

## DAFTAR PUSTAKA

- Agus, H. 2005, "Metode Perhitungan Cadangan", Departemen Teknik Pertambangan Fakultas Ilmu Kebumihan Dan Teknologi Mineral Institut Teknologi Bandung (ITB), Bandung
- Ahmad, W., 2006. *Laterite Fundamental Of Chemistry, Mineralogy, Wheathring Process And Laterite Information*, PT INCO, Sorowako.
- Ahmad, W. 2008, *Laterite: Fundamental of Chemistry, Mineralogy, Weathering Processes and Laterit Formation*, PT. *International Nickel* Indonesia : Sorowako, *South Sulawesi*
- Brand, N, W. 1998. Nickel laterites: Classification and Features. *AGSO J. Aust. Geol. Geophys.* 17. 81 – 88.
- Elias, M,, 2002, *Nickel Laterite Deposits-Eological Overview, Resources And Exploitation, In Giant Ore Deposit: Characteristics, Genesis And Exploration*, Centre Ore Deposit Res,, Univ, Tasmania, Spec, Pub 4, 205-220,
- Friedrick, G., Kros, G., And Wiechowski, A. 1984. Goldminerasation In Rodalquilar, Spanien, *Geol. Jb. Hannover*, A. 75, P. 345
- Golightly, J,, 1979, Nickelferous Laterites: A General Description, *Journal of Electrostatics*, pp, 3-23.
- Hasria., Anshari, E., Muliddin., Restele, L.O, Zulkifli, L.O.M. 2019. Pengaruh Struktur Geologi Terhadap Sebaran Kadar Nikel (Ni) Dan Besi (Fe) Pada Endapan Nikel Laterit Zona Saprolit PT. Manunggal Sarana Surya Pratama, Kecamatan Lasolo Kepulauan, Kabupaten Konawe Utara, Sulawesi Tenggara. *J. Riset Dan Pertambangan (J-Ristam)*
- Isjudarto, A. 2013. Pengaruh morfologi lokal terhadap pembentukan nikel Laterit. *RTII*, 8.
- Ilyas, A, Kashiwaya, K, and Koike, K, 2016, *Ni Grade Distribution in Laterite Characterized from Geostatistics, Topograph and the Paleo-Groundwater System in Sorowako, Indonesia*, *Journal of Geochemical Exploration*, 165(2016), pp, 174-188,
- Kadariusman, A, Miyashita, S,, Maruyama, S, and Parkinson, 2004, *Petrology, Geochemistry and Paleogeographic Reconstruction of the East Sulawesi Ophiolite*, *Indonesia, Tectonophysics*, 392(2004), pp, 55-83,
- KCMI, 2017, *Kode Pelaporan Hasil Eksplorasi, Sumberdaya Mineral dan Cadangan Bijih*, Jakarta, Hal, 10-16.

- Latif, A. A., 2008. Studi Perbandingan Metode Nearest Neighbourhood Point (NNP), Inverse Distance Weighted (IDW) Dan Kriging Pada Perhitungan Cadangan Nikel Laterit
- Lintjewas, L., Setiawan, I., dan Kausar, A. Al., 2019. Profil Endapan Nikel Laterit di Daerah Palangga, Provinsi Sulawesi Tenggara. *RISSET Geologi Dan Pertambangan*, 29(1), 91 – 104.
- Mubroto B, Briden J,C,, McClelland E,, Hall R,, 1994, *Paleomagnetism of the Balantak ophiolite, Sulawesi, Earth Planet, Sci, Lett, Vol,125*, pp,193–209
- Nushantara, A., P., 2002. Profil Kimia Pelapukan Bongkah Peridotit Daerah Dx, Sorowako, Sulawesi Selatan. Ugm, Yogyakarta
- Pramono, G.H. 2008. Akurasi Meode IDW Dan Krigging Untuk Interpolasi Sebaran Sedimen Tersuspensi Di Maros, Sulawessi Selatan. *Forum Geografi*, Vol 22(1), 145-158
- Simandjuntak, Surono, dan Sukido, 1994. *Geologi Regional Lembar Kolaka Skala 1: 250.000*. Penerbit Pusat Penelitian dan Pengembangan Geologi.
- Surono, 2013. *Geologi Lengan Tenggara Sulawesi*. Bandung: Badan Geologi, Kementerian Energi dan Sumber Daya Mineral.
- Sufriadin, Widodo, S., dan Thamrin, M., 2017, Karakteristik Mineral Bijih pada Batuan Ultramafik di Daerah Latao, Kolaka Utara, Propinsi Sulawesi Tenggara, *Proceeding Seminar Nasional Kebumihan Ke-10 Peran Penelitian Ilmu Kebumihan Dalam Pembangunan Infrastruktur Di Indonesia 13 – 14 September 2017; Grha Sabha Pramana*, 980-989.
- T, O, Simanjuntak, Rusmana, E, Sukindo, Sukarna, D,, Haryono, E, 1993. *Peta Geologi Lembar Lasusua Kendari, Sulawesi*, Pusat Penelitian dan Pengembangan Geologi: Bandung,
- Trino Dan Islamiah, D., 2014. Perhitungan Kemajuan Tambang (Progres Mining) Dengan Metode Penampang Melintang Di Cv. Wulu Bumi Sakti Kecamatan Samboja Kabupaten Kutai Karta Negara Propinsi Kalimantan Timur. *Jurnal Geologi Pertambangn*, 2 (5)
- Van Leeuwen, T.M and P.E. Peters., 2011, *Minerals Deposits of Sulawesi, Proceeding of The Sulawesi Minerals Resources Seminar MGEI-IAGI*
- Widayat, A.H, 2005, Modul Responsi TE, 323, Metode Perhitungan Cadangan
- Wahid, M, Abdul,. 2019. Perhitungan Kemjuan Tambang Batu Gatu Granit Dengan Metode Penampang Melintang (*Cross Section*) Kabupaten Mempawak Provinsi Kalimantan Barat.
- Zuidam, R.A. Van., 1985. *Aerial Photo-Interpretation Terrain Analysis and Geomorphology Mapping. Smith Publisher The Hague, ITC.*

# LAMPIRAN

LAMPIRAN I  
Contoh Data Titik Bor

## Data Collar

| Hole id | y       | x        | z      | Max Depth (m) | Hole Path |
|---------|---------|----------|--------|---------------|-----------|
| CBK18   | 9627153 | 418866.8 | 154.13 | 26            | LINEAR    |
| CBK19   | 9627251 | 418792.5 | 176.58 | 13            | LINEAR    |
| CBK20   | 9627204 | 418893   | 145.74 | 41            | LINEAR    |
| CBK21   | 9627150 | 418843.5 | 162.17 | 17            | LINEAR    |
| CBK22   | 9627226 | 418868.1 | 153.79 | 27            | LINEAR    |
| CBK23   | 9627203 | 418842.6 | 155.41 | 35            | LINEAR    |
| CBK24   | 9627174 | 418792.9 | 179.03 | 25            | LINEAR    |
| CBK25   | 9627173 | 418898   | 146.9  | 26            | LINEAR    |
| CBK26   | 9627176 | 418820.4 | 167.7  | 36            | LINEAR    |
| CBK27   | 9627147 | 418765.8 | 178.6  | 23            | LINEAR    |
| CBK28   | 9627123 | 418725.8 | 192.42 | 8             | LINEAR    |
| CBK29   | 9627226 | 418768.4 | 183.78 | 16            | LINEAR    |
| CBK30   | 9627300 | 418787.8 | 188.57 | 14            | LINEAR    |
| CBK31   | 9627277 | 418842.9 | 172.93 | 25            | LINEAR    |
| CBK32   | 9627250 | 418892.3 | 161.37 | 26            | LINEAR    |
| CBK33   | 9627227 | 418894.3 | 153.36 | 22            | LINEAR    |
| CBK34   | 9627125 | 418927.5 | 180.56 | 11            | LINEAR    |
| CBK35   | 9627174 | 418844.9 | 161.39 | 38            | LINEAR    |
| CBK36   | 9627276 | 418867.9 | 170.14 | 13            | LINEAR    |
| CBK37   | 9627226 | 418792.8 | 174.79 | 45            | LINEAR    |
| CBK38   | 9627249 | 418862.7 | 161.25 | 24            | LINEAR    |
| CBK39   | 9627198 | 418918.8 | 141.93 | 20            | LINEAR    |
| CBK40   | 9627229 | 418842.1 | 159.19 | 28            | LINEAR    |
| CBK41   | 9627277 | 418820.6 | 177.44 | 13            | LINEAR    |
| CBK42   | 9627203 | 418862.5 | 149.04 | 50            | LINEAR    |
| CBK43   | 9627251 | 418817.8 | 171.9  | 24            | LINEAR    |
| CBK44   | 9627174 | 418872.4 | 152.32 | 21            | LINEAR    |
| CBK45   | 9627126 | 418816.1 | 161.84 | 28            | LINEAR    |
| CBK46   | 9627124 | 418881.7 | 164.91 | 15            | LINEAR    |
| CBK47   | 9627124 | 418747.3 | 182.81 | 22            | LINEAR    |
| CBK48   | 9627125 | 418905.1 | 171.81 | 24            | LINEAR    |
| CBK49   | 9627171 | 418918.5 | 151.78 | 25            | LINEAR    |
| CBK50   | 9627126 | 418768.1 | 173.16 | 30            | LINEAR    |
| CBK51   | 9627126 | 418796.5 | 166.81 | 37            | LINEAR    |
| CBK52   | 9627145 | 418746.4 | 182.53 | 26            | LINEAR    |
| CBK53   | 9627150 | 418899.9 | 158.61 | 26            | LINEAR    |
| CBK54   | 9627150 | 418924.3 | 166.32 | 24            | LINEAR    |
| CBK55   | 9627152 | 418724.7 | 192.17 | 20            | LINEAR    |
| CBK56   | 9627174 | 418745.4 | 192.28 | 18            | LINEAR    |
| CBK57   | 9627178 | 418723.7 | 197.74 | 17            | LINEAR    |
| CBK58   | 9627201 | 418722.6 | 198.94 | 14            | LINEAR    |
| CBK59   | 9627226 | 418722   | 198.77 | 13            | LINEAR    |
| CBK60   | 9627228 | 418924.2 | 153.62 | 11            | LINEAR    |
| CBK61   | 9627251 | 418923.8 | 162.33 | 16            | LINEAR    |

| <b>Hole id</b> | <b>y</b> | <b>x</b> | <b>z</b> | <b>Max Depth (m)</b> | <b>Hole Path</b> |
|----------------|----------|----------|----------|----------------------|------------------|
| CBK62          | 9627252  | 418722.1 | 198.85   | 9                    | LINEAR           |
| CBK63          | 9627273  | 418773.5 | 186.98   | 11                   | LINEAR           |
| CBK64          | 9627274  | 418795.3 | 182.64   | 9                    | LINEAR           |
| CBK65          | 9627274  | 418741   | 195.64   | 12                   | LINEAR           |
| CBK66          | 9627275  | 418721.6 | 199      | 6                    | LINEAR           |
| CBK67          | 9627276  | 418891.1 | 169.94   | 13                   | LINEAR           |
| CBK68          | 9627278  | 418923.4 | 163.86   | 9                    | LINEAR           |
| CBK69          | 9627294  | 418720.2 | 199      | 12                   | LINEAR           |
| CBK70          | 9627294  | 418741   | 196.9    | 15                   | LINEAR           |
| CBK71          | 9627297  | 418765.4 | 192.59   | 6                    | LINEAR           |
| CBK72          | 9627300  | 418818.9 | 182.6    | 8.7                  | LINEAR           |
| CBK73          | 9627302  | 418922.2 | 165.67   | 10                   | LINEAR           |
| CBK74          | 9627303  | 418845.1 | 178.85   | 5                    | LINEAR           |
| CBK75          | 9627303  | 418869.1 | 176.27   | 7                    | LINEAR           |
| CBK76          | 9627303  | 418892.7 | 174.6    | 6.5                  | LINEAR           |
| CBK77          | 9627251  | 418843.5 | 164.57   | 19                   | LINEAR           |
| CBK78          | 9627200  | 418795.8 | 175.84   | 27                   | LINEAR           |
| CBK79          | 9627227  | 418814.3 | 165.63   | 31                   | LINEAR           |
| CBK80          | 9627198  | 418770.9 | 185.98   | 33                   | LINEAR           |
| CBK81          | 9627146  | 418819.3 | 168.37   | 22                   | LINEAR           |
| CBK82          | 9627124  | 418863.1 | 161.32   | 24                   | LINEAR           |
| CBK83          | 9627225  | 418743   | 193.48   | 18                   | LINEAR           |
| CBK84          | 9627247  | 418770.1 | 183.1    | 13                   | LINEAR           |
| CBK85          | 9627203  | 418818.2 | 167.1    | 26                   | LINEAR           |
| CBK86          | 9627125  | 418841.7 | 158      | 30                   | LINEAR           |
| CBK87          | 9627252  | 418744   | 193.08   | 10                   | LINEAR           |
| CBK88          | 9627175  | 418763.2 | 188.37   | 18                   | LINEAR           |
| CBK89          | 9627148  | 418794.3 | 174.39   | 28                   | LINEAR           |
| CBK90          | 9627204  | 418744.4 | 194.41   | 11                   | LINEAR           |

## Data Assay

| Hole id | From (m) | To (m) | Ni Total (%) |
|---------|----------|--------|--------------|
| CBK18   | 0        | 1      | 1.36         |
| CBK18   | 25       | 26     | 0.29         |
| CBK19   | 0        | 1      | 1.25         |
| CBK19   | 12       | 13     | 0.33         |
| CBK20   | 0        | 1      | 1.56         |
| CBK20   | 40       | 41     | 0.69         |
| CBK21   | 0        | 1      | 1.22         |
| CBK21   | 16       | 17     | 0.23         |
| CBK22   | 0        | 1      | 1.34         |
| CBK22   | 26       | 27     | 0.31         |
| CBK23   | 0        | 1      | 1.41         |
| CBK23   | 34       | 35     | 0.26         |
| CBK24   | 0        | 1      | 0.06         |
| CBK24   | 24       | 25     | 0.48         |
| CBK25   | 0        | 1      | 1.53         |
| CBK25   | 25.57    | 26     | 0.82         |
| CBK26   | 0        | 1      | 1.67         |
| CBK26   | 35       | 36     | 0.25         |
| CBK27   | 0        | 1      | 0.02         |
| CBK27   | 22       | 23     | 0.32         |
| CBK28   | 0        | 1      | 1.35         |
| CBK28   | 7        | 8      | 0.25         |
| CBK29   | 0        | 1      | 1.39         |
| CBK29   | 15       | 16     | 1.89         |
| CBK30   | 0        | 1      | 1.02         |
| CBK30   | 13       | 14     | 0.25         |
| CBK31   | 0        | 1      | 1.14         |
| CBK31   | 24       | 25     | 0.22         |
| CBK32   | 0        | 1      | 1.15         |
| CBK32   | 25       | 26     | 1.98         |
| CBK33   | 0        | 1      | 1.05         |
| CBK33   | 21       | 22     | 0.27         |
| CBK34   | 0        | 1      | 1.21         |
| CBK34   | 10       | 11     | 0.61         |
| CBK35   | 0        | 1      | 1.34         |
| CBK35   | 37       | 38     | 0.25         |
| CBK36   | 0        | 0.2    | 1.06         |
| CBK36   | 12       | 13     | 0.4          |
| CBK37   | 0        | 1      | 1.44         |
| CBK37   | 44       | 45     | 0.23         |
| CBK38   | 0        | 1      | 1.34         |
| CBK38   | 23       | 24     | 0.79         |

| Hole id | From (m) | To (m) | Ni Total (%) |
|---------|----------|--------|--------------|
| CBK54   | 0        | 1      | 0.01         |
| CBK54   | 23       | 24     | 0.42         |
| CBK55   | 0        | 1      | 1.02         |
| CBK55   | 19       | 20     | 0.25         |
| CBK56   | 0        | 1      | 0.28         |
| CBK56   | 17       | 18     | 0.7          |
| CBK57   | 0        | 1      | 1.03         |
| CBK57   | 16       | 17     | 1.27         |
| CBK58   | 0        | 1      | 0.09         |
| CBK58   | 13       | 14     | 0.6          |
| CBK59   | 0        | 0.75   | 1.3          |
| CBK59   | 12       | 13     | 0.2          |
| CBK60   | 0        | 0.2    | 1.4          |
| CBK60   | 10       | 11     | 0.3          |
| CBK61   | 0        | 0.55   | 0.9          |
| CBK61   | 15       | 16     | 1.2          |
| CBK62   | 0        | 0.5    | 1.6          |
| CBK62   | 8        | 9      | 0.5          |
| CBK63   | 0        | 1      | 1.5          |
| CBK63   | 10       | 11     | 0.3          |
| CBK64   | 0        | 1      | 1.45         |
| CBK64   | 8        | 9      | 0.34         |
| CBK65   | 0        | 0.23   | 1.1          |
| CBK65   | 11.2     | 12     | 0.3          |
| CBK66   | 0        | 1      | 0.8          |
| CBK66   | 5        | 6      | 2.2          |
| CBK67   | 0        | 1      | 0.47         |
| CBK67   | 12       | 13     | 0.54         |
| CBK68   | 0        | 0.2    | 1.2          |
| CBK68   | 8        | 9      | 0.2          |
| CBK69   | 0        | 1      | 1.7          |
| CBK69   | 11       | 12     | 0.4          |
| CBK70   | 0        | 0.3    | 1.6          |
| CBK70   | 14       | 15     | 0.3          |
| CBK71   | 0        | 0.4    | 1.3          |
| CBK71   | 5        | 6      | 1.3          |
| CBK72   | 0        | 0.45   | 1.5          |
| CBK72   | 8        | 8.7    | 0.4          |
| CBK73   | 0        | 0.65   | 1.2          |
| CBK73   | 9        | 10     | 0.5          |
| CBK74   | 0        | 0.2    | 1.4          |
| CBK74   | 4        | 5      | 0.4          |

| Hole id | From (m) | To (m) | Ni Total (%) |
|---------|----------|--------|--------------|
| CBK39   | 19       | 20     | 0.69         |
| CBK40   | 0        | 1      | 1.57         |
| CBK40   | 27       | 28     | 0.78         |
| CBK41   | 0        | 1      | 1.87         |
| CBK41   | 12       | 13     | 0.28         |
| CBK42   | 0        | 1      | 1.51         |
| CBK42   | 49       | 50     | 0.72         |
| CBK43   | 0        | 1      | 1.19         |
| CBK43   | 23       | 24     | 0.28         |
| CBK44   | 0        | 1      | 1.26         |
| CBK44   | 20       | 21     | 0.32         |
| CBK45   | 0        | 1      | 0.04         |
| CBK45   | 27       | 28     | 0.5          |
| CBK46   | 0        | 1      | 1.52         |
| CBK46   | 14       | 15     | 0.3          |
| CBK47   | 0        | 1      | 0.3          |
| CBK47   | 21       | 22     | 0.25         |
| CBK48   | 0        | 1      | 0.01         |
| CBK48   | 23       | 24     | 0.5          |
| CBK49   | 0        | 1      | 0.29         |
| CBK49   | 24       | 25     | 0.26         |
| CBK50   | 0        | 1      | 0.19         |
| CBK50   | 29       | 30     | 0.22         |
| CBK51   | 0        | 1      | 0.12         |
| CBK51   | 36       | 37     | 0.21         |
| CBK52   | 0        | 1      | 0.72         |
| CBK52   | 25       | 26     | 0.75         |
| CBK53   | 0        | 1      | 0.31         |
| CBK53   | 25       | 26     | 0.31         |

| Hole id | From (m) | To (m) | Ni Total (%) |
|---------|----------|--------|--------------|
| CBK75   | 6        | 7      | 0.32         |
| CBK76   | 0        | 0.6    | 1.2          |
| CBK76   | 6        | 6.5    | 0.2          |
| CBK77   | 0        | 1      | 1.61         |
| CBK77   | 18       | 19     | 0.84         |
| CBK78   | 0        | 1      | 1.48         |
| CBK78   | 26       | 27     | 0.32         |
| CBK79   | 0        | 1      | 1.42         |
| CBK79   | 30       | 31     | 0.91         |
| CBK80   | 0        | 1      | 1.52         |
| CBK80   | 32       | 33     | 0.89         |
| CBK81   | 0        | 1      | 1.58         |
| CBK81   | 21       | 22     | 0.24         |
| CBK82   | 0        | 1      | 0.76         |
| CBK82   | 23       | 24     | 0.45         |
| CBK83   | 0        | 1      | 1.62         |
| CBK83   | 17       | 18     | 0.29         |
| CBK84   | 0        | 1      | 1.4          |
| CBK84   | 12       | 13     | 0.56         |
| CBK85   | 0        | 1      | 1.36         |
| CBK85   | 25       | 26     | 0.29         |
| CBK86   | 0        | 1      | 0.82         |
| CBK86   | 29       | 30     | 0.34         |
| CBK87   | 0        | 1      | 0.8          |
| CBK87   | 9        | 10     | 0.69         |
| CBK88   | 0        | 1      | 1.29         |
| CBK88   | 17       | 18     | 0.33         |
| CBK89   | 0        | 1      | 1.34         |
| CBK89   | 27       | 28     | 0.37         |
| CBK90   | 0        | 1      | 1.4          |
| CBK90   | 10       | 11     | 0.26         |



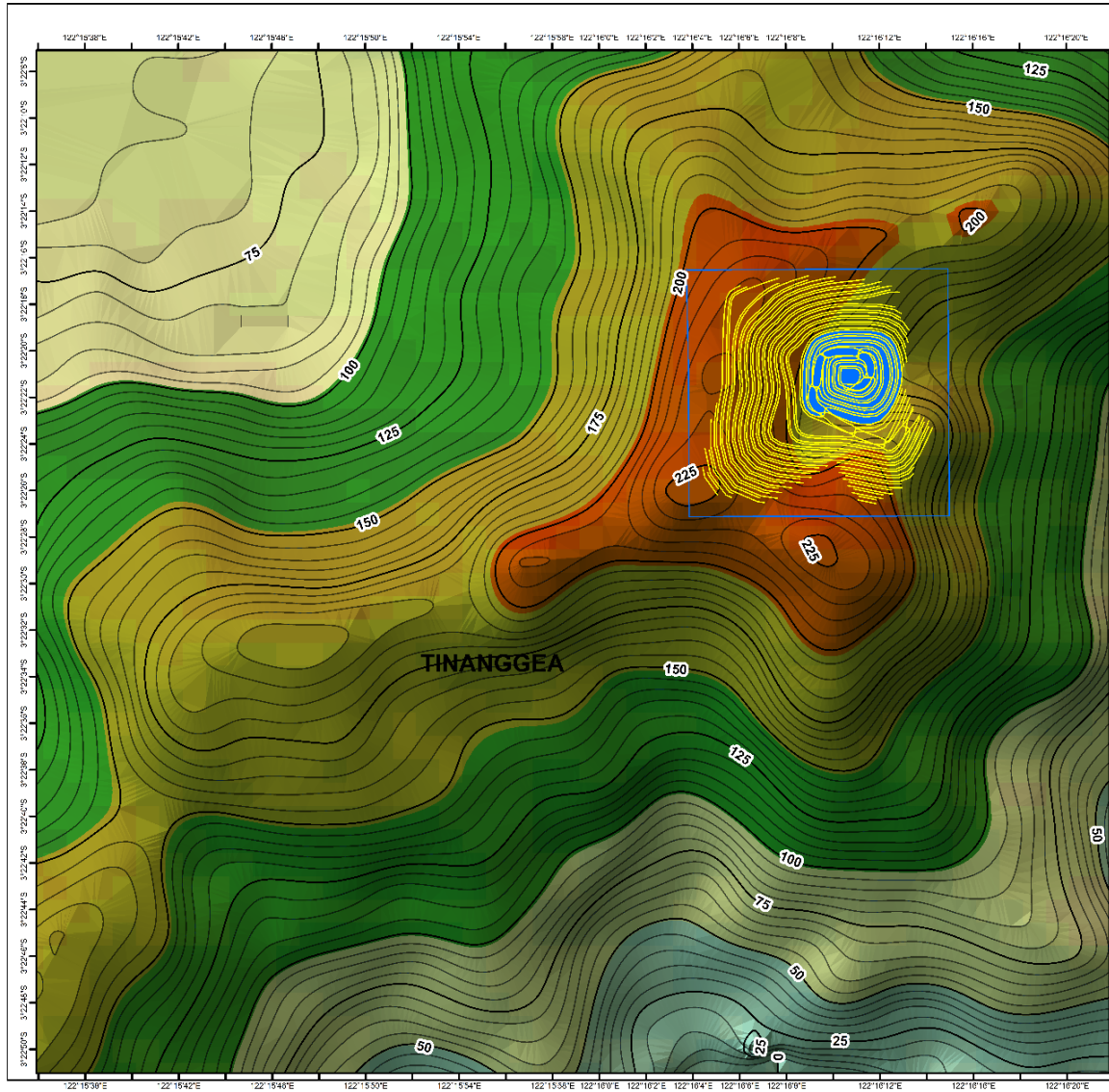
## Data Geologi

| Hole id | From (m) | To (m) | Lithologi | Hole id | From (m) | To (m) | Lithologi |
|---------|----------|--------|-----------|---------|----------|--------|-----------|
| CBK18   | 0        | 1      | LIM       | CBK20   | 2        | 3      | LIM       |
| CBK18   | 1        | 2      | LIM       | CBK20   | 3        | 4      | SAP       |
| CBK18   | 2        | 3      | LIM       | CBK20   | 4        | 5      | SAP       |
| CBK18   | 3        | 4      | SAP       | CBK20   | 5        | 5.47   | SAP       |
| CBK18   | 4        | 5      | SAP       | CBK20   | 5.47     | 6      | SAP       |
| CBK18   | 5        | 6      | SAP       | CBK20   | 6        | 7      | SAP       |
| CBK18   | 6        | 7      | SAP       | CBK20   | 7        | 8      | SAP       |
| CBK18   | 7        | 8      | SAP       | CBK20   | 8        | 9      | SAP       |
| CBK18   | 8        | 9      | SAP       | CBK20   | 9        | 10     | SAP       |
| CBK18   | 9        | 10     | SAP       | CBK20   | 10       | 11     | SAP       |
| CBK18   | 10       | 11     | SAP       | CBK20   | 11       | 12     | SAP       |
| CBK18   | 11       | 11.53  | SAP       | CBK20   | 12       | 13     | SAP       |
| CBK18   | 11.53    | 12     | SAP       | CBK20   | 13       | 14     | SAP       |
| CBK18   | 12       | 13     | SAP       | CBK20   | 14       | 15     | SAP       |
| CBK18   | 13       | 13.45  | BLD       | CBK20   | 15       | 16     | SAP       |
| CBK18   | 13.45    | 14     | BLD       | CBK20   | 16       | 17     | SAP       |
| CBK18   | 14       | 15     | BLD       | CBK20   | 17       | 18     | SAP       |
| CBK18   | 15       | 16     | BLD       | CBK20   | 18       | 19     | SAP       |
| CBK18   | 16       | 16.28  | SAP       | CBK20   | 19       | 19.85  | SAP       |
| CBK18   | 16.28    | 17     | SAP       | CBK20   | 19.85    | 20     | SAP       |
| CBK18   | 17       | 18     | SAP       | CBK20   | 20       | 21     | SAP       |
| CBK18   | 18       | 18.4   | SAP       | CBK20   | 21       | 21.75  | SAP       |
| CBK18   | 18.4     | 19     | SAP       | CBK20   | 21.75    | 22     | SAP       |
| CBK18   | 19       | 20     | SAP       | CBK20   | 22       | 22.8   | SAP       |
| CBK18   | 20       | 21     | BLD       | CBK20   | 22.8     | 23     | SAP       |
| CBK18   | 21       | 22     | BLD       | CBK20   | 23       | 23.2   | SAP       |
| CBK18   | 22       | 22.33  | SAP       | CBK20   | 23.2     | 23.4   | SAP       |
| CBK18   | 22.33    | 23     | BRK       | CBK20   | 23.4     | 23.8   | SAP       |
| CBK18   | 23       | 24     | BRK       | CBK20   | 23.8     | 24     | SAP       |
| CBK18   | 24       | 25     | BRK       | CBK20   | 24       | 24.5   | SAP       |
| CBK18   | 25       | 26     | BRK       | CBK20   | 24.5     | 25     | SAP       |
| CBK19   | 0        | 1      | LIM       | CBK20   | 25       | 26     | SAP       |
| CBK19   | 1        | 2      | LIM       | CBK20   | 26       | 27     | SAP       |
| CBK19   | 2        | 3      | LIM       | CBK20   | 27       | 27.63  | SAP       |
| CBK19   | 3        | 3.5    | SAP       | CBK20   | 27.63    | 28     | SAP       |
| CBK19   | 3.5      | 4      | SAP       | CBK20   | 28       | 29     | SAP       |
| CBK19   | 4        | 5      | SAP       | CBK20   | 29       | 30     | SAP       |
| CBK19   | 5        | 5.45   | SAP       | CBK20   | 30       | 31     | SAP       |
| CBK19   | 5.45     | 6      | SAP       | CBK20   | 31       | 32     | SAP       |
| CBK19   | 6        | 7      | SAP       | CBK20   | 32       | 32.85  | SAP       |
| CBK19   | 7        | 8      | SAP       | CBK20   | 32.85    | 33     | SAP       |
| CBK19   | 8        | 8.4    | SAP       | CBK20   | 33       | 33.4   | SAP       |
| CBK19   | 8.4      | 9      | BRK       | CBK20   | 33.4     | 34     | SAP       |

## Data Survey

| Hole id | Total Depth (m) | Dip | Azimuth | Hole id | Total Depth (m) | Dip | Azimuth |
|---------|-----------------|-----|---------|---------|-----------------|-----|---------|
| CBK18   | 26              | -90 | 0       | CBK54   | 24              | -90 | 0       |
| CBK19   | 13              | -90 | 0       | CBK55   | 20              | -90 | 0       |
| CBK20   | 41              | -90 | 0       | CBK56   | 18              | -90 | 0       |
| CBK21   | 17              | -90 | 0       | CBK57   | 17              | -90 | 0       |
| CBK22   | 27              | -90 | 0       | CBK58   | 14              | -90 | 0       |
| CBK23   | 35              | -90 | 0       | CBK59   | 13              | -90 | 0       |
| CBK24   | 25              | -90 | 0       | CBK60   | 11              | -90 | 0       |
| CBK25   | 26              | -90 | 0       | CBK61   | 16              | -90 | 0       |
| CBK26   | 36              | -90 | 0       | CBK62   | 9               | -90 | 0       |
| CBK27   | 23              | -90 | 0       | CBK63   | 11              | -90 | 0       |
| CBK28   | 8               | -90 | 0       | CBK64   | 9               | -90 | 0       |
| CBK29   | 16              | -90 | 0       | CBK65   | 12              | -90 | 0       |
| CBK30   | 14              | -90 | 0       | CBK66   | 6               | -90 | 0       |
| CBK31   | 25              | -90 | 0       | CBK67   | 13              | -90 | 0       |
| CBK32   | 26              | -90 | 0       | CBK68   | 9               | -90 | 0       |
| CBK33   | 22              | -90 | 0       | CBK69   | 12              | -90 | 0       |
| CBK34   | 11              | -90 | 0       | CBK70   | 15              | -90 | 0       |
| CBK35   | 38              | -90 | 0       | CBK71   | 6               | -90 | 0       |
| CBK36   | 13              | -90 | 0       | CBK72   | 8.7             | -90 | 0       |
| CBK37   | 45              | -90 | 0       | CBK73   | 10              | -90 | 0       |
| CBK38   | 24              | -90 | 0       | CBK74   | 5               | -90 | 0       |
| CBK39   | 20              | -90 | 0       | CBK75   | 7               | -90 | 0       |
| CBK40   | 28              | -90 | 0       | CBK76   | 6.5             | -90 | 0       |
| CBK41   | 13              | -90 | 0       | CBK77   | 19              | -90 | 0       |
| CBK42   | 50              | -90 | 0       | CBK78   | 27              | -90 | 0       |
| CBK43   | 24              | -90 | 0       | CBK79   | 31              | -90 | 0       |
| CBK44   | 21              | -90 | 0       | CBK80   | 33              | -90 | 0       |
| CBK45   | 28              | -90 | 0       | CBK81   | 22              | -90 | 0       |
| CBK46   | 15              | -90 | 0       | CBK82   | 24              | -90 | 0       |
| CBK47   | 22              | -90 | 0       | CBK83   | 18              | -90 | 0       |
| CBK48   | 24              | -90 | 0       | CBK84   | 13              | -90 | 0       |
| CBK49   | 25              | -90 | 0       | CBK85   | 26              | -90 | 0       |
| CBK50   | 30              | -90 | 0       | CBK86   | 30              | -90 | 0       |
| CBK51   | 37              | -90 | 0       | CBK87   | 10              | -90 | 0       |
| CBK52   | 26              | -90 | 0       | CBK88   | 18              | -90 | 0       |
| CBK53   | 26              | -90 | 0       | CBK89   | 28              | -90 | 0       |
|         |                 |     |         | CBK90   | 11              | -90 | 0       |

LAMPIRAN II  
Peta Lokasi Penelitian



### PETA LOKASI PENELITIAN

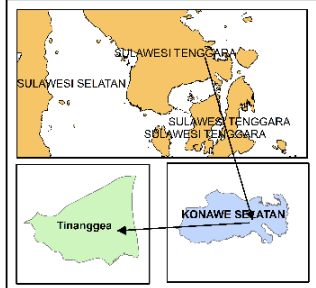


#### Legenda

- Contour Minor 5 m
  - Contour Major 25 m
  - IUP PT IFISHDECO Tbk
  - Lokasi Penelitian
- Pit Blok X.dwg Point Pit Blok X.dwg Polyline
- -0-7-1-1-1, 7, 0
  - -0-5-0-0-1, 5, 0
  - -0-2-1-1-0, 2, 0
  - -0-1-1-0-0, 1, 0
  - -0-7-1-1-1, 7, 0
  - -0-5-0-0-1, 5, 0
  - -0-2-1-1-0, 2, 0
  - -0-1-1-0-0, 1, 0

Elevation

|                     |                     |
|---------------------|---------------------|
| 148,333 - 197,778 m | 395,556 - 445 m     |
| 98,889 - 148,333 m  | 346,111 - 395,556 m |
| 49,444 - 98,889 m   | 296,667 - 346,111 m |
| 0 - 49,444 m        | 247,222 - 296,667 m |
|                     | 197,778 - 247,222 m |



DEPERTEMEN TEKNIK PERTAMBANGAN  
FAKULTAS TEKNIK  
UNIVERSITAS HASANUDDIN

SKRIPSI  
ESTIMASI UMUR TAMBANG BERDASARKAN  
CADANGAN TERKIRA ENDA-PAN NIKEL LATERIT MENGGUNAKAN  
METODE INVERSE DISTANCE WEIGHTING (IDW)

PEMBIMBING

|  |
|--|
| Dr. pihl. Nat S'i Widodo, ST, MT<br>NIP. 19710101 201012 1 001 |
| Dr. Ir. IRZAL NUR, M.T<br>NIP. 19660409 199703 1 002           |

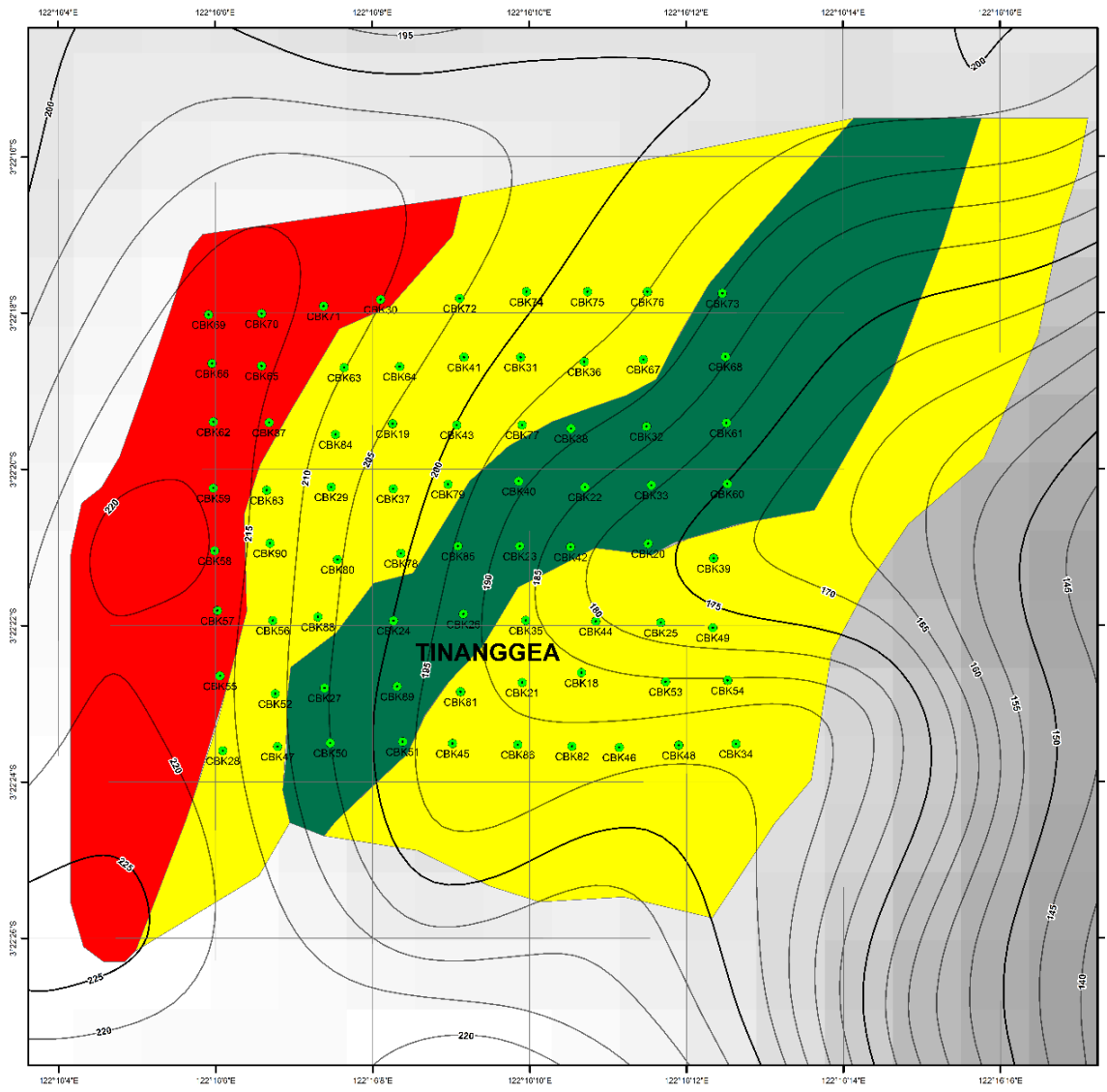
MODIFIKASI

|   |
|---|
| DZULKIFLI TUNGGAL<br>NIM : D111 18 1309 |
|---|

LABORATORIUM EKSPLORASI MINERAL

Sumber :

**LAMPIRAN III**  
**Peta Klasifikasi Kemiringan Lereng (°)**

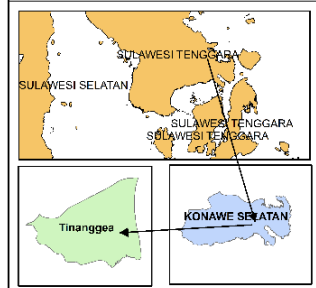


**PETA KLASIFIKASI KEMIRINGAN LERENG BLOK X**



**Legenda**

- 2-8 (Landai)
- 8-15 (Agak Curam) Seg-1
- 8-15 (Agak Curam) Seg 2
- 15-25 (Curam)
- Contour\_Minor\_5 m
- Contour\_Major\_25 m
- Titik Bor




**DEPERTEMEN TEKNIK PERTAMBANGAN**  
**FAKULTAS TEKNIK**  
**UNIVERSITAS HASANUDDIN**

SKRIPSI  
 ESTIMASI UMUR TAMBANG BERDASARKAN  
 CADANGAN TERKIRA ENDAPAN NIKEL LATERIT MENGGUNAKAN  
 METODE INVERSE DISTANCE WEIGHTING (IDW)

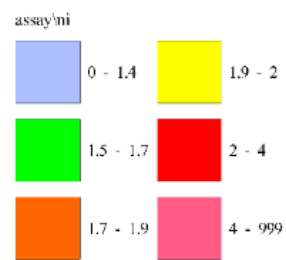
|                   |  |
|-------------------|--|
| <b>PEMBIMBING</b> | Dr. p.Hi. Nat S.H Widodo, ST, MT<br>NIP. 19710101 201012 1 001 |
|                   | Dr. Ir. IRZAL NUR, M.T<br>NIP. 19660409 199703 1 002           |

**MODIFIKASI** DZULKIFLI TUNGGA'  
 NIM : D111 18 1309  
 LABORATORIUM EKSPLORASI MINERAL

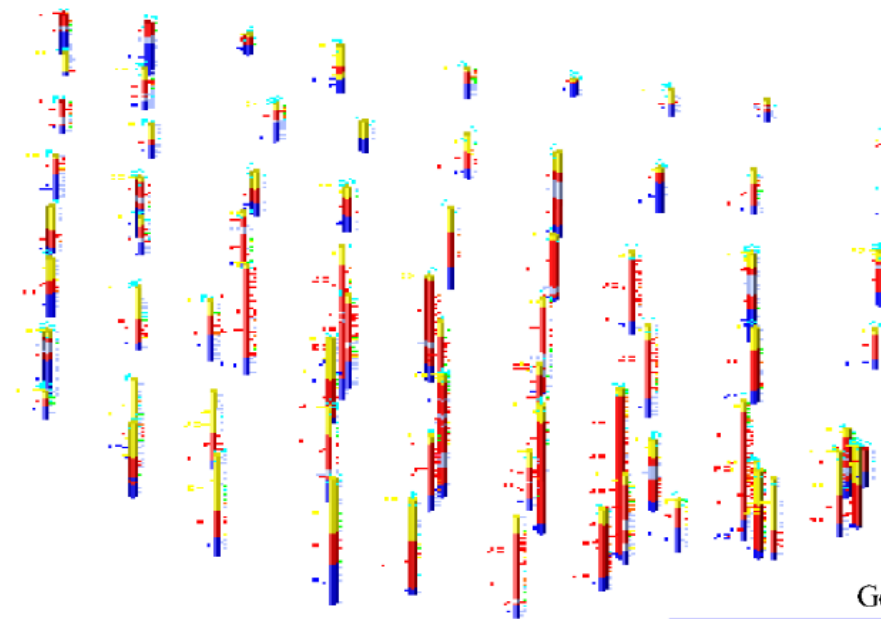
Sumber :  

LAMPIRAN IV  
*Drillhole*

smothh\_contur\_gabung\_smooth\_str\_01



SURPAC - Gemcom Software



Gemcom Software

DRILLHOLE

Dibuat Oleh : Dzulkipli Tungga'

Diperiksa Oleh : Dr.Phil.nat. Sri Widodo, ST, MT

Scale: 1: 1576

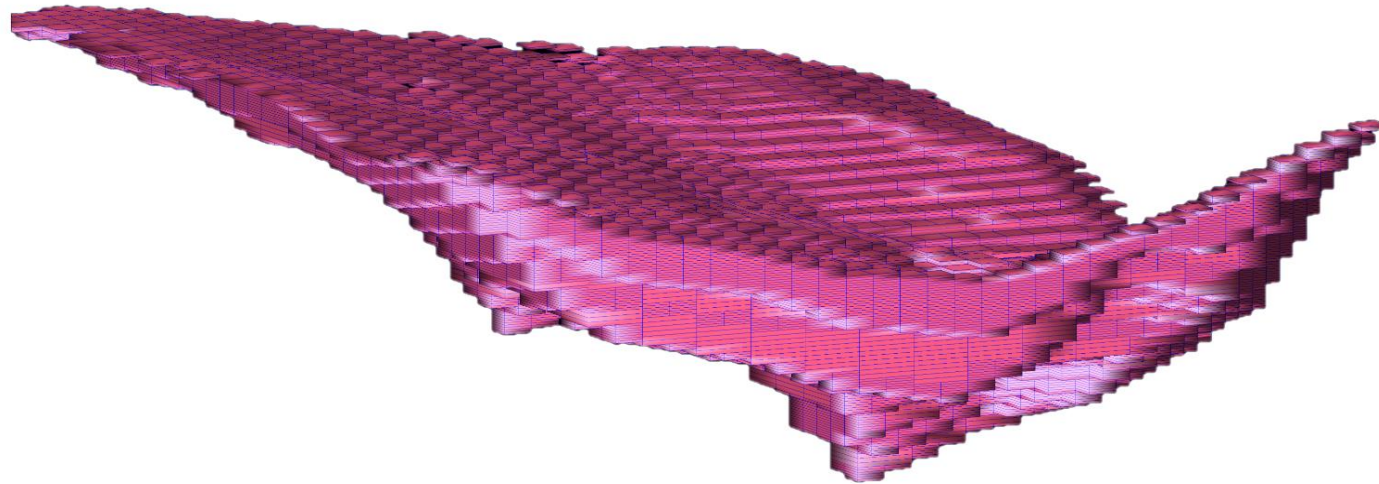
Plan No.

Date: 28-Sep-22



**LAMPIRAN V**  
**Estimasi Sumberdaya dan Cadangan**

## *Constraint Ni Laterit*



main\_graphics\_layer\_20

Gemcom Software

CONSTRAINT LATERIT

Dibuat Oleh : Dzulkifli 'Tungga'

Dibuat Oleh : Dr.Phil.nat. Sri Widodo, ST, MT

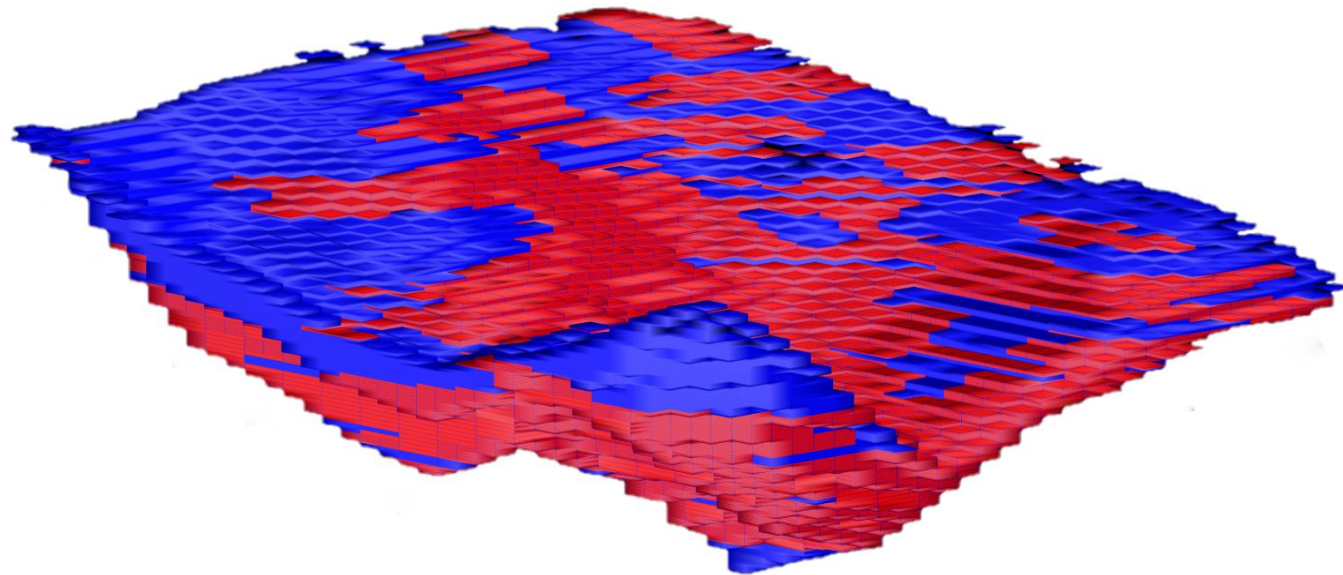
Scale: 1:

1551

Plan No.

Date: 18-Nov-22

## *Constraint Ni Laterit*



main\_graphics\_layer\_21

Gemcom Software

CONSTRAINT ORE

Dibuat Oleh : Dzulfitri Tungga'

Diperiksa Oleh : Dr.Phil.nat. Sri Widodo, ST, MT

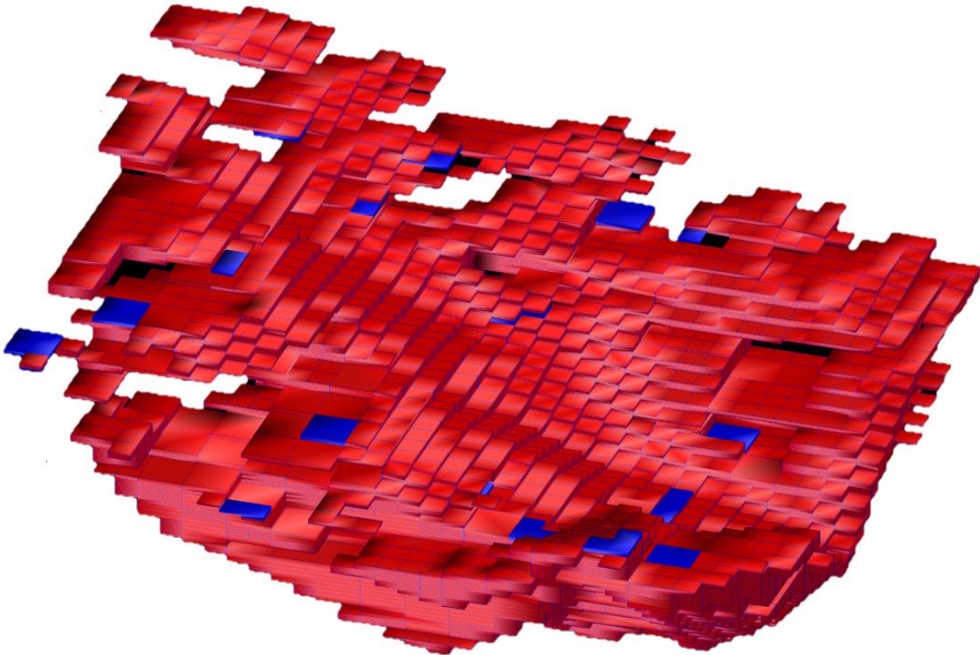
Scale: 1:

1615

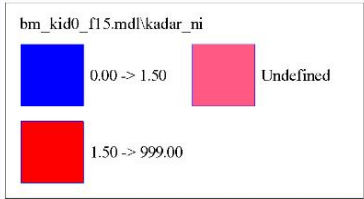
Plan No.

Date: 18-Nov-22

# Constraint ORE Ni Laterit



main\_graphics\_layer\_04



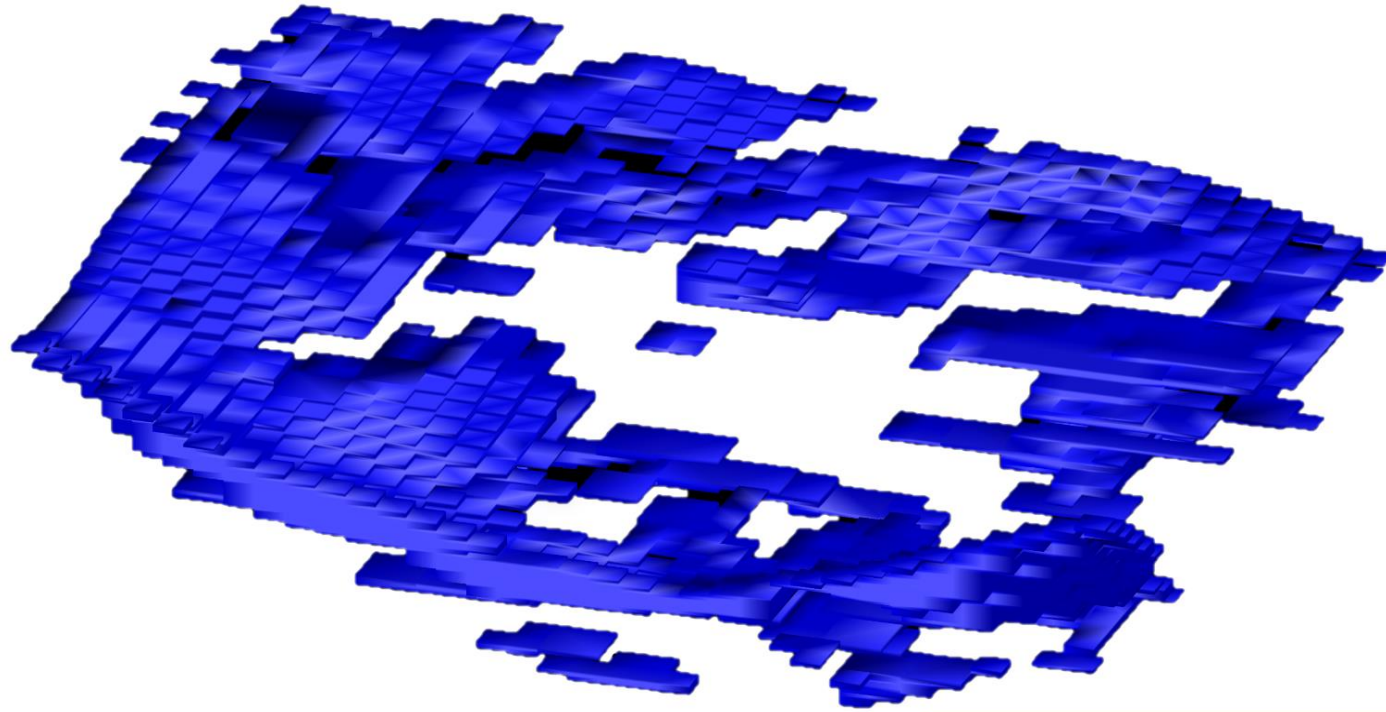
SURPAC - Gemcom Software

Gemcom Software

CONSTRAINT ORE  
Dibuat Oleh : Dzulkifli Tungga'  
Diperiksa Oleh : Dr.Phil.nat. Sri Widodo, ST, MT

|           |      |          |                 |
|-----------|------|----------|-----------------|
| Scale: 1: | 1217 | Plan No. | Date: 28-Sep-22 |
|-----------|------|----------|-----------------|

## Constraint WASTE Ni Laterit



main\_graphics\_layer\_08

Gemcom Software

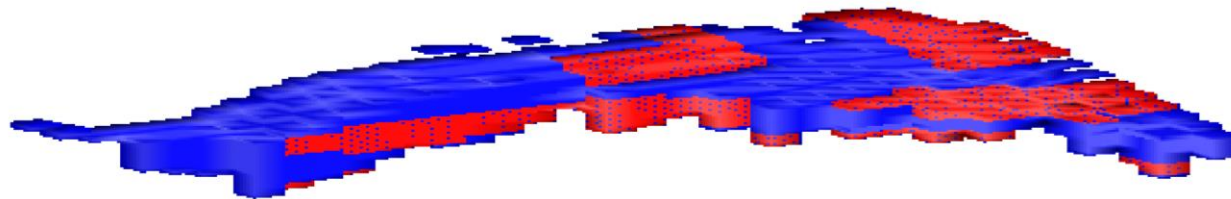
CONSTRAINT WASTE

Dibuat Oleh : Dzulkifli Tungga'

Diperiksa Oleh : Dr.Phil.nat. Sri Widodo, ST, MT

|           |      |          |                 |
|-----------|------|----------|-----------------|
| Scale: 1: | 1406 | Plan No. | Date: 28-Sep-22 |
|-----------|------|----------|-----------------|

## *Constraint ORE - WASTE* Kemiringan Lereng 2°-8° (Landai)



main\_graphics\_layer\_15

Gemcom Software

DESAIN PIT

Dibuat Oleh : Dzulfitri Tunnga'

Diperiksa Oleh : Dr.Phil.nat. Sri Widodo, ST, MT

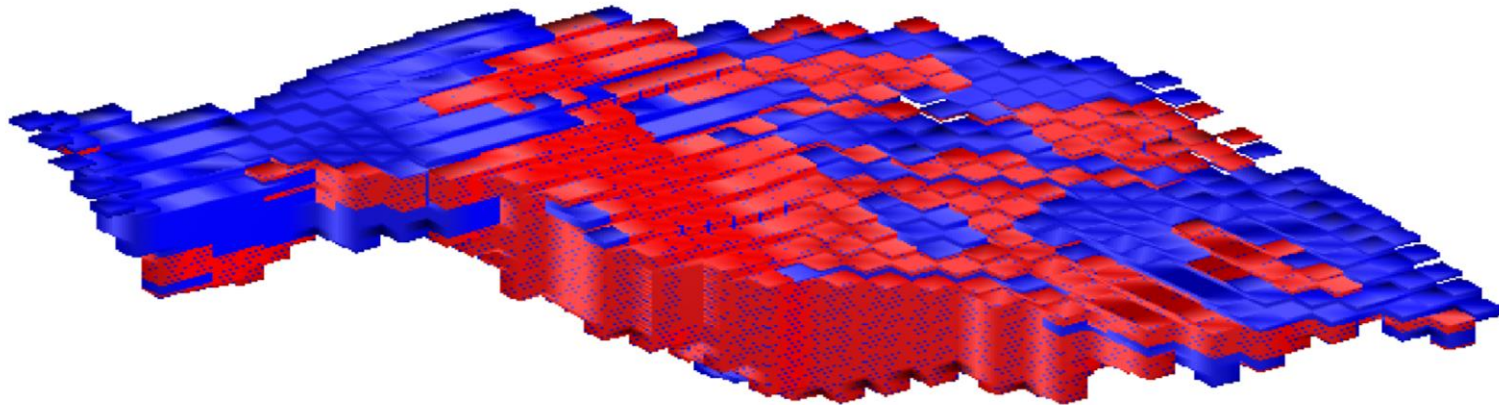
Scale: 1:

1065

Plan No.

Date: 17-Nov-22

*Constraint ORE - WASTE* Kemiringan Lereng 8°-15° (Agak Curam)  
*Segment I*



main\_graphics\_layer\_16

SURPAC - Gemcom Software

Gemcom Software

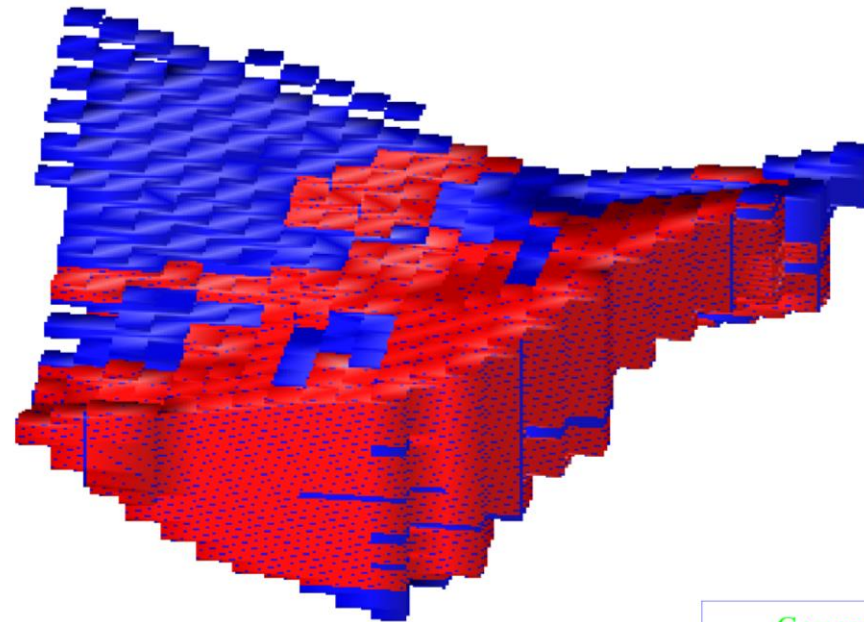
DESAIN PIT

Dibuat Oleh : Dzulkifli Tungga'

Dibuat Oleh : Dr.Phil.nat. Sri Widodo, ST, MT

|           |      |          |                 |
|-----------|------|----------|-----------------|
| Scale: 1: | 1203 | Plan No. | Date: 17-Nov-22 |
|-----------|------|----------|-----------------|

*Constraint ORE - WASTE* Kemiringan Lereng 8°-15° (Agak Curam)  
*Segment II*



main\_graphics\_layer\_17

Gemcom Software

DESAIN PIT

Dibuat Oleh : Dzulkifli Tungga'

Diperiksa Oleh : Dr.Phil.nat. Sri Widodo, ST, MT

Scale: 1:

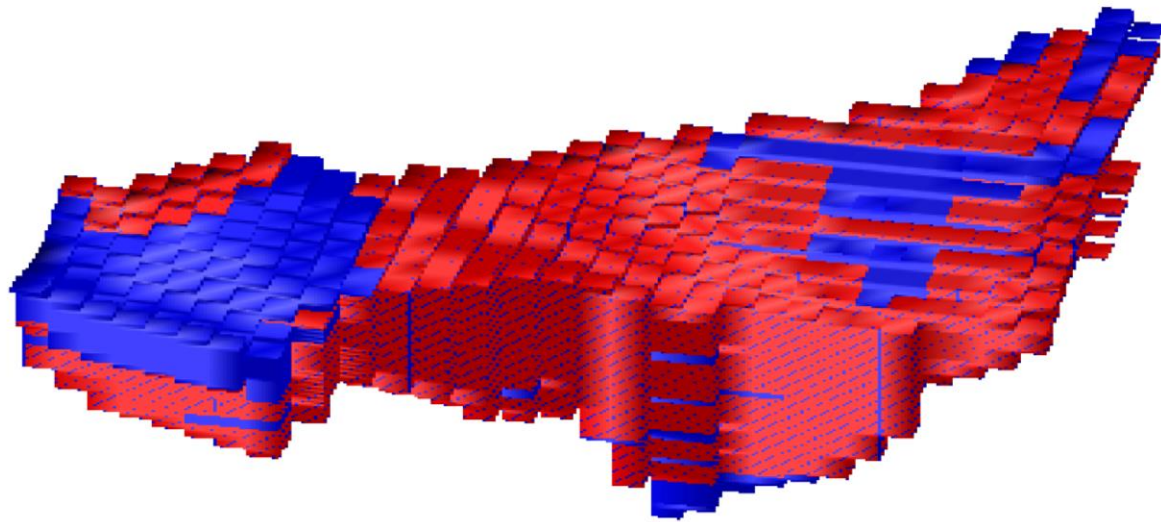
1112

Plan No.

Date: 17-Nov-22



*Constraint ORE - WASTE* Kemiringan Lereng 15°-21° (Curam)



main\_graphics\_layer\_18

Gemcom Software

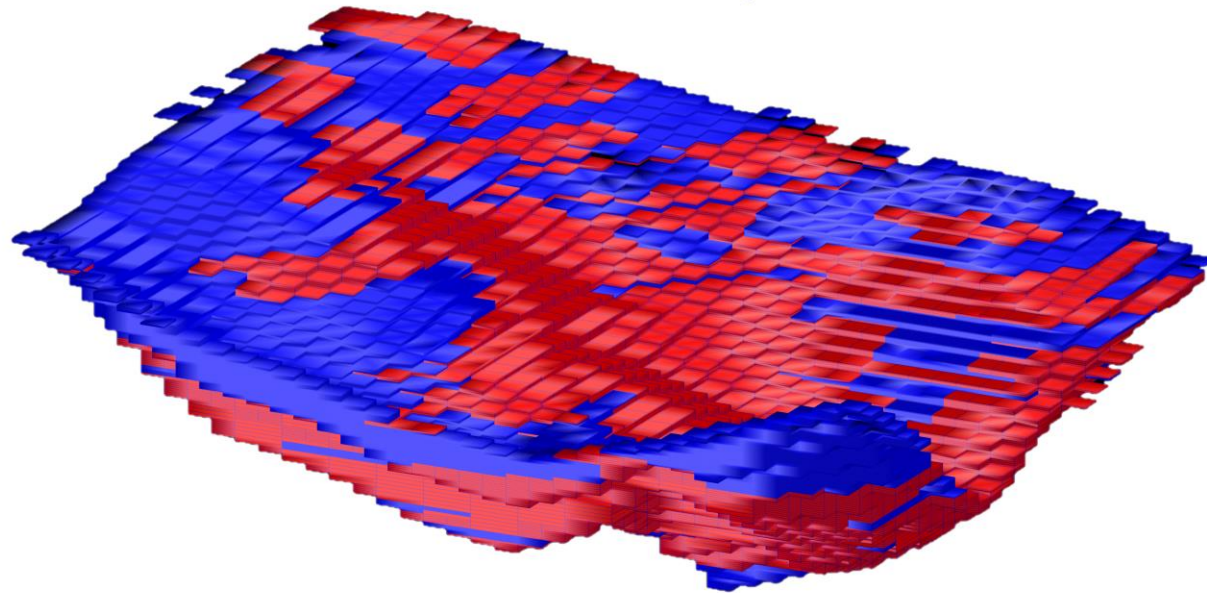
DESAIN PIT

Dibuat Oleh : Dzulkifli Tungga'

Dibuat Oleh : Dr.Phil.nat. Sri Widodo, ST, MT

|           |      |          |                 |
|-----------|------|----------|-----------------|
| Scale: 1: | 1210 | Plan No. | Date: 17-Nov-22 |
|-----------|------|----------|-----------------|

# Material Tertambang



main\_graphics\_layer\_19

Gemcom Software

MATERIAL TERTAMBANG

Dibuat Oleh : Dzulkifli Tungga'

Diperiksa Oleh : Dr.Phil.nat. Sri Widodo, ST, MT

Scale: 1:

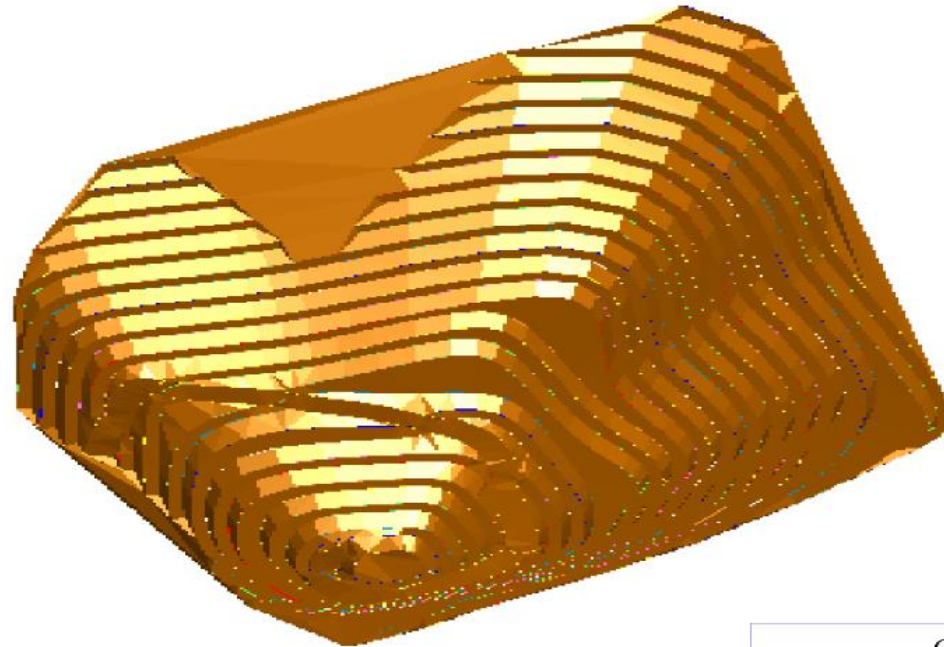
1775

Plan No.

Date: 18-Nov-22

LAMPIRAN VI  
Desain *Pit*

## Desain *Pit*



pit\_revvl\_kido\_99991\_dtm\_01

pit\_revvl\_kido\_99991.dtm



SURPAC - Gemcom Software

Gemcom Software

DESAIN PIT

Dibuat Oleh : Dzulkifli Tungga'

Dibuat Oleh : Dr.Phil.nat. Sri Widodo, ST, MT

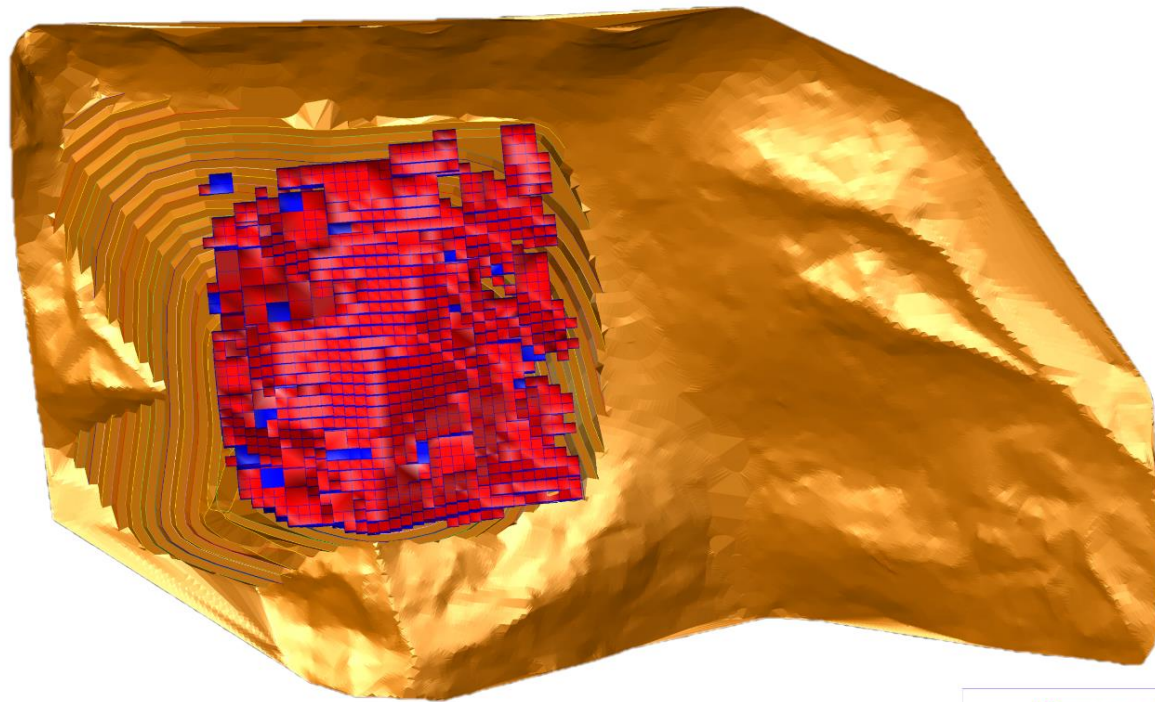
Scale: 1:

2143

Plan No.

Date: 28-Sep-22

## *Pit Limit Actual*



smoth\_contur\_gabung\_smooth\_dtm

Gemcom Software

PIT LIMIT ACTUAL

Dibuat Oleh : Dzulkifli Tungga'

Diperiksa Oleh : Dr.Phil.nat. Sri Widodo, ST, MT

|           |      |          |       |           |
|-----------|------|----------|-------|-----------|
| Scale: 1: | 4773 | Plan No. | Date: | 18-Nov-22 |
|-----------|------|----------|-------|-----------|






**LAMPIRAN VII**  
**Kartu Konsultasi Tugas Akhir**

Lampiran B 10

Kartu Konsultasi Tugas Akhir

**JUDUL:** Estimasi Umur Tambang Berdasarkan Cadangan Terkira Endapan Nikel laterit Menggunakan Metode Inverse Distance Weighting (IDW).

(Konsultasi minimal 8 kali)

| TANGGAL    | MATERI KONSULTASI   | PARAF DOSEN   |
|------------|---|---|
| 8/07/22    | <ol style="list-style-type: none"> <li>1. Pengajuan Proposal penelitian</li> <li>2. Metode penelitian</li> <li>3. koreksi isi proposal</li> </ol>   |    |
| 11/11/2022 | <ol style="list-style-type: none"> <li>1. Diskusi data pengolahan Penelitian.</li> <li>2. Asistensi Bab II dan III, IV, V,</li> <li>3. <del>koreksi</del> Asistensi Artikel Ujian.</li> <li>4. Lengkapi Bab I sampai V</li> </ol> |   |
| 12/12/2022 | <ol style="list-style-type: none"> <li>1. Acc Laporan Seminar Hasil</li> <li>2. Acc Artikel. Inovich Laporan penelitian</li> <li>3. Acc. poster</li> </ol>  |  |
| 07/01/2023 | <ol style="list-style-type: none"> <li>1. Perbaikan Hasil Seminar Hasil Penelitian</li> <li>2. Acc. perbaikan Hasil penelitian.</li> <li>3. Acc. poster dan Artikel.</li> </ol>   |  |
| 8/03/2023  | Acc perbaikan Hasil sidang Ujian SARJANA  |  |

| TANGGAL    | MATERI KONSULTASI  | PARAF DOSEN |
|------------|--|-------------|
| 08/07/22   | 1. Pengajuan prosal penelitian<br>2. Metode penelitian<br>3. Koreksi isi proposal                                      | M —         |
| 19/11/2022 | 1. Perbaiki format penulisan (ikuti panduan)<br>2. perbaiki peta (legenda)<br>3. cek kemiringan lereng (Bab IV, Hasil) | M —         |
| 12/12/2022 | 1. Acc. Laporan Seminar Hasil<br>2. Acc. Anika Amiah<br>3. Acc. poster   | M —         |
| 27-01-23   | Acc Hasil Seminar Hasil penelitian   | M —         |
| 9/03/2023  | Acc perbaiki Hasil sidang Ujian SARJANA  | M —         |