': 90 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A_K

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 20 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

ABBANCAMENTO_K

Model: **Mohr-Coulomb**
 Unit Weight: **17 kN/m³**
 Cohesion': **150 kPa**
 Phi': **10 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

SLIP SURFACE LIMITS

Left Coordinate: **(3'354.132; 204.24857) m**
 Right Coordinate: **(3'808.8933; 275) m**

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	3'430.5287	209.34624
	3'433.2936	209.53073
	3'444.0403	210.53218
	3'469.6582	211.25017
	3'493.7974	211.53218
	3'497.6775	210.53218
	3'500.8888	210.53218
	3'528.2309	221.49147

SEISMIC COEFFICIENTS

Horz Seismic Coef.: **0.082**
 Vert Seismic Coef.: **0.041**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

POINTS

	X (m)	Y (m)
Point 1	3'456.0961	221.52001
Point 2	3'430.5287	209.34624
Point 3	3'433.2936	209.53073
Point 4	3'444.0403	210.53218
Point 5	3'469.6582	211.25017
Point 6	3'808.8933	270.94428
Point 7	3'728.3794	270.75976
Point 8	3'662.0903	261.56488
Point 9	3'630.2127	253.68683
Point 10	3'602.9033	247.16348
Point 11	3'588.0446	240.38389
Point 12	3'575.7686	234.45382
Point 13	3'549.7511	226.082
Point 14	3'501.5386	208.10225
Point 15	3'472.8929	196.34239
Point 16	3'452.8793	190.82745
Point 17	3'442.6039	186.38473
Point 18	3'354.132	173.90883
Point 19	3'354.132	125
Point 20	3'808.8933	125
Point 21	3'808.8933	275

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 22	3'728.238	274.49147
Point 23	3'663.0628	265.265
Point 24	3'599.1276	249.57407
Point 25	3'572.4604	236.20716
Point 26	3'532.5677	223.49046
Point 27	3'528.2309	221.49147
Point 28	3'500.8888	210.53218
Point 29	3'497.6775	210.53218
Point 30	3'471.0748	198.82952
Point 31	3'451.1817	193.34779
Point 32	3'441.1805	189.04112
Point 33	3'354.132	176.15002
Point 34	3'493.7974	211.53218
Point 35	3'470.8148	200.81254
Point 36	3'450.9216	195.33081
Point 37	3'440.9205	191.02414
Point 38	3'354.132	178.69492
Point 39	3'354.132	204.24857

REGIONS

	Material	Points	Area (m ²)
Regio n 1	Unghia_k	1;2;3;4;5	203.89

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Regio n 2	B2_k	6;7;8;9;10;12;13;14;15;16;17;18;19;20	48'192
Regio n 3	B1_k	15;14;13;12;10;8;7;6;21;22;23;24;25;26;27;28;29;30;31;32;33;18 ;17;16	1'512.7
Regio n 4	A_k	30;29;34;35;36;37;38;33;32;31	320.43
Regio n 5	Prevam_k	34;5;4;3;2;39;38;37;36;35	2'485.9
Regio n 6	Abbancamento _k	27;1;5;34;29;28	539.7

CURRENT SLIP SURFACE

Slip Surface: 1

F of S: >5

Volume: 743.58787 m³

Weight: 12'844.884 kN

F of S Rank (Analysis): 1 of 1 slip surfaces

F of S Rank (Query): 1 of 1 slip surfaces

Exit: (3'430.5287; 209.34624) m

Entry: (3'528.2309; 221.49147) m

Radius: 37.787918 m

Center: (3'478.2475; 224.52778) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)
Slice 1	3'431.9111	209.43848	-49.035
Slice 2	3'435.0847	209.69764	-49.035
Slice 3	3'438.6669	210.03145	-49.035
Slice 4	3'442.2492	210.36527	-49.035
Slice 5	3'445.5473	210.57442	-49.035
Slice 6	3'448.5612	210.65889	-49.035

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 7	3'451.5752	210.74336	-49.035
Slice 8	3'454.5891	210.82783	-49.035
Slice 9	3'457.7914	210.91758	-49.035
Slice 10	3'461.1819	211.01261	-49.035
Slice 11	3'464.5724	211.10763	-49.035
Slice 12	3'467.9629	211.20266	-49.035
Slice 13	3'471.3824	211.27031	-49.034993
Slice 14	3'474.8309	211.3106	-49.034979
Slice 15	3'478.2793	211.35089	-49.034965
Slice 16	3'481.7278	211.39118	-49.034951
Slice 17	3'485.1763	211.43146	-49.034965
Slice 18	3'488.6247	211.47175	-49.034979
Slice 19	3'492.0732	211.51204	-49.034993
Slice 20	3'495.7375	211.03218	-49.035
Slice 21	3'499.2832	210.53218	-49.035
Slice 22	3'502.5977	211.21714	-49.034994
Slice 23	3'506.0154	212.58705	-49.034982
Slice 24	3'509.4332	213.95696	-49.03497
Slice 25	3'512.851	215.32687	-49.034988
Slice 26	3'516.2687	216.69678	-49.035012
Slice 27	3'519.6865	218.06669	-49.03503
Slice 28	3'523.1043	219.4366	-49.035018
Slice 29	3'526.522	220.80651	-49.035006

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE B3 DRENATA – SUPERFICI CIRCOLARI – STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

01_STATICA_GENERICO

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Max Absolute Lambda: 2

MATERIALS

UNGHIA_D

Model: Mohr-Coulomb
Unit Weight: 18 kN/m³
Cohesion': 0 kPa
Phi': 33 °
Phi-B: 0 °

PREVAM_D

Model: Mohr-Coulomb
Unit Weight: 18 kN/m³
Cohesion': 8 kPa
Phi': 16 °
Phi-B: 0 °

B1_D

Model: Mohr-Coulomb
Unit Weight: 20 kN/m³
Cohesion': 12 kPa
Phi': 17 °
Phi-B: 0 °

B2_D

Model: Mohr-Coulomb
Unit Weight: 21 kN/m³
Cohesion': 20 kPa
Phi': 19 °
Phi-B: 0 °

A_D

Model: Mohr-Coulomb
Unit Weight: 19 kN/m³
Cohesion': 8 kPa
Phi': 20 °
Phi-B: 0 °

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

ABBANCAMENTO_D

Model: [Mohr-Coulomb](#)
 Unit Weight: [17 kN/m³](#)
 Cohesion': [8 kPa](#)
 Phi': [19 °](#)
 Phi-B: [0 °](#)

SLIP SURFACE ENTRY AND EXIT


Left Projection: [Range](#)
 Left-Zone Left Coordinate: [\(2'862.3168; 202.92321\) m](#)
 Left-Zone Right Coordinate: [\(2'880; 206.56509\) m](#)
 Left-Zone Increment: [4](#)
 Right Projection: [Range](#)
 Right-Zone Left Coordinate: [\(2'881; 207.04749\) m](#)
 Right-Zone Right Coordinate: [\(2'944; 212.18364\) m](#)
 Right-Zone Increment: [10](#)
 Radius Increments: [10](#)

SLIP SURFACE LIMITS

Left Coordinate: [\(2'673.6249; 179.20233\) m](#)
 Right Coordinate: [\(3'144.2366; 262.82304\) m](#)

POINTS

	X (m)	Y (m)
Point 1	3'144.2366	259.49089
Point 2	3'103.905	255.69538
Point 3	3'039.0793	238.78429
Point 4	3'005.8074	224.98039
Point 5	2'938.8404	197.13074
Point 6	2'910.8187	187.20907
Point 7	2'899.2714	182.53452

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 8	2'673.6249	148.15917
Point 9	2'673.6249	106.07514
Point 10	3'144.2366	106.07514
Point 11	3'144.2366	262.82304
Point 12	3'103.6947	258.97638
Point 13	3'038.5417	242.51762
Point 14	2'946.8099	204.86962
Point 15	2'945.6368	204.8426
Point 16	2'927.8657	195.53257
Point 17	2'906.9409	189.8026
Point 18	2'897.9855	185.76717
Point 19	2'883.457	183.71949
Point 20	2'673.6249	151.61183
Point 21	2'940.5128	204.72456
Point 22	2'926.2042	197.28524
Point 23	2'911.9978	193.43253
Point 24	2'906.2127	191.79538
Point 25	2'905.7006	191.57396
Point 26	2'904.1099	190.8862
Point 27	2'896.324	187.51984
Point 28	2'673.6249	153.90347
Point 29	2'859.7917	202.86504
Point 30	2'756.9924	192.64559

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 31	2'673.6249	179.20233
Point 32	2'964.7139	212.22102
Point 33	2'891.4505	212.08882
Point 34	2'900.4275	203.80114
Point 35	2'872.9587	203.16836

REGIONS

	Material	Points	Area (m ²)
Region 1	B2_d	1;2;3;4;5;6;7;8;9;10	43'175
Region 2	B1_d	6;5;4;3;2;1;11;12;13;14;15;16;17;18;19;20;8;7	1'715.7
Region 3	A_d	17;16;15;21;22;23;24;25;26;27;28;20;19;18	571.39
Region 4	Prevam_d	22;21;34;35;29;30;31;28;27;26;25;24;23	5'621.1
Region 5	Abbancamento_d	32;33;34;21;15;14	465.11
Region 6	Unghia_d	33;35;34	116.67

CURRENT SLIP SURFACE

Slip Surface: 256
 F of S: 1.393
 Volume: 9.5783445 m³
 Weight: 172.4102 kN
 Resisting Moment: 2'895.7353 kN-m
 Activating Moment: 2'078.9954 kN-m
 Resisting Force: 91.971673 kN
 Activating Force: 66.031945 kN
 F of S Rank (Analysis): 1 of 605 slip surfaces
 F of S Rank (Query): 1 of 605 slip surfaces
 Exit: (2'873.5141; 203.43629) m
 Entry: (2'886.7781; 209.83484) m
 Radius: 28.33845 m
 Center: (2'868.2563; 231.28271) m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SLIP SLICES

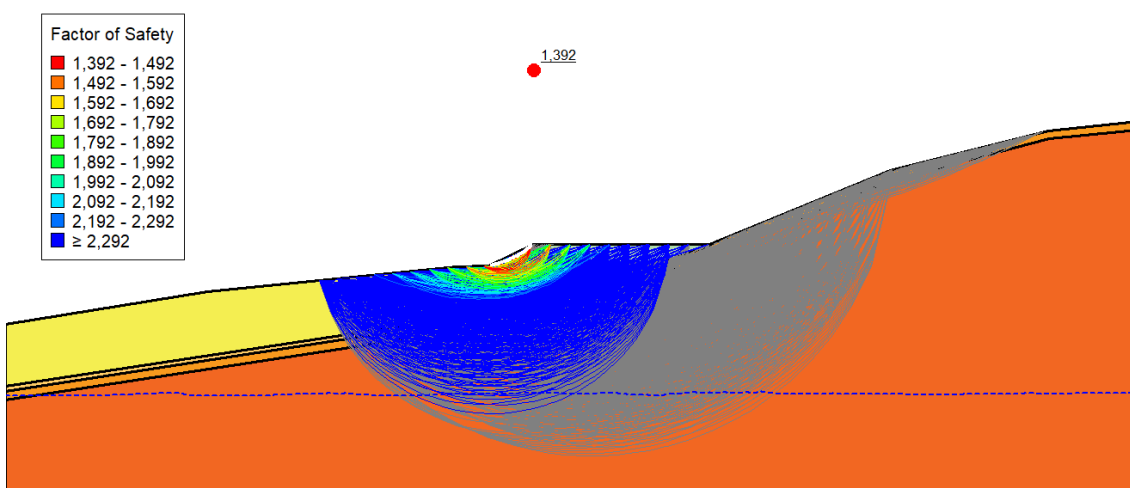
	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'873.7352	203.47986	-49.035	1.0555228	0.68546452	0
Slice 2	2'874.1773	203.57065	-49.034999	3.1390652	2.0385328	0
Slice 3	2'874.6194	203.66883	-49.034998	5.1377436	3.3364897	0
Slice 4	2'875.0616	203.77446	-49.034997	7.0270447	4.5634162	0
Slice 5	2'875.5037	203.88763	-49.034996	8.7821727	5.7032097	0
Slice 6	2'875.9458	204.00844	-49.034995	10.379873	6.7407684	0
Slice 7	2'876.388	204.13699	-49.034995	11.800117	7.6630857	0
Slice 8	2'876.8301	204.27338	-49.034994	13.027465	8.4601349	0
Slice 9	2'877.2722	204.41775	-49.034994	14.051965	9.1254525	0
Slice 10	2'877.7144	204.57021	-49.034993	14.869512	9.6563737	0
Slice 11	2'878.1565	204.73091	-49.034993	15.481683	10.053922	0
Slice 12	2'878.5986	204.9	-49.034992	15.895104	10.322401	0
Slice	2'879.0408	205.07764	-	16.120478	10.468761	0

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

13			49.034992			
Slice 14	2'879.4829	205.264	- 49.034992	16.171411	10.501837	0
Slice 15	2'879.925	205.45928	- 49.034992	16.063166	10.431542	0
Slice 16	2'880.3672	205.66368	- 49.034992	15.811478	10.268094	0
Slice 17	2'880.8093	205.87741	- 49.034992	15.431488	10.021325	0
Slice 18	2'881.2514	206.10073	- 49.034992	14.936857	9.7001081	0
Slice 19	2'881.6936	206.33387	- 49.034992	14.339072	9.3119019	0
Slice 20	2'882.1357	206.57713	- 49.034992	13.646925	8.8624168	0
Slice 21	2'882.5778	206.8308	- 49.034993	12.866148	8.3553744	0
Slice 22	2'883.02	207.09522	- 49.034995	11.999156	7.7923427	0
Slice 23	2'883.4621	207.37073	- 49.034996	11.044862	7.172617	0
Slice 24	2'883.9042	207.65773	- 49.034997	9.998535	6.4931246	0
Slice 25	2'884.3463	207.95664	- 49.034998	8.8516527	5.7483305	0
Slice 26	2'884.7885	208.26793	- 49.034998	7.5917335	4.9301294	0
Slice 27	2'885.2306	208.5921	- 49.034999	6.2021333	4.0277125	0

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 28	2'885.6727	208.92972	- 49.034999	4.6617951	3.0274052	0
Slice 29	2'886.1149	209.2814	-49.035	2.9449521	1.9124743	0
Slice 30	2'886.557	209.64784	-49.035	1.0207896	0.66290853	0



SEZIONE B3 DRENATA – SUPERFICI CIRCOLARI – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: **Meters**
 Time(t) Units: **Seconds**
 Force(F) Units: **Kilonewtons**
 Pressure(p) Units: **kPa**
 Strength Units: **kPa**
 Unit Weight of Water: **9.807 kN/m³**
 View: **2D**
 Element Thickness: **1**

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Kind: [SLOPE/W](#)

Parent: [Insitu](#)

Method: [Morgenstern-Price](#)

Settings

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Entry and Exit](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [19 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

ABBANCAMENTO_K

Model: [Mohr-Coulomb](#)

Unit Weight: [17 kN/m³](#)

Cohesion': [10 kPa](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

PREVAM_K

Model: Mohr-Coulomb
 Unit Weight: 18 kN/m³
 Cohesion': 10 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B2_K


Model: Mohr-Coulomb
 Unit Weight: 21 kN/m³
 Cohesion': 25 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B1_K

Model: Mohr-Coulomb
 Unit Weight: 20 kN/m³
 Cohesion': 15 kPa
 Phi': 22 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A_K

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 10 kPa
 Phi': 25 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SLIP SURFACE ENTRY AND EXIT

Left Projection: [Range](#)
 Left-Zone Left Coordinate: [\(2'863.2963; 202.94577\) m](#)
 Left-Zone Right Coordinate: [\(2'880.9016; 207.00002\) m](#)
 Left-Zone Increment: [5](#)
 Right Projection: [Range](#)
 Right-Zone Left Coordinate: [\(2'885.8684; 209.39601\) m](#)
 Right-Zone Right Coordinate: [\(2'935; 212.1674\) m](#)
 Right-Zone Increment: [10](#)
 Radius Increments: [20](#)

SLIP SURFACE LIMITS

Left Coordinate: [\(2'673.6249; 179.20233\) m](#)
 Right Coordinate: [\(3'144.2366; 262.82304\) m](#)

SEISMIC COEFFICIENTS

Horz Seismic Coef.: [0.082](#)
 Vert Seismic Coef.: [0.041](#)

POINTS

	X (m)	Y (m)
Point 1	3'144.2366	259.49089
Point 2	3'103.905	255.69538
Point 3	3'039.0793	238.78429
Point 4	3'005.8074	224.98039
Point 5	2'938.8404	197.13074
Point 6	2'910.8187	187.20907
Point 7	2'899.2714	182.53452
Point 8	2'673.6249	148.15917
Point 9	2'673.6249	106.07514

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 10	3'144.2366	106.07514
Point 11	3'144.2366	262.82304
Point 12	3'103.6947	258.97638
Point 13	3'038.5417	242.51762
Point 14	2'946.8099	204.86962
Point 15	2'945.6368	204.8426
Point 16	2'927.8657	195.53257
Point 17	2'906.9409	189.8026
Point 18	2'897.9855	185.76717
Point 19	2'883.457	183.71949
Point 20	2'673.6249	151.61183
Point 21	2'940.5128	204.72456
Point 22	2'926.2042	197.28524
Point 23	2'911.9978	193.43253
Point 24	2'906.2127	191.79538
Point 25	2'905.7006	191.57396
Point 26	2'904.1099	190.8862
Point 27	2'896.324	187.51984
Point 28	2'673.6249	153.90347
Point 29	2'859.7917	202.86504
Point 30	2'756.9924	192.64559
Point 31	2'673.6249	179.20233
Point 32	2'964.7139	212.22102

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 33	2'891.4505	212.08882
Point 34	2'900.4275	203.80114
Point 35	2'872.9587	203.16836

REGIONS

	Material	Points	Area (m ²)
Region 1	B2_k	1;2;3;4;5;6;7;8;9;10	43'175
Region 2	B1_k	6;5;4;3;2;1;11;12;13;14;15;16;17;18;19;20;8;7	1'715.7
Region 3	A_k	17;16;15;21;22;23;24;25;26;27;28;20;19;18	571.39
Region 4	Prevam_k	22;21;34;35;29;30;31;28;27;26;25;24;23	5'621.1
Region 5	Abbancamento_k	32;33;34;21;15;14	465.11
Region 6	Unghia_k	33;35;34	116.67

CURRENT SLIP SURFACE

Slip Surface: 257
 F of S: 1.470
 Volume: 10.971402 m³
 Weight: 208.45663 kN
 Resisting Moment: 6'302.3569 kN-m
 Activating Moment: 4'284.729 kN-m
 Resisting Force: 143.1524 kN
 Activating Force: 97.380661 kN
 F of S Rank (Analysis): 1 of 1'386 slip surfaces
 F of S Rank (Query): 1 of 1'386 slip surfaces
 Exit: (2'874.7959; 204.05462) m
 Entry: (2'890.349; 211.55747) m
 Radius: 39.637626 m
 Center: (2'865.7639; 242.64951) m


SLIP SLICES

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

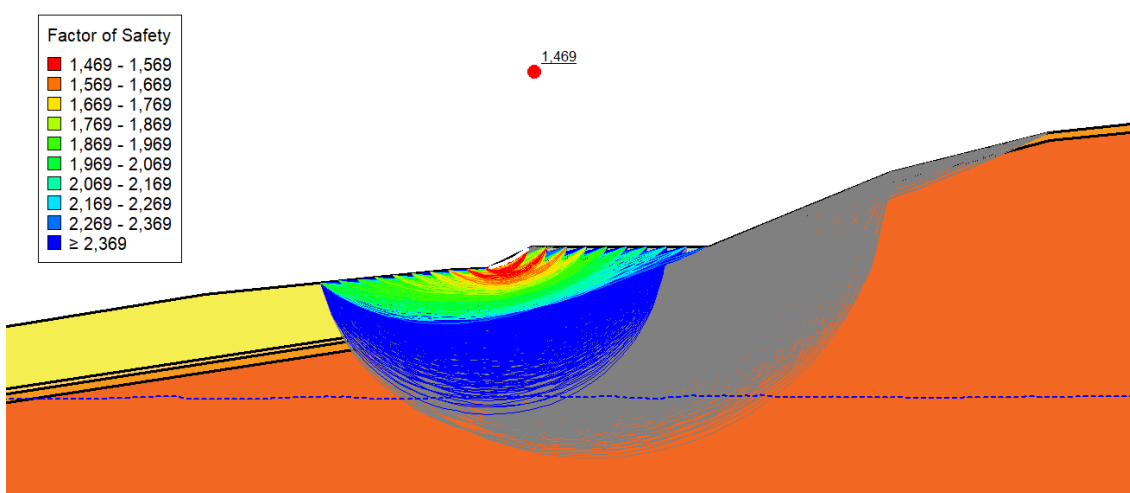
	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'875.0551	204.11712	-49.035	1.1056176	0	0.90666264
Slice 2	2'875.5735	204.24584	- 49.034999	3.2830741	0	2.6902412
Slice 3	2'876.092	204.38201	- 49.034998	5.3647443	0	4.3927936
Slice 4	2'876.6104	204.52572	- 49.034997	7.3265429	0	5.9964097
Slice 5	2'877.1289	204.67706	- 49.034996	9.1441061	0	7.4831842
Slice 6	2'877.6473	204.8361	- 49.034995	10.794599	0	8.8364529
Slice 7	2'878.1657	205.00296	- 49.034995	12.258375	0	10.041917
Slice 8	2'878.6842	205.17773	- 49.034994	13.520314	0	11.088542
Slice 9	2'879.2026	205.36053	- 49.034994	14.570707	0	11.96915
Slice 10	2'879.721	205.55148	- 49.034993	15.405635	0	12.680666
Slice 11	2'880.2395	205.75069	- 49.034993	16.026847	0	13.224004
Slice 12	2'880.7579	205.95832	- 49.034993	16.441208	0	13.60367
Slice 13	2'881.2764	206.17449	- 49.034992	16.65983	0	13.827108

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 14	2'881.7948	206.39937	- 49.034992	16.696982	0	13.903918
Slice 15	2'882.3132	206.63311	- 49.034992	16.568894	0	13.845002
Slice 16	2'882.8317	206.87589	- 49.034993	16.292512	0	13.661728
Slice 17	2'883.3501	207.1279	- 49.034995	15.884295	0	13.365162
Slice 18	2'883.8685	207.38934	- 49.034996	15.359099	0	12.965408
Slice 19	2'884.387	207.6604	- 49.034997	14.729259	0	12.471062
Slice 20	2'884.9054	207.94133	- 49.034998	14.003924	0	11.888792
Slice 21	2'885.4239	208.23236	- 49.034998	13.188706	0	11.223024
Slice 22	2'885.9423	208.53376	- 49.034999	12.285632	0	10.475713
Slice 23	2'886.4607	208.84579	-49.035	11.293285	0	9.6461865
Slice 24	2'886.9792	209.16875	-49.035	10.206983	0	8.7310173
Slice 25	2'887.4976	209.50297	-49.035	9.0188323	0	7.7239321
Slice 26	2'888.0161	209.84879	- 49.035001	7.7175868	0	6.6157224
Slice 27	2'888.5345	210.20659	- 49.035001	6.2883545	0	5.3941619
Slice	2'889.0529	210.57675	-	4.7123382	0	4.0439301

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

28			49.035001			
Slice 29	2'889.5714	210.95972	- 49.035001	2.9668015	0	2.546552
Slice 30	2'890.0898	211.35596	-49.035	1.0253515	0	0.88036952



SEZIONE B3 DRENATA – SCORRIMENTO LUNGO BASE - STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

02_STATIC_BASE

Kind: [SLOPE/W](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Parent: [Insitu](#)

Method: [Morgenstern-Price](#)

Settings

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Fully-Specified](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [0.1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_D

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [33 °](#)

Phi-B: [0 °](#)

PREVAM_D

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [8 kPa](#)

Phi': [16 °](#)

Phi-B: [0 °](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

B1_D

Model: **Mohr-Coulomb**
Unit Weight: **20 kN/m³**
Cohesion': **12 kPa**
Phi': **17 °**
Phi-B: **0 °**

B2_D

Model: **Mohr-Coulomb**
Unit Weight: **21 kN/m³**
Cohesion': **20 kPa**
Phi': **19 °**
Phi-B: **0 °**

A_D

Model: **Mohr-Coulomb**
Unit Weight: **19 kN/m³**
Cohesion': **8 kPa**
Phi': **20 °**
Phi-B: **0 °**

ABBANCAMENTO_D

Model: **Mohr-Coulomb**
Unit Weight: **17 kN/m³**
Cohesion': **8 kPa**
Phi': **19 °**
Phi-B: **0 °**

SLIP SURFACE LIMITS

Left Coordinate: **(2'673.6249; 179.20233) m**
Right Coordinate: **(3'144.2366; 262.82304) m**

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	2'872.9587	203.16836
	2'900.4275	203.80114
	2'940.5128	204.72456
	2'945.6368	204.8426
	2'946.8099	204.86962
	2'964.7139	212.22102

POINTS

	X (m)	Y (m)
Point 1	3'144.2366	259.49089
Point 2	3'103.905	255.69538
Point 3	3'039.0793	238.78429
Point 4	3'005.8074	224.98039
Point 5	2'938.8404	197.13074
Point 6	2'910.8187	187.20907
Point 7	2'899.2714	182.53452
Point 8	2'673.6249	148.15917
Point 9	2'673.6249	106.07514
Point 10	3'144.2366	106.07514
Point 11	3'144.2366	262.82304
Point 12	3'103.6947	258.97638
Point 13	3'038.5417	242.51762
Point 14	2'946.8099	204.86962

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 15	2'945.6368	204.8426
Point 16	2'927.8657	195.53257
Point 17	2'906.9409	189.8026
Point 18	2'897.9855	185.76717
Point 19	2'883.457	183.71949
Point 20	2'673.6249	151.61183
Point 21	2'940.5128	204.72456
Point 22	2'926.2042	197.28524
Point 23	2'911.9978	193.43253
Point 24	2'906.2127	191.79538
Point 25	2'905.7006	191.57396
Point 26	2'904.1099	190.8862
Point 27	2'896.324	187.51984
Point 28	2'673.6249	153.90347
Point 29	2'859.7917	202.86504
Point 30	2'756.9924	192.64559
Point 31	2'673.6249	179.20233
Point 32	2'964.7139	212.22102
Point 33	2'891.4505	212.08882
Point 34	2'900.4275	203.80114
Point 35	2'872.9587	203.16836

REGIONS

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	Material	Points	Area (m ²)
Region 1	B2_d	1;2;3;4;5;6;7;8;9;10	43'175
Region 2	B1_d	6;5;4;3;2;1;11;12;13;14;15;16;17;18;19;20;8;7	1'715.7
Region 3	A_d	17;16;15;21;22;23;24;25;26;27;28;20;19;18	571.39
Region 4	Prevam_d	22;21;34;35;29;30;31;28;27;26;25;24;23	5'621.1
Region 5	Abbancamento_d	32;33;34;21;15;14	465.11
Region 6	Unghia_d	33;35;34	116.67

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 7.441
 Volume: 581.77443 m³
 Weight: 10'006.832 kN
 Resisting Moment: 54'796.68 kN-m
 Activating Moment: 7'364.295 kN-m
 Resisting Force: 4'782.0041 kN
 Activating Force: 642.67587 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (2'872.9587; 203.16836) m
 Entry: (2'964.7139; 212.22102) m
 Radius: 34.495236 m
 Center: (2'918.1664; 214.48419) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'874.4997	203.20386	- 49.034995	12.724152	8.2631611	0
Slice 2	2'877.5817	203.27486	- 49.034984	38.204155	24.810068	0

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 3	2'880.6636	203.34585	- 49.034973	63.730195	41.386873	0
Slice 4	2'883.7456	203.41685	- 49.034979	89.298866	57.991362	0
Slice 5	2'886.8276	203.48785	- 49.035001	114.90508	74.620235	0
Slice 6	2'889.9095	203.55884	- 49.035023	140.5422	91.269173	0
Slice 7	2'892.9467	203.62881	- 49.035026	151.47316	98.367822	0
Slice 8	2'895.939	203.69774	- 49.035016	147.66349	95.893791	0
Slice 9	2'898.9313	203.76667	- 49.035005	143.82598	93.401682	0
Slice 10	2'901.9692	203.83666	- 49.035008	141.0918	48.581802	8
Slice 11	2'905.0527	203.90769	- 49.035023	139.96545	48.19397	8
Slice 12	2'908.1362	203.97872	- 49.035038	138.8236	47.800798	8
Slice 13	2'911.2197	204.04975	- 49.035045	137.6663	47.402309	8
Slice 14	2'914.3032	204.12079	-49.03503	136.49391	46.998624	8
Slice 15	2'917.3867	204.19182	- 49.035015	135.30705	46.589954	8
Slice 16	2'920.4702	204.26285	-49.035	134.1066	46.176605	8
Slice	2'923.5536	204.33388	-	132.89369	45.758968	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

17			49.034985			
Slice 18	2'926.6371	204.40491	-49.03497	131.66971	45.337515	8
Slice 19	2'929.7206	204.47595	- 49.034955	130.43623	44.912796	8
Slice 20	2'932.8041	204.54698	- 49.034962	129.19505	44.485423	8
Slice 21	2'935.8876	204.61801	- 49.034977	127.94812	44.05607	8
Slice 22	2'938.9711	204.68904	- 49.034992	126.69752	43.625456	8
Slice 23	2'941.7938	204.75407	-49.035	125.55132	43.230786	8
Slice 24	2'944.3558	204.81309	-49.035	124.51136	42.8727	8
Slice 25	2'946.2234	204.85611	-49.035	123.75431	42.612027	8
Slice 26	2'948.3019	205.48224	-49.035	108.79518	37.461186	8
Slice 27	2'951.2859	206.70747	-49.035	89.290166	30.74507	8
Slice 28	2'954.2699	207.9327	-49.035	69.65466	23.984023	8
Slice 29	2'957.2539	209.15794	-49.035	49.86128	17.168616	8
Slice 30	2'960.2379	210.38317	-49.035	29.888072	10.291289	8
Slice 31	2'963.2219	211.6084	-49.035	9.7191397	3.3465682	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE B3 DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Fully-Specified](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Maximum iterations to calculate converged lambda: 20

Max Absolute Lambda: 2

MATERIALS

UNGHIA_K

Model: Mohr-Coulomb

Unit Weight: 19 kN/m³

Cohesion': 0 kPa

Phi': 40 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb

Unit Weight: 17 kN/m³

Cohesion': 10 kPa

Phi': 24 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

PREVAM_K

Model: Mohr-Coulomb

Unit Weight: 18 kN/m³

Cohesion': 10 kPa

Phi': 20 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

B2_K

Model: Mohr-Coulomb

Unit Weight: 21 kN/m³

Cohesion': 25 kPa

Phi': 24 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

B1_K

Model: **Mohr-Coulomb**
 Unit Weight: **20 kN/m³**
 Cohesion': **15 kPa**
 Phi': **22 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

A_K

Model: **Mohr-Coulomb**
 Unit Weight: **19 kN/m³**
 Cohesion': **10 kPa**
 Phi': **25 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

SLIP SURFACE LIMITS

Left Coordinate: **(2'673.6249; 179.20233) m**
 Right Coordinate: **(3'144.2366; 262.82304) m**

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	2'872.9587	203.16836
	2'900.4275	203.80114
	2'940.5128	204.72456
	2'945.6368	204.8426
	2'946.8099	204.86962
	2'964.7139	212.22102

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082

Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
Point 1	3'144.2366	259.49089
Point 2	3'103.905	255.69538
Point 3	3'039.0793	238.78429
Point 4	3'005.8074	224.98039
Point 5	2'938.8404	197.13074
Point 6	2'910.8187	187.20907
Point 7	2'899.2714	182.53452
Point 8	2'673.6249	148.15917
Point 9	2'673.6249	106.07514
Point 10	3'144.2366	106.07514
Point 11	3'144.2366	262.82304
Point 12	3'103.6947	258.97638
Point 13	3'038.5417	242.51762
Point 14	2'946.8099	204.86962
Point 15	2'945.6368	204.8426
Point 16	2'927.8657	195.53257
Point 17	2'906.9409	189.8026
Point 18	2'897.9855	185.76717

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 19	2'883.457	183.71949
Point 20	2'673.6249	151.61183
Point 21	2'940.5128	204.72456
Point 22	2'926.2042	197.28524
Point 23	2'911.9978	193.43253
Point 24	2'906.2127	191.79538
Point 25	2'905.7006	191.57396
Point 26	2'904.1099	190.8862
Point 27	2'896.324	187.51984
Point 28	2'673.6249	153.90347
Point 29	2'859.7917	202.86504
Point 30	2'756.9924	192.64559
Point 31	2'673.6249	179.20233
Point 32	2'964.7139	212.22102
Point 33	2'891.4505	212.08882
Point 34	2'900.4275	203.80114
Point 35	2'872.9587	203.16836

REGIONS

	Material	Points	Area (m ²)
Region 1	B2_k	1;2;3;4;5;6;7;8;9;10	43'175
Region 2	B1_k	6;5;4;3;2;1;11;12;13;14;15;16;17;18;19;20;8;7	1'715.7
Region 3	A_k	17;16;15;21;22;23;24;25;26;27;28;20;19;18	571.39

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Region 4	Prevam_k	22;21;34;35;29;30;31;28;27;26;25;24;23	5'621.1
Region 5	Abbancamento_k	32;33;34;21;15;14	465.11
Region 6	Unghia_k	33;35;34	116.67

CURRENT SLIP SURFACE

Slip Surface: 1

F of S: 4.248

Volume: 581.77443 m³

Weight: 10'123.498 kN

Resisting Moment: 71'551.793 kN-m

Activating Moment: 16'842.668 kN-m

Resisting Force: 6'257.6217 kN

Activating Force: 1'473.1698 kN

F of S Rank (Analysis): 1 of 1 slip surfaces

F of S Rank (Query): 1 of 1 slip surfaces

Exit: (2'872.9587; 203.16836) m

Entry: (2'964.7139; 212.22102) m

Radius: 34.495236 m

Center: (2'918.1664; 214.48419) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'874.4997	203.20386	- 49.034995	13.97577	0	11.270049
Slice 2	2'877.5817	203.27486	- 49.034984	42.069166	0	33.837728
Slice 3	2'880.6636	203.34585	- 49.034973	70.368604	0	56.445466
Slice 4	2'883.7456	203.41685	- 49.034979	98.858862	0	79.090298
Slice 5	2'886.8276	203.48785	- 49.035001	127.5172	0	101.7678

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 6	2'889.9095	203.55884	- 49.035023	156.31387	0	124.47218
Slice 7	2'892.9467	203.62881	- 49.035026	167.48316	0	133.05254
Slice 8	2'895.939	203.69774	- 49.035016	160.86109	0	127.47699
Slice 9	2'898.9313	203.76667	- 49.035005	154.10229	0	121.87487
Slice 10	2'901.9692	203.83666	- 49.035008	147.86189	0	72.818066
Slice 11	2'905.0527	203.90769	- 49.035023	146.53902	0	72.315569
Slice 12	2'908.1362	203.97872	- 49.035038	145.18487	0	71.80629
Slice 13	2'911.2197	204.04975	- 49.035045	143.801	0	71.290274
Slice 14	2'914.3032	204.12079	-49.03503	142.38943	0	70.767687
Slice 15	2'917.3867	204.19182	- 49.035015	140.95269	0	70.238811
Slice 16	2'920.4702	204.26285	-49.035	139.49375	0	69.704046
Slice 17	2'923.5536	204.33388	- 49.034985	138.01602	0	69.1639
Slice 18	2'926.6371	204.40491	-49.03497	136.52329	0	68.618981
Slice 19	2'929.7206	204.47595	- 49.034955	135.01969	0	68.069996
Slice	2'932.8041	204.54698	-	133.50963	0	67.517731

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

20			49.034962			
Slice 21	2'935.8876	204.61801	- 49.034977	131.99775	0	66.963044
Slice 22	2'938.9711	204.68904	- 49.034992	130.48885	0	66.406855
Slice 23	2'941.7938	204.75407	-49.035	129.11413	0	65.89719
Slice 24	2'944.3558	204.81309	-49.035	127.87536	0	65.434842
Slice 25	2'946.2234	204.85611	-49.035	126.97907	0	65.098306
Slice 26	2'948.3019	205.48224	-49.035	104.92748	0	58.457709
Slice 27	2'951.2859	206.70747	-49.035	86.750919	0	49.770593
Slice 28	2'954.2699	207.9327	-49.035	68.191852	0	41.025716
Slice 29	2'957.2539	209.15794	-49.035	49.159138	0	32.210945
Slice 30	2'960.2379	210.38317	-49.035	29.573649	0	23.316552
Slice 31	2'963.2219	211.6084	-49.035	9.3710786	0	14.335492

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE B3 NON DRENATA – SUPERFICI CIRCOLARI – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [19 kN/m³](#)
 Cohesion': [0 kPa](#)
 Phi': [40 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

ABBANCAMENTO_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [17 kN/m³](#)
 Cohesion': [150 kPa](#)
 Phi': [10 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [75 kPa](#)
 Phi': [17 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [90 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B1_K

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 20 kN/m³
 Cohesion': 50 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A_K

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 20 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range
 Left-Zone Left Coordinate: (2'842.9143; 201.18723) m
 Left-Zone Right Coordinate: (2'878; 205.60029) m
 Left-Zone Increment: 10
 Right Projection: Range
 Right-Zone Left Coordinate: (2'882; 207.52989) m
 Right-Zone Right Coordinate: (2'940; 212.17643) m
 Right-Zone Increment: 10
 Radius Increments: 20

SLIP SURFACE LIMITS

Left Coordinate: (2'673.6249; 179.20233) m
 Right Coordinate: (3'144.2366; 262.82304) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082
 Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 1	3'144.2366	259.49089
Point 2	3'103.905	255.69538
Point 3	3'039.0793	238.78429
Point 4	3'005.8074	224.98039
Point 5	2'938.8404	197.13074
Point 6	2'910.8187	187.20907
Point 7	2'899.2714	182.53452
Point 8	2'673.6249	148.15917
Point 9	2'673.6249	106.07514
Point 10	3'144.2366	106.07514
Point 11	3'144.2366	262.82304
Point 12	3'103.6947	258.97638
Point 13	3'038.5417	242.51762
Point 14	2'946.8099	204.86962
Point 15	2'945.6368	204.8426
Point 16	2'927.8657	195.53257
Point 17	2'906.9409	189.8026
Point 18	2'897.9855	185.76717
Point 19	2'883.457	183.71949
Point 20	2'673.6249	151.61183
Point 21	2'940.5128	204.72456
Point 22	2'926.2042	197.28524
Point 23	2'911.9978	193.43253

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 24	2'906.2127	191.79538
Point 25	2'905.7006	191.57396
Point 26	2'904.1099	190.8862
Point 27	2'896.324	187.51984
Point 28	2'673.6249	153.90347
Point 29	2'859.7917	202.86504
Point 30	2'756.9924	192.64559
Point 31	2'673.6249	179.20233
Point 32	2'964.7139	212.22102
Point 33	2'891.4505	212.08882
Point 34	2'900.4275	203.80114
Point 35	2'872.9587	203.16836

REGIONS

	Material	Points	Area (m ²)
Region 1	B2_k	1;2;3;4;5;6;7;8;9;10	43'175
Region 2	B1_k	6;5;4;3;2;1;11;12;13;14;15;16;17;18;19;20;8;7	1'715.7
Region 3	A_k	17;16;15;21;22;23;24;25;26;27;28;20;19;18	571.39
Region 4	Prevam_k	22;21;34;35;29;30;31;28;27;26;25;24;23	5'621.1
Region 5	Abbancamento_k	32;33;34;21;15;14	465.11
Region 6	Unghia_k	33;35;34	116.67

CURRENT SLIP SURFACE

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slip Surface: 1'413
 F of S: 1.482
 Volume: 9.9225176 m³
 Weight: 188.52783 kN
 Resisting Moment: 4'465.1731 kN-m
 Activating Moment: 3'013.7897 kN-m
 Resisting Force: 129.81445 kN
 Activating Force: 87.61318 kN
 F of S Rank (Analysis): 1 of 2'541 slip surfaces
 F of S Rank (Query): 1 of 2'541 slip surfaces
 Exit: (2'873.4858; 203.42265) m
 Entry: (2'887.3178; 210.0952) m
 Radius: 30.963794 m
 Center: (2'867.3687; 233.77618) m

SLIP SLICES

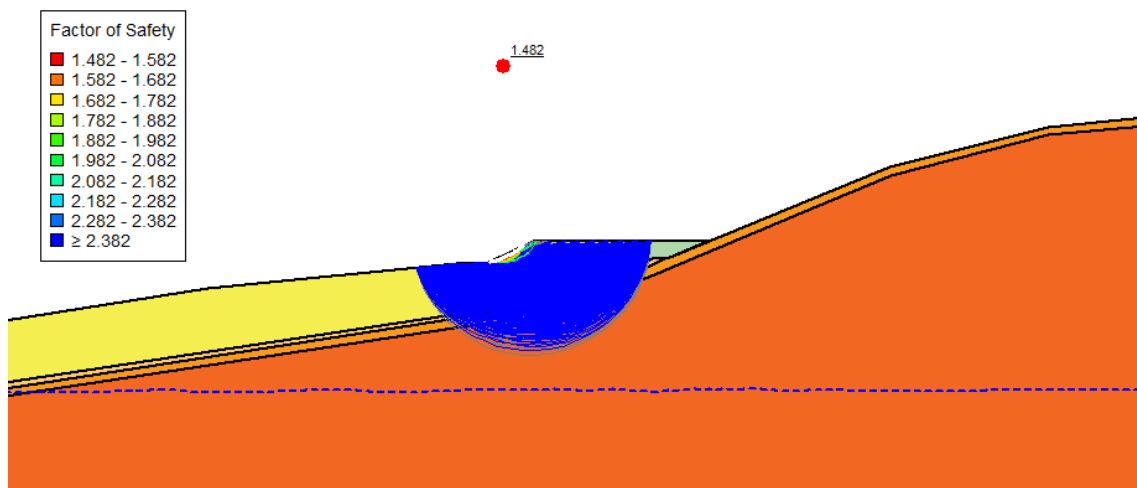
	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'873.7164	203.47093	-49.035	1.1343055	0	0.92676985
Slice 2	2'874.1774	203.57119	- 49.034999	3.3777282	0	2.7543623
Slice 3	2'874.6385	203.67884	- 49.034998	5.5345288	0	4.505062
Slice 4	2'875.0996	203.79396	- 49.034997	7.5747443	0	6.1582645
Slice 5	2'875.5606	203.91665	- 49.034996	9.46796	0	7.6931963
Slice 6	2'876.0217	204.047	- 49.034995	11.185738	0	9.0904161
Slice 7	2'876.4828	204.1851	- 49.034995	12.703858	0	10.333196
Slice 8	2'876.9438	204.33107	- 49.034994	14.004098	0	11.408636

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 9	2'877.4049	204.48503	- 49.034994	15.075365	0	12.308399
Slice 10	2'877.866	204.64709	- 49.034993	15.91407	0	13.029008
Slice 11	2'878.327	204.81741	- 49.034993	16.523752	0	13.571709
Slice 12	2'878.7881	204.99612	- 49.034992	16.914059	0	13.941962
Slice 13	2'879.2491	205.18337	- 49.034992	17.099273	0	14.148639
Slice 14	2'879.7102	205.37935	- 49.034992	17.096605	0	14.203065
Slice 15	2'880.1713	205.58424	- 49.034992	16.924542	0	14.117989
Slice 16	2'880.6323	205.79822	- 49.034992	16.601441	0	13.906597
Slice 17	2'881.0934	206.02151	- 49.034992	16.144524	0	13.581619
Slice 18	2'881.5545	206.25433	- 49.034992	15.569285	0	13.154581
Slice 19	2'882.0155	206.49694	- 49.034992	14.889195	0	12.635209
Slice 20	2'882.4766	206.74958	- 49.034993	14.115513	0	12.030975
Slice 21	2'882.9377	207.01256	- 49.034994	13.256957	0	11.346776
Slice 22	2'883.3987	207.28617	- 49.034995	12.319111	0	10.584707
Slice	2'883.8598	207.57075	-	11.303564	0	9.7438943

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

23			49.034996			
Slice 24	2'884.3209	207.86666	- 49.034997	10.206961	0	8.8203748
Slice 25	2'884.7819	208.17429	- 49.034998	9.0202878	0	7.8069711
Slice 26	2'885.243	208.49407	- 49.034999	7.7286553	0	6.6931619
Slice 27	2'885.7041	208.82648	- 49.034999	6.3117145	0	5.4649295
Slice 28	2'886.1651	209.17201	-49.035	4.7444769	0	4.1045843
Slice 29	2'886.6262	209.53124	-49.035	2.998033	0	2.5905721
Slice 30	2'887.0873	209.90478	-49.035	1.0395455	0	0.89727141



	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE B4 DRENATA – SUPERFICI CIRCOLARI – STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

01_STATICA_GENERICO

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

B2_D

Model: **Mohr-Coulomb**
Unit Weight: **21 kN/m³**
Cohesion': **20 kPa**
Phi': **19 °**
Phi-B: **0 °**

PREVAM_D

Model: **Mohr-Coulomb**
Unit Weight: **18 kN/m³**
Cohesion': **8 kPa**
Phi': **16 °**
Phi-B: **0 °**

UNGHIA_D

Model: **Mohr-Coulomb**
Unit Weight: **18 kN/m³**
Cohesion': **0 kPa**
Phi': **33 °**
Phi-B: **0 °**

ABBANCAMENTO_D

Model: **Mohr-Coulomb**
Unit Weight: **17 kN/m³**
Cohesion': **8 kPa**
Phi': **19 °**
Phi-B: **0 °**

B1_D

Model: **Mohr-Coulomb**
Unit Weight: **20 kN/m³**
Cohesion': **12 kPa**
Phi': **17 °**
Phi-B: **0 °**

A_D

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Model: **Mohr-Coulomb**

Unit Weight: **19 kN/m³**

Cohesion': **8 kPa**

Phi': **20 °**

Phi-B: **0 °**

SLIP SURFACE ENTRY AND EXIT

Left Projection: **Range**

Left-Zone Left Coordinate: **(3'416.0859; 222) m**

Left-Zone Right Coordinate: **(3'424; 225.71187) m**

Left-Zone Increment: **5**

Right Projection: **Range**

Right-Zone Left Coordinate: **(3'426.9998; 227.21177) m**

Right-Zone Right Coordinate: **(3'446; 231.3586) m**

Right-Zone Increment: **10**

Radius Increments: **10**

SLIP SURFACE LIMITS

Left Coordinate: **(3'250.4633; 109.43219) m**

Right Coordinate: **(3'633.7128; 298) m**

POINTS

	X (m)	Y (m)
Point 1	3'475.091	231.34648
Point 2	3'435.3024	231.36306
Point 3	3'442.8926	223.59312
Point 4	3'445.8633	223.76689
Point 5	3'358.4296	187.92216
Point 6	3'391.6967	198.12388
Point 7	3'403.8915	204.39958
Point 8	3'426.705	217.70328

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 9	3'445.7675	222.99378
Point 10	3'448.2605	224.38837
Point 11	3'425.5145	219.55333
Point 12	3'413.3094	211.69929
Point 13	3'390.4432	199.93182
Point 14	3'357.5843	190.03136
Point 15	3'254.9747	172.22872
Point 16	3'250.5253	172.17921
Point 17	3'250.5233	170.1245
Point 18	3'255.9231	170.18595
Point 19	3'309.1161	179.38968
Point 20	3'424.6008	222.52308
Point 21	3'416.2644	222.03542
Point 22	3'361.3684	211.14292
Point 23	3'250.5371	184.14799
Point 24	3'633.7087	293.8808
Point 25	3'547.089	262.27885
Point 26	3'487.4376	230.72583
Point 27	3'428.7614	214.50775
Point 28	3'406.0567	201.27678
Point 29	3'393.8619	195.00108
Point 30	3'359.8433	184.39489
Point 31	3'309.833	175.65792

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 32	3'255.5578	166.8982
Point 33	3'250.5199	166.74436
Point 34	3'250.4633	109.43219
Point 35	3'633.5261	109.0537
Point 36	3'633.7128	298
Point 37	3'545.3122	265.63788
Point 38	3'485.6585	234.08361
Point 39	3'416.6978	222.06078

REGIONS

	Material	Points	Area (m²)
Regio n 1	Abbancamento_ d	1;2;3;4	163.23
Regio n 2	A_d	5;6;7;8;9;10;4;11;12;13;14;15;16;17;18;19	423.2
Regio n 3	Prevam_d	13;12;11;4;3;20;21;22;23;16;15;14	2'787.7
Regio n 4	B2_d	24;25;26;27;28;29;30;31;32;33;34;35	42'707
Regio n 5	B1_d	24;36;37;38;10;9;8;7;6;5;19;18;17;33;32;31;30;29;28;27;26;25	1'528.8
Regio n 6	Unghia_d	2;39;20;3	107.58

CURRENT SLIP SURFACE

Slip Surface: 14

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

F of S: 1.348
 Volume: 8.1396706 m³
 Weight: 146.51407 kN
 Resisting Moment: 2'147.4468 kN-m
 Activating Moment: 1'593.487 kN-m
 Resisting Force: 77.217829 kN
 Activating Force: 57.297332 kN
 F of S Rank (Analysis): 1 of 726 slip surfaces
 F of S Rank (Query): 1 of 726 slip surfaces
 Exit: (3'416.8478; 222.1358) m
 Entry: (3'428.7869; 228.10531) m
 Radius: 24.86806 m
 Center: (3'412.1041; 246.54721) m

SLIP SLICES

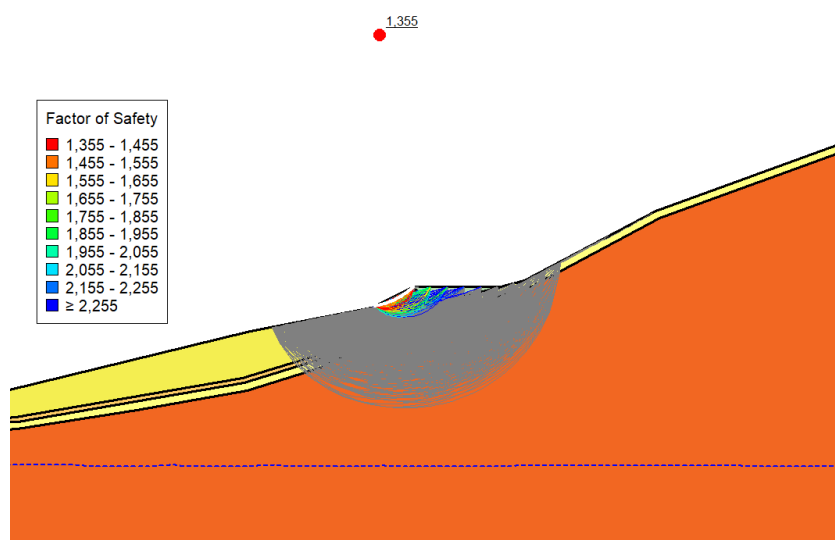
	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'417.0468	222.17615	-49.035	0.98531351	0.63987007	0
Slice 2	3'417.4448	222.26027	-49.035	2.9335313	1.9050575	0
Slice 3	3'417.8428	222.35122	-49.035	4.8069929	3.1216977	0
Slice 4	3'418.2407	222.44908	-49.035	6.5812418	4.2739084	0
Slice 5	3'418.6387	222.55395	-49.035	8.2313825	5.3455223	0
Slice 6	3'419.0367	222.66591	-49.035	9.7339586	6.3213066	0
Slice 7	3'419.4346	222.78506	-49.035	11.068707	7.1881025	0
Slice 8	3'419.8326	222.91151	-49.035	12.219985	7.9357508	0

	Committente		Oggetto del servizio
	GE.R.IN		DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 9	3'420.2306	223.04538	-49.035	13.177712	8.5577062	0
Slice 10	3'420.6285	223.1868	-49.035	13.937757	9.0512854	0
Slice 11	3'421.0265	223.3359	-49.035	14.501761	9.4175535	0
Slice 12	3'421.4245	223.49283	-49.035	14.876477	9.660897	0
Slice 13	3'421.8224	223.65776	-49.035	15.072763	9.7883665	0
Slice 14	3'422.2204	223.83086	-49.035	15.104362	9.8088876	0
Slice 15	3'422.6184	224.01232	-49.035	14.986634	9.732434	0
Slice 16	3'423.0163	224.20234	-49.035	14.73534	9.5692415	0
Slice 17	3'423.4143	224.40113	-49.035	14.365578	9.3291156	0
Slice 18	3'423.8123	224.60895	-49.035	13.890911	9.0208632	0
Slice 19	3'424.2102	224.82605	-49.035	13.322687	8.6518541	0
Slice 20	3'424.6082	225.05271	-49.035	12.669549	8.2277015	0
Slice 21	3'425.0062	225.28924	-49.035	11.937097	7.7520414	0
Slice 22	3'425.4042	225.53596	-49.035	11.127655	7.2263839	0
Slice	3'425.8021	225.79326	-49.035	10.240114	6.6500077	0

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

23						
Slice 24	3'426.2001	226.06151	-49.035	9.2697895	6.0198717	0
Slice 25	3'426.5981	226.34116	-49.035	8.2082814	5.3305202	0
Slice 26	3'426.996	226.63269	-49.035	7.0432898	4.5739659	0
Slice 27	3'427.394	226.93664	-49.035	5.7583804	3.739536	0
Slice 28	3'427.792	227.25358	-49.035	4.3326831	2.8136773	0
Slice 29	3'428.1899	227.58417	-49.035	2.740517	1.7797125	0
Slice 30	3'428.5879	227.92913	-49.035	0.95093924	0.61754717	0



	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE B4 DRENATA – SUPERFICI CIRCOLARI – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [0 kPa](#)
 Phi': [40 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [10 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B1_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [15 kPa](#)
 Phi': [22 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [25 kPa](#)
 Phi': [24 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 19 kN/m³
 Cohesion': 10 kPa
 Phi': 25 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 10 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range
 Left-Zone Left Coordinate: (3'416.0859; 222) m
 Left-Zone Right Coordinate: (3'426.5763; 227.00002) m
 Left-Zone Increment: 5
 Right Projection: Range
 Right-Zone Left Coordinate: (3'428.2084; 227.81607) m
 Right-Zone Right Coordinate: (3'450; 231.35694) m
 Right-Zone Increment: 10
 Radius Increments: 10

SLIP SURFACE LIMITS


Left Coordinate: (3'250.4633; 109.43219) m
 Right Coordinate: (3'633.7128; 298) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082
 Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 1	3'475.091	231.34648
Point 2	3'435.3024	231.36306
Point 3	3'442.8926	223.59312
Point 4	3'445.8633	223.76689
Point 5	3'358.4296	187.92216
Point 6	3'391.6967	198.12388
Point 7	3'403.8915	204.39958
Point 8	3'426.705	217.70328
Point 9	3'445.7675	222.99378
Point 10	3'448.2605	224.38837
Point 11	3'425.5145	219.55333
Point 12	3'413.3094	211.69929
Point 13	3'390.4432	199.93182
Point 14	3'357.5843	190.03136
Point 15	3'254.9747	172.22872
Point 16	3'250.5253	172.17921
Point 17	3'250.5233	170.1245
Point 18	3'255.9231	170.18595
Point 19	3'309.1161	179.38968
Point 20	3'424.6008	222.52308
Point 21	3'416.2644	222.03542
Point 22	3'361.3684	211.14292
Point 23	3'250.5371	184.14799

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 24	3'633.7087	293.8808
Point 25	3'547.089	262.27885
Point 26	3'487.4376	230.72583
Point 27	3'428.7614	214.50775
Point 28	3'406.0567	201.27678
Point 29	3'393.8619	195.00108
Point 30	3'359.8433	184.39489
Point 31	3'309.833	175.65792
Point 32	3'255.5578	166.8982
Point 33	3'250.5199	166.74436
Point 34	3'250.4633	109.43219
Point 35	3'633.5261	109.0537
Point 36	3'633.7128	298
Point 37	3'545.3122	265.63788
Point 38	3'485.6585	234.08361
Point 39	3'416.6978	222.06078

REGIONS

	Material	Points	Area (m ²)
Regio n 1	Abbancamento_ k	1;2;3;4	163.23
Regio n 2	A_k	5;6;7;8;9;10;4;11;12;13;14;15;16;17;18;19	423.2

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Regio n 3	Prevam_k	13;12;11;4;3;20;21;22;23;16;15;14	2'787.7
Regio n 4	B2_k	24;25;26;27;28;29;30;31;32;33;34;35	42'707
Regio n 5	B1_k	24;36;37;38;10;9;8;7;6;5;19;18;17;33;32;31;30;29;28;27;26;25	1'528.8
Regio n 6	Unghia_k	2;39;20;3	107.58

CURRENT SLIP SURFACE

Slip Surface: 14
 F of S: 1.445
 Volume: 10.270271 m³
 Weight: 184.86487 kN
 Resisting Moment: 3'909.1197 kN-m
 Activating Moment: 2'704.718 kN-m
 Resisting Force: 125.90043 kN
 Activating Force: 87.128138 kN
 F of S Rank (Analysis): 1 of 726 slip surfaces
 F of S Rank (Query): 1 of 726 slip surfaces
 Exit: (3'416.8491; 222.13641) m
 Entry: (3'430.2324; 228.82806) m
 Radius: 27.766971 m
 Center: (3'411.5822; 249.3993) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'417.0721	222.1814	-49.035	1.1402072	0	0.93069193
Slice 2	3'417.5182	222.27521	-49.035	3.401983	0	2.7708777
Slice	3'417.9643	222.3767	-49.035	5.5858155	0	4.5404319

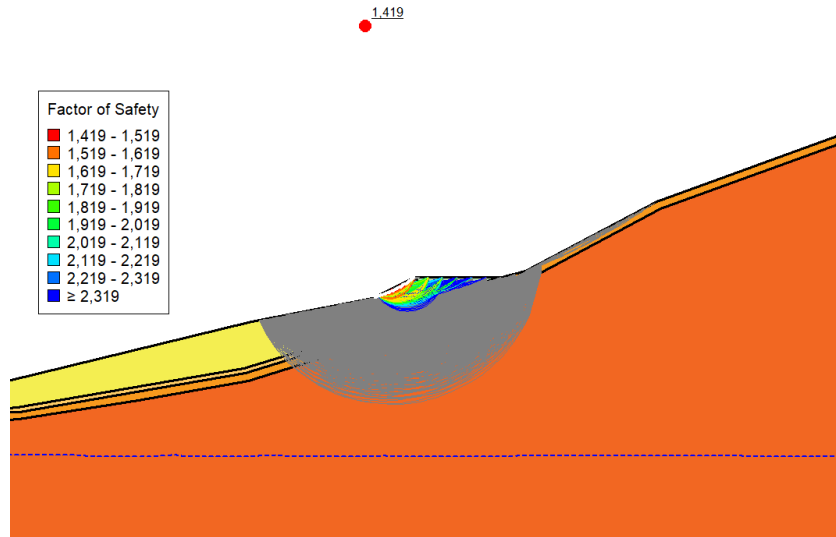
	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

3						
Slice 4	3'418.4105	222.48598	-49.035	7.6584326	0	6.2162548
Slice 5	3'418.8566	222.60312	-49.035	9.5856877	0	7.7748312
Slice 6	3'419.3027	222.72824	-49.035	11.335336	0	9.1940045
Slice 7	3'419.7488	222.86145	-49.035	12.879625	0	10.454635
Slice 8	3'420.1949	223.00287	-49.035	14.197375	0	11.541947
Slice 9	3'420.641	223.15264	-49.035	15.275318	0	12.446426
Slice 10	3'421.0871	223.31089	-49.035	16.108587	0	13.164175
Slice 11	3'421.5332	223.47778	-49.035	16.700404	0	13.696753
Slice 12	3'421.9793	223.65349	-49.035	17.061098	0	14.050549
Slice 13	3'422.4255	223.83819	-49.035	17.206687	0	14.235822
Slice 14	3'422.8716	224.03208	-49.035	17.157237	0	14.26556
Slice 15	3'423.3177	224.23537	-49.035	16.935151	0	14.154269
Slice 16	3'423.7638	224.4483	-49.035	16.563487	0	13.916837
Slice 17	3'424.2099	224.6711	-49.035	16.064361	0	13.567526

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 18	3'424.656	224.90406	-49.035	15.457465	0	13.119144
Slice 19	3'425.1021	225.14746	-49.035	14.758807	0	12.582413
Slice 20	3'425.5482	225.40162	-49.035	13.979805	0	11.965498
Slice 21	3'425.9943	225.66689	-49.035	13.126888	0	11.273688
Slice 22	3'426.4405	225.94364	-49.035	12.20163	0	10.509181
Slice 23	3'426.8866	226.23229	-49.035	11.201272	0	9.6709329
Slice 24	3'427.3327	226.53329	-49.035	10.119316	0	8.7545277
Slice 25	3'427.7788	226.84712	-49.035	8.9457841	0	7.7520371
Slice 26	3'428.2249	227.17435	-49.035	7.6668773	0	6.6518443
Slice 27	3'428.671	227.51556	-49.035	6.2640723	0	5.4384147
Slice 28	3'429.1171	227.87142	-49.035	4.7130354	0	4.0920086
Slice 29	3'429.5632	228.24268	-49.035	2.9828509	0	2.5883334
Slice 30	3'430.0093	228.63016	-49.035	1.035778	0	0.89812679

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI



SEZIONE B4 DRENATA – SCORRIMENTO LUNGO BASE - STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

02_STATICA_BASE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slip Surface Option: **Fully-Specified**

Critical slip surfaces saved: **1**

Resisting Side Maximum Convex Angle: **1 °**

Driving Side Maximum Convex Angle: **5 °**

Optimize Critical Slip Surface Location: **No**

Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **0.1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

B2_D

Model: **Mohr-Coulomb**

Unit Weight: **21 kN/m³**

Cohesion': **20 kPa**

Phi': **19 °**

Phi-B: **0 °**

PREVAM_D

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **8 kPa**

Phi': **16 °**

Phi-B: **0 °**

UNGHIA_D

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

Phi': **33 °**

Phi-B: **0 °**

ABBANCAMENTO_D

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 8 kPa
 Phi': 19 °
 Phi-B: 0 °

B1_D

Model: Mohr-Coulomb
 Unit Weight: 20 kN/m³
 Cohesion': 12 kPa
 Phi': 17 °
 Phi-B: 0 °

A_D

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 8 kPa
 Phi': 20 °
 Phi-B: 0 °

SLIP SURFACE LIMITS

Left Coordinate: (3'250.4633; 109.43219) m
 Right Coordinate: (3'633.7128; 298) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	3'416.6978	222.06078
	3'424.6008	222.52308
	3'442.8926	223.59312
	3'445.8633	223.76689
	3'448.2605	224.38837

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	3'475.091	231.34648
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POINTS

	X (m)	Y (m)
Point 1	3'475.091	231.34648
Point 2	3'435.3024	231.36306
Point 3	3'442.8926	223.59312
Point 4	3'445.8633	223.76689
Point 5	3'358.4296	187.92216
Point 6	3'391.6967	198.12388
Point 7	3'403.8915	204.39958
Point 8	3'426.705	217.70328
Point 9	3'445.7675	222.99378
Point 10	3'448.2605	224.38837
Point 11	3'425.5145	219.55333
Point 12	3'413.3094	211.69929
Point 13	3'390.4432	199.93182
Point 14	3'357.5843	190.03136
Point 15	3'254.9747	172.22872
Point 16	3'250.5253	172.17921
Point 17	3'250.5233	170.1245
Point 18	3'255.9231	170.18595
Point 19	3'309.1161	179.38968

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 20	3'424.6008	222.52308
Point 21	3'416.2644	222.03542
Point 22	3'361.3684	211.14292
Point 23	3'250.5371	184.14799
Point 24	3'633.7087	293.8808
Point 25	3'547.089	262.27885
Point 26	3'487.4376	230.72583
Point 27	3'428.7614	214.50775
Point 28	3'406.0567	201.27678
Point 29	3'393.8619	195.00108
Point 30	3'359.8433	184.39489
Point 31	3'309.833	175.65792
Point 32	3'255.5578	166.8982
Point 33	3'250.5199	166.74436
Point 34	3'250.4633	109.43219
Point 35	3'633.5261	109.0537
Point 36	3'633.7128	298
Point 37	3'545.3122	265.63788
Point 38	3'485.6585	234.08361
Point 39	3'416.6978	222.06078

REGIONS

	Material	Points	Area
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

			(m²)
Regio n 1	Abbancamento_ d	1;2;3;4	163.23
Regio n 2	A_d	5;6;7;8;9;10;4;11;12;13;14;15;16;17;18;19	423.2
Regio n 3	Prevam_d	13;12;11;4;3;20;21;22;23;16;15;14	2'787.7
Regio n 4	B2_d	24;25;26;27;28;29;30;31;32;33;34;35	42'707
Regio n 5	B1_d	24;36;37;38;10;9;8;7;6;5;19;18;17;33;32;31;30;29;28;27;26;25	1'528.8
Regio n 6	Unghia_d	2;39;20;3	107.58

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 4.125
 Volume: 270.815 m³
 Weight: 4'711.4365 kN
 Resisting Moment: 26'104.532 kN-m
 Activating Moment: 6'328.7699 kN-m
 Resisting Force: 2'601.4425 kN
 Activating Force: 630.71389 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (3'416.6978; 222.06078) m
 Entry: (3'475.091; 231.34648) m
 Radius: 23.580146 m
 Center: (3'444.7869; 233.66791) m

SLIP SLICES


	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 1	3'417.6857	222.11857	-49.035	7.7931717	5.0609449	0
Slice 2	3'419.6614	222.23414	-49.035	23.431167	15.216378	0
Slice 3	3'421.6372	222.34972	-49.035	39.144226	25.420557	0
Slice 4	3'423.6129	222.46529	-49.035	54.926801	35.669881	0
Slice 5	3'425.671	222.58568	-49.035	71.431859	46.388391	0
Slice 6	3'427.8113	222.71089	-49.035	88.653246	57.572091	0
Slice 7	3'429.9516	222.83609	-49.035	105.91559	68.782387	0
Slice 8	3'432.0919	222.9613	-49.035	123.19885	80.00627	0
Slice 9	3'434.2322	223.0865	-49.035	140.48081	91.229303	0
Slice 10	3'436.2512	223.20461	-49.035	147.19615	95.5903	0
Slice 11	3'438.1487	223.31561	-49.035	143.30425	93.062868	0
Slice 12	3'440.0463	223.42661	-49.035	139.33284	90.483804	0
Slice 13	3'441.9438	223.53762	-49.035	135.28375	87.854296	0
Slice 14	3'443.6353	223.63656	-49.035	131.62728	45.322908	8
Slice	3'445.1206	223.72345	-49.035	129.97909	44.755389	8

	Committente		Oggetto del servizio	
	GE.R.IN		DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI	

15						
Slice 16	3'447.0619	224.07772	-49.035	117.58535	40.487882	8
Slice 17	3'449.2187	224.63705	-49.035	108.38175	37.318831	8
Slice 18	3'451.1352	225.13405	-49.035	100.28399	34.530547	8
Slice 19	3'453.0517	225.63104	-49.035	92.245089	31.762531	8
Slice 20	3'454.9681	226.12804	-49.035	84.250243	29.009685	8
Slice 21	3'456.8846	226.62503	-49.035	76.284391	26.266822	8
Slice 22	3'458.8011	227.12202	-49.035	68.332517	23.528772	8
Slice 23	3'460.7175	227.61902	-49.035	60.379952	20.790485	8
Slice 24	3'462.634	228.11601	-49.035	52.41268	18.047133	8
Slice 25	3'464.5504	228.61301	-49.035	44.417632	15.294217	8
Slice 26	3'466.4669	229.11	-49.035	36.382977	12.527664	8
Slice 27	3'468.3834	229.607	-49.035	28.298401	9.7439209	8
Slice 28	3'470.2998	230.10399	-49.035	20.155367	6.9400495	8
Slice 29	3'472.2163	230.60099	-49.035	11.947351	4.113803	8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 30	3'474.1328	231.09798	-49.035	3.6700474	1.2636987	8
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SEZIONE B4 DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Fully-Specified](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Number of Slices: 30
 F of S Tolerance: 0.001
 Minimum Slip Surface Depth: 1 m
 Search Method: Root Finder
 Tolerable difference between starting and converged F of S: 3
 Maximum iterations to calculate converged lambda: 20
 Max Absolute Lambda: 2

MATERIALS

UNGHIA_K

Model: Mohr-Coulomb
 Unit Weight: 18 kN/m³
 Cohesion': 0 kPa
 Phi': 40 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

PREVAM_K

Model: Mohr-Coulomb
 Unit Weight: 18 kN/m³
 Cohesion': 10 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B1_K

Model: Mohr-Coulomb
 Unit Weight: 20 kN/m³
 Cohesion': 15 kPa
 Phi': 22 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B2_K

Model: Mohr-Coulomb
 Unit Weight: 21 kN/m³
 Cohesion': 25 kPa

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A_K

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 10 kPa
 Phi': 25 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 10 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE LIMITS

Left Coordinate: (3'250.4633; 109.43219) m
 Right Coordinate: (3'633.7128; 298) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	3'416.6978	222.06078
	3'424.6008	222.52308
	3'442.8926	223.59312
	3'445.8633	223.76689

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	3'448.2605	224.38837
	3'475.091	231.34648


SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082

Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
Point 1	3'475.091	231.34648
Point 2	3'435.3024	231.36306
Point 3	3'442.8926	223.59312
Point 4	3'445.8633	223.76689
Point 5	3'358.4296	187.92216
Point 6	3'391.6967	198.12388
Point 7	3'403.8915	204.39958
Point 8	3'426.705	217.70328
Point 9	3'445.7675	222.99378
Point 10	3'448.2605	224.38837
Point 11	3'425.5145	219.55333
Point 12	3'413.3094	211.69929
Point 13	3'390.4432	199.93182
Point 14	3'357.5843	190.03136
Point 15	3'254.9747	172.22872

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 16	3'250.5253	172.17921
Point 17	3'250.5233	170.1245
Point 18	3'255.9231	170.18595
Point 19	3'309.1161	179.38968
Point 20	3'424.6008	222.52308
Point 21	3'416.2644	222.03542
Point 22	3'361.3684	211.14292
Point 23	3'250.5371	184.14799
Point 24	3'633.7087	293.8808
Point 25	3'547.089	262.27885
Point 26	3'487.4376	230.72583
Point 27	3'428.7614	214.50775
Point 28	3'406.0567	201.27678
Point 29	3'393.8619	195.00108
Point 30	3'359.8433	184.39489
Point 31	3'309.833	175.65792
Point 32	3'255.5578	166.8982
Point 33	3'250.5199	166.74436
Point 34	3'250.4633	109.43219
Point 35	3'633.5261	109.0537
Point 36	3'633.7128	298
Point 37	3'545.3122	265.63788
Point 38	3'485.6585	234.08361

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 39	3'416.6978	222.06078
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REGIONS

	Material	Points	Area (m²)
Regio n 1	Abbancamento_ k	1;2;3;4	163.23
Regio n 2	A_k	5;6;7;8;9;10;4;11;12;13;14;15;16;17;18;19	423.2
Regio n 3	Prevam_k	13;12;11;4;3;20;21;22;23;16;15;14	2'787.7
Regio n 4	B2_k	24;25;26;27;28;29;30;31;32;33;34;35	42'707
Regio n 5	B1_k	24;36;37;38;10;9;8;7;6;5;19;18;17;33;32;31;30;29;28;27;26;25	1'528.8
Regio n 6	Unghia_k	2;39;20;3	107.58

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 3.282
 Volume: 270.815 m³
 Weight: 4'711.4365 kN
 Resisting Moment: 33'628.352 kN-m
 Activating Moment: 10'246.879 kN-m
 Resisting Force: 3'351.353 kN
 Activating Force: 1'021.2303 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (3'416.6978; 222.06078) m
 Entry: (3'475.091; 231.34648) m
 Radius: 23.580146 m
 Center: (3'444.7869; 233.66791) m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'417.6857	222.11857	-49.035	8.0915612	0	6.5391528
Slice 2	3'419.6614	222.23414	-49.035	24.41494	0	19.661078
Slice 3	3'421.6372	222.34972	-49.035	40.94241	0	32.846395
Slice 4	3'423.6129	222.46529	-49.035	57.659224	0	46.090424
Slice 5	3'425.671	222.58568	-49.035	75.250205	0	59.941086
Slice 6	3'427.8113	222.71089	-49.035	93.698925	0	74.393186
Slice 7	3'429.9516	222.83609	-49.035	112.26019	0	88.879881
Slice 8	3'432.0919	222.9613	-49.035	130.87965	0	103.38425
Slice 9	3'434.2322	223.0865	-49.035	149.49688	0	117.88752
Slice 10	3'436.2512	223.20461	-49.035	156.86904	0	123.52359
Slice 11	3'438.1487	223.31561	-49.035	152.88546	0	120.25814
Slice 12	3'440.0463	223.42661	-49.035	148.68667	0	116.92553
Slice	3'441.9438	223.53762	-49.035	144.27745	0	113.52729

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

13						
Slice 14	3'443.6353	223.63656	-49.035	136.95094	0	68.604895
Slice 15	3'445.1206	223.72345	-49.035	134.97506	0	67.870543
Slice 16	3'447.0619	224.07772	-49.035	115.53889	0	62.350656
Slice 17	3'449.2187	224.63705	-49.035	106.32815	0	58.252783
Slice 18	3'451.1352	225.13405	-49.035	98.349236	0	54.647383
Slice 19	3'453.0517	225.63104	-49.035	90.51976	0	51.068297
Slice 20	3'454.9681	226.12804	-49.035	82.800857	0	47.50894
Slice 21	3'456.8846	226.62503	-49.035	75.153156	0	43.96261
Slice 22	3'458.8011	227.12202	-49.035	67.537394	0	40.422624
Slice 23	3'460.7175	227.61902	-49.035	59.915016	0	36.882452
Slice 24	3'462.634	228.11601	-49.035	52.248791	0	33.335848
Slice 25	3'464.5504	228.61301	-49.035	44.503429	0	29.776988
Slice 26	3'466.4669	229.11	-49.035	36.646227	0	26.200594
Slice 27	3'468.3834	229.607	-49.035	28.647743	0	22.602059

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 28	3'470.2998	230.10399	-49.035	20.482514	0	18.977565
Slice 29	3'472.2163	230.60099	-49.035	12.129811	0	15.324186
Slice 30	3'474.1328	231.09798	-49.035	3.574431	0	11.639984

SEZIONE B4 NON DRENATA – SUPERFICI CIRCOLARI – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Driving Side Maximum Convex Angle: 5 °

Optimize Critical Slip Surface Location: No

Tension Crack

Tension Crack Option: (none)

F of S Distribution

F of S Calculation Option: Constant

Advanced

Number of Slices: 30

F of S Tolerance: 0.001

Minimum Slip Surface Depth: 1 m

Search Method: Root Finder

Tolerable difference between starting and converged F of S: 3

Maximum iterations to calculate converged lambda: 20

Max Absolute Lambda: 2

MATERIALS

UNGHIA_K

Model: Mohr-Coulomb

Unit Weight: 18 kN/m³

Cohesion': 0 kPa

Phi': 40 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

PREVAM_K

Model: Mohr-Coulomb

Unit Weight: 18 kN/m³

Cohesion': 75 kPa

Phi': 17 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

B1_K

Model: Mohr-Coulomb

Unit Weight: 20 kN/m³

Cohesion': 50 kPa

Phi': 20 °

Phi-B: 0 °

Cohesion R: 0 kPa

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi R: 0 °

B2_K

Model: **Mohr-Coulomb**
Unit Weight: 21 kN/m³
Cohesion': 90 kPa
Phi': 20 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

A_K

Model: **Mohr-Coulomb**
Unit Weight: 19 kN/m³
Cohesion': 20 kPa
Phi': 10 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

ABBANCAMETO_K

Model: **Mohr-Coulomb**
Unit Weight: 17 kN/m³
Cohesion': 150 kPa
Phi': 10 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: **Range**
Left-Zone Left Coordinate: (3'416.0859; 222) m
Left-Zone Right Coordinate: (3'423; 225.21187) m
Left-Zone Increment: 5
Right Projection: **Range**
Right-Zone Left Coordinate: (3'425; 226.21187) m
Right-Zone Right Coordinate: (3'475; 231.34652) m
Right-Zone Increment: 10
Radius Increments: 10

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SLIP SURFACE LIMITS

Left Coordinate: (3'250.4633; 109.43219) m

Right Coordinate: (3'633.7128; 298) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082

Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
Point 1	3'475.091	231.34648
Point 2	3'435.3024	231.36306
Point 3	3'442.8926	223.59312
Point 4	3'445.8633	223.76689
Point 5	3'358.4296	187.92216
Point 6	3'391.6967	198.12388
Point 7	3'403.8915	204.39958
Point 8	3'426.705	217.70328
Point 9	3'445.7675	222.99378
Point 10	3'448.2605	224.38837
Point 11	3'425.5145	219.55333
Point 12	3'413.3094	211.69929
Point 13	3'390.4432	199.93182
Point 14	3'357.5843	190.03136
Point 15	3'254.9747	172.22872

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 16	3'250.5253	172.17921
Point 17	3'250.5233	170.1245
Point 18	3'255.9231	170.18595
Point 19	3'309.1161	179.38968
Point 20	3'424.6008	222.52308
Point 21	3'416.2644	222.03542
Point 22	3'361.3684	211.14292
Point 23	3'250.5371	184.14799
Point 24	3'633.7087	293.8808
Point 25	3'547.089	262.27885
Point 26	3'487.4376	230.72583
Point 27	3'428.7614	214.50775
Point 28	3'406.0567	201.27678
Point 29	3'393.8619	195.00108
Point 30	3'359.8433	184.39489
Point 31	3'309.833	175.65792
Point 32	3'255.5578	166.8982
Point 33	3'250.5199	166.74436
Point 34	3'250.4633	109.43219
Point 35	3'633.5261	109.0537
Point 36	3'633.7128	298
Point 37	3'545.3122	265.63788
Point 38	3'485.6585	234.08361

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 39	3'416.6978	222.06078
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REGIONS

	Material	Points	Area (m²)
Regio n 1	Abbancameto_ k	1;2;3;4	163.23
Regio n 2	A_k	5;6;7;8;9;10;4;11;12;13;14;15;16;17;18;19	423.2
Regio n 3	Prevam_k	13;12;11;4;3;20;21;22;23;16;15;14	2'787.7
Regio n 4	B2_k	24;25;26;27;28;29;30;31;32;33;34;35	42'707
Regio n 5	B1_k	24;36;37;38;10;9;8;7;6;5;19;18;17;33;32;31;30;29;28;27;26;25	1'528.8
Regio n 6	Unghia_k	2;39;20;3	107.58

CURRENT SLIP SURFACE

Slip Surface: 14
 F of S: 1.445
 Volume: 9.2792904 m³
 Weight: 167.02723 kN
 Resisting Moment: 3'365.571 kN-m
 Activating Moment: 2'328.9295 kN-m
 Resisting Force: 113.74687 kN
 Activating Force: 78.727217 kN
 F of S Rank (Analysis): 1 of 726 slip surfaces
 F of S Rank (Query): 1 of 726 slip surfaces
 Exit: (3'416.8485; 222.13615) m
 Entry: (3'429.5809; 228.50232) m
 Radius: 26.460409 m
 Center: (3'411.8174; 248.11386) m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SLIP SLICES

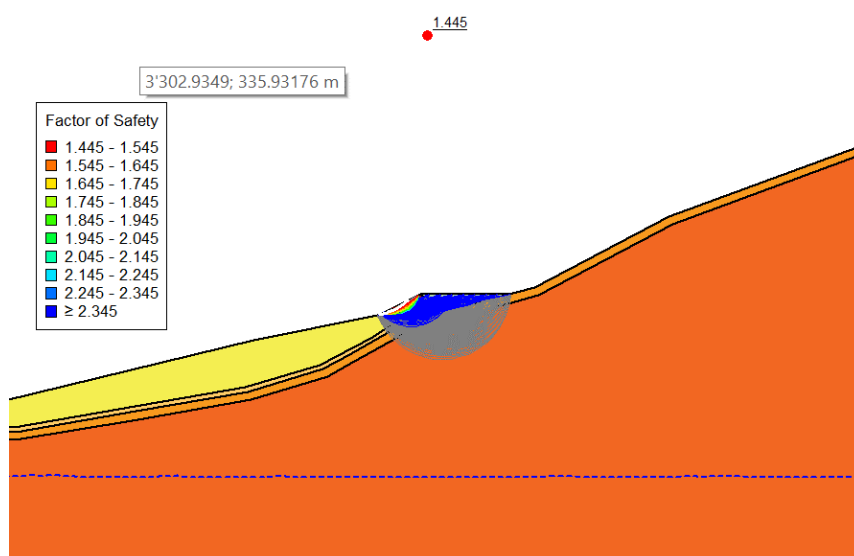
	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'417.0608	222.17905	-49.035	1.0827221	0	0.88380818
Slice 2	3'417.4852	222.26849	-49.035	3.2303727	0	2.6312289
Slice 3	3'417.9096	222.36524	-49.035	5.3038848	0	4.311489
Slice 4	3'418.334	222.46937	-49.035	7.2717133	0	5.9026855
Slice 5	3'418.7584	222.58098	-49.035	9.1014881	0	7.3825239
Slice 6	3'419.1828	222.70017	-49.035	10.762645	0	8.7300001
Slice 7	3'419.6072	222.82704	-49.035	12.228879	0	9.9269699
Slice 8	3'420.0316	222.96171	-49.035	13.480113	0	10.959427
Slice 9	3'420.456	223.10431	-49.035	14.503769	0	11.81835
Slice 10	3'420.8805	223.25498	-49.035	15.295229	0	12.500044
Slice 11	3'421.3049	223.41385	-49.035	15.857538	0	13.005983
Slice 12	3'421.7293	223.5811	-49.035	16.200482	0	13.34222
Slice	3'422.1537	223.75689	-49.035	16.33924	0	13.518479

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

13						
Slice 14	3'422.5781	223.94141	-49.035	16.292831	0	13.547069
Slice 15	3'423.0025	224.13486	-49.035	16.08249	0	13.441743
Slice 16	3'423.4269	224.33746	-49.035	15.730084	0	13.216615
Slice 17	3'423.8513	224.54944	-49.035	15.256584	0	12.885209
Slice 18	3'424.2758	224.77107	-49.035	14.680667	0	12.459673
Slice 19	3'424.7002	225.00262	-49.035	14.017515	0	11.950175
Slice 20	3'425.1246	225.24438	-49.035	13.277961	0	11.36446
Slice 21	3'425.549	225.49669	-49.035	12.468106	0	10.707546
Slice 22	3'425.9734	225.75991	-49.035	11.589444	0	9.9815216
Slice 23	3'426.3978	226.03443	-49.035	10.639364	0	9.1853967
Slice 24	3'426.8222	226.32067	-49.035	9.6117043	0	8.3149845
Slice 25	3'427.2466	226.6191	-49.035	8.4970044	0	7.3627668
Slice 26	3'427.671	226.93023	-49.035	7.282175	0	6.317727
Slice 27	3'428.0955	227.25465	-49.035	5.9496469	0	5.1651341

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 28	3'428.5199	227.59297	-49.035	4.4763436	0	3.8862721
Slice 29	3'428.9443	227.94589	-49.035	2.8329527	0	2.4581112
Slice 30	3'429.3687	228.31421	-49.035	0.98369962	0	0.85291666



SEZIONE B4 NON DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: **Meters**
Time(t) Units: **Seconds**
Force(F) Units: **Kilonewtons**
Pressure(p) Units: **kPa**
Strength Units: **kPa**
Unit Weight of Water: **9.807 kN/m³**
View: **2D**
Element Thickness: **1**

ANALYSIS SETTINGS

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)

Parent: [Insitu](#)

Method: [Morgenstern-Price](#)

Settings

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Fully-Specified](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 18 kN/m³
 Cohesion': 75 kPa
 Phi': 17 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B1_K

Model: Mohr-Coulomb
 Unit Weight: 20 kN/m³
 Cohesion': 50 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B2_K

Model: Mohr-Coulomb
 Unit Weight: 21 kN/m³
 Cohesion': 90 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A_K

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 20 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMETO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 150 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SLIP SURFACE LIMITS

Left Coordinate: (3'250.4633; 109.43219) m

Right Coordinate: (3'633.7128; 298) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	3'416.6978	222.06078
	3'424.6008	222.52308
	3'442.8926	223.59312
	3'445.8633	223.76689
	3'448.2605	224.38837
	3'475.091	231.34648

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.082

Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
Point 1	3'475.091	231.34648
Point 2	3'435.3024	231.36306
Point 3	3'442.8926	223.59312
Point 4	3'445.8633	223.76689
Point 5	3'358.4296	187.92216

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 6	3'391.6967	198.12388
Point 7	3'403.8915	204.39958
Point 8	3'426.705	217.70328
Point 9	3'445.7675	222.99378
Point 10	3'448.2605	224.38837
Point 11	3'425.5145	219.55333
Point 12	3'413.3094	211.69929
Point 13	3'390.4432	199.93182
Point 14	3'357.5843	190.03136
Point 15	3'254.9747	172.22872
Point 16	3'250.5253	172.17921
Point 17	3'250.5233	170.1245
Point 18	3'255.9231	170.18595
Point 19	3'309.1161	179.38968
Point 20	3'424.6008	222.52308
Point 21	3'416.2644	222.03542
Point 22	3'361.3684	211.14292
Point 23	3'250.5371	184.14799
Point 24	3'633.7087	293.8808
Point 25	3'547.089	262.27885
Point 26	3'487.4376	230.72583
Point 27	3'428.7614	214.50775
Point 28	3'406.0567	201.27678

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 29	3'393.8619	195.00108
Point 30	3'359.8433	184.39489
Point 31	3'309.833	175.65792
Point 32	3'255.5578	166.8982
Point 33	3'250.5199	166.74436
Point 34	3'250.4633	109.43219
Point 35	3'633.5261	109.0537
Point 36	3'633.7128	298
Point 37	3'545.3122	265.63788
Point 38	3'485.6585	234.08361
Point 39	3'416.6978	222.06078

REGIONS

	Material	Points	Area (m²)
Regio n 1	Abbanameto_ k	1;2;3;4	163.23
Regio n 2	A_k	5;6;7;8;9;10;4;11;12;13;14;15;16;17;18;19	423.2
Regio n 3	Prevam_k	13;12;11;4;3;20;21;22;23;16;15;14	2'787.7
Regio n 4	B2_k	24;25;26;27;28;29;30;31;32;33;34;35	42'707
Regio n 5	B1_k	24;36;37;38;10;9;8;7;6;5;19;18;17;33;32;31;30;29;28;27;26;25	1'528.8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Regio n 6	Unghia_k	2;39;20;3	107.58
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CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 7.117
 Volume: 270.815 m³
 Weight: 4'711.4365 kN
 Resisting Moment: 73'454.437 kN-m
 Activating Moment: 10'321.341 kN-m
 Resisting Force: 7'270.2715 kN
 Activating Force: 1'021.5232 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (3'416.6978; 222.06078) m
 Entry: (3'475.091; 231.34648) m
 Radius: 23.580146 m
 Center: (3'444.7869; 233.66791) m

SLIP SLICES


	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'417.6857	222.11857	-49.035	8.1198151	0	6.5694586
Slice 2	3'419.6614	222.23414	-49.035	24.364028	0	19.745029
Slice 3	3'421.6372	222.34972	-49.035	40.614745	0	32.973929
Slice 4	3'423.6129	222.46529	-49.035	56.871291	0	46.252305
Slice 5	3'425.671	222.58568	-49.035	73.810124	0	60.130136
Slice	3'427.8113	222.71089	-49.035	91.430586	0	74.603203

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

6						
Slice 7	3'429.9516	222.83609	-49.035	109.05409	0	89.105713
Slice 8	3'432.0919	222.9613	-49.035	126.67899	0	103.62348
Slice 9	3'434.2322	223.0865	-49.035	144.30357	0	118.14073
Slice 10	3'436.2512	223.20461	-49.035	151.07362	0	123.77151
Slice 11	3'438.1487	223.31561	-49.035	146.98608	0	120.48687
Slice 12	3'440.0463	223.42661	-49.035	142.89242	0	117.14602
Slice 13	3'441.9438	223.53762	-49.035	138.79287	0	113.7502
Slice 14	3'443.6353	223.63656	-49.035	134.91452	0	174.28131
Slice 15	3'445.1206	223.72345	-49.035	133.34032	0	174.01507
Slice 16	3'447.0619	224.07772	-49.035	123.79552	0	168.6975
Slice 17	3'449.2187	224.63705	-49.035	113.67871	0	167.39374
Slice 18	3'451.1352	225.13405	-49.035	104.66577	0	166.28029
Slice 19	3'453.0517	225.63104	-49.035	95.64473	0	165.19203
Slice 20	3'454.9681	226.12804	-49.035	86.628291	0	164.11359

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 21	3'456.8846	226.62503	-49.035	77.628672	0	163.0295
Slice 22	3'458.8011	227.12202	-49.035	68.657267	0	161.92418
Slice 23	3'460.7175	227.61902	-49.035	59.724343	0	160.78184
Slice 24	3'462.634	228.11601	-49.035	50.838777	0	159.58643
Slice 25	3'464.5504	228.61301	-49.035	42.007829	0	158.32165
Slice 26	3'466.4669	229.11	-49.035	33.236957	0	156.97109
Slice 27	3'468.3834	229.607	-49.035	24.52968	0	155.51843
Slice 28	3'470.2998	230.10399	-49.035	15.887488	0	153.94789
Slice 29	3'472.2163	230.60099	-49.035	7.3097988	0	152.24478
Slice 30	3'474.1328	231.09798	-49.035	-1.2060354	0	150.39633

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO COMUNE DI PIANORO (BO)

ALLEGATO 3 – VERIFICHE DI STABILITA' GLOBALE – SLD – CER 01.05.99

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE A1 DRENATA – SUPERFICI CIRCOLARI –PSEUDO- STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [0 kPa](#)
 Phi': [40 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [10 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B1_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [15 kPa](#)
 Phi': [22 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [25 kPa](#)
 Phi': [24 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 19 kN/m³
 Cohesion': 10 kPa
 Phi': 25 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 10 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range
 Left-Zone Left Coordinate: (2'554.9159; 218.32077) m
 Left-Zone Right Coordinate: (2'733.9103; 263) m
 Left-Zone Increment: 20
 Right Projection: Range
 Right-Zone Left Coordinate: (2'742; 266.45796) m
 Right-Zone Right Coordinate: (2'889; 308.3618) m
 Right-Zone Increment: 20
 Radius Increments: 10

SLIP SURFACE LIMITS

Left Coordinate: (2'503.8651; 214.1798) m
 Right Coordinate: (2'958.6264; 310) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03
 Vert Seismic Coef.: 0.015

POINTS

	X (m)	Y (m)
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 1	2'684.2087	228.35588
Point 2	2'724.2998	239.95541
Point 3	2'736.3441	239.95541
Point 4	2'758.0362	247.69553
Point 5	2'796.6632	262.95049
Point 6	2'805.7118	264.06507
Point 7	2'826.8057	275.29284
Point 8	2'855.6858	290.17432
Point 9	2'819.4267	290.1635
Point 10	2'797.1537	280.1635
Point 11	2'786.0419	280.1635
Point 12	2'763.2592	270.1635
Point 13	2'750.6689	270.1635
Point 14	2'729.6139	261.1635
Point 15	2'726.4983	260.1635
Point 16	2'710.2761	260.1635
Point 17	2'689.0716	250.1635
Point 18	2'679.0181	250.1635
Point 19	2'647.5301	240.1635
Point 20	2'634.0631	240.1635
Point 21	2'608.4867	230.1635
Point 22	2'597.2415	230.1635
Point 23	2'606.9978	222.00483

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 24	2'621.8409	222.60238
Point 25	2'643.8188	223.12299
Point 26	2'661.1175	223.17482
Point 27	2'662.0909	223.28793
Point 28	2'671.1205	224.38582
Point 29	2'674.4302	225.38974
Point 30	2'663.9335	220.72482
Point 31	2'586.099	221.1635
Point 32	2'568.3659	221.1635
Point 33	2'553.8651	218.09868
Point 34	2'503.8651	214.1798
Point 35	2'503.8651	197.44202
Point 36	2'574.8075	207.79982
Point 37	2'616.4235	214.74482
Point 38	2'639.6005	216.75382
Point 39	2'664.6205	218.82482
Point 40	2'668.2129	221.07761
Point 41	2'670.3005	222.38982
Point 42	2'503.8651	193.40893
Point 43	2'575.1505	205.82982
Point 44	2'616.6755	212.75882
Point 45	2'639.8215	214.76582
Point 46	2'840.6827	279.25382

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 47	2'853.5687	285.97282
Point 48	2'859.9	288.93882
Point 49	2'865.8159	290.26403
Point 50	2'878.1227	298.09482
Point 51	2'888.4944	304.69428
Point 52	2'899.1878	307.25806
Point 53	2'958.6264	307.61471
Point 54	2'958.6264	310
Point 55	2'908.6267	310.1635
Point 56	2'894.3544	309.94296
Point 57	2'885.432	307.30817
Point 58	2'868.7689	296.17482
Point 59	2'862.5325	292.00794
Point 60	2'858	291
Point 61	2'503.8651	189.67263
Point 62	2'576.9097	202.38882
Point 63	2'618.2507	209.28682
Point 64	2'650.0603	212.9008
Point 65	2'665.4008	216.44142
Point 66	2'687.5642	225.61062
Point 67	2'724.934	235.67774
Point 68	2'737.6727	236.39808
Point 69	2'753.7327	241.80982

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 70	2'797.8977	259.48582
Point 71	2'806.9644	261.17663
Point 72	2'503.8651	159.9977
Point 73	2'958.6264	159.9977
Point 74	2'579.2415	221.1635

REGIONS

	Material	Points	Area (m²)
Region 1	Abbanca mento_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23;24;25;26;27; 28;29	4'63 2.5
Region 2	Prevam_k	30;29;28;27;26;25;24;23;31;74;32;33;34;35;36;37;38	1'75 4.1
Region 3	A_k	39;40;41;29;30;38;37;36;35;42;43;44;45	408. 51
Region 4	B1_k	46;47;48;49;50;51;52;53;54;55;56;57;58;59;60;8;7;6;5;4;3;2;1;29;41;40;39 ;45;44;43;42;61;62;63;64;65;66;67;68;69;70;71	1'63 7.7
Region 5	B2_k	53;52;51;50;49;48;47;46;71;70;69;68;67;66;65;64;63;62;61;72;73	38'4 49
Region 6	Unghia_k	22;74;31;23	120. 22

CURRENT SLIP SURFACE

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slip Surface: 366
 F of S: 1.554
 Volume: 4'437.0609 m³
 Weight: 76'144.629 kN
 Resisting Moment: 13'301'953 kN-m
 Activating Moment: 8'556'330 kN-m
 Resisting Force: 31'638.941 kN
 Activating Force: 20'360.273 kN
 F of S Rank (Analysis): 1 of 4'851 slip surfaces
 F of S Rank (Query): 1 of 4'851 slip surfaces
 Exit: (2'564.0943; 220.26068) m
 Entry: (2'831.2287; 290.16702) m
 Radius: 401.04905 m
 Center: (2'602.3362; 619.48229) m

SLIP SLICES


	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'566.2301	220.06761	-49.035002	12.796926	0	14.559148
Slice 2	2'573.8037	219.48665	-49.035002	32.743399	0	21.693492
Slice 3	2'582.6703	218.93042	-49.035	76.382318	0	37.282152
Slice 4	2'591.6703	218.61384	-49.03498	168.67332	0	70.23357
Slice 5	2'602.1197	218.46297	-49.034986	221.40382	0	89.033857
Slice 6	2'607.7422	218.47037	-49.035	217.63529	0	87.666056
Slice 7	2'615.1638	218.69412	-49.035	260.31209	0	102.92494
Slice 8	2'627.952	219.299	-49.03498	336.52303	0	130.25691

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

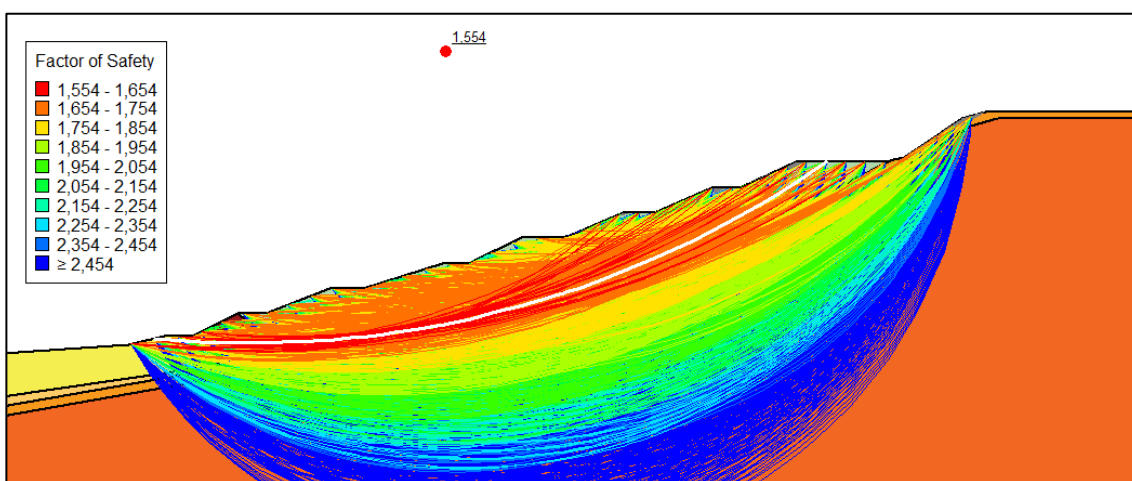
Slice 9	2'638.941	220.13728	-49.034993	360.19269	0	138.85818
Slice 10	2'645.6745	220.7861	-49.03499	345.89214	0	133.82939
Slice 11	2'650.927	221.40244	-49.034973	350.87383	0	135.71342
Slice 12	2'657.7207	222.29073	-49.034984	368.13727	0	142.06056
Slice 13	2'661.6042	222.83711	-49.035	377.04392	0	145.35541
Slice 14	2'666.6057	223.64287	-49.035	386.81819	0	149.00266
Slice 15	2'671.9729	224.52619	-49.035	396.80773	0	152.74848
Slice 16	2'673.2391	224.75082	-49.035	402.91944	0	195.17894
Slice 17	2'674.0416	224.89578	-49.035	402.83322	0	175.67805
Slice 18	2'676.7242	225.39941	-49.035	407.71861	0	177.71857
Slice 19	2'681.6134	226.35578	-49.035	401.62483	0	175.44522
Slice 20	2'686.6402	227.40195	-49.035001	381.68779	0	167.63339
Slice 21	2'694.3727	229.17478	-49.03501	388.63872	0	170.68622
Slice 22	2'704.975	231.82839	-49.035018	418.60923	0	183.09991
Slice	2'713.782	234.2462	-49.034995	412.82119	0	181.0884

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

23						
Slice 24	2'720.7939	236.34439	-49.034996	374.29723	0	165.80611
Slice 25	2'725.3991	237.78275	-49.035	347.5602	0	155.16474
Slice 26	2'728.0561	238.65142	-49.035	337.75911	0	151.2837
Slice 27	2'730.7818	239.56054	-49.035	334.96563	0	150.22614
Slice 28	2'736.6296	241.61861	-49.035002	336.92815	0	159.98315
Slice 29	2'745.9891	245.07736	-49.035005	339.84416	0	161.51624
Slice 30	2'756.9641	249.50389	-49.035006	298.72556	0	143.40475
Slice 31	2'767.0563	253.84548	-49.035003	256.1393	0	124.53359
Slice 32	2'774.6505	257.36295	-49.034996	251.87972	0	122.69074
Slice 33	2'782.2448	261.07583	-49.034987	245.39296	0	119.82734
Slice 34	2'791.5978	265.95624	-49.034997	198.51732	0	98.898767
Slice 35	2'800.8659	271.0457	-49.035017	149.44803	0	76.969722
Slice 36	2'808.2902	275.38264	-49.035005	135.42628	0	70.707276
Slice 37	2'815.7145	279.9373	-49.034983	118.4941	0	63.14568

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 38	2'825.3277	286.21857	-49.035003	52.810666	0	33.800381
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SEZIONE A1 DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
Time(t) Units: [Seconds](#)
Force(F) Units: [Kilonewtons](#)
Pressure(p) Units: [kPa](#)
Strength Units: [kPa](#)
Unit Weight of Water: [9.807 kN/m³](#)
View: [2D](#)
Element Thickness: [1](#)

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)
Parent: [Insitu](#)
Method: [Morgenstern-Price](#)
Settings
Side Function
Interslice force function option: [Half-Sine](#)
PWP Conditions Source: [Parent Analysis](#)
Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slip Surface

Direction of movement: **Right to Left**

Use Passive Mode: **No**

Slip Surface Option: **Fully-Specified**

Critical slip surfaces saved: **1**

Resisting Side Maximum Convex Angle: **1 °**

Driving Side Maximum Convex Angle: **5 °**

Optimize Critical Slip Surface Location: **No**

Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

Phi': **40 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

PREVAM_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **10 kPa**

Phi': **20 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

B1_K

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Model: **Mohr-Coulomb**
 Unit Weight: **20 kN/m³**
 Cohesion': **15 kPa**
 Phi': **22 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

B2_K

Model: **Mohr-Coulomb**
 Unit Weight: **21 kN/m³**
 Cohesion': **25 kPa**
 Phi': **24 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

A_K

Model: **Mohr-Coulomb**
 Unit Weight: **19 kN/m³**
 Cohesion': **10 kPa**
 Phi': **25 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

ABBANCAMENTO_K

Model: **Mohr-Coulomb**
 Unit Weight: **17 kN/m³**
 Cohesion': **10 kPa**
 Phi': **24 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

SLIP SURFACE LIMITS

Left Coordinate: **(2'503.8651; 214.1798) m**
 Right Coordinate: **(2'958.6264; 310) m**

FULLY SPECIFIED SLIP SURFACES

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	2'579.2415	221.1635
	2'586.099	221.1635
	2'606.9978	222.00483
	2'621.8409	222.60238
	2'643.8188	223.12299
	2'661.1175	223.17482
	2'662.0909	223.28793
	2'671.1205	224.38582
	2'674.4302	225.38974
	2'684.2087	228.35588
	2'724.2998	239.95541
	2'736.3441	239.95541
	2'758.0362	247.69553
	2'796.6632	262.95049
	2'805.7118	264.06507
	2'826.8057	275.29284
	2'855.6858	290.17432

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03
Vert Seismic Coef.: 0.015

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

POINTS

	X (m)	Y (m)
Point 1	2'684.2087	228.35588
Point 2	2'724.2998	239.95541
Point 3	2'736.3441	239.95541
Point 4	2'758.0362	247.69553
Point 5	2'796.6632	262.95049
Point 6	2'805.7118	264.06507
Point 7	2'826.8057	275.29284
Point 8	2'855.6858	290.17432
Point 9	2'819.4267	290.1635
Point 10	2'797.1537	280.1635
Point 11	2'786.0419	280.1635
Point 12	2'763.2592	270.1635
Point 13	2'750.6689	270.1635
Point 14	2'729.6139	261.1635
Point 15	2'726.4983	260.1635
Point 16	2'710.2761	260.1635
Point 17	2'689.0716	250.1635
Point 18	2'679.0181	250.1635
Point 19	2'647.5301	240.1635
Point 20	2'634.0631	240.1635
Point 21	2'608.4867	230.1635

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 22	2'597.2415	230.1635
Point 23	2'606.9978	222.00483
Point 24	2'621.8409	222.60238
Point 25	2'643.8188	223.12299
Point 26	2'661.1175	223.17482
Point 27	2'662.0909	223.28793
Point 28	2'671.1205	224.38582
Point 29	2'674.4302	225.38974
Point 30	2'663.9335	220.72482
Point 31	2'586.099	221.1635
Point 32	2'568.3659	221.1635
Point 33	2'553.8651	218.09868
Point 34	2'503.8651	214.1798
Point 35	2'503.8651	197.44202
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Point 37	2'616.4235	214.74482
Point 38	2'639.6005	216.75382
Point 39	2'664.6205	218.82482
Point 40	2'668.2129	221.07761
Point 41	2'670.3005	222.38982
Point 42	2'503.8651	193.40893
Point 43	2'575.1505	205.82982
Point 44	2'616.6755	212.75882

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 45	2'639.8215	214.76582
Point 46	2'840.6827	279.25382
Point 47	2'853.5687	285.97282
Point 48	2'859.9	288.93882
Point 49	2'865.8159	290.26403
Point 50	2'878.1227	298.09482
Point 51	2'888.4944	304.69428
Point 52	2'899.1878	307.25806
Point 53	2'958.6264	307.61471
Point 54	2'958.6264	310
Point 55	2'908.6267	310.1635
Point 56	2'894.3544	309.94296
Point 57	2'885.432	307.30817
Point 58	2'868.7689	296.17482
Point 59	2'862.5325	292.00794
Point 60	2'858	291
Point 61	2'503.8651	189.67263
Point 62	2'576.9097	202.38882
Point 63	2'618.2507	209.28682
Point 64	2'650.0603	212.9008
Point 65	2'665.4008	216.44142
Point 66	2'687.5642	225.61062
Point 67	2'724.934	235.67774

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 68	2'737.6727	236.39808
Point 69	2'753.7327	241.80982
Point 70	2'797.8977	259.48582
Point 71	2'806.9644	261.17663
Point 72	2'503.8651	159.9977
Point 73	2'958.6264	159.9977
Point 74	2'579.2415	221.1635

REGIONS

	Material	Points	Area (m²)
Region 1	Abbanca mento_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23;24;25;26;27; 28;29	4'63 2.5
Region 2	Prevam_k	30;29;28;27;26;25;24;23;31;74;32;33;34;35;36;37;38	1'75 4.1
Region 3	A_k	39;40;41;29;30;38;37;36;35;42;43;44;45	408. 51
Region 4	B1_k	46;47;48;49;50;51;52;53;54;55;56;57;58;59;60;8;7;6;5;4;3;2;1;29;41;40;39 ;45;44;43;42;61;62;63;64;65;66;67;68;69;70;71	1'63 7.7
Region 5	B2_k	53;52;51;50;49;48;47;46;71;70;69;68;67;66;65;64;63;62;61;72;73	38'4 49
Region 6	Unghia_k	22;74;31;23	120. 22

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 1.776
 Volume: 4'752.7109 m³
 Weight: 80'916.302 kN
 Resisting Moment: 2'987'631.8 kN-m
 Activating Moment: 1'682'528.4 kN-m
 Resisting Force: 37'640.697 kN
 Activating Force: 21'200.563 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (2'579.2415; 221.1635) m
 Entry: (2'855.6858; 290.17432) m
 Radius: 124.96334 m
 Center: (2'704.5429; 307.42703) m

SLIP SLICES


	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'582.6703	221.1635	-49.035	31.678271	0	26.188912
Slice 2	2'591.6703	221.38778	-49.034974	110.66722	0	91.360432
Slice 3	2'602.1197	221.80845	-49.034977	153.99795	0	126.63524
Slice 4	2'607.7422	222.0348	-49.035	146.19276	0	73.816253
Slice 5	2'615.1638	222.33357	-49.035	188.2988	0	92.172972
Slice 6	2'627.952	222.74714	-49.034973	274.5177	0	129.61903
Slice 7	2'638.941	223.00744	-49.034978	316.11976	0	147.59207

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 8	2'645.6745	223.12855	-49.034989	319.43469	0	148.73371
Slice 9	2'654.3238	223.15446	-49.034961	360.87709	0	166.62807
Slice 10	2'661.6042	223.23138	-49.035	379.67245	0	175.95572
Slice 11	2'666.6057	223.83687	-49.035	395.57697	0	182.99077
Slice 12	2'672.7753	224.88778	-49.035	373.33912	0	175.13711
Slice 13	2'676.7242	226.08557	-49.035	373.21909	0	175.14802
Slice 14	2'681.6134	227.56864	-49.035	360.20894	0	169.44848
Slice 15	2'686.6402	229.05937	-49.035006	338.23013	0	159.63234
Slice 16	2'694.3727	231.29663	-49.035025	340.7675	0	160.85588
Slice 17	2'704.975	234.36417	-49.035044	369.14874	0	173.56982
Slice 18	2'713.782	236.91231	-49.034979	366.8468	0	172.63691
Slice 19	2'720.7939	238.94104	-49.034991	333.81323	0	158.03979
Slice 20	2'725.3991	239.95541	-49.035	376.18096	0	173.36106
Slice 21	2'728.0561	239.95541	-49.035	384.7796	0	177.13328
Slice	2'732.979	239.95541	-49.035	419.23614	0	192.19092

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

22						
Slice 23	2'739.9253	241.23324	-49.035	366.04115	0	173.21398
Slice 24	2'747.0877	243.78891	-49.035	373.17791	0	176.41784
Slice 25	2'754.3526	246.38114	-49.035	356.71251	0	169.09151
Slice 26	2'760.6477	248.72689	-49.035	314.84998	0	150.74851
Slice 27	2'768.9549	252.00764	-49.035	303.56605	0	145.67766
Slice 28	2'780.3462	256.50643	-49.035	312.28444	0	149.47664
Slice 29	2'791.3526	260.85316	-49.035	286.02787	0	137.66144
Slice 30	2'796.9084	262.9807	-49.035	287.5012	0	136.4711
Slice 31	2'801.4327	263.53799	-49.035	309.57972	0	146.22718
Slice 32	2'812.5693	267.71512	-49.035032	275.42376	0	133.41258
Slice 33	2'823.1162	273.32901	-49.035017	242.80659	0	118.60855
Slice 34	2'831.619	277.77309	-49.035016	181.19022	0	90.915058
Slice 35	2'841.2458	282.73358	-49.035	109.16407	0	58.718554
Slice 36	2'850.8724	287.69407	-49.034984	35.127104	0	25.740021

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE A1 NON DRENATA – SUPERFICIE CIRCOLARE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Maximum iterations to calculate converged lambda: 20

Max Absolute Lambda: 2

MATERIALS

UNGHIAK

Model: Mohr-Coulomb

Unit Weight: 18 kN/m³

Cohesion': 0 kPa

Phi': 40 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

PREVAMK

Model: Mohr-Coulomb

Unit Weight: 18 kN/m³

Cohesion': 75 kPa

Phi': 17 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

B1K

Model: Mohr-Coulomb

Unit Weight: 20 kN/m³

Cohesion': 50 kPa

Phi': 20 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

B2K

Model: Mohr-Coulomb

Unit Weight: 21 kN/m³

Cohesion': 90 kPa

Phi': 20 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

AK

Model: [Mohr-Coulomb](#)
 Unit Weight: [19 kN/m³](#)
 Cohesion': [20 kPa](#)
 Phi': [10 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

010599K

Model: [Mohr-Coulomb](#)
 Unit Weight: [17 kN/m³](#)
 Cohesion': [150 kPa](#)
 Phi': [10 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

SLIP SURFACE ENTRY AND EXIT

Left Projection: [Range](#)
 Left-Zone Left Coordinate: [\(2'562; 219.81803\) m](#)
 Left-Zone Right Coordinate: [\(2'766; 271.36652\) m](#)
 Left-Zone Increment: [20](#)
 Right Projection: [Range](#)
 Right-Zone Left Coordinate: [\(2'781.0788; 277.98505\) m](#)
 Right-Zone Right Coordinate: [\(2'906; 310.12291\) m](#)
 Right-Zone Increment: [20](#)
 Radius Increments: [10](#)

SLIP SURFACE LIMITS

Left Coordinate: [\(2'503.8651; 214.1798\) m](#)
 Right Coordinate: [\(2'958.6264; 310\) m](#)

SEISMIC COEFFICIENTS

Horz Seismic Coef.: [0.03](#)
 Vert Seismic Coef.: [0.015](#)

POINTS

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	X (m)	Y (m)
Point 1	2'684.2087	228.35588
Point 2	2'724.2998	239.95541
Point 3	2'736.3441	239.95541
Point 4	2'758.0362	247.69553
Point 5	2'796.6632	262.95049
Point 6	2'805.7118	264.06507
Point 7	2'826.8057	275.29284
Point 8	2'855.6858	290.17432
Point 9	2'819.4267	290.1635
Point 10	2'797.1537	280.1635
Point 11	2'786.0419	280.1635
Point 12	2'763.2592	270.1635
Point 13	2'750.6689	270.1635
Point 14	2'729.6139	261.1635
Point 15	2'726.4983	260.1635
Point 16	2'710.2761	260.1635
Point 17	2'689.0716	250.1635
Point 18	2'679.0181	250.1635
Point 19	2'647.5301	240.1635
Point 20	2'634.0631	240.1635
Point 21	2'608.4867	230.1635
Point 22	2'597.2415	230.1635

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 23	2'606.9978	222.00483
Point 24	2'621.8409	222.60238
Point 25	2'643.8188	223.12299
Point 26	2'661.1175	223.17482
Point 27	2'662.0909	223.28793
Point 28	2'671.1205	224.38582
Point 29	2'674.4302	225.38974
Point 30	2'663.9335	220.72482
Point 31	2'586.099	221.1635
Point 32	2'568.3659	221.1635
Point 33	2'553.8651	218.09868
Point 34	2'503.8651	214.1798
Point 35	2'503.8651	197.44202
Point 36	2'574.8075	207.79982
Point 37	2'616.4235	214.74482
Point 38	2'639.6005	216.75382
Point 39	2'664.6205	218.82482
Point 40	2'668.2129	221.07761
Point 41	2'670.3005	222.38982
Point 42	2'503.8651	193.40893
Point 43	2'575.1505	205.82982
Point 44	2'616.6755	212.75882
Point 45	2'639.8215	214.76582

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 46	2'840.6827	279.25382
Point 47	2'853.5687	285.97282
Point 48	2'859.9	288.93882
Point 49	2'865.8159	290.26403
Point 50	2'878.1227	298.09482
Point 51	2'888.4944	304.69428
Point 52	2'899.1878	307.25806
Point 53	2'958.6264	307.61471
Point 54	2'958.6264	310
Point 55	2'908.6267	310.1635
Point 56	2'894.3544	309.94296
Point 57	2'885.432	307.30817
Point 58	2'868.7689	296.17482
Point 59	2'862.5325	292.00794
Point 60	2'858	291
Point 61	2'503.8651	189.67263
Point 62	2'576.9097	202.38882
Point 63	2'618.2507	209.28682
Point 64	2'650.0603	212.9008
Point 65	2'665.4008	216.44142
Point 66	2'687.5642	225.61062
Point 67	2'724.934	235.67774
Point 68	2'737.6727	236.39808

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 69	2'753.7327	241.80982
Point 70	2'797.8977	259.48582
Point 71	2'806.9644	261.17663
Point 72	2'503.8651	159.9977
Point 73	2'958.6264	159.9977
Point 74	2'579.2415	221.1635

REGIONS

	Mate rial	Points	Area (m ²)
Regi on 1	0105 99k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23;24;25;26;27;28;29	4'632 .5
Regi on 2	PREV AMk	30;29;28;27;26;25;24;23;31;74;32;33;34;35;36;37;38	1'754 .1
Regi on 3	Ak	39;40;41;29;30;38;37;36;35;42;43;44;45	408.5 1
Regi on 4	B1k	46;47;48;49;50;51;52;53;54;55;56;57;58;59;60;8;7;6;5;4;3;2;1;29;41;40;39;45; 44;43;42;61;62;63;64;65;66;67;68;69;70;71	1'637 .7
Regi on 5	B2k	53;52;51;50;49;48;47;46;71;70;69;68;67;66;65;64;63;62;61;72;73	38'44 9
Regi on 6	UNG HIAk	22;74;31;23	120.2 2

CURRENT SLIP SURFACE

Slip Surface: 225

F of S: 1.867

Volume: 13'293.17 m³

Weight: 256'735.04 kN

Resisting Moment: 39'047'492 kN-m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Activating Moment: 20'918'170 kN-m
 Resisting Force: 117'555.78 kN
 Activating Force: 62'976.431 kN
 F of S Rank (Analysis): 1 of 4'851 slip surfaces
 F of S Rank (Query): 1 of 4'851 slip surfaces
 Exit: (2'562; 219.81803) m
 Entry: (2'906; 310.12291) m
 Radius: 309.26086 m
 Center: (2'669.7552; 509.69919) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'565.1829	218.67432	-49.035004	51.714209	0	90.003086
Slice 2	2'573.8037	215.75556	-49.035006	124.32026	0	111.59985
Slice 3	2'582.6703	212.97421	-49.035	216.04117	0	138.88284
Slice 4	2'588.7032	211.26065	-49.034998	312.24738	0	167.54003
Slice 5	2'593.7182	209.94186	-49.035	371.10074	0	83.895792
Slice 6	2'596.6852	209.19508	-49.035	438.2032	0	204.88328
Slice 7	2'601.4075	208.11568	-49.035	468.32778	0	215.48474
Slice 8	2'606.2856	207.02221	-49.034999	500.49436	0	266.45968
Slice 9	2'607.7422	206.7205	-49.034997	508.44415	0	269.25102
Slice	2'612.5811	205.79783	-49.034998	565.22062	0	289.33663

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

10						
Slice 11	2'617.4631	204.89241	-49.03501	626.91676	0	311.19562
Slice 12	2'620.0458	204.46495	-49.035016	657.61726	0	322.08153
Slice 13	2'627.952	203.33874	-49.034993	745.79504	0	353.40313
Slice 14	2'636.9423	202.19764	-49.034985	819.00606	0	379.50382
Slice 15	2'641.8202	201.70912	-49.034988	830.63633	0	383.71532
Slice 16	2'645.6745	201.38291	-49.034984	838.10485	0	386.45666
Slice 17	2'648.7952	201.15204	-49.034978	850.37659	0	390.91326
Slice 18	2'655.5889	200.81254	-49.034962	896.13671	0	407.4775
Slice 19	2'661.6042	200.54615	-49.035003	934.55722	0	421.45795
Slice 20	2'663.0122	200.51323	-49.035014	942.77288	0	424.46423
Slice 21	2'664.277	200.48705	-49.035024	950.11059	0	427.1525
Slice 22	2'665.0107	200.47498	-49.03503	954.61428	0	428.80176
Slice 23	2'666.8068	200.45559	-49.035041	965.98733	0	432.96828
Slice 24	2'669.2567	200.4405	-49.035043	981.11958	0	438.52453

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 25	2'670.7105	200.44008	-49.035038	989.82095	0	441.7274
Slice 26	2'672.7753	200.45751	-49.035029	1'002.062	0	446.24195
Slice 27	2'676.7242	200.52538	-49.035009	1'022.955	0	453.99566
Slice 28	2'681.6134	200.67667	-49.034998	1'030.5511	0	457.08465
Slice 29	2'685.8865	200.8639	-49.034989	1'024.0443	0	455.09335
Slice 30	2'688.3179	200.99685	-49.034983	1'019.3933	0	453.62653
Slice 31	2'694.3727	201.46555	-49.034968	1'047.1122	0	464.1099
Slice 32	2'704.975	202.49669	-49.035009	1'098.7696	0	483.69632
Slice 33	2'717.6051	204.25256	-49.035016	1'085.9124	0	480.36659
Slice 34	2'725.7162	205.54459	-49.035002	1'046.1763	0	466.86474
Slice 35	2'728.0561	205.98753	-49.035003	1'039.4118	0	464.66108
Slice 36	2'732.979	206.9894	-49.035002	1'038.3152	0	464.76689
Slice 37	2'737.0084	207.84024	-49.035004	1'039.6244	0	465.64895
Slice 38	2'744.1708	209.59957	-49.035009	1'044.7005	0	468.20266
Slice	2'752.2008	211.63463	-49.035014	1'038.9116	0	466.88509

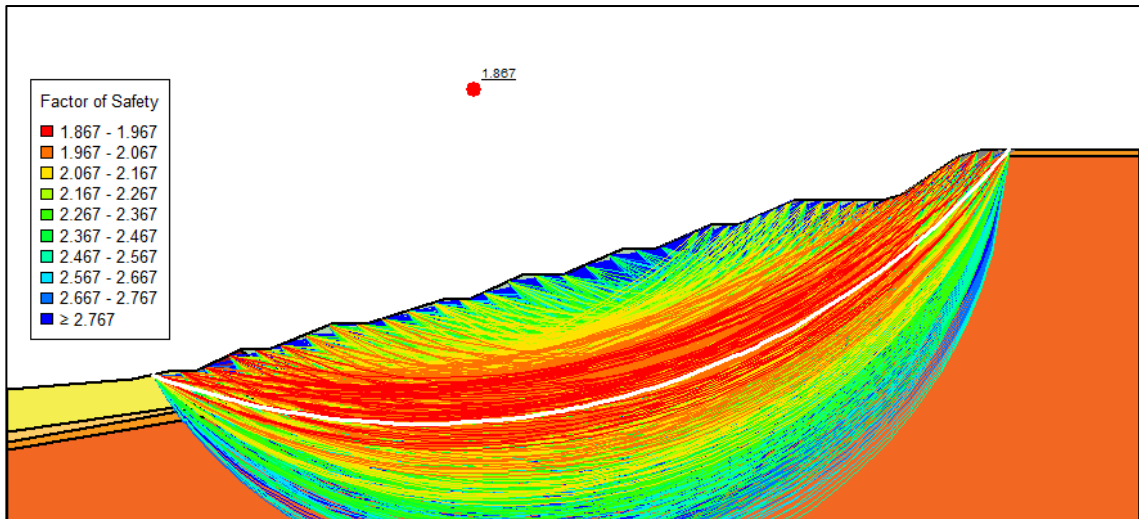
	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

39						
Slice 40	2'755.8845	212.68233	-49.035018	1'014.2529	0	458.27866
Slice 41	2'760.6477	214.10932	-49.035018	981.93101	0	446.96396
Slice 42	2'768.9549	216.84164	-49.034996	961.56506	0	440.25079
Slice 43	2'780.3462	220.95239	-49.034972	952.84423	0	437.93379
Slice 44	2'791.5978	225.51593	-49.034999	900.54428	0	419.58401
Slice 45	2'797.5257	228.06677	-49.035004	854.67324	0	403.16282
Slice 46	2'801.8047	230.08064	-49.035001	842.32217	0	398.86056
Slice 47	2'806.3381	232.23403	-49.035	829.92916	0	394.53675
Slice 48	2'813.1955	235.80564	-49.035009	814.90291	0	389.30682
Slice 49	2'823.1162	241.17612	-49.035	767.98936	0	372.44382
Slice 50	2'833.7442	247.62495	-49.035001	665.71923	0	335.20462
Slice 51	2'847.1257	256.47969	-49.034995	528.55186	0	285.09223
Slice 52	2'854.6273	261.78212	-49.034987	447.55954	0	255.44543
Slice 53	2'856.8429	263.45059	-49.035011	427.24389	0	248.0118

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 54	2'858.95	265.06441	-49.035039	410.043	0	241.71937
Slice 55	2'861.2162	266.83678	-49.035023	387.93579	0	233.6276
Slice 56	2'864.1742	269.2016	-49.035016	370.05999	0	227.09554
Slice 57	2'867.2924	271.75452	-49.035017	360.94355	0	223.77919
Slice 58	2'873.4458	277.07548	-49.035024	339.41228	0	215.93318
Slice 59	2'881.7773	284.61322	-49.035031	304.9211	0	203.34906
Slice 60	2'886.9632	289.56661	-49.035037	269.67022	0	190.46447
Slice 61	2'891.4244	294.08982	-49.035039	214.29481	0	170.21073
Slice 62	2'896.7711	299.71488	-49.035001	132.07354	0	140.15764
Slice 63	2'901.3802	304.80598	-49.035	43.903162	0	107.96481
Slice 64	2'904.7863	308.70364	-49.035005	-2.7498224	0	50.099916

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI



SEZIONE A1 NON DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
Time(t) Units: [Seconds](#)
Force(F) Units: [Kilonewtons](#)
Pressure(p) Units: [kPa](#)
Strength Units: [kPa](#)
Unit Weight of Water: [9.807 kN/m³](#)
View: [2D](#)
Element Thickness: [1](#)

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)
Parent: [Insitu](#)
Method: [Morgenstern-Price](#)
Settings
Side Function
Interslice force function option: [Half-Sine](#)
PWP Conditions Source: [Parent Analysis](#)
Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
Slip Surface
Direction of movement: [Right to Left](#)
Use Passive Mode: [No](#)
Slip Surface Option: [Fully-Specified](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Critical slip surfaces saved: **1**
 Resisting Side Maximum Convex Angle: **1 °**
 Driving Side Maximum Convex Angle: **5 °**
 Optimize Critical Slip Surface Location: **No**
 Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIAK

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

Phi': **40 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

PREVAMK

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **75 kPa**

Phi': **17 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

B1K

Model: **Mohr-Coulomb**

Unit Weight: **20 kN/m³**

Cohesion': **50 kPa**

Phi': **20 °**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

B2K

Model: Mohr-Coulomb
Unit Weight: 21 kN/m³
Cohesion': 90 kPa
Phi': 20 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

AK

Model: Mohr-Coulomb
Unit Weight: 19 kN/m³
Cohesion': 20 kPa
Phi': 10 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

010599K

Model: Mohr-Coulomb
Unit Weight: 17 kN/m³
Cohesion': 150 kPa
Phi': 10 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

SLIP SURFACE LIMITS

Left Coordinate: (2'503.8651; 214.1798) m
Right Coordinate: (2'958.6264; 310) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	X (m)	Y (m)
	2'579.2415	221.1635
	2'586.099	221.1635
	2'606.9978	222.00483
	2'621.8409	222.60238
	2'643.8188	223.12299
	2'661.1175	223.17482
	2'662.0909	223.28793
	2'671.1205	224.38582
	2'674.4302	225.38974
	2'684.2087	228.35588
	2'724.2998	239.95541
	2'736.3441	239.95541
	2'758.0362	247.69553
	2'796.6632	262.95049
	2'805.7118	264.06507
	2'826.8057	275.29284
	2'855.6858	290.17432

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03

Vert Seismic Coef.: 0.015


POINTS

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	X (m)	Y (m)
Point 1	2'684.2087	228.35588
Point 2	2'724.2998	239.95541
Point 3	2'736.3441	239.95541
Point 4	2'758.0362	247.69553
Point 5	2'796.6632	262.95049
Point 6	2'805.7118	264.06507
Point 7	2'826.8057	275.29284
Point 8	2'855.6858	290.17432
Point 9	2'819.4267	290.1635
Point 10	2'797.1537	280.1635
Point 11	2'786.0419	280.1635
Point 12	2'763.2592	270.1635
Point 13	2'750.6689	270.1635
Point 14	2'729.6139	261.1635
Point 15	2'726.4983	260.1635
Point 16	2'710.2761	260.1635
Point 17	2'689.0716	250.1635
Point 18	2'679.0181	250.1635
Point 19	2'647.5301	240.1635
Point 20	2'634.0631	240.1635
Point 21	2'608.4867	230.1635
Point 22	2'597.2415	230.1635

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 23	2'606.9978	222.00483
Point 24	2'621.8409	222.60238
Point 25	2'643.8188	223.12299
Point 26	2'661.1175	223.17482
Point 27	2'662.0909	223.28793
Point 28	2'671.1205	224.38582
Point 29	2'674.4302	225.38974
Point 30	2'663.9335	220.72482
Point 31	2'586.099	221.1635
Point 32	2'568.3659	221.1635
Point 33	2'553.8651	218.09868
Point 34	2'503.8651	214.1798
Point 35	2'503.8651	197.44202
Point 36	2'574.8075	207.79982
Point 37	2'616.4235	214.74482
Point 38	2'639.6005	216.75382
Point 39	2'664.6205	218.82482
Point 40	2'668.2129	221.07761
Point 41	2'670.3005	222.38982
Point 42	2'503.8651	193.40893
Point 43	2'575.1505	205.82982
Point 44	2'616.6755	212.75882
Point 45	2'639.8215	214.76582

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 46	2'840.6827	279.25382
Point 47	2'853.5687	285.97282
Point 48	2'859.9	288.93882
Point 49	2'865.8159	290.26403
Point 50	2'878.1227	298.09482
Point 51	2'888.4944	304.69428
Point 52	2'899.1878	307.25806
Point 53	2'958.6264	307.61471
Point 54	2'958.6264	310
Point 55	2'908.6267	310.1635
Point 56	2'894.3544	309.94296
Point 57	2'885.432	307.30817
Point 58	2'868.7689	296.17482
Point 59	2'862.5325	292.00794
Point 60	2'858	291
Point 61	2'503.8651	189.67263
Point 62	2'576.9097	202.38882
Point 63	2'618.2507	209.28682
Point 64	2'650.0603	212.9008
Point 65	2'665.4008	216.44142
Point 66	2'687.5642	225.61062
Point 67	2'724.934	235.67774
Point 68	2'737.6727	236.39808

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 69	2'753.7327	241.80982
Point 70	2'797.8977	259.48582
Point 71	2'806.9644	261.17663
Point 72	2'503.8651	159.9977
Point 73	2'958.6264	159.9977
Point 74	2'579.2415	221.1635

REGIONS

	Mate rial	Points	Area (m ²)
Regi on 1	0105 99k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23;24;25;26;27;28;29	4'632 .5
Regi on 2	PREV AMk	30;29;28;27;26;25;24;23;31;74;32;33;34;35;36;37;38	1'754 .1
Regi on 3	Ak	39;40;41;29;30;38;37;36;35;42;43;44;45	408.5 1
Regi on 4	B1k	46;47;48;49;50;51;52;53;54;55;56;57;58;59;60;8;7;6;5;4;3;2;1;29;41;40;39;45; 44;43;42;61;62;63;64;65;66;67;68;69;70;71	1'637 .7
Regi on 5	B2k	53;52;51;50;49;48;47;46;71;70;69;68;67;66;65;64;63;62;61;72;73	38'44 9
Regi on 6	UNG HIAk	22;74;31;23	120.2 2

CURRENT SLIP SURFACE

Slip Surface: 1

F of S: 2.490

Volume: 4'752.7109 m³

Weight: 80'916.302 kN

Resisting Moment: 4'233'850.8 kN-m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Activating Moment: 1'700'442.2 kN-m
 Resisting Force: 52'618.413 kN
 Activating Force: 21'133.669 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (2'579.2415; 221.1635) m
 Entry: (2'855.6858; 290.17432) m
 Radius: 124.96334 m
 Center: (2'704.5429; 307.42703) m

SLIP SLICES


	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'582.6703	221.1635	-49.035	31.535754	0	26.043154
Slice 2	2'591.6703	221.38778	-49.034974	109.87113	0	90.708201
Slice 3	2'602.1197	221.80845	-49.034977	151.25554	0	124.5938
Slice 4	2'607.7422	222.0348	-49.035	145.50722	0	175.0802
Slice 5	2'615.1638	222.33357	-49.035	187.89964	0	182.38032
Slice 6	2'627.952	222.74714	-49.034973	273.00784	0	197.04732
Slice 7	2'638.941	223.00744	-49.034978	313.07362	0	203.94684
Slice 8	2'645.6745	223.12855	-49.034989	315.73727	0	204.30361
Slice 9	2'654.3238	223.15446	-49.034961	354.83235	0	211.06934
Slice	2'661.6042	223.23138	-49.035	375.19786	0	215.03161

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

10						
Slice 11	2'666.6057	223.83687	-49.035	390.63318	0	217.76637
Slice 12	2'672.7753	224.88778	-49.035	373.30517	0	215.44976
Slice 13	2'676.7242	226.08557	-49.035	373.22082	0	215.46391
Slice 14	2'681.6134	227.56864	-49.035	360.15907	0	213.19016
Slice 15	2'686.6402	229.05937	-49.035006	337.85727	0	209.22898
Slice 16	2'694.3727	231.29663	-49.035025	340.65264	0	209.76033
Slice 17	2'704.975	234.36417	-49.035044	369.49502	0	214.9022
Slice 18	2'713.782	236.91231	-49.034979	367.52008	0	214.58392
Slice 19	2'720.7939	238.94104	-49.034991	334.70082	0	208.80167
Slice 20	2'725.3991	239.95541	-49.035	369.46381	0	213.7328
Slice 21	2'728.0561	239.95541	-49.035	377.7259	0	215.18371
Slice 22	2'732.979	239.95541	-49.035	410.5309	0	220.92626
Slice 23	2'739.9253	241.23324	-49.035	369.84016	0	215.31524
Slice 24	2'747.0877	243.78891	-49.035	377.59178	0	216.68343

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 25	2'754.3526	246.38114	-49.035	361.30474	0	213.7866
Slice 26	2'760.6477	248.72689	-49.035	319.38764	0	206.47791
Slice 27	2'768.9549	252.00764	-49.035	308.07284	0	204.44851
Slice 28	2'780.3462	256.50643	-49.035	317.41402	0	206.05153
Slice 29	2'791.3526	260.85316	-49.035	290.36927	0	201.21859
Slice 30	2'796.9084	262.9807	-49.035	290.91038	0	200.56207
Slice 31	2'801.4327	263.53799	-49.035	313.01381	0	204.44345
Slice 32	2'812.5693	267.71512	-49.035032	279.31468	0	199.48937
Slice 33	2'823.1162	273.32901	-49.035017	243.48861	0	193.08059
Slice 34	2'831.619	277.77309	-49.035016	176.15431	0	181.18046
Slice 35	2'841.2458	282.73358	-49.035	96.249624	0	167.19667
Slice 36	2'850.8724	287.69407	-49.034984	12.859932	0	152.71911

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE A2 DRENATA – SUPERFICI CIRCOLARI –PSEUDO- STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [0 kPa](#)
 Phi': [40 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [10 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B1_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [15 kPa](#)
 Phi': [22 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [25 kPa](#)
 Phi': [24 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 19 kN/m³
 Cohesion': 10 kPa
 Phi': 25 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 10 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range
 Left-Zone Left Coordinate: (3'388.4372; 220.23059) m
 Left-Zone Right Coordinate: (3'563.1074; 261.00002) m
 Left-Zone Increment: 30
 Right Projection: Range
 Right-Zone Left Coordinate: (3'573.3311; 266.4542) m
 Right-Zone Right Coordinate: (3'682; 297.14391) m
 Right-Zone Increment: 20
 Radius Increments: 20

SLIP SURFACE LIMITS


Left Coordinate: (3'286.6419; 215.93536) m
 Right Coordinate: (3'741.4032; 297) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03
 Vert Seismic Coef.: 0.015

POINTS

	X (m)	Y (m)
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 1	3'492.0756	231.19331
Point 2	3'504.6379	232.49738
Point 3	3'525.3431	237.97475
Point 4	3'551.7864	252.97475
Point 5	3'572.5103	264.22475
Point 6	3'582.6617	265.67593
Point 7	3'615.6013	275.97475
Point 8	3'627.4351	275.97475
Point 9	3'635.7102	279.52223
Point 10	3'607.0603	279.67693
Point 11	3'583.7531	269.67693
Point 12	3'579.372	269.67693
Point 13	3'560.6273	259.67693
Point 14	3'552.602	259.67693
Point 15	3'529.5602	249.67693
Point 16	3'515.45	249.67693
Point 17	3'494.2461	239.67693
Point 18	3'483.9042	239.67693
Point 19	3'458.1066	229.67693
Point 20	3'452.3584	229.67693
Point 21	3'462.224	221.67205
Point 22	3'466.6714	222.47475
Point 23	3'476.3183	226.95506

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 24	3'435.0351	220.84913
Point 25	3'443.033	220.97475
Point 26	3'460.6763	221.46118
Point 27	3'461.1308	221.47475
Point 28	3'446.4826	209.32266
Point 29	3'477.0077	223.32587
Point 30	3'494.3661	227.90325
Point 31	3'504.076	228.35863
Point 32	3'526.7423	233.60944
Point 33	3'532.554	236.84586
Point 34	3'540.9087	241.65913
Point 35	3'551.3043	247.31989
Point 36	3'573.9336	259.98258
Point 37	3'582.4924	260.69426
Point 38	3'590.3869	263.45452
Point 39	3'617.6671	271.63675
Point 40	3'627.5468	271.85892
Point 41	3'677.9248	293.06174
Point 42	3'741.4032	293.27558
Point 43	3'741.4032	297
Point 44	3'678.8645	297.15151
Point 45	3'666.4418	292.52525
Point 46	3'661.7158	290.67074

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 47	3'445.3833	212.43942
Point 48	3'376.9488	194.95058
Point 49	3'363.4632	192.26977
Point 50	3'286.6554	184.84873
Point 51	3'286.6419	182.24442
Point 52	3'364.7694	189.71237
Point 53	3'444.7438	214.39855
Point 54	3'424.7421	208.88691
Point 55	3'376.6739	196.99835
Point 56	3'363.4954	194.43155
Point 57	3'286.6419	187.43791
Point 58	3'411.824	220.48458
Point 59	3'394.488	220.35902
Point 60	3'379.6366	220.0438
Point 61	3'362.4358	219.93872
Point 62	3'348.8305	219.78957
Point 63	3'299.1781	216.69742
Point 64	3'286.6419	215.93536
Point 65	3'286.6419	147
Point 66	3'741.4032	147

REGIONS

	Material	Points	Area
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

			(m ²)
Regi on 1	Abbancame nto_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23	1'271. 9
Regi on 2	Unghia_k	20;24;25;26;27;21	115.9 9
Regi on 3	B1_k	28;29;30;31;32;33;34;35;36;37;38;39;40;41;42;43;44;45;46;9;8;7;6;5;4; 3;2;1;23;22;47;48;49;50;51;52	1'713. 1
Regi on 4	A_k	47;22;21;27;26;53;54;55;56;57;50;49;48	378.9 3
Regi on 5	Prevam_k	54;53;26;25;24;58;59;60;61;62;63;64;57;56;55	3'493
Regi on 6	B2_k	42;41;40;39;38;37;36;35;34;33;32;31;30;29;28;52;51;65;66	40'72 1

CURRENT SLIP SURFACE

Slip Surface: 12'943
 F of S: 1.469
 Volume: 269.41127 m³
 Weight: 4'865.6779 kN
 Resisting Moment: 181'463.61 kN-m
 Activating Moment: 123'539.15 kN-m
 Resisting Force: 2'479.0876 kN
 Activating Force: 1'687.8751 kN
 F of S Rank (Analysis): 1 of 13'671 slip surfaces
 F of S Rank (Query): 1 of 13'671 slip surfaces
 Exit: (3'557.3279; 259.67693) m
 Entry: (3'610.7216; 279.65716) m
 Radius: 67.384649 m
 Center: (3'562.6254; 326.85302) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

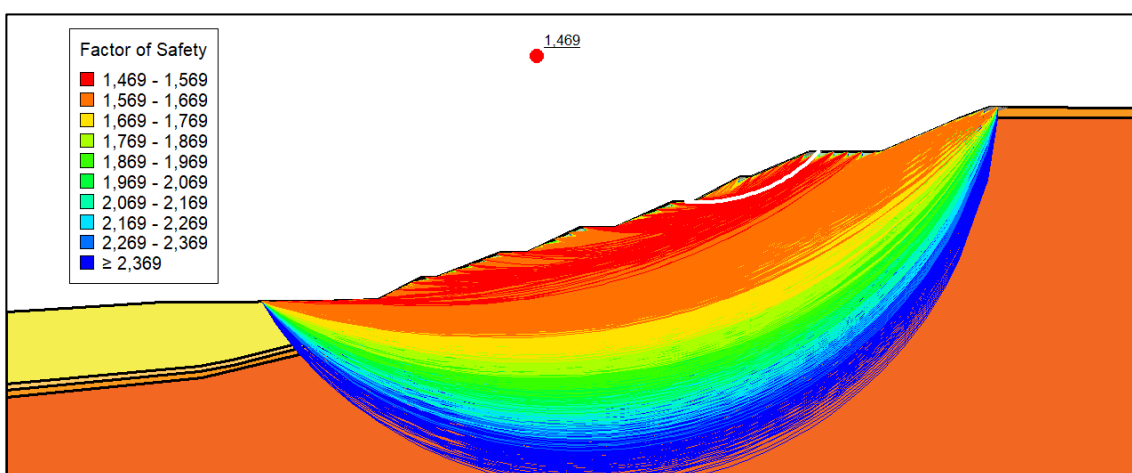
Slice 1	3'558.1527	259.62205	-49.035	1.769407	0	10.739162
Slice 2	3'559.8024	259.53259	-49.035	3.8788559	0	11.62328
Slice 3	3'561.412	259.48387	-49.035	12.811293	0	15.492409
Slice 4	3'562.9815	259.47388	-49.035	28.671205	0	22.392154
Slice 5	3'564.6407	259.50419	- 49.035002	46.578294	0	33.293519
Slice 6	3'566.3895	259.57928	- 49.035006	65.33933	0	40.716271
Slice 7	3'568.1383	259.69999	- 49.035007	82.661359	0	47.591698
Slice 8	3'569.8871	259.86656	- 49.035007	98.347178	0	53.846964
Slice 9	3'571.6359	260.07935	- 49.035005	112.25879	0	59.429967
Slice 10	3'573.368	260.33586	- 49.035001	123.19007	0	63.857957
Slice 11	3'575.0834	260.63575	-49.035	131.22136	0	67.157467
Slice 12	3'576.7989	260.98168	-49.035	137.58236	0	69.814703
Slice 13	3'578.5143	261.37436	-49.035	142.37041	0	71.862264
Slice 14	3'580.1944	261.80462	-49.035	138.70244	0	70.52097
Slice	3'581.8393	262.27143	-49.035	127.16825	0	66.006509

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

15						
Slice 16	3'583.2074	262.69117	-49.035	117.45836	0	62.193561
Slice 17	3'584.6084	263.16143	-49.035	112.95497	0	60.474951
Slice 18	3'586.319	263.77792	-49.035	111.11736	0	59.84799
Slice 19	3'588.0296	264.4474	-49.035	108.4885	0	58.891685
Slice 20	3'589.7403	265.17157	-49.035	105.15478	0	57.637687
Slice 21	3'591.4509	265.95239	-49.035	101.1811	0	56.109907
Slice 22	3'593.1615	266.79209	-49.035	96.608214	0	54.323447
Slice 23	3'594.8721	267.69315	-49.035	91.450731	0	52.283709
Slice 24	3'596.5828	268.65845	-49.035	85.694985	0	49.985541
Slice 25	3'598.2934	269.69123	-49.035	79.296649	0	47.412265
Slice 26	3'600.004	270.79524	-49.035	72.17764	0	44.534439
Slice 27	3'601.8928	272.10684	- 49.034999	64.865731	0	39.269071
Slice 28	3'603.9598	273.65109	- 49.034995	56.208974	0	35.379731
Slice 29	3'606.0268	275.32455	- 49.035001	46.158057	0	30.860662

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 30	3'607.9756	277.02816	- 49.035004	29.866928	0	23.549531
Slice 31	3'609.8063	278.75922	- 49.035009	6.8263264	0	13.245953



SEZIONE A2 DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: **Meters**
Time(t) Units: **Seconds**
Force(F) Units: **Kilonewtons**
Pressure(p) Units: **kPa**
Strength Units: **kPa**
Unit Weight of Water: **9.807 kN/m³**
View: **2D**
Element Thickness: **1**

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: **SLOPE/W**
Parent: **Insitu**
Method: **Morgenstern-Price**
Settings
Side Function

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Fully-Specified](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [10 kPa](#)

Phi': [20 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

B1_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [15 kPa](#)
 Phi': [22 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [25 kPa](#)
 Phi': [24 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [19 kN/m³](#)
 Cohesion': [10 kPa](#)
 Phi': [25 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

ABBANCAMENTO_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [17 kN/m³](#)
 Cohesion': [10 kPa](#)
 Phi': [24 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

SLIP SURFACE LIMITS

Left Coordinate: [\(3'286.6419; 215.93536\) m](#)
 Right Coordinate: [\(3'741.4032; 297\) m](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	3'435.0351	220.84913
	3'443.033	220.97475
	3'460.6763	221.46118
	3'461.1308	221.47475
	3'462.224	221.67205
	3'466.6714	222.47475
	3'476.3183	226.95506
	3'492.0756	231.19331
	3'504.6379	232.49738
	3'525.3431	237.97475
	3'551.7864	252.97475
	3'572.5103	264.22475
	3'582.6617	265.67593
	3'615.6013	275.97475
	3'627.4351	275.97475
	3'635.7102	279.52223

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03
Vert Seismic Coef.: 0.015

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

POINTS

	X (m)	Y (m)
Point 1	3'492.0756	231.19331
Point 2	3'504.6379	232.49738
Point 3	3'525.3431	237.97475
Point 4	3'551.7864	252.97475
Point 5	3'572.5103	264.22475
Point 6	3'582.6617	265.67593
Point 7	3'615.6013	275.97475
Point 8	3'627.4351	275.97475
Point 9	3'635.7102	279.52223
Point 10	3'607.0603	279.67693
Point 11	3'583.7531	269.67693
Point 12	3'579.372	269.67693
Point 13	3'560.6273	259.67693
Point 14	3'552.602	259.67693
Point 15	3'529.5602	249.67693
Point 16	3'515.45	249.67693
Point 17	3'494.2461	239.67693
Point 18	3'483.9042	239.67693
Point 19	3'458.1066	229.67693
Point 20	3'452.3584	229.67693
Point 21	3'462.224	221.67205

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 22	3'466.6714	222.47475
Point 23	3'476.3183	226.95506
Point 24	3'435.0351	220.84913
Point 25	3'443.033	220.97475
Point 26	3'460.6763	221.46118
Point 27	3'461.1308	221.47475
Point 28	3'446.4826	209.32266
Point 29	3'477.0077	223.32587
Point 30	3'494.3661	227.90325
Point 31	3'504.076	228.35863
Point 32	3'526.7423	233.60944
Point 33	3'532.554	236.84586
Point 34	3'540.9087	241.65913
Point 35	3'551.3043	247.31989
Point 36	3'573.9336	259.98258
Point 37	3'582.4924	260.69426
Point 38	3'590.3869	263.45452
Point 39	3'617.6671	271.63675
Point 40	3'627.5468	271.85892
Point 41	3'677.9248	293.06174
Point 42	3'741.4032	293.27558
Point 43	3'741.4032	297
Point 44	3'678.8645	297.15151

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 45	3'666.4418	292.52525
Point 46	3'661.7158	290.67074
Point 47	3'445.3833	212.43942
Point 48	3'376.9488	194.95058
Point 49	3'363.4632	192.26977
Point 50	3'286.6554	184.84873
Point 51	3'286.6419	182.24442
Point 52	3'364.7694	189.71237
Point 53	3'444.7438	214.39855
Point 54	3'424.7421	208.88691
Point 55	3'376.6739	196.99835
Point 56	3'363.4954	194.43155
Point 57	3'286.6419	187.43791
Point 58	3'411.824	220.48458
Point 59	3'394.488	220.35902
Point 60	3'379.6366	220.0438
Point 61	3'362.4358	219.93872
Point 62	3'348.8305	219.78957
Point 63	3'299.1781	216.69742
Point 64	3'286.6419	215.93536
Point 65	3'286.6419	147
Point 66	3'741.4032	147

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

REGIONS

	Material	Points	Area (m²)
Region 1	Abbancame nto_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23	1'271. 9
Region 2	Unghia_k	20;24;25;26;27;21	115.9 9
Region 3	B1_k	28;29;30;31;32;33;34;35;36;37;38;39;40;41;42;43;44;45;46;9;8;7;6;5;4; 3;2;1;23;22;47;48;49;50;51;52	1'713. 1
Region 4	A_k	47;22;21;27;26;53;54;55;56;57;50;49;48	378.9 3
Region 5	Prevam_k	54;53;26;25;24;58;59;60;61;62;63;64;57;56;55	3'493
Region 6	B2_k	42;41;40;39;38;37;36;35;34;33;32;31;30;29;28;52;51;65;66	40'72 1

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 1.874
 Volume: 1'387.8925 m³
 Weight: 23'710.158 kN
 Resisting Moment: 716'079.66 kN-m
 Activating Moment: 382'045.33 kN-m
 Resisting Force: 12'736.876 kN
 Activating Force: 6'796.4232 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (3'435.0351; 220.84913) m
 Entry: (3'635.7102; 279.52223) m
 Radius: 93.479605 m
 Center: (3'522.5066; 294.1905) m

SLIP SLICES

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'439.0341	220.91194	-49.035	36.573217	0	30.153252
Slice 2	3'447.6957	221.1033	-49.035026	117.48593	0	96.454928
Slice 3	3'455.2325	221.31109	-49.03503	160.71033	0	131.32824
Slice 4	3'459.3915	221.42576	-49.035007	167.04814	0	136.10603
Slice 5	3'460.9036	221.46796	-49.035	176.45712	0	143.68216
Slice 6	3'461.6774	221.5734	-49.035	164.00363	0	134.75918
Slice 7	3'464.4477	222.0734	-49.035	173.63736	0	85.984261
Slice 8	3'471.4949	224.7149	-49.035	153.4731	0	78.21781
Slice 9	3'480.1112	227.97525	-49.034976	167.02511	0	83.641826
Slice 10	3'487.9899	230.09438	-49.034975	155.92591	0	78.797755
Slice 11	3'493.1609	231.30597	-49.035	149.93064	0	75.403809
Slice 12	3'496.8441	231.68831	-49.035	164.96449	0	81.983188
Slice 13	3'502.0399	232.22769	-49.035	198.7479	0	96.781602

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 14	3'507.3409	233.21244	-49.034987	204.16127	0	100.26569
Slice 15	3'512.747	234.64256	-49.034962	221.3108	0	107.92498
Slice 16	3'520.3965	236.66619	-49.034977	208.5723	0	102.33535
Slice 17	3'527.4517	239.17083	-49.035	140.83488	0	73.694878
Slice 18	3'533.2646	242.46821	-49.035	117.68292	0	63.235554
Slice 19	3'540.6733	246.67083	-49.035	104.2611	0	57.163514
Slice 20	3'548.082	250.87344	-49.035	91.221926	0	51.241231
Slice 21	3'552.1942	253.19612	-49.035	85.389586	0	48.519396
Slice 22	3'556.6147	255.59577	-49.035	55.31137	0	34.908365
Slice 23	3'563.5981	259.38672	-49.035	25.405853	0	21.381013
Slice 24	3'569.5396	262.61207	-49.035	24.811742	0	21.105216
Slice 25	3'575.9412	264.7152	-49.035	54.971634	0	33.99843
Slice 26	3'581.0169	265.44079	-49.035	73.467657	0	42.151269
Slice 27	3'583.2074	265.84655	-49.035	60.110449	0	36.604944
Slice	3'587.6376	267.23169	-49.035	64.593481	0	38.591058

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

28						
Slice 29	3'595.4067	269.66075	-49.035	78.979082	0	44.962037
Slice 30	3'603.1758	272.08981	-49.035	93.56123	0	51.401944
Slice 31	3'611.3308	274.63955	-49.035	79.672852	0	45.21127
Slice 32	3'618.5597	275.97475	-49.035	65.850779	0	38.690221
Slice 33	3'624.4767	275.97475	-49.035	63.897512	0	37.920909
Slice 34	3'631.5727	277.74849	-49.035	26.020689	0	21.606561

SEZIONE A2 NON DRENATA – SUPERFICIE CIRCOLARE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Entry and Exit](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [75 kPa](#)

Phi': [17 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

B1_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [50 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [90 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [19 kN/m³](#)
 Cohesion': [20 kPa](#)
 Phi': [10 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

ABBANCAMENTO_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [17 kN/m³](#)
 Cohesion': [150 kPa](#)
 Phi': [10 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

SLIP SURFACE ENTRY AND EXIT

Left Projection: [Range](#)
 Left-Zone Left Coordinate: [\(3'394.7934; 220.36123\) m](#)
 Left-Zone Right Coordinate: [\(3'566.8563; 263\) m](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Left-Zone Increment: 30
 Right Projection: Range
 Right-Zone Left Coordinate: (3'575.5794; 267.65364) m
 Right-Zone Right Coordinate: (3'673; 294.96755) m
 Right-Zone Increment: 20
 Radius Increments: 20

SLIP SURFACE LIMITS

Left Coordinate: (3'286.6419; 215.93536) m
 Right Coordinate: (3'741.4032; 297) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03
 Vert Seismic Coef.: 0.015

POINTS


	X (m)	Y (m)
Point 1	3'492.0756	231.19331
Point 2	3'504.6379	232.49738
Point 3	3'525.3431	237.97475
Point 4	3'551.7864	252.97475
Point 5	3'572.5103	264.22475
Point 6	3'582.6617	265.67593
Point 7	3'615.6013	275.97475
Point 8	3'627.4351	275.97475
Point 9	3'635.7102	279.52223
Point 10	3'607.0603	279.67693
Point 11	3'583.7531	269.67693

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 12	3'579.372	269.67693
Point 13	3'560.6273	259.67693
Point 14	3'552.602	259.67693
Point 15	3'529.5602	249.67693
Point 16	3'515.45	249.67693
Point 17	3'494.2461	239.67693
Point 18	3'483.9042	239.67693
Point 19	3'458.1066	229.67693
Point 20	3'452.3584	229.67693
Point 21	3'462.224	221.67205
Point 22	3'466.6714	222.47475
Point 23	3'476.3183	226.95506
Point 24	3'435.0351	220.84913
Point 25	3'443.033	220.97475
Point 26	3'460.6763	221.46118
Point 27	3'461.1308	221.47475
Point 28	3'446.4826	209.32266
Point 29	3'477.0077	223.32587
Point 30	3'494.3661	227.90325
Point 31	3'504.076	228.35863
Point 32	3'526.7423	233.60944
Point 33	3'532.554	236.84586
Point 34	3'540.9087	241.65913

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 35	3'551.3043	247.31989
Point 36	3'573.9336	259.98258
Point 37	3'582.4924	260.69426
Point 38	3'590.3869	263.45452
Point 39	3'617.6671	271.63675
Point 40	3'627.5468	271.85892
Point 41	3'677.9248	293.06174
Point 42	3'741.4032	293.27558
Point 43	3'741.4032	297
Point 44	3'678.8645	297.15151
Point 45	3'666.4418	292.52525
Point 46	3'661.7158	290.67074
Point 47	3'445.3833	212.43942
Point 48	3'376.9488	194.95058
Point 49	3'363.4632	192.26977
Point 50	3'286.6554	184.84873
Point 51	3'286.6419	182.24442
Point 52	3'364.7694	189.71237
Point 53	3'444.7438	214.39855
Point 54	3'424.7421	208.88691
Point 55	3'376.6739	196.99835
Point 56	3'363.4954	194.43155
Point 57	3'286.6419	187.43791

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 58	3'411.824	220.48458
Point 59	3'394.488	220.35902
Point 60	3'379.6366	220.0438
Point 61	3'362.4358	219.93872
Point 62	3'348.8305	219.78957
Point 63	3'299.1781	216.69742
Point 64	3'286.6419	215.93536
Point 65	3'286.6419	147
Point 66	3'741.4032	147

REGIONS

	Material	Points	Area (m ²)
Region 1	Abbanamento_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23	1'271.9
Region 2	Unghia_k	20;24;25;26;27;21	115.99
Region 3	B1_k	28;29;30;31;32;33;34;35;36;37;38;39;40;41;42;43;44;45;46;9;8;7;6;5;4;3;2;1;23;22;47;48;49;50;51;52	1'713.1
Region 4	A_k	47;22;21;27;26;53;54;55;56;57;50;49;48	378.93
Region 5	Prevam_k	54;53;26;25;24;58;59;60;61;62;63;64;57;56;55	3'493
Region 6	B2_k	42;41;40;39;38;37;36;35;34;33;32;31;30;29;28;52;51;65;66	40'721

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

CURRENT SLIP SURFACE

Slip Surface: 2'194
 F of S: 1.801
 Volume: 7'888.6598 m³
 Weight: 158'638.64 kN
 Resisting Moment: 17'791'054 kN-m
 Activating Moment: 9'878'714.5 kN-m
 Resisting Force: 75'572.671 kN
 Activating Force: 41'963.115 kN
 F of S Rank (Analysis): 1 of 13'671 slip surfaces
 F of S Rank (Query): 1 of 13'671 slip surfaces
 Exit: (3'418.9525; 220.59654) m
 Entry: (3'673; 294.96755) m
 Radius: 216.68687 m
 Center: (3'497.7738; 422.43905) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'422.9732	219.11737	-49.03496	48.533749	0	89.029509
Slice 2	3'431.0145	216.33587	-49.03499	108.65174	0	106.84927
Slice 3	3'437.9765	214.18892	-49.035	185.43623	0	129.65158
Slice 4	3'441.9755	213.06249	- 49.035003	232.68213	0	59.963811
Slice 5	3'443.8884	212.56104	- 49.035004	263.1783	0	65.231014
Slice 6	3'444.8082	212.32518	- 49.035002	277.75646	0	67.749271
Slice 7	3'445.128	212.24499	- 49.035001	300.72485	0	156.02544

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 8	3'447.7998	211.60825	- 49.034993	346.79724	0	172.32959
Slice 9	3'451.2873	210.8002	- 49.034986	415.74918	0	236.38475
Slice 10	3'455.2325	209.98943	-49.03498	451.66436	0	249.02727
Slice 11	3'459.3915	209.18266	- 49.034984	484.68531	0	260.65936
Slice 12	3'460.9036	208.91217	- 49.034986	503.56114	0	267.34046
Slice 13	3'461.6774	208.78059	- 49.034987	512.81152	0	270.61579
Slice 14	3'464.4477	208.34211	- 49.034985	547.52181	0	282.91994
Slice 15	3'471.4949	207.4065	- 49.034962	634.16052	0	313.72105
Slice 16	3'476.663	206.78328	- 49.034963	695.0394	0	335.44867
Slice 17	3'480.456	206.47303	- 49.034964	731.87896	0	348.66453
Slice 18	3'487.9899	206.01182	- 49.034971	768.80878	0	362.11963
Slice 19	3'493.1609	205.80401	- 49.035009	772.16059	0	363.58616
Slice 20	3'499.1611	205.81238	- 49.035038	806.43883	0	376.25505
Slice 21	3'504.3569	205.85239	- 49.035009	841.27633	0	389.14215
Slice	3'510.044	206.16764	-	874.41908	0	401.56875

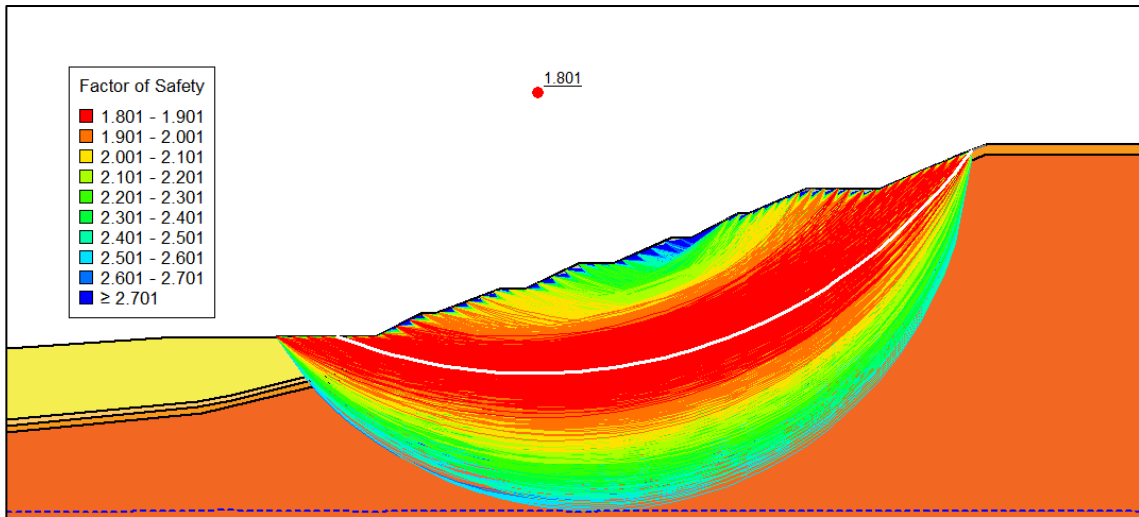
	Committente		Oggetto del servizio
	GE.R.IN		DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

22			49.034973			
Slice 23	3'520.3965	206.99377	- 49.034967	883.92701	0	406.10771
Slice 24	3'526.0427	207.60523	- 49.034979	860.83442	0	398.4567
Slice 25	3'528.1512	207.89678	- 49.034982	852.83866	0	395.8286
Slice 26	3'531.0571	208.32897	- 49.034984	852.35267	0	396.00417
Slice 27	3'536.7314	209.32529	- 49.034983	867.53511	0	402.18395
Slice 28	3'546.3476	211.34039	- 49.035032	883.95723	0	409.32928
Slice 29	3'552.1942	212.69768	- 49.035018	891.29539	0	412.71793
Slice 30	3'556.6147	213.93588	- 49.034999	864.43987	0	403.50935
Slice 31	3'566.5688	217.05846	- 49.035007	842.84252	0	396.78149
Slice 32	3'573.222	219.31298	- 49.034981	847.36611	0	399.12069
Slice 33	3'576.6528	220.64019	- 49.034982	842.61566	0	397.71927
Slice 34	3'580.9322	222.3515	- 49.034988	823.33843	0	391.07391
Slice 35	3'582.577	223.03594	- 49.034992	807.40077	0	385.3959
Slice 36	3'583.2074	223.30606	- 49.034993	801.58302	0	383.32371

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 37	3'587.07	225.04063	- 49.034998	786.27721	0	378.03438
Slice 38	3'594.5552	228.62253	- 49.034991	761.00632	0	369.30633
Slice 39	3'602.892	233.01717	- 49.034984	728.60813	0	357.89911
Slice 40	3'611.3308	237.95907	- 49.034995	664.52629	0	334.74274
Slice 41	3'616.6342	241.26543	- 49.035014	606.09985	0	313.45656
Slice 42	3'622.5511	245.38503	- 49.035009	530.5417	0	285.84896
Slice 43	3'631.5727	252.07652	-49.03499	416.90239	0	244.24304
Slice 44	3'640.0445	259.10129	- 49.034988	331.77786	0	213.06869
Slice 45	3'648.713	267.0877	- 49.034969	257.42563	0	185.8636
Slice 46	3'657.3815	276.02366	-49.03498	166.98862	0	152.81154
Slice 47	3'664.0788	283.57848	- 49.034986	83.847471	0	122.49087
Slice 48	3'667.5257	287.77487	- 49.034965	33.398286	0	104.13153
Slice 49	3'670.8048	292.0544	- 49.034986	4.1392918	0	52.658833

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI



SEZIONE A2 NON DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
Time(t) Units: [Seconds](#)
Force(F) Units: [Kilonewtons](#)
Pressure(p) Units: [kPa](#)
Strength Units: [kPa](#)
Unit Weight of Water: [9.807 kN/m³](#)
View: [2D](#)
Element Thickness: [1](#)

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)
Parent: [Insitu](#)
Method: [Morgenstern-Price](#)
Settings
Side Function
Interslice force function option: [Half-Sine](#)
PWP Conditions Source: [Parent Analysis](#)
Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
Slip Surface
Direction of movement: [Right to Left](#)
Use Passive Mode: [No](#)
Slip Surface Option: [Fully-Specified](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Critical slip surfaces saved: **1**
 Resisting Side Maximum Convex Angle: **1 °**
 Driving Side Maximum Convex Angle: **5 °**
 Optimize Critical Slip Surface Location: **No**
 Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

Phi': **40 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

PREVAM_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **75 kPa**

Phi': **17 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

B1_K

Model: **Mohr-Coulomb**

Unit Weight: **20 kN/m³**

Cohesion': **50 kPa**

Phi': **20 °**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

B2_K

Model: Mohr-Coulomb
Unit Weight: 21 kN/m³
Cohesion': 90 kPa
Phi': 20 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

A_K

Model: Mohr-Coulomb
Unit Weight: 19 kN/m³
Cohesion': 20 kPa
Phi': 10 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

ABBANCAMENTO_K


Model: Mohr-Coulomb
Unit Weight: 17 kN/m³
Cohesion': 150 kPa
Phi': 10 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

SLIP SURFACE LIMITS

Left Coordinate: (3'286.6419; 215.93536) m
Right Coordinate: (3'741.4032; 297) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	X (m)	Y (m)
	3'435.0351	220.84913
	3'443.033	220.97475
	3'460.6763	221.46118
	3'461.1308	221.47475
	3'462.224	221.67205
	3'466.6714	222.47475
	3'476.3183	226.95506
	3'492.0756	231.19331
	3'504.6379	232.49738
	3'525.3431	237.97475
	3'551.7864	252.97475
	3'572.5103	264.22475
	3'582.6617	265.67593
	3'615.6013	275.97475
	3'627.4351	275.97475
	3'635.7102	279.52223

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03

Vert Seismic Coef.: 0.015

POINTS

	X (m)	Y (m)
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 1	3'492.0756	231.19331
Point 2	3'504.6379	232.49738
Point 3	3'525.3431	237.97475
Point 4	3'551.7864	252.97475
Point 5	3'572.5103	264.22475
Point 6	3'582.6617	265.67593
Point 7	3'615.6013	275.97475
Point 8	3'627.4351	275.97475
Point 9	3'635.7102	279.52223
Point 10	3'607.0603	279.67693
Point 11	3'583.7531	269.67693
Point 12	3'579.372	269.67693
Point 13	3'560.6273	259.67693
Point 14	3'552.602	259.67693
Point 15	3'529.5602	249.67693
Point 16	3'515.45	249.67693
Point 17	3'494.2461	239.67693
Point 18	3'483.9042	239.67693
Point 19	3'458.1066	229.67693
Point 20	3'452.3584	229.67693
Point 21	3'462.224	221.67205
Point 22	3'466.6714	222.47475
Point 23	3'476.3183	226.95506

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 24	3'435.0351	220.84913
Point 25	3'443.033	220.97475
Point 26	3'460.6763	221.46118
Point 27	3'461.1308	221.47475
Point 28	3'446.4826	209.32266
Point 29	3'477.0077	223.32587
Point 30	3'494.3661	227.90325
Point 31	3'504.076	228.35863
Point 32	3'526.7423	233.60944
Point 33	3'532.554	236.84586
Point 34	3'540.9087	241.65913
Point 35	3'551.3043	247.31989
Point 36	3'573.9336	259.98258
Point 37	3'582.4924	260.69426
Point 38	3'590.3869	263.45452
Point 39	3'617.6671	271.63675
Point 40	3'627.5468	271.85892
Point 41	3'677.9248	293.06174
Point 42	3'741.4032	293.27558
Point 43	3'741.4032	297
Point 44	3'678.8645	297.15151
Point 45	3'666.4418	292.52525
Point 46	3'661.7158	290.67074

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 47	3'445.3833	212.43942
Point 48	3'376.9488	194.95058
Point 49	3'363.4632	192.26977
Point 50	3'286.6554	184.84873
Point 51	3'286.6419	182.24442
Point 52	3'364.7694	189.71237
Point 53	3'444.7438	214.39855
Point 54	3'424.7421	208.88691
Point 55	3'376.6739	196.99835
Point 56	3'363.4954	194.43155
Point 57	3'286.6419	187.43791
Point 58	3'411.824	220.48458
Point 59	3'394.488	220.35902
Point 60	3'379.6366	220.0438
Point 61	3'362.4358	219.93872
Point 62	3'348.8305	219.78957
Point 63	3'299.1781	216.69742
Point 64	3'286.6419	215.93536
Point 65	3'286.6419	147
Point 66	3'741.4032	147

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

REGIONS

	Material	Points	Area (m²)
Region 1	Abbancame nto_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23	1'271. 9
Region 2	Unghia_k	20;24;25;26;27;21	115.9 9
Region 3	B1_k	28;29;30;31;32;33;34;35;36;37;38;39;40;41;42;43;44;45;46;9;8;7;6;5;4; 3;2;1;23;22;47;48;49;50;51;52	1'713. 1
Region 4	A_k	47;22;21;27;26;53;54;55;56;57;50;49;48	378.9 3
Region 5	Prevam_k	54;53;26;25;24;58;59;60;61;62;63;64;57;56;55	3'493
Region 6	B2_k	42;41;40;39;38;37;36;35;34;33;32;31;30;29;28;52;51;65;66	40'72 1

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 4.738
 Volume: 1'387.8925 m³
 Weight: 23'710.158 kN
 Resisting Moment: 1'681'726 kN-m
 Activating Moment: 354'946.85 kN-m
 Resisting Force: 31'784.174 kN
 Activating Force: 6'708.8044 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (3'435.0351; 220.84913) m
 Entry: (3'635.7102; 279.52223) m
 Radius: 93.479605 m
 Center: (3'522.5066; 294.1905) m

SLIP SLICES

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'439.0341	220.91194	-49.035	36.259058	0	30.033399
Slice 2	3'447.6957	221.1033	-49.035026	114.64957	0	95.194206
Slice 3	3'455.2325	221.31109	-49.03503	153.91068	0	128.0699
Slice 4	3'459.3915	221.42576	-49.035007	158.07776	0	131.71406
Slice 5	3'460.9036	221.46796	-49.035	166.55442	0	138.82344
Slice 6	3'461.6774	221.5734	-49.035	160.28423	0	133.55651
Slice 7	3'464.4477	222.0734	-49.035	169.37037	0	179.68479
Slice 8	3'471.4949	224.7149	-49.035	149.40079	0	176.17611
Slice 9	3'480.1112	227.97525	-49.034976	162.5887	0	178.46931
Slice 10	3'487.9899	230.09438	-49.034975	151.68371	0	176.5691
Slice 11	3'493.1609	231.30597	-49.035	146.36311	0	175.69931
Slice 12	3'496.8441	231.68831	-49.035	160.89895	0	178.25275
Slice 13	3'502.0399	232.22769	-49.035	193.14139	0	183.91026

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 14	3'507.3409	233.21244	-49.034987	199.12059	0	184.83488
Slice 15	3'512.747	234.64256	-49.034962	215.77263	0	187.72876
Slice 16	3'520.3965	236.66619	-49.034977	203.84816	0	185.64357
Slice 17	3'527.4517	239.17083	-49.035	138.14338	0	174.06862
Slice 18	3'533.2646	242.46821	-49.035	115.61546	0	170.17729
Slice 19	3'540.6733	246.67083	-49.035	103.02389	0	168.001
Slice 20	3'548.082	250.87344	-49.035	90.751128	0	165.88515
Slice 21	3'552.1942	253.19612	-49.035	85.550975	0	164.99296
Slice 22	3'556.6147	255.59577	-49.035	55.720212	0	159.85039
Slice 23	3'563.5981	259.38672	-49.035	25.837276	0	154.70152
Slice 24	3'569.5396	262.61207	-49.035	25.029126	0	154.56935
Slice 25	3'575.9412	264.7152	-49.035	62.15535	0	160.93023
Slice 26	3'581.0169	265.44079	-49.035	79.616113	0	163.97676
Slice 27	3'583.2074	265.84655	-49.035	63.604677	0	161.20796
Slice	3'587.6376	267.23169	-49.035	67.740266	0	161.93031

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

28						
Slice 29	3'595.4067	269.66075	-49.035	81.551677	0	164.3377
Slice 30	3'603.1758	272.08981	-49.035	95.780454	0	166.819
Slice 31	3'611.3308	274.63955	-49.035	80.987194	0	164.25841
Slice 32	3'618.5597	275.97475	-49.035	70.231295	0	162.26247
Slice 33	3'624.4767	275.97475	-49.035	66.994185	0	161.67012
Slice 34	3'631.5727	277.74849	-49.035	18.531349	0	153.44864

SEZIONE A3 DRENATA – SUPERFICI CIRCOLARI –PSEUDO- STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Entry and Exit](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [10 kPa](#)

Phi': [20 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

B1_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [15 kPa](#)
 Phi': [22 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [25 kPa](#)
 Phi': [24 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [19 kN/m³](#)
 Cohesion': [10 kPa](#)
 Phi': [25 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

ABBANCAMENTO_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [17 kN/m³](#)
 Cohesion': [10 kPa](#)
 Phi': [24 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

SLIP SURFACE ENTRY AND EXIT

Left Projection: [Range](#)
 Left-Zone Left Coordinate: [\(2'740.0748; 219.17136\) m](#)
 Left-Zone Right Coordinate: [\(2'937; 264.29333\) m](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Left-Zone Increment: 30
 Right Projection: Range
 Right-Zone Left Coordinate: (2'942.9776; 267.09098) m
 Right-Zone Right Coordinate: (3'075.849; 305.00002) m
 Right-Zone Increment: 20
 Radius Increments: 20

SLIP SURFACE LIMITS

Left Coordinate: (2'711.7831; 217.29801) m
 Right Coordinate: (3'166.5444; 307) m

SEISMIC COEFFICIENTS


Horz Seismic Coef.: 0.03
 Vert Seismic Coef.: 0.015

POINTS

	X (m)	Y (m)
Point 1	2'780.3189	230.24756
Point 2	2'761.5777	221.11201
Point 3	2'770.0323	221.24756
Point 4	2'771.1352	222.24756
Point 5	2'791.3256	222.41238
Point 6	3'166.5444	303.01257
Point 7	3'080.3246	302.38842
Point 8	3'049.2693	285.76317
Point 9	3'023.5906	275.83199
Point 10	3'017.0134	274.96252
Point 11	3'003.5041	269.46226

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 12	2'997.1767	267.769
Point 13	2'980.0278	265.17352
Point 14	2'971.3858	263.29635
Point 15	2'969.083	262.6869
Point 16	2'958.9575	257.24266
Point 17	2'932.6225	250.22585
Point 18	2'917.6895	246.81467
Point 19	2'904.39	240.65645
Point 20	2'900.8284	240.14298
Point 21	2'897.8768	239.63768
Point 22	2'876.353	232.93888
Point 23	2'836.6834	219.79672
Point 24	2'834.1466	219.09019
Point 25	2'812.8195	209.40816
Point 26	2'792.3136	203.4954
Point 27	2'782.4947	199.44034
Point 28	2'762.9184	196.89394
Point 29	2'711.7831	191.66118
Point 30	2'711.7831	153.08176
Point 31	3'166.5444	153.08176
Point 32	3'166.5444	307
Point 33	3'078.4196	306.39091
Point 34	3'048.5839	290.24756

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 35	3'022.709	279.74756
Point 36	3'016.6199	278.99756
Point 37	2'996.9899	271.74756
Point 38	2'985.8129	269.99756
Point 39	2'966.9558	266.74756
Point 40	2'956.6862	260.99756
Point 41	2'948.2498	258.74756
Point 42	2'930.5289	253.74756
Point 43	2'915.4353	250.74756
Point 44	2'902.3925	244.49756
Point 45	2'895.9478	243.74756
Point 46	2'881.4341	239.49756
Point 47	2'832.3851	222.74756
Point 48	2'830.223	222.72991
Point 49	2'811.4482	213.17936
Point 50	2'791.4405	207.66609
Point 51	2'781.4223	203.33454
Point 52	2'767.9566	201.58299
Point 53	2'711.7831	194.88956
Point 54	2'825.4031	222.69057
Point 55	2'810.7663	215.04705
Point 56	2'796.5599	211.19433
Point 57	2'790.7748	209.55719

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 58	2'788.672	208.64801
Point 59	2'780.8861	205.28164
Point 60	2'711.7831	197.26143
Point 61	2'755.2558	220.81593
Point 62	2'741.4729	219.22387
Point 63	2'736.6835	219.04398
Point 64	2'711.7831	217.29801
Point 65	2'790.2627	209.33577
Point 66	2'982.1724	269.37012
Point 67	3'011.149	290.24756
Point 68	2'990.649	280.24756
Point 69	2'980.6698	280.24756
Point 70	2'959.0565	270.24756
Point 71	2'949.7221	270.24756
Point 72	2'928.3556	260.24756
Point 73	2'903.0593	260.24756
Point 74	2'880.8345	250.24756
Point 75	2'869.84	250.24757
Point 76	2'842.6494	241.25875
Point 77	2'835.8826	240.24756
Point 78	2'817.4082	240.24756
Point 79	2'798.7905	232.31639
Point 80	2'790.7871	230.24756

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

REGIONS

	Material	Points	Area (m ²)
Reg ion 1	Unghia_k	1;2;3;4;5	117. 17
Reg ion 2	B2_k	6;7;8;9;10;11;12;13;15;16;17;18;19;21;22;23;24;25;26;27;28;29;30;31	44'5 21
Reg ion 3	B1_k	24;23;22;21;19;18;17;16;15;13;12;11;10;9;8;7;6;32;33;34;35;36;37;38;66;39 ;40;41;42;43;44;45;46;47;48;49;50;51;52;53;29;28;27;26;25	1'96 1.2
Reg ion 4	A_k	48;54;55;56;57;65;58;59;60;53;52;51;50;49	258. 53
Reg ion 5	Prevam_k	54;5;4;3;2;61;62;63;64;60;59;58;65;57;56;55	1'69 1.1
Reg ion 6	Abbanca mento_k	46;45;44;43;42;41;40;39;66;38;37;36;35;34;67;68;69;70;71;72;73;74;75;76; 77;78;79;80;1;5;54;48;47	2'97 0.1

CURRENT SLIP SURFACE

Slip Surface: 12'606
 F of S: 1.545
 Volume: 835.29743 m³
 Weight: 14'459.559 kN
 Resisting Moment: 951'684.05 kN-m
 Activating Moment: 616'143.87 kN-m
 Resisting Force: 6'793.9126 kN
 Activating Force: 4'398.7543 kN
 F of S Rank (Analysis): 1 of 13'671 slip surfaces
 F of S Rank (Query): 1 of 13'671 slip surfaces
 Exit: (2'924.1944; 260.24756) m
 Entry: (3'022.8566; 290.24756) m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Radius: 131.74578 m

Center: (2'938.2557; 391.2408) m

SLIP SLICES

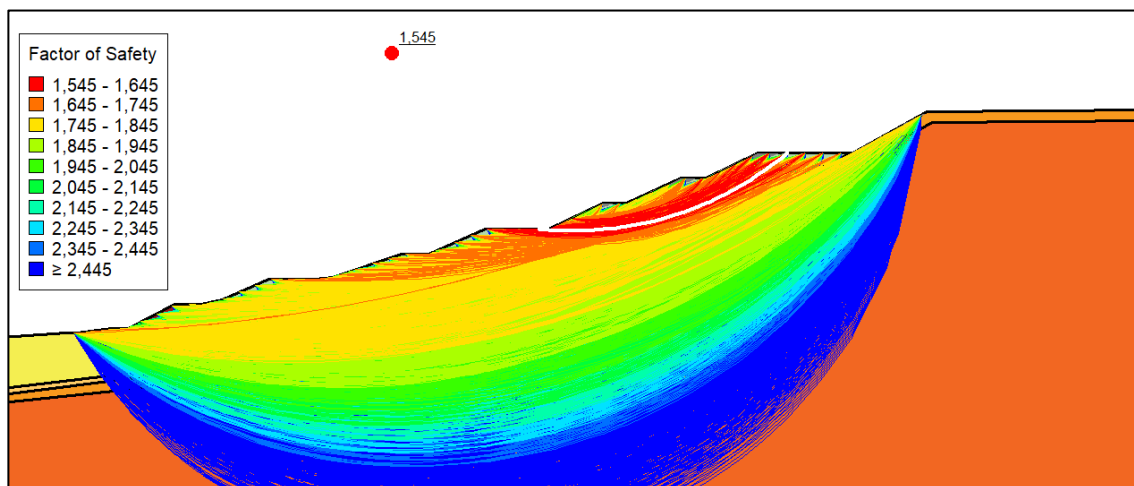
	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'926.275	260.05754	-49.035	4.4011799	0	11.876014
Slice 2	2'930.1361	259.75757	-49.035	25.496233	0	21.04908
Slice 3	2'933.6972	259.58596	-49.035	59.705728	0	35.945228
Slice 4	2'937.2583	259.51083	-49.035	92.37395	0	50.166095
Slice 5	2'940.8194	259.53201	-49.035	123.03533	0	63.52703
Slice 6	2'944.3805	259.64954	-49.035	151.26656	0	75.859923
Slice 7	2'947.9416	259.86368	-49.035	176.72119	0	87.026382
Slice 8	2'951.0698	260.12666	-49.035	185.58035	0	90.965077
Slice 9	2'953.7651	260.41814	-49.035	178.81478	0	88.072264
Slice 10	2'955.8995	260.68423	-49.035	172.62759	0	83.470787
Slice 11	2'957.8713	260.96901	-49.035	167.79573	0	81.612024
Slice	2'961.0313	261.49412	-49.035	174.87079	0	84.568099

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

12						
Slice 13	2'964.981	262.24994	-49.035	192.16694	0	91.68181
Slice 14	2'968.6701	263.06587	-49.035	203.19208	0	96.305519
Slice 15	2'972.0986	263.92833	-49.035	208.79491	0	98.755583
Slice 16	2'975.5271	264.88969	-49.035	212.23146	0	100.33882
Slice 17	2'978.9556	265.95224	-49.035	213.73402	0	101.13793
Slice 18	2'981.4211	266.76966	-49.035	208.64344	0	99.214213
Slice 19	2'983.9927	267.70411	-49.035	189.76925	0	91.711413
Slice 20	2'988.231	269.36958	-49.035	157.72174	0	78.912774
Slice 21	2'991.3427	270.66656	-49.035	138.82088	0	71.352919
Slice 22	2'993.6291	271.70981	-49.035	137.59546	0	71.614066
Slice 23	2'996.8145	273.23804	-49.035	135.94145	0	70.950521
Slice 24	3'000	274.87352	-49.035	133.26468	0	69.810182
Slice 25	3'003.1854	276.62085	-49.035	129.55229	0	68.186531
Slice 26	3'006.3708	278.48525	-49.035	124.7545	0	66.057397

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 27	3'009.5563	280.47262	-49.035	118.78049	0	63.383112
Slice 28	3'012.6125	282.49854	-49.035	101.96267	0	55.837605
Slice 29	3'015.5394	284.5594	-49.035	74.086536	0	43.337225
Slice 30	3'018.4663	286.7429	-49.035	44.335118	0	30.010456
Slice 31	3'021.3932	289.05689	-49.035	12.271433	0	15.676131



SEZIONE A3 DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: **Meters**
 Time(t) Units: **Seconds**
 Force(F) Units: **Kilonewtons**
 Pressure(p) Units: **kPa**
 Strength Units: **kPa**
 Unit Weight of Water: **9.807 kN/m³**
 View: **2D**
 Element Thickness: **1**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)

Parent: [Insitu](#)

Method: [Morgenstern-Price](#)

Settings

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Fully-Specified](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesionⁱ: [0 kPa](#)

Phiⁱ: [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

PREVAM_K

Model: **Mohr-Coulomb**
 Unit Weight: **18 kN/m³**
 Cohesion': **10 kPa**
 Phi': **20 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

B1_K

Model: **Mohr-Coulomb**
 Unit Weight: **20 kN/m³**
 Cohesion': **15 kPa**
 Phi': **22 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

B2_K

Model: **Mohr-Coulomb**
 Unit Weight: **21 kN/m³**
 Cohesion': **25 kPa**
 Phi': **24 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

A_K

Model: **Mohr-Coulomb**
 Unit Weight: **19 kN/m³**
 Cohesion': **10 kPa**
 Phi': **25 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

ABBANCAMENTO_K

Model: **Mohr-Coulomb**
 Unit Weight: **17 kN/m³**
 Cohesion': **10 kPa**
 Phi': **24 °**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

SLIP SURFACE LIMITS

Left Coordinate: (2'711.7831; 217.29801) m
Right Coordinate: (3'166.5444; 307) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	2'761.5777	221.11201
	2'770.0323	221.24756
	2'771.1352	222.24756
	2'791.3256	222.41238
	2'825.4031	222.69057
	2'830.223	222.72991
	2'832.3851	222.74756
	2'881.4341	239.49756
	2'895.9478	243.74756
	2'902.3925	244.49756
	2'915.4353	250.74756
	2'930.5289	253.74756
	2'948.2498	258.74756
	2'956.6862	260.99756

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	2'966.9558	266.74756
	2'982.1724	269.37012
	2'985.8129	269.99756
	2'996.9899	271.74756
	3'016.6199	278.99756
	3'022.709	279.74756
	3'048.5839	290.24756

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03

Vert Seismic Coef.: 0.015

POINTS

	X (m)	Y (m)
Point 1	2'780.3189	230.24756
Point 2	2'761.5777	221.11201
Point 3	2'770.0323	221.24756
Point 4	2'771.1352	222.24756
Point 5	2'791.3256	222.41238
Point 6	3'166.5444	303.01257
Point 7	3'080.3246	302.38842
Point 8	3'049.2693	285.76317
Point 9	3'023.5906	275.83199
Point 10	3'017.0134	274.96252

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 11	3'003.5041	269.46226
Point 12	2'997.1767	267.769
Point 13	2'980.0278	265.17352
Point 14	2'971.3858	263.29635
Point 15	2'969.083	262.6869
Point 16	2'958.9575	257.24266
Point 17	2'932.6225	250.22585
Point 18	2'917.6895	246.81467
Point 19	2'904.39	240.65645
Point 20	2'900.8284	240.14298
Point 21	2'897.8768	239.63768
Point 22	2'876.353	232.93888
Point 23	2'836.6834	219.79672
Point 24	2'834.1466	219.09019
Point 25	2'812.8195	209.40816
Point 26	2'792.3136	203.4954
Point 27	2'782.4947	199.44034
Point 28	2'762.9184	196.89394
Point 29	2'711.7831	191.66118
Point 30	2'711.7831	153.08176
Point 31	3'166.5444	153.08176
Point 32	3'166.5444	307
Point 33	3'078.4196	306.39091

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 34	3'048.5839	290.24756
Point 35	3'022.709	279.74756
Point 36	3'016.6199	278.99756
Point 37	2'996.9899	271.74756
Point 38	2'985.8129	269.99756
Point 39	2'966.9558	266.74756
Point 40	2'956.6862	260.99756
Point 41	2'948.2498	258.74756
Point 42	2'930.5289	253.74756
Point 43	2'915.4353	250.74756
Point 44	2'902.3925	244.49756
Point 45	2'895.9478	243.74756
Point 46	2'881.4341	239.49756
Point 47	2'832.3851	222.74756
Point 48	2'830.223	222.72991
Point 49	2'811.4482	213.17936
Point 50	2'791.4405	207.66609
Point 51	2'781.4223	203.33454
Point 52	2'767.9566	201.58299
Point 53	2'711.7831	194.88956
Point 54	2'825.4031	222.69057
Point 55	2'810.7663	215.04705
Point 56	2'796.5599	211.19433

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 57	2'790.7748	209.55719
Point 58	2'788.672	208.64801
Point 59	2'780.8861	205.28164
Point 60	2'711.7831	197.26143
Point 61	2'755.2558	220.81593
Point 62	2'741.4729	219.22387
Point 63	2'736.6835	219.04398
Point 64	2'711.7831	217.29801
Point 65	2'790.2627	209.33577
Point 66	2'982.1724	269.37012
Point 67	3'011.149	290.24756
Point 68	2'990.649	280.24756
Point 69	2'980.6698	280.24756
Point 70	2'959.0565	270.24756
Point 71	2'949.7221	270.24756
Point 72	2'928.3556	260.24756
Point 73	2'903.0593	260.24756
Point 74	2'880.8345	250.24756
Point 75	2'869.84	250.24757
Point 76	2'842.6494	241.25875
Point 77	2'835.8826	240.24756
Point 78	2'817.4082	240.24756
Point 79	2'798.7905	232.31639

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 80	2'790.7871	230.24756
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REGIONS

	Material	Points	Area (m ²)
Region 1	Unghia_k	1;2;3;4;5	117.17
Region 2	B2_k	6;7;8;9;10;11;12;13;15;16;17;18;19;21;22;23;24;25;26;27;28;29;30;31	44'521
Region 3	B1_k	24;23;22;21;19;18;17;16;15;13;12;11;10;9;8;7;6;32;33;34;35;36;37;38;66;39;40;41;42;43;44;45;46;47;48;49;50;51;52;53;29;28;27;26;25	1'961.2
Region 4	A_k	48;54;55;56;57;65;58;59;60;53;52;51;50;49	258.53
Region 5	Prevam_k	54;5;4;3;2;61;62;63;64;60;59;58;65;57;56;55	1'691.1
Region 6	Abbanca mento_k	46;45;44;43;42;41;40;39;66;38;37;36;35;34;67;68;69;70;71;72;73;74;75;76;77;78;79;80;1;5;54;48;47	2'970.1

CURRENT SLIP SURFACE

Slip Surface: 1

F of S: 2.006

Volume: 3'087.2703 m³

Weight: 52'600.768 kN

Resisting Moment: 1'828'958.5 kN-m

Activating Moment: 911'730.45 kN-m

Resisting Force: 26'016.657 kN

Activating Force: 12'974.728 kN

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

F of S Rank (Analysis): 1 of 1 slip surfaces

F of S Rank (Query): 1 of 1 slip surfaces

Exit: (2'761.5777; 221.11201) m

Entry: (3'048.5839; 290.24756) m

Radius: 125.63077 m

Center: (2'892.5905; 307.53145) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'765.805	221.17979	-49.035	36.590686	0	30.222689
Slice 2	2'770.5837	221.74756	-49.035	49.025	0	42.236402
Slice 3	2'775.7271	222.28504	-49.035	107.32293	0	88.387762
Slice 4	2'785.553	222.36526	-49.035	147.26178	0	120.89957
Slice 5	2'791.0563	222.41018	-49.035	145.71488	0	119.37796
Slice 6	2'795.0581	222.44285	-49.035	161.71374	0	80.521459
Slice 7	2'803.4449	222.51132	-49.035	214.67893	0	103.62895
Slice 8	2'812.7538	222.58731	-49.035	286.56506	0	134.98363
Slice 9	2'821.4057	222.65794	-49.035	323.54398	0	151.05293
Slice 10	2'827.8131	222.71024	-49.035	324.59647	0	151.43657
Slice	2'831.3041	222.73873	-49.035	325.06428	0	151.60343

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

11						
Slice 12	2'834.1339	223.34475	-49.035	269.12449	0	129.16443
Slice 13	2'839.266	225.09735	-49.035	248.5715	0	120.0981
Slice 14	2'847.1812	227.80035	-49.035	236.04691	0	114.62294
Slice 15	2'856.2447	230.8955	-49.035	232.76699	0	113.25791
Slice 16	2'865.3082	233.99065	-49.035	229.70689	0	111.97808
Slice 17	2'875.3373	237.41551	-49.035	198.75078	0	98.277707
Slice 18	2'881.1343	239.39518	-49.035	169.81792	0	85.436887
Slice 19	2'885.0625	240.56006	-49.035	183.34889	0	91.252532
Slice 20	2'892.3194	242.68506	-49.035	200.67254	0	98.971752
Slice 21	2'899.1701	244.12256	-49.035	249.4003	0	119.46587
Slice 22	2'902.7259	244.65732	-49.035	220.39633	0	108.75963
Slice 23	2'909.2473	247.78232	-49.035	177.56268	0	89.573702
Slice 24	2'921.8955	252.03158	-49.035	135.35935	0	69.713144
Slice 25	2'929.4423	253.53158	-49.035	118.66107	0	62.35631

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 26	2'934.9591	254.99756	-49.035	130.7386	0	67.982287
Slice 27	2'943.8196	257.49756	-49.035	156.63105	0	79.472232
Slice 28	2'948.9859	258.94389	-49.035	173.34618	0	86.819959
Slice 29	2'953.2042	260.06889	-49.035	160.8825	0	81.297158
Slice 30	2'957.8713	261.66113	-49.035	117.74314	0	62.975042
Slice 31	2'963.0062	264.53613	-49.035	103.58377	0	56.594297
Slice 32	2'973.8128	267.92935	-49.035	151.58748	0	76.831118
Slice 33	2'981.4211	269.24063	-49.035	182.22448	0	90.35142
Slice 34	2'983.9927	269.68384	-49.035	174.67258	0	87.027602
Slice 35	2'988.231	270.37616	-49.035	164.00003	0	82.277541
Slice 36	2'993.8195	271.25116	-49.035	174.83129	0	87.063422
Slice 37	3'004.0695	274.36227	-49.035	190.45964	0	94.683721
Slice 38	3'013.8845	277.98727	-49.035	189.48551	0	94.16552
Slice 39	3'019.6645	279.37256	-49.035	182.94527	0	90.491365
Slice	3'027.0215	281.49756	-49.035	134.18061	0	69.644289

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

40						
Slice 41	3'035.6465	284.99756	-49.035	80.508098	0	45.784984
Slice 42	3'044.2714	288.49756	-49.035	25.821371	0	21.531712

SEZIONE A3 NON DRENATA – SUPERFICIE CIRCOLARE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

Phi': **40 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

PREVAM_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **75 kPa**

Phi': **17 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

B1_K

Model: **Mohr-Coulomb**

Unit Weight: **20 kN/m³**

Cohesion': **50 kPa**

Phi': **20 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

B2_K

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [90 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [19 kN/m³](#)
 Cohesion': [20 kPa](#)
 Phi': [10 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

ABBANCAMENTO_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [17 kN/m³](#)
 Cohesion': [150 kPa](#)
 Phi': [10 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

SLIP SURFACE ENTRY AND EXIT

Left Projection: [Range](#)
 Left-Zone Left Coordinate: [\(2'740.0748; 219.17136\) m](#)
 Left-Zone Right Coordinate: [\(2'937; 264.29333\) m](#)
 Left-Zone Increment: [30](#)
 Right Projection: [Range](#)
 Right-Zone Left Coordinate: [\(2'942.9776; 267.09098\) m](#)
 Right-Zone Right Coordinate: [\(3'075.849; 305.00002\) m](#)
 Right-Zone Increment: [20](#)
 Radius Increments: [20](#)

SLIP SURFACE LIMITS

Left Coordinate: [\(2'711.7831; 217.29801\) m](#)
 Right Coordinate: [\(3'166.5444; 307\) m](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI


SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03

Vert Seismic Coef.: 0.015

POINTS

	X (m)	Y (m)
Point 1	2'780.3189	230.24756
Point 2	2'761.5777	221.11201
Point 3	2'770.0323	221.24756
Point 4	2'771.1352	222.24756
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Point 6	3'166.5444	303.01257
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Point 10	3'017.0134	274.96252
Point 11	3'003.5041	269.46226
Point 12	2'997.1767	267.769
Point 13	2'980.0278	265.17352
Point 14	2'971.3858	263.29635
Point 15	2'969.083	262.6869
Point 16	2'958.9575	257.24266
Point 17	2'932.6225	250.22585
Point 18	2'917.6895	246.81467

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 19	2'904.39	240.65645
Point 20	2'900.8284	240.14298
Point 21	2'897.8768	239.63768
Point 22	2'876.353	232.93888
Point 23	2'836.6834	219.79672
Point 24	2'834.1466	219.09019
Point 25	2'812.8195	209.40816
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Point 29	2'711.7831	191.66118
Point 30	2'711.7831	153.08176
Point 31	3'166.5444	153.08176
Point 32	3'166.5444	307
Point 33	3'078.4196	306.39091
Point 34	3'048.5839	290.24756
Point 35	3'022.709	279.74756
Point 36	3'016.6199	278.99756
Point 37	2'996.9899	271.74756
Point 38	2'985.8129	269.99756
Point 39	2'966.9558	266.74756
Point 40	2'956.6862	260.99756
Point 41	2'948.2498	258.74756

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 42	2'930.5289	253.74756
Point 43	2'915.4353	250.74756
Point 44	2'902.3925	244.49756
Point 45	2'895.9478	243.74756
Point 46	2'881.4341	239.49756
Point 47	2'832.3851	222.74756
Point 48	2'830.223	222.72991
Point 49	2'811.4482	213.17936
Point 50	2'791.4405	207.66609
Point 51	2'781.4223	203.33454
Point 52	2'767.9566	201.58299
Point 53	2'711.7831	194.88956
Point 54	2'825.4031	222.69057
Point 55	2'810.7663	215.04705
Point 56	2'796.5599	211.19433
Point 57	2'790.7748	209.55719
Point 58	2'788.672	208.64801
Point 59	2'780.8861	205.28164
Point 60	2'711.7831	197.26143
Point 61	2'755.2558	220.81593
Point 62	2'741.4729	219.22387
Point 63	2'736.6835	219.04398
Point 64	2'711.7831	217.29801

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 65	2'790.2627	209.33577
Point 66	2'982.1724	269.37012
Point 67	3'011.149	290.24756
Point 68	2'990.649	280.24756
Point 69	2'980.6698	280.24756
Point 70	2'959.0565	270.24756
Point 71	2'949.7221	270.24756
Point 72	2'928.3556	260.24756
Point 73	2'903.0593	260.24756
Point 74	2'880.8345	250.24756
Point 75	2'869.84	250.24757
Point 76	2'842.6494	241.25875
Point 77	2'835.8826	240.24756
Point 78	2'817.4082	240.24756
Point 79	2'798.7905	232.31639
Point 80	2'790.7871	230.24756

REGIONS

	Material	Points	Area (m ²)
Reg ion 1	Unghia_k	1;2;3;4;5	117. 17
Reg ion	B2_k	6;7;8;9;10;11;12;13;15;16;17;18;19;21;22;23;24;25;26;27;28;29;30;31	44'5 21

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

2			
Reg ion 3	B1_k	24;23;22;21;19;18;17;16;15;13;12;11;10;9;8;7;6;32;33;34;35;36;37;38;66;39 ;40;41;42;43;44;45;46;47;48;49;50;51;52;53;29;28;27;26;25	1'96 1.2
Reg ion 4	A_k	48;54;55;56;57;65;58;59;60;53;52;51;50;49	258. 53
Reg ion 5	Prevam_ k	54;5;4;3;2;61;62;63;64;60;59;58;65;57;56;55	1'69 1.1
Reg ion 6	Abbanca mento_k	46;45;44;43;42;41;40;39;66;38;37;36;35;34;67;68;69;70;71;72;73;74;75;76; 77;78;79;80;1;5;54;48;47	2'97 0.1

CURRENT SLIP SURFACE

Slip Surface: 429
 F of S: 1.967
 Volume: 12'134.268 m³
 Weight: 238'879.22 kN
 Resisting Moment: 35'449'412 kN-m
 Activating Moment: 18'029'920 kN-m
 Resisting Force: 110'512.94 kN
 Activating Force: 56'185.819 kN
 F of S Rank (Analysis): 1 of 13'671 slip surfaces
 F of S Rank (Query): 1 of 13'671 slip surfaces
 Exit: (2'740.0748; 219.17136) m
 Entry: (3'075.849; 305.00002) m
 Radius: 299.72036 m
 Center: (2'847.3988; 499.0175) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice	2'740.7739	218.90526	-49.035	21.186932	0	80.882141

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

1						
Slice 2	2'748.3643	216.22577	-49.034994	90.96932	0	101.65292
Slice 3	2'758.4167	212.82955	-49.03498	178.77148	0	127.74356
Slice 4	2'765.805	210.65063	-49.034976	267.94795	0	154.25744
Slice 5	2'770.5837	209.30829	-49.03496	342.25981	0	176.37549
Slice 6	2'775.7271	208.03108	-49.034979	419.37114	0	199.31527
Slice 7	2'781.7374	206.58157	-49.035	493.64936	0	221.40361
Slice 8	2'784.843	205.90302	-49.035	485.69431	0	103.55338
Slice 9	2'787.601	205.32492	-49.035	520.17995	0	233.62611
Slice 10	2'789.4673	204.95018	-49.035	529.38198	0	236.86602
Slice 11	2'790.5249	204.74282	-49.035	534.45379	0	238.65276
Slice 12	2'791.0563	204.64061	-49.035	538.21086	0	239.98068
Slice 13	2'792.7808	204.31938	-49.035	555.08389	0	245.95611
Slice 14	2'795.3979	203.84498	-49.035	588.1106	0	297.28965
Slice 15	2'797.6752	203.45264	-49.034999	610.80342	0	305.32674

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 16	2'804.7784	202.40461	-49.034994	695.27191	0	335.31467
Slice 17	2'811.1073	201.50262	-49.035003	771.57718	0	362.4739
Slice 18	2'812.1339	201.37979	-49.035006	783.70254	0	366.79762
Slice 19	2'815.1139	201.04996	-49.035014	818.69196	0	379.2875
Slice 20	2'821.4057	200.45335	-49.035009	857.75633	0	393.32065
Slice 21	2'827.8131	199.9475	-49.034997	874.03087	0	399.30537
Slice 22	2'831.3041	199.73154	-49.034997	879.11985	0	401.24863
Slice 23	2'833.2658	199.63183	-49.035005	881.50926	0	402.18214
Slice 24	2'835.0146	199.55436	-49.03501	884.13724	0	403.19731
Slice 25	2'836.283	199.5036	-49.035014	886.82486	0	404.21558
Slice 26	2'839.6664	199.41176	-49.03502	899.12362	0	408.77934
Slice 27	2'849.4471	199.38124	-49.035004	949.09228	0	427.24294
Slice 28	2'863.0424	199.78308	-49.035028	1'015.8799	0	452.22629
Slice 29	2'873.0965	200.41871	-49.034999	1'034.9504	0	459.99741
Slice	2'878.5938	200.93347	-49.034994	1'019.4753	0	454.97811

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

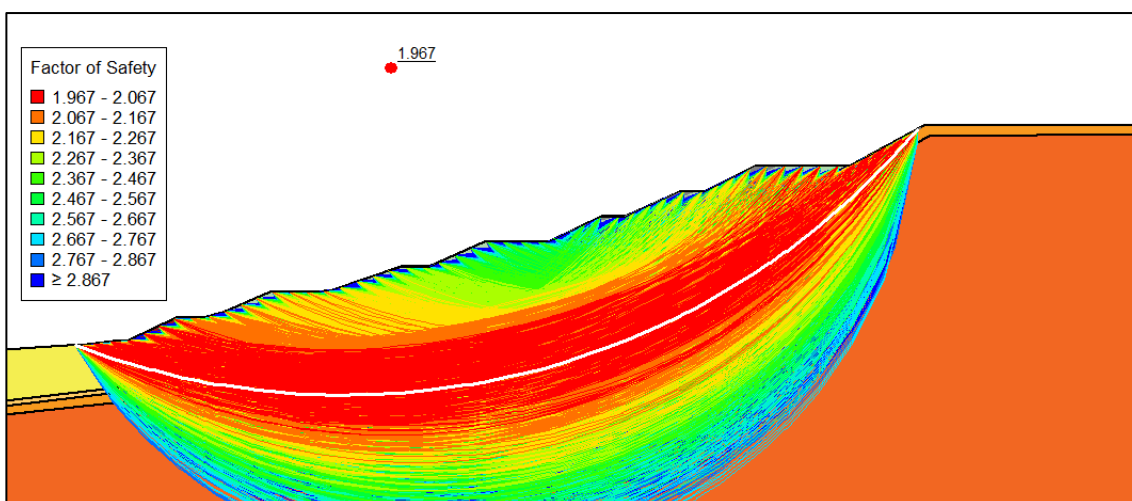
30						
Slice 31	2'888.3911	202.21163	-49.035011	1'040.228	0	463.46456
Slice 32	2'896.9123	203.41684	-49.035013	1'068.0947	0	474.42952
Slice 33	2'900.1347	203.98198	-49.035004	1'074.2643	0	477.01164
Slice 34	2'902.7259	204.44818	-49.034994	1'079.1268	0	479.0542
Slice 35	2'903.7247	204.6381	-49.034991	1'076.7493	0	478.30546
Slice 36	2'909.9127	205.94341	-49.034973	1'045.9324	0	467.83557
Slice 37	2'916.5624	207.38872	-49.034989	1'011.8721	0	456.20356
Slice 38	2'923.0226	209.04688	-49.035008	969.06996	0	441.33385
Slice 39	2'929.4423	210.747	-49.035006	934.29354	0	429.32076
Slice 40	2'931.5757	211.36259	-49.035001	935.28882	0	429.87633
Slice 41	2'940.4362	214.22149	-49.03501	935.37792	0	430.67639
Slice 42	2'948.9859	217.03927	-49.035013	934.95131	0	431.21688
Slice 43	2'953.2042	218.61839	-49.035005	906.58225	0	421.19058
Slice 44	2'957.8713	220.40222	-49.035005	870.2129	0	408.24919

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 45	2'963.0062	222.52356	-49.034989	859.9143	0	404.81412
Slice 46	2'968.0194	224.64256	-49.034965	856.58134	0	403.89041
Slice 47	2'974.5554	227.67462	-49.034989	841.5264	0	398.7235
Slice 48	2'980.3488	230.39797	-49.035023	828.01115	0	394.04523
Slice 49	2'981.4211	230.93244	-49.035029	819.88463	0	391.11563
Slice 50	2'983.9927	232.24003	-49.035028	794.86143	0	382.05724
Slice 51	2'988.231	234.45922	-49.035013	752.91359	0	366.84715
Slice 52	2'993.8195	237.52166	-49.035003	718.59277	0	354.44162
Slice 53	3'000.247	241.22811	-49.035005	698.81037	0	347.34495
Slice 54	3'007.3266	245.57132	-49.035003	676.09482	0	339.13813
Slice 55	3'013.8845	249.81079	-49.035022	633.64999	0	323.64053
Slice 56	3'016.8167	251.77306	-49.035017	601.82804	0	311.98433
Slice 57	3'019.8612	253.91166	-49.035016	564.76499	0	298.40164
Slice 58	3'023.1498	256.23453	-49.034998	525.04373	0	283.83597
Slice	3'029.8389	261.35002	-49.035015	443.13238	0	253.80249

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

59						
Slice 60	3'042.3356	271.49996	-49.034971	281.11733	0	194.38988
Slice 61	3'048.9266	277.16483	-49.034985	193.1634	0	162.15505
Slice 62	3'053.8018	281.78268	-49.035003	157.32901	0	149.09228
Slice 63	3'062.8669	290.77913	-49.034988	83.009153	0	122.03559
Slice 64	3'071.6242	300.23453	-49.035004	17.547969	0	57.469396



SEZIONE A3 NON DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: Meters
Time(t) Units: Seconds
Force(F) Units: Kilonewtons
Pressure(p) Units: kPa
Strength Units: kPa
Unit Weight of Water: 9.807 kN/m³
View: 2D

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Element Thickness: 1

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)

Parent: [Insitu](#)

Method: [Morgenstern-Price](#)

Settings

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Fully-Specified](#)

Critical slip surfaces saved: 1

Resisting Side Maximum Convex Angle: 1 °

Driving Side Maximum Convex Angle: 5 °

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: 30

F of S Tolerance: 0.001

Minimum Slip Surface Depth: 1 m

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: 3

Maximum iterations to calculate converged lambda: 20

Max Absolute Lambda: 2

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: 18 kN/m³

Cohesion': 0 kPa

Phi': 40 °

Phi-B: 0 °

Cohesion R: 0 kPa

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi R: 0 °

PREVAM_K

Model: Mohr-Coulomb
Unit Weight: 18 kN/m³
Cohesion': 75 kPa
Phi': 17 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

B1_K

Model: Mohr-Coulomb
Unit Weight: 20 kN/m³
Cohesion': 50 kPa
Phi': 20 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

B2_K

Model: Mohr-Coulomb
Unit Weight: 21 kN/m³
Cohesion': 90 kPa
Phi': 20 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

A_K

Model: Mohr-Coulomb
Unit Weight: 19 kN/m³
Cohesion': 20 kPa
Phi': 10 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 17 kN/m³

Cohesion': 150 kPa

Phi': 10 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

SLIP SURFACE LIMITS

Left Coordinate: (2'711.7831; 217.29801) m

Right Coordinate: (3'166.5444; 307) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	2'761.5777	221.11201
	2'770.0323	221.24756
	2'771.1352	222.24756
	2'791.3256	222.41238
	2'825.4031	222.69057
	2'830.223	222.72991
	2'832.3851	222.74756
	2'881.4341	239.49756
	2'895.9478	243.74756
	2'902.3925	244.49756
	2'915.4353	250.74756
	2'930.5289	253.74756
	2'948.2498	258.74756

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	2'956.6862	260.99756
	2'966.9558	266.74756
	2'982.1724	269.37012
	2'985.8129	269.99756
	2'996.9899	271.74756
	3'016.6199	278.99756
	3'022.709	279.74756
	3'048.5839	290.24756

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03

Vert Seismic Coef.: 0.015

POINTS

	X (m)	Y (m)
Point 1	2'780.3189	230.24756
Point 2	2'761.5777	221.11201
Point 3	2'770.0323	221.24756
Point 4	2'771.1352	222.24756
Point 5	2'791.3256	222.41238
Point 6	3'166.5444	303.01257
Point 7	3'080.3246	302.38842
Point 8	3'049.2693	285.76317
Point 9	3'023.5906	275.83199

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 10	3'017.0134	274.96252
Point 11	3'003.5041	269.46226
Point 12	2'997.1767	267.769
Point 13	2'980.0278	265.17352
Point 14	2'971.3858	263.29635
Point 15	2'969.083	262.6869
Point 16	2'958.9575	257.24266
Point 17	2'932.6225	250.22585
Point 18	2'917.6895	246.81467
Point 19	2'904.39	240.65645
Point 20	2'900.8284	240.14298
Point 21	2'897.8768	239.63768
Point 22	2'876.353	232.93888
Point 23	2'836.6834	219.79672
Point 24	2'834.1466	219.09019
Point 25	2'812.8195	209.40816
Point 26	2'792.3136	203.4954
Point 27	2'782.4947	199.44034
Point 28	2'762.9184	196.89394
Point 29	2'711.7831	191.66118
Point 30	2'711.7831	153.08176
Point 31	3'166.5444	153.08176
Point 32	3'166.5444	307

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 33	3'078.4196	306.39091
Point 34	3'048.5839	290.24756
Point 35	3'022.709	279.74756
Point 36	3'016.6199	278.99756
Point 37	2'996.9899	271.74756
Point 38	2'985.8129	269.99756
Point 39	2'966.9558	266.74756
Point 40	2'956.6862	260.99756
Point 41	2'948.2498	258.74756
Point 42	2'930.5289	253.74756
Point 43	2'915.4353	250.74756
Point 44	2'902.3925	244.49756
Point 45	2'895.9478	243.74756
Point 46	2'881.4341	239.49756
Point 47	2'832.3851	222.74756
Point 48	2'830.223	222.72991
Point 49	2'811.4482	213.17936
Point 50	2'791.4405	207.66609
Point 51	2'781.4223	203.33454
Point 52	2'767.9566	201.58299
Point 53	2'711.7831	194.88956
Point 54	2'825.4031	222.69057
Point 55	2'810.7663	215.04705

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 56	2'796.5599	211.19433
Point 57	2'790.7748	209.55719
Point 58	2'788.672	208.64801
Point 59	2'780.8861	205.28164
Point 60	2'711.7831	197.26143
Point 61	2'755.2558	220.81593
Point 62	2'741.4729	219.22387
Point 63	2'736.6835	219.04398
Point 64	2'711.7831	217.29801
Point 65	2'790.2627	209.33577
Point 66	2'982.1724	269.37012
Point 67	3'011.149	290.24756
Point 68	2'990.649	280.24756
Point 69	2'980.6698	280.24756
Point 70	2'959.0565	270.24756
Point 71	2'949.7221	270.24756
Point 72	2'928.3556	260.24756
Point 73	2'903.0593	260.24756
Point 74	2'880.8345	250.24756
Point 75	2'869.84	250.24757
Point 76	2'842.6494	241.25875
Point 77	2'835.8826	240.24756
Point 78	2'817.4082	240.24756

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 79	2'798.7905	232.31639
Point 80	2'790.7871	230.24756

REGIONS

	Material	Points	Area (m²)
Region 1	Unghia_k	1;2;3;4;5	117.17
Region 2	B2_k	6;7;8;9;10;11;12;13;15;16;17;18;19;21;22;23;24;25;26;27;28;29;30;31	44'521
Region 3	B1_k	24;23;22;21;19;18;17;16;15;13;12;11;10;9;8;7;6;32;33;34;35;36;37;38;66;39;40;41;42;43;44;45;46;47;48;49;50;51;52;53;29;28;27;26;25	1'961.2
Region 4	A_k	48;54;55;56;57;65;58;59;60;53;52;51;50;49	258.53
Region 5	Prevam_k	54;5;4;3;2;61;62;63;64;60;59;58;65;57;56;55	1'691.1
Region 6	Abbanca mento_k	46;45;44;43;42;41;40;39;66;38;37;36;35;34;67;68;69;70;71;72;73;74;75;76;77;78;79;80;1;5;54;48;47	2'970.1

CURRENT SLIP SURFACE

Slip Surface: 1

F of S: 3.814

Volume: 3'087.2703 m³

Weight: 52'600.768 kN

Resisting Moment: 3'423'014.1 kN-m

Activating Moment: 897'515.07 kN-m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Resisting Force: 49'264.537 kN
 Activating Force: 12'917.885 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (2'761.5777; 221.11201) m
 Entry: (3'048.5839; 290.24756) m
 Radius: 125.63077 m
 Center: (2'892.5905; 307.53145) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'765.805	221.17979	-49.035	36.476338	0	30.125544
Slice 2	2'770.5837	221.74756	-49.035	56.052885	0	47.622002
Slice 3	2'775.7271	222.28504	-49.035	105.71571	0	87.133287
Slice 4	2'785.553	222.36526	-49.035	143.3175	0	117.79402
Slice 5	2'791.0563	222.41018	-49.035	140.64175	0	115.38541
Slice 6	2'795.0581	222.44285	-49.035	160.33766	0	177.51934
Slice 7	2'803.4449	222.51132	-49.035	212.2568	0	186.45058
Slice 8	2'812.7538	222.58731	-49.035	281.70366	0	198.44542
Slice 9	2'821.4057	222.65794	-49.035	316.62915	0	204.4547
Slice 10	2'827.8131	222.71024	-49.035	316.96331	0	204.46508

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 11	2'831.3041	222.73873	-49.035	317.07662	0	204.46147
Slice 12	2'834.1339	223.34475	-49.035	267.79243	0	197.23361
Slice 13	2'839.266	225.09735	-49.035	246.84845	0	193.56517
Slice 14	2'847.1812	227.80035	-49.035	234.20037	0	191.39223
Slice 15	2'856.2447	230.8955	-49.035	231.04396	0	190.90926
Slice 16	2'865.3082	233.99065	-49.035	228.19359	0	190.46356
Slice 17	2'875.3373	237.41551	-49.035	197.4614	0	184.99018
Slice 18	2'881.1343	239.39518	-49.035	168.70154	0	179.83514
Slice 19	2'885.0625	240.56006	-49.035	182.52281	0	182.15189
Slice 20	2'892.3194	242.68506	-49.035	200.10707	0	185.31003
Slice 21	2'899.1701	244.12256	-49.035	247.07613	0	192.87637
Slice 22	2'902.7259	244.65732	-49.035	221.1057	0	189.84477
Slice 23	2'909.2473	247.78232	-49.035	177.59049	0	181.91829
Slice 24	2'921.8955	252.03158	-49.035	137.45244	0	173.78247
Slice	2'929.4423	253.53158	-49.035	121.32056	0	170.91964

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

25						
Slice 26	2'934.9591	254.99756	-49.035	132.34645	0	173.12241
Slice 27	2'943.8196	257.49756	-49.035	158.25901	0	177.75301
Slice 28	2'948.9859	258.94389	-49.035	175.07237	0	180.70017
Slice 29	2'953.2042	260.06889	-49.035	162.72267	0	178.49463
Slice 30	2'957.8713	261.66113	-49.035	116.29112	0	170.88801
Slice 31	2'963.0062	264.53613	-49.035	101.32288	0	168.15304
Slice 32	2'973.8128	267.92935	-49.035	153.86952	0	176.65601
Slice 33	2'981.4211	269.24063	-49.035	184.1079	0	182.01238
Slice 34	2'983.9927	269.68384	-49.035	176.622	0	180.69986
Slice 35	2'988.231	270.37616	-49.035	166.07285	0	178.81609
Slice 36	2'993.8195	271.25116	-49.035	176.76918	0	180.71992
Slice 37	3'004.0695	274.36227	-49.035	192.19107	0	183.91658
Slice 38	3'013.8845	277.98727	-49.035	191.21563	0	183.65163
Slice 39	3'019.6645	279.37256	-49.035	184.90612	0	182.05737

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 40	3'027.0215	281.49756	-49.035	132.65417	0	173.34702
Slice 41	3'035.6465	284.99756	-49.035	74.875326	0	163.21799
Slice 42	3'044.2714	288.49756	-49.035	14.982977	0	152.84116

SEZIONE A4 DRENATA – SUPERFICI CIRCOLARI –PSEUDO- STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Driving Side Maximum Convex Angle: 5 °

Optimize Critical Slip Surface Location: No

Tension Crack

Tension Crack Option: (none)

F of S Distribution

F of S Calculation Option: Constant

Advanced

Number of Slices: 30

F of S Tolerance: 0.001

Minimum Slip Surface Depth: 1 m

Search Method: Root Finder

Tolerable difference between starting and converged F of S: 3

Maximum iterations to calculate converged lambda: 20

Max Absolute Lambda: 2

MATERIALS

UNGHIA_K

Model: Mohr-Coulomb

Unit Weight: 18 kN/m³

Cohesion': 0 kPa

Phi': 40 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

PREVAM_K

Model: Mohr-Coulomb

Unit Weight: 18 kN/m³

Cohesion': 10 kPa

Phi': 20 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

B1_K

Model: Mohr-Coulomb

Unit Weight: 20 kN/m³

Cohesion': 15 kPa

Phi': 22 °

Phi-B: 0 °

Cohesion R: 0 kPa

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi R: 0 °

B2_K

Model: Mohr-Coulomb
Unit Weight: 21 kN/m³
Cohesion': 25 kPa
Phi': 24 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

A_K

Model: Mohr-Coulomb
Unit Weight: 19 kN/m³
Cohesion': 10 kPa
Phi': 25 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
Unit Weight: 17 kN/m³
Cohesion': 10 kPa
Phi': 24 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range
Left-Zone Left Coordinate: (2'796.8066; 215.21759) m
Left-Zone Right Coordinate: (3'007; 263.23413) m
Left-Zone Increment: 30
Right Projection: Range
Right-Zone Left Coordinate: (3'015.8541; 267.92261) m
Right-Zone Right Coordinate: (3'145; 299.21648) m
Right-Zone Increment: 20
Radius Increments: 20

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SLIP SURFACE LIMITS

Left Coordinate: (2'727.5266; 204.85355) m

Right Coordinate: (3'220.2729; 310) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03

Vert Seismic Coef.: 0.015

POINTS

	X (m)	Y (m)
Point 1	2'843.6155	232.25048
Point 2	2'835.4023	228.14388
Point 3	2'818.7979	219.17975
Point 4	2'852.9875	223.59905
Point 5	3'020.7119	248.95247
Point 6	3'064.3063	259.42029
Point 7	3'134.3395	292.54587
Point 8	3'101.1574	292.47157
Point 9	3'082.0485	282.28764
Point 10	3'070.22	282.28764
Point 11	3'051.3472	272.25048
Point 12	3'024.0272	272.25048
Point 13	3'005.1424	262.25048
Point 14	2'988.7526	262.25048
Point 15	2'970.0575	252.25048

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 16	2'944.7846	252.25048
Point 17	2'926.0509	242.25048
Point 18	2'882.981	242.25048
Point 19	2'864.232	232.25048
Point 20	2'910.7065	225.17729
Point 21	2'915.774	225.31585
Point 22	2'923.11	225.51644
Point 23	3'220.2729	306
Point 24	3'161.8501	305.54294
Point 25	3'136.7068	289.73087
Point 26	3'068.3767	257.48721
Point 27	2'916.2965	219.28444
Point 28	2'898.3504	212.96584
Point 29	2'877.8711	206.87817
Point 30	2'868.0812	202.37698
Point 31	2'727.5266	181.54206
Point 32	2'727.5266	96.5976
Point 33	3'220.2729	96.5976
Point 34	3'220.2729	310
Point 35	3'159.9548	309.38742
Point 36	3'151.5696	303.32728
Point 37	2'897.9163	215.982
Point 38	2'876.9915	210.25203

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 39	2'868.0361	206.2166
Point 40	2'853.5076	204.16892
Point 41	2'727.5266	184.89182
Point 42	2'896.2548	217.73467
Point 43	2'882.0484	213.88196
Point 44	2'876.2633	212.24481
Point 45	2'875.7512	212.02339
Point 46	2'874.1605	211.33563
Point 47	2'866.3746	207.96927
Point 48	2'727.5266	187.11451
Point 49	2'780.966	212.3636
Point 50	2'727.5266	204.85355

REGIONS

	Material	Points	Area (m²)
Regio n 1	Unghia_k	1;2;3;4	171.32
Regio n 2	Abbancamento _k	5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;1;4;20;21;22	4'592.7
Regio n 3	B2_k	23;24;25;26;27;28;29;30;31;32;33	69'861
Regio n 4	B1_k	30;29;28;27;26;25;24;23;34;35;36;7;6;5;22;21;37;38;39;40;41;3 1	1'893.7
Regio	A_k	40;39;38;37;21;20;42;43;44;45;46;47;48;41	393.48

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

n 5			
Regio n 6	Prevam_k	46;45;44;43;42;20;4;3;49;50;48;47	2'826.8

CURRENT SLIP SURFACE

Slip Surface: 13'281
 F of S: 1.557
 Volume: 70.201176 m³
 Weight: 1'193.42 kN
 Resisting Moment: 17'267.258 kN-m
 Activating Moment: 11'090.867 kN-m
 Resisting Force: 675.11883 kN
 Activating Force: 433.68179 kN
 F of S Rank (Analysis): 1 of 13'671 slip surfaces
 F of S Rank (Query): 1 of 13'671 slip surfaces
 Exit: (3'007; 263.23413) m
 Entry: (3'028.4973; 272.25048) m
 Radius: 22.964653 m
 Center: (3'010.0956; 285.98919) m

SLIP SLICES


	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'007.3547	263.19148	-49.035	5.3454285	0	12.291698
Slice 2	3'008.0642	263.11733	-49.035	14.187153	0	16.104481
Slice 3	3'008.7737	263.06536	-49.035	22.782328	0	19.803445
Slice 4	3'009.4831	263.03544	-49.035	30.975788	0	23.328947
Slice 5	3'010.1926	263.02748	-49.035	38.615101	0	26.622396

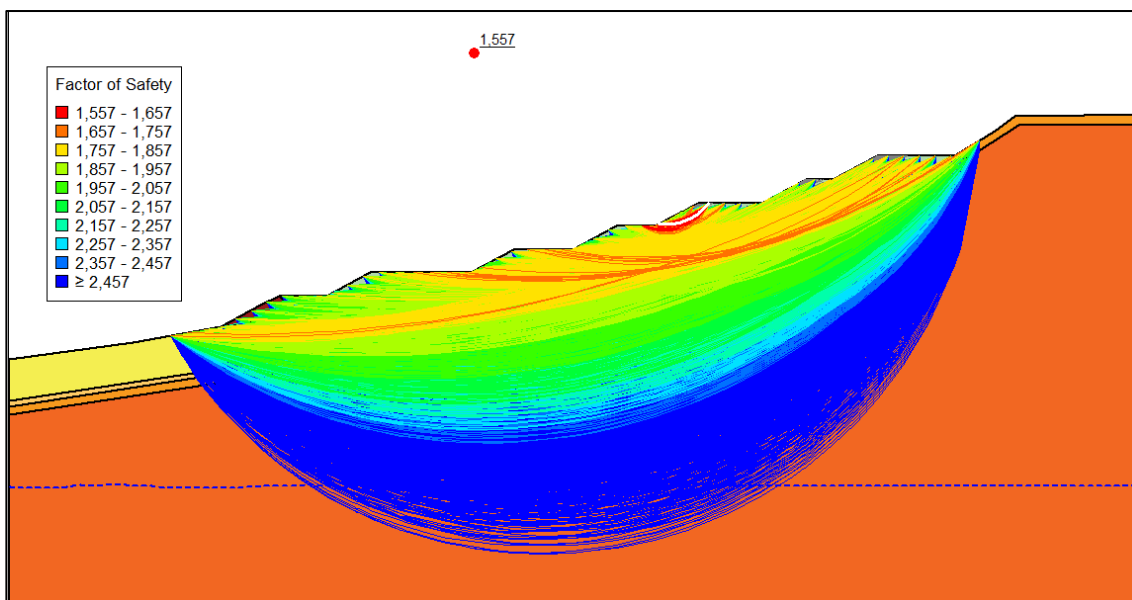
	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 6	3'010.9021	263.04144	-49.035	45.563098	0	29.630832
Slice 7	3'011.6115	263.07738	- 49.034999	51.708696	0	32.310894
Slice 8	3'012.321	263.13539	- 49.034998	56.974609	0	34.631713
Slice 9	3'013.0305	263.21565	- 49.034998	61.321174	0	36.576436
Slice 10	3'013.7399	263.31839	- 49.034997	64.746152	0	38.142303
Slice 11	3'014.4494	263.44392	- 49.034996	67.281043	0	39.339463
Slice 12	3'015.1589	263.59262	- 49.034995	68.984849	0	40.18881
Slice 13	3'015.8683	263.76496	- 49.034994	69.936437	0	40.71925
Slice 14	3'016.5778	263.96149	- 49.034994	70.226578	0	40.964769
Slice 15	3'017.2873	264.18287	- 49.034994	69.95051	0	40.961627
Slice 16	3'017.9967	264.42986	- 49.034993	69.201593	0	40.745892
Slice 17	3'018.7062	264.70336	- 49.034993	68.066305	0	40.351428
Slice 18	3'019.4157	265.00441	- 49.034993	66.620587	0	39.808356
Slice 19	3'020.1251	265.33421	- 49.034993	64.927376	0	39.141952
Slice	3'020.8346	265.69417	-	63.035065	0	38.371886

	Committente		Oggetto del servizio
	GE.R.IN		DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

20			49.034993			
Slice 21	3'021.5441	266.08592	- 49.034993	60.976583	0	37.511688
Slice 22	3'022.2535	266.51138	- 49.034994	58.768786	0	36.568333
Slice 23	3'022.963	266.97284	- 49.034994	56.411869	0	35.541806
Slice 24	3'023.6725	267.47297	- 49.034994	53.888411	0	34.424525
Slice 25	3'024.3997	268.02977	- 49.034994	48.594145	0	32.041263
Slice 26	3'025.1447	268.64977	- 49.034995	40.466076	0	28.367167
Slice 27	3'025.8897	269.32616	- 49.034995	31.850442	0	24.470497
Slice 28	3'026.6348	270.06617	- 49.034996	22.497318	0	20.248735
Slice 29	3'027.3798	270.8792	- 49.034998	12.075291	0	15.56768
Slice 30	3'028.1248	271.7779	- 49.034999	0.12825629	0	10.246675

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI



SEZIONE A4 DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
Time(t) Units: [Seconds](#)
Force(F) Units: [Kilonewtons](#)
Pressure(p) Units: [kPa](#)
Strength Units: [kPa](#)
Unit Weight of Water: [9.807 kN/m³](#)
View: [2D](#)
Element Thickness: [1](#)

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)
Parent: [Insitu](#)
Method: [Morgenstern-Price](#)
Settings
Side Function
Interslice force function option: [Half-Sine](#)
PWP Conditions Source: [Parent Analysis](#)
Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
Slip Surface
Direction of movement: [Right to Left](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Use Passive Mode: **No**
 Slip Surface Option: **Fully-Specified**
 Critical slip surfaces saved: **1**
 Resisting Side Maximum Convex Angle: **1 °**
 Driving Side Maximum Convex Angle: **5 °**
 Optimize Critical Slip Surface Location: **No**
 Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

Phi': **40 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

PREVAM_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **10 kPa**

Phi': **20 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

B1_K

Model: **Mohr-Coulomb**

Unit Weight: **20 kN/m³**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Cohesion': 15 kPa
 Phi': 22 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B2_K

Model: Mohr-Coulomb
 Unit Weight: 21 kN/m³
 Cohesion': 25 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A_K

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 10 kPa
 Phi': 25 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 10 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE LIMITS

Left Coordinate: (2'727.5266; 204.85355) m
 Right Coordinate: (3'220.2729; 310) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	X (m)	Y (m)
	2'818.7979	219.17975
	2'852.9875	223.59905
	2'910.7065	225.17729
	2'915.774	225.31585
	2'923.11	225.51644
	3'020.7119	248.95247
	3'064.3063	259.42029
	3'134.3395	292.54587

SEISMIC COEFFICIENTS

Horz Seismic Coef.: **0.03**

Vert Seismic Coef.: **0.015**

POINTS

	X (m)	Y (m)
Point 1	2'843.6155	232.25048
Point 2	2'835.4023	228.14388
Point 3	2'818.7979	219.17975
Point 4	2'852.9875	223.59905
Point 5	3'020.7119	248.95247
Point 6	3'064.3063	259.42029
Point 7	3'134.3395	292.54587
Point 8	3'101.1574	292.47157

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 9	3'082.0485	282.28764
Point 10	3'070.22	282.28764
Point 11	3'051.3472	272.25048
Point 12	3'024.0272	272.25048
Point 13	3'005.1424	262.25048
Point 14	2'988.7526	262.25048
Point 15	2'970.0575	252.25048
Point 16	2'944.7846	252.25048
Point 17	2'926.0509	242.25048
Point 18	2'882.981	242.25048
Point 19	2'864.232	232.25048
Point 20	2'910.7065	225.17729
Point 21	2'915.774	225.31585
Point 22	2'923.11	225.51644
Point 23	3'220.2729	306
Point 24	3'161.8501	305.54294
Point 25	3'136.7068	289.73087
Point 26	3'068.3767	257.48721
Point 27	2'916.2965	219.28444
Point 28	2'898.3504	212.96584
Point 29	2'877.8711	206.87817
Point 30	2'868.0812	202.37698
Point 31	2'727.5266	181.54206

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 32	2'727.5266	96.5976
Point 33	3'220.2729	96.5976
Point 34	3'220.2729	310
Point 35	3'159.9548	309.38742
Point 36	3'151.5696	303.32728
Point 37	2'897.9163	215.982
Point 38	2'876.9915	210.25203
Point 39	2'868.0361	206.2166
Point 40	2'853.5076	204.16892
Point 41	2'727.5266	184.89182
Point 42	2'896.2548	217.73467
Point 43	2'882.0484	213.88196
Point 44	2'876.2633	212.24481
Point 45	2'875.7512	212.02339
Point 46	2'874.1605	211.33563
Point 47	2'866.3746	207.96927
Point 48	2'727.5266	187.11451
Point 49	2'780.966	212.3636
Point 50	2'727.5266	204.85355

REGIONS

	Material	Points	Area (m²)
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Regio n 1	Unghia_k	1;2;3;4	171.32
Regio n 2	Abbancamento_k	5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;1;4;20;21;22	4'592.7
Regio n 3	B2_k	23;24;25;26;27;28;29;30;31;32;33	69'861
Regio n 4	B1_k	30;29;28;27;26;25;24;23;34;35;36;7;6;5;22;21;37;38;39;40;41;3 1	1'893.7
Regio n 5	A_k	40;39;38;37;21;20;42;43;44;45;46;47;48;41	393.48
Regio n 6	Prevam_k	46;45;44;43;42;20;4;3;49;50;48;47	2'826.8

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 1.960
 Volume: 4'764.0242 m³
 Weight: 81'159.733 kN
 Resisting Moment: 3'145'217 kN-m
 Activating Moment: 1'604'462.8 kN-m
 Resisting Force: 38'700.141 kN
 Activating Force: 19'745.264 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (2'818.7979; 219.17975) m
 Entry: (3'134.3395; 292.54587) m
 Radius: 138.91661 m
 Center: (2'963.775; 310.8874) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice	2'822.949	219.71632	-49.035	29.704495	0	24.702774

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

1						
Slice 2	2'831.2512	220.78945	-49.035	89.852974	0	74.612874
Slice 3	2'839.5089	221.85682	-49.035	147.88435	0	122.60447
Slice 4	2'848.3015	222.99334	-49.035	161.77879	0	133.87023
Slice 5	2'858.6098	223.75278	-49.035	152.2024	0	76.485564
Slice 6	2'868.9192	224.03468	-49.035	192.78347	0	94.186451
Slice 7	2'878.2937	224.29101	-49.035	278.1747	0	131.49062
Slice 8	2'887.6019	224.54553	-49.035	319.98299	0	149.69046
Slice 9	2'896.8438	224.79823	-49.035	317.44135	0	148.4843
Slice 10	2'906.0856	225.05094	-49.035	314.50067	0	147.11951
Slice 11	2'913.2402	225.24657	-49.035	311.94289	0	145.95195
Slice 12	2'919.442	225.41615	-49.035	309.49	0	144.84738
Slice 13	2'924.5804	225.86952	-49.035004	271.41094	0	129.6647
Slice 14	2'930.7343	227.34718	-49.035023	287.15781	0	136.67541
Slice 15	2'940.1012	229.59634	-49.034979	330.4228	0	155.88449

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 16	2'951.1028	232.23804	-49.034986	326.70136	0	154.31764
Slice 17	2'963.7393	235.27228	-49.035008	276.10521	0	132.01468
Slice 18	2'974.7313	237.91167	-49.034959	272.57823	0	130.51938
Slice 19	2'984.0788	240.15619	-49.034988	316.08183	0	149.81843
Slice 20	2'992.8501	242.26232	-49.035014	321.55549	0	152.28203
Slice 21	3'001.045	244.23007	-49.035039	288.97777	0	137.90267
Slice 22	3'012.9272	247.08321	-49.034977	308.49844	0	146.57958
Slice 23	3'022.3695	249.3505	-49.034993	352.02	0	165.85628
Slice 24	3'028.5805	250.84187	-49.034965	341.72483	0	161.31189
Slice 25	3'037.6872	253.02855	-49.034978	305.83918	0	145.45058
Slice 26	3'046.7939	255.21523	-49.034981	269.97873	0	129.60018
Slice 27	3'057.8268	257.86443	-49.034971	282.48461	0	135.1335
Slice 28	3'067.2632	260.81887	-49.034992	288.80371	0	139.18045
Slice 29	3'076.1343	265.01489	-49.034967	251.90094	0	122.60977
Slice	3'086.8257	270.07194	-49.034993	216.82466	0	106.85037

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

30						
Slice 31	3'096.3802	274.59118	-49.035008	227.93127	0	111.68721
Slice 32	3'106.6878	279.46664	-49.034979	195.36761	0	97.072986
Slice 33	3'117.7485	284.69833	-49.034959	117.71703	0	62.445924
Slice 34	3'128.8092	289.93002	-49.035015	38.206386	0	27.08331

SEZIONE A4 NON DRENATA – SUPERFICIE CIRCOLARE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slip Surface Option: [Entry and Exit](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [75 kPa](#)

Phi': [17 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

B1_K

Model: [Mohr-Coulomb](#)

Unit Weight: [20 kN/m³](#)

Cohesion': [50 kPa](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B2_K

Model: Mohr-Coulomb
 Unit Weight: 21 kN/m³
 Cohesion': 90 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A_K

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 20 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 150 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range
 Left-Zone Left Coordinate: (2'796.8066; 215.21759) m
 Left-Zone Right Coordinate: (3'007; 263.23413) m
 Left-Zone Increment: 30
 Right Projection: Range
 Right-Zone Left Coordinate: (3'015.8541; 267.92261) m
 Right-Zone Right Coordinate: (3'145; 299.21648) m
 Right-Zone Increment: 20

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Radius Increments: 20

SLIP SURFACE LIMITS

Left Coordinate: (2'727.5266; 204.85355) m

Right Coordinate: (3'220.2729; 310) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03

Vert Seismic Coef.: 0.015

POINTS

	X (m)	Y (m)
Point 1	2'843.6155	232.25048
Point 2	2'835.4023	228.14388
Point 3	2'818.7979	219.17975
Point 4	2'852.9875	223.59905
Point 5	3'020.7119	248.95247
Point 6	3'064.3063	259.42029
Point 7	3'134.3395	292.54587
Point 8	3'101.1574	292.47157
Point 9	3'082.0485	282.28764
Point 10	3'070.22	282.28764
Point 11	3'051.3472	272.25048
Point 12	3'024.0272	272.25048
Point 13	3'005.1424	262.25048
Point 14	2'988.7526	262.25048

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 15	2'970.0575	252.25048
Point 16	2'944.7846	252.25048
Point 17	2'926.0509	242.25048
Point 18	2'882.981	242.25048
Point 19	2'864.232	232.25048
Point 20	2'910.7065	225.17729
Point 21	2'915.774	225.31585
Point 22	2'923.11	225.51644
Point 23	3'220.2729	306
Point 24	3'161.8501	305.54294
Point 25	3'136.7068	289.73087
Point 26	3'068.3767	257.48721
Point 27	2'916.2965	219.28444
Point 28	2'898.3504	212.96584
Point 29	2'877.8711	206.87817
Point 30	2'868.0812	202.37698
Point 31	2'727.5266	181.54206
Point 32	2'727.5266	96.5976
Point 33	3'220.2729	96.5976
Point 34	3'220.2729	310
Point 35	3'159.9548	309.38742
Point 36	3'151.5696	303.32728
Point 37	2'897.9163	215.982

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 38	2'876.9915	210.25203
Point 39	2'868.0361	206.2166
Point 40	2'853.5076	204.16892
Point 41	2'727.5266	184.89182
Point 42	2'896.2548	217.73467
Point 43	2'882.0484	213.88196
Point 44	2'876.2633	212.24481
Point 45	2'875.7512	212.02339
Point 46	2'874.1605	211.33563
Point 47	2'866.3746	207.96927
Point 48	2'727.5266	187.11451
Point 49	2'780.966	212.3636
Point 50	2'727.5266	204.85355

REGIONS

	Material	Points	Area (m ²)
Regio n 1	Unghia_k	1;2;3;4	171.32
Regio n 2	Abbancamento _k	5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;1;4;20;21;22	4'592.7
Regio n 3	B2_k	23;24;25;26;27;28;29;30;31;32;33	69'861
Regio n 4	B1_k	30;29;28;27;26;25;24;23;34;35;36;7;6;5;22;21;37;38;39;40;41;3 1	1'893.7

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Regio n 5	A_k	40;39;38;37;21;20;42;43;44;45;46;47;48;41	393.48
Regio n 6	Prevam_k	46;45;44;43;42;20;4;3;49;50;48;47	2'826.8

CURRENT SLIP SURFACE

Slip Surface: 428
 F of S: 2.076
 Volume: 12'490.395 m³
 Weight: 238'220.62 kN
 Resisting Moment: 39'756'641 kN-m
 Activating Moment: 19'158'537 kN-m
 Resisting Force: 111'093.22 kN
 Activating Force: 53'510.753 kN
 F of S Rank (Analysis): 1 of 13'671 slip surfaces
 F of S Rank (Query): 1 of 13'671 slip surfaces
 Exit: (2'796.8066; 215.21759) m
 Entry: (3'145; 299.21648) m
 Radius: 337.28905 m
 Center: (2'903.8755; 535.06154) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'802.3044	213.4811	-49.035024	66.015756	0	94.299237
Slice 2	2'813.3001	210.2117	-49.034965	170.26291	0	125.33704
Slice 3	2'827.1001	206.73739	-49.034983	349.47336	0	178.69707
Slice 4	2'837.5094	204.37313	-49.03502	507.5038	0	225.78986
Slice	2'841.616	203.57471	-49.034997	546.04818	0	114.09125

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

5						
Slice 6	2'844.4345	203.05254	-49.034967	576.03146	0	119.28137
Slice 7	2'849.1205	202.26966	-49.034992	611.85169	0	266.47667
Slice 8	2'853.2476	201.59393	-49.035008	625.08299	0	271.1352
Slice 9	2'855.7963	201.22483	-49.035012	634.42689	0	274.44042
Slice 10	2'861.1585	200.50278	-49.03501	659.34004	0	322.91865
Slice 11	2'865.3033	199.98703	-49.035	683.75907	0	331.59917
Slice 12	2'867.2279	199.77044	-49.034994	708.6635	0	340.47065
Slice 13	2'871.1208	199.38057	-49.034982	760.34175	0	358.89984
Slice 14	2'874.9558	199.01553	-49.034975	810.84296	0	376.93528
Slice 15	2'876.0073	198.92585	-49.034973	824.35444	0	381.76604
Slice 16	2'876.6274	198.87511	-49.034971	832.1959	0	384.57081
Slice 17	2'877.4313	198.81102	-49.03497	842.16346	0	388.13745
Slice 18	2'879.9598	198.62795	-49.034965	872.33552	0	398.94444
Slice 19	2'882.5147	198.44989	-49.034963	902.3368	0	409.70332

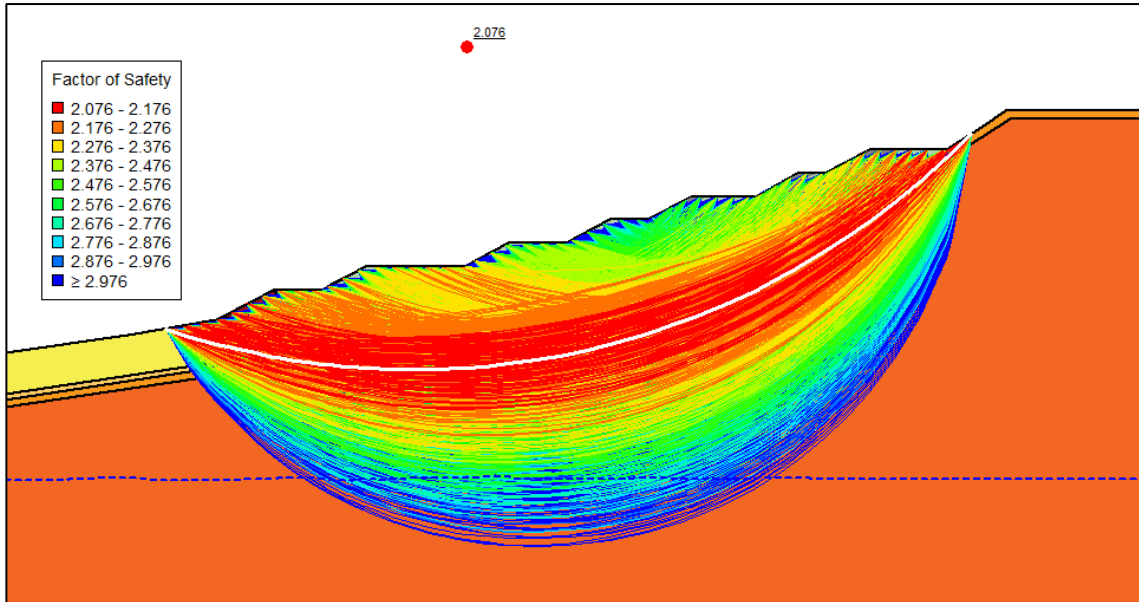
	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 20	2'889.6179	198.13944	-49.034972	915.66554	0	414.68409
Slice 21	2'897.0855	197.84186	-49.035001	923.26144	0	417.68901
Slice 22	2'904.3114	197.8334	-49.035002	926.5494	0	419.23357
Slice 23	2'913.2402	197.91204	-49.035033	925.49654	0	419.37922
Slice 24	2'916.0352	197.99185	-49.035007	922.51683	0	418.49328
Slice 25	2'919.7033	198.16132	-49.034967	914.8415	0	415.9941
Slice 26	2'924.5804	198.41181	-49.034985	904.77918	0	412.73174
Slice 27	2'930.7343	198.87642	-49.035022	934.41678	0	423.8439
Slice 28	2'940.1012	199.75658	-49.035006	994.29966	0	446.15762
Slice 29	2'951.1028	201.15621	-49.035002	996.71312	0	448.02746
Slice 30	2'963.7393	203.18955	-49.035012	941.72352	0	429.34579
Slice 31	2'974.7313	205.3336	-49.034974	927.98633	0	425.36519
Slice 32	2'984.0788	207.48226	-49.034985	956.34962	0	436.46324
Slice 33	2'996.9475	210.98004	-49.034979	914.88709	0	422.48392
Slice	3'012.9272	215.9942	-49.034979	869.97125	0	407.30455

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

34						
Slice 35	3'022.3695	219.2769	-49.035001	878.75788	0	411.10239
Slice 36	3'030.8572	222.67523	-49.035001	824.4897	0	391.75866
Slice 37	3'044.5172	228.58584	-49.035023	711.88672	0	351.20309
Slice 38	3'057.8268	235.04506	-49.034997	645.6952	0	327.38818
Slice 39	3'066.3415	239.48867	-49.034991	635.20966	0	323.73172
Slice 40	3'069.2984	241.12604	-49.034998	631.7422	0	322.51022
Slice 41	3'076.1343	245.15895	-49.035015	574.69286	0	301.69728
Slice 42	3'086.8257	251.75818	-49.035004	508.01657	0	277.34275
Slice 43	3'096.3802	258.16442	-49.03501	481.79226	0	267.75386
Slice 44	3'106.6247	265.59935	-49.034974	402.61202	0	238.71612
Slice 45	3'117.5592	274.1914	-49.035009	267.2822	0	189.12503
Slice 46	3'128.683	283.72928	-49.035008	113.37275	0	132.8676
Slice 47	3'139.6698	294.00264	-49.034986	12.378846	0	55.426177

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI



SEZIONE A4 NON DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Use Passive Mode: **No**
 Slip Surface Option: **Fully-Specified**
 Critical slip surfaces saved: **1**
 Resisting Side Maximum Convex Angle: **1 °**
 Driving Side Maximum Convex Angle: **5 °**
 Optimize Critical Slip Surface Location: **No**
 Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

Phi': **40 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

PREVAM_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **75 kPa**

Phi': **17 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

B1_K

Model: **Mohr-Coulomb**

Unit Weight: **20 kN/m³**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Cohesion': 50 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B2_K

Model: Mohr-Coulomb
 Unit Weight: 21 kN/m³
 Cohesion': 90 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A_K

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 20 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 150 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE LIMITS

Left Coordinate: (2'727.5266; 204.85355) m
 Right Coordinate: (3'220.2729; 310) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	X (m)	Y (m)
	2'818.7979	219.17975
	2'852.9875	223.59905
	2'910.7065	225.17729
	2'915.774	225.31585
	2'923.11	225.51644
	3'020.7119	248.95247
	3'064.3063	259.42029
	3'134.3395	292.54587

SEISMIC COEFFICIENTS

Horz Seismic Coef.: **0.03**

Vert Seismic Coef.: **0.015**

POINTS

	X (m)	Y (m)
Point 1	2'843.6155	232.25048
Point 2	2'835.4023	228.14388
Point 3	2'818.7979	219.17975
Point 4	2'852.9875	223.59905
Point 5	3'020.7119	248.95247
Point 6	3'064.3063	259.42029
Point 7	3'134.3395	292.54587
Point 8	3'101.1574	292.47157

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 9	3'082.0485	282.28764
Point 10	3'070.22	282.28764
Point 11	3'051.3472	272.25048
Point 12	3'024.0272	272.25048
Point 13	3'005.1424	262.25048
Point 14	2'988.7526	262.25048
Point 15	2'970.0575	252.25048
Point 16	2'944.7846	252.25048
Point 17	2'926.0509	242.25048
Point 18	2'882.981	242.25048
Point 19	2'864.232	232.25048
Point 20	2'910.7065	225.17729
Point 21	2'915.774	225.31585
Point 22	2'923.11	225.51644
Point 23	3'220.2729	306
Point 24	3'161.8501	305.54294
Point 25	3'136.7068	289.73087
Point 26	3'068.3767	257.48721
Point 27	2'916.2965	219.28444
Point 28	2'898.3504	212.96584
Point 29	2'877.8711	206.87817
Point 30	2'868.0812	202.37698
Point 31	2'727.5266	181.54206

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 32	2'727.5266	96.5976
Point 33	3'220.2729	96.5976
Point 34	3'220.2729	310
Point 35	3'159.9548	309.38742
Point 36	3'151.5696	303.32728
Point 37	2'897.9163	215.982
Point 38	2'876.9915	210.25203
Point 39	2'868.0361	206.2166
Point 40	2'853.5076	204.16892
Point 41	2'727.5266	184.89182
Point 42	2'896.2548	217.73467
Point 43	2'882.0484	213.88196
Point 44	2'876.2633	212.24481
Point 45	2'875.7512	212.02339
Point 46	2'874.1605	211.33563
Point 47	2'866.3746	207.96927
Point 48	2'727.5266	187.11451
Point 49	2'780.966	212.3636
Point 50	2'727.5266	204.85355

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

REGIONS

	Material	Points	Area (m ²)
Regio n 1	Unghia_k	1;2;3;4	171.32
Regio n 2	Abbancamento _k	5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;1;4;20;21;22	4'592.7
Regio n 3	B2_k	23;24;25;26;27;28;29;30;31;32;33	69'861
Regio n 4	B1_k	30;29;28;27;26;25;24;23;34;35;36;7;6;5;22;21;37;38;39;40;41;3 1	1'893.7
Regio n 5	A_k	40;39;38;37;21;20;42;43;44;45;46;47;48;41	393.48
Regio n 6	Prevam_k	46;45;44;43;42;20;4;3;49;50;48;47	2'826.8

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 2.962
 Volume: 4'764.0242 m³
 Weight: 81'159.733 kN
 Resisting Moment: 4'812'724.4 kN-m
 Activating Moment: 1'624'667.1 kN-m
 Resisting Force: 58'247.085 kN
 Activating Force: 19'663.788 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (2'818.7979; 219.17975) m
 Entry: (3'134.3395; 292.54587) m
 Radius: 138.91661 m
 Center: (2'963.775; 310.8874) m

SLIP SLICES

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'822.949	219.71632	-49.035	30.129685	0	25.001789
Slice 2	2'831.2512	220.78945	-49.035	90.698547	0	75.227072
Slice 3	2'839.5089	221.85682	-49.035	148.48813	0	123.09626
Slice 4	2'848.3015	222.99334	-49.035	161.31619	0	133.64178
Slice 5	2'858.6098	223.75278	-49.035	152.057	0	176.25544
Slice 6	2'868.9192	224.03468	-49.035	192.68494	0	183.26522
Slice 7	2'878.2937	224.29101	-49.035	276.41741	0	197.8084
Slice 8	2'887.6019	224.54553	-49.035	316.86636	0	204.82669
Slice 9	2'896.8438	224.79823	-49.035	313.99546	0	204.30144
Slice 10	2'906.0856	225.05094	-49.035	310.83726	0	203.73073
Slice 11	2'913.2402	225.24657	-49.035	308.18844	0	203.25676
Slice 12	2'919.442	225.41615	-49.035	305.72006	0	202.81883
Slice 13	2'924.5804	225.86952	-49.035004	270.42809	0	197.23131

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 14	2'930.7343	227.34718	-49.035023	286.32919	0	200.04356
Slice 15	2'940.1012	229.59634	-49.034979	329.73503	0	207.70653
Slice 16	2'951.1028	232.23804	-49.034986	326.15451	0	207.10852
Slice 17	2'963.7393	235.27228	-49.035008	275.95396	0	198.30023
Slice 18	2'974.7313	237.91167	-49.034959	272.74012	0	197.75425
Slice 19	2'984.0788	240.15619	-49.034988	316.38242	0	205.45269
Slice 20	2'992.8501	242.26232	-49.035014	322.12529	0	206.4738
Slice 21	3'001.045	244.23007	-49.035039	289.8904	0	200.80678
Slice 22	3'012.9272	247.08321	-49.034977	309.81092	0	204.31797
Slice 23	3'022.3695	249.3505	-49.034993	353.772	0	212.04836
Slice 24	3'028.5805	250.84187	-49.034965	343.81073	0	210.28978
Slice 25	3'037.6872	253.02855	-49.034978	308.26816	0	204.03323
Slice 26	3'046.7939	255.21523	-49.034981	272.53326	0	197.75098
Slice 27	3'057.8268	257.86443	-49.034971	285.45325	0	200.01202
Slice	3'067.2632	260.81887	-49.034992	293.79036	0	201.97772

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

28						
Slice 29	3'076.1343	265.01489	-49.034967	254.8488	0	195.066
Slice 30	3'086.8257	270.07194	-49.034993	217.40915	0	188.43193
Slice 31	3'096.3802	274.59118	-49.035008	228.66917	0	190.37082
Slice 32	3'106.6878	279.46664	-49.034979	193.29627	0	184.13285
Slice 33	3'117.7485	284.69833	-49.034959	108.99509	0	169.38281
Slice 34	3'128.8092	289.93002	-49.035015	21.49747	0	154.16932

SEZIONE B1 DRENATA – SUPERFICI CIRCOLARI –PSEUDO- STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Method: [Morgenstern-Price](#)

Settings

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Entry and Exit](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [10 kPa](#)

Phi': [20 °](#)

Phi-B: [0 °](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Cohesion R: 0 kPa

Phi R: 0 °

B1_K

Model: Mohr-Coulomb

Unit Weight: 20 kN/m³

Cohesion': 15 kPa

Phi': 22 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

B2_K

Model: Mohr-Coulomb

Unit Weight: 21 kN/m³

Cohesion': 25 kPa

Phi': 24 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

A_K

Model: Mohr-Coulomb

Unit Weight: 19 kN/m³

Cohesion': 10 kPa

Phi': 25 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb

Unit Weight: 17 kN/m³

Cohesion': 10 kPa


Phi': 24 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Left Projection: [Range](#)
 Left-Zone Left Coordinate: [\(3'399.3143; 207.26342\) m](#)
 Left-Zone Right Coordinate: [\(3'442; 214.80823\) m](#)
 Left-Zone Increment: [10](#)
 Right Projection: [Range](#)
 Right-Zone Left Coordinate: [\(3'448.8173; 218.05425\) m](#)
 Right-Zone Right Coordinate: [\(3'552; 229.68494\) m](#)
 Right-Zone Increment: [20](#)
 Radius Increments: [20](#)

SLIP SURFACE LIMITS

Left Coordinate: [\(3'354.132; 204.24857\) m](#)
 Right Coordinate: [\(3'808.8933; 275\) m](#)

SEISMIC COEFFICIENTS

Horz Seismic Coef.: [0.03](#)
 Vert Seismic Coef.: [0.015](#)

POINTS

	X (m)	Y (m)
Point 1	3'456.0961	221.52001
Point 2	3'430.5287	209.34624
Point 3	3'433.2936	209.53073
Point 4	3'444.0403	210.53218
Point 5	3'469.6582	211.25017
Point 6	3'808.8933	270.94428
Point 7	3'728.3794	270.75976
Point 8	3'662.0903	261.56488
Point 9	3'630.2127	253.68683
Point 10	3'602.9033	247.16348

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 11	3'588.0446	240.38389
Point 12	3'575.7686	234.45382
Point 13	3'549.7511	226.082
Point 14	3'501.5386	208.10225
Point 15	3'472.8929	196.34239
Point 16	3'452.8793	190.82745
Point 17	3'442.6039	186.38473
Point 18	3'354.132	173.90883
Point 19	3'354.132	125
Point 20	3'808.8933	125
Point 21	3'808.8933	275
Point 22	3'728.238	274.49147
Point 23	3'663.0628	265.265
Point 24	3'599.1276	249.57407
Point 25	3'572.4604	236.20716
Point 26	3'532.5677	223.49046
Point 27	3'528.2309	221.49147
Point 28	3'500.8888	210.53218
Point 29	3'497.6775	210.53218
Point 30	3'471.0748	198.82952
Point 31	3'451.1817	193.34779
Point 32	3'441.1805	189.04112
Point 33	3'354.132	176.15002

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 34	3'493.7974	211.53218
Point 35	3'470.8148	200.81254
Point 36	3'450.9216	195.33081
Point 37	3'440.9205	191.02414
Point 38	3'354.132	178.69492
Point 39	3'354.132	204.24857

REGIONS

	Material	Points	Area (m ²)
Regio n 1	Unghia_k	1;2;3;4;5	203.89
Regio n 2	B2_k	6;7;8;9;10;12;13;14;15;16;17;18;19;20	48'192
Regio n 3	B1_k	15;14;13;12;10;8;7;6;21;22;23;24;25;26;27;28;29;30;31;32;33;18 ;17;16	1'512.7
Regio n 4	A_k	30;29;34;35;36;37;38;33;32;31	320.43
Regio n 5	Prevam_k	34;5;4;3;2;39;38;37;36;35	2'485.9
Regio n 6	Abbancamento _k	27;1;5;34;29;28	539.7

CURRENT SLIP SURFACE

Slip Surface: 2'701

F of S: 1.531

Volume: 163.45085 m³

Weight: 2'940.435 kN

Resisting Moment: 42'152.718 kN-m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Activating Moment: 27'539.438 kN-m
 Resisting Force: 1'443.7669 kN
 Activating Force: 943.26767 kN
 F of S Rank (Analysis): 1 of 4'851 slip surfaces
 F of S Rank (Query): 1 of 4'851 slip surfaces
 Exit: (3'425.6492; 209.02065) m
 Entry: (3'458.5711; 221.51903) m
 Radius: 25.209159 m
 Center: (3'435.7069; 232.13653) m

SLIP SLICES

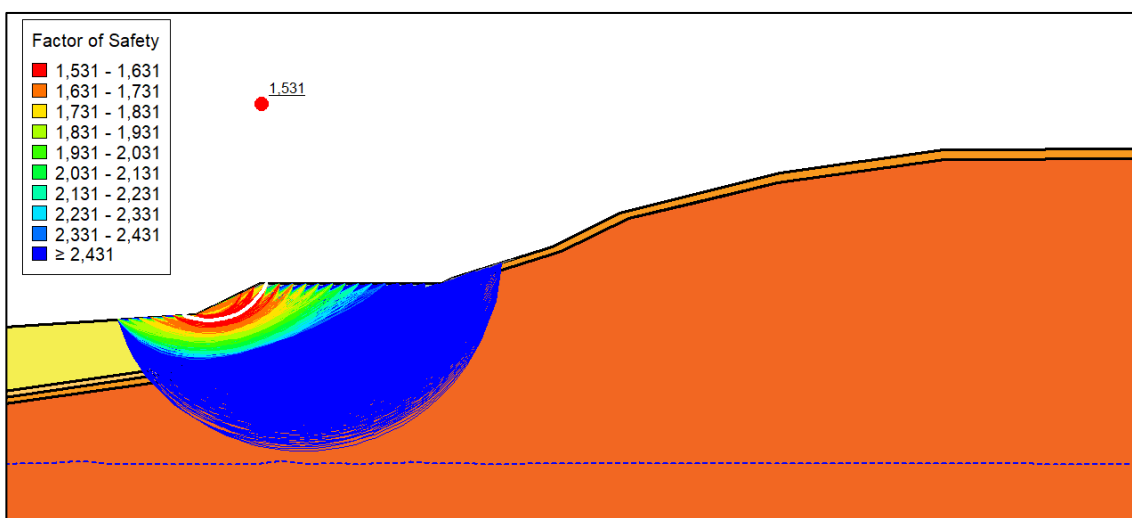
	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'426.2591	208.77399	- 49.035005	9.3648298	0	13.25181
Slice 2	3'427.479	208.31665	- 49.035003	21.475548	0	17.509054
Slice 3	3'428.6989	207.92938	-49.035	32.50309	0	21.37012
Slice 4	3'429.9188	207.60887	- 49.034997	42.123153	0	24.733351
Slice 5	3'430.9895	207.37713	- 49.034994	53.235565	0	28.644874
Slice 6	3'431.9111	207.21914	- 49.034993	66.088219	0	33.195352
Slice 7	3'432.8328	207.09605	- 49.034991	77.717312	0	37.330782
Slice 8	3'433.8309	207.00305	- 49.034989	88.748065	0	41.280968
Slice 9	3'434.9056	206.94585	- 49.034987	98.779576	0	44.911798
Slice	3'435.9803	206.93458	-	106.82757	0	47.871302

	Committente		Oggetto del servizio
	GE.R.IN		DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

10			49.034986			
Slice 11	3'437.0549	206.96919	- 49.034985	112.94126	0	50.172282
Slice 12	3'438.1296	207.04987	- 49.034985	117.23808	0	51.849318
Slice 13	3'439.2043	207.17705	- 49.034985	119.88455	0	52.953077
Slice 14	3'440.279	207.35147	- 49.034985	121.07627	0	53.544246
Slice 15	3'441.3536	207.57412	- 49.034985	121.01957	0	53.687807
Slice 16	3'442.4283	207.84633	- 49.034985	119.91594	0	53.448088
Slice 17	3'443.503	208.16981	- 49.034986	117.95018	0	52.884823
Slice 18	3'444.6506	208.57625	- 49.034988	115.04862	0	51.973762
Slice 19	3'445.8711	209.07689	- 49.034991	111.28848	0	50.73425
Slice 20	3'447.0916	209.65491	- 49.034994	106.92686	0	49.246011
Slice 21	3'448.3121	210.31647	- 49.034998	102.03252	0	47.532133
Slice 22	3'449.4347	211.00184	-49.035	91.351366	0	77.534236
Slice 23	3'450.4596	211.70466	- 49.034999	84.83264	0	72.27685
Slice 24	3'451.4844	212.48606	- 49.034999	77.969411	0	66.675985

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 25	3'452.5092	213.35591	- 49.034999	70.695099	0	60.6746
Slice 26	3'453.534	214.32728	-49.035	62.900612	0	54.179776
Slice 27	3'454.5589	215.41801	-49.035	54.427768	0	47.055904
Slice 28	3'455.5837	216.65364	-49.035	45.05853	0	39.113414
Slice 29	3'456.5446	217.97127	-49.035	33.037477	0	28.806294
Slice 30	3'457.4417	219.39625	-49.035	18.494632	0	16.205172
Slice 31	3'458.2306	220.84023	- 49.035003	-0.96010925	0	9.9021647



SEZIONE B1 DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: Meters

Time(t) Units: Seconds

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Fully-Specified](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 18 kN/m³
 Cohesion': 0 kPa
 Phi': 40 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

PREVAM_K

Model: Mohr-Coulomb
 Unit Weight: 18 kN/m³
 Cohesion': 10 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B1_K

Model: Mohr-Coulomb
 Unit Weight: 20 kN/m³
 Cohesion': 15 kPa
 Phi': 22 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B2_K

Model: Mohr-Coulomb
 Unit Weight: 21 kN/m³
 Cohesion': 25 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A_K

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 10 kPa
 Phi': 25 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

ABBANCAMENTO_K

Model: **Mohr-Coulomb**
 Unit Weight: **17 kN/m³**
 Cohesion': **10 kPa**
 Phi': **24 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

SLIP SURFACE LIMITS

Left Coordinate: **(3'354.132; 204.24857) m**
 Right Coordinate: **(3'808.8933; 275) m**

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	3'430.5287	209.34624
	3'433.2936	209.53073
	3'444.0403	210.53218
	3'469.6582	211.25017
	3'493.7974	211.53218
	3'497.6775	210.53218
	3'500.8888	210.53218
	3'528.2309	221.49147

SEISMIC COEFFICIENTS

Horz Seismic Coef.: **0.03**
 Vert Seismic Coef.: **0.015**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

POINTS

	X (m)	Y (m)
Point 1	3'456.0961	221.52001
Point 2	3'430.5287	209.34624
Point 3	3'433.2936	209.53073
Point 4	3'444.0403	210.53218
Point 5	3'469.6582	211.25017
Point 6	3'808.8933	270.94428
Point 7	3'728.3794	270.75976
Point 8	3'662.0903	261.56488
Point 9	3'630.2127	253.68683
Point 10	3'602.9033	247.16348
Point 11	3'588.0446	240.38389
Point 12	3'575.7686	234.45382
Point 13	3'549.7511	226.082
Point 14	3'501.5386	208.10225
Point 15	3'472.8929	196.34239
Point 16	3'452.8793	190.82745
Point 17	3'442.6039	186.38473
Point 18	3'354.132	173.90883
Point 19	3'354.132	125
Point 20	3'808.8933	125
Point 21	3'808.8933	275

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 22	3'728.238	274.49147
Point 23	3'663.0628	265.265
Point 24	3'599.1276	249.57407
Point 25	3'572.4604	236.20716
Point 26	3'532.5677	223.49046
Point 27	3'528.2309	221.49147
Point 28	3'500.8888	210.53218
Point 29	3'497.6775	210.53218
Point 30	3'471.0748	198.82952
Point 31	3'451.1817	193.34779
Point 32	3'441.1805	189.04112
Point 33	3'354.132	176.15002
Point 34	3'493.7974	211.53218
Point 35	3'470.8148	200.81254
Point 36	3'450.9216	195.33081
Point 37	3'440.9205	191.02414
Point 38	3'354.132	178.69492
Point 39	3'354.132	204.24857

REGIONS

	Material	Points	Area (m ²)
Regio n 1	Unghia_k	1;2;3;4;5	203.89

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Regio n 2	B2_k	6;7;8;9;10;12;13;14;15;16;17;18;19;20	48'192
Regio n 3	B1_k	15;14;13;12;10;8;7;6;21;22;23;24;25;26;27;28;29;30;31;32;33;18;17;16	1'512.7
Regio n 4	A_k	30;29;34;35;36;37;38;33;32;31	320.43
Regio n 5	Prevam_k	34;5;4;3;2;39;38;37;36;35	2'485.9
Regio n 6	Abbancamento _k	27;1;5;34;29;28	539.7

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 5.944
 Volume: 743.58787 m³
 Weight: 12'844.884 kN
 Resisting Moment: 118'236.79 kN-m
 Activating Moment: 19'892.17 kN-m
 Resisting Force: 8'188.7903 kN
 Activating Force: 1'377.7051 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (3'430.5287; 209.34624) m
 Entry: (3'528.2309; 221.49147) m
 Radius: 37.787918 m
 Center: (3'478.2475; 224.52778) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'431.9111	209.43848	-49.035	10.25273	0	8.4933549
Slice	3'435.0847	209.69764	-49.035	32.814323	0	27.205126

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

2						
Slice 3	3'438.6669	210.03145	-49.035	57.601528	0	47.741744
Slice 4	3'442.2492	210.36527	-49.035	82.411345	0	68.285406
Slice 5	3'445.5473	210.57442	-49.035	108.67985	0	89.604408
Slice 6	3'448.5612	210.65889	-49.035	133.74303	0	110.16989
Slice 7	3'451.5752	210.74336	-49.035	158.86421	0	130.76236
Slice 8	3'454.5891	210.82783	-49.035	184.02474	0	151.37315
Slice 9	3'457.7914	210.91758	-49.035	194.58179	0	159.94984
Slice 10	3'461.1819	211.01261	-49.035	190.45028	0	156.45293
Slice 11	3'464.5724	211.10763	-49.035	186.21235	0	152.90667
Slice 12	3'467.9629	211.20266	-49.035	181.86606	0	149.31017
Slice 13	3'471.3824	211.27031	- 49.034993	178.49772	0	88.045188
Slice 14	3'474.8309	211.3106	- 49.034979	177.585	0	87.685438
Slice 15	3'478.2793	211.35089	- 49.034965	176.61675	0	87.308381
Slice 16	3'481.7278	211.39118	- 49.034951	175.59606	0	86.914784

	Committente		Oggetto del servizio
	GE.R.IN		DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 17	3'485.1763	211.43146	- 49.034965	174.52711	0	86.505757
Slice 18	3'488.6247	211.47175	- 49.034979	173.41515	0	86.082742
Slice 19	3'492.0732	211.51204	- 49.034993	172.2664	0	85.647485
Slice 20	3'495.7375	211.03218	-49.035	192.3478	0	92.620411
Slice 21	3'499.2832	210.53218	-49.035	187.97706	0	92.739351
Slice 22	3'502.5977	211.21714	- 49.034994	161.34915	0	83.180322
Slice 23	3'506.0154	212.58705	- 49.034982	140.53859	0	73.60811
Slice 24	3'509.4332	213.95696	-49.03497	119.63305	0	64.009374
Slice 25	3'512.851	215.32687	- 49.034988	98.540677	0	54.359295
Slice 26	3'516.2687	216.69678	- 49.035012	77.177428	0	44.635565
Slice 27	3'519.6865	218.06669	-49.03503	55.469209	0	34.818985
Slice 28	3'523.1043	219.4366	- 49.035018	33.354137	0	24.894017
Slice 29	3'526.522	220.80651	- 49.035006	10.784797	0	14.8493

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE B1 NON DRENATA – SUPERFICIE CIRCOLARE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [0 kPa](#)
 Phi': [40 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [75 kPa](#)
 Phi': [17 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B1_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [50 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [90 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 19 kN/m³
 Cohesion': 20 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 150 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range
 Left-Zone Left Coordinate: (3'405.9315; 207.70496) m
 Left-Zone Right Coordinate: (3'442.4027; 214.99998) m
 Left-Zone Increment: 10
 Right Projection: Range
 Right-Zone Left Coordinate: (3'448.4948; 217.9007) m
 Right-Zone Right Coordinate: (3'532; 223.22879) m
 Right-Zone Increment: 20
 Radius Increments: 10

SLIP SURFACE LIMITS

Left Coordinate: (3'354.132; 204.24857) m
 Right Coordinate: (3'808.8933; 275) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03
 Vert Seismic Coef.: 0.015

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

POINTS


	X (m)	Y (m)
Point 1	3'456.0961	221.52001
Point 2	3'430.5287	209.34624
Point 3	3'433.2936	209.53073
Point 4	3'444.0403	210.53218
Point 5	3'469.6582	211.25017
Point 6	3'808.8933	270.94428
Point 7	3'728.3794	270.75976
Point 8	3'662.0903	261.56488
Point 9	3'630.2127	253.68683
Point 10	3'602.9033	247.16348
Point 11	3'588.0446	240.38389
Point 12	3'575.7686	234.45382
Point 13	3'549.7511	226.082
Point 14	3'501.5386	208.10225
Point 15	3'472.8929	196.34239
Point 16	3'452.8793	190.82745
Point 17	3'442.6039	186.38473
Point 18	3'354.132	173.90883
Point 19	3'354.132	125
Point 20	3'808.8933	125
Point 21	3'808.8933	275

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 22	3'728.238	274.49147
Point 23	3'663.0628	265.265
Point 24	3'599.1276	249.57407
Point 25	3'572.4604	236.20716
Point 26	3'532.5677	223.49046
Point 27	3'528.2309	221.49147
Point 28	3'500.8888	210.53218
Point 29	3'497.6775	210.53218
Point 30	3'471.0748	198.82952
Point 31	3'451.1817	193.34779
Point 32	3'441.1805	189.04112
Point 33	3'354.132	176.15002
Point 34	3'493.7974	211.53218
Point 35	3'470.8148	200.81254
Point 36	3'450.9216	195.33081
Point 37	3'440.9205	191.02414
Point 38	3'354.132	178.69492
Point 39	3'354.132	204.24857

REGIONS

	Material	Points	Area (m ²)
Regio n 1	Unghia_k	1;2;3;4;5	203.89

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Regio n 2	B2_k	6;7;8;9;10;12;13;14;15;16;17;18;19;20	48'192
Regio n 3	B1_k	15;14;13;12;10;8;7;6;21;22;23;24;25;26;27;28;29;30;31;32;33;18; ;17;16	1'512.7
Regio n 4	A_k	30;29;34;35;36;37;38;33;32;31	320.43
Regio n 5	Prevam_k	34;5;4;3;2;39;38;37;36;35	2'485.9
Regio n 6	Abbancamento _k	27;1;5;34;29;28	539.7

CURRENT SLIP SURFACE

Slip Surface: 245
 F of S: 1.658
 Volume: 14.175621 m³
 Weight: 255.16118 kN
 Resisting Moment: 12'645.927 kN-m
 Activating Moment: 7'624.4941 kN-m
 Resisting Force: 175.4655 kN
 Activating Force: 105.83057 kN
 F of S Rank (Analysis): 1 of 2'541 slip surfaces
 F of S Rank (Query): 1 of 2'541 slip surfaces
 Exit: (3'432.2506; 210.16611) m
 Entry: (3'452.3187; 219.72141) m
 Radius: 65.052713 m
 Center: (3'414.7296; 272.8149) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'432.5851	210.26158	- 49.035007	1.029075	0	0.8579281
Slice	3'433.254	210.45641	-	3.0444946	0	2.5390482

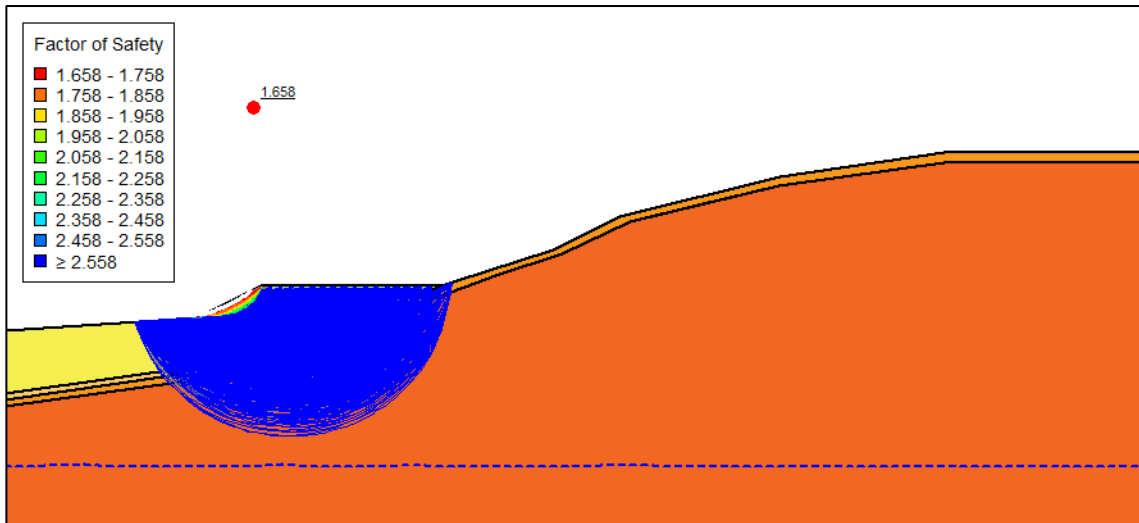
	Committente		Oggetto del servizio
	GE.R.IN		DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

2			49.035009			
Slice 3	3'433.9229	210.65905	-49.03501	4.956239	0	4.1345681
Slice 4	3'434.5919	210.86958	- 49.035012	6.7484341	0	5.6309082
Slice 5	3'435.2608	211.08807	- 49.035013	8.4052928	0	7.0147341
Slice 6	3'435.9297	211.31461	- 49.035015	9.9121546	0	8.2738111
Slice 7	3'436.5987	211.5493	- 49.035017	11.256424	0	9.3977505
Slice 8	3'437.2676	211.79222	- 49.035018	12.428322	0	10.378587
Slice 9	3'437.9365	212.04348	-49.03502	13.421396	0	11.211142
Slice 10	3'438.6055	212.30317	- 49.035022	14.232749	0	11.893164
Slice 11	3'439.2744	212.57141	- 49.035024	14.862999	0	12.425242
Slice 12	3'439.9434	212.84831	- 49.035026	15.315996	0	12.810523
Slice 13	3'440.6123	213.134	- 49.035022	15.598329	0	13.054286
Slice 14	3'441.2812	213.42859	- 49.035017	15.718693	0	13.163408
Slice 15	3'441.9502	213.73223	- 49.035011	15.687158	0	13.145784
Slice 16	3'442.6191	214.04505	- 49.035006	15.514398	0	13.009747

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 17	3'443.288	214.3672	- 49.035001	15.210924	0	12.76351
Slice 18	3'443.957	214.69883	- 49.034996	14.78638	0	12.414677
Slice 19	3'444.6259	215.04011	- 49.034991	14.248952	0	11.969813
Slice 20	3'445.2948	215.39122	- 49.034986	13.60491	0	11.434095
Slice 21	3'445.9638	215.75232	- 49.034981	12.858316	0	10.811028
Slice 22	3'446.6327	216.12362	- 49.034976	12.010873	0	10.10223
Slice 23	3'447.3016	216.50532	- 49.034973	11.06186	0	9.307281
Slice 24	3'447.9706	216.89762	- 49.034975	10.008116	0	8.4236173
Slice 25	3'448.6395	217.30075	- 49.034976	8.8440107	0	7.446475
Slice 26	3'449.3085	217.71496	- 49.034978	7.5613773	0	6.3688703
Slice 27	3'449.9774	218.14048	- 49.034979	6.1494616	0	5.1816097
Slice 28	3'450.6463	218.5776	- 49.034981	4.5949274	0	3.8733255
Slice 29	3'451.3153	219.02659	- 49.034983	2.8819987	0	2.4305348
Slice 30	3'451.9842	219.48775	- 49.034985	0.99277833	0	0.83773288

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI



SEZIONE B1 NON DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
Time(t) Units: [Seconds](#)
Force(F) Units: [Kilonewtons](#)
Pressure(p) Units: [kPa](#)
Strength Units: [kPa](#)
Unit Weight of Water: [9.807 kN/m³](#)
View: [2D](#)
Element Thickness: [1](#)

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)
Parent: [Insitu](#)
Method: [Morgenstern-Price](#)
Settings
Side Function
Interslice force function option: [Half-Sine](#)
PWP Conditions Source: [Parent Analysis](#)
Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
Slip Surface
Direction of movement: [Right to Left](#)
Use Passive Mode: [No](#)
Slip Surface Option: [Fully-Specified](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Critical slip surfaces saved: **1**
 Resisting Side Maximum Convex Angle: **1 °**
 Driving Side Maximum Convex Angle: **5 °**
 Optimize Critical Slip Surface Location: **No**
 Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

Phi': **40 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

PREVAM_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **75 kPa**

Phi': **17 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

B1_K

Model: **Mohr-Coulomb**

Unit Weight: **20 kN/m³**

Cohesion': **50 kPa**

Phi': **20 °**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

B2_K

Model: Mohr-Coulomb
Unit Weight: 21 kN/m³
Cohesion': 90 kPa
Phi': 20 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

A_K

Model: Mohr-Coulomb
Unit Weight: 19 kN/m³
Cohesion': 20 kPa
Phi': 10 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
Unit Weight: 17 kN/m³
Cohesion': 150 kPa
Phi': 10 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

SLIP SURFACE LIMITS

Left Coordinate: (3'354.132; 204.24857) m
Right Coordinate: (3'808.8933; 275) m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	3'430.5287	209.34624
	3'433.2936	209.53073
	3'444.0403	210.53218
	3'469.6582	211.25017
	3'493.7974	211.53218
	3'497.6775	210.53218
	3'500.8888	210.53218
	3'528.2309	221.49147

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03

Vert Seismic Coef.: 0.015

POINTS

	X (m)	Y (m)
Point 1	3'456.0961	221.52001
Point 2	3'430.5287	209.34624
Point 3	3'433.2936	209.53073
Point 4	3'444.0403	210.53218
Point 5	3'469.6582	211.25017
Point 6	3'808.8933	270.94428

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 7	3'728.3794	270.75976
Point 8	3'662.0903	261.56488
Point 9	3'630.2127	253.68683
Point 10	3'602.9033	247.16348
Point 11	3'588.0446	240.38389
Point 12	3'575.7686	234.45382
Point 13	3'549.7511	226.082
Point 14	3'501.5386	208.10225
Point 15	3'472.8929	196.34239
Point 16	3'452.8793	190.82745
Point 17	3'442.6039	186.38473
Point 18	3'354.132	173.90883
Point 19	3'354.132	125
Point 20	3'808.8933	125
Point 21	3'808.8933	275
Point 22	3'728.238	274.49147
Point 23	3'663.0628	265.265
Point 24	3'599.1276	249.57407
Point 25	3'572.4604	236.20716
Point 26	3'532.5677	223.49046
Point 27	3'528.2309	221.49147
Point 28	3'500.8888	210.53218
Point 29	3'497.6775	210.53218

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 30	3'471.0748	198.82952
Point 31	3'451.1817	193.34779
Point 32	3'441.1805	189.04112
Point 33	3'354.132	176.15002
Point 34	3'493.7974	211.53218
Point 35	3'470.8148	200.81254
Point 36	3'450.9216	195.33081
Point 37	3'440.9205	191.02414
Point 38	3'354.132	178.69492
Point 39	3'354.132	204.24857

REGIONS

	Material	Points	Area (m ²)
Regio n 1	Unghia_k	1;2;3;4;5	203.89
Regio n 2	B2_k	6;7;8;9;10;12;13;14;15;16;17;18;19;20	48'192
Regio n 3	B1_k	15;14;13;12;10;8;7;6;21;22;23;24;25;26;27;28;29;30;31;32;33;18; ;17;16	1'512.7
Regio n 4	A_k	30;29;34;35;36;37;38;33;32;31	320.43
Regio n 5	Prevam_k	34;5;4;3;2;39;38;37;36;35	2'485.9
Regio n 6	Abbancamento _k	27;1;5;34;29;28	539.7

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 10.681
 Volume: 743.58787 m³
 Weight: 12'844.884 kN
 Resisting Moment: 228'194.07 kN-m
 Activating Moment: 21'364.556 kN-m
 Resisting Force: 14'245.672 kN
 Activating Force: 1'333.7504 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (3'430.5287; 209.34624) m
 Entry: (3'528.2309; 221.49147) m
 Radius: 37.787918 m
 Center: (3'478.2475; 224.52778) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'431.9111	209.43848	-49.035	10.282615	0	8.514939
Slice 2	3'435.0847	209.69764	-49.035	32.882598	0	27.287091
Slice 3	3'438.6669	210.03145	-49.035	57.568771	0	47.84665
Slice 4	3'442.2492	210.36527	-49.035	82.157323	0	68.381951
Slice 5	3'445.5473	210.57442	-49.035	108.05517	0	89.406524
Slice 6	3'448.5612	210.65889	-49.035	132.8748	0	109.86512
Slice 7	3'451.5752	210.74336	-49.035	157.71854	0	130.3349

	Committente		Oggetto del servizio
	GE.R.IN		DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 8	3'454.5891	210.82783	-49.035	182.57918	0	150.81239
Slice 9	3'457.7914	210.91758	-49.035	192.90119	0	159.28061
Slice 10	3'461.1819	211.01261	-49.035	188.65255	0	155.72404
Slice 11	3'464.5724	211.10763	-49.035	184.36559	0	152.1485
Slice 12	3'467.9629	211.20266	-49.035	180.03934	0	148.5536
Slice 13	3'471.3824	211.27031	- 49.034993	179.42694	0	180.90001
Slice 14	3'474.8309	211.3106	- 49.034979	178.74665	0	180.77459
Slice 15	3'478.2793	211.35089	- 49.034965	177.9631	0	180.64145
Slice 16	3'481.7278	211.39118	- 49.034951	177.07611	0	180.50064
Slice 17	3'485.1763	211.43146	- 49.034965	176.08755	0	180.35237
Slice 18	3'488.6247	211.47175	- 49.034979	175.00139	0	180.197
Slice 19	3'492.0732	211.51204	- 49.034993	173.82365	0	180.03504
Slice 20	3'495.7375	211.03218	-49.035	198.99108	0	182.84851
Slice 21	3'499.2832	210.53218	-49.035	188.89905	0	182.85308
Slice	3'502.5977	211.21714	-	156.74835	0	178.94532

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

22			49.034994			
Slice 23	3'506.0154	212.58705	- 49.034982	136.78331	0	175.09981
Slice 24	3'509.4332	213.95696	-49.03497	116.55667	0	171.23651
Slice 25	3'512.851	215.32687	- 49.034988	95.912516	0	167.34479
Slice 26	3'516.2687	216.69678	- 49.035012	74.705827	0	163.41524
Slice 27	3'519.6865	218.06669	-49.03503	52.806338	0	159.43989
Slice 28	3'523.1043	219.4366	- 49.035018	30.102899	0	155.41251
Slice 29	3'526.522	220.80651	- 49.035006	6.5083911	0	151.3288

SEZIONE B2 DRENATA – SUPERFICI CIRCOLARI –PSEUDO- STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Kind: [SLOPE/W](#)

Parent: [Insitu](#)

Method: [Morgenstern-Price](#)

Settings

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Entry and Exit](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

ABBANCAMENTO_K

Model: [Mohr-Coulomb](#)

Unit Weight: [17 kN/m³](#)

Cohesion': [10 kPa](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

PREVAM_K

Model: Mohr-Coulomb
 Unit Weight: 18 kN/m³
 Cohesion': 10 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B2_K


Model: Mohr-Coulomb
 Unit Weight: 21 kN/m³
 Cohesion': 25 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B1_K

Model: Mohr-Coulomb
 Unit Weight: 20 kN/m³
 Cohesion': 15 kPa
 Phi': 22 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A_K

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 10 kPa
 Phi': 25 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SLIP SURFACE ENTRY AND EXIT

Left Projection: [Range](#)
 Left-Zone Left Coordinate: [\(3'203.7245; 209.91863\) m](#)
 Left-Zone Right Coordinate: [\(3'240; 215.1882\) m](#)
 Left-Zone Increment: [4](#)
 Right Projection: [Range](#)
 Right-Zone Left Coordinate: [\(3'245.1371; 217.77255\) m](#)
 Right-Zone Right Coordinate: [\(3'328; 226.37377\) m](#)
 Right-Zone Increment: [10](#)
 Radius Increments: [10](#)

SLIP SURFACE LIMITS

Left Coordinate: [\(3'183.6014; 208.80929\) m](#)
 Right Coordinate: [\(3'579.3799; 264\) m](#)

SEISMIC COEFFICIENTS


Horz Seismic Coef.: [0.03](#)
 Vert Seismic Coef.: [0.015](#)

POINTS

	X (m)	Y (m)
Point 1	3'579.3799	260.27576
Point 2	3'509.6435	260.27576
Point 3	3'501.9873	257.89303
Point 4	3'477.8365	256.24712
Point 5	3'450.3579	252.54153
Point 6	3'435.1272	249.48888
Point 7	3'414.3346	245.89168
Point 8	3'393.5734	239.77832
Point 9	3'388.9474	239.56109

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 10	3'368.1851	234.30234
Point 11	3'311.0459	217.48212
Point 12	3'297.0647	214.50366
Point 13	3'286.5293	209.52162
Point 14	3'231.0214	193.17111
Point 15	3'183.6014	182.10445
Point 16	3'183.6014	131.95917
Point 17	3'579.3799	131.95917
Point 18	3'295.8032	218.19721
Point 19	3'313.8613	222.125
Point 20	3'253.7888	222.125
Point 21	3'263.5204	211.97579
Point 22	3'281.8299	212.125
Point 23	3'282.936	212.43591
Point 24	3'579.3799	264
Point 25	3'508.5257	264.12467
Point 26	3'501.387	261.32207
Point 27	3'477.1529	260.13066
Point 28	3'450.1065	256.4284
Point 29	3'414.2473	250.35949
Point 30	3'393.0752	243.65478
Point 31	3'384.2228	242.84878
Point 32	3'360.3639	236.09925

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 33	3'313.8601	222.12467
Point 34	3'295.802	218.19688
Point 35	3'282.9348	212.43558
Point 36	3'281.8287	212.12467
Point 37	3'231.0214	196.80262
Point 38	3'183.6014	185.8656
Point 39	3'313.8612	222.125
Point 40	3'313.8609	222.12492
Point 41	3'295.8029	218.19708
Point 42	3'279.3051	212.1041
Point 43	3'231.0214	198.05749
Point 44	3'183.6014	187.54822
Point 45	3'263.5192	211.97545
Point 46	3'232.7005	211.51601
Point 47	3'183.6014	208.80929
Point 48	3'263.5207	211.97548

REGIONS

	Material	Points	Area (m²)
Region 1	B2_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17	39'38 4
Region 2	Abbancame nto_k	18;40;39;20;21;22;35;34;41	367.8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Regi on 3	B1_k	13;12;11;10;9;8;7;5;4;3;2;1;24;25;26;27;28;29;30;31;32;39;40;33;41;3 4;35;22;36;37;38;15;14	1'554. 3
Regi on 4	A_k	37;36;42;43;44;38	118.7 5
Regi on 5	Prevam_k	42;45;46;47;44;43	1'147
Regi on 6	Unghia_k	20;46;48;21	158.6 4

CURRENT SLIP SURFACE

Slip Surface: 256

F of S: 1.582

Volume: 12.350191 m³

Weight: 222.30344 kN

Resisting Moment: 8'500.6748 kN-m

Activating Moment: 5'374.6316 kN-m

Resisting Force: 149.98561 kN

Activating Force: 94.838861 kN

F of S Rank (Analysis): 1 of 605 slip surfaces

F of S Rank (Query): 1 of 605 slip surfaces

Exit: (3'235.2576; 212.80241) m

Entry: (3'252.6875; 221.57099) m

Radius: 50.631641 m

Center: (3'221.6446; 261.56971) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'235.5481	212.88537	- 49.034987	1.0156397	0	0.84606254
Slice 2	3'236.1291	213.05506	- 49.034985	3.0124963	0	2.5083233
Slice	3'236.7101	213.23234	-	4.9169477	0	4.0922359

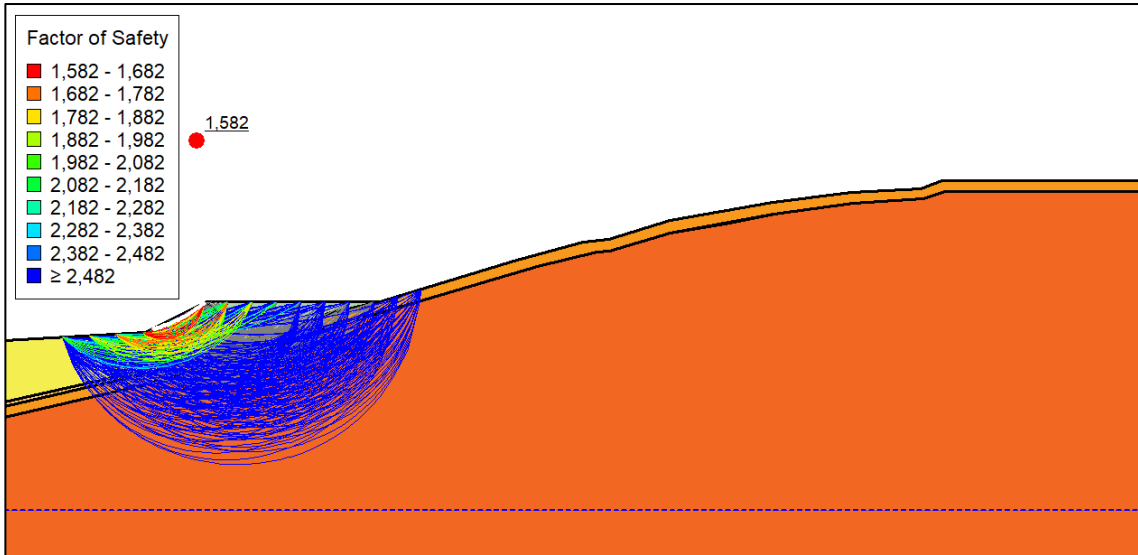
	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

3			49.034982			
Slice 4	3'237.2911	213.41727	-49.03498	6.7092741	0	5.5822228
Slice 5	3'237.8721	213.60996	- 49.034978	8.3698071	0	6.9627737
Slice 6	3'238.4531	213.81049	- 49.034975	9.8802652	0	8.2194874
Slice 7	3'239.0341	214.01896	- 49.034973	11.224955	0	9.340014
Slice 8	3'239.6151	214.23549	-49.03497	12.39173	0	10.314807
Slice 9	3'240.1961	214.46017	- 49.034968	13.372628	0	11.137621
Slice 10	3'240.7771	214.69314	- 49.034965	14.164142	0	11.805712
Slice 11	3'241.3581	214.9345	- 49.034963	14.767158	0	12.31976
Slice 12	3'241.9391	215.1844	-49.03496	15.186563	0	12.683531
Slice 13	3'242.5201	215.44297	- 49.034957	15.430635	0	12.90334
Slice 14	3'243.1011	215.71036	- 49.034955	15.510233	0	12.987391
Slice 15	3'243.6821	215.98672	- 49.034957	15.43789	0	12.945056
Slice 16	3'244.2631	216.27222	- 49.034959	15.22683	0	12.786158
Slice 17	3'244.8441	216.56703	- 49.034962	14.889994	0	12.520312

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 18	3'245.4251	216.87134	- 49.034965	14.439124	0	12.156337
Slice 19	3'246.0061	217.18534	- 49.034967	13.884005	0	11.701777
Slice 20	3'246.5871	217.50924	-49.03497	13.231914	0	11.162521
Slice 21	3'247.1681	217.84326	- 49.034973	12.487339	0	10.542508
Slice 22	3'247.7491	218.18763	- 49.034975	11.651923	0	9.8435238
Slice 23	3'248.3301	218.5426	- 49.034978	10.724543	0	9.0650448
Slice 24	3'248.9111	218.90844	-49.03498	9.7014041	0	8.2041337
Slice 25	3'249.492	219.28542	- 49.034982	8.5760114	0	7.2553598
Slice 26	3'250.073	219.67386	- 49.034985	7.3389885	0	6.2107392
Slice 27	3'250.654	220.07406	- 49.034987	5.9777945	0	5.0596904
Slice 28	3'251.235	220.48638	- 49.034989	4.4764816	0	3.7890082
Slice 29	3'251.816	220.91119	- 49.034992	2.8156309	0	2.3828676
Slice 30	3'252.397	221.34887	- 49.034994	0.97251722	0	0.82287313

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI



SEZIONE B2 DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: **Meters**
Time(t) Units: **Seconds**
Force(F) Units: **Kilonewtons**
Pressure(p) Units: **kPa**
Strength Units: **kPa**
Unit Weight of Water: **9.807 kN/m³**
View: **2D**
Element Thickness: **1**

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: **SLOPE/W**
Parent: **Insitu**
Method: **Morgenstern-Price**
Settings
Side Function
Interslice force function option: **Half-Sine**
PWP Conditions Source: **Parent Analysis**
Staged Pseudo Static Analysis Option: **Effective Stress Strengths**
Slip Surface
Direction of movement: **Right to Left**
Use Passive Mode: **No**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slip Surface Option: **Fully-Specified**

Critical slip surfaces saved: **1**

Resisting Side Maximum Convex Angle: **1 °**

Driving Side Maximum Convex Angle: **5 °**

Optimize Critical Slip Surface Location: **No**

Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

Phi': **40 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

ABBANCAMENTO_K

Model: **Mohr-Coulomb**

Unit Weight: **17 kN/m³**

Cohesion': **10 kPa**

Phi': **24 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

PREVAM_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **10 kPa**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B2_K

Model: Mohr-Coulomb
 Unit Weight: 21 kN/m³
 Cohesion': 25 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B1_K

Model: Mohr-Coulomb
 Unit Weight: 20 kN/m³
 Cohesion': 15 kPa
 Phi': 22 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A_K

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 10 kPa
 Phi': 25 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE LIMITS

Left Coordinate: (3'183.6014; 208.80929) m
 Right Coordinate: (3'579.3799; 264) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	X (m)	Y (m)
	3'232.7005	211.51601
	3'263.5204	211.97579
	3'279.3051	212.1041
	3'281.8287	212.12467
	3'282.9348	212.43558
	3'295.802	218.19688
	3'313.8613	222.125

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03

Vert Seismic Coef.: 0.015

POINTS

	X (m)	Y (m)
Point 1	3'579.3799	260.27576
Point 2	3'509.6435	260.27576
Point 3	3'501.9873	257.89303
Point 4	3'477.8365	256.24712
Point 5	3'450.3579	252.54153
Point 6	3'435.1272	249.48888
Point 7	3'414.3346	245.89168
Point 8	3'393.5734	239.77832
Point 9	3'388.9474	239.56109

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 10	3'368.1851	234.30234
Point 11	3'311.0459	217.48212
Point 12	3'297.0647	214.50366
Point 13	3'286.5293	209.52162
Point 14	3'231.0214	193.17111
Point 15	3'183.6014	182.10445
Point 16	3'183.6014	131.95917
Point 17	3'579.3799	131.95917
Point 18	3'295.8032	218.19721
Point 19	3'313.8613	222.125
Point 20	3'253.7888	222.125
Point 21	3'263.5204	211.97579
Point 22	3'281.8299	212.125
Point 23	3'282.936	212.43591
Point 24	3'579.3799	264
Point 25	3'508.5257	264.12467
Point 26	3'501.387	261.32207
Point 27	3'477.1529	260.13066
Point 28	3'450.1065	256.4284
Point 29	3'414.2473	250.35949
Point 30	3'393.0752	243.65478
Point 31	3'384.2228	242.84878
Point 32	3'360.3639	236.09925

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 33	3'313.8601	222.12467
Point 34	3'295.802	218.19688
Point 35	3'282.9348	212.43558
Point 36	3'281.8287	212.12467
Point 37	3'231.0214	196.80262
Point 38	3'183.6014	185.8656
Point 39	3'313.8612	222.125
Point 40	3'313.8609	222.12492
Point 41	3'295.8029	218.19708
Point 42	3'279.3051	212.1041
Point 43	3'231.0214	198.05749
Point 44	3'183.6014	187.54822
Point 45	3'263.5192	211.97545
Point 46	3'232.7005	211.51601
Point 47	3'183.6014	208.80929
Point 48	3'263.5207	211.97548

REGIONS

	Material	Points	Area (m²)
Region 1	B2_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17	39'38 4
Region 2	Abbancame nto_k	18;40;39;20;21;22;35;34;41	367.8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Regi on 3	B1_k	13;12;11;10;9;8;7;5;4;3;2;1;24;25;26;27;28;29;30;31;32;39;40;33;41;3 4;35;22;36;37;38;15;14	1'554. 3
Regi on 4	A_k	37;36;42;43;44;38	118.7 5
Regi on 5	Prevam_k	42;45;46;47;44;43	1'147
Regi on 6	Unghia_k	20;46;48;21	158.6 4

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 5.260
 Volume: 526.43693 m³
 Weight: 9'108.0639 kN
 Resisting Moment: 79'198.309 kN-m
 Activating Moment: 15'055.519 kN-m
 Resisting Force: 5'996.0308 kN
 Activating Force: 1'139.8528 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (3'232.7005; 211.51601) m
 Entry: (3'313.8612; 222.125) m
 Radius: 32.058083 m
 Center: (3'272.2408; 224.77725) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'234.0185	211.53567	- 49.034996	11.752823	0	9.7131681
Slice 2	3'236.6546	211.575	- 49.034988	35.359432	0	29.191623
Slice	3'239.2906	211.61432	-	59.113436	0	48.746108

	Committente		Oggetto del servizio
	GE.R.IN		DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

3			49.034979			
Slice 4	3'241.9266	211.65365	- 49.034971	83.005211	0	68.371591
Slice 5	3'244.5627	211.69297	- 49.034978	107.01999	0	88.0604
Slice 6	3'247.1987	211.7323	- 49.034994	131.13815	0	107.80237
Slice 7	3'249.8347	211.77162	- 49.035011	155.33555	0	127.58505
Slice 8	3'252.4708	211.81095	- 49.035027	179.5841	0	147.39397
Slice 9	3'255.0053	211.84876	- 49.035027	190.26695	0	156.05167
Slice 10	3'257.4382	211.88505	- 49.035019	187.29472	0	153.5122
Slice 11	3'259.8711	211.92135	- 49.035011	184.21333	0	150.91654
Slice 12	3'262.304	211.95764	- 49.035004	181.02005	0	148.26334
Slice 13	3'264.8358	211.98651	- 49.034993	177.63007	0	87.567019
Slice 14	3'267.4666	212.00795	- 49.034979	177.03551	0	87.347989
Slice 15	3'270.0974	212.02939	- 49.034965	176.37494	0	87.107642
Slice 16	3'272.7281	212.05083	- 49.034951	175.65093	0	86.84664
Slice 17	3'275.3589	212.07227	- 49.034965	174.8672	0	86.566011

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 18	3'277.9897	212.09371	- 49.034979	174.02856	0	86.267133
Slice 19	3'280.5669	212.11471	- 49.034993	173.15951	0	85.958344
Slice 20	3'282.3818	212.28029	-49.035	158.03422	0	80.905084
Slice 21	3'284.2215	213.01171	-49.035	140.27426	0	73.721321
Slice 22	3'286.795	214.16397	-49.035	122.79946	0	65.733678
Slice 23	3'289.3684	215.31623	-49.035	105.36725	0	57.758719
Slice 24	3'291.9418	216.46849	-49.035	87.903859	0	49.77466
Slice 25	3'294.5153	217.62075	-49.035	70.337927	0	41.760598
Slice 26	3'295.8025	218.19698	-49.035	64.699557	0	38.760935
Slice 27	3'296.2058	218.28474	0	63.342706	0	38.144717
Slice 28	3'298.0158	218.67848	- 49.034988	56.93797	0	35.279961
Slice 29	3'300.8303	219.29064	- 49.034973	46.938788	0	30.814885
Slice 30	3'303.6447	219.9028	- 49.034957	36.873666	0	26.33218
Slice 31	3'306.4591	220.51496	-49.03496	26.728177	0	21.827961
Slice	3'309.2735	221.12712	-	16.490994	0	17.29921

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

32			49.034975			
Slice 33	3'312.2709	221.7791	- 49.034991	5.4770666	0	12.446267

SEZIONE B2 NON DRENATA – SUPERFICIE CIRCOLARE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Advanced

Number of Slices: 30

F of S Tolerance: 0.001

Minimum Slip Surface Depth: 1 m

Search Method: Root Finder

Tolerable difference between starting and converged F of S: 3

Maximum iterations to calculate converged lambda: 20

Max Absolute Lambda: 2

MATERIALS

UNGHIA_K

Model: Mohr-Coulomb

Unit Weight: 18 kN/m³

Cohesion': 0 kPa

Phi': 40 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb

Unit Weight: 17 kN/m³

Cohesion': 150 kPa

Phi': 10 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

PREVAM_K

Model: Mohr-Coulomb

Unit Weight: 18 kN/m³

Cohesion': 75 kPa

Phi': 17 °

Phi-B: 0 °


Cohesion R: 0 kPa

Phi R: 0 °

B2_K

Model: Mohr-Coulomb

Unit Weight: 21 kN/m³

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Cohesion': 90 kPa

Phi': 20 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

B1_K

Model: Mohr-Coulomb

Unit Weight: 20 kN/m³

Cohesion': 50 kPa

Phi': 20 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

A_K

Model: Mohr-Coulomb

Unit Weight: 19 kN/m³

Cohesion': 20 kPa

Phi': 10 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range

Left-Zone Left Coordinate: (3'203.7245; 209.91863) m

Left-Zone Right Coordinate: (3'240; 215.1882) m

Left-Zone Increment: 4

Right Projection: Range

Right-Zone Left Coordinate: (3'245.1371; 217.77255) m

Right-Zone Right Coordinate: (3'328; 226.37377) m

Right-Zone Increment: 10

Radius Increments: 10

SLIP SURFACE LIMITS

Left Coordinate: (3'183.6014; 208.80929) m

Right Coordinate: (3'579.3799; 264) m

SEISMIC COEFFICIENTS

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Horz Seismic Coef.: 0.03

Vert Seismic Coef.: 0.015

POINTS

	X (m)	Y (m)
Point 1	3'579.3799	260.27576
Point 2	3'509.6435	260.27576
Point 3	3'501.9873	257.89303
Point 4	3'477.8365	256.24712
Point 5	3'450.3579	252.54153
Point 6	3'435.1272	249.48888
Point 7	3'414.3346	245.89168
Point 8	3'393.5734	239.77832
Point 9	3'388.9474	239.56109
Point 10	3'368.1851	234.30234
Point 11	3'311.0459	217.48212
Point 12	3'297.0647	214.50366
Point 13	3'286.5293	209.52162
Point 14	3'231.0214	193.17111
Point 15	3'183.6014	182.10445
Point 16	3'183.6014	131.95917
Point 17	3'579.3799	131.95917
Point 18	3'295.8032	218.19721
Point 19	3'313.8613	222.125

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 20	3'253.7888	222.125
Point 21	3'263.5204	211.97579
Point 22	3'281.8299	212.125
Point 23	3'282.936	212.43591
Point 24	3'579.3799	264
Point 25	3'508.5257	264.12467
Point 26	3'501.387	261.32207
Point 27	3'477.1529	260.13066
Point 28	3'450.1065	256.4284
Point 29	3'414.2473	250.35949
Point 30	3'393.0752	243.65478
Point 31	3'384.2228	242.84878
Point 32	3'360.3639	236.09925
Point 33	3'313.8601	222.12467
Point 34	3'295.802	218.19688
Point 35	3'282.9348	212.43558
Point 36	3'281.8287	212.12467
Point 37	3'231.0214	196.80262
Point 38	3'183.6014	185.8656
Point 39	3'313.8612	222.125
Point 40	3'313.8609	222.12492
Point 41	3'295.8029	218.19708
Point 42	3'279.3051	212.1041

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 43	3'231.0214	198.05749
Point 44	3'183.6014	187.54822
Point 45	3'263.5192	211.97545
Point 46	3'232.7005	211.51601
Point 47	3'183.6014	208.80929
Point 48	3'263.5207	211.97548

REGIONS

	Material	Points	Area (m ²)
Region 1	B2_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17	39'38 4
Region 2	Abbancame nto_k	18;40;39;20;21;22;35;34;41	367.8
Region 3	B1_k	13;12;11;10;9;8;7;5;4;3;2;1;24;25;26;27;28;29;30;31;32;39;40;33;41;3 4;35;22;36;37;38;15;14	1'554. 3
Region 4	A_k	37;36;42;43;44;38	118.7 5
Region 5	Prevam_k	42;45;46;47;44;43	1'147
Region 6	Unghia_k	20;46;48;21	158.6 4

CURRENT SLIP SURFACE

Slip Surface: 256

F of S: 1.582

Volume: 12.350191 m³

Weight: 222.30344 kN

Resisting Moment: 8'500.6748 kN-m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI


Activating Moment: 5'374.6316 kN-m
 Resisting Force: 149.98561 kN
 Activating Force: 94.838861 kN
 F of S Rank (Analysis): 1 of 605 slip surfaces
 F of S Rank (Query): 1 of 605 slip surfaces
 Exit: (3'235.2576; 212.80241) m
 Entry: (3'252.6875; 221.57099) m
 Radius: 50.631641 m
 Center: (3'221.6446; 261.56971) m

SLIP SLICES

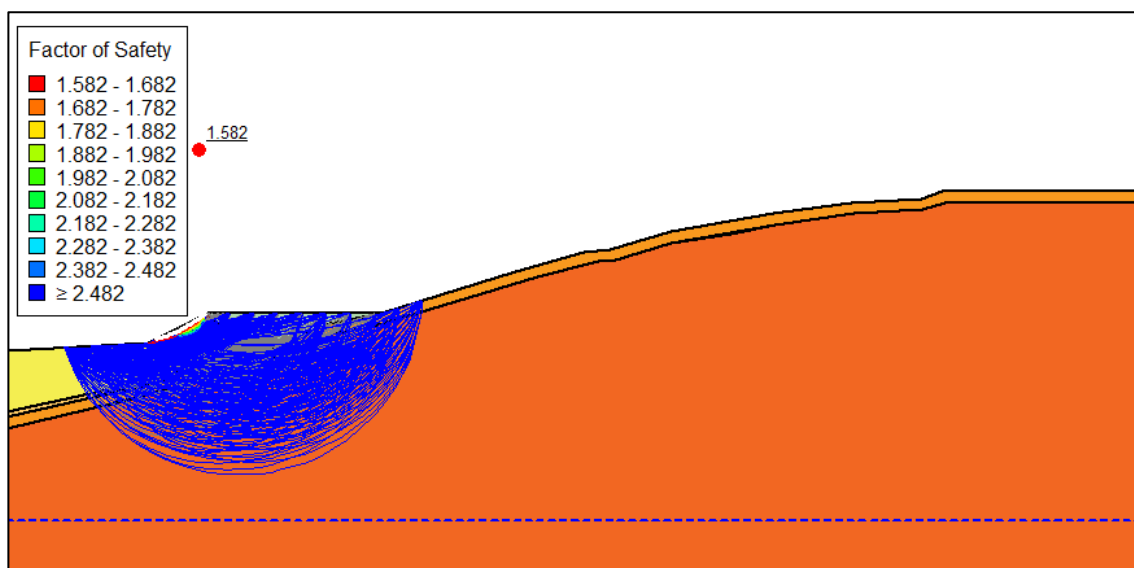
	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'235.5481	212.88537	- 49.034987	1.0156397	0	0.84606254
Slice 2	3'236.1291	213.05506	- 49.034985	3.0124963	0	2.5083233
Slice 3	3'236.7101	213.23234	- 49.034982	4.9169477	0	4.0922359
Slice 4	3'237.2911	213.41727	-49.03498	6.7092741	0	5.5822228
Slice 5	3'237.8721	213.60996	- 49.034978	8.3698071	0	6.9627737
Slice 6	3'238.4531	213.81049	- 49.034975	9.8802652	0	8.2194874
Slice 7	3'239.0341	214.01896	- 49.034973	11.224955	0	9.340014
Slice 8	3'239.6151	214.23549	-49.03497	12.39173	0	10.314807
Slice 9	3'240.1961	214.46017	- 49.034968	13.372628	0	11.137621
Slice	3'240.7771	214.69314	-	14.164142	0	11.805712

	Committente		Oggetto del servizio
	GE.R.IN		DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

10			49.034965			
Slice 11	3'241.3581	214.9345	- 49.034963	14.767158	0	12.31976
Slice 12	3'241.9391	215.1844	-49.03496	15.186563	0	12.683531
Slice 13	3'242.5201	215.44297	- 49.034957	15.430635	0	12.90334
Slice 14	3'243.1011	215.71036	- 49.034955	15.510233	0	12.987391
Slice 15	3'243.6821	215.98672	- 49.034957	15.43789	0	12.945056
Slice 16	3'244.2631	216.27222	- 49.034959	15.22683	0	12.786158
Slice 17	3'244.8441	216.56703	- 49.034962	14.889994	0	12.520312
Slice 18	3'245.4251	216.87134	- 49.034965	14.439124	0	12.156337
Slice 19	3'246.0061	217.18534	- 49.034967	13.884005	0	11.701777
Slice 20	3'246.5871	217.50924	-49.03497	13.231914	0	11.162521
Slice 21	3'247.1681	217.84326	- 49.034973	12.487339	0	10.542508
Slice 22	3'247.7491	218.18763	- 49.034975	11.651923	0	9.8435238
Slice 23	3'248.3301	218.5426	- 49.034978	10.724543	0	9.0650448
Slice 24	3'248.9111	218.90844	-49.03498	9.7014041	0	8.2041337

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 25	3'249.492	219.28542	- 49.034982	8.5760114	0	7.2553598
Slice 26	3'250.073	219.67386	- 49.034985	7.3389885	0	6.2107392
Slice 27	3'250.654	220.07406	- 49.034987	5.9777945	0	5.0596904
Slice 28	3'251.235	220.48638	- 49.034989	4.4764816	0	3.7890082
Slice 29	3'251.816	220.91119	- 49.034992	2.8156309	0	2.3828676
Slice 30	3'252.397	221.34887	- 49.034994	0.97251722	0	0.82287313



SEZIONE B2 NON DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: Meters
Time(t) Units: Seconds
Force(F) Units: Kilonewtons
Pressure(p) Units: kPa

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Strength Units: **kPa**

Unit Weight of Water: **9.807 kN/m³**

View: **2D**

Element Thickness: **1**

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: **SLOPE/W**

Parent: **Insitu**

Method: **Morgenstern-Price**

Settings

Side Function

Interslice force function option: **Half-Sine**

PWP Conditions Source: **Parent Analysis**

Staged Pseudo Static Analysis Option: **Effective Stress Strengths**

Slip Surface

Direction of movement: **Right to Left**

Use Passive Mode: **No**

Slip Surface Option: **Fully-Specified**

Critical slip surfaces saved: **1**

Resisting Side Maximum Convex Angle: **1 °**

Driving Side Maximum Convex Angle: **5 °**

Optimize Critical Slip Surface Location: **No**

Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi': 40 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 150 kPa
 Phi': 10 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

PREVAM_K

Model: Mohr-Coulomb
 Unit Weight: 18 kN/m³
 Cohesion': 75 kPa
 Phi': 17 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B2_K

Model: Mohr-Coulomb
 Unit Weight: 21 kN/m³
 Cohesion': 90 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B1_K

Model: Mohr-Coulomb
 Unit Weight: 20 kN/m³
 Cohesion': 50 kPa
 Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

A_K

Model: **Mohr-Coulomb**

Unit Weight: **19 kN/m³**

Cohesion': **20 kPa**

Phi': **10 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

SLIP SURFACE LIMITS

Left Coordinate: **(3'183.6014; 208.80929) m**

Right Coordinate: **(3'579.3799; 264) m**

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1


	X (m)	Y (m)
	3'232.7005	211.51601
	3'263.5204	211.97579
	3'279.3051	212.1041
	3'281.8287	212.12467
	3'282.9348	212.43558
	3'295.802	218.19688
	3'313.8613	222.125

SEISMIC COEFFICIENTS

Horz Seismic Coef.: **0.03**

Vert Seismic Coef.: **0.015**

POINTS

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	X (m)	Y (m)
Point 1	3'579.3799	260.27576
Point 2	3'509.6435	260.27576
Point 3	3'501.9873	257.89303
Point 4	3'477.8365	256.24712
Point 5	3'450.3579	252.54153
Point 6	3'435.1272	249.48888
Point 7	3'414.3346	245.89168
Point 8	3'393.5734	239.77832
Point 9	3'388.9474	239.56109
Point 10	3'368.1851	234.30234
Point 11	3'311.0459	217.48212
Point 12	3'297.0647	214.50366
Point 13	3'286.5293	209.52162
Point 14	3'231.0214	193.17111
Point 15	3'183.6014	182.10445
Point 16	3'183.6014	131.95917
Point 17	3'579.3799	131.95917
Point 18	3'295.8032	218.19721
Point 19	3'313.8613	222.125
Point 20	3'253.7888	222.125
Point 21	3'263.5204	211.97579
Point 22	3'281.8299	212.125

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 23	3'282.936	212.43591
Point 24	3'579.3799	264
Point 25	3'508.5257	264.12467
Point 26	3'501.387	261.32207
Point 27	3'477.1529	260.13066
Point 28	3'450.1065	256.4284
Point 29	3'414.2473	250.35949
Point 30	3'393.0752	243.65478
Point 31	3'384.2228	242.84878
Point 32	3'360.3639	236.09925
Point 33	3'313.8601	222.12467
Point 34	3'295.802	218.19688
Point 35	3'282.9348	212.43558
Point 36	3'281.8287	212.12467
Point 37	3'231.0214	196.80262
Point 38	3'183.6014	185.8656
Point 39	3'313.8612	222.125
Point 40	3'313.8609	222.12492
Point 41	3'295.8029	218.19708
Point 42	3'279.3051	212.1041
Point 43	3'231.0214	198.05749
Point 44	3'183.6014	187.54822
Point 45	3'263.5192	211.97545

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 46	3'232.7005	211.51601
Point 47	3'183.6014	208.80929
Point 48	3'263.5207	211.97548

REGIONS

	Material	Points	Area (m²)
Region 1	B2_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17	39'384
Region 2	Abbancame nto_k	18;40;39;20;21;22;35;34;41	367.8
Region 3	B1_k	13;12;11;10;9;8;7;5;4;3;2;1;24;25;26;27;28;29;30;31;32;39;40;33;41;34;35;22;36;37;38;15;14	1'554.3
Region 4	A_k	37;36;42;43;44;38	118.75
Region 5	Prevam_k	42;45;46;47;44;43	1'147
Region 6	Unghia_k	20;46;48;21	158.64

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 10.272
 Volume: 526.43693 m³
 Weight: 9'108.0639 kN
 Resisting Moment: 154'542.97 kN-m
 Activating Moment: 15'045.213 kN-m
 Resisting Force: 11'587.919 kN
 Activating Force: 1'128.1368 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (3'232.7005; 211.51601) m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Entry: (3'313.8612; 222.125) m

Radius: 32.058083 m

Center: (3'272.2408; 224.77725) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'234.0185	211.53567	- 49.034996	11.750072	0	9.7116288
Slice 2	3'236.6546	211.575	- 49.034988	35.286926	0	29.146926
Slice 3	3'239.2906	211.61432	- 49.034979	58.877174	0	48.599732
Slice 4	3'241.9266	211.65365	- 49.034971	82.517089	0	68.06882
Slice 5	3'244.5627	211.69297	- 49.034978	106.20113	0	87.55237
Slice 6	3'247.1987	211.7323	- 49.034994	129.92205	0	107.04801
Slice 7	3'249.8347	211.77162	- 49.035011	153.67109	0	126.55285
Slice 8	3'252.4708	211.81095	- 49.035027	177.43811	0	146.06359
Slice 9	3'255.0053	211.84876	- 49.035027	187.76618	0	154.50186
Slice 10	3'257.4382	211.88505	- 49.035019	184.6234	0	151.85722
Slice 11	3'259.8711	211.92135	- 49.035011	181.44149	0	149.19977

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 12	3'262.304	211.95764	- 49.035004	178.21964	0	146.52922
Slice 13	3'264.8358	211.98651	- 49.034993	177.42841	0	180.52769
Slice 14	3'267.4666	212.00795	- 49.034979	177.05695	0	180.46202
Slice 15	3'270.0974	212.02939	- 49.034965	176.61076	0	180.39198
Slice 16	3'272.7281	212.05083	- 49.034951	176.08969	0	180.31758
Slice 17	3'275.3589	212.07227	- 49.034965	175.49485	0	180.23891
Slice 18	3'277.9897	212.09371	- 49.034979	174.82864	0	180.15612
Slice 19	3'280.5669	212.11471	- 49.034993	174.11048	0	180.07127
Slice 20	3'282.3818	212.28029	-49.035	157.63013	0	178.45093
Slice 21	3'284.2215	213.01171	-49.035	139.01976	0	175.68698
Slice 22	3'286.795	214.16397	-49.035	121.58644	0	172.37324
Slice 23	3'289.3684	215.31623	-49.035	104.1323	0	169.05891
Slice 24	3'291.9418	216.46849	-49.035	86.5602	0	165.73869
Slice 25	3'294.5153	217.62075	-49.035	68.776339	0	162.40754
Slice	3'295.8025	218.19698	-49.035	65.021227	0	161.31198

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

26						
Slice 27	3'296.2058	218.28474	0	63.681433	0	161.06458
Slice 28	3'298.0158	218.67848	- 49.034988	57.135559	0	159.89944
Slice 29	3'300.8303	219.29064	- 49.034973	46.839897	0	158.08252
Slice 30	3'303.6447	219.9028	- 49.034957	36.376912	0	156.25818
Slice 31	3'306.4591	220.51496	-49.03496	25.732204	0	154.42577
Slice 32	3'309.2735	221.12712	- 49.034975	14.897311	0	152.58497
Slice 33	3'312.2709	221.7791	- 49.034991	3.1441741	0	150.61507

SEZIONE B3 DRENATA – SUPERFICI CIRCOLARI –PSEUDO- STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Kind: [SLOPE/W](#)

Parent: [Insitu](#)

Method: [Morgenstern-Price](#)

Settings

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Entry and Exit](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [19 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

ABBANCAMENTO_K

Model: [Mohr-Coulomb](#)

Unit Weight: [17 kN/m³](#)

Cohesion': [10 kPa](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi': 24 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

PREVAM_K

Model: Mohr-Coulomb
Unit Weight: 18 kN/m³
Cohesion': 10 kPa
Phi': 20 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

B2_K


Model: Mohr-Coulomb
Unit Weight: 21 kN/m³
Cohesion': 25 kPa
Phi': 24 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

B1_K

Model: Mohr-Coulomb
Unit Weight: 20 kN/m³
Cohesion': 15 kPa
Phi': 22 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

A_K

Model: Mohr-Coulomb
Unit Weight: 19 kN/m³
Cohesion': 10 kPa
Phi': 25 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SLIP SURFACE ENTRY AND EXIT

Left Projection: [Range](#)
 Left-Zone Left Coordinate: [\(2'865.6503; 203\) m](#)
 Left-Zone Right Coordinate: [\(2'880; 206.56509\) m](#)
 Left-Zone Increment: [5](#)
 Right Projection: [Range](#)
 Right-Zone Left Coordinate: [\(2'881; 207.04749\) m](#)
 Right-Zone Right Coordinate: [\(2'939; 212.17462\) m](#)
 Right-Zone Increment: [10](#)
 Radius Increments: [10](#)

SLIP SURFACE LIMITS

Left Coordinate: [\(2'673.6249; 179.20233\) m](#)
 Right Coordinate: [\(3'144.2366; 262.82304\) m](#)

SEISMIC COEFFICIENTS

Horz Seismic Coef.: [0.03](#)
 Vert Seismic Coef.: [0.015](#)

POINTS

	X (m)	Y (m)
Point 1	3'144.2366	259.49089
Point 2	3'103.905	255.69538
Point 3	3'039.0793	238.78429
Point 4	3'005.8074	224.98039
Point 5	2'938.8404	197.13074
Point 6	2'910.8187	187.20907
Point 7	2'899.2714	182.53452
Point 8	2'673.6249	148.15917
Point 9	2'673.6249	106.07514

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 10	3'144.2366	106.07514
Point 11	3'144.2366	262.82304
Point 12	3'103.6947	258.97638
Point 13	3'038.5417	242.51762
Point 14	2'946.8099	204.86962
Point 15	2'945.6368	204.8426
Point 16	2'927.8657	195.53257
Point 17	2'906.9409	189.8026
Point 18	2'897.9855	185.76717
Point 19	2'883.457	183.71949
Point 20	2'673.6249	151.61183
Point 21	2'940.5128	204.72456
Point 22	2'926.2042	197.28524
Point 23	2'911.9978	193.43253
Point 24	2'906.2127	191.79538
Point 25	2'905.7006	191.57396
Point 26	2'904.1099	190.8862
Point 27	2'896.324	187.51984
Point 28	2'673.6249	153.90347
Point 29	2'859.7917	202.86504
Point 30	2'756.9924	192.64559
Point 31	2'673.6249	179.20233
Point 32	2'964.7139	212.22102

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 33	2'891.4505	212.08882
Point 34	2'900.4275	203.80114
Point 35	2'872.9587	203.16836

REGIONS

	Material	Points	Area (m ²)
Region 1	B2_k	1;2;3;4;5;6;7;8;9;10	43'175
Region 2	B1_k	6;5;4;3;2;1;11;12;13;14;15;16;17;18;19;20;8;7	1'715.7
Region 3	A_k	17;16;15;21;22;23;24;25;26;27;28;20;19;18	571.39
Region 4	Prevam_k	22;21;34;35;29;30;31;28;27;26;25;24;23	5'621.1
Region 5	Abbancamento_k	32;33;34;21;15;14	465.11
Region 6	Unghia_k	33;35;34	116.67

CURRENT SLIP SURFACE

Slip Surface: 272
 F of S: 1.648
 Volume: 68.579986 m³
 Weight: 1'291.645 kN
 Resisting Moment: 12'065.138 kN-m
 Activating Moment: 7'321.2839 kN-m
 Resisting Force: 697.07923 kN
 Activating Force: 423.00164 kN
 F of S Rank (Analysis): 1 of 726 slip surfaces
 F of S Rank (Query): 1 of 726 slip surfaces
 Exit: (2'871.6999; 203.13936) m
 Entry: (2'891.6781; 212.08923) m
 Radius: 14.835125 m
 Center: (2'877.5951; 216.7529) m

SLIP SLICES

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

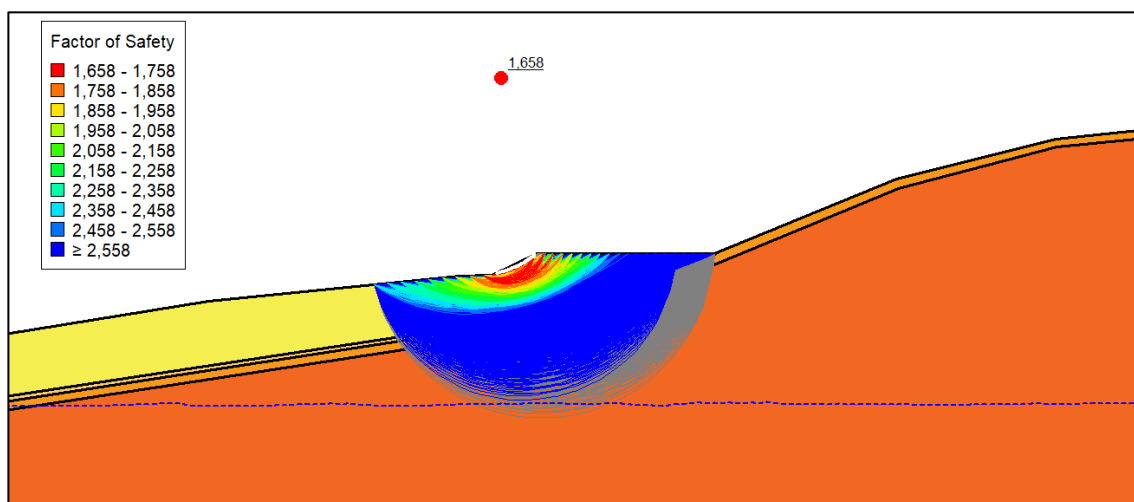
	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'872.0146	203.01157	-49.035	5.9144271	0	12.037217
Slice 2	2'872.644	202.77233	- 49.035001	11.859708	0	14.115288
Slice 3	2'873.2867	202.5613	- 49.035001	20.845238	0	17.267142
Slice 4	2'873.9427	202.37839	- 49.034999	32.826356	0	21.480299
Slice 5	2'874.5987	202.22739	- 49.034997	44.115391	0	25.452868
Slice 6	2'875.2547	202.10731	- 49.034995	54.412767	0	29.088778
Slice 7	2'875.9107	202.0174	- 49.034993	63.47042	0	32.308036
Slice 8	2'876.5667	201.95711	-49.03499	71.113736	0	35.053415
Slice 9	2'877.2227	201.92608	- 49.034988	77.252512	0	37.293901
Slice 10	2'877.8787	201.92412	- 49.034985	81.880366	0	39.024724
Slice 11	2'878.5348	201.95122	- 49.034983	85.064371	0	40.264441
Slice 12	2'879.1908	202.00754	-49.03498	86.928231	0	41.049997
Slice 13	2'879.8468	202.09341	- 49.034977	87.632688	0	41.430835

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 14	2'880.5028	202.20937	- 49.034975	87.356404	0	41.463004
Slice 15	2'881.1588	202.35614	- 49.034972	86.279505	0	41.203965
Slice 16	2'881.8148	202.53468	- 49.034969	84.57089	0	40.708435
Slice 17	2'882.4708	202.74621	- 49.034968	82.379442	0	40.025387
Slice 18	2'883.1268	202.99224	- 49.034973	79.828654	0	39.196073
Slice 19	2'883.7828	203.27468	- 49.034979	77.013818	0	38.252844
Slice 20	2'884.4444	203.59898	- 49.034985	72.949058	0	61.538643
Slice 21	2'885.1117	203.96886	-49.03499	68.206508	0	57.793053
Slice 22	2'885.7789	204.3858	- 49.034994	63.332517	0	53.890227
Slice 23	2'886.4462	204.85475	- 49.034998	58.329225	0	49.831568
Slice 24	2'887.1134	205.38221	- 49.035002	53.16006	0	45.587303
Slice 25	2'887.7807	205.97682	- 49.035005	47.748037	0	41.094182
Slice 26	2'888.4479	206.65057	- 49.035007	41.970188	0	36.249894
Slice 27	2'889.1151	207.42082	- 49.035008	35.645914	0	30.902043
Slice	2'889.7824	208.3145	-	28.51542	0	24.827619

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

28			49.035008			
Slice 29	2'890.4496	209.37784	- 49.035007	20.201879	0	17.694591
Slice 30	2'891.1169	210.70528	- 49.035004	10.153739	0	8.9878197
Slice 31	2'891.5372	211.68998	- 49.035001	3.0267294	0	2.7030084
Slice 32	2'891.651	212.00898	-49.035	-9.4727656	0	6.1143373



SEZIONE B3 DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: **Meters**
Time(t) Units: **Seconds**
Force(F) Units: **Kilonewtons**
Pressure(p) Units: **kPa**
Strength Units: **kPa**
Unit Weight of Water: **9.807 kN/m³**
View: **2D**
Element Thickness: **1**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)

Parent: [Insitu](#)

Method: [Morgenstern-Price](#)

Settings

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Fully-Specified](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [19 kN/m³](#)

Cohesionⁱ: [0 kPa](#)

Phiⁱ: [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

ABBANCAMENTO_K

Model: **Mohr-Coulomb**
 Unit Weight: **17 kN/m³**
 Cohesion': **10 kPa**
 Phi': **24 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

PREVAM_K

Model: **Mohr-Coulomb**
 Unit Weight: **18 kN/m³**
 Cohesion': **10 kPa**
 Phi': **20 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

B2_K

Model: **Mohr-Coulomb**
 Unit Weight: **21 kN/m³**
 Cohesion': **25 kPa**
 Phi': **24 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

B1_K

Model: **Mohr-Coulomb**
 Unit Weight: **20 kN/m³**
 Cohesion': **15 kPa**
 Phi': **22 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

A_K

Model: **Mohr-Coulomb**
 Unit Weight: **19 kN/m³**
 Cohesion': **10 kPa**
 Phi': **25 °**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

SLIP SURFACE LIMITS

Left Coordinate: (2'673.6249; 179.20233) m
Right Coordinate: (3'144.2366; 262.82304) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	2'872.9587	203.16836
	2'900.4275	203.80114
	2'940.5128	204.72456
	2'945.6368	204.8426
	2'946.8099	204.86962
	2'964.7139	212.22102

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03
Vert Seismic Coef.: 0.015

POINTS

	X (m)	Y (m)
Point 1	3'144.2366	259.49089
Point 2	3'103.905	255.69538
Point 3	3'039.0793	238.78429

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 4	3'005.8074	224.98039
Point 5	2'938.8404	197.13074
Point 6	2'910.8187	187.20907
Point 7	2'899.2714	182.53452
Point 8	2'673.6249	148.15917
Point 9	2'673.6249	106.07514
Point 10	3'144.2366	106.07514
Point 11	3'144.2366	262.82304
Point 12	3'103.6947	258.97638
Point 13	3'038.5417	242.51762
Point 14	2'946.8099	204.86962
Point 15	2'945.6368	204.8426
Point 16	2'927.8657	195.53257
Point 17	2'906.9409	189.8026
Point 18	2'897.9855	185.76717
Point 19	2'883.457	183.71949
Point 20	2'673.6249	151.61183
Point 21	2'940.5128	204.72456
Point 22	2'926.2042	197.28524
Point 23	2'911.9978	193.43253
Point 24	2'906.2127	191.79538
Point 25	2'905.7006	191.57396
Point 26	2'904.1099	190.8862

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 27	2'896.324	187.51984
Point 28	2'673.6249	153.90347
Point 29	2'859.7917	202.86504
Point 30	2'756.9924	192.64559
Point 31	2'673.6249	179.20233
Point 32	2'964.7139	212.22102
Point 33	2'891.4505	212.08882
Point 34	2'900.4275	203.80114
Point 35	2'872.9587	203.16836

REGIONS

	Material	Points	Area (m ²)
Region 1	B2_k	1;2;3;4;5;6;7;8;9;10	43'175
Region 2	B1_k	6;5;4;3;2;1;11;12;13;14;15;16;17;18;19;20;8;7	1'715.7
Region 3	A_k	17;16;15;21;22;23;24;25;26;27;28;20;19;18	571.39
Region 4	Prevam_k	22;21;34;35;29;30;31;28;27;26;25;24;23	5'621.1
Region 5	Abbancamento_k	32;33;34;21;15;14	465.11
Region 6	Unghia_k	33;35;34	116.67

CURRENT SLIP SURFACE

Slip Surface: 1

F of S: 6.602

Volume: 581.77443 m³

Weight: 10'123.498 kN

Resisting Moment: 71'551.793 kN-m

Activating Moment: 10'837.335 kN-m

Resisting Force: 6'257.6217 kN

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Activating Force: 947.80844 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (2'872.9587; 203.16836) m
 Entry: (2'964.7139; 212.22102) m
 Radius: 34.495236 m
 Center: (2'918.1664; 214.48419) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'874.4997	203.20386	- 49.034995	13.629335	0	11.270049
Slice 2	2'877.5817	203.27486	- 49.034984	40.956536	0	33.837728
Slice 3	2'880.6636	203.34585	- 49.034973	68.383279	0	56.445466
Slice 4	2'883.7456	203.41685	- 49.034979	95.90221	0	79.090298
Slice 5	2'886.8276	203.48785	- 49.035001	123.50235	0	101.7678
Slice 6	2'889.9095	203.55884	- 49.035023	151.16932	0	124.47218
Slice 7	2'892.9467	203.62881	- 49.035026	161.71878	0	133.05254
Slice 8	2'895.939	203.69774	- 49.035016	155.07153	0	127.47699
Slice 9	2'898.9313	203.76667	- 49.035005	148.35821	0	121.87487
Slice 10	2'901.9692	203.83666	- 49.035008	143.62264	0	72.818066

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 11	2'905.0527	203.90769	- 49.035023	142.4388	0	72.315569
Slice 12	2'908.1362	203.97872	- 49.035038	141.23079	0	71.80629
Slice 13	2'911.2197	204.04975	- 49.035045	139.99907	0	71.290274
Slice 14	2'914.3032	204.12079	-49.03503	138.7445	0	70.767687
Slice 15	2'917.3867	204.19182	- 49.035015	137.46838	0	70.238811
Slice 16	2'920.4702	204.26285	-49.035	136.17237	0	69.704046
Slice 17	2'923.5536	204.33388	- 49.034985	134.85851	0	69.1639
Slice 18	2'926.6371	204.40491	-49.03497	133.5292	0	68.618981
Slice 19	2'929.7206	204.47595	- 49.034955	132.18713	0	68.069996
Slice 20	2'932.8041	204.54698	- 49.034962	130.83529	0	67.517731
Slice 21	2'935.8876	204.61801	- 49.034977	129.47687	0	66.963044
Slice 22	2'938.9711	204.68904	- 49.034992	128.11527	0	66.406855
Slice 23	2'941.7938	204.75407	-49.035	126.86896	0	65.89719
Slice 24	2'944.3558	204.81309	-49.035	125.74034	0	65.434842
Slice	2'946.2234	204.85611	-49.035	124.92034	0	65.098306

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

25						
Slice 26	2'948.3019	205.48224	-49.035	107.22547	0	58.457709
Slice 27	2'951.2859	206.70747	-49.035	88.255663	0	49.770593
Slice 28	2'954.2699	207.9327	-49.035	69.054738	0	41.025716
Slice 29	2'957.2539	209.15794	-49.035	49.571396	0	32.210945
Slice 30	2'960.2379	210.38317	-49.035	29.76309	0	23.316552
Slice 31	2'963.2219	211.6084	-49.035	9.5974071	0	14.335492

SEZIONE B3 NON DRENATA – SUPERFICIE CIRCOLARE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Entry and Exit](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [19 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

ABBANCAENTO_K

Model: [Mohr-Coulomb](#)

Unit Weight: [17 kN/m³](#)

Cohesion': [150 kPa](#)

Phi': [10 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

PREVAM_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [75 kPa](#)
 Phi': [17 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [90 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B1_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [50 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [19 kN/m³](#)
 Cohesion': [20 kPa](#)
 Phi': [10 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

SLIP SURFACE ENTRY AND EXIT

Left Projection: [Range](#)
 Left-Zone Left Coordinate: [\(2'824.5078; 199.35741\) m](#)
 Left-Zone Right Coordinate: [\(2'880; 206.56509\) m](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Left-Zone Increment: 10
 Right Projection: Range
 Right-Zone Left Coordinate: (2'886.8266; 209.85825) m
 Right-Zone Right Coordinate: (2'952; 212.19808) m
 Right-Zone Increment: 10
 Radius Increments: 20

SLIP SURFACE LIMITS

Left Coordinate: (2'673.6249; 179.20233) m
 Right Coordinate: (3'144.2366; 262.82304) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03
 Vert Seismic Coef.: 0.015

POINTS

	X (m)	Y (m)
Point 1	3'144.2366	259.49089
Point 2	3'103.905	255.69538
Point 3	3'039.0793	238.78429
Point 4	3'005.8074	224.98039
Point 5	2'938.8404	197.13074
Point 6	2'910.8187	187.20907
Point 7	2'899.2714	182.53452
Point 8	2'673.6249	148.15917
Point 9	2'673.6249	106.07514
Point 10	3'144.2366	106.07514
Point 11	3'144.2366	262.82304

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 12	3'103.6947	258.97638
Point 13	3'038.5417	242.51762
Point 14	2'946.8099	204.86962
Point 15	2'945.6368	204.8426
Point 16	2'927.8657	195.53257
Point 17	2'906.9409	189.8026
Point 18	2'897.9855	185.76717
Point 19	2'883.457	183.71949
Point 20	2'673.6249	151.61183
Point 21	2'940.5128	204.72456
Point 22	2'926.2042	197.28524
Point 23	2'911.9978	193.43253
Point 24	2'906.2127	191.79538
Point 25	2'905.7006	191.57396
Point 26	2'904.1099	190.8862
Point 27	2'896.324	187.51984
Point 28	2'673.6249	153.90347
Point 29	2'859.7917	202.86504
Point 30	2'756.9924	192.64559
Point 31	2'673.6249	179.20233
Point 32	2'964.7139	212.22102
Point 33	2'891.4505	212.08882
Point 34	2'900.4275	203.80114

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

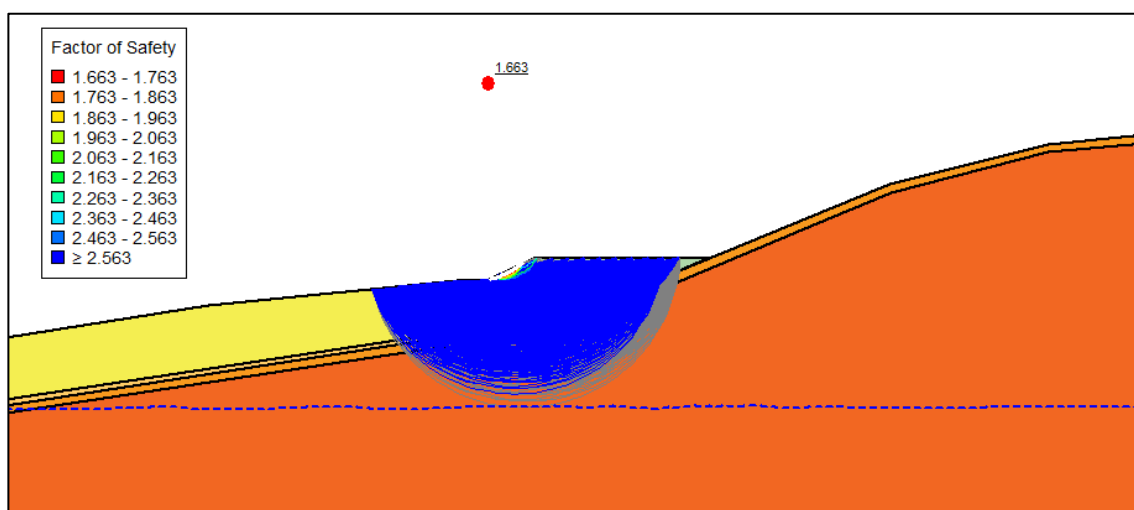
Slice 1	2'873.6602	203.44695	-49.035	1.0573618	0	0.87874723
Slice 2	2'874.1065	203.54613	- 49.034999	3.1436776	0	2.6109751
Slice 3	2'874.5528	203.65236	- 49.034998	5.1435018	0	4.2694132
Slice 4	2'874.9992	203.76572	- 49.034997	7.0323135	0	5.8348621
Slice 5	2'875.4455	203.88627	- 49.034996	8.7853649	0	7.2879905
Slice 6	2'875.8918	204.01412	- 49.034996	10.379495	0	8.6107219
Slice 7	2'876.3381	204.14936	- 49.034995	11.794801	0	9.7875096
Slice 8	2'876.7844	204.29209	- 49.034994	13.01598	0	10.806363
Slice 9	2'877.2307	204.44243	- 49.034994	14.033212	0	11.659526
Slice 10	2'877.6771	204.60049	- 49.034994	14.842517	0	12.34375
Slice 11	2'878.1234	204.7664	- 49.034993	15.445588	0	12.860169
Slice 12	2'878.5697	204.94029	- 49.034993	15.849187	0	13.213831
Slice 13	2'879.016	205.12233	- 49.034993	16.064209	0	13.41296
Slice 14	2'879.4623	205.31266	- 49.034992	16.104548	0	13.46807
Slice	2'879.9087	205.51145	-	15.985886	0	13.391013

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

15			49.034992			
Slice 16	2'880.355	205.7189	- 49.034992	15.724484	0	13.194062
Slice 17	2'880.8013	205.93519	- 49.034992	15.336051	0	12.889081
Slice 18	2'881.2476	206.16053	- 49.034992	14.834743	0	12.486827
Slice 19	2'881.6939	206.39516	- 49.034992	14.232335	0	11.996386
Slice 20	2'882.1403	206.63933	- 49.034993	13.537627	0	11.424753
Slice 21	2'882.5866	206.89328	- 49.034994	12.756089	0	10.77652
Slice 22	2'883.0329	207.15731	- 49.034995	11.889757	0	10.05366
Slice 23	2'883.4792	207.43173	- 49.034996	10.937266	0	9.255376
Slice 24	2'883.9255	207.71688	- 49.034997	9.8939286	0	8.3779785
Slice 25	2'884.3718	208.0131	- 49.034998	8.7516939	0	7.4147743
Slice 26	2'884.8182	208.32081	- 49.034999	7.498934	0	6.35595
Slice 27	2'885.2645	208.64042	- 49.034999	6.1200709	0	5.1884383
Slice 28	2'885.7108	208.97242	-49.035	4.5951742	0	3.8957672
Slice 29	2'886.1571	209.3173	-49.035	2.8996771	0	2.4578988

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 30	2'886.6034	209.67564	-49.035	1.0042763	0	0.85106619
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SEZIONE B3 NON DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
Time(t) Units: [Seconds](#)
Force(F) Units: [Kilonewtons](#)
Pressure(p) Units: [kPa](#)
Strength Units: [kPa](#)
Unit Weight of Water: [9.807 kN/m³](#)
View: [2D](#)
Element Thickness: [1](#)

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)
Parent: [Insitu](#)
Method: [Morgenstern-Price](#)
Settings
Side Function
Interslice force function option: [Half-Sine](#)
PWP Conditions Source: [Parent Analysis](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Staged Pseudo Static Analysis Option: **Effective Stress Strengths**

Slip Surface

Direction of movement: **Right to Left**

Use Passive Mode: **No**

Slip Surface Option: **Fully-Specified**

Critical slip surfaces saved: **1**

Resisting Side Maximum Convex Angle: **1 °**

Driving Side Maximum Convex Angle: **5 °**

Optimize Critical Slip Surface Location: **No**

Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_K

Model: **Mohr-Coulomb**

Unit Weight: **19 kN/m³**

Cohesion': **0 kPa**

Phi': **40 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

ABBANCAENTO_K

Model: **Mohr-Coulomb**

Unit Weight: **17 kN/m³**

Cohesion': **150 kPa**

Phi': **10 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

PREVAM_K

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Model: **Mohr-Coulomb**
 Unit Weight: **18 kN/m³**
 Cohesion': **75 kPa**
 Phi': **17 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

B2_K

Model: **Mohr-Coulomb**
 Unit Weight: **21 kN/m³**
 Cohesion': **90 kPa**
 Phi': **20 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

B1_K

Model: **Mohr-Coulomb**
 Unit Weight: **20 kN/m³**
 Cohesion': **50 kPa**
 Phi': **20 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

A_K

Model: **Mohr-Coulomb**
 Unit Weight: **19 kN/m³**
 Cohesion': **20 kPa**
 Phi': **10 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

SLIP SURFACE LIMITS

Left Coordinate: **(2'673.6249; 179.20233) m**
 Right Coordinate: **(3'144.2366; 262.82304) m**

FULLY SPECIFIED SLIP SURFACES

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	2'872.9587	203.16836
	2'900.4275	203.80114
	2'940.5128	204.72456
	2'945.6368	204.8426
	2'946.8099	204.86962
	2'964.7139	212.22102

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03
Vert Seismic Coef.: 0.015

POINTS

	X (m)	Y (m)
Point 1	3'144.2366	259.49089
Point 2	3'103.905	255.69538
Point 3	3'039.0793	238.78429
Point 4	3'005.8074	224.98039
Point 5	2'938.8404	197.13074
Point 6	2'910.8187	187.20907
Point 7	2'899.2714	182.53452
Point 8	2'673.6249	148.15917
Point 9	2'673.6249	106.07514

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 10	3'144.2366	106.07514
Point 11	3'144.2366	262.82304
Point 12	3'103.6947	258.97638
Point 13	3'038.5417	242.51762
Point 14	2'946.8099	204.86962
Point 15	2'945.6368	204.8426
Point 16	2'927.8657	195.53257
Point 17	2'906.9409	189.8026
Point 18	2'897.9855	185.76717
Point 19	2'883.457	183.71949
Point 20	2'673.6249	151.61183
Point 21	2'940.5128	204.72456
Point 22	2'926.2042	197.28524
Point 23	2'911.9978	193.43253
Point 24	2'906.2127	191.79538
Point 25	2'905.7006	191.57396
Point 26	2'904.1099	190.8862
Point 27	2'896.324	187.51984
Point 28	2'673.6249	153.90347
Point 29	2'859.7917	202.86504
Point 30	2'756.9924	192.64559
Point 31	2'673.6249	179.20233
Point 32	2'964.7139	212.22102

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 33	2'891.4505	212.08882
Point 34	2'900.4275	203.80114
Point 35	2'872.9587	203.16836

REGIONS

	Material	Points	Area (m²)
Region 1	B2_k	1;2;3;4;5;6;7;8;9;10	43'175
Region 2	B1_k	6;5;4;3;2;1;11;12;13;14;15;16;17;18;19;20;8;7	1'715.7
Region 3	A_k	17;16;15;21;22;23;24;25;26;27;28;20;19;18	571.39
Region 4	Prevam_k	22;21;34;35;29;30;31;28;27;26;25;24;23	5'621.1
Region 5	Abbancaento_k	32;33;34;21;15;14	465.11
Region 6	Unghia_k	33;35;34	116.67

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 14.328
 Volume: 581.77443 m³
 Weight: 10'123.498 kN
 Resisting Moment: 168'562.35 kN-m
 Activating Moment: 11'764.143 kN-m
 Resisting Force: 13'305.926 kN
 Activating Force: 928.6446 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (2'872.9587; 203.16836) m
 Entry: (2'964.7139; 212.22102) m
 Radius: 34.495236 m
 Center: (2'918.1664; 214.48419) m


SLIP SLICES

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	2'874.4997	203.20386	-49.034995	13.6353	0	11.277093
Slice 2	2'877.5817	203.27486	-49.034984	40.914206	0	33.839009
Slice 3	2'880.6636	203.34585	-49.034973	68.205197	0	56.412136
Slice 4	2'883.7456	203.41685	-49.034979	95.507407	0	78.995628
Slice 5	2'886.8276	203.48785	-49.035001	122.81952	0	101.58823
Slice 6	2'889.9095	203.55884	-49.035023	150.13981	0	124.18831
Slice 7	2'892.9467	203.62881	-49.035026	160.39808	0	132.67628
Slice 8	2'895.939	203.69774	-49.035016	153.58467	0	127.04324
Slice 9	2'898.9313	203.76667	-49.035005	146.76322	0	121.40278
Slice 10	2'901.9692	203.83666	-49.035008	143.67696	0	174.85007
Slice 11	2'905.0527	203.90769	-49.035023	142.67421	0	174.65987
Slice 12	2'908.1362	203.97872	-49.035038	141.63144	0	174.4669
Slice 13	2'911.2197	204.04975	-49.035045	140.54579	0	174.27104

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 14	2'914.3032	204.12079	-49.03503	139.41515	0	174.0722
Slice 15	2'917.3867	204.19182	-49.035015	138.23818	0	173.87036
Slice 16	2'920.4702	204.26285	-49.035	137.01436	0	173.66553
Slice 17	2'923.5536	204.33388	-49.034985	135.74399	0	173.45781
Slice 18	2'926.6371	204.40491	-49.03497	134.42824	0	173.24733
Slice 19	2'929.7206	204.47595	-49.034955	133.0691	0	173.03426
Slice 20	2'932.8041	204.54698	-49.034962	131.66941	0	172.81886
Slice 21	2'935.8876	204.61801	-49.034977	130.23282	0	172.6014
Slice 22	2'938.9711	204.68904	-49.034992	128.76374	0	172.38222
Slice 23	2'941.7938	204.75407	-49.035	127.39504	0	172.18037
Slice 24	2'944.3558	204.81309	-49.035	126.13633	0	171.99642
Slice 25	2'946.2234	204.85611	-49.035	125.21171	0	171.86207
Slice 26	2'948.3019	205.48224	-49.035	104.05746	0	169.08007
Slice 27	2'951.2859	206.70747	-49.035	85.69255	0	165.59442
Slice	2'954.2699	207.9327	-49.035	66.839084	0	162.07961

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

28						
Slice 29	2'957.2539	209.15794	-49.035	47.395999	0	158.53027
Slice 30	2'960.2379	210.38317	-49.035	27.276414	0	154.94221
Slice 31	2'963.2219	211.6084	-49.035	6.411007	0	151.31249

SEZIONE B4 DRENATA – SUPERFICI CIRCOLARI –PSEUDO- STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Critical slip surfaces saved: **1**
 Resisting Side Maximum Convex Angle: **1 °**
 Driving Side Maximum Convex Angle: **5 °**
 Optimize Critical Slip Surface Location: **No**
 Tension Crack

Tension Crack Option: **(none)**

F of S Distribution

F of S Calculation Option: **Constant**

Advanced

Number of Slices: **30**

F of S Tolerance: **0.001**

Minimum Slip Surface Depth: **1 m**

Search Method: **Root Finder**

Tolerable difference between starting and converged F of S: **3**

Maximum iterations to calculate converged lambda: **20**

Max Absolute Lambda: **2**

MATERIALS

UNGHIA_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **0 kPa**

Phi': **40 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

PREVAM_K

Model: **Mohr-Coulomb**

Unit Weight: **18 kN/m³**

Cohesion': **10 kPa**

Phi': **20 °**

Phi-B: **0 °**

Cohesion R: **0 kPa**

Phi R: **0 °**

B1_K

Model: **Mohr-Coulomb**

Unit Weight: **20 kN/m³**

Cohesion': **15 kPa**

Phi': **22 °**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

B2_K

Model: Mohr-Coulomb
Unit Weight: 21 kN/m³
Cohesion': 25 kPa
Phi': 24 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

A_K

Model: Mohr-Coulomb
Unit Weight: 19 kN/m³
Cohesion': 10 kPa
Phi': 25 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
Unit Weight: 17 kN/m³
Cohesion': 10 kPa
Phi': 24 °
Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range
Left-Zone Left Coordinate: (3'416.0859; 222) m
Left-Zone Right Coordinate: (3'424.5763; 226.00002) m
Left-Zone Increment: 5
Right Projection: Range
Right-Zone Left Coordinate: (3'426.5763; 227.00002) m
Right-Zone Right Coordinate: (3'457; 231.35402) m
Right-Zone Increment: 10
Radius Increments: 10

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SLIP SURFACE LIMITS

Left Coordinate: (3'250.4633; 109.43219) m

Right Coordinate: (3'633.7128; 298) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03

Vert Seismic Coef.: 0.015

POINTS

	X (m)	Y (m)
Point 1	3'475.091	231.34648
Point 2	3'435.3024	231.36306
Point 3	3'442.8926	223.59312
Point 4	3'445.8633	223.76689
Point 5	3'358.4296	187.92216
Point 6	3'391.6967	198.12388
Point 7	3'403.8915	204.39958
Point 8	3'426.705	217.70328
Point 9	3'445.7675	222.99378
Point 10	3'448.2605	224.38837
Point 11	3'425.5145	219.55333
Point 12	3'413.3094	211.69929
Point 13	3'390.4432	199.93182
Point 14	3'357.5843	190.03136
Point 15	3'254.9747	172.22872

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 16	3'250.5253	172.17921
Point 17	3'250.5233	170.1245
Point 18	3'255.9231	170.18595
Point 19	3'309.1161	179.38968
Point 20	3'424.6008	222.52308
Point 21	3'416.2644	222.03542
Point 22	3'361.3684	211.14292
Point 23	3'250.5371	184.14799
Point 24	3'633.7087	293.8808
Point 25	3'547.089	262.27885
Point 26	3'487.4376	230.72583
Point 27	3'428.7614	214.50775
Point 28	3'406.0567	201.27678
Point 29	3'393.8619	195.00108
Point 30	3'359.8433	184.39489
Point 31	3'309.833	175.65792
Point 32	3'255.5578	166.8982
Point 33	3'250.5199	166.74436
Point 34	3'250.4633	109.43219
Point 35	3'633.5261	109.0537
Point 36	3'633.7128	298
Point 37	3'545.3122	265.63788
Point 38	3'485.6585	234.08361

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 39	3'416.6978	222.06078
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REGIONS

	Material	Points	Area (m²)
Regio n 1	Abbancamento_ k	1;2;3;4	163.23
Regio n 2	A_k	5;6;7;8;9;10;4;11;12;13;14;15;16;17;18;19	423.2
Regio n 3	Prevam_k	13;12;11;4;3;20;21;22;23;16;15;14	2'787.7
Regio n 4	B2_k	24;25;26;27;28;29;30;31;32;33;34;35	42'707
Regio n 5	B1_k	24;36;37;38;10;9;8;7;6;5;19;18;17;33;32;31;30;29;28;27;26;25	1'528.8
Regio n 6	Unghia_k	2;39;20;3	107.58

CURRENT SLIP SURFACE

Slip Surface: 14
 F of S: 1.620
 Volume: 8.9978809 m³
 Weight: 161.96186 kN
 Resisting Moment: 3'216.1391 kN-m
 Activating Moment: 1'985.4949 kN-m
 Resisting Force: 110.29568 kN
 Activating Force: 68.104505 kN
 F of S Rank (Analysis): 1 of 726 slip surfaces
 F of S Rank (Query): 1 of 726 slip surfaces
 Exit: (3'416.8484; 222.13607) m
 Entry: (3'429.3896; 228.40667) m
 Radius: 26.076767 m
 Center: (3'411.8865; 247.73641) m

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SLIP SLICES

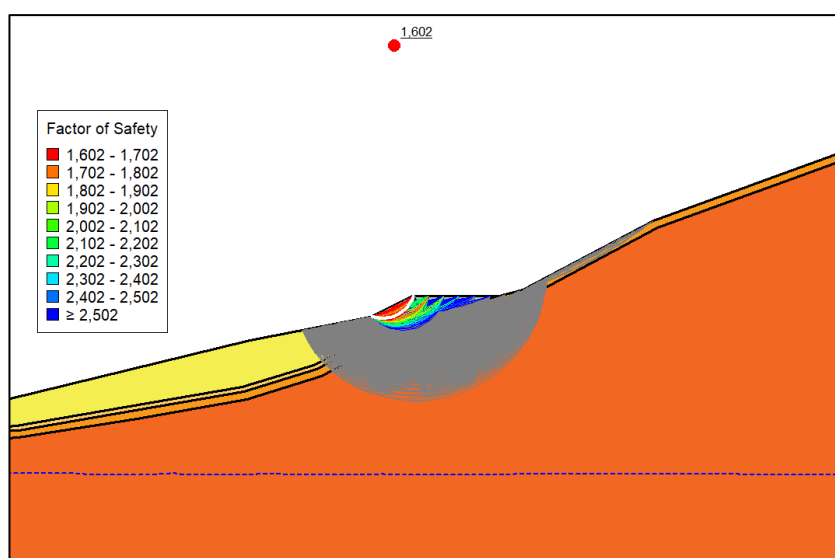
	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'417.0574	222.17836	-49.035	1.0471065	0	0.870044
Slice 2	3'417.4754	222.26651	-49.035	3.1186036	0	2.5902308
Slice 3	3'417.8935	222.36186	-49.035	5.1119952	0	4.2442761
Slice 4	3'418.3115	222.46448	-49.035	7.0003273	0	5.8106281
Slice 5	3'418.7296	222.57447	-49.035	8.7560437	0	7.2673509
Slice 6	3'419.1476	222.69192	-49.035	10.353103	0	8.5937785
Slice 7	3'419.5656	222.81693	-49.035	11.768979	0	9.772059
Slice 8	3'419.9837	222.94962	-49.035	12.986305	0	10.788412
Slice 9	3'420.4017	223.09012	-49.035	13.993975	0	11.633961
Slice 10	3'420.8198	223.23856	-49.035	14.787604	0	12.305069
Slice 11	3'421.2378	223.39508	-49.035	15.369334	0	12.803187
Slice 12	3'421.6559	223.55984	-49.035	15.747079	0	13.134268
Slice	3'422.0739	223.73301	-49.035	15.933355	0	13.30788

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

13						
Slice 14	3'422.4919	223.91478	-49.035	15.94386	0	13.336133
Slice 15	3'422.91	224.10534	-49.035	15.796007	0	13.232557
Slice 16	3'423.328	224.30491	-49.035	15.50754	0	13.011042
Slice 17	3'423.7461	224.51372	-49.035	15.095364	0	12.684892
Slice 18	3'424.1641	224.73202	-49.035	14.574627	0	12.266063
Slice 19	3'424.5821	224.96008	-49.035	13.958051	0	11.764559
Slice 20	3'425.0002	225.19821	-49.035	13.255455	0	11.188003
Slice 21	3'425.4182	225.44672	-49.035	12.473382	0	10.541335
Slice 22	3'425.8363	225.70596	-49.035	11.614769	0	9.8266079
Slice 23	3'426.2543	225.97633	-49.035	10.678661	0	9.0428498
Slice 24	3'426.6723	226.25823	-49.035	9.6599804	0	8.1859406
Slice 25	3'427.0904	226.55214	-49.035	8.5494205	0	7.2484824
Slice 26	3'427.5084	226.85855	-49.035	7.3334156	0	6.2196349
Slice 27	3'427.9265	227.17803	-49.035	5.9941209	0	5.0849031

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 28	3'428.3445	227.5112	-49.035	4.5092594	0	3.8258711
Slice 29	3'428.7625	227.85874	-49.035	2.8517655	0	2.4198802
Slice 30	3'429.1806	228.22144	-49.035	0.98928952	0	0.83964377



SEZIONE B4 DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: **Meters**
Time(t) Units: **Seconds**
Force(F) Units: **Kilonewtons**
Pressure(p) Units: **kPa**
Strength Units: **kPa**
Unit Weight of Water: **9.807 kN/m³**
View: **2D**
Element Thickness: **1**

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Kind: [SLOPE/W](#)

Parent: [Insitu](#)

Method: [Morgenstern-Price](#)

Settings

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Fully-Specified](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [10 kPa](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi': 20 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B1_K

Model: Mohr-Coulomb
 Unit Weight: 20 kN/m³
 Cohesion': 15 kPa
 Phi': 22 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

B2_K

Model: Mohr-Coulomb
 Unit Weight: 21 kN/m³
 Cohesion': 25 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

A_K

Model: Mohr-Coulomb
 Unit Weight: 19 kN/m³
 Cohesion': 10 kPa
 Phi': 25 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 10 kPa
 Phi': 24 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SLIP SURFACE LIMITS

Left Coordinate: (3'250.4633; 109.43219) m

Right Coordinate: (3'633.7128; 298) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	3'416.6978	222.06078
	3'424.6008	222.52308
	3'442.8926	223.59312
	3'445.8633	223.76689
	3'448.2605	224.38837
	3'475.091	231.34648

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03

Vert Seismic Coef.: 0.015

POINTS

	X (m)	Y (m)
Point 1	3'475.091	231.34648
Point 2	3'435.3024	231.36306
Point 3	3'442.8926	223.59312
Point 4	3'445.8633	223.76689
Point 5	3'358.4296	187.92216

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 6	3'391.6967	198.12388
Point 7	3'403.8915	204.39958
Point 8	3'426.705	217.70328
Point 9	3'445.7675	222.99378
Point 10	3'448.2605	224.38837
Point 11	3'425.5145	219.55333
Point 12	3'413.3094	211.69929
Point 13	3'390.4432	199.93182
Point 14	3'357.5843	190.03136
Point 15	3'254.9747	172.22872
Point 16	3'250.5253	172.17921
Point 17	3'250.5233	170.1245
Point 18	3'255.9231	170.18595
Point 19	3'309.1161	179.38968
Point 20	3'424.6008	222.52308
Point 21	3'416.2644	222.03542
Point 22	3'361.3684	211.14292
Point 23	3'250.5371	184.14799
Point 24	3'633.7087	293.8808
Point 25	3'547.089	262.27885
Point 26	3'487.4376	230.72583
Point 27	3'428.7614	214.50775
Point 28	3'406.0567	201.27678

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 29	3'393.8619	195.00108
Point 30	3'359.8433	184.39489
Point 31	3'309.833	175.65792
Point 32	3'255.5578	166.8982
Point 33	3'250.5199	166.74436
Point 34	3'250.4633	109.43219
Point 35	3'633.5261	109.0537
Point 36	3'633.7128	298
Point 37	3'545.3122	265.63788
Point 38	3'485.6585	234.08361
Point 39	3'416.6978	222.06078

REGIONS

	Material	Points	Area (m²)
Regio n 1	Abbancamento_ k	1;2;3;4	163.23
Regio n 2	A_k	5;6;7;8;9;10;4;11;12;13;14;15;16;17;18;19	423.2
Regio n 3	Prevam_k	13;12;11;4;3;20;21;22;23;16;15;14	2'787.7
Regio n 4	B2_k	24;25;26;27;28;29;30;31;32;33;34;35	42'707
Regio n 5	B1_k	24;36;37;38;10;9;8;7;6;5;19;18;17;33;32;31;30;29;28;27;26;25	1'528.8

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Regio n 6	Unghia_k	2;39;20;3	107.58
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CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 4.332
 Volume: 270.815 m³
 Weight: 4'711.4365 kN
 Resisting Moment: 33'628.352 kN-m
 Activating Moment: 7'762.2652 kN-m
 Resisting Force: 3'351.353 kN
 Activating Force: 773.57912 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (3'416.6978; 222.06078) m
 Entry: (3'475.091; 231.34648) m
 Radius: 23.580146 m
 Center: (3'444.7869; 233.66791) m

SLIP SLICES

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'417.6857	222.11857	-49.035	7.9014219	0	6.5391528
Slice 2	3'419.6614	222.23414	-49.035	23.788083	0	19.661078
Slice 3	3'421.6372	222.34972	-49.035	39.796763	0	32.846395
Slice 4	3'423.6129	222.46529	-49.035	55.918723	0	46.090424
Slice 5	3'425.671	222.58568	-49.035	72.818655	0	59.941086
Slice	3'427.8113	222.71089	-49.035	90.486822	0	74.393186

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

6						
Slice 7	3'429.9516	222.83609	-49.035	108.22254	0	88.879881
Slice 8	3'432.0919	222.9613	-49.035	125.9933	0	103.38425
Slice 9	3'434.2322	223.0865	-49.035	143.76291	0	117.88752
Slice 10	3'436.2512	223.20461	-49.035	150.71879	0	123.52359
Slice 11	3'438.1487	223.31561	-49.035	146.79457	0	120.25814
Slice 12	3'440.0463	223.42661	-49.035	142.74143	0	116.92553
Slice 13	3'441.9438	223.53762	-49.035	138.5622	0	113.52729
Slice 14	3'443.6353	223.63656	-49.035	133.74846	0	68.604895
Slice 15	3'445.1206	223.72345	-49.035	131.97972	0	67.870543
Slice 16	3'447.0619	224.07772	-49.035	116.86015	0	62.350656
Slice 17	3'449.2187	224.63705	-49.035	107.64538	0	58.252783
Slice 18	3'451.1352	225.13405	-49.035	99.584414	0	54.647383
Slice 19	3'453.0517	225.63104	-49.035	91.616336	0	51.068297
Slice 20	3'454.9681	226.12804	-49.035	83.717518	0	47.50894

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 21	3'456.8846	226.62503	-49.035	75.863961	0	43.96261
Slice 22	3'458.8011	227.12202	-49.035	68.031733	0	40.422624
Slice 23	3'460.7175	227.61902	-49.035	60.197405	0	36.882452
Slice 24	3'462.634	228.11601	-49.035	52.338494	0	33.335848
Slice 25	3'464.5504	228.61301	-49.035	44.433902	0	29.776988
Slice 26	3'466.4669	229.11	-49.035	36.464353	0	26.200594
Slice 27	3'468.3834	229.607	-49.035	28.412833	0	22.602059
Slice 28	3'470.2998	230.10399	-49.035	20.265015	0	18.977565
Slice 29	3'472.2163	230.60099	-49.035	12.00967	0	15.324186
Slice 30	3'474.1328	231.09798	-49.035	3.6390538	0	11.639984

SEZIONE B4 NON DRENATA – SUPERFICIE CIRCOLARE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: **Meters**
 Time(t) Units: **Seconds**
 Force(F) Units: **Kilonewtons**
 Pressure(p) Units: **kPa**
 Strength Units: **kPa**
 Unit Weight of Water: **9.807 kN/m³**
 View: **2D**
 Element Thickness: **1**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)

Parent: [Insitu](#)

Method: [Morgenstern-Price](#)

Settings

Side Function

Interslice force function option: [Half-Sine](#)

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Entry and Exit](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

PREVAM_K

Model: **Mohr-Coulomb**
 Unit Weight: **18 kN/m³**
 Cohesion': **75 kPa**
 Phi': **17 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

B1_K

Model: **Mohr-Coulomb**
 Unit Weight: **20 kN/m³**
 Cohesion': **50 kPa**
 Phi': **20 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

B2_K

Model: **Mohr-Coulomb**
 Unit Weight: **21 kN/m³**
 Cohesion': **90 kPa**
 Phi': **20 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

A_K

Model: **Mohr-Coulomb**
 Unit Weight: **19 kN/m³**
 Cohesion': **20 kPa**
 Phi': **10 °**
 Phi-B: **0 °**
 Cohesion R: **0 kPa**
 Phi R: **0 °**

ABBANCAMENTO_K

Model: **Mohr-Coulomb**
 Unit Weight: **17 kN/m³**
 Cohesion': **150 kPa**
 Phi': **10 °**

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Phi-B: 0 °
Cohesion R: 0 kPa
Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range
Left-Zone Left Coordinate: (3'416.0859; 222) m
Left-Zone Right Coordinate: (3'424; 225.71187) m
Left-Zone Increment: 5
Right Projection: Range
Right-Zone Left Coordinate: (3'426; 226.71187) m
Right-Zone Right Coordinate: (3'466; 231.35027) m
Right-Zone Increment: 10
Radius Increments: 10

SLIP SURFACE LIMITS

Left Coordinate: (3'250.4633; 109.43219) m
Right Coordinate: (3'633.7128; 298) m

SEISMIC COEFFICIENTS

Horz Seismic Coef.: 0.03
Vert Seismic Coef.: 0.015

POINTS

	X (m)	Y (m)
Point 1	3'475.091	231.34648
Point 2	3'435.3024	231.36306
Point 3	3'442.8926	223.59312
Point 4	3'445.8633	223.76689
Point 5	3'358.4296	187.92216
Point 6	3'391.6967	198.12388
Point 7	3'403.8915	204.39958

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 8	3'426.705	217.70328
Point 9	3'445.7675	222.99378
Point 10	3'448.2605	224.38837
Point 11	3'425.5145	219.55333
Point 12	3'413.3094	211.69929
Point 13	3'390.4432	199.93182
Point 14	3'357.5843	190.03136
Point 15	3'254.9747	172.22872
Point 16	3'250.5253	172.17921
Point 17	3'250.5233	170.1245
Point 18	3'255.9231	170.18595
Point 19	3'309.1161	179.38968
Point 20	3'424.6008	222.52308
Point 21	3'416.2644	222.03542
Point 22	3'361.3684	211.14292
Point 23	3'250.5371	184.14799
Point 24	3'633.7087	293.8808
Point 25	3'547.089	262.27885
Point 26	3'487.4376	230.72583
Point 27	3'428.7614	214.50775
Point 28	3'406.0567	201.27678
Point 29	3'393.8619	195.00108
Point 30	3'359.8433	184.39489

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 31	3'309.833	175.65792
Point 32	3'255.5578	166.8982
Point 33	3'250.5199	166.74436
Point 34	3'250.4633	109.43219
Point 35	3'633.5261	109.0537
Point 36	3'633.7128	298
Point 37	3'545.3122	265.63788
Point 38	3'485.6585	234.08361
Point 39	3'416.6978	222.06078

REGIONS

	Material	Points	Area (m²)
Regio n 1	Abbancamento_ k	1;2;3;4	163.23
Regio n 2	A_k	5;6;7;8;9;10;4;11;12;13;14;15;16;17;18;19	423.2
Regio n 3	Prevam_k	13;12;11;4;3;20;21;22;23;16;15;14	2'787.7
Regio n 4	B2_k	24;25;26;27;28;29;30;31;32;33;34;35	42'707
Regio n 5	B1_k	24;36;37;38;10;9;8;7;6;5;19;18;17;33;32;31;30;29;28;27;26;25	1'528.8
Regio n 6	Unghia_k	2;39;20;3	107.58

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

CURRENT SLIP SURFACE

Slip Surface: 14
 F of S: 1.620
 Volume: 9.4206778 m³
 Weight: 169.5722 kN
 Resisting Moment: 3'441.4832 kN-m
 Activating Moment: 2'124.4881 kN-m
 Resisting Force: 115.48085 kN
 Activating Force: 71.302063 kN
 F of S Rank (Analysis): 1 of 726 slip surfaces
 F of S Rank (Query): 1 of 726 slip surfaces
 Exit: (3'416.8486; 222.13619) m
 Entry: (3'429.6759; 228.54983) m
 Radius: 26.65096 m
 Center: (3'411.7831; 248.30133) m

SLIP SLICES

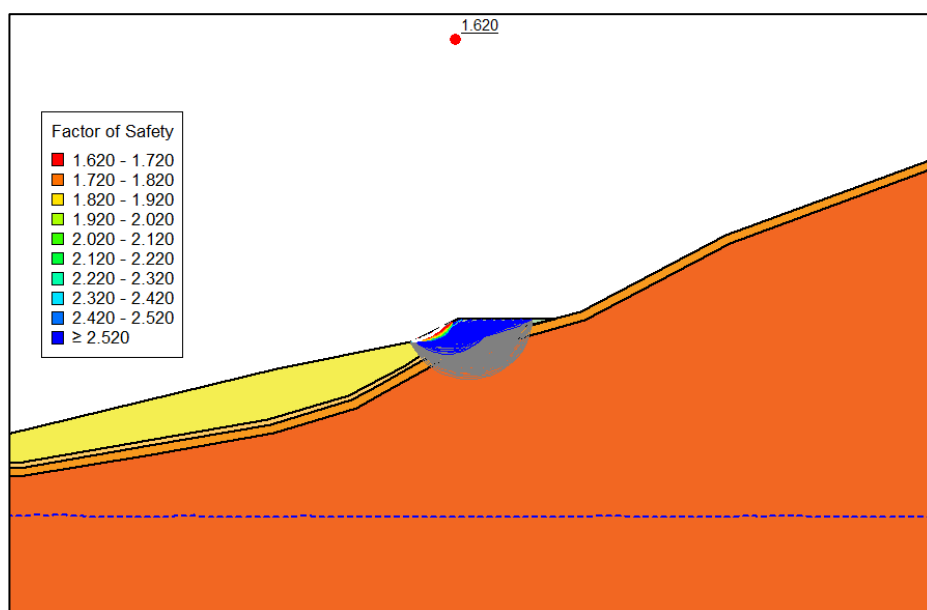
	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'417.0624	222.1794	-49.035	1.0719077	0	0.89064507
Slice 2	3'417.49	222.26947	-49.035	3.1925068	0	2.6515933
Slice 3	3'417.9176	222.36691	-49.035	5.2332006	0	4.3448748
Slice 4	3'418.3451	222.47179	-49.035	7.1663777	0	5.9484119
Slice 5	3'418.7727	222.58421	-49.035	8.9638078	0	7.4397323
Slice 6	3'419.2003	222.70426	-49.035	10.598812	0	8.7976637
Slice 7	3'419.6279	222.83206	-49.035	12.04831	0	10.003917

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 8	3'420.0554	222.96772	-49.035	13.294512	0	11.044374
Slice 9	3'420.483	223.11136	-49.035	14.326039	0	11.90994
Slice 10	3'420.9106	223.26313	-49.035	15.138399	0	12.596892
Slice 11	3'421.3382	223.42318	-49.035	15.73379	0	13.106715
Slice 12	3'421.7658	223.59166	-49.035	16.12032	0	13.445512
Slice 13	3'422.1933	223.76875	-49.035	16.310813	0	13.623086
Slice 14	3'422.6209	223.95463	-49.035	16.321354	0	13.651844
Slice 15	3'423.0485	224.14952	-49.035	16.169782	0	13.545648
Slice 16	3'423.4761	224.35363	-49.035	15.874275	0	13.318726
Slice 17	3'423.9036	224.56719	-49.035	15.452151	0	12.98471
Slice 18	3'424.3312	224.79047	-49.035	14.918924	0	12.555842
Slice 19	3'424.7588	225.02374	-49.035	14.287627	0	12.042373
Slice 20	3'425.1864	225.26731	-49.035	13.568316	0	11.452108
Slice 21	3'425.6139	225.52152	-49.035	12.767691	0	10.790105
Slice	3'426.0415	225.78671	-49.035	11.88876	0	10.058469

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

22						
Slice 23	3'426.4691	226.06329	-49.035	10.930542	0	9.2562015
Slice 24	3'426.8967	226.35168	-49.035	9.8878371	0	8.3790822
Slice 25	3'427.3242	226.65235	-49.035	8.7511112	0	7.4195333
Slice 26	3'427.7518	226.96584	-49.035	7.5064683	0	6.3664506
Slice 27	3'428.1794	227.2927	-49.035	6.1356291	0	5.204986
Slice 28	3'428.607	227.63358	-49.035	4.6157733	0	3.9162741
Slice 29	3'429.0346	227.98918	-49.035	2.9191736	0	2.4771011
Slice 30	3'429.4621	228.36029	-49.035	1.0126862	0	0.8595095



	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE B4 NON DRENATA – SCORRIMENTO LUNGO BASE – PSEUDO-STATICA

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

04_PSEUDO-STATICA_BASE_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Fully-Specified](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [0 kPa](#)
 Phi': [40 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [75 kPa](#)
 Phi': [17 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B1_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [50 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [90 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 19 kN/m³

Cohesion': 20 kPa

Phi': 10 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb

Unit Weight: 17 kN/m³

Cohesion': 150 kPa

Phi': 10 °

Phi-B: 0 °

Cohesion R: 0 kPa

Phi R: 0 °

SLIP SURFACE LIMITS

Left Coordinate: (3'250.4633; 109.43219) m

Right Coordinate: (3'633.7128; 298) m

FULLY SPECIFIED SLIP SURFACES

FULLY SPECIFIED SLIP SURFACE 1

	X (m)	Y (m)
	3'416.6978	222.06078
	3'424.6008	222.52308
	3'442.8926	223.59312
	3'445.8633	223.76689
	3'448.2605	224.38837
	3'475.091	231.34648

SEISMIC COEFFICIENTS

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Horz Seismic Coef.: 0.03

Vert Seismic Coef.: 0.015

POINTS

	X (m)	Y (m)
Point 1	3'475.091	231.34648
Point 2	3'435.3024	231.36306
Point 3	3'442.8926	223.59312
Point 4	3'445.8633	223.76689
Point 5	3'358.4296	187.92216
Point 6	3'391.6967	198.12388
Point 7	3'403.8915	204.39958
Point 8	3'426.705	217.70328
Point 9	3'445.7675	222.99378
Point 10	3'448.2605	224.38837
Point 11	3'425.5145	219.55333
Point 12	3'413.3094	211.69929
Point 13	3'390.4432	199.93182
Point 14	3'357.5843	190.03136
Point 15	3'254.9747	172.22872
Point 16	3'250.5253	172.17921
Point 17	3'250.5233	170.1245
Point 18	3'255.9231	170.18595
Point 19	3'309.1161	179.38968

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 20	3'424.6008	222.52308
Point 21	3'416.2644	222.03542
Point 22	3'361.3684	211.14292
Point 23	3'250.5371	184.14799
Point 24	3'633.7087	293.8808
Point 25	3'547.089	262.27885
Point 26	3'487.4376	230.72583
Point 27	3'428.7614	214.50775
Point 28	3'406.0567	201.27678
Point 29	3'393.8619	195.00108
Point 30	3'359.8433	184.39489
Point 31	3'309.833	175.65792
Point 32	3'255.5578	166.8982
Point 33	3'250.5199	166.74436
Point 34	3'250.4633	109.43219
Point 35	3'633.5261	109.0537
Point 36	3'633.7128	298
Point 37	3'545.3122	265.63788
Point 38	3'485.6585	234.08361
Point 39	3'416.6978	222.06078

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

REGIONS

	Material	Points	Area (m ²)
Regio n 1	Abbancamento_ k	1;2;3;4	163.23
Regio n 2	A_k	5;6;7;8;9;10;4;11;12;13;14;15;16;17;18;19	423.2
Regio n 3	Prevam_k	13;12;11;4;3;20;21;22;23;16;15;14	2'787.7
Regio n 4	B2_k	24;25;26;27;28;29;30;31;32;33;34;35	42'707
Regio n 5	B1_k	24;36;37;38;10;9;8;7;6;5;19;18;17;33;32;31;30;29;28;27;26;25	1'528.8
Regio n 6	Unghia_k	2;39;20;3	107.58

CURRENT SLIP SURFACE

Slip Surface: 1
 F of S: 9.433
 Volume: 270.815 m³
 Weight: 4'711.4365 kN
 Resisting Moment: 73'454.437 kN-m
 Activating Moment: 7'787.2457 kN-m
 Resisting Force: 7'270.2715 kN
 Activating Force: 770.75156 kN
 F of S Rank (Analysis): 1 of 1 slip surfaces
 F of S Rank (Query): 1 of 1 slip surfaces
 Exit: (3'416.6978; 222.06078) m
 Entry: (3'475.091; 231.34648) m
 Radius: 23.580146 m
 Center: (3'444.7869; 233.66791) m

SLIP SLICES

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI


	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'417.6857	222.11857	-49.035	7.9276739	0	6.5694586
Slice 2	3'419.6614	222.23414	-49.035	23.78276	0	19.745029
Slice 3	3'421.6372	222.34972	-49.035	39.63764	0	32.973929
Slice 4	3'423.6129	222.46529	-49.035	55.492543	0	46.252305
Slice 5	3'425.671	222.58568	-49.035	72.007946	0	60.130136
Slice 6	3'427.8113	222.71089	-49.035	89.184048	0	74.603203
Slice 7	3'429.9516	222.83609	-49.035	106.36061	0	89.105713
Slice 8	3'432.0919	222.9613	-49.035	123.53759	0	103.62348
Slice 9	3'434.2322	223.0865	-49.035	140.71485	0	118.14073
Slice 10	3'436.2512	223.20461	-49.035	147.30772	0	123.77151
Slice 11	3'438.1487	223.31561	-49.035	143.31583	0	120.48687
Slice 12	3'440.0463	223.42661	-49.035	139.32339	0	117.14602
Slice 13	3'441.9438	223.53762	-49.035	135.33033	0	113.7502

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 14	3'443.6353	223.63656	-49.035	132.83675	0	174.28131
Slice 15	3'445.1206	223.72345	-49.035	131.34228	0	174.01507
Slice 16	3'447.0619	224.07772	-49.035	119.3611	0	168.6975
Slice 17	3'449.2187	224.63705	-49.035	110.02732	0	167.39374
Slice 18	3'451.1352	225.13405	-49.035	101.76655	0	166.28029
Slice 19	3'453.0517	225.63104	-49.035	93.520579	0	165.19203
Slice 20	3'454.9681	226.12804	-49.035	85.274884	0	164.11359
Slice 21	3'456.8846	226.62503	-49.035	77.015303	0	163.0295
Slice 22	3'458.8011	227.12202	-49.035	68.728398	0	161.92418
Slice 23	3'460.7175	227.61902	-49.035	60.401778	0	160.78184
Slice 24	3'462.634	228.11601	-49.035	52.024417	0	159.58643
Slice 25	3'464.5504	228.61301	-49.035	43.586951	0	158.32165
Slice 26	3'466.4669	229.11	-49.035	35.081947	0	156.97109
Slice 27	3'468.3834	229.607	-49.035	26.504142	0	155.51843
Slice	3'470.2998	230.10399	-49.035	17.850637	0	153.94789

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

28						
Slice 29	3'472.2163	230.60099	-49.035	9.1210417	0	152.24478
Slice 30	3'474.1328	231.09798	-49.035	0.31755139	0	150.39633

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO COMUNE DI PIANORO (BO)

ALLEGATO 3 – VERIFICHE DI STABILITA' GLOBALE – RIFIUTI INERTI ESCLUSO 01.05.99

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

SEZIONE A2 DRENATA – SUPERFICI CIRCOLARI – 2A

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)
 PWP Conditions Source: [Parent Analysis](#)
 Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)
 Slip Surface
 Direction of movement: [Right to Left](#)
 Use Passive Mode: [No](#)
 Slip Surface Option: [Entry and Exit](#)
 Critical slip surfaces saved: [1](#)
 Resisting Side Maximum Convex Angle: [1 °](#)
 Driving Side Maximum Convex Angle: [5 °](#)
 Optimize Critical Slip Surface Location: [No](#)
 Tension Crack
 Tension Crack Option: [\(none\)](#)
 F of S Distribution
 F of S Calculation Option: [Constant](#)
 Advanced
 Number of Slices: [30](#)
 F of S Tolerance: [0.001](#)
 Minimum Slip Surface Depth: [1 m](#)
 Search Method: [Root Finder](#)
 Tolerable difference between starting and converged F of S: [3](#)
 Maximum iterations to calculate converged lambda: [20](#)
 Max Absolute Lambda: [2](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [0 kPa](#)
 Phi': [40 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [18 kN/m³](#)
 Cohesion': [10 kPa](#)
 Phi': [20 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B1_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [15 kPa](#)
 Phi': [22 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [25 kPa](#)
 Phi': [24 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Unit Weight: 19 kN/m³
 Cohesion': 10 kPa
 Phi': 25 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

ABBANCAMENTO_K

Model: Mohr-Coulomb
 Unit Weight: 17 kN/m³
 Cohesion': 5 kPa
 Phi': 28 °
 Phi-B: 0 °
 Cohesion R: 0 kPa
 Phi R: 0 °

SLIP SURFACE ENTRY AND EXIT

Left Projection: Range
 Left-Zone Left Coordinate: (3'403.7189; 220.42588) m
 Left-Zone Right Coordinate: (3'566.8563; 263) m
 Left-Zone Increment: 30
 Right Projection: Range
 Right-Zone Left Coordinate: (3'574.1935; 266.91428) m
 Right-Zone Right Coordinate: (3'688; 297.12938) m
 Right-Zone Increment: 20
 Radius Increments: 20

SLIP SURFACE LIMITS


Left Coordinate: (3'286.6419; 215.93536) m
 Right Coordinate: (3'741.4032; 297) m

SEISMIC COEFFICIENTS


Horz Seismic Coef.: 0.082
 Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 1	3'492.0756	231.19331
Point 2	3'504.6379	232.49738
Point 3	3'525.3431	237.97475
Point 4	3'551.7864	252.97475
Point 5	3'572.5103	264.22475
Point 6	3'582.6617	265.67593
Point 7	3'615.6013	275.97475
Point 8	3'627.4351	275.97475
Point 9	3'635.7102	279.52223
Point 10	3'607.0603	279.67693
Point 11	3'583.7531	269.67693
Point 12	3'579.372	269.67693
Point 13	3'560.6273	259.67693
Point 14	3'552.602	259.67693
Point 15	3'529.5602	249.67693
Point 16	3'515.45	249.67693
Point 17	3'494.2461	239.67693
Point 18	3'483.9042	239.67693
Point 19	3'458.1066	229.67693
Point 20	3'452.3584	229.67693
Point 21	3'462.224	221.67205
Point 22	3'466.6714	222.47475
Point 23	3'476.3183	226.95506

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 24	3'435.0351	220.84913
Point 25	3'443.033	220.97475
Point 26	3'460.6763	221.46118
Point 27	3'461.1308	221.47475
Point 28	3'446.4826	209.32266
Point 29	3'477.0077	223.32587
Point 30	3'494.3661	227.90325
Point 31	3'504.076	228.35863
Point 32	3'526.7423	233.60944
Point 33	3'532.554	236.84586
Point 34	3'540.9087	241.65913
Point 35	3'551.3043	247.31989
Point 36	3'573.9336	259.98258
Point 37	3'582.4924	260.69426
Point 38	3'590.3869	263.45452
Point 39	3'617.6671	271.63675
Point 40	3'627.5468	271.85892
Point 41	3'677.9248	293.06174
Point 42	3'741.4032	293.27558
Point 43	3'741.4032	297
Point 44	3'678.8645	297.15151
Point 45	3'666.4418	292.52525
Point 46	3'661.7158	290.67074

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 47	3'445.3833	212.43942
Point 48	3'376.9488	194.95058
Point 49	3'363.4632	192.26977
Point 50	3'286.6554	184.84873
Point 51	3'286.6419	182.24442
Point 52	3'364.7694	189.71237
Point 53	3'444.7438	214.39855
Point 54	3'424.7421	208.88691
Point 55	3'376.6739	196.99835
Point 56	3'363.4954	194.43155
Point 57	3'286.6419	187.43791
Point 58	3'411.824	220.48458
Point 59	3'394.488	220.35902
Point 60	3'379.6366	220.0438
Point 61	3'362.4358	219.93872
Point 62	3'348.8305	219.78957
Point 63	3'299.1781	216.69742
Point 64	3'286.6419	215.93536
Point 65	3'286.6419	147
Point 66	3'741.4032	147

REGIONS

	Material	Points	Area
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	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI


			(m ²)
Regio n 1	Abbancame nto_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23	1'271. 9
Regio n 2	Unghia_k	20;24;25;26;27;21	115.9 9
Regio n 3	B1_k	28;29;30;31;32;33;34;35;36;37;38;39;40;41;42;43;44;45;46;9;8;7;6;5;4; 3;2;1;23;22;47;48;49;50;51;52	1'713. 1
Regio n 4	A_k	47;22;21;27;26;53;54;55;56;57;50;49;48	378.9 3
Regio n 5	Prevam_k	54;53;26;25;24;58;59;60;61;62;63;64;57;56;55	3'493
Regio n 6	B2_k	42;41;40;39;38;37;36;35;34;33;32;31;30;29;28;52;51;65;66	40'72 1

CURRENT SLIP SURFACE


Slip Surface: 12'502
 F of S: 1.264
 Volume: 324.4948 m³
 Weight: 5'903.6009 kN
 Resisting Moment: 219'823.24 kN-m
 Activating Moment: 173'912.88 kN-m
 Resisting Force: 2'898.6222 kN
 Activating Force: 2'293.4817 kN
 F of S Rank (Analysis): 1 of 13'671 slip surfaces
 F of S Rank (Query): 1 of 13'671 slip surfaces
 Exit: (3'556.2021; 259.67693) m
 Entry: (3'613.4569; 279.64239) m
 Radius: 70.13449 m
 Center: (3'564.0057; 329.37593) m

SLIP SLICES


	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

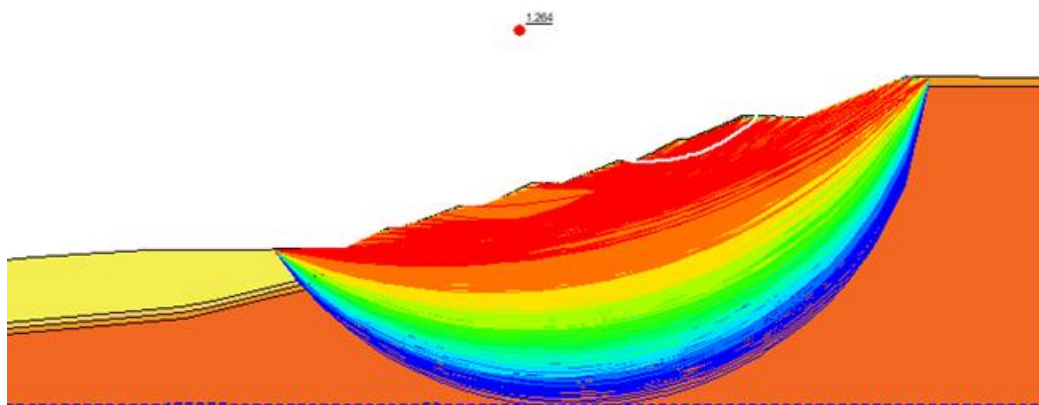
Slice 1	3'557.3084	259.57079	-49.035	2.687643	0	6.2731457
Slice 2	3'559.521	259.39375	-49.035	6.5950502	0	8.1375779
Slice 3	3'561.9818	259.28375	-49.035	23.346502	0	16.416769
Slice 4	3'564.2537	259.24788	- 49.035003	50.799927	0	33.913257
Slice 5	3'566.0885	259.27839	- 49.035007	72.70631	0	42.218585
Slice 6	3'567.9233	259.35697	- 49.035009	92.962657	0	49.959277
Slice 7	3'569.7581	259.48381	- 49.035009	111.29901	0	57.052667
Slice 8	3'571.5929	259.65916	- 49.035007	127.52355	0	63.437108
Slice 9	3'573.1801	259.84738	- 49.035003	139.00571	0	68.05792
Slice 10	3'573.8918	259.94172	-49.035	146.91883	0	86.245343
Slice 11	3'574.2069	259.98785	-49.035	148.67907	0	87.035853
Slice 12	3'575.2955	260.16101	-49.035	150.22342	0	72.732626
Slice 13	3'576.9261	260.44682	-49.035	156.8953	0	75.661649
Slice 14	3'578.5567	260.77258	-49.035	162.01458	0	78.040682
Slice 15	3'580.1944	261.14063	-49.035	158.51663	0	77.046168
Slice	3'581.8393	261.552	-49.035	146.97144	0	72.847505

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

16						
Slice 17	3'583.2074	261.92359	-49.035	137.24094	0	69.279395
Slice 18	3'584.7398	262.38432	-49.035	132.757	0	67.832775
Slice 19	3'586.7131	263.02738	-49.035	130.80067	0	67.485987
Slice 20	3'588.6865	263.73606	-49.035	127.8086	0	66.690041
Slice 21	3'590.6598	264.51251	-49.035	123.94914	0	65.496695
Slice 22	3'592.6332	265.35919	-49.035	119.35303	0	63.947251
Slice 23	3'594.6066	266.27895	-49.035	114.10894	0	62.070646
Slice 24	3'596.5799	267.27502	-49.035	108.26051	0	59.881975
Slice 25	3'598.5533	268.35115	-49.035	101.8044	0	57.381196
Slice 26	3'600.5266	269.51167	-49.035	94.688553	0	54.551742
Slice 27	3'602.5	270.76159	-49.035	86.809377	0	51.358761
Slice 28	3'604.4733	272.10679	-49.035	78.006137	0	47.746708
Slice 29	3'606.2602	273.40809	-49.035	70.177969	0	43.826183
Slice 30	3'608.1264	274.87523	- 49.035002	56.253229	0	36.171477

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Slice 31	3'610.2586	276.67392	- 49.035007	34.12657	0	24.00454
Slice 32	3'612.3908	278.62597	- 49.035015	9.8542913	0	10.72221



SEZIONE A2 DRENATA – SUPERFICI CIRCOLARI – 2B

PROJECT SETTINGS

Length(L) Units: [Meters](#)
 Time(t) Units: [Seconds](#)
 Force(F) Units: [Kilonewtons](#)
 Pressure(p) Units: [kPa](#)
 Strength Units: [kPa](#)
 Unit Weight of Water: [9.807 kN/m³](#)
 View: [2D](#)
 Element Thickness: [1](#)

ANALYSIS SETTINGS

03_PSEUDO-STATICA_GENERICO_DRE

Kind: [SLOPE/W](#)
 Parent: [Insitu](#)
 Method: [Morgenstern-Price](#)
 Settings
 Side Function
 Interslice force function option: [Half-Sine](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

PWP Conditions Source: [Parent Analysis](#)

Staged Pseudo Static Analysis Option: [Effective Stress Strengths](#)

Slip Surface

Direction of movement: [Right to Left](#)

Use Passive Mode: [No](#)

Slip Surface Option: [Entry and Exit](#)

Critical slip surfaces saved: [1](#)

Resisting Side Maximum Convex Angle: [1 °](#)

Driving Side Maximum Convex Angle: [5 °](#)

Optimize Critical Slip Surface Location: [No](#)

Tension Crack

Tension Crack Option: [\(none\)](#)

F of S Distribution

F of S Calculation Option: [Constant](#)

Advanced

Number of Slices: [30](#)

F of S Tolerance: [0.001](#)

Minimum Slip Surface Depth: [1 m](#)

Search Method: [Root Finder](#)

Tolerable difference between starting and converged F of S: [3](#)

Maximum iterations to calculate converged lambda: [20](#)

Max Absolute Lambda: [2](#)

MATERIALS

UNGHIA_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [0 kPa](#)

Phi': [40 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

PREVAM_K

Model: [Mohr-Coulomb](#)

Unit Weight: [18 kN/m³](#)

Cohesion': [10 kPa](#)

Phi': [20 °](#)

Phi-B: [0 °](#)

Cohesion R: [0 kPa](#)

Phi R: [0 °](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

B1_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [20 kN/m³](#)
 Cohesion': [15 kPa](#)
 Phi': [22 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

B2_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [21 kN/m³](#)
 Cohesion': [25 kPa](#)
 Phi': [24 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

A_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [19 kN/m³](#)
 Cohesion': [10 kPa](#)
 Phi': [25 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

ABBANCAMENTO_K

Model: [Mohr-Coulomb](#)
 Unit Weight: [17 kN/m³](#)
 Cohesion': [5 kPa](#)
 Phi': [35 °](#)
 Phi-B: [0 °](#)
 Cohesion R: [0 kPa](#)
 Phi R: [0 °](#)

SLIP SURFACE ENTRY AND EXIT

Left Projection: [Range](#)
 Left-Zone Left Coordinate: [\(3'403.7189; 220.42588\) m](#)
 Left-Zone Right Coordinate: [\(3'566.8563; 263\) m](#)

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Left-Zone Increment: 30
 Right Projection: Range
 Right-Zone Left Coordinate: (3'574.1935; 266.91428) m
 Right-Zone Right Coordinate: (3'688; 297.12938) m
 Right-Zone Increment: 20
 Radius Increments: 20

SLIP SURFACE LIMITS


Left Coordinate: (3'286.6419; 215.93536) m
 Right Coordinate: (3'741.4032; 297) m

SEISMIC COEFFICIENTS


Horz Seismic Coef.: 0.082
 Vert Seismic Coef.: 0.041

POINTS

	X (m)	Y (m)
Point 1	3'492.0756	231.19331
Point 2	3'504.6379	232.49738
Point 3	3'525.3431	237.97475
Point 4	3'551.7864	252.97475
Point 5	3'572.5103	264.22475
Point 6	3'582.6617	265.67593
Point 7	3'615.6013	275.97475
Point 8	3'627.4351	275.97475
Point 9	3'635.7102	279.52223
Point 10	3'607.0603	279.67693
Point 11	3'583.7531	269.67693

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 12	3'579.372	269.67693
Point 13	3'560.6273	259.67693
Point 14	3'552.602	259.67693
Point 15	3'529.5602	249.67693
Point 16	3'515.45	249.67693
Point 17	3'494.2461	239.67693
Point 18	3'483.9042	239.67693
Point 19	3'458.1066	229.67693
Point 20	3'452.3584	229.67693
Point 21	3'462.224	221.67205
Point 22	3'466.6714	222.47475
Point 23	3'476.3183	226.95506
Point 24	3'435.0351	220.84913
Point 25	3'443.033	220.97475
Point 26	3'460.6763	221.46118
Point 27	3'461.1308	221.47475
Point 28	3'446.4826	209.32266
Point 29	3'477.0077	223.32587
Point 30	3'494.3661	227.90325
Point 31	3'504.076	228.35863
Point 32	3'526.7423	233.60944
Point 33	3'532.554	236.84586
Point 34	3'540.9087	241.65913

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI


Point 35	3'551.3043	247.31989
Point 36	3'573.9336	259.98258
Point 37	3'582.4924	260.69426
Point 38	3'590.3869	263.45452
Point 39	3'617.6671	271.63675
Point 40	3'627.5468	271.85892
Point 41	3'677.9248	293.06174
Point 42	3'741.4032	293.27558
Point 43	3'741.4032	297
Point 44	3'678.8645	297.15151
Point 45	3'666.4418	292.52525
Point 46	3'661.7158	290.67074
Point 47	3'445.3833	212.43942
Point 48	3'376.9488	194.95058
Point 49	3'363.4632	192.26977
Point 50	3'286.6554	184.84873
Point 51	3'286.6419	182.24442
Point 52	3'364.7694	189.71237
Point 53	3'444.7438	214.39855
Point 54	3'424.7421	208.88691
Point 55	3'376.6739	196.99835
Point 56	3'363.4954	194.43155
Point 57	3'286.6419	187.43791

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

Point 58	3'411.824	220.48458
Point 59	3'394.488	220.35902
Point 60	3'379.6366	220.0438
Point 61	3'362.4358	219.93872
Point 62	3'348.8305	219.78957
Point 63	3'299.1781	216.69742
Point 64	3'286.6419	215.93536
Point 65	3'286.6419	147
Point 66	3'741.4032	147

REGIONS

	Material	Points	Area (m ²)
Region 1	Abbanamento_k	1;2;3;4;5;6;7;8;9;10;11;12;13;14;15;16;17;18;19;20;21;22;23	1'271.9
Region 2	Unghia_k	20;24;25;26;27;21	115.99
Region 3	B1_k	28;29;30;31;32;33;34;35;36;37;38;39;40;41;42;43;44;45;46;9;8;7;6;5;4;3;2;1;23;22;47;48;49;50;51;52	1'713.1
Region 4	A_k	47;22;21;27;26;53;54;55;56;57;50;49;48	378.93
Region 5	Prevam_k	54;53;26;25;24;58;59;60;61;62;63;64;57;56;55	3'493
Region 6	B2_k	42;41;40;39;38;37;36;35;34;33;32;31;30;29;28;52;51;65;66	40'721


	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

CURRENT SLIP SURFACE


Slip Surface: 12'502
 F of S: 1.295
 Volume: 324.4948 m³
 Weight: 5'903.6009 kN
 Resisting Moment: 225'239.24 kN-m
 Activating Moment: 173'912.88 kN-m
 Resisting Force: 2'961.2345 kN
 Activating Force: 2'286.6312 kN
 F of S Rank (Analysis): 1 of 13'671 slip surfaces
 F of S Rank (Query): 1 of 13'671 slip surfaces
 Exit: (3'556.2021; 259.67693) m
 Entry: (3'613.4569; 279.64239) m
 Radius: 70.13449 m
 Center: (3'564.0057; 329.37593) m

SLIP SLICES


	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	3'557.3084	259.57079	-49.035	2.7125006	0	6.6874584
Slice 2	3'559.521	259.39375	-49.035	6.7067039	0	9.1763184
Slice 3	3'561.9818	259.28375	-49.035	23.946481	0	20.272354
Slice 4	3'564.2537	259.24788	- 49.035003	50.702809	0	33.853866
Slice 5	3'566.0885	259.27839	- 49.035007	72.43292	0	42.101512
Slice 6	3'567.9233	259.35697	- 49.035009	92.516588	0	49.78709
Slice 7	3'569.7581	259.48381	- 49.035009	110.69962	0	56.833356

	Committente	Oggetto del servizio
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Slice 8	3'571.5929	259.65916	- 49.035007	126.80339	0	63.183054
Slice 9	3'573.1801	259.84738	- 49.035003	138.2168	0	67.786863
Slice 10	3'573.8918	259.94172	-49.035	145.88374	0	85.864037
Slice 11	3'574.2069	259.98785	-49.035	147.63334	0	86.652203
Slice 12	3'575.2955	260.16101	-49.035	149.39738	0	72.458513
Slice 13	3'576.9261	260.44682	-49.035	156.08922	0	75.40205
Slice 14	3'578.5567	260.77258	-49.035	161.26419	0	77.807989
Slice 15	3'580.1944	261.14063	-49.035	157.86842	0	76.854928
Slice 16	3'581.8393	261.552	-49.035	146.45776	0	72.706488
Slice 17	3'583.2074	261.92359	-49.035	136.84548	0	69.181387
Slice 18	3'584.7398	262.38432	-49.035	132.49449	0	67.783914
Slice 19	3'586.7131	263.02738	-49.035	130.71647	0	67.503116
Slice 20	3'588.6865	263.73606	-49.035	127.91076	0	66.77441
Slice 21	3'590.6598	264.51251	-49.035	124.23942	0	65.647014
Slice	3'592.6332	265.35919	-49.035	119.82817	0	64.160099

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

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Slice 23	3'594.6066	266.27895	-49.035	114.76193	0	62.340891
Slice 24	3'596.5799	267.27502	-49.035	109.08183	0	60.203169
Slice 25	3'598.5533	268.35115	-49.035	102.78309	0	57.745929
Slice 26	3'600.5266	269.51167	-49.035	95.813019	0	54.951951
Slice 27	3'602.5	270.76159	-49.035	88.067923	0	51.786022
Slice 28	3'604.4733	272.10679	-49.035	79.387245	0	48.192528
Slice 29	3'606.2602	273.40809	-49.035	67.70399	0	54.467816
Slice 30	3'608.1264	274.87523	- 49.035002	53.608423	0	44.394913
Slice 31	3'610.2586	276.67392	- 49.035007	32.046667	0	28.793541
Slice 32	3'612.3908	278.62597	- 49.035015	9.1225269	0	12.116991

	Committente	Oggetto del servizio
	GE.R.IN	DISCARICA PER INERTI "CA' CIRENAICA" CON FINALITA' DI RECUPERO GEOMORFOLOGICO - COMUNE DI PIANORO (BO) WBS E ELENCO ELABORATI

