

Robertson GeoConsultants and Jones 2019

Report Part 3 of 3

Photo B6 13: TP36 northwest of Intermediate Pit bund, near bridge



Photo B6 14: TP36 profile from 0 to 0.8 m (left); sample from this interval (right)



Appendix B7
Area East of Main Pit

Photo B7 1: Location of test pits east of Main Pit



Photo B7 2: Location of test pits east of Main Pit



Photo B7 3: Location of TP37 facing west



Photo B7 4: Location of TP37 facing east



Photo B7 5: TP37 test pit (left); samples taken from 1 m (right)



Photo B7 6: TP37 profile from 0 to 5.2 m



Photo B7 7: TP38 facing south



Photo B7 8: TP38 test pit (left); profile of top 1.5 m (right)



Photo B7 9: TP39 facing south



Photo B7 10: TP39 top 1.2 m (left); samples from this interval (right)



Photo B7 11: TP40 facing north, east of road and Main Pit



Photo B7 12: TP40 profile from 0 to 4.2 m



Appendix B8
Old Stockpile Area

Photo B8 1: Location of TP41 on south side of the Old Stockpile, facing northwest



Photo B8 2: Location of TP42 on south side of the Old Stockpile, facing west



Photo B8 3: TP41 close up of waste rock



Photo B8 4: TP41 profile from 0 to 2.6 m



Photo B8 5: TP42 close up of waste rock under cover



Photo B8 6: TP42 profile from 0 to 2.0 m



Photo B8 7: TP43 facing north (left); profile from 0 to 1.8 m (right)

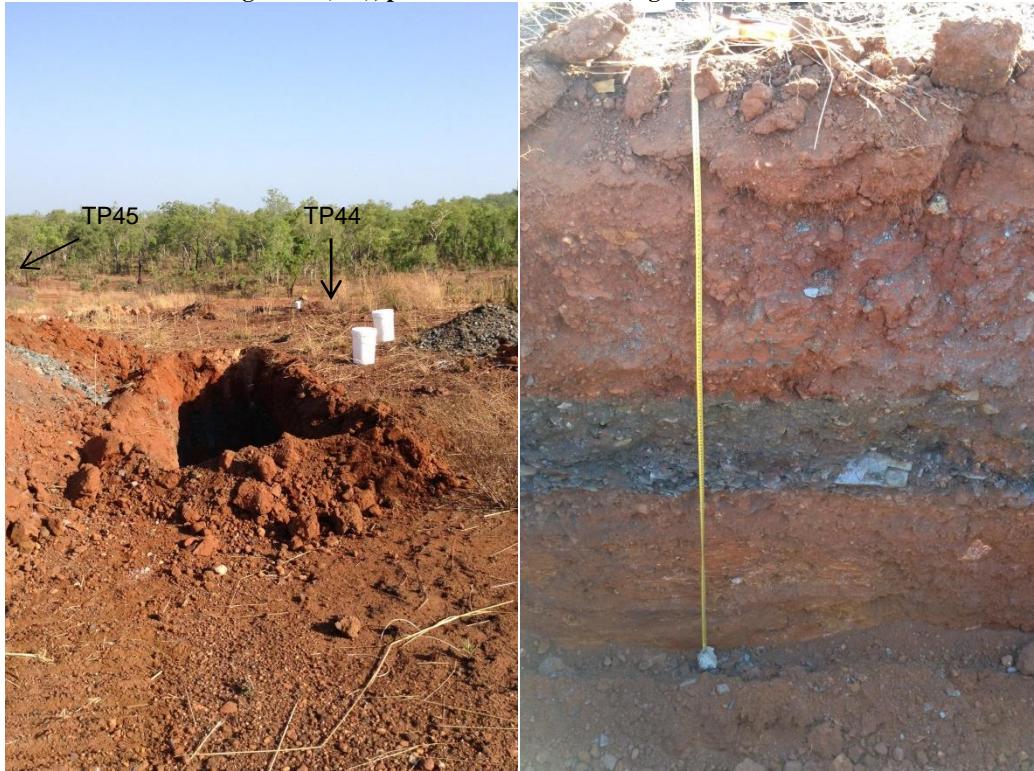


Photo B8 8: Close up of waste rock under cover at TP43



Photo B8 9: Location of TP44 on downhill slope of north side of Old Stockpile



Photo B8 10: TP44 profile from 0 to 2.0 m (left); waste rock samples from top 1 m (right)



Photo B8 11: TP45 profile from 0 to 2.0 m (left); close up of top 0.7 m (right)



Photo B8 12: Location of test pits on west side of the Old Stockpile

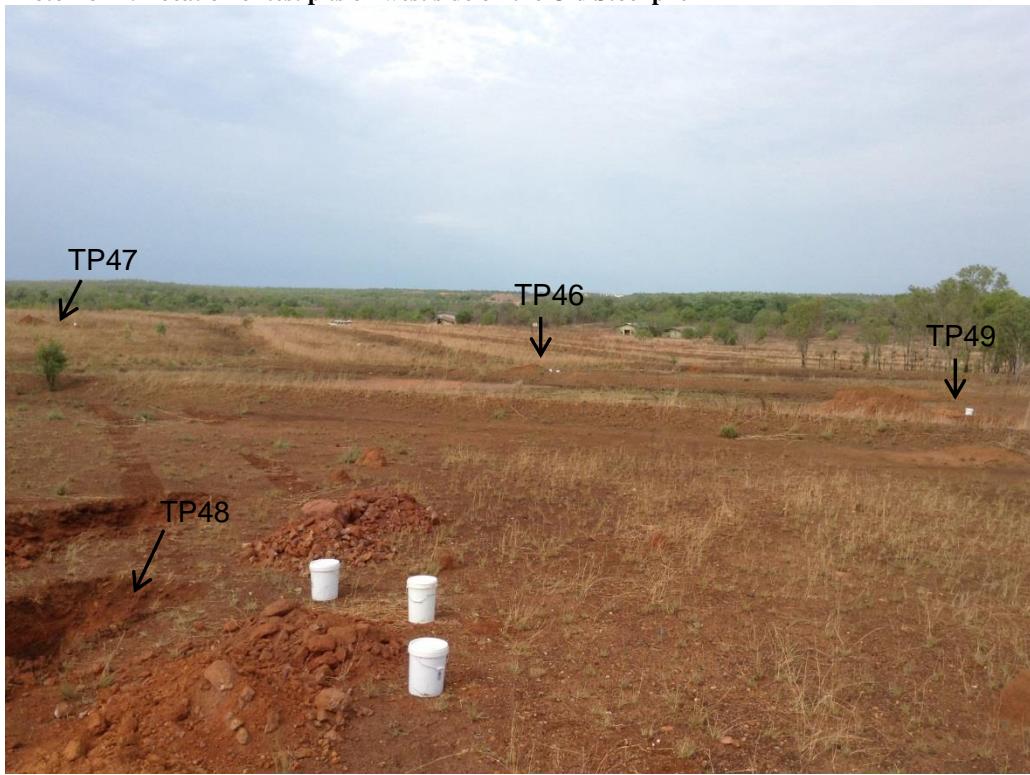


Photo B8 13: TP46 test pit (left) ; sample waste from taken from 1.1 to 1.6 m section (right)



Photo B8 14: TP46 profile from 0 to 2 m



Photo B8 15: TP47 test pit facing northeast

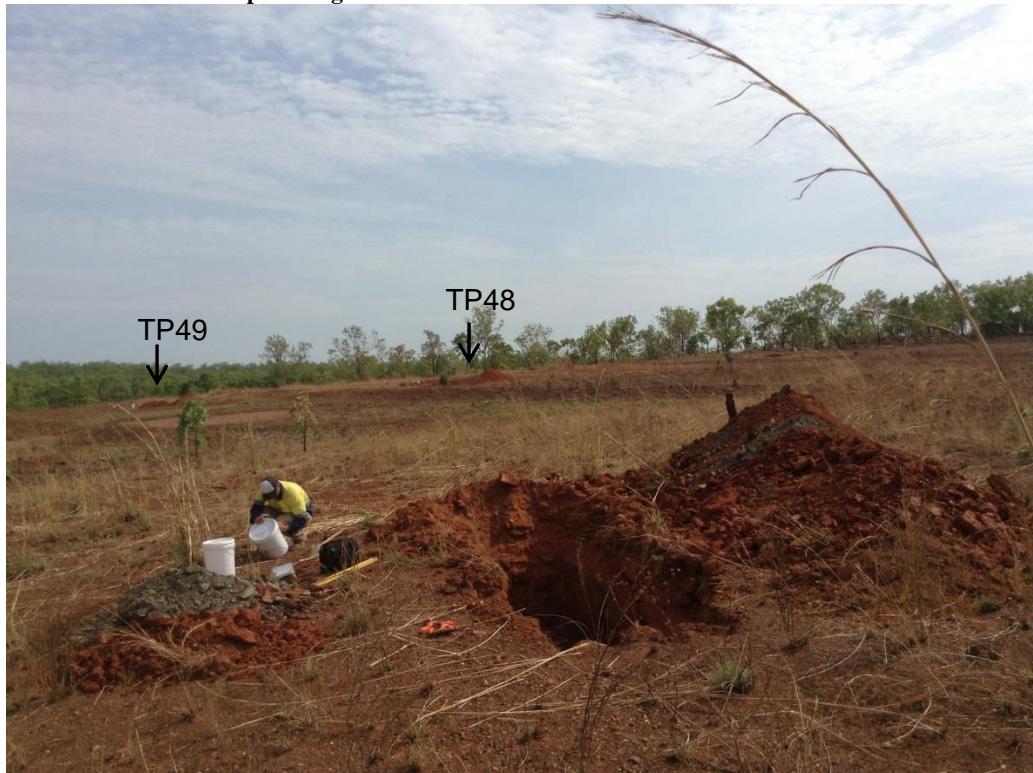


Photo B8 16: TP47 test pit (left) and samples from 1.3 to 1.8 m (right)



Photo B8 17: TP48 facing southwest



Photo B8 18: TP48 profile from 0 to 2.6 m



Photo B8 19: TP49 test pit (left); waste rock samples collected from 0.55 to 0.80 m (right)



Photo B8 20: TP49 close up of waste rock layer



Photo B8 21: TP50 facing west



Photo B8 22: TP45 profile from 0 to 2 m



Appendix C
Close-up Photos of Waste Rock

Appendix C1
Main WRD

Photo C1 1: TP1-P1 waste rock samples from depths a) 0.7 to 2 m; b) 2 to 3 m; c) 3 to 4 m; d) 4 to 5 m

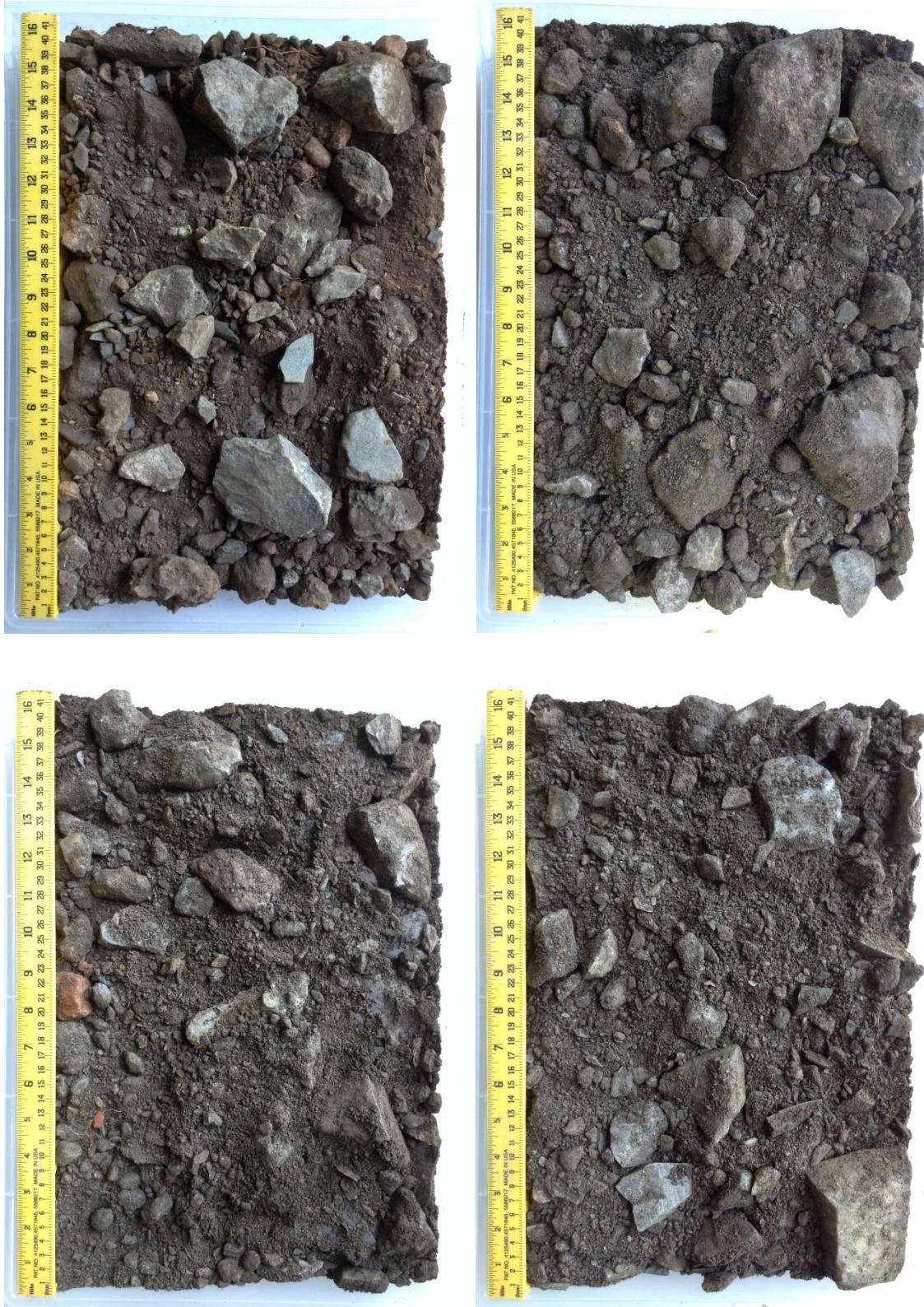


Photo C1 2: TP1-P1 waste rock samples from depths a) 5 to 6 m; b) 6 to 7 m; c) 7 to 8 m; d) 8 to 9 m

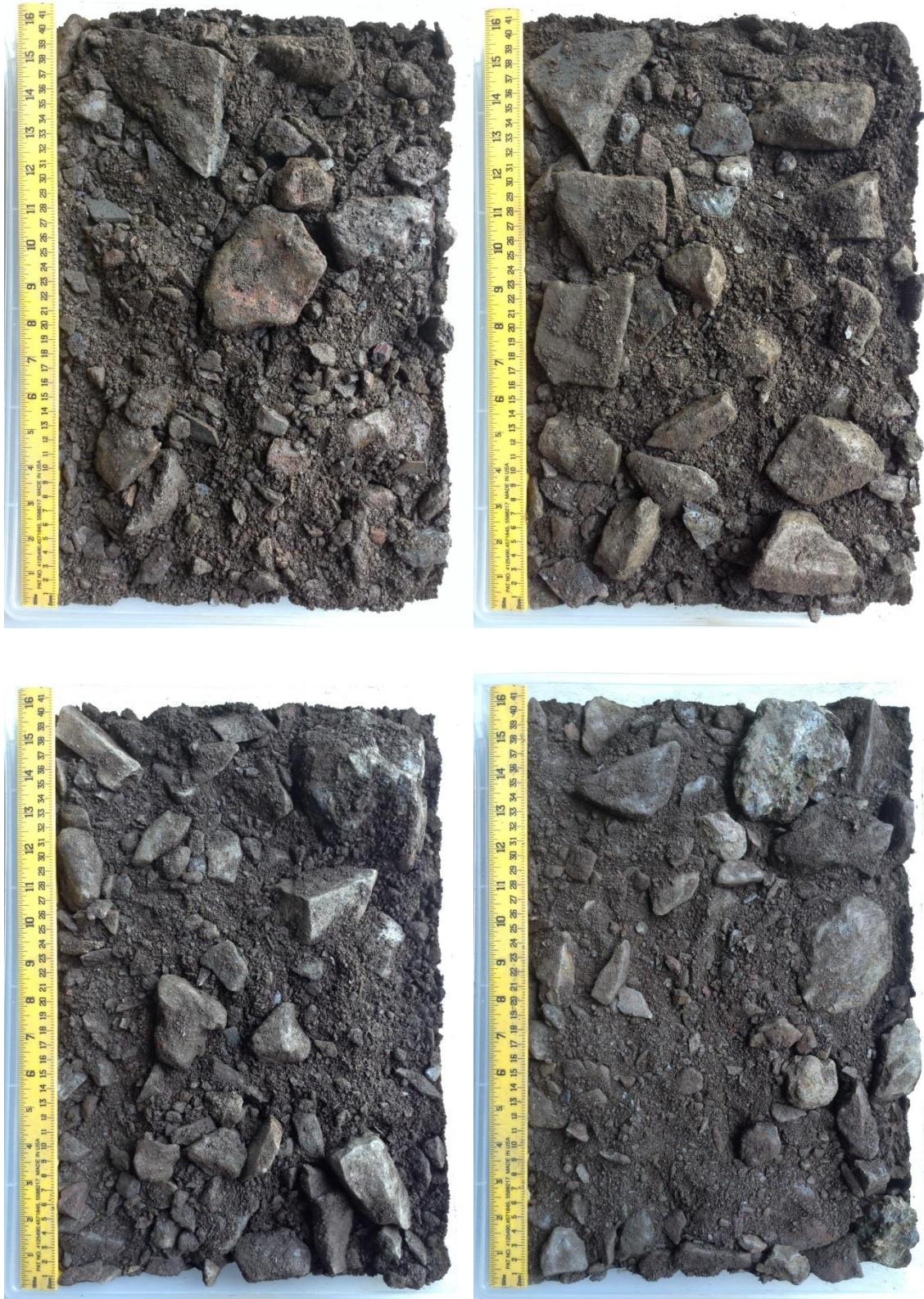


Photo C1 3: TP1-P1 waste rock samples from depths a) 9 to 10 m; b) 10 to 11 m; c) 11 to 12 m; d) 12 to 13 m



Photo C1 4: TP1-P1 waste rock samples from depths a) 13 to 14 m; b) 14 to 15 m; c) 15 to 16 m; d) 16 to 17 m

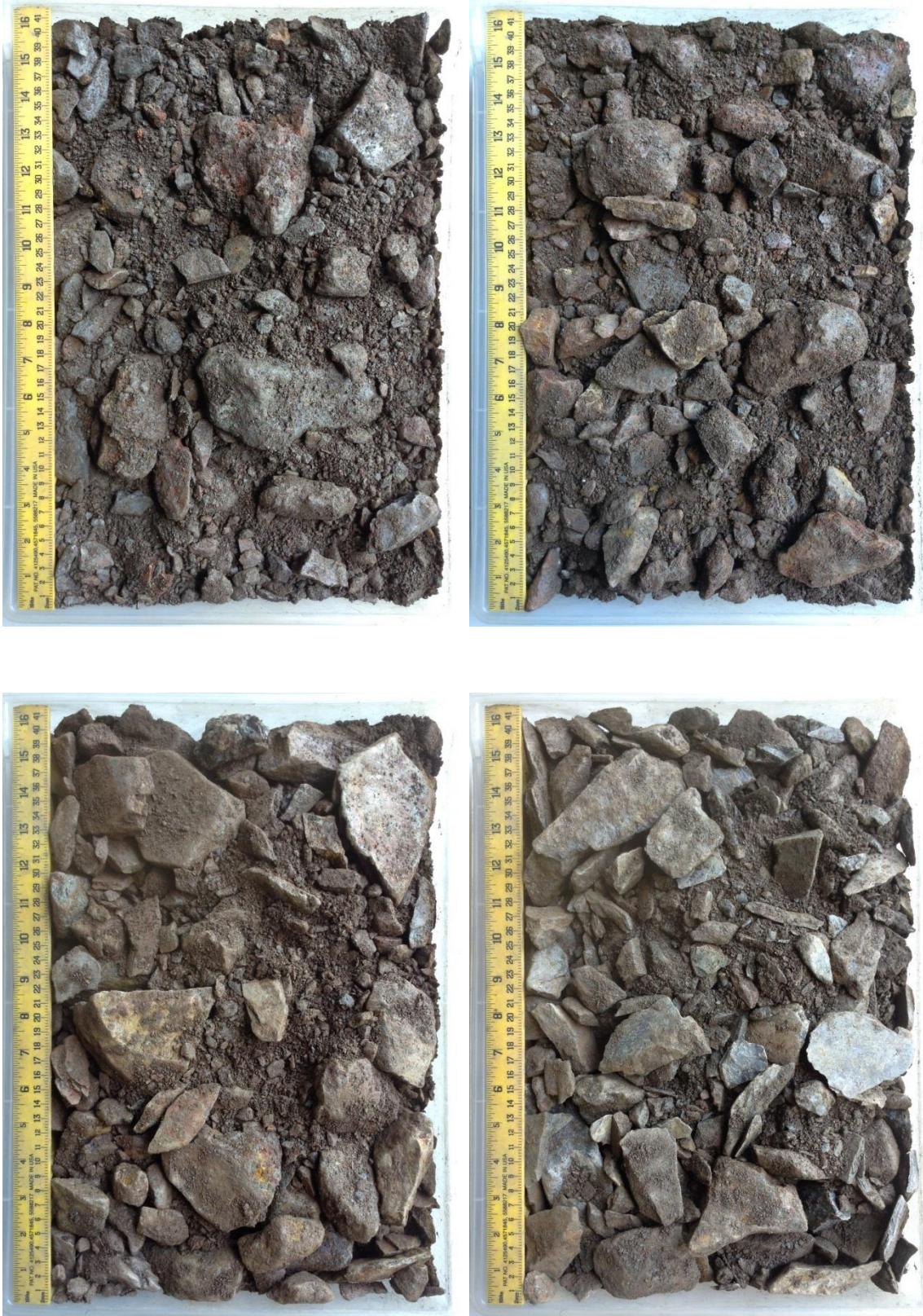


Photo C1 5: TP1-P1 waste rock samples from depths a) 17 to 18 m; b) 18 to 19 m; c) 19 to 20 m; d) 20 to 21 m



Photo C1 6: TP1-P1 waste rock samples from depths a) 21 to 22 m; b) 22 to 23m; and c) supernatants

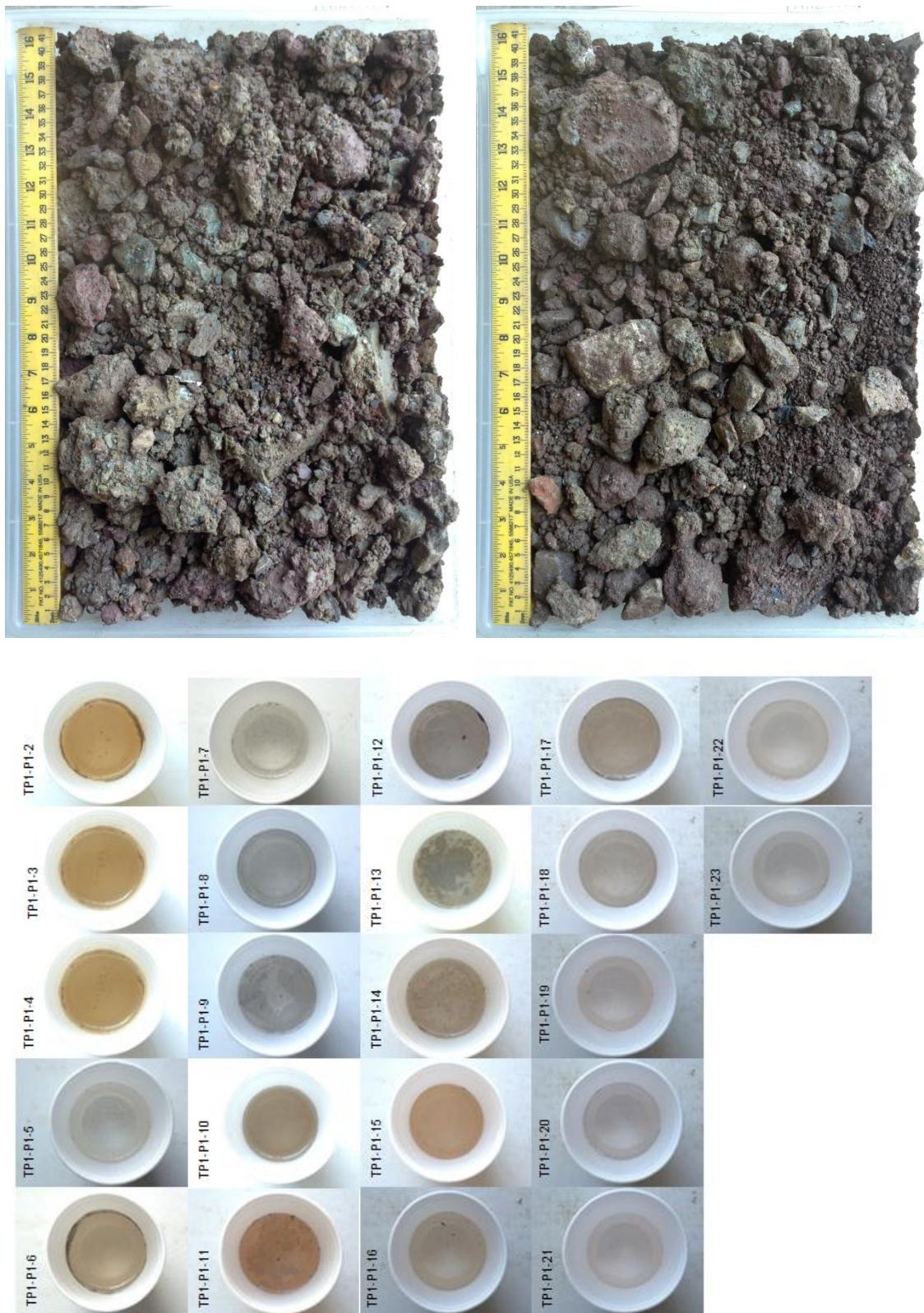


Photo C1 7: TP1-P2 waste rock samples from depths a) 0.7 to 2 m; b) 2 to 3 m; c) 3 to 4 m; d) 4 to 5 m



Photo C1 8: TP1-P2 waste rock samples from depths a) 5 to 6 m; b) 6 to 7 m; c) 7 to 8 m; d) 8 to 9 m

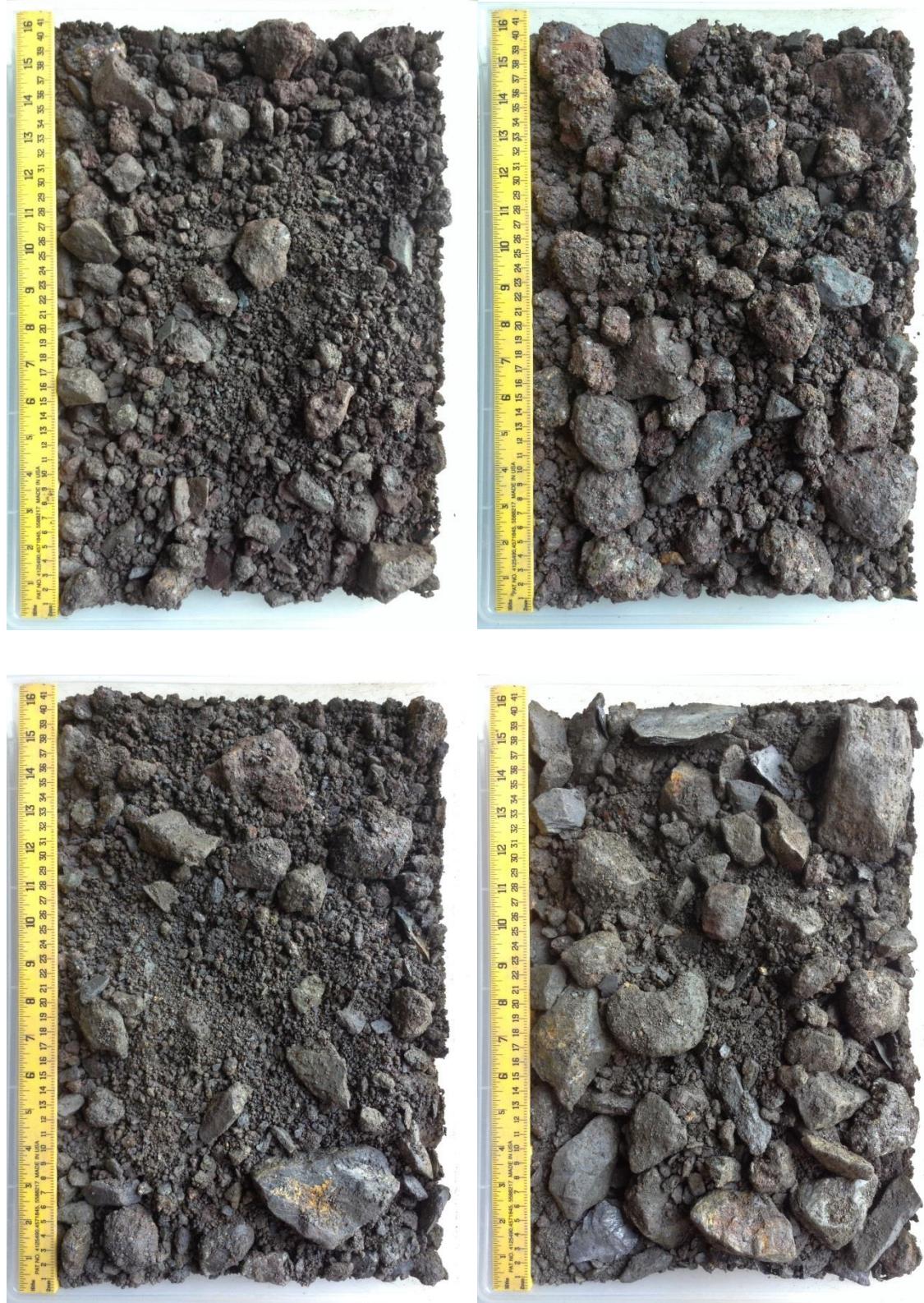


Photo C1 9: TP1-P2 waste rock samples from depths a) 9 to 10 m; and b) supernatants

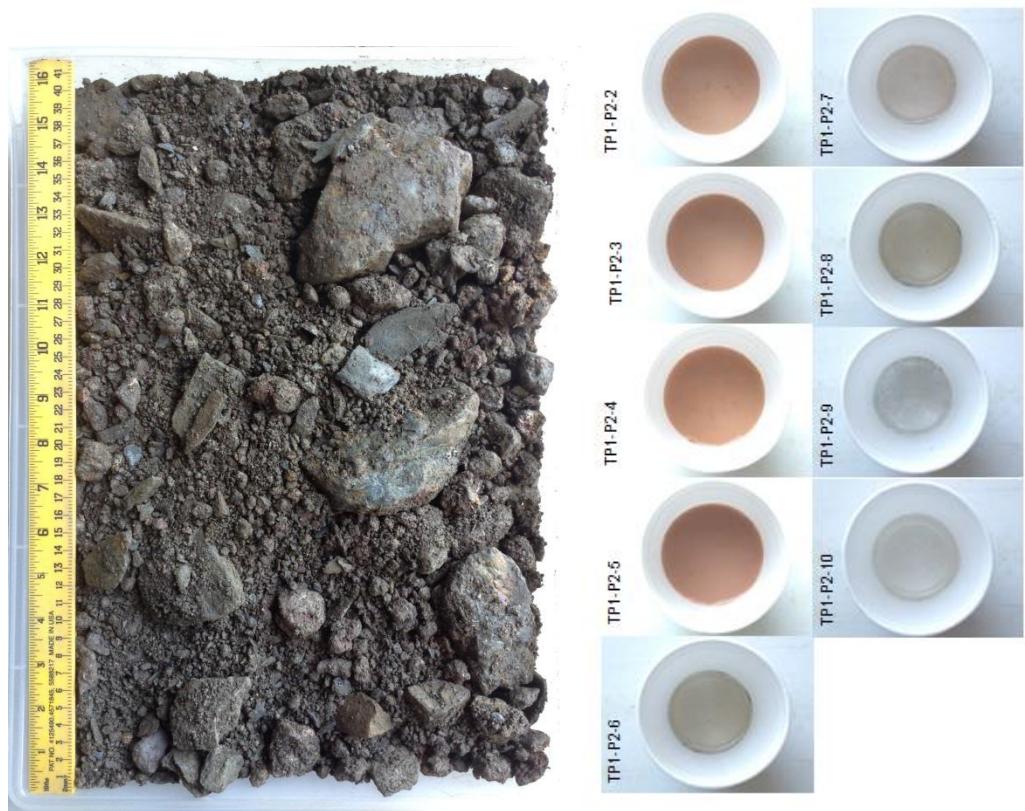


Photo C1 10: TP2-P1 waste rock samples from depths a) 0.3 to 1 m; b) 1 to 2 m; c) 2 to 3 m; d) 3 to 4 m



Photo C1 11: TP2-P1 waste rock samples from depths a) 4 to 5 m; b) 5 to 6 m; c) 6 to 7 m; d) 7 to 8 m

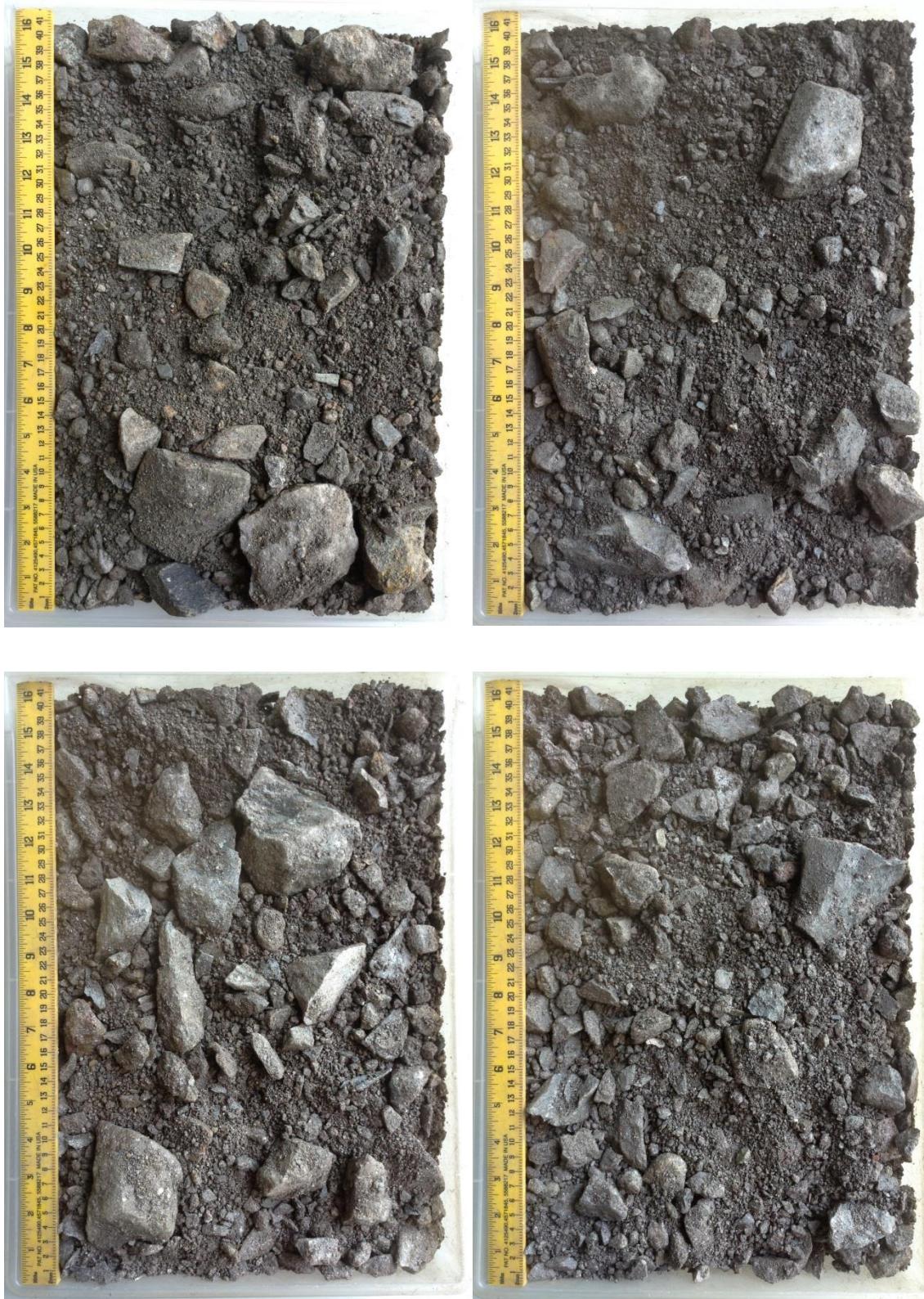


Photo C1 12: TP2-P1 waste rock samples from depths a) 8 to 9 m; b) 9 to 10 m; c) 10 to 11 m; d) 11 to 12 m

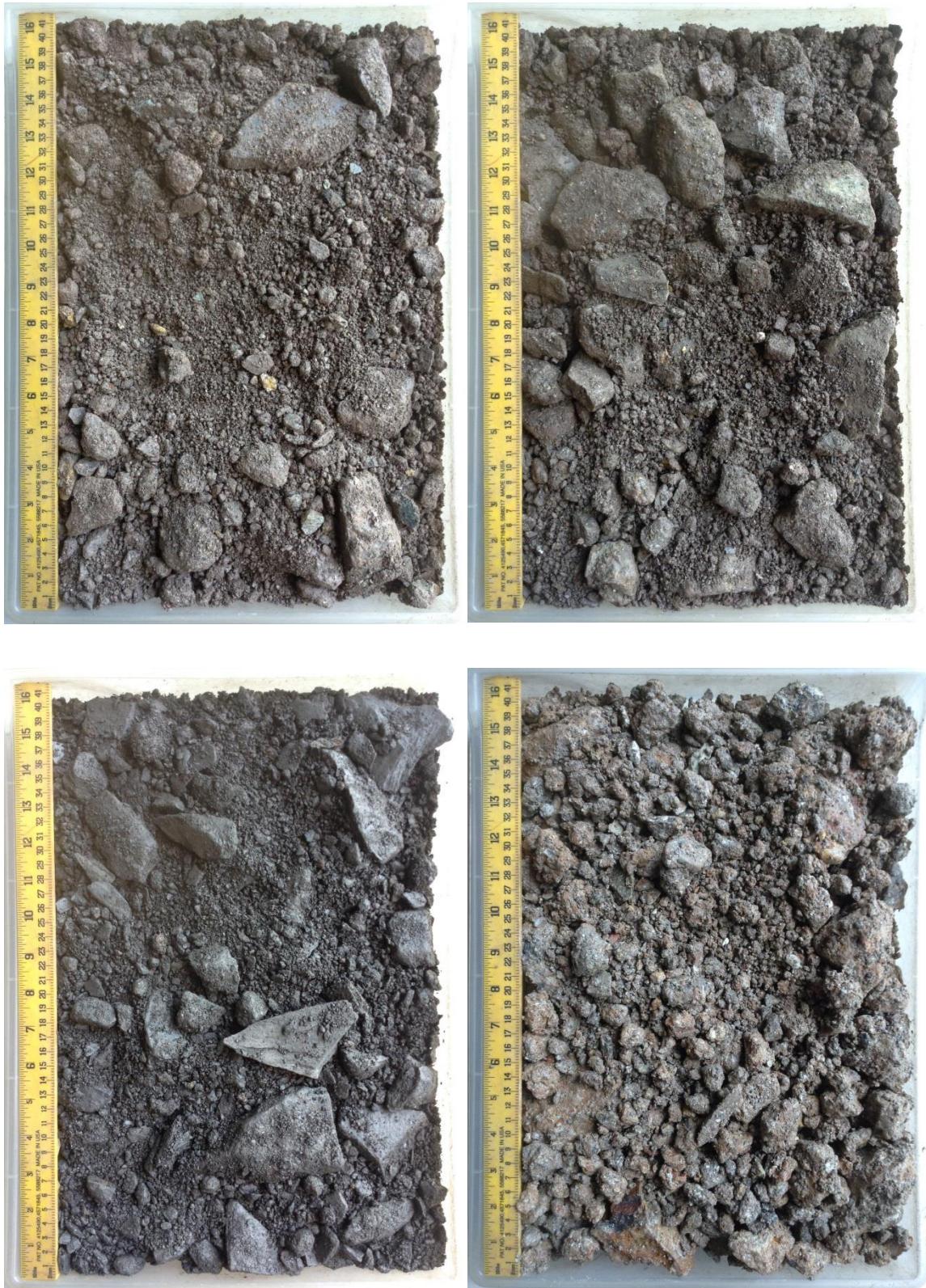


Photo C1 13: TP2-P1 waste rock samples from depths a) 12 to 13 m; b) 13 to 14 m; c) 14 to 15 m; d) 15 to 16 m

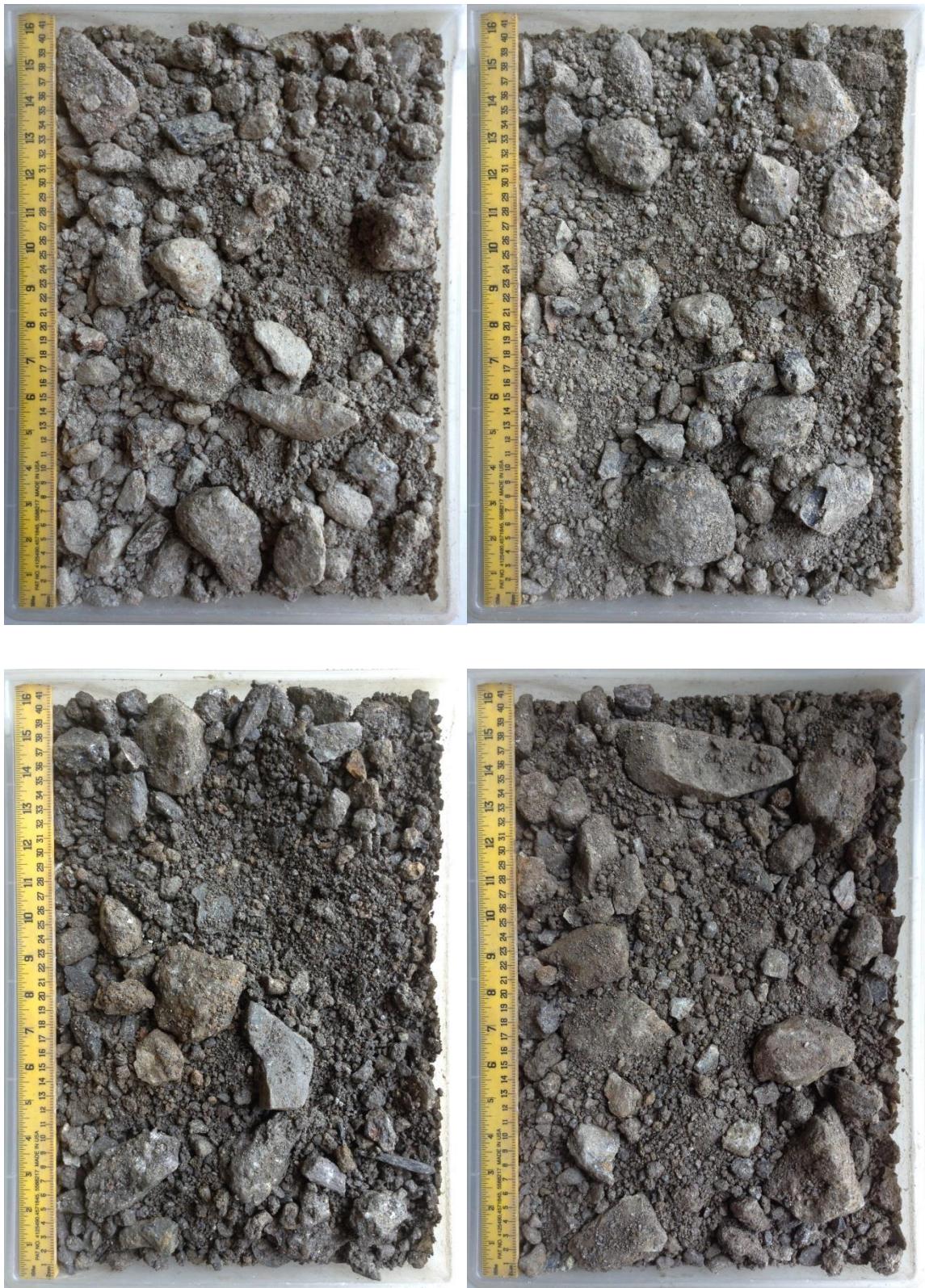


Photo C1 14: TP2-P1 waste rock samples from depths a) 16 to 17 m; b) 17 to 18 m; c) 18 to 19 m; d) 19 to 20 m



Photo C1 15: TP2-P2 supernatants

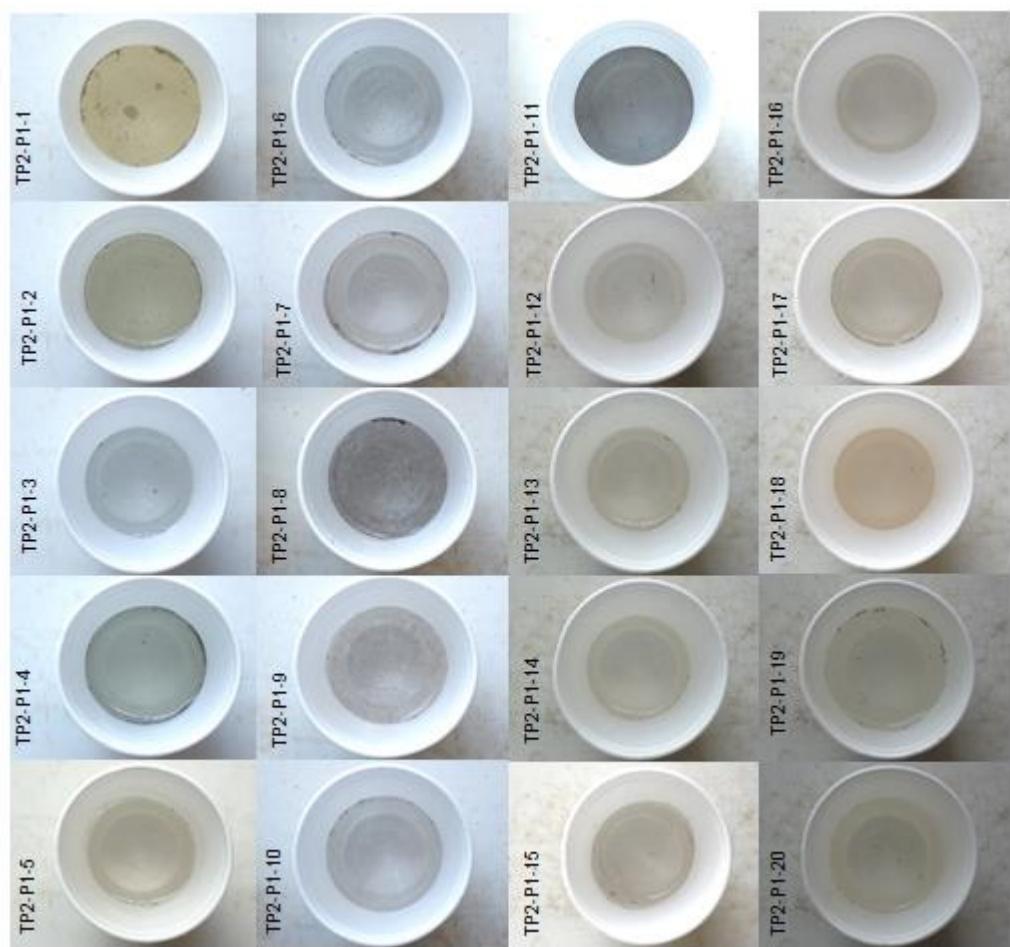


Photo C1 16: TP2-P2 waste rock samples from depths a) 0.7 to 2 m; b) 2 to 3 m; c) 3 to 4 m; d) 4 to 5 m



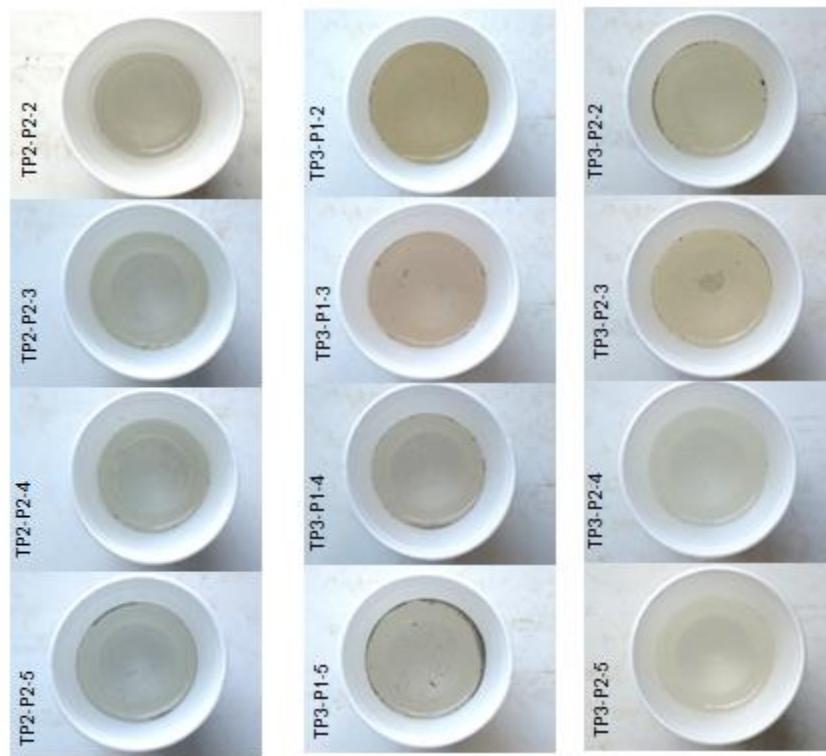
Photo C1 17: TP3-P1 waste rock samples from depths a) 1 to 2 m; b) 2 to 3 m; c) 3 to 4 m; d) 4 to 5 m



Photo C1 18: TP3-P2 waste rock samples from depths a) 1 to 2 m; b) 2 to 3 m; c) 3 to 4 m; d) 4 to 5 m



Photo C1 19: TP2-P2 supernatants (a), TP3-P1supernatants (b), and TP3-P2 supernatants (c)



**Appendix C2
Intermediate WRD**

Photo C2 1: TP4-P1 waste rock samples from depths a) 0.7 to 2 m; b) 2 to 3 m; c) 3 to 4 m; d) 4 to 5 m



Photo C2 2: TP4-P1 waste rock samples from depths a) 5 to 6 m; b) 6 to 7 m; c) 7 to 8 m; d) 8 to 9 m

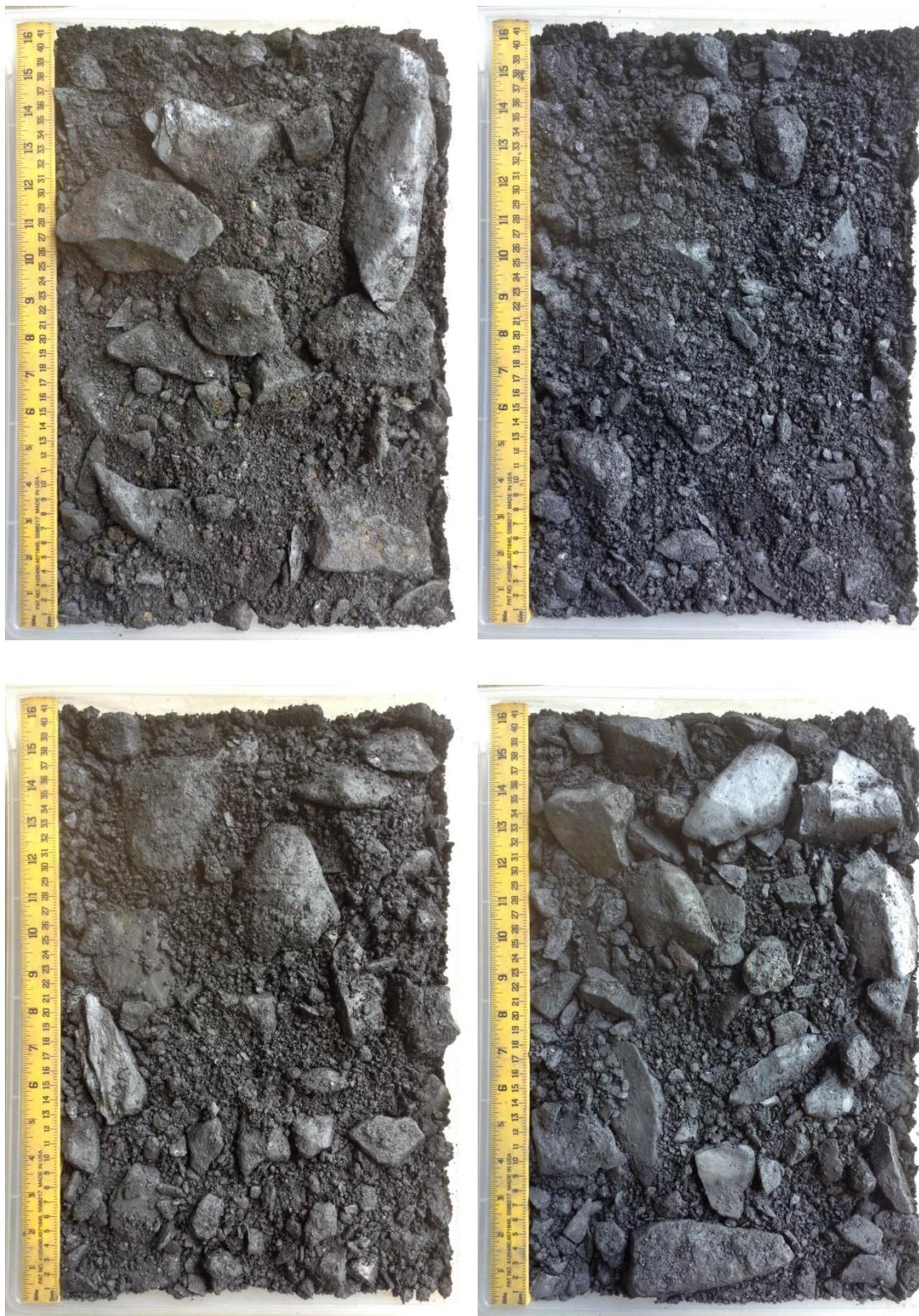


Photo C2 3: TP4-P1 waste rock samples from depths a) 9 to 10 m; b) 10 to 11 m; c) 11 to 12 m; d) 12 to 13 m

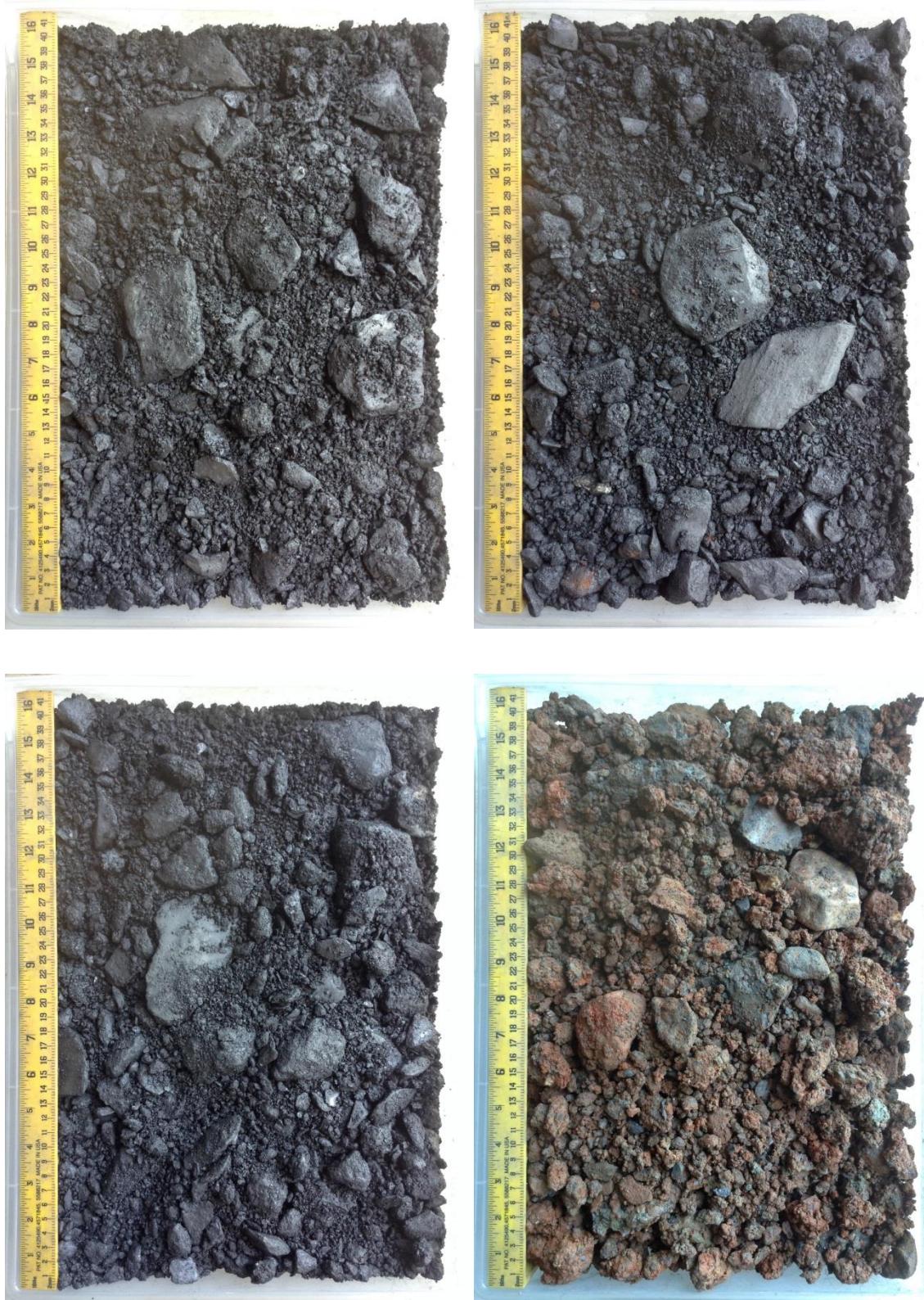


Photo C2 4: TP4-P1 supernatants

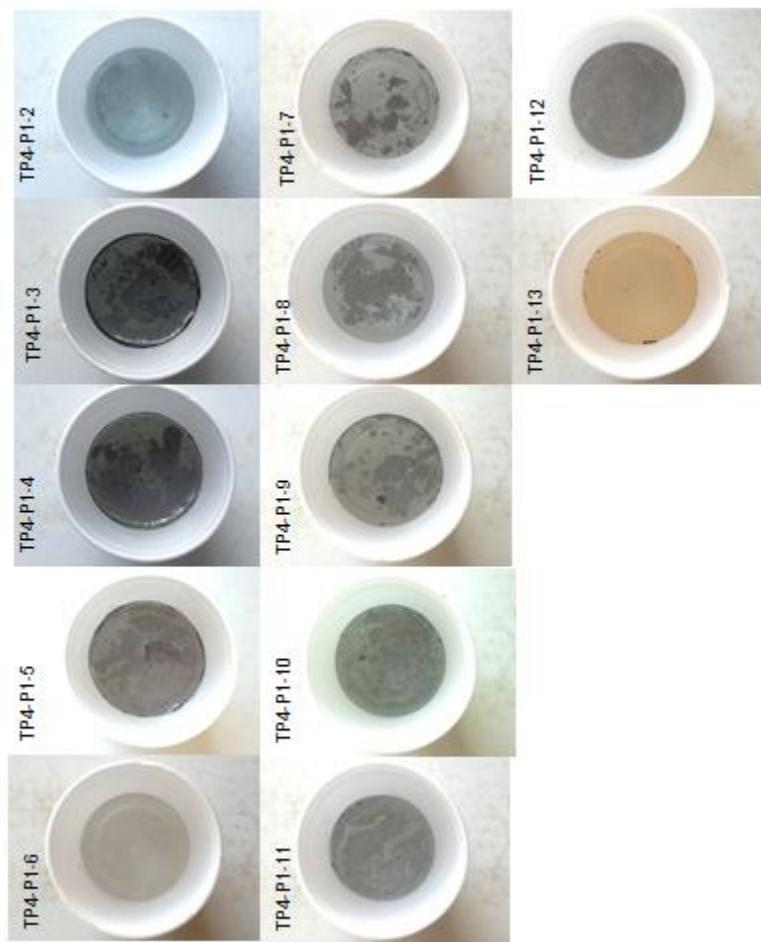


Photo C2 5: TP5-P1 waste rock samples from depths a) 0.9 to 2 m; b) 2 to 3 m; c) 3 to 4 m; d) 4 to 5 m

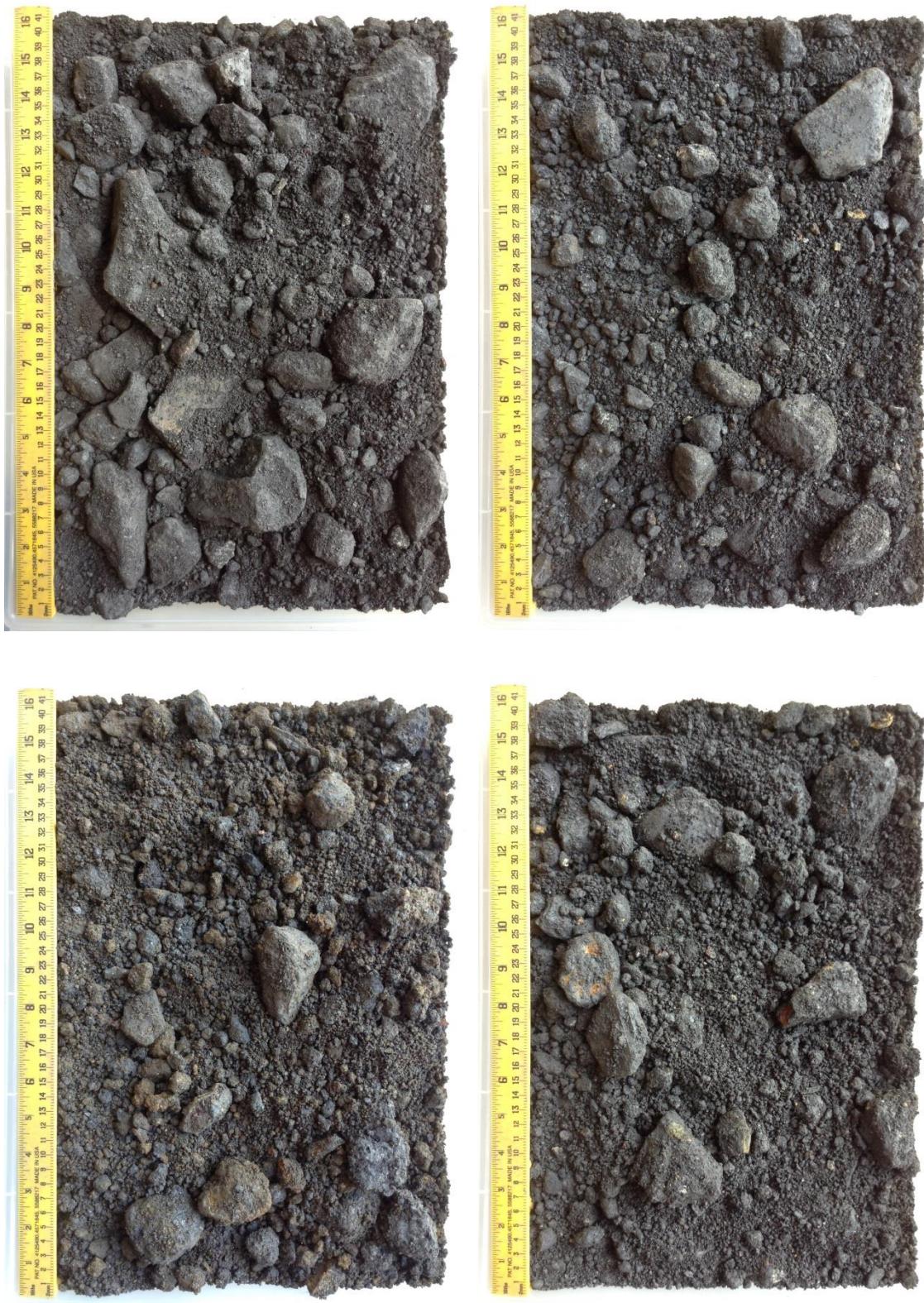


Photo C2 6: TP5-P1 waste rock samples from depths a) 5 to 6 m; b) 6 to 7 m; c) 7 to 8 m; d) 8 to 9 m

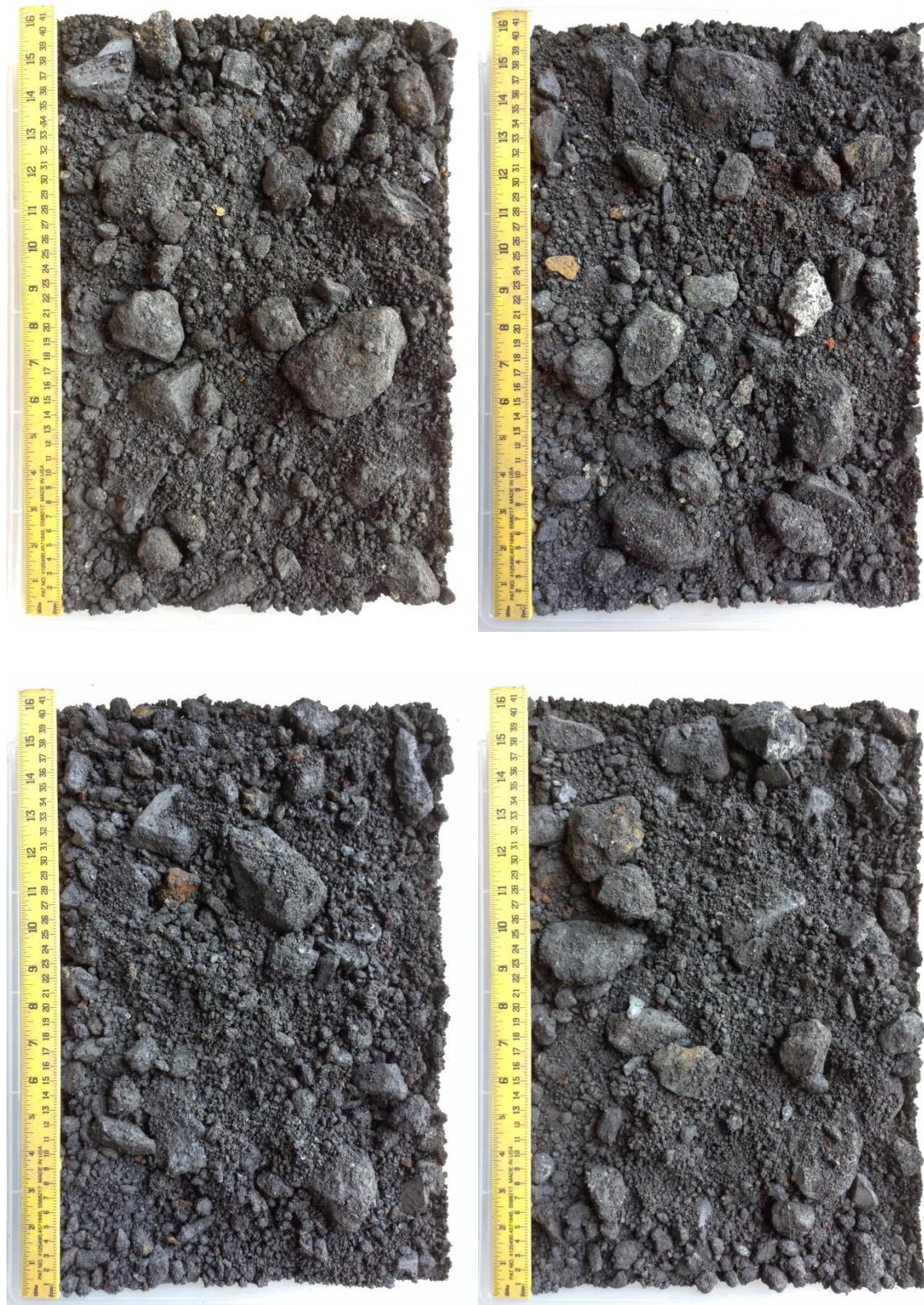


Photo C2 7: TP5-P1 supernatants

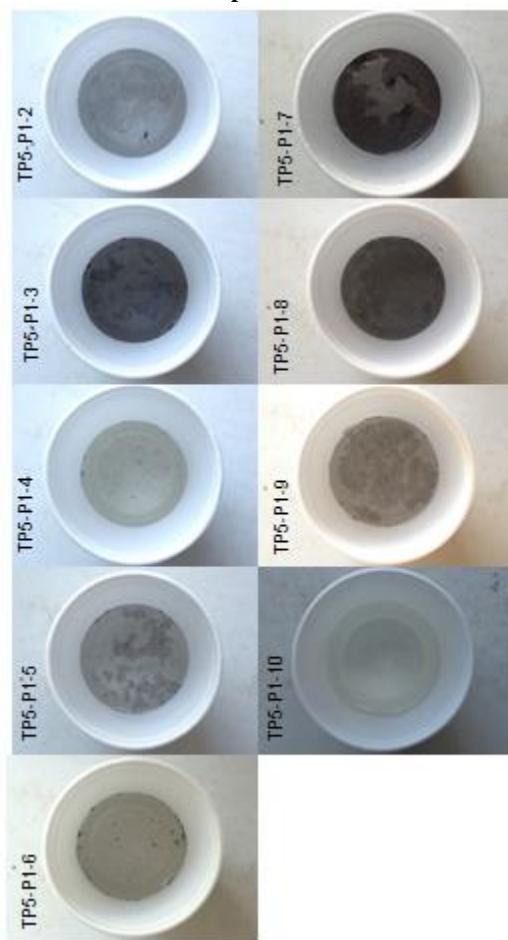


Photo C2 8: TP7-P1 waste rock samples from depths a) 0.55 to 1 m; b) 1 to 2 m; c) 2 to 3 m; d) 3 to 4 m



Photo C2 9: TP7-P1 waste rock samples from depths a) 4 to 5 m; b) 5 to 6 m; c) 6 to 7 m; d) 7 to 8 m

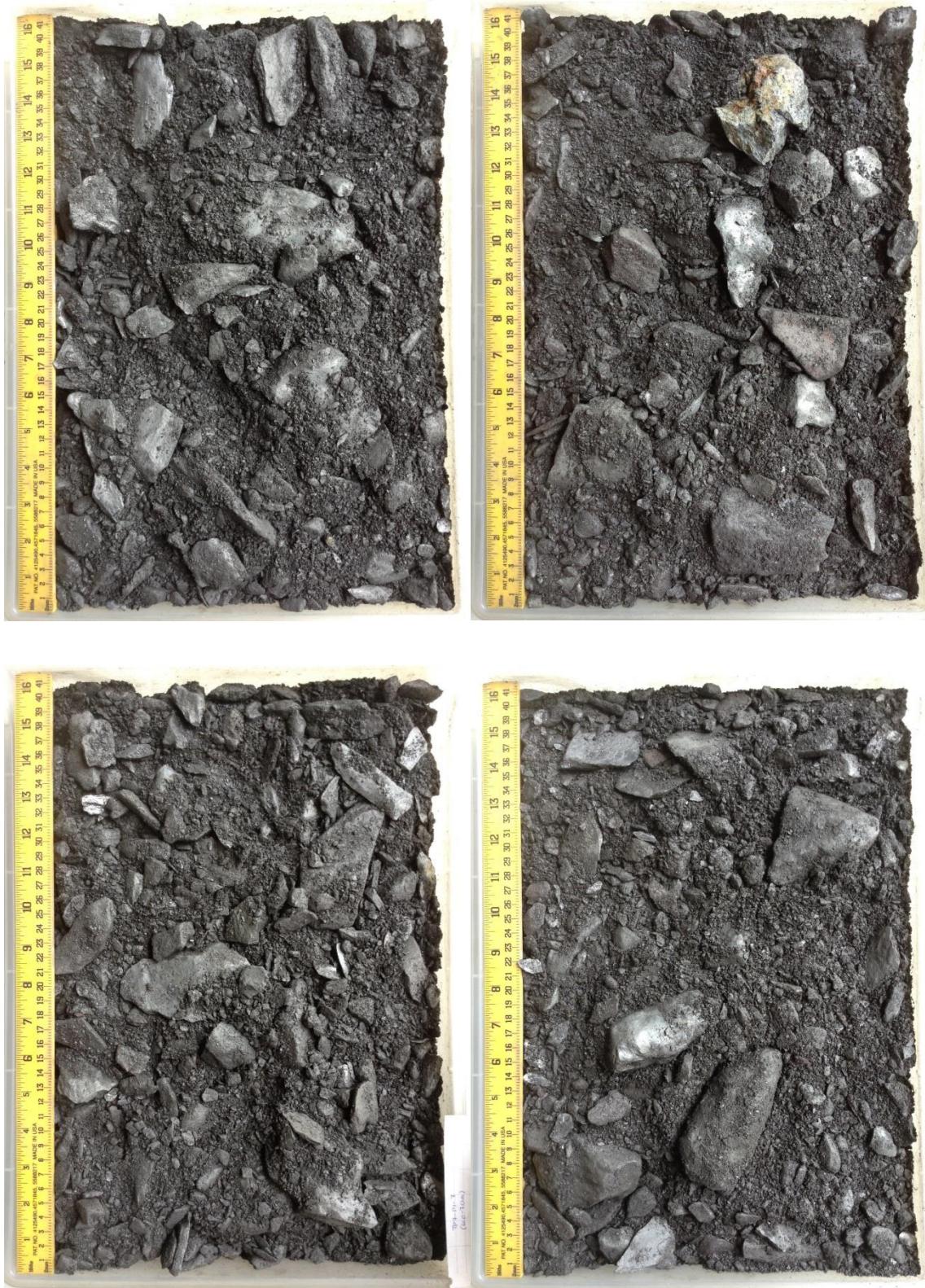


Photo C2 10: TP7-P1 waste rock samples from depths a) 8 to 9 m; b) 9 to 10 m; c) 10 to 11 m; d) 11 to 12 m

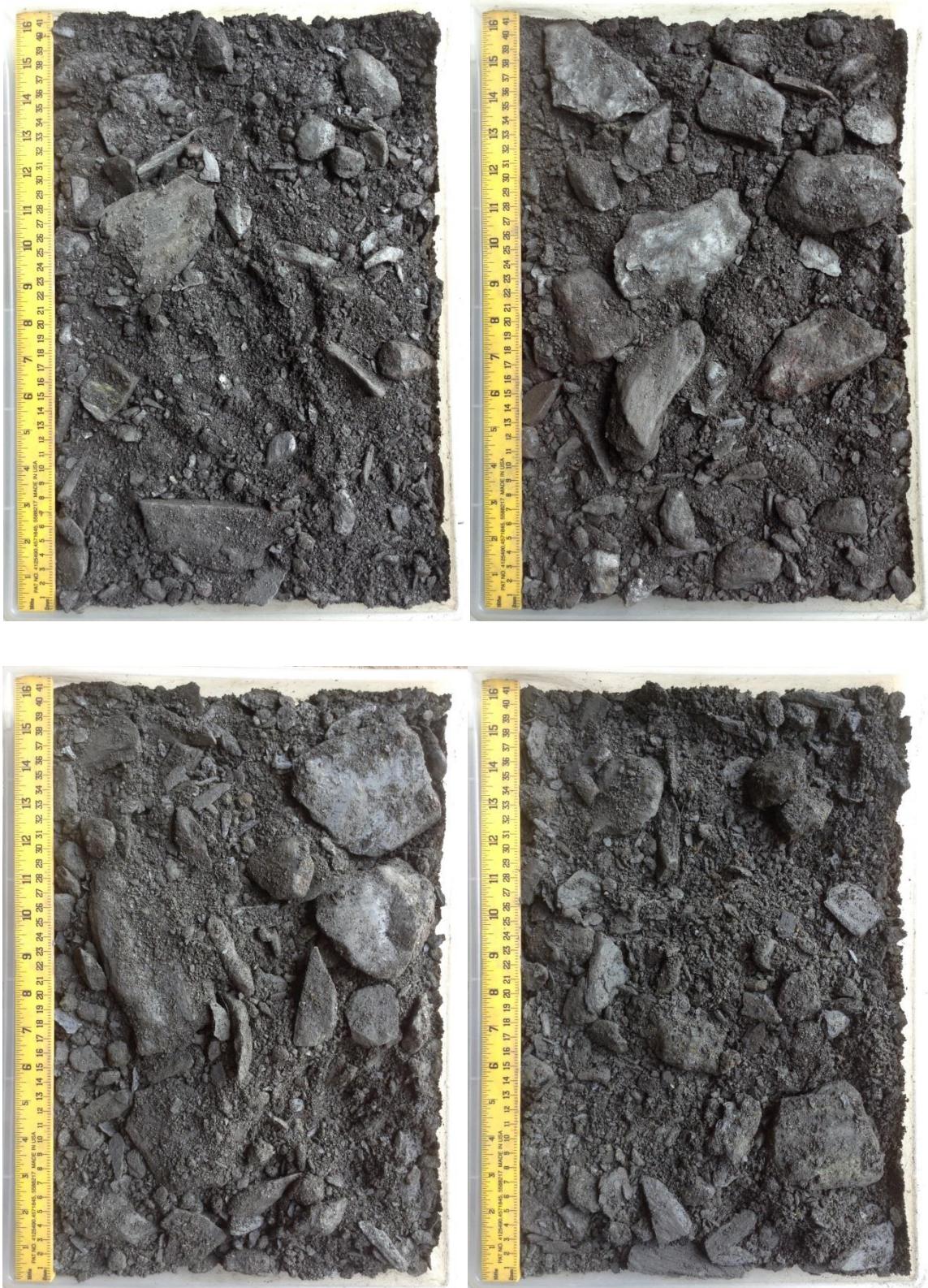
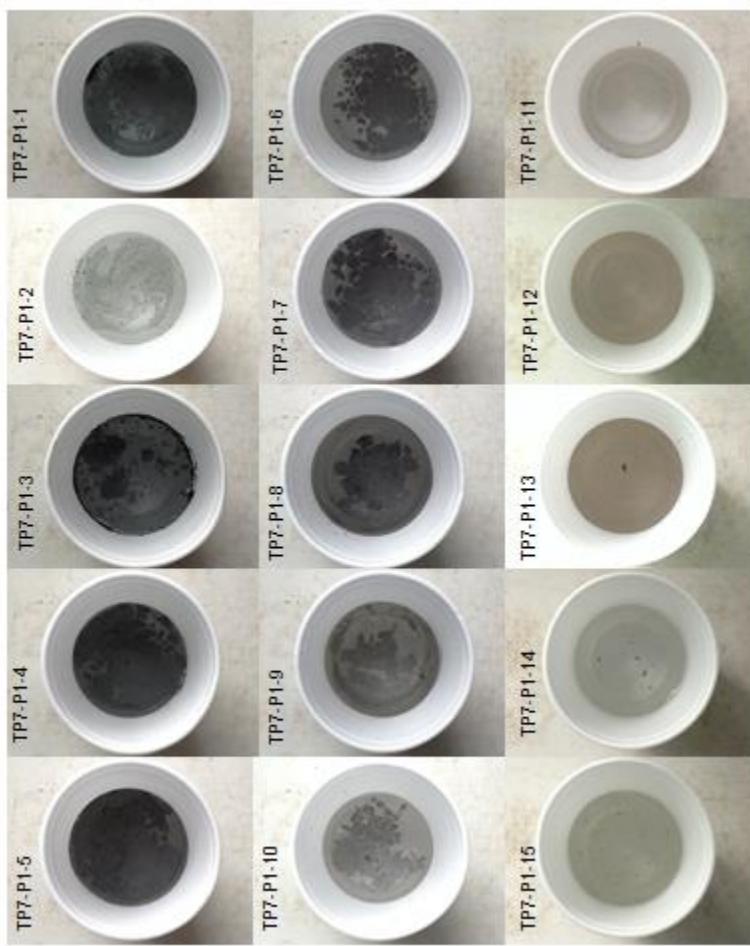


Photo C2 11: TP7-P1 waste rock samples from depths a) 12 to 13 m; b) 13 to 14 m; c) 14 to 15 m;



Photo C2 12: TP6-P1 supernatants



Appendix C3
Dyson's WRD

Photo C3 1: TP6-P1 waste rock samples from depths a) 0.75 to 2 m; b) 2 to 3 m; c) 3 to 4 m; d) 4 to 5 m



Photo C3 2: TP6-P1 waste rock samples from depths a) 5 to 6 m; b) 6 to 7 m; c) 7 to 8 m; d) 8 to 9 m



Photo C3 3: TP6-P1 waste rock samples from depths a) 9 to 10 m; b) 10 to 11 m; c) 11 to 12 m; d) 12 to 13 m

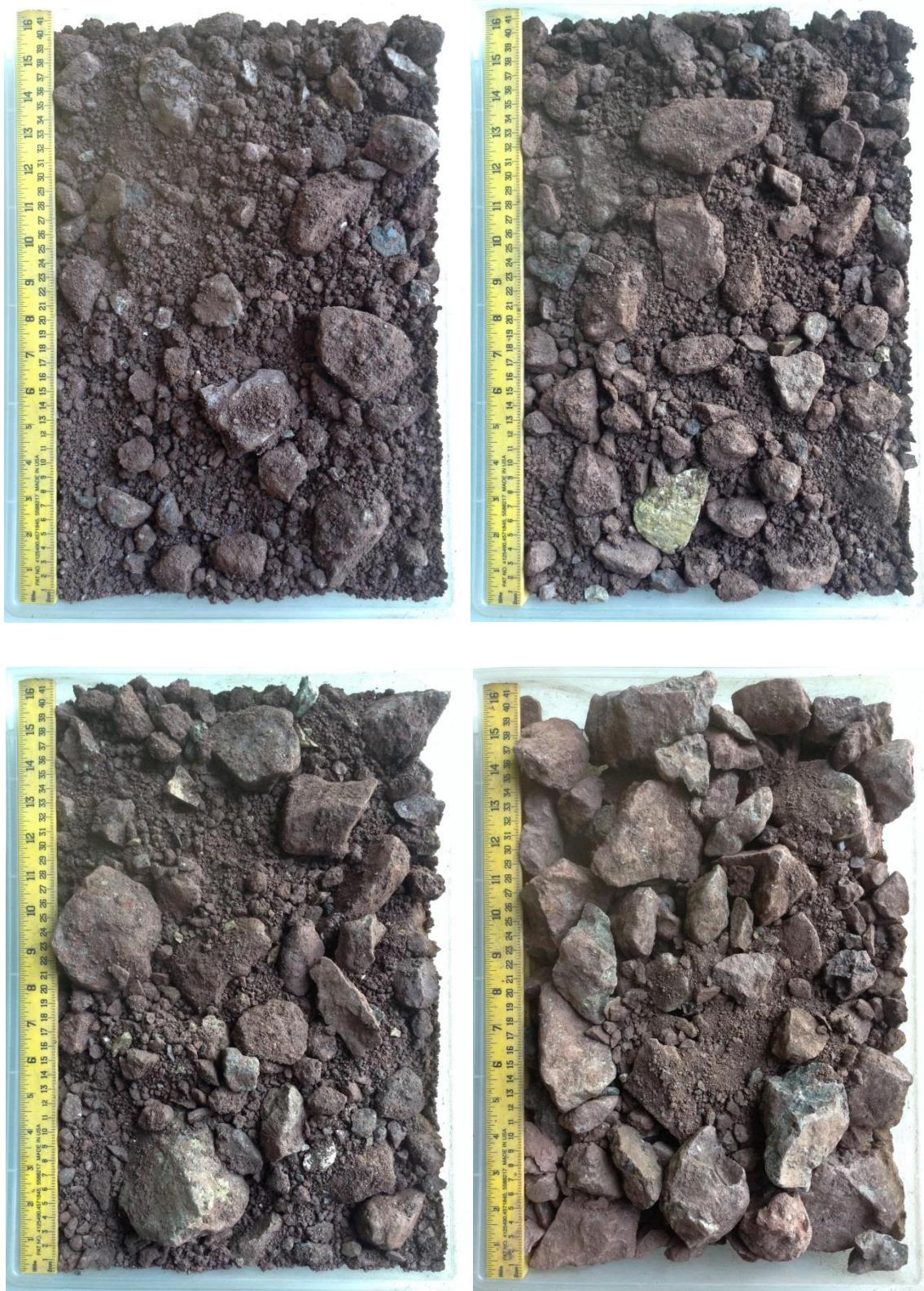


Photo C3 4: TP6-P1 waste rock samples from depths a) 13 to 14 m; b) 14 to 15 m; and c) supernatants



Photo C3 5: TP6-P1 supernatants

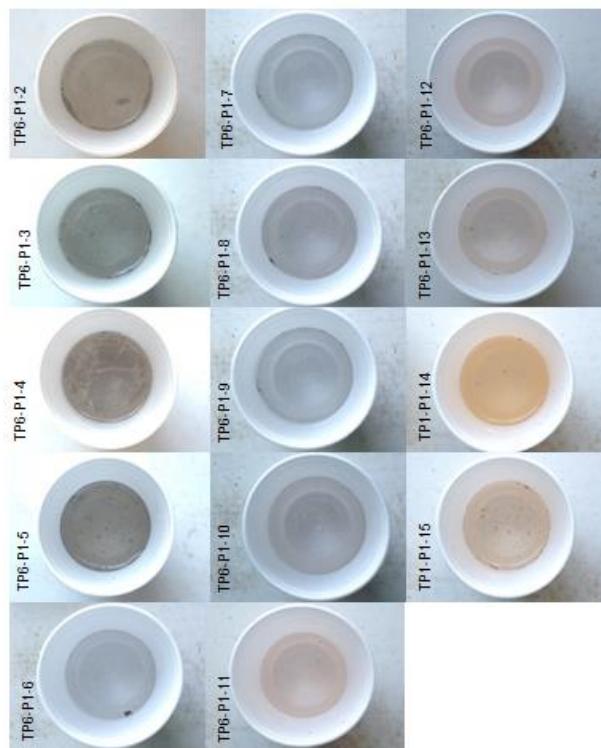


Photo C3 6: TP6-P2 waste rock samples from depths a) 0.65 to 2 m; b) 2 to 3 m; c) 3 to 4 m; d) 4 to 5 m

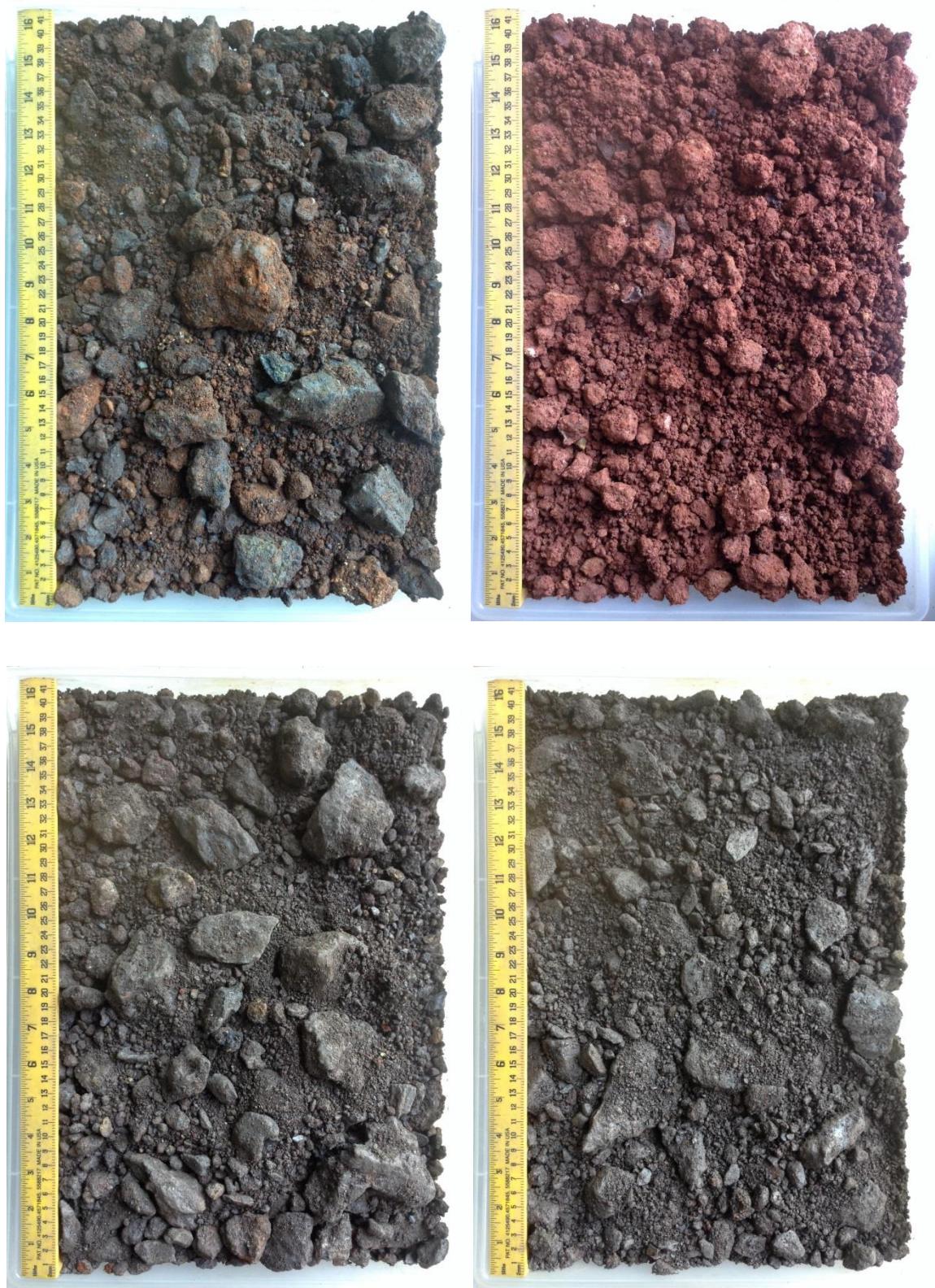


Photo C3 7: TP6-P2 waste rock samples from depths a) 5 to 6 m; b) 6 to 7 m; c) 7 to 8 m; d) 8 to 9 m

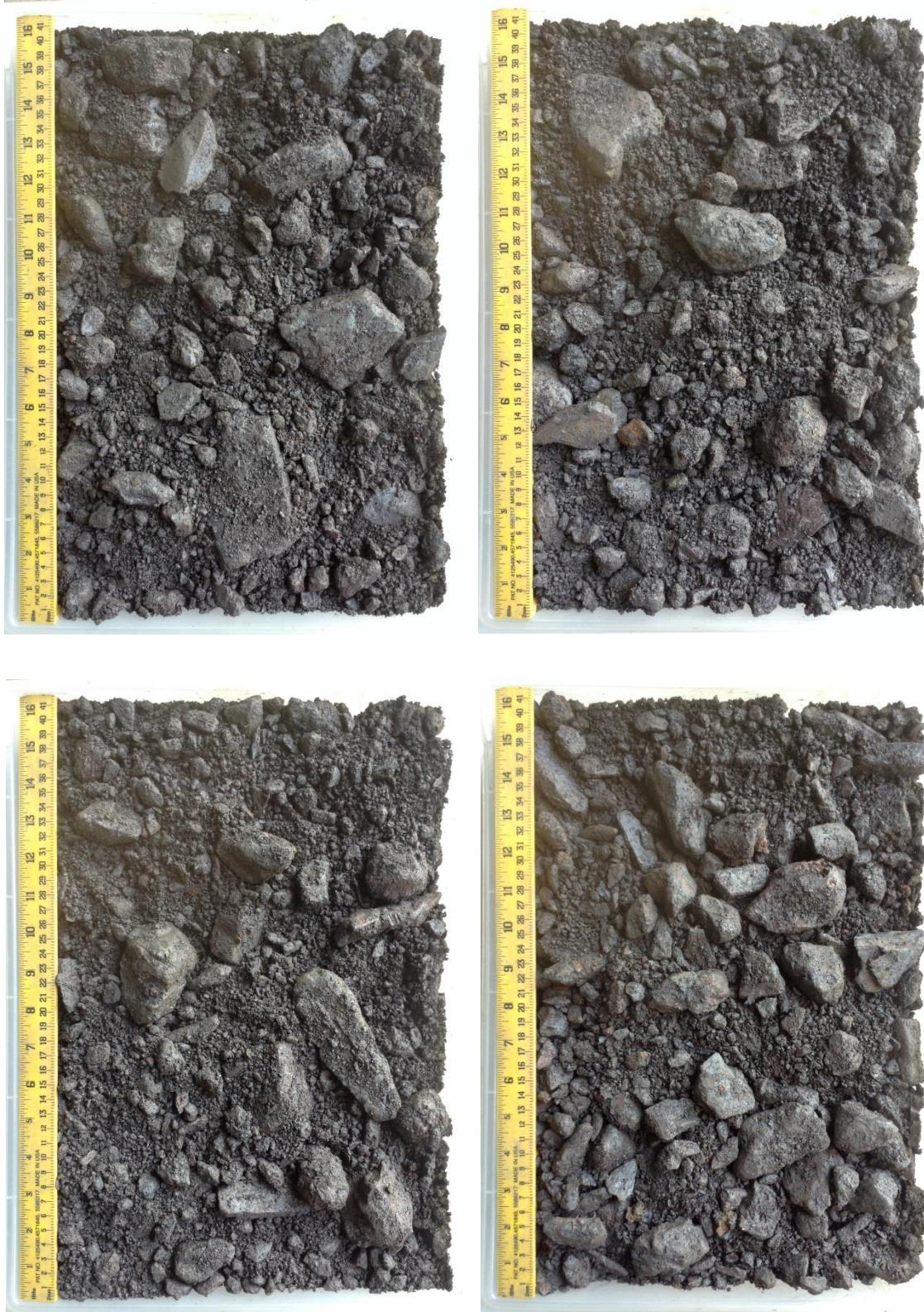


Photo C3 8: TP6-P2 waste rock samples from depths a) 9 to 10; and b) supernatants



Appendix D
Test Pit Logs

Table D1. Test Pit Log for TP1-P1

Depth (m bgs)	Plus 75 mm Size Fraction (Image) (%)	Minus 75 mm Size Fraction (Image) (%)	Moisture Content	Color Code	Rinse pH (-)	Rinse EC (μ S/cm)	Comment	
0.0 to 0.7 m		-	 > 19 mm : - 4 - 19 mm : - 2 - 4 mm : - 1 - 2 mm : - < 1mm : - USCS: n/a	Dry	Red 2.5YR 4/6	-	-	Loosely compacted Cover material
0.7 to 2.0 m		45%	 > 19 mm : 37.3% 4 - 19 mm : 26.5% 2 - 4 mm : 11.2% 1 - 2 mm : 7.6% < 1mm : 17.5% USCS: gravel with sand & cobbles	Dry	Very dark greyish brown 10YR 3/2	6.6	2320	Cemented Friable shale Weathered Some visible pyrite
2.0 to 3.0 m		30%	 > 19 mm : 42.7% 4 - 19 mm : 26.1% 2 - 4 mm : 9.7% 1 - 2 mm : 14.8% < 1mm : 6.7% USCS: gravel with sand & cobbles	Dry	Very dark greyish brown 10YR 3/2	5.5	1440	Cemented Friable shale Greasy feel No visible sulphides
3.0 to 4.0 m		50%	 > 19 mm : 22.9% 4 - 19 mm : 34.3% 2 - 4 mm : 15.8% 1 - 2 mm : 22.3% < 1mm : 4.7% USCS: gravel with sand & cobbles	Moist	Very dark greyish brown 10YR 3/2	5.8	2420	Cemented shale No visible sulphides
4.0 to 5.0 m		60%	 > 19 mm : 31.7% 4 - 19 mm : 34.8% 2 - 4 mm : 12.8% 1 - 2 mm : 9.3% < 1mm : 11.4% USCS: cobbles with gravel & sand	Moist	Very dark greyish brown 10YR 3/2	5.2	1187	Cemented shale Some oxide staining
5.0 to 6.0 m		30%	 > 19 mm : 37.7% 4 - 19 mm : 30.9% 2 - 4 mm : 10.4% 1 - 2 mm : 10.7% < 1mm : 10.3% USCS: gravel with sand & cobbles	Moist	Very dark greyish brown 10YR 3/2	4.8	1061	Highly cemented shale Some internal structure evident Some sulphides visible
6.0 to 7.0 m		40%	 > 19 mm : 43.8% 4 - 19 mm : 26.5% 2 - 4 mm : 7.2% 1 - 2 mm : 7.8% < 1mm : 14.8% USCS: gravel with sand & cobbles	Moist	Very dark greyish brown 10YR 3/2	5.1	2050	Cemented shale Internal structure (end dump?) with angles similar to batters
7.0 to 8.0 m		10%	 > 19 mm : 28.8% 4 - 19 mm : 30.2% 2 - 4 mm : 12.0% 1 - 2 mm : 10.0% < 1mm : 19.0% USCS: cobbley gravel with sand	Moist	Very dark greyish brown 2.5Y 3/2	5.1	1953	Cemented Dark brown matrix with suspended chunks of shale Sphalerite veins evident

Table D1. Test Pit Log for TP1-P1

Depth (m bgs)	Plus 75 mm Size Fraction (Image) (%)	Minus 75 mm Size Fraction (Image) (%)	Moisture Content	Color Code	Rinse pH (-)	Rinse EC (μ S/cm)	Comment	
8.0 to 9.0 m		30%	 > 19 mm 31.1% 4 - 19 mm 28.7% 2 - 4 mm 10.5% 1 - 2 mm 10.2% < 1mm 19.5% USCS: gravel with sand & cobbles	Moist	Very dark grey 5YR 3/1	5	1622	Cemented shale Some staining and evidence of oxidation
9.0 to 10.0 m		30%	 > 19 mm 32.4% 4 - 19 mm 29.0% 2 - 4 mm 10.3% 1 - 2 mm 10.3% < 1mm 17.9% USCS: gravel with sand & cobbles	Moist	Very dark grey 2.5Y 3/1	4.7	1812	Cemented Graphitic shale Large pyrite crystals (veins) Large boulder removed (+150 cm) largest so far
9.0 to 10.0 m		60%	 > 19 mm 35.6% 4 - 19 mm 27.8% 2 - 4 mm 13.6% 1 - 2 mm 12.6% < 1mm 10.4% USCS: cobbles with gravel & sand	Moist	Dark reddish brown 5YR 3/3	5.4	1240	Lens of grey/black shale with brown material below 10.7 m Cemented
11.0 to 12.0 m		15%	 > 19 mm 40.7% 4 - 19 mm 26.6% 2 - 4 mm 10.6% 1 - 2 mm 11.9% < 1mm 10.3% USCS: gravel with sand & cobbles	Moist	Very dark greyish brown 10YR 3/2	4.6	1048	Cemented shale Large cobbles split and coated in pyrite
12.0 to 13.0 m		15%	 > 19 mm 37.5% 4 - 19 mm 30.7% 2 - 4 mm 9.4% 1 - 2 mm 11.1% < 1mm 11.3% USCS: gravel with sand & cobbles	Moist	Dark brown 7.5YR 3/2	4.8	1020	Slight odor (possible H ₂ S) Some staining and jarosite No evidence of stron oxidation (red brown crystals/clasts) Clean, relatively fresh rock
13.0 to 14.0 m		10%	 > 19 mm 49.0% 4 - 19 mm 27.3% 2 - 4 mm 15.0% 1 - 2 mm 2.9% < 1mm 5.8% USCS: cobble gravel with sand	Moist	Very dark greyish brown 10YR 3/2	5.8	1074	Same material as above (fresh)
14.0 to 15.0 m		15%	 > 19 mm 48.3% 4 - 19 mm 25.8% 2 - 4 mm 9.9% 1 - 2 mm 5.2% < 1mm 10.7% USCS: gravel with sand & cobbles	Moist	Dark brown 7.5YR 3/3	4.6	1196	Cemented shale +75 mm fraction is relatively coarse
15.0 to 16.0 m		60%	 > 19 mm 76.2% 4 - 19 mm 15.5% 2 - 4 mm 2.1% 1 - 2 mm 1.7% < 1mm 4.5% USCS: cobbles with gravel	Moist	Brown 7.5YR 4/3	4.4	2320	Loosely cemented shale Few visible sulphides Some fine-grained pyrite Malachite common +75mm is relatively coarse 20-30cm cobbles common

Table D1. Test Pit Log for TP1-P1

Depth (m bgs)	Plus 75 mm Size Fraction (Image)	(%)	Minus 75 mm Size Fraction (Image)	(%)	Moisture Content	Color Code	Rinse pH (-)	Rinse EC (μ S/cm)	Comment										
16.0 to 17.0 m		70%		<table> <tr><td>> 19 mm</td><td>57.6%</td></tr> <tr><td>4 - 19 mm</td><td>27.2%</td></tr> <tr><td>2 - 4 mm</td><td>3.8%</td></tr> <tr><td>1 - 2 mm</td><td>3.1%</td></tr> <tr><td>< 1mm</td><td>8.4%</td></tr> </table> <p>USCS: cobbles with gravel</p>	> 19 mm	57.6%	4 - 19 mm	27.2%	2 - 4 mm	3.8%	1 - 2 mm	3.1%	< 1mm	8.4%	Moist	Brown 7.5YR 5/2	4.3	1970	Loosely cemented shale Not welded with secondary minerals Coarse fraction heavily stained Reddish brown crystals evident Material too coarse to be cemented
> 19 mm	57.6%																		
4 - 19 mm	27.2%																		
2 - 4 mm	3.8%																		
1 - 2 mm	3.1%																		
< 1mm	8.4%																		
17.0 to 18.0 m		80%		<table> <tr><td>> 19 mm</td><td>83.7%</td></tr> <tr><td>4 - 19 mm</td><td>11.5%</td></tr> <tr><td>2 - 4 mm</td><td>1.0%</td></tr> <tr><td>1 - 2 mm</td><td>0.9%</td></tr> <tr><td>< 1mm</td><td>2.9%</td></tr> </table> <p>USCS: cobbles with gravel</p>	> 19 mm	83.7%	4 - 19 mm	11.5%	2 - 4 mm	1.0%	1 - 2 mm	0.9%	< 1mm	2.9%	Moist	Brown 7.5YR 5/2	4.4	2120	Loosely cemented shale Broken through to purplish layer New material (HQB) holds more moisture Some fine-grained sulphides Waste rock dipping 38° to the south
> 19 mm	83.7%																		
4 - 19 mm	11.5%																		
2 - 4 mm	1.0%																		
1 - 2 mm	0.9%																		
< 1mm	2.9%																		
18.0 to 19.0 m		80%		<table> <tr><td>> 19 mm</td><td>39.4%</td></tr> <tr><td>4 - 19 mm</td><td>44.1%</td></tr> <tr><td>2 - 4 mm</td><td>6.9%</td></tr> <tr><td>1 - 2 mm</td><td>4.0%</td></tr> <tr><td>< 1mm</td><td>5.5%</td></tr> </table> <p>USCS: cobbles with gravel</p>	> 19 mm	39.4%	4 - 19 mm	44.1%	2 - 4 mm	6.9%	1 - 2 mm	4.0%	< 1mm	5.5%	Moist	Reddish brown 2.5YR 5/4	5.7	2370	Loosely cemented Predominantly HQB waste rock Some clays Fe-Mn rich Secondary minerals are common on coarse material (incl. jarosite)
> 19 mm	39.4%																		
4 - 19 mm	44.1%																		
2 - 4 mm	6.9%																		
1 - 2 mm	4.0%																		
< 1mm	5.5%																		
19.0 to 20.0 m		80%		<table> <tr><td>> 19 mm</td><td>41.2%</td></tr> <tr><td>4 - 19 mm</td><td>30.8%</td></tr> <tr><td>2 - 4 mm</td><td>11.4%</td></tr> <tr><td>1 - 2 mm</td><td>7.3%</td></tr> <tr><td>< 1mm</td><td>9.4%</td></tr> </table> <p>USCS: cobbles with gravel</p>	> 19 mm	41.2%	4 - 19 mm	30.8%	2 - 4 mm	11.4%	1 - 2 mm	7.3%	< 1mm	9.4%	Moist	Reddish brown 2.5YR 5/4	6	2100	Uncemented HQB Mostly large cobbles Some clasts of quartzite (>) Clay-rich material Very moist jarosite boulder present
> 19 mm	41.2%																		
4 - 19 mm	30.8%																		
2 - 4 mm	11.4%																		
1 - 2 mm	7.3%																		
< 1mm	9.4%																		
20.0 to 21.0 m		75%		<table> <tr><td>> 19 mm</td><td>31.4%</td></tr> <tr><td>4 - 19 mm</td><td>46.4%</td></tr> <tr><td>2 - 4 mm</td><td>10.1%</td></tr> <tr><td>1 - 2 mm</td><td>4.7%</td></tr> <tr><td>< 1mm</td><td>7.4%</td></tr> </table> <p>USCS: cobbles with gravel</p>	> 19 mm	31.4%	4 - 19 mm	46.4%	2 - 4 mm	10.1%	1 - 2 mm	4.7%	< 1mm	7.4%	Moist to wet	Weak red 10R 5/3	6.7	3550	Uncemented HQB Fiens are plastic - silty clay Very little fresh mineralization Seepage at 20.5 m Red-orange oxide staining at seepage level
> 19 mm	31.4%																		
4 - 19 mm	46.4%																		
2 - 4 mm	10.1%																		
1 - 2 mm	4.7%																		
< 1mm	7.4%																		
21.0 to 22.0 m		50%		<table> <tr><td>> 19 mm</td><td>35.9%</td></tr> <tr><td>4 - 19 mm</td><td>48.1%</td></tr> <tr><td>2 - 4 mm</td><td>7.8%</td></tr> <tr><td>1 - 2 mm</td><td>3.6%</td></tr> <tr><td>< 1mm</td><td>4.6%</td></tr> </table> <p>USCS: sandy gravel and cobble</p>	> 19 mm	35.9%	4 - 19 mm	48.1%	2 - 4 mm	7.8%	1 - 2 mm	3.6%	< 1mm	4.6%	Moist to wet	Brown 7.5YR 5/3	7	4210	Natural ground at 21.8 m Some red/orange oxide staining on gravel and cobbles Mixed with waste rock during sampling
> 19 mm	35.9%																		
4 - 19 mm	48.1%																		
2 - 4 mm	7.8%																		
1 - 2 mm	3.6%																		
< 1mm	4.6%																		
22.0 to 23.0 m		50%		<table> <tr><td>> 19 mm</td><td>26.4%</td></tr> <tr><td>4 - 19 mm</td><td>39.6%</td></tr> <tr><td>2 - 4 mm</td><td>12.4%</td></tr> <tr><td>1 - 2 mm</td><td>8.2%</td></tr> <tr><td>< 1mm</td><td>13.4%</td></tr> </table> <p>USCS: gravel & cobble with sand</p>	> 19 mm	26.4%	4 - 19 mm	39.6%	2 - 4 mm	12.4%	1 - 2 mm	8.2%	< 1mm	13.4%	Moist	Brown 7.5YR 5/3	6.6	2600	Natural ground with trace waste rock Burnt branches present Gravel and cobbles in stiff fine matrix Some red-brown oxidation mottled on fines and most rock appears lightly weathered/stained
> 19 mm	26.4%																		
4 - 19 mm	39.6%																		
2 - 4 mm	12.4%																		
1 - 2 mm	8.2%																		
< 1mm	13.4%																		

Table D10. Test Pit Log for TP6-P1

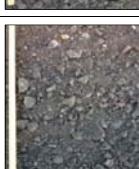
Depth (m bgs)	Plus 75 mm Size Fraction (Image) (%)	Minus 75 mm Size Fraction (Image) (%)	Moisture Content	Color Code	Rinse pH (-)	Rinse EC (uS/cm)	Comment	
0.00 to 0.75 m		 > 19 mm : - 4 - 19 mm : - 2 - 4 mm : - 1 - 2 mm : - < 1mm : - USCS: n/a		Dry	Dark reddish 2.5YR 3/4	-	-	Laterite cover Iron nodules present Similar to Main WRD cover
0.75 to 2.0 m		 > 19 mm : 34.3% 4 - 19 mm : 37.4% 2 - 4 mm : 14.0% 1 - 2 mm : 8.3% < 1mm : 6.0% USCS: sandy gravel		Moist	Black 7.5 YR 2.5/1	3.6	2,830	Highly altered shale (White's Formation) Clayey laterite consistency Fragments of black shale, some pieces very soft and easily broken Blue and red inside breaks Small veins of pyrite found
2.0 to 3.0 m		 > 19 mm : 43.8% 4 - 19 mm : 31.4% 2 - 4 mm : 12.0% 1 - 2 mm : 9.5% < 1mm : 3.3% USCS: sandy gravel		Moist	Black 7.5 YR 2.5/1	4.5	740	Altered shale as above Less clayey
3.0 to 4.0 m		 > 19 mm : 25.0% 4 - 19 mm : 38.1% 2 - 4 mm : 17.3% 1 - 2 mm : 13.6% < 1mm : 6.0% USCS: gravel with sand		Moist	Black 5 YR 2.5/1	6.7	542	More competent rock than above Not altered by moisture Few visible sulphides Some staining on coarse material but not extensive Burnt plant roots found
4.0 to 5.0 m		 > 19 mm : 31.8% 4 - 19 mm : 33.5% 2 - 4 mm : 14.4% 1 - 2 mm : 10.6% < 1mm : 9.7% USCS: cobble gravel wth sand		Moist	Black 7.5 YR 2.5/1	6.8	210	Altered shale Material seems quite fresh (like rock from intermediate WRD) Plastic - can form in fist easily
5.0 to 6.0 m		 > 19 mm : 34.4% 4 - 19 mm : 41.0% 2 - 4 mm : 10.7% 1 - 2 mm : 5.4% < 1mm : 8.6% USCS: sandy gravel		Moist	Very dark grey 7.5YR 3/1	6.6	1,580	Gravelly clay laterite texture Weathered shale fragments Very clayey - clods up to 550 mm Some "fresh"/lightly weathered cobbles Red staining throughout, some quartz, trace pale green surface alteration (serpentinite?)
6.0 to 7.0 m		 > 19 mm : 17.4% 4 - 19 mm : 36.6% 2 - 4 mm : 17.1% 1 - 2 mm : 12.7% < 1mm : 16.2% USCS: gravel with sand		Moist	Dark grey 5YR 4/1	6.9	938	As above Rock predominantly shale with slatey cleavage and weathered soft slick surface alteration
7.0 to 8.0 m		 > 19 mm : 27.3% 4 - 19 mm : 35.1% 2 - 4 mm : 14.9% 1 - 2 mm : 9.2% < 1mm : 13.4% USCS: gravel with sand		Moist	Dark grey 5YR 4/1	6.8	854	As above with increase in surface discoloration No visible sulphides Some yellow-orange oxide staining Generally dark grey matrix

Table D10. Test Pit Log for TP6-P1

Depth (m bgs)	Plus 75 mm Size Fraction (Image) (%)	Minus 75 mm Size Fraction (Image) (%)	Moisture Content	Color Code	Rinse pH (-)	Rinse EC (µS/cm)	Comment	
8.0 to 9.0 m		15%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1mm USCS: cobble & sandy gravel	48.0% 26.3% 11.5% 7.0% 7.3%	Moist Dark reddish grey 5YR 4/2	7.1 540	As above, more reddish Max. boulder size 450 mm Orange-red staining on most cobble and boulder surfaces Some light green and dark orange staining/alteration
9.0 to 10.0 m		40%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1mm USCS: sandy gravel with cobbles	35.1% 33.4% 13.8% 9.0% 8.6%	Moist Reddish brown 5YR 4/3	7.2 350	Gravelly clay matrix with 40% gravel Yellow-orange staining and pale chalky green alteration on few Less clayey than above
10.0 to 11.0 m		30%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1mm USCS: sandy gravel with cobbles	32.5% 32.9% 13.7% 10.0% 10.8%	Dry to moist Reddish brown 5YR 4/3	7.5 286	Uncemented gravelly/cobbly fines Walls sloughing in Purple rock with clay chunks (HQB - mottle blueish grey, white and purple) Blocky clavage
11.0 to 12.0 m		40%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1mm USCS: sandy gravel with cobbles	46.2% 27.1% 10.6% 8.0% 8.1%	Moist Reddish brown 5YR 4/3	7.7 260	As above Blocky weathered HQB Lots of pale green coloration on breaks and surfaces Hard and heavy Some oxide staining Few white pieces fizz with HCl
12.0 to 13.0 m		80%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1mm USCS: gravelly cobble	82.3% 13.0% 1.7% 1.0% 2.0%	Moist Reddish brown 5YR 4/3	7.5 400	Large number of boulders Increased sloughing As above with exception of quartz veins and blotches more evident Some secondary crystallization
13.0 to 14.0 m		70%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1mm USCS: gravelly cobble	40.1% 26.5% 9.7% 8.5% 15.2%	Moist Brown 7.5YR 4/3	6.8 262	As above until 13.5 m Change to fine to medium sand with gravel Large particles are HQB Evidence of discrete layering from 10 to 14 m dipping 32° south
14.0 to 15.0 m		40%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1mm USCS: gravel with cobbles	42.3% 28.6% 10.3% 7.7% 11.1%	Moist Strong brown 7.5YR 4/6	6.5 790	Strong organic odor Crumbly fines (cobble/gravelly silt) Mixed with highly stained quartz (degraded to crumbs) Boulders predominantly stained quartz Tree roots visible

Table D11. Test Pit Log for TP6-P2

Depth (m bgs)	Plus 75 mm Size Fraction (Image)	(%)	Minus 75 mm Size Fraction (Image)	(%)	Moisture Content	Color Code	Rinse pH (-)	Rinse EC (uS/cm)	Comment
0.00 to 0.65 m		-		> 19 mm - 4 - 19 mm - 2 - 4 mm - 1 - 2 mm - < 1mm - USCS: n/a	Dry to moist	Dark reddish brown 2.5YR 3/4	-	-	Laterite cover Top 0.4 m very dry Roots present 0.4 - 0.65 m well compacted
0.65 to 2.0 m		60%		> 19 mm 35.8% 4 - 19 mm 38.0% 2 - 4 mm 11.5% 1 - 2 mm 5.4% < 1mm 9.3% USCS: gravelly cobbles	Moist	Dark reddish brown 2.5YR 3/4	2.9	1,333	Highly altered uncemented White's Formation shale Mostly gravelly silt/clay Less cohesive than TP6-P1 Yellow staining (not seen in TP6-P1) Red/brown staining on cobbles/gravels Possibly mixed with dolomite or HQB
2.0 to 3.0 m		15%		> 19 mm 13.8% 4 - 19 mm 54.8% 2 - 4 mm 15.3% 1 - 2 mm 6.5% < 1mm 9.6% USCS: sandy & cobbley gravel	Moist	Red 2.5YR 4/6	3.3	845	Highly altered dolomite Appears similar to natural laterite in OTD Gravelly clay with rock fragments Possibly second cover lining
3.0 to 4.0 m		20%		> 19 mm 43.3% 4 - 19 mm 28.5% 2 - 4 mm 10.2% 1 - 2 mm 7.2% < 1mm 10.8% USCS: sandy & cobbley gravel	Moist	Dark reddish grey 2.5YR 3/1	3.7	1,093	Similar to TP6-P2-2 but all shale Red/orange oxide staining Weathered but less than interval above No fresh sulphides Some yellow staining
4.0 to 5.0 m		25%		> 19 mm 31.3% 4 - 19 mm 30.6% 2 - 4 mm 17.2% 1 - 2 mm 15.7% < 1mm 5.1% USCS: sandy & cobbley gravel	Moist	Reddish black 2.5YR 2.5/1	4.4	719	As above, yet more moisture Rock is slick/slippy (surface alteration) More clay fines in sub 75 mm fraction
5.0 to 6.0 m		40%		> 19 mm 25.8% 4 - 19 mm 36.5% 2 - 4 mm 16.5% 1 - 2 mm 12.5% < 1mm 8.6% USCS: sandy gravel with cobbles	Moist	Reddish black 2.5YR 2.5/1	6.2	708	As in TP6-P1-4 and TP6-P1-5 Clayey shale Dark bluish grey with red mottled oxide staining on cobbles and boulders No visible sulphides Coarser than previous sample
6.0 to 7.0 m		15%		> 19 mm 30.3% 4 - 19 mm 38.6% 2 - 4 mm 15.9% 1 - 2 mm 11.4% < 1mm 3.9% USCS: sandy & cobbley gravel	Moist	Black Gley 1 2.5/N	6.5	1,112	As above with orange/red oxide staining on some boulders and cobbles No fresh sulphides visible

Table D11. Test Pit Log for TP6-P2

Depth (m bgs)	Plus 75 mm Size Fraction		Minus 75 mm Size Fraction		Moisture Content	Color Code	Rinse pH (-)	Rinse EC (uS/cm)	Comment
	(Image)	(%)	(Image)	(%)					
7.0 to 8.0 m		25%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1mm USCS: sandy & cobbly gravel	40.1% 29.7% 12.8% 9.5% 7.8%	Moist to wet Very dark grey 5YR 3/1	7	988	Altered shale as above Clay surface coating on cobbles
8.0 to 9.0 m		70%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1mm USCS: gravelly cobbles	50.6% 27.7% 9.0% 6.3% 6.4%	Moist Black 5YR 2.5/1	5.5	1,199	Altered and stained White's Formation shale as above No fresh sulphides visible Dark blueish grey with red oxide staining (mottled)
9.0 to 10.0 m		50%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1mm USCS: gravel with cobbles	31.9% 42.0% 13.6% 7.5% 5.1%	Moist Dark reddish brown 5YR 2.5/2	6.4	1,214	Highly altered White's Formation Gravelly clay Red-brown and orange oxide staining Large boulder of HQB in corner of test pit

Table D2. Test Pit Log for TP1-P2

Depth (m bgs)	Plus 75 mm Size Fraction (Image) (%)	Minus 75 mm Size Fraction (Image) (%)	Moisture Content	Color Code	Rinse pH (-)	Rinse EC (uS/cm)	Comment										
0.7 to 2.0 m	 10%	 <table> <tr><td>> 19 mm</td><td>30.7%</td></tr> <tr><td>4 - 19 mm</td><td>36.3%</td></tr> <tr><td>2 - 4 mm</td><td>13.1%</td></tr> <tr><td>1 - 2 mm</td><td>11.6%</td></tr> <tr><td>< 1mm</td><td>8.4%</td></tr> </table> <p>USCS: sandy gravel</p>	> 19 mm	30.7%	4 - 19 mm	36.3%	2 - 4 mm	13.1%	1 - 2 mm	11.6%	< 1mm	8.4%	Dry	Dark greyish brown 10YR 4/2	7.5	75	Cemented waste rock Very homogeneous No visible sulphides Coarse grains mostly between 10 and 30 cm (0.0 - 0.7 m laterite cover)
> 19 mm	30.7%																
4 - 19 mm	36.3%																
2 - 4 mm	13.1%																
1 - 2 mm	11.6%																
< 1mm	8.4%																
2.0 to 3.0 m	 30%	 <table> <tr><td>> 19 mm</td><td>30.7%</td></tr> <tr><td>4 - 19 mm</td><td>40.4%</td></tr> <tr><td>2 - 4 mm</td><td>12.3%</td></tr> <tr><td>1 - 2 mm</td><td>9.6%</td></tr> <tr><td>< 1mm</td><td>7.0%</td></tr> </table> <p>USCS: sandy gravel with cobbles</p>	> 19 mm	30.7%	4 - 19 mm	40.4%	2 - 4 mm	12.3%	1 - 2 mm	9.6%	< 1mm	7.0%	Dry	Greyish brown 10YR 5/2	7.8	44	Cemented waste rock (slate) No visible sulphides
> 19 mm	30.7%																
4 - 19 mm	40.4%																
2 - 4 mm	12.3%																
1 - 2 mm	9.6%																
< 1mm	7.0%																
3.0 to 4.0 m	 30%	 <table> <tr><td>> 19 mm</td><td>35.4%</td></tr> <tr><td>4 - 19 mm</td><td>36.1%</td></tr> <tr><td>2 - 4 mm</td><td>10.1%</td></tr> <tr><td>1 - 2 mm</td><td>8.7%</td></tr> <tr><td>< 1mm</td><td>9.7%</td></tr> </table> <p>USCS: sandy gravel with cobbles</p>	> 19 mm	35.4%	4 - 19 mm	36.1%	2 - 4 mm	10.1%	1 - 2 mm	8.7%	< 1mm	9.7%	Dry	Dark reddish brown 5YR 4/2	7.8	54	Host rock No visible sulphides Cemented
> 19 mm	35.4%																
4 - 19 mm	36.1%																
2 - 4 mm	10.1%																
1 - 2 mm	8.7%																
< 1mm	9.7%																
4.0 to 5.0 m	 30%	 <table> <tr><td>> 19 mm</td><td>34.2%</td></tr> <tr><td>4 - 19 mm</td><td>40.9%</td></tr> <tr><td>2 - 4 mm</td><td>14.8%</td></tr> <tr><td>1 - 2 mm</td><td>8.0%</td></tr> <tr><td>< 1mm</td><td>2.1%</td></tr> </table> <p>USCS: sandy gravel with cobbles</p>	> 19 mm	34.2%	4 - 19 mm	40.9%	2 - 4 mm	14.8%	1 - 2 mm	8.0%	< 1mm	2.1%	Moist	Dark reddish brown 5YR 4/2	8.2	1187	Cemented Fines easily shaped in hand
> 19 mm	34.2%																
4 - 19 mm	40.9%																
2 - 4 mm	14.8%																
1 - 2 mm	8.0%																
< 1mm	2.1%																
5.0 to 6.0 m	 10%	 <table> <tr><td>> 19 mm</td><td>8.5%</td></tr> <tr><td>4 - 19 mm</td><td>41.7%</td></tr> <tr><td>2 - 4 mm</td><td>18.5%</td></tr> <tr><td>1 - 2 mm</td><td>13.2%</td></tr> <tr><td>< 1mm</td><td>18.1%</td></tr> </table> <p>USCS: gravel with sand</p>	> 19 mm	8.5%	4 - 19 mm	41.7%	2 - 4 mm	18.5%	1 - 2 mm	13.2%	< 1mm	18.1%	Moist	Dark reddish grey 2.5YR 4/1	6.6	562	Cemented High clay content
> 19 mm	8.5%																
4 - 19 mm	41.7%																
2 - 4 mm	18.5%																
1 - 2 mm	13.2%																
< 1mm	18.1%																
6.0 to 7.0 m	 10%	 <table> <tr><td>> 19 mm</td><td>31.8%</td></tr> <tr><td>4 - 19 mm</td><td>32.3%</td></tr> <tr><td>2 - 4 mm</td><td>12.9%</td></tr> <tr><td>1 - 2 mm</td><td>10.2%</td></tr> <tr><td>< 1mm</td><td>12.8%</td></tr> </table> <p>USCS: gravel with sand</p>	> 19 mm	31.8%	4 - 19 mm	32.3%	2 - 4 mm	12.9%	1 - 2 mm	10.2%	< 1mm	12.8%	Moist	Dark reddish grey 2.5YR 4/1	7.1	525	Shale Some visible sulphides (sphalerite) Cemented
> 19 mm	31.8%																
4 - 19 mm	32.3%																
2 - 4 mm	12.9%																
1 - 2 mm	10.2%																
< 1mm	12.8%																
7.0 to 8.0 m	 20%	 <table> <tr><td>> 19 mm</td><td>39.1%</td></tr> <tr><td>4 - 19 mm</td><td>28.3%</td></tr> <tr><td>2 - 4 mm</td><td>12.0%</td></tr> <tr><td>1 - 2 mm</td><td>9.1%</td></tr> <tr><td>< 1mm</td><td>11.4%</td></tr> </table> <p>USCS: cobble gravel with sand</p>	> 19 mm	39.1%	4 - 19 mm	28.3%	2 - 4 mm	12.0%	1 - 2 mm	9.1%	< 1mm	11.4%	Moist	Very dark greyish brown 2.5YR 3/2	6.2	1010	Shale (shiny lustre) Sphalerite Pyrite Some red clay with white spots Weathering (lateritic texture) Cemented
> 19 mm	39.1%																
4 - 19 mm	28.3%																
2 - 4 mm	12.0%																
1 - 2 mm	9.1%																
< 1mm	11.4%																

Table D2. Test Pit Log for TP1-P2

Depth (m bgs)	Plus 75 mm Size Fraction (Image) (%)	Minus 75 mm Size Fraction (Image) (%)	Moisture Content	Color Code	Rinse pH (-)	Rinse EC (μ S/cm)	Comment										
8.0 to 9.0 m	 20%	 <table> <tr><td>> 19 mm</td><td>44.7%</td></tr> <tr><td>4 - 19 mm</td><td>28.3%</td></tr> <tr><td>2 - 4 mm</td><td>9.4%</td></tr> <tr><td>1 - 2 mm</td><td>7.1%</td></tr> <tr><td>< 1mm</td><td>10.6%</td></tr> </table> <p>USCS: cobbley gravel with sand</p>	> 19 mm	44.7%	4 - 19 mm	28.3%	2 - 4 mm	9.4%	1 - 2 mm	7.1%	< 1mm	10.6%	Moist	Very dark greenish brown 2.5Y 3/2	4.8	1662	Sulphides present Staining along fractures Greenish hue throughout fines Cemented
> 19 mm	44.7%																
4 - 19 mm	28.3%																
2 - 4 mm	9.4%																
1 - 2 mm	7.1%																
< 1mm	10.6%																
9.0 to 10.0 m	 10%	 <table> <tr><td>> 19 mm</td><td>45.9%</td></tr> <tr><td>4 - 19 mm</td><td>29.4%</td></tr> <tr><td>2 - 4 mm</td><td>9.7%</td></tr> <tr><td>1 - 2 mm</td><td>7.1%</td></tr> <tr><td>< 1mm</td><td>7.9%</td></tr> </table> <p>USCS: sandy gravel</p>	> 19 mm	45.9%	4 - 19 mm	29.4%	2 - 4 mm	9.7%	1 - 2 mm	7.1%	< 1mm	7.9%	Moist	Dark grey 10YR 4/2	6.2	1454	Black shale High clay content Highly oxidized Stained (red crystals) Cemented
> 19 mm	45.9%																
4 - 19 mm	29.4%																
2 - 4 mm	9.7%																
1 - 2 mm	7.1%																
< 1mm	7.9%																

Table D3. Test Pit Log for TP2-P1

Depth (m bgs)	Plus 75 mm Size Fraction (Image) (%)	Minus 75 mm Size Fraction (Image) (%)	Moisture Content	Color Code	Rinse pH (-)	Rinse EC (uS/cm)	Comment
0.0 to 0.3 m		 > 19 mm : - 4 - 19 mm : - 2 - 4 mm : - 1 - 2 mm : - < 1mm : - USCS: n/a	Dry	Red 2.5YR 4/6	-	-	Loosely compacted Laterite cover material
0.3 to 1.0 m		 > 19 mm : 48.9% 4 - 19 mm : 21.3% 2 - 4 mm : 7.8% 1 - 2 mm : 8.0% < 1mm : 14.1% USCS: sandy gravel with cobbles	Dry	Dark greyish brown 2.5Y 4/2	3.3	1336	Cemented waste rock Predominantly slate Jarosite (stained, yellowish red) Some visible sulphides
1.0 to 2.0 m		 > 19 mm : 49.2% 4 - 19 mm : 24.4% 2 - 4 mm : 7.1% 1 - 2 mm : 10.5% < 1mm : 8.8% USCS: sandy cobbles with gravel	Dry	Dark olive grey 5Y 3/2	3.3	2990	Graphitic schist or slate Cemented
2.0 to 3.0 m		 > 19 mm : 29.0% 4 - 19 mm : 39.0% 2 - 4 mm : 20.0% 1 - 2 mm : 8.6% < 1mm : 3.4% USCS: sandy gravel with cobbles	Moist	Dark bluish grey 10B 4/1	3.5	760	Material above, wetter Plastic Some visible sulphides (disseminated) Cemented
3.0 to 4.0 m		 > 19 mm : 32.5% 4 - 19 mm : 31.0% 2 - 4 mm : 14.9% 1 - 2 mm : 14.3% < 1mm : 7.3% USCS: gravel with sand	Moist	Dark greenish grey 5GY 4/1	3.6	1245	Plastic fines Crystals of MgSO ₄ Jarosite staining Pyrite vein Cemented
4.0 to 5.0 m		 > 19 mm : 25.6% 4 - 19 mm : 35.2% 2 - 4 mm : 15.2% 1 - 2 mm : 17.6% < 1mm : 6.5% USCS: cobbley gravel with sand	Moist	Dark grey 7.5YR 4/1	3.8	861	+75 mm fraction is relatively fine grained Visible sulphides (pyrite) Cemented
5.0 to 6.0 m		 > 19 mm : 24.1% 4 - 19 mm : 39.3% 2 - 4 mm : 12.3% 1 - 2 mm : 9.6% < 1mm : 14.7% USCS: gravel with sand & cobbles	Moist	Grey 7.5YR 5/1	4	597	"Fresh" waste rock Minimal jarosite or other secondary minerals No staining Not cemented
6.0 to 7.0 m		 > 19 mm : 44.9% 4 - 19 mm : 29.0% 2 - 4 mm : 9.8% 1 - 2 mm : 7.3% < 1mm : 9.0% USCS: sandy gravel with cobbles	Moist	Grey 7.5YR 5/1	4.1	746	Shale (less cemented) Falls easily from sidewall Minimal sulphides

Table D3. Test Pit Log for TP2-P1

Depth (m bgs)	Plus 75 mm Size Fraction (Image) (%)	Minus 75 mm Size Fraction (Image) (%)	Moisture Content	Color Code	Rinse pH (-)	Rinse EC (uS/cm)	Comment	
7.0 to 8.0 m		15%	 > 19 mm: 23.4% 4 - 19 mm: 38.7% 2 - 4 mm: 13.7% 1 - 2 mm: 11.3% < 1mm: 12.9% USCS: cobbly gravel with sand	Moist	Grey 7.5YR 5/1	4	714	Shale (relatively loose) No visible sulphides Loosely cemented Plastic fines
8.0 to 9.0 m		20%	 > 19 mm: 32.5% 4 - 19 mm: 32.8% 2 - 4 mm: 13.4% 1 - 2 mm: 11.4% < 1mm: 9.9% USCS: sandy & cobbley gravel	Moist	Grey 7.5YR 5/1	4.3	450	Minimal signs of weathering No staining or secondary minerals Loosely cemented
9.0 to 10.0 m		30%	 > 19 mm: 21.8% 4 - 19 mm: 42.4% 2 - 4 mm: 15.2% 1 - 2 mm: 10.5% < 1mm: 10.1% USCS: gravel with sand & cobbles	Moist	Grey 7.5YR 5/1	4.7	430	No staining or sulphides "Fresh" waste rock Loosely cemented
10.0 to 11.0 m		40%	 > 19 mm: 35.3% 4 - 19 mm: 31.9% 2 - 4 mm: 11.8% 1 - 2 mm: 9.5% < 1mm: 11.5% USCS: sandy gravel with cobbles	Moist	Very dark grey 7.5YR 3/1	4.5	600	Fresh, clean waste rock Several large cobbles Uncemented
11.0 to 12.0 m		10%	 > 19 mm: 39.2% 4 - 19 mm: 39.9% 2 - 4 mm: 8.3% 1 - 2 mm: 4.2% < 1mm: 8.5% USCS: sandy & cobbley gravel	Moist	Pinkish grey 7.5YR 6/2	4.6	865	Gravelly clay Highly altered HQB predominating platy shale Waxy texture No fresh rock/sulphides evident Oxide staining throughout matrix and surfaces Clayey HQB layer could be impermeable layer keeping water from rising Uncemented
12.0 to 13.0 m		20%	 > 19 mm: 37.9% 4 - 19 mm: 37.2% 2 - 4 mm: 9.4% 1 - 2 mm: 5.9% < 1mm: 9.7% USCS: sandy & cobbley gravel	Moist	Light grey 7.5 YR 7/1	4	850	Highly altered shale (80%) and HQB (20%) High clay content Leaves waxy/oily residue on hands & crumbles to fines, holds shape when clumped Light green chalky mineralization No sulphides evident Oxide staining prevalent Layers dipping at 32 deg. SW
13.0 to 14.0 m		20%	 > 19 mm: 11.3% 4 - 19 mm: 43.7% 2 - 4 mm: 20.0% 1 - 2 mm: 14.0% < 1mm: 11.1% USCS: cobbly gravel with sand	Moist	Light grey 7.5 YR 7/1	4	582	Mix of weathered shale (90%) and HQB (10%) More degraded than previous layers Predominantly very soft waxy clumps of rock No sulphides evident Layers dipping at 32 deg. SW Clayey HQB layer could be impermeable layer Uncemented
14.0 to 15.0 m		50%	 > 19 mm: 31.7% 4 - 19 mm: 41.4% 2 - 4 mm: 11.8% 1 - 2 mm: 6.5% < 1mm: 8.6% USCS: sandy gravel with cobbles	Moist	Grey 7.5YR 5/1	4.5	744	More competent rock, less clay content Iron staining & red coloration Composed of 2 layers of altered shale (grey & brown) Least altered of previous intervals Layers dipping at 32 deg. SW Boulders/cobbles mostly fresher rock - 75mm fraction more gravelly/cobbley

Table D3. Test Pit Log for TP2-P1

Depth (m bgs)	Plus 75 mm Size Fraction (Image) (%)	Minus 75 mm Size Fraction (Image) (%)	Moisture Content	Color Code	Rinse pH (-)	Rinse EC (uS/cm)	Comment										
15.0 to 16.0 m	 50%	 <table> <tr><td>> 19 mm</td><td>54.4%</td></tr> <tr><td>4 - 19 mm</td><td>26.0%</td></tr> <tr><td>2 - 4 mm</td><td>7.5%</td></tr> <tr><td>1 - 2 mm</td><td>5.9%</td></tr> <tr><td>< 1mm</td><td>6.2%</td></tr> </table> <p>USCS: sandy gravel with cobbles</p>	> 19 mm	54.4%	4 - 19 mm	26.0%	2 - 4 mm	7.5%	1 - 2 mm	5.9%	< 1mm	6.2%	Moist	Grey 7.5YR 5/1	5	775	As above Uncemented with larger boulders than above Oxide staining and red coloration Some wood & railway pin found Rock crumbly
> 19 mm	54.4%																
4 - 19 mm	26.0%																
2 - 4 mm	7.5%																
1 - 2 mm	5.9%																
< 1mm	6.2%																
16.0 to 17.0 m	 40%	 <table> <tr><td>> 19 mm</td><td>40.9%</td></tr> <tr><td>4 - 19 mm</td><td>25.8%</td></tr> <tr><td>2 - 4 mm</td><td>10.3%</td></tr> <tr><td>1 - 2 mm</td><td>9.2%</td></tr> <tr><td>< 1mm</td><td>13.9%</td></tr> </table> <p>USCS: sandy gravel with cobbles</p>	> 19 mm	40.9%	4 - 19 mm	25.8%	2 - 4 mm	10.3%	1 - 2 mm	9.2%	< 1mm	13.9%	Moist	Grey 7.5YR 5/1	5.1	704	Iron oxide staining Blocky cleavage Soft shale Smooth and waxy/chalky Can clump fines, but more silty than clayey Some red & pale green coloration Some HQB present (heavy, oxide stained)
> 19 mm	40.9%																
4 - 19 mm	25.8%																
2 - 4 mm	10.3%																
1 - 2 mm	9.2%																
< 1mm	13.9%																
17.0 to 18.0 m	 60%	 <table> <tr><td>> 19 mm</td><td>45.0%</td></tr> <tr><td>4 - 19 mm</td><td>33.2%</td></tr> <tr><td>2 - 4 mm</td><td>8.4%</td></tr> <tr><td>1 - 2 mm</td><td>6.1%</td></tr> <tr><td>< 1mm</td><td>7.4%</td></tr> </table> <p>USCS: sandy cobbles with gravel</p>	> 19 mm	45.0%	4 - 19 mm	33.2%	2 - 4 mm	8.4%	1 - 2 mm	6.1%	< 1mm	7.4%	Moist	Light grey 7.5YR 7/2	6.9	721	Uncemented altered HQB and shale (blocky) Oxide staining Red/pale green mineralization Some secondary mineralization (Bornite?) HQB: dark purple with red/black mottling and clayey white veins Shale: dark lusterous grey, when cracked
> 19 mm	45.0%																
4 - 19 mm	33.2%																
2 - 4 mm	8.4%																
1 - 2 mm	6.1%																
< 1mm	7.4%																
18.0 to 19.0 m	 5%	 <table> <tr><td>> 19 mm</td><td>0.5%</td></tr> <tr><td>4 - 19 mm</td><td>30.9%</td></tr> <tr><td>2 - 4 mm</td><td>15.6%</td></tr> <tr><td>1 - 2 mm</td><td>9.5%</td></tr> <tr><td>< 1mm</td><td>43.5%</td></tr> </table> <p>USCS: sand with gravel</p>	> 19 mm	0.5%	4 - 19 mm	30.9%	2 - 4 mm	15.6%	1 - 2 mm	9.5%	< 1mm	43.5%	Moist	Very pale brown 7.5YR 7/4	4.3	470	Ground surface at 18.8 m Gravely fine to medium sand with tree roots Rounded grains Alluvial Uncemented
> 19 mm	0.5%																
4 - 19 mm	30.9%																
2 - 4 mm	15.6%																
1 - 2 mm	9.5%																
< 1mm	43.5%																
19.0 to 20.0 m	 0%	 <table> <tr><td>> 19 mm</td><td>5.2%</td></tr> <tr><td>4 - 19 mm</td><td>51.0%</td></tr> <tr><td>2 - 4 mm</td><td>18.6%</td></tr> <tr><td>1 - 2 mm</td><td>10.1%</td></tr> <tr><td>< 1mm</td><td>15.1%</td></tr> </table> <p>USCS: gravel with sand</p>	> 19 mm	5.2%	4 - 19 mm	51.0%	2 - 4 mm	18.6%	1 - 2 mm	10.1%	< 1mm	15.1%	Moist	Yellowish red 5YR 5/6	4.1	686	Clayey sand - laterite Few roots Uncemented
> 19 mm	5.2%																
4 - 19 mm	51.0%																
2 - 4 mm	18.6%																
1 - 2 mm	10.1%																
< 1mm	15.1%																

Table D4. Test Pit Log for TP2-P2

Depth (m bgs)	Plus 75 mm Size Fraction (Image) (%)	Minus 75 mm Size Fraction (Image) (%)	Moisture Content	Color Code	Rinse pH (-)	Rinse EC (µS/cm)	Comment
0.0 to 0.7 m		 > 19 mm - 4 - 19 mm - 2 - 4 mm - 1 - 2 mm - < 1mm - USCS:	Dry 2.5YR 4/6	Red 2.5YR 4/6	-	-	Loosely compacted, stiff Soil cover
0.7 to 2.0 m		 > 19 mm 22.6% 4 - 19 mm 35.1% 2 - 4 mm 14.7% 1 - 2 mm 15.7% < 1mm 11.9% USCS: sandy gravel	Dry	Dark greenish grey 10G 4/1	3	816	Shale waste rock Minor jarosite (stains) Matrix supported Cemented
2.0 to 3.0 m		 > 19 mm 60.9% 4 - 19 mm 20.0% 2 - 4 mm 6.6% 1 - 2 mm 6.3% < 1mm 6.2% USCS: sandy gravel with cobbles	Dry 5Y 4/2	Olive grey 5Y 4/2	3.2	636	Graphic shale waste rock No visible sulphides (barren host rock) Cemented
3.0 to 4.0 m		 > 19 mm 20.5% 4 - 19 mm 33.3% 2 - 4 mm 19.9% 1 - 2 mm 20.3% < 1mm 6.1% USCS: gravel with sand & cobbles	Moist 5Y 4/2	Olive grey 5Y 4/2	3.6	444	Shale waste rock Red iron oxide concretions Cemented
4.0 to 5.0 m		 > 19 mm 29.8% 4 - 19 mm 36.2% 2 - 4 mm 17.8% 1 - 2 mm 12.1% < 1mm 4.0% USCS: gravel with sand & cobbles	Moist	Dark olive grey 5Y 3/2	3.3	792	Cemented shale waste rock

Table D5. Test Pit Log for TP3-P1

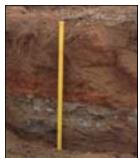
Depth (m bgs)	Plus 75 mm Size Fraction (Image) (%)	Minus 75 mm Size Fraction (Image) (%)	Moisture Content	Color Code	Rinse pH (-)	Rinse EC (μ S/cm)	Comment										
0.0 to 0.7 m		 <table> <tr><td>> 19 mm</td><td>-</td></tr> <tr><td>4 - 19 mm</td><td>-</td></tr> <tr><td>2 - 4 mm</td><td>-</td></tr> <tr><td>1 - 2 mm</td><td>-</td></tr> <tr><td>< 1mm</td><td>-</td></tr> </table> <p>USCS:</p>	> 19 mm	-	4 - 19 mm	-	2 - 4 mm	-	1 - 2 mm	-	< 1mm	-	Dry	Red 2.5YR 4/6	-	-	Loosely compacted Soil cover
> 19 mm	-																
4 - 19 mm	-																
2 - 4 mm	-																
1 - 2 mm	-																
< 1mm	-																
0.7 to 2.0 m	 40%	 <table> <tr><td>> 19 mm</td><td>46.9%</td></tr> <tr><td>4 - 19 mm</td><td>22.2%</td></tr> <tr><td>2 - 4 mm</td><td>7.6%</td></tr> <tr><td>1 - 2 mm</td><td>7.6%</td></tr> <tr><td>< 1mm</td><td>15.7%</td></tr> </table> <p>USCS: gravel with sand & cobbles</p>	> 19 mm	46.9%	4 - 19 mm	22.2%	2 - 4 mm	7.6%	1 - 2 mm	7.6%	< 1mm	15.7%	Dry	Very dark greyish brown 10YR 3/2	5.1	185	Hard cemented competent shale Very large boulder (+1m) Very blocky & difficult to excavate Visible sulphides (sphalerite, pyrite) along veins in shale
> 19 mm	46.9%																
4 - 19 mm	22.2%																
2 - 4 mm	7.6%																
1 - 2 mm	7.6%																
< 1mm	15.7%																
2.0 to 3.0 m	 60%	 <table> <tr><td>> 19 mm</td><td>27.9%</td></tr> <tr><td>4 - 19 mm</td><td>33.5%</td></tr> <tr><td>2 - 4 mm</td><td>13.6%</td></tr> <tr><td>1 - 2 mm</td><td>13.5%</td></tr> <tr><td>< 1mm</td><td>11.5%</td></tr> </table> <p>USCS: cobbles with sand & gravel</p>	> 19 mm	27.9%	4 - 19 mm	33.5%	2 - 4 mm	13.6%	1 - 2 mm	13.5%	< 1mm	11.5%	Dry	Very dark greyish brown 10YR 3/2	6.6	116	Cemented shale waste rock Many nodules (similar to tree knots - fossils?)
> 19 mm	27.9%																
4 - 19 mm	33.5%																
2 - 4 mm	13.6%																
1 - 2 mm	13.5%																
< 1mm	11.5%																
3.0 to 4.0 m	 50%	 <table> <tr><td>> 19 mm</td><td>38.5%</td></tr> <tr><td>4 - 19 mm</td><td>34.3%</td></tr> <tr><td>2 - 4 mm</td><td>11.7%</td></tr> <tr><td>1 - 2 mm</td><td>11.3%</td></tr> <tr><td>< 1mm</td><td>4.3%</td></tr> </table> <p>USCS: sandy gravel with cobbles</p>	> 19 mm	38.5%	4 - 19 mm	34.3%	2 - 4 mm	11.7%	1 - 2 mm	11.3%	< 1mm	4.3%	Moist	Very dark greyish brown 10YR 3/2	5.5	306	Cemented shale waste rock Hard, blocky material Visible sulphides Drier than TP1 and TP2 at this depth
> 19 mm	38.5%																
4 - 19 mm	34.3%																
2 - 4 mm	11.7%																
1 - 2 mm	11.3%																
< 1mm	4.3%																
4.0 to 5.0 m	 50%	 <table> <tr><td>> 19 mm</td><td>7.4%</td></tr> <tr><td>4 - 19 mm</td><td>39.9%</td></tr> <tr><td>2 - 4 mm</td><td>20.3%</td></tr> <tr><td>1 - 2 mm</td><td>25.2%</td></tr> <tr><td>< 1mm</td><td>7.2%</td></tr> </table> <p>USCS: sand with gravel & cobbles</p>	> 19 mm	7.4%	4 - 19 mm	39.9%	2 - 4 mm	20.3%	1 - 2 mm	25.2%	< 1mm	7.2%	Moist	Very dark grey 2.5Y 3/1	4.3	301	Cemented shale waste rock Some carbonaceous material (graphitic)
> 19 mm	7.4%																
4 - 19 mm	39.9%																
2 - 4 mm	20.3%																
1 - 2 mm	25.2%																
< 1mm	7.2%																

Table D6. Test Pit Log for TP3-P2

Depth (m bgs)	Plus 75 mm Size Fraction (Image)	(%)	Minus 75 mm Size Fraction (Image)	(%)	Moisture Content	Color Code	Rinse pH (-)	Rinse EC (uS/cm)	Comment
0.0 to 0.7 m		-		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1mm USCS:	- - - - - USCS:	Dry 2.5YR 4/6	-	-	Loosely compacted Soil cover
0.7 to 2.0 m		30%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1mm USCS: gravel with sand & cobbles	24.5% 31.7% 12.9% 15.6% 15.2% USCS: gravel with sand & cobbles	Dry 5Y 6/3	3.5	1,702	0.77 - 1.1 m beige material +1.1 m cemented shale waste rock Strong H ₂ S smell Large boulders (>1m) Very reacted rocks but no visible sulphides, highly oxidized, jarosite on surfaces
2.0 to 3.0 m		30%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1mm USCS: cobbles with sand & gravel	57.0% 19.8% 8.4% 7.5% 7.3% USCS: cobbles with sand & gravel	Dry Light olive grey 5Y 6/2	3.1	1,576	Boulders >150 cm Oxide stained Contain jarosite Cemented
3.0 to 4.0 m		70%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1mm USCS: sandy gravel with cobbles	41.4% 31.1% 11.6% 10.5% 5.4% USCS: sandy gravel with cobbles	Moist Light olive grey 5Y 6/2	3.2	2,020	Cemented shale Highly oxidized, some "fresher" shale Secondary precipitation FeSO ₄ , Myroederite? Myroederite?
4.0 to 5.0 m		60%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1mm USCS: sand with gravel & cobbles	38.1% 40.3% 16.7% 4.5% 0.5% USCS: sand with gravel & cobbles	Moist Olive grey 5Y 5/2	3.1	1,047	Cemented shale

Table D7. Test Pit Log for TP4-P1

Depth (m bgs)	Plus 75 mm Size Fraction (Image)	Minus 75 mm Size Fraction (Image)	Moisture Content	Color Code	Rinse pH	Rinse EC (uS/cm)	Comment	
0.00 to 0.45 m			> 19 mm - 4 - 19 mm - 2 - 4 mm - 1 - 2 mm - < 1mm - USCS: n/a	Dry 	Yellowish red 5YR 4/6	-	-	Loosely compacted Cobbly/rocky layer with vegetation
0.45 to 0.70 m			> 19 mm - 4 - 19 mm - 2 - 4 mm - 1 - 2 mm - < 1mm - USCS: n/a	Moist 	Dark reddish 2.5YR 3/4	-	-	Densely compacted laterite Silty clay Some gravel
0.7 to 2.0 m			> 19 mm 31.7% 4 - 19 mm 30.5% 2 - 4 mm 11.4% 1 - 2 mm 9.3% < 1mm 17.0% USCS: sandy cobble with gravel	Moist 	Black Gley 1	4 	2,940	Relatively fresh shale waste rock Limited 2° mineralization (dark red-brown) Some jarosite along fractures Very limited sulphides (sphalerite,pyrite) Predominantly shale dipping 30 deg W Uncemented **Material surfaces oxidized overnight - yellow staining**
2.0 to 3.0 m			> 19 mm 35.5% 4 - 19 mm 28.0% 2 - 4 mm 10.4% 1 - 2 mm 9.2% < 1mm 16.8% USCS: sandy cobble with gravel	Moist 	Black Gley 1	4.3 	921	As above No visible sulphides Uncemented Unoxidized
3.0 to 4.0 m			> 19 mm 25.2% 4 - 19 mm 33.3% 2 - 4 mm 11.5% 1 - 2 mm 10.6% < 1mm 19.4% USCS: sandy cobble with gravel	Moist 	Greenish black 10Y 2.5/1	3.9 	897	Carbonaceous shale Some mineralization (pyrite, chalcopyrite?) Uncemented
4.0 to 5.0 m			> 19 mm 45.5% 4 - 19 mm 19.2% 2 - 4 mm 8.4% 1 - 2 mm 8.6% < 1mm 18.3% USCS: sandy cobble with gravel	Moist 	Greenish black 10Y 2.5/1	3.9 	778	Relatively barren shale waste rock Characteristic White's Formation Very shiny lustre on exposed surfaces One large boulder (+60 cm)
5.0 to 6.0 m			> 19 mm 34.0% 4 - 19 mm 27.0% 2 - 4 mm 10.0% 1 - 2 mm 10.0% < 1mm 18.9% USCS: sandy cobble with gravel	Moist 	Dark olive grey 5Y 3/2	3.6 	2,320	Waste rock looks relatively fresh Few visible sulphides (pyrite, relatively coarse crystals along cleavage lines) Minor staining and jarosite Plastic fines Uncemented
6.0 to 7.0 m			> 19 mm 31.1% 4 - 19 mm 27.3% 2 - 4 mm 13.5% 1 - 2 mm 12.7% < 1mm 15.4% USCS: gravel with sand & cobbles	Moist 	Very dark grey Gley 1 3/N	4.1 	1,570	Fresh shale waste rock Uncemented No visible signs of oxidation but some coarse pyrite enclosed in cobbles

Table D7. Test Pit Log for TP4-P1

Depth (m bgs)	Plus 75 mm Size Fraction (Image)	Plus 75 mm Size Fraction (%)	Minus 75 mm Size Fraction (Image)	Minus 75 mm Size Fraction (%)	Moisture Content	Color Code	Rinse pH	Rinse EC (uS/cm)	Comment
7.0 to 8.0 m		40%		> 19 mm 37.8% 4 - 19 mm 30.0% 2 - 4 mm 12.4% 1 - 2 mm 8.0% < 1mm 11.9% USCS: sandy gravel with cobbles	Moist	Very dark grey Gley 1 3/N	4.2	1,330	Material moist throughout, no signs of pore water drainage Small veins of pyrite Uncemented
8.0 to 9.0 m		40%		> 19 mm 60.0% 4 - 19 mm 20.9% 2 - 4 mm 7.6% 1 - 2 mm 5.5% < 1mm 6.0% USCS: sandy gravel with cobbles	Moist	Very dark grey Gley 1 3/N	4	1,601	As above
9.0 to 10.0 m		40%		> 19 mm 32.8% 4 - 19 mm 34.8% 2 - 4 mm 13.0% 1 - 2 mm 8.8% < 1mm 10.6% USCS: sandy gravel with cobbles	Moist	Very dark grey Gley 1 3/N	3.9	1,779	As above
10.0 to 11.0 m		20%		> 19 mm 35.0% 4 - 19 mm 37.0% 2 - 4 mm 12.9% 1 - 2 mm 7.7% < 1mm 7.3% USCS: sandy & cobbley gravel	Moist	Very dark grey Gley 1 3/N	3.7	4,200	As above Trace staining Some visible pyrite Loosely cemented - unstable
11.0 to 12.0 m		15%		> 19 mm 35.4% 4 - 19 mm 34.9% 2 - 4 mm 11.2% 1 - 2 mm 9.8% < 1mm 8.6% USCS: sandy & cobbley gravel	Moist	Very dark grey Gley 1 3/N	3.8	4,640	As above Some pyrite on "fresh" surfaces
12.0 to 13.0 m		30%		> 19 mm 11.8% 4 - 19 mm 62.1% 2 - 4 mm 14.0% 1 - 2 mm 4.8% < 1mm 7.2% USCS: sandy & cobbley gravel	Moist to wet	Dark yellowish brown 10YR 3/4	3.8	1,613	Bottom of WRD at 12.5 m bgs Natural ground, grading from light brown & grey burnt soil to brown-red gravelly clay Roots and small branches Cohesive, stiff in situ, latentic coloration Alluvial sands and gravels Some white salt on blue-grey clay

Table D8. Test Pit Log for TP7-P1

Depth (m bgs)	Plus 75 mm Size Fraction (Image) (%)	Minus 75 mm Size Fraction (Image) (%)	Moisture Content	Color Code	Rinse pH (-)	Rinse EC (μ S/cm)	Comment	
0.0 to 0.55 m			> 19 mm - 4 - 19 mm - 2 - 4 mm - 1 - 2 mm - < 1 mm - USCS: n/a	Dry to moist 2.5YR 3/4	Dark reddish brown	-	-	Lateritic soil cover Gravely and silty clay Major root zone 0.0 to 0.1 m White stained lens (5 cm width) separating a moister & stiffer laterite layer Stiffer after 0.4 m
0.55 to 1.0 m			> 19 mm 33.9% 4 - 19 mm 30.0% 2 - 4 mm 9.8% 1 - 2 mm 11.1% < 1 mm 15.2% USCS: gravel with sand	Moist Very dark grey Gley 1 3/N	3	1,820	White's Formation shale waste rock Slaty cleavage Fresh appearance Graphitic "dust" on surfaces No odor Some visible pyrite (fresh) No visible alteration/oxidation Not cemented	
1.0 to 2.0 m			> 19 mm 58.2% 4 - 19 mm 13.2% 2 - 4 mm 7.3% 1 - 2 mm 7.3% < 1 mm 13.9% USCS: sandy gravel with cobbles	Moist Very dark grey Gley 1 3/N	3.3	1,121	As above Orange-red oxide staining on most surfaces Visible pyrite and chalcopyrite (fresh) Oxide staining in 200 mm layers at 2 m bgs Some schistose cleavage Dense insitu	
2.0 to 3.0 m			> 19 mm 24.5% 4 - 19 mm 30.6% 2 - 4 mm 11.4% 1 - 2 mm 13.7% < 1 mm 19.8% USCS: sandy gravel with cobbles	Moist Very dark grey Gley 1 3/N	3.5	1,095	As above but fresher Shiny surfaces on cobbles Minimal oxidation stains Fresh pyrite (surfaces and veinlets) Less graphitic "dust" on surfaces Very fresh Stiff/dense insitu	
3.0 to 4.0 m			> 19 mm 42.0% 4 - 19 mm 24.9% 2 - 4 mm 9.3% 1 - 2 mm 9.8% < 1 mm 14.1% USCS: sandy gravel with cobbles	Moist Very dark grey Gley 1 3/N	4.2	649	As above Shale is more dull than above Trace pyrite only Minor oxide staining on boulder surfaces Uncemented	
4.0 to 5.0 m			> 19 mm 46.0% 4 - 19 mm 23.2% 2 - 4 mm 8.2% 1 - 2 mm 7.4% < 1 mm 15.3% USCS: gravel with sand & cobbles	Moist Very dark grey Gley 1 3/N	5.2	474	As above No visible pyrite One boulder (300 mm)	
5.0 to 6.0 m			> 19 mm 32.9% 4 - 19 mm 27.4% 2 - 4 mm 12.8% 1 - 2 mm 14.6% < 1 mm 12.4% USCS: gravel with sand & cobbles	Dry to moist 7.5YR 3/1	Very dark grey 4.3	700	High graphitic shale Some red/yellow oxide staining Fine lamination & smooth graphitic coating (har & glass-like) Some pyrite crystals and secondary quartz Fairly homogenous Platy cleavage	
6.0 to 7.0 m			> 19 mm 42.7% 4 - 19 mm 26.2% 2 - 4 mm 8.9% 1 - 2 mm 8.8% < 1 mm 13.4% USCS: gravel with sand & cobbles	Moist Black Gley 1 2.5/N	4.1	1,138	As above but more red coloration along cleavage lines, more oxide staining Pyrite present Fines darker and feel oily	

Table D8. Test Pit Log for TP7-P1

Depth (m bgs)	Plus 75 mm Size Fraction (Image)	Plus 75 mm Size Fraction (%)	Minus 75 mm Size Fraction (Image)		Moisture Content	Color Code	Rinse pH	Rinse EC ($\mu\text{S}/\text{cm}$)	Comment
			(Image)	(%)			(-)		
7.0 to 8.0 m		40%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1 mm USCS: gravel with sand & cobbles	22.8% 35.0% 12.7% 12.5% 17.1%	Moist Gley 1 2.5/N	Black Solid black	4.6	1,198 Less oxidation Larger fraction increasing in size
8.0 to 9.0 m		40%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1 mm USCS: gravel with sand & cobbles	36.8% 28.1% 9.8% 12.1% 13.2%	Moist Gley 1 2.5/N	Black Solid black	3.5	3,190 Uncemented shale with platy cleavage More staining (red/yellow brown) than above Pyrite veins Arsenic pyrite veins and blotches Lustrous surfaces
9.0 to 10.0 m		40%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1 mm USCS: gravel with sand & cobbles	35.9% 29.3% 10.6% 9.9% 14.3%	Moist Very dark grey 10YR 3/1	Black Solid black	3.7	3,420 As above but much more reacted Pitted & dull surfaces as opposed to smooth Blocky cleavage, and some heavy grains Lots of oxide staining (red and yellow) Quartz present Some graphite present - sparkly Some pyrite present
10.0 to 11.0 m		10%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1 mm USCS: gravel with sand	18.2% 37.2% 15.1% 15.1% 14.5%	Moist Dark greenish Gley 1 3/10Y	Black Solid dark grey	3.1	10,920 Appears cemented, but still loose Oxidized with red/yellow staining Soft oily surfaces
11.0 to 12.0 m		30%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1 mm USCS: gravel with sand & cobbles	20.9% 39.7% 14.3% 13.5% 11.5%	Dry to moist Gley 1 4/N	Dark grey Solid dark grey	2.9	16,520 Less oily Some shale-like cleavage Some blocky with pitted surface texture Quartz present Little pyrite Oxide staining (orange)
12.0 to 13.0 m		20%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1 mm USCS: cobbley gravel with sand	15.8% 41.3% 15.1% 16.2% 11.6%	Dry to moist Gley 1 4/N	Dark grey Solid dark grey	2.9	16,480 Graphitic shale Blocky and platy cleavage Yellow and red staining Soft and pliable in areas More powdery than oily
13.0 to 14.0 m		20%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1 mm USCS: cobbley gravel with sand	37.4% 31.9% 11.5% 10.3% 8.9%	Moist Gley 1 4/N	Dark grey Solid dark grey	3.2	9,690 As above Some oily/graphic pieces Pyrite present
14.0 to 15.0 m		40%		> 19 mm 4 - 19 mm 2 - 4 mm 1 - 2 mm < 1 mm USCS: gravel with cobbles	22.8% 33.8% 14.7% 16.5% 12.3%	Moist Dark greenish Gley 1 3/10Y	Black Solid dark grey	3.2	4,540 Oxidized shale waste rock Jarosite and orange/red staining Pyrite present Between blocky and platy cleavage

Table D9. Test Pit Log for TP5-P1

Depth (m bgs)	Plus 75 mm Size Fraction (Image) (%)	Minus 75 mm Size Fraction (Image) (%)	Moisture Content	Color Code	Rinse pH (-)	Rinse EC (uS/cm)	Comment	
0.00 to 0.90 m			> 19 mm - 4 - 19 mm - 2 - 4 mm - 1 - 2 mm - < 1mm - USCS:	Dry 2.5YR 3/4	Dark reddish brown 2.5YR 3/4	-	-	Three layered cover 0.0-0.3m brown soil 0.3-0.6m gravelly soil 0.6-0.9m dense dark laterite found in OTD
0.9 to 2.0 m			> 19 mm 18.1% 4 - 19 mm 28.9% 2 - 4 mm 15.5% 1 - 2 mm 17.3% < 1mm 20.2% USCS: gravel with sand	Moist 7.5 YR 2.5/1	Black 7.5 YR 2.5/1	5.7	58	Uncemented altered shale Laminated cleavage present Minor staining No visible pyrite Little malachite (bright green) Relatively fresh waste rock (and barren) Some soft rock
2.0 to 3.0 m			> 19 mm 16.1% 4 - 19 mm 35.6% 2 - 4 mm 18.2% 1 - 2 mm 20.3% < 1mm 9.9% USCS: sandy gravel	Moist 7.5 YR 2.5/1	Black 7.5 YR 2.5/1	5.7	115	Shale - appears fresh Iridescent shean (oil slick) Some plasticity Some jarosite and minor oxide staining
3.0 to 4.0 m			> 19 mm 21.9% 4 - 19 mm 33.7% 2 - 4 mm 18.4% 1 - 2 mm 17.1% < 1mm 8.9% USCS: gravel with sand	Moist 5 YR 2.5/1	Black 5 YR 2.5/1	4.9	455	Altered shale to soft mush Very low competency Thin yellow veneer around light brown staining (jarosite "rim") No visible oxides Some brownish rock (minor)
4.0 to 5.0 m			> 19 mm 29.2% 4 - 19 mm 29.4% 2 - 4 mm 16.0% 1 - 2 mm 17.4% < 1mm 8.0% USCS: gravel with sand	Moist 7.5 YR 2.5/1	Black 7.5 YR 2.5/1	6	85	Same as above, fine-grained No visible sulphides Little to no oxidation
5.0 to 6.0 m			> 19 mm 28.6% 4 - 19 mm 32.3% 2 - 4 mm 15.3% 1 - 2 mm 11.4% < 1mm 12.4% USCS: cobble & sandy gravel	Moist Gley 1 2.5/N	Black Gley 1 2.5/N	5.6	206	As above More moist than previous
6.0 to 7.0 m			> 19 mm 41.3% 4 - 19 mm 27.0% 2 - 4 mm 13.1% 1 - 2 mm 10.7% < 1mm 7.8% USCS: cobble & sandy gravel	Moist Gley 1 2.5/N	Black Gley 1 2.5/N	5.7	305	As above

Table D9. Test Pit Log for TP5-P1

Depth (m bgs)	Plus 75 mm Size Fraction		Minus 75 mm Size Fraction		Moisture Content	Color Code	Rinse pH (-)	Rinse EC (uS/cm)	Comment										
	(Image)	(%)	(Image)	(%)															
7.0 to 8.0 m		10%		<table> <tr><td>> 19 mm</td><td>32.5%</td></tr> <tr><td>4 - 19 mm</td><td>36.6%</td></tr> <tr><td>2 - 4 mm</td><td>12.4%</td></tr> <tr><td>1 - 2 mm</td><td>9.3%</td></tr> <tr><td>< 1mm</td><td>9.2%</td></tr> </table> <p>USCS: sandy gravel</p>	> 19 mm	32.5%	4 - 19 mm	36.6%	2 - 4 mm	12.4%	1 - 2 mm	9.3%	< 1mm	9.2%	Moist	Black Gley 1 2.5/N	4.9	835	As above Very consistent appearance Minor pyrite
> 19 mm	32.5%																		
4 - 19 mm	36.6%																		
2 - 4 mm	12.4%																		
1 - 2 mm	9.3%																		
< 1mm	9.2%																		
8.0 to 9.0 m		10%		<table> <tr><td>> 19 mm</td><td>23.5%</td></tr> <tr><td>4 - 19 mm</td><td>34.5%</td></tr> <tr><td>2 - 4 mm</td><td>14.6%</td></tr> <tr><td>1 - 2 mm</td><td>11.9%</td></tr> <tr><td>< 1mm</td><td>15.6%</td></tr> </table> <p>USCS: sandy gravel</p>	> 19 mm	23.5%	4 - 19 mm	34.5%	2 - 4 mm	14.6%	1 - 2 mm	11.9%	< 1mm	15.6%	Moist	Black Gley 1 2.5/N	5.1	550	Same material above
> 19 mm	23.5%																		
4 - 19 mm	34.5%																		
2 - 4 mm	14.6%																		
1 - 2 mm	11.9%																		
< 1mm	15.6%																		
9.0 to 10.0 m		0%		<table> <tr><td>> 19 mm</td><td>-</td></tr> <tr><td>4 - 19 mm</td><td>-</td></tr> <tr><td>2 - 4 mm</td><td>-</td></tr> <tr><td>1 - 2 mm</td><td>-</td></tr> <tr><td>< 1mm</td><td>-</td></tr> </table> <p>USCS: sandy gravel</p>	> 19 mm	-	4 - 19 mm	-	2 - 4 mm	-	1 - 2 mm	-	< 1mm	-	Moist	Dark yellowish brown 10YR 4/6	4.2	830	Yellow clay Natural ground Boulder present - similar to nearby boulder field (Coomalic Dolomite?)
> 19 mm	-																		
4 - 19 mm	-																		
2 - 4 mm	-																		
1 - 2 mm	-																		
< 1mm	-																		

Appendix E

Rinse pH and EC Measurements (Grab Samples and By Size Fraction)

Table E1. Grab sample rinse measurements from TP1 in the Main WRD

Sample ID	Easting, m	Northing, m	Depth, m	Collection Date	Predominant Lithology	Colour (matrix)	Color Code	Rinse measurements	
								pH	EC, uS/cm
TP1 (primary profile)									
TP1-grab-1	718039	8562457	5	9-Oct-14	Shale	Very dark greyish	2.5Y 3/2	3.8	11,040
TP1-grab-2	718034	8562452	5	9-Oct-14	Shale	Very dark greyish	2.5Y 3/3	3.9	6,070
TP1-grab-3	718027	8562454	5	9-Oct-14	Shale	Very dark greyish	2.5Y 3/4	3.8	1,020
TP1-grab-4	718015	8562457	5	9-Oct-14	Shale	Dark greyish brown	2.5Y 4/2	4.5	532
TP1-grab-5	718006	8562449	5	9-Oct-14	Shale	Dark greyish brown	2.5Y 4/3	4.7	320
TP1-grab-6	718048	8562448	5	13-Oct-14	Shale	Greenish black	10Y 2/1	4.1	1,260
TP1-grab-7	718049	8562437	5	13-Oct-14	Shale	Very dark greyish brown	2.5Y3/2	4.3	294
TP1-grab-8	718052	8562427	5	13-Oct-14	Shale	Very dark greyish brown	2.5Y3/2	4.9	1,379
TP1-grab-9	718052	8562416	5	13-Oct-14	Shale	Dark olive grey	5Y 3/2	4.7	1,572
TP1-grab-10	718046	8562412	5	13-Oct-14	Shale	Very dark greyish brown	2.5Y 3/2	4.7	1,492
TP1-grab-11	718041	8562399	5	13-Oct-14	Shale	Very dark grey	2.5Y 3/1	4.1	928
TP1-grab-12	718032	8562403	5	13-Oct-14	Shale	Very dark greyish brown	10YR 3/2	5.7	2,310
TP1-grab-13	718022	8562406	5	13-Oct-14	Shale	Dark brown	7.5YR 3/2	4.8	515
TP1-grab-14	718010	8562405	5	13-Oct-14	Shale	Very dark grey	2.5Y 3/1	5.7	1,445
TP1-grab-15	718003	8562413	5	13-Oct-14	Shale	Very dark grey	2.5Y 3/1	5.9	2,520
TP1-grab-16	718006	8562424	5	13-Oct-14	Shale	Dark olive grey	5Y 3/2	4.8	1,601
TP1-grab-17	717997	8562437	5	13-Oct-14	Shale	Dark reddish brown	5YR 4/2	6.0	916
TP1-grab-18	718000	8562447	5	13-Oct-14	Shale	Brown	10YR 5/3	5.3	740
TP1-grab-19	-	-	-	13-Oct-14	Jarosite	Yellowish brown	10YR 5/6	5.0	175
TP1-grab-20	718033	8562415	10	20-Oct-14	Shale	Very dark greyish brown	2.5YR 3/2	4.4	2,130
TP1-grab-21	718019	8562417	10	20-Oct-14	Shale	Red	2.5YR 4/6	4.8	1,673
TP1-grab-22	718013	8562423	10	20-Oct-14	Shale	Dark olive brown	2.5YR 3/3	4.9	2,080
TP1-grab-23	718007	8562432	10	20-Oct-14	Shale	Reddish brown	2.5YR 4/3	6.8	2,500
TP1-grab-24	718008	8562440	10	20-Oct-14	Shale	Reddish brown	2.5YR 4/3	6.3	4,750
TP1-grab-25	718008	8562451	10	20-Oct-14	Shale	Weak red	2.5YR 5/2	6.9	656
TP1-grab-26	718012	8562459	10	20-Oct-14	Shale	Light olive brown	2.5Y 5/3	4.3	1,253
TP1-grab-27	718020	8562467	10	20-Oct-14	Shale	Greyish brown	10YR 5/2	5	1,872
TP1-grab-28	718027	8562461	10	20-Oct-14	Shale	Brown	10YR 5/3	5.8	897
TP1-grab-29	718031	8562450	10	20-Oct-14	Shale	Reddish brown	2.5YR 4/4	4.2	6,330
TP1-grab-30	718042	8562448	10	20-Oct-14	Shale	Reddish brown	5Y 4/3	4.4	3,290
TP1-grab-31	718045	8562439	10	20-Oct-14	Shale	Dark reddish brown	5YR 3/4	4.7	1,148
TP1-grab-32	718046	8562436	10	20-Oct-14	Shale	Reddish brown	2.5YR 5/3	3.9	826
TP1-grab-33	718027	8562435	15	22-Oct-14	Shale	Reddish brown	2.5YR 4/3	6.5	4,800
TP1-grab-34	718027	8562431	15	22-Oct-14	jarosite	Light brown	7.5YR 6/3	3.9	2,410
TP1-grab-35	718022	8562429	15	22-Oct-14	Shale	Reddish brown	2.5YR 5/3	5	1,761
TP1-grab-36	718025	8562434	15	22-Oct-14	Shale	Reddish brown	2.5YR 5/3	6.7	4,200
TP1-grab-37	718021	8562425	18	23-Oct-14	Shale	Reddish brown	5YR 4/3	6.5	3,710
TP1-grab-38	718019	8562429	18	23-Oct-14	Shale	Reddish brown	5YR 5/3	7	3,710
TP1-grab-39	718031	8562429	18	23-Oct-14	HQB	Weak red	5R 4/3	7.2	1,880
TP1-grab-40	718022	8562420	18	23-Oct-14	Shale	Reddish brown	5YR 4/3	4.3	4,230

Table E2. Grab sample rinse measurements from TP4 and TP7 in the Intermediate WRD

Sample ID	Easting, m	Northing, m	Depth, m	Collection Date	Predominant Lithology	Colour (matrix)	Color Code	Rinse measurements	
								pH	EC, uS/cm
TP4 (primary profile)									
TP4-grab-1	717376	8562798	10	23-Oct-14	Shale	Black	GLEY1 2.5/N	3.5	3,360
TP4-grab-2	717380	8562800	10	23-Oct-14	Shale	Greenish black	GLEY1 5GY 2.5/1	3.6	2,650
TP4-grab-3	717382	8562789	10	23-Oct-14	Shale	Very dark greenish grey	GLEY1 10Y 3/1	3.5	1,004
TP4-grab-4	717370	8562796	10	23-Oct-14	Shale	Greenish black	GLEY1 10Y 2.5/1	3.4	1,690
TP4-grab-5	717360	8562799	10	23-Oct-14	Shale	Greenish black	GLEY1 10Y 2.5/1	3.5	1,310
TP4-grab-6	717382	8562799	10	23-Oct-14	Shale	Very dark greenish grey	GLEY1 10Y 3/1	3.4	1,750
TP4-grab-7	717382	8562802	10	23-Oct-14	Shale	Black	GLEY1 2.5/N	3.5	1,645
TP4-grab-8	717388	8562806	10	23-Oct-14	Shale	Black	GLEY1 2.5/N	3.4	1,775
TP7 (primary profile)									
TP7-grab-1	717349	8562766	10	29-Oct-14	Shale	Greenish black	GLEY1 10Y 2.5/1	3.6	1,780
TP7-grab-2	717345	8562763	10	29-Oct-14	Shale	Black	GLEY1 2.5/N	3.6	1,396
TP7-grab-3	717334	8562775	10	29-Oct-14	Shale	Black	GLEY1 2.5/N	3.7	640
TP7-grab-4	717330	8562770	10	29-Oct-14	Shale	Black	GLEY1 2.5/N	3.6	1,001
TP7-grab-5	717339	8562769	10	29-Oct-14	Shale	Very dark grey	GLEY1 3/N	4.2	909
TP7-grab-6	717340	8562762	10	29-Oct-14	Shale	Very dark grey	GLEY1 3/N	4	1,034
TP7-grab-7	717331	8562773	10	29-Oct-14	Shale	Dark brown	7.5YR 3/2	3.7	1,421
TP7-grab-8	717336	8562772	10	29-Oct-14	Shale	Dark brown	7.5YR 3/2	3.8	5,310

Table E3. Grab sample rinse measurements from TP6 in Dyson's WRD

Sample ID	Easting, m	Northing, m	Depth, m	Collection Date	Predominant Lithology	Colour (matrix)	Color Code	Rinse measurements	
								pH	EC, uS/cm
TP6 (primary profile)									
TP6-grab-1	719319	8563534	5	24-Oct-14	Shale	Dark grey	5Y 4/1	2.9	1,040
TP6-grab-2	719324	8563532	5	24-Oct-14	Shale	Very dark grey	5YR 3/1	3.3	903
TP6-grab-3	719325	8563525	5	24-Oct-14	?	Reddish brown	5YR 4/3	4	854
TP6-grab-4	719325	8563515	5	24-Oct-14	Shale	Reddish brown	5YR 5/4	3.9	615
TP6-grab-5	719340	8563516	5	24-Oct-14	Shale	Reddish brown	5YR 5/4	5.6	185
TP6-grab-6	719338	8563522	5	24-Oct-14	Shale	Reddish brown	5YR 4/3	3.7	264
TP6-grab-7	719338	8563522	5	24-Oct-14	Shale	Dark grey	GLEY1 4/N	3.9	331
TP6-grab-8	719335	8563531	5	24-Oct-14	Shale	Very dark grey	GLEY1 3/N	3.6	1,462
TP6-grab-9	719338	8563538	5	24-Oct-14	Shale	Very dark grey	GLEY1 3/N	3.7	1,531
TP6-grab-10	719324	8563525	10	25-Oct-14	Shale	Dark reddish grey	2.5YR 3/1	4.7	817
TP6-grab-11	719326	8563520	10	25-Oct-14	Shale	Dark reddish grey	2.5YR 3/1	5.5	796
TP6-grab-12	719335	8563522	10	25-Oct-14	Shale	Dark reddish grey	2.5YR 3/1	4.1	1,475
TP6-grab-13	719335	8563513	10	25-Oct-14	Shale	Black	GLEY1 2.5/N	5.7	793
TP6-grab-14	719326	8563506	10	25-Oct-14	Shale	Dusky red	2.5YR 3/2	5.7	1,056

Table E4. Grab sample rinse measurements from TP2 in the Main WRD

Sample ID	Easting, m	Northing, m	Depth, m	Collection Date	Predominant Lithology	Colour (matrix)	Color Code	Rinse measurements	
								pH	EC, $\mu\text{S}/\text{cm}$
TP2 (primary profile)									
TP2-grab-1	717941	8562695	5	25-Oct-14	Shale	Greyish brown	2.5Y 5/2	5.4	1,180
TP2-grab-2	717938	8562685	5	25-Oct-14	Shale	Reddish brown	2.5YR 5/3	4	1,075
TP2-grab-3	717931	8562683	5	25-Oct-14	Shale	Dark greyish brown	2.5Y 4/2	3.9	1,654
TP2-grab-4	717931	8562680	5	25-Oct-14	Shale	Very dark greyish brown	2.5Y 3/2	3.7	1,868
TP2-grab-5	717923	8562679	5	25-Oct-14	Shale	Greyish brown	2.5Y 5/2	3.7	2,320
TP2-grab-6	717923	8562671	5	25-Oct-14	Shale	Reddish brown	5YR 4/4	4	1,767
TP2-grab-7	717910	8562674	5	25-Oct-14	Shale	Greyish olive	10Y-5GY 5/2	3.4	947
TP2-grab-8	717922	8562669	10	25-Oct-14	Shale	Greyish brown	10YR 5/2	6.8	787
TP2-grab-9	717917	8562668	10	25-Oct-14	Shale	Dark grey	2.5Y 4/1	4.5	1,142
TP2-grab-10	717920	8562663	10	25-Oct-14	Shale	Weak red	2.5YR 4/2	4.4	891
TP2-grab-11	717923	8562656	10	25-Oct-14	Shale	Greyish brown	10YR 5/2	5.8	1,260
TP2-grab-12	717926	8562650	10	25-Oct-14	Shale	Dark grey	10YR 4/1	5.6	1,309
TP2-grab-13	717929	8562647	10	25-Oct-14	Shale	Reddish brown	2.5YR 4/4	7.7	681
TP2-grab-14	717922	8562647	15	27-Oct-14	Shale	Pinkish grey	7.5YR 6/2	6.6	1,005
TP2-grab-15	717926	8562662	15	27-Oct-14	Shale	Pinkish grey	7.5YR 6/2	7.4	1,206
TP2-grab-16	717917	8562659	15	27-Oct-14	Shale	Grey	7.5YR 5/1	4.2	632
TP2-grab-17	717913	8562672	15	27-Oct-14	Shale	Grey	2.5Y 5/1	4.4	473
TP2-grab-18	717919	8562673	15	27-Oct-14	Shale	Light brownish grey	2.5Y 6/2	6.9	533
TP2-grab-19	717923	8562669	15	27-Oct-14	Shale	Grey	2.5Y 5/1	5.5	425
TP2-grab-20	717931	8562663	15	27-Oct-14	Shale	Light brownish grey	2.5Y 6/2	4.7	439
TP2-grab-21	717938	8562657	15	27-Oct-14	Shale	Light yellowish brown	2.5Y 6/3	7.1	303

Table E5. Rinse pH and EC Measurements for Different Size Fractions, Main WRD

	+19 mm	4 to 19 mm	2 to 4 mm	1 to 2 mm	- 1 mm
<i>Main WRD</i>					
TP1-P1-4					
Rinse pH (initial)	4.8	5.2	5.1		5.1
Rinse pH (after 60 mins)	4.8	5.5	5.5		5.5
Rinse pH (after 120 mins)	-	-	-		5.5
Rinse EC (initial)	172	270	482		876
Rinse EC (after 60 mins)	326	528	768		1,440
Rinse EC (after 120 mins)	-	-	-		1,945
TP1-P1-12					
Rinse pH (after 60 mins)	4.8	4.7	4.6	4.6	4.5
Rinse EC (after 60 mins)	112	330	634	945	1,208
TP1-P1-19					
Rinse pH (after 60 mins)	5.4	6	5.9	5.8	5.7
Rinse EC (after 60 mins)	190	500	1,130	1,460	2,160
TP1-P1-21					
Rinse pH (after 60 mins)	7	6.9	6.9	6.9	6.9
Rinse EC (after 60 mins)	857	1,490	2,660	2,860	3,050
TP2-P1-4					
Rinse pH (after 60 mins)	4.5	3.7	3.6	3.7	3.7
Rinse EC (after 60 mins)	386	570	935	1,236	1,489
TP3-P2-5					
Rinse pH (after 60 mins)	3.6	3.3	3.3	3.7	3.1
Rinse EC (after 60 mins)	309	755	1,040	1,236	1,047
TP2-P1-10					
Rinse pH (after 60 mins)	5	4.9	4.9	4.8	4.7
Rinse EC (after 60 mins)	77	140	305	336	540
TP2-P1-14					
Rinse pH (after 60 mins)	4.4	4.2	4	4	3.9
Rinse EC (after 60 mins)	45	317	480	526	654

Table E6. Rinse pH and EC Measurements for Different Size Fractions, Intermediate/Dyson's WRD

	+19 mm	4 to 19 mm	2 to 4 mm	1 to 2 mm	- 1 mm
<i>Intermediate WRD</i>					
TP4-P1-4					
Rinse pH (after 60 mins)	4.4	4.2	4.1	3.9	3.9
Rinse EC (after 60 mins)	78	266	573	747	1,010
TP5-P1-5					
Rinse pH (after 60 mins)	5.7	6	5.9	5.9	5.9
Rinse EC (after 60 mins)	41	30	53	73	112
TP4-P1-8					
Rinse pH (after 60 mins)	4.8	4.5	4.4	4.2	4.2
Rinse EC (after 60 mins)	209	435	974	1,195	1,616
TP7-P1-8					
Rinse pH (after 60 mins)	4.9	5.2	4.7	4.7	4.6
Rinse EC (after 60 mins)	91	273	643	875	1,421
TP7-P1-2					
Rinse pH (after 60 mins)	4.3	3.6	3.5	3.4	3.4
Rinse EC (after 60 mins)	96	442	694	839	1,172
<i>Dyson's WRD</i>					
TP6-P1-4					
Rinse pH (after 60 mins)	5.5	6.3	6.5	6.6	6.5
Rinse EC (after 60 mins)	80	190	318	529	706
TP6-P1-10					
Rinse pH (after 60 mins)	7.6	7.3	7.2	7.2	7.2
Rinse EC (after 60 mins)	85	112	248	290	480
TP6-P1-12					
Rinse pH (after 60 mins)	7.5	7.4	7.5	7.7	7.8
Rinse EC (after 60 mins)	25	79	175	215	308

Appendix F
Sulphur Measurement and ABA Parameters

Table F1. Sulphur Measurements and ABA Results for TP1, Main WRD

Sample ID	Depth, m	Rinse pH	Rinse EC, $\mu\text{S}/\text{cm}$	$S_{\text{total}} (\text{Leco})$, %	$S_{\text{total}} (\text{aqua regia})$, %	$S_{\text{jar} + \text{SO}_4}$, %	S_{SO_4} , %	S_{Jar} , %	S_{sulphide} , %	MPA, kg $\text{H}_2\text{SO}_4/\text{t}$	AP, kg $\text{H}_2\text{SO}_4/\text{t}$	% CaCO_3	ANC, kg $\text{H}_2\text{SO}_4/\text{t}$	NAPP, kg $\text{H}_2\text{SO}_4/\text{t}$	ANC/AP	Class
Method Code:				ED042T	ME-ICP41	S-GRA06	ED040S	Calc.	Calc.	Calc.	Calc.	EA013	Calc.	Calc.		
TP1 (primary profile)																
TP1-P1-2	1 to 2	6.6	2,320	2.5	2.2	0.3	0.2	0.0	2.2	75.3	67.3	11.4	111.0	-43.7	1.6	PAF-III
TP1-P1-3	2 to 3	5.5	1,440	2.3	2.1	0.7	0.4	0.3	1.6	69.5	48.3	7.7	75.9	-27.6	1.6	PAF-III
TP1-P1-4	3 to 4	5.8	2,420	1.2	1.4	0.4	0.2	0.2	0.8	36.1	23.0	2.0	20.0	3.0	0.9	PAF-II
TP1-P1-5	4 to 5	5.2	1,187	0.8	0.8	0.1	0.1	0.0	0.7	24.2	20.5	2.0	20.2	0.3	1.0	PAF-II
TP1-P1-6	5 to 6	4.8	1,061	0.5	0.5	0.2	0.1	0.1	0.3	15.6	9.2	0.2	2.3	6.9	0.3	PAF-II
TP1-P1-7	6 to 7	5.1	2,050	0.9	1.0	0.4	0.2	0.2	0.5	26.3	14.1	2.0	19.4	-5.3	1.4	PAF-III
TP1-P1-8	7 to 8	5.1	1,953	0.8	0.9	0.3	0.2	0.1	0.5	24.2	14.1	1.9	18.5	-4.4	1.3	PAF-III
TP1-P1-9	8 to 9	5.0	1,622	0.8	0.8	0.3	0.2	0.1	0.5	23.9	14.4	1.7	16.8	-2.4	1.2	PAF-III
TP1-P1-10	9 to 10	4.7	1,812	1.0	1.2	0.4	0.2	0.2	0.6	30.9	17.7	1.6	15.9	1.8	0.9	PAF-II
TP1-P1-11	10 to 11	5.4	1,240	1.5	1.5	0.3	0.1	0.2	1.2	44.7	35.5	1.4	13.9	21.6	0.4	PAF-II
TP1-P1-12	11 to 12	4.6	1,048	1.4	1.4	0.6	0.0	0.6	0.7	42.2	22.6	0.6	6.3	16.3	0.3	PAF-II
TP1-P1-13	12 to 13	4.8	1,020	1.9	1.8	0.4	0.1	0.3	1.5	56.9	46.2	1.0	10.4	35.8	0.2	PAF-I
TP1-P1-14	13 to 14	5.8	1,074	3.0	2.7	0.7	0.0	0.7	2.3	92.7	70.4	0.8	7.6	62.8	0.1	PAF-I
TP1-P1-15	14 to 15	4.6	1,196	1.8	1.8	0.6	0.1	0.5	1.2	55.1	36.7	0.8	8.4	28.3	0.2	PAF-II
TP1-P1-16	15 to 16	4.4	2,320	1.7	1.8	0.3	0.1	0.2	1.5	52.3	44.4	1.2	11.5	32.9	0.3	PAF-II
TP1-P1-17	16 to 17	4.3	1,970	2.7	2.4	0.2	0.1	0.2	2.4	81.4	74.1	0.6	6.4	67.7	0.1	PAF-I
TP1-P1-18	17 to 18	4.4	2,120	2.1	1.9	0.3	0.1	0.2	1.8	64.6	55.4	1.1	11.0	44.4	0.2	PAF-I
TP1-P1-19	18 to 19	5.7	2,370	0.4	0.4	0.1	0.1	0.0	0.2	10.7	6.7	2.2	21.6	-14.9	3.2	NAF
TP1-P1-19 (grab)	18 to 19	5.0	175	0.5	0.5	0.1	0.1	0.0	0.3	14.1	9.7	0.9	8.5	1.2	0.9	PAF-III
TP1-P1-20	19 to 20	6.0	2,100	0.2	0.2	0.1	0.1	0.0	0.1	5.5	2.8	2.8	27.7	-24.9	10.1	NAF
TP1-P1-21	20 to 21	6.7	3,550	0.2	0.2	0.2	0.1	0.0	0.1	6.4	1.8	2.4	24.1	-22.3	13.1	NAF
TP1-P1-22	21 to 22	7.0	4,210	0.3	0.2	0.1	0.0	0.1	0.1	8.3	4.0	3.3	32.2	-28.2	8.1	PAF-III
TP1-P1-23	22 to 23	6.6	2,600	0.2	0.4	0.2	0.2	0.0	0.0	6.1	0.3	3.1	30.5	-30.2	99.7	NAF
TP1 Secondary Profile																
TP1-P2-2	1 to 2	7.5	75	0.0	-	0.0	0.0	0.0	0.0	0.9	0.6	2.1	20.3	-19.7	33.2	NAF
TP1-P2-3	2 to 3	7.8	44	0.0	-	0.0	0.0	0.0	0.0	0.9	0.3	2.6	25.2	-24.9	82.4	NAF
TP1-P2-4	3 to 4	7.8	54	0.0	-	0.0	0.0	0.0	0.0	0.6	0.3	2.0	19.8	-19.5	64.7	NAF
TP1-P2-5	4 to 5	8.2	1,187	0.0	-	0.0	0.0	0.0	0.0	0.6	0.3	2.4	23.7	-23.4	77.5	NAF
TP1-P2-6	5 to 6	6.6	562	0.7	-	0.0	0.0	0.0	0.6	19.9	19.0	2.2	22.1	-3.1	1.2	PAF-III
TP1-P2-7	6 to 7	7.1	525	0.9	-	0.1	0.0	0.0	0.9	27.5	26.0	2.9	28.7	-2.7	1.1	PAF-III
TP1-P2-8	7 to 8	6.2	1,010	1.5	-	0.1	0.1	0.1	1.4	47.1	42.8	1.6	16.0	26.8	0.4	PAF-II
TP1-P2-9	8 to 9	4.8	1,662	2.1	-	0.2	0.1	0.1	1.9	62.7	56.6	1.5	14.4	42.2	0.3	PAF-I
TP1-P2-10	9 to 10	6.2	1,454	0.8	-	0.2	0.1	0.1	0.6	23.3	18.7	2.0	20.2	-1.5	1.1	PAF-III

Notes:

MPA = Maximum Potential Acidity

AP = Acid Generating Potential

ANC = Acid Neutralization Capacity

NAPP = AP - ANC

Table F2. Sulphur Measurements and ABA Results for TP2, Main WRD

Sample ID	Depth, m	Rinse pH	Rinse EC, $\mu\text{S}/\text{cm}$	$S_{\text{total}} (\text{Leco})$, %	$S_{\text{total}} (\text{aqua regia})$, %	$S_{\text{jar} + S_{\text{SO}_4}}$, %	S_{SO_4} , %	S_{Jar} , %	S_{sulphide} , %	MPA, kg $\text{H}_2\text{SO}_4/\text{t}$	AP, kg $\text{H}_2\text{SO}_4/\text{t}$	% CaCO_3	ANC, kg $\text{H}_2\text{SO}_4/\text{t}$	NAPP, kg $\text{H}_2\text{SO}_4/\text{t}$	ANC/AP	Class
Method Code:				ED042T	ME-ICP41	S-GRA06	ED040S	Calc.	Calc.	Calc.	Calc.	EA013	Calc.	Calc.		
TP2 (primary profile)																
TP2-P1-1	0 to 1	3.3	1,336	1.0	1.2	0.6	0.1	0.5	0.4	31.2	12.9	0.1	0.5	12.4	0.0	PAF-II
TP2-P1-2	1 to 2	3.3	2,990	2.1	2.0	0.9	0.3	0.7	1.2	65.2	37.0	0.1	0.5	36.5	0.0	PAF-II
TP2-P1-3	2 to 3	3.5	760	6.8	6.7	0.4	0.1	0.3	6.5	208.4	197.7	0.1	0.5	197.2	0.0	PAF-I
TP2-P1-4	3 to 4	3.6	1,245	4.4	3.9	0.5	0.1	0.4	3.9	133.7	118.4	0.1	0.5	117.9	0.0	PAF-I
TP2-P1-5	4 to 5	3.8	861	1.4	1.4	0.2	0.0	0.1	1.2	43.1	37.3	0.1	0.5	36.8	0.0	PAF-II
TP2-P1-6	5 to 6	4.0	597	0.5	0.4	0.0	0.0	0.0	0.5	14.4	14.1	0.8	7.9	6.2	0.6	PAF-II
TP2-P1-7	6 to 7	4.1	746	1.2	1.3	0.0	0.0	0.0	1.1	35.2	34.6	0.4	3.8	30.8	0.1	PAF-II
TP2-P1-8	7 to 8	4.0	714	1.4	1.5	0.0	0.0	0.0	1.4	42.5	42.2	0.2	2.1	40.1	0.0	PAF-II
TP2-P1-9	8 to 9	4.3	450	0.1	0.1	0.0	0.0	0.0	0.1	2.4	2.1	0.5	4.6	-2.5	2.1	NAF
TP2-P1-10	9 to 10	4.7	430	0.5	0.4	0.0	0.0	0.0	0.5	16.2	15.6	1.1	10.7	4.9	0.7	PAF-II
TP2-P1-11	10 to 11	4.5	600	1.4	1.4	0.1	0.0	0.1	1.3	43.5	40.4	1.0	9.4	31.0	0.2	PAF-II
TP2-P1-12	11 to 12	4.6	865	0.1	0.1	0.0	0.0	0.0	0.1	1.8	1.5	0.2	2.5	-1.0	1.6	PAF-III
TP2-P1-13	12 to 13	4.0	850	0.1	0.0	0.0	0.0	0.0	0.0	1.5	1.2	0.2	1.8	-0.6	1.5	PAF-III
TP2-P1-14	13 to 14	4.0	582	0.1	0.0	0.0	0.0	0.0	0.0	1.5	1.2	0.1	0.6	0.6	0.5	PAF-II
TP2-P1-15	14 to 15	4.5	744	0.1	0.1	0.0	0.0	0.0	0.1	2.1	1.8	0.9	9.2	-7.4	5.0	NAF
TP2-P1-16	15 to 16	5.0	775	0.1	0.0	0.0	0.0	0.0	0.0	1.5	1.2	0.9	8.4	-7.2	6.9	NAF
TP2-P1-17	16 to 17	5.1	704	0.1	0.1	0.0	0.0	0.0	0.1	1.8	1.5	0.9	8.6	-7.1	5.6	NAF
TP2-P1-18	17 to 18	6.9	721	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.6	2.1	20.7	-20.1	33.8	NAF
TP2-P1-19	18 to 19	4.3	470	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.9	0.1	0.5	0.4	0.5	PAF-III
TP2-P1-20	19 to 20	4.1	686	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.9	0.1	0.5	0.4	0.5	PAF-III
TP2 (secondary profile)																
TP2-P2-2	1 to 2	3.0	816	0.6	0.6	0.3	0.0	0.3	0.3	19.6	9.5	0.1	0.5	9.0	0.1	PAF-III
TP2-P2-3	2 to 3	3.2	636	0.6	0.2	0.4	0.0	0.4	0.2	17.4	4.6	0.1	0.5	4.1	0.1	PAF-III
TP2-P2-4	3 to 4	3.6	444	0.7	0.6	0.5	0.0	0.4	0.3	22.3	8.6	0.1	0.5	8.1	0.1	PAF-III
TP2-P2-5	4 to 5	3.3	792	0.9	1.4	0.3	0.1	0.2	0.6	26.0	18.4	0.1	0.5	17.9	0.0	PAF-II
TP3 (primary profile)																
TP3-P1-2	1 to 2	5.1	185	0.6	1.2	0.1	0.0	0.1	0.5	18.4	15.9	2.0	19.4	-3.5	1.2	PAF-III
TP3-P1-3	2 to 3	6.6	116	0.2	1.5	0.0	0.0	0.0	0.2	5.5	5.2	2.0	19.7	-14.5	3.8	NAF
TP3-P1-4	3 to 4	5.5	306	0.6	1.6	0.0	0.0	0.0	0.6	19.0	17.7	1.6	15.9	1.8	0.9	PAF-II
TP3-P1-5	4 to 5	4.3	301	1.4	1.2	0.2	0.0	0.1	1.2	41.6	36.4	0.8	8.0	28.4	0.2	PAF-II
TP3 (secondary profile)																
TP3-P2-2	1 to 2	3.5	1,702	1.1	-	0.7	0.1	0.6	0.3	32.1	9.8	0.4	3.9	5.9	0.4	PAF-III
TP3-P2-3	2 to 3	3.1	1,576	1.6	-	0.8	0.1	0.7	0.8	47.7	23.3	0.1	0.5	22.8	0.0	PAF-II
TP3-P2-4	3 to 4	3.2	2,020	1.6	-	0.9	0.1	0.8	0.7	49.6	22.6	0.1	0.5	22.1	0.0	PAF-II
TP3-P2-5	4 to 5	3.1	1,047	1.2	-	0.7	0.1	0.7	0.5	37.9	15.3	0.1	0.5	14.8	0.0	PAF-II

Notes:

MPA = Maximum Potential Acidity

AP = Acid Generating Potential

ANC = Acid Neutralization Capacity

NAPP = AP - ANC

Table F3. Sulphur Measurements and ABA Results for TP4, TP5, and TP7, Intermediate WRD

Sample ID	Depth, m	Rinse pH	Rinse EC, $\mu\text{S}/\text{cm}$	$S_{\text{total}} (\text{Leco})$, %	$S_{\text{total}} (\text{aqua regia})$, %	$S_{\text{jar}} + S_{\text{SO}_4}$, %	S_{SO_4} , %	S_{Jar} , %	S_{sulphide} , %	MPA, kg $\text{H}_2\text{SO}_4/\text{t}$	AP, kg $\text{H}_2\text{SO}_4/\text{t}$	% CaCO_3	ANC, kg $\text{H}_2\text{SO}_4/\text{t}$	NAPP, kg $\text{H}_2\text{SO}_4/\text{t}$	ANC/AP	Class
Method Code:				ED042T	ME-ICP41	S-GRA06	ED040S	Calc.	Calc.	Calc.	Calc.	EA013	Calc.	Calc.	Calc.	
TP4 (primary profile)																
TP4-P1-2	1 to 2	4.0	2,940	5.6	5.0	0.8	0.3	0.5	4.8	170.1	146.3	0.1	0.5	145.8	0.0	PAF-I
TP4-P1-3	2 to 3	4.3	921	5.3	4.8	0.1	0.1	0.0	5.2	161.0	158.2	0.2	2.3	155.9	0.0	PAF-I
TP4-P1-4	3 to 4	3.9	897	3.9	3.6	0.4	0.1	0.4	3.4	117.8	104.3	0.1	0.5	103.8	0.0	PAF-I
TP4-P1-5	4 to 5	3.9	778	3.8	3.4	0.4	0.0	0.4	3.4	116.3	104.0	0.1	0.5	103.5	0.0	PAF-I
TP4-P1-6	5 to 6	3.6	2,320	3.2	2.7	0.7	0.1	0.6	2.5	96.4	76.5	0.2	2.5	74.0	0.0	PAF-I
TP4-P1-7	6 to 7	4.1	1,570	4.9	4.0	0.2	0.1	0.2	4.7	149.0	142.3	0.3	3.0	139.3	0.0	PAF-I
TP4-P1-8	7 to 8	4.2	1,330	5.2	4.6	0.1	0.1	0.1	5.1	159.4	155.1	0.7	7.3	147.8	0.0	PAF-I
TP4-P1-9	8 to 9	4.0	1,601	5.5	4.8	0.2	0.1	0.1	5.3	167.7	162.8	0.9	8.7	154.1	0.1	PAF-I
TP4-P1-10	9 to 10	3.9	1,779	5.1	4.5	0.1	0.1	0.0	5.1	157.3	155.1	0.7	7.1	148.0	0.0	PAF-I
TP4-P1-11	10 to 11	3.7	4,200	5.1	4.3	0.2	0.2	0.0	4.8	154.5	147.5	0.5	5.0	142.5	0.0	PAF-I
TP4-P1-12	11 to 12	3.8	4,640	4.7	4.3	0.3	0.2	0.1	4.4	142.3	133.4	0.5	4.8	128.6	0.0	PAF-I
TP4-P1-13	12 to 13	3.8	1,613	0.5	0.4	0.1	0.0	0.1	0.4	15.6	11.6	0.1	0.5	11.1	0.0	PAF-II
TP5 (primary profile)																
TP5-P1-2	1 to 2	5.7	58	2.8	2.7	0.1	0.0	0.1	2.8	86.9	84.8	0.1	1.0	83.8	0.0	PAF-I
TP5-P1-3	2 to 3	5.7	115	3.4	3.0	0.1	0.0	0.1	3.3	103.7	101.6	0.1	0.9	100.7	0.0	PAF-I
TP5-P1-4	3 to 4	4.9	455	0.2	0.2	0.0	0.0	0.0	0.2	6.7	5.8	0.9	9.1	-3.3	1.6	PAF-III
TP5-P1-5	4 to 5	6.0	85	1.9	1.7	0.1	0.0	0.1	1.8	57.2	55.4	0.1	0.5	54.9	0.0	PAF-I
TP5-P1-6	5 to 6	5.6	206	2.3	1.9	0.1	0.0	0.1	2.2	69.8	67.6	0.1	0.7	66.9	0.0	PAF-I
TP5-P1-7	6 to 7	5.7	305	1.6	1.5	0.1	0.0	0.1	1.5	47.4	45.0	0.1	0.5	44.5	0.0	PAF-I
TP5-P1-8	7 to 8	4.9	835	3.7	3.2	0.1	0.0	0.1	3.6	114.1	111.1	0.4	3.6	107.5	0.0	PAF-I
TP5-P1-9	8 to 9	5.1	550	3.1	2.6	0.1	0.0	0.1	3.0	93.3	90.6	0.4	4.4	86.2	0.0	PAF-I
TP5-P1-10	9 to 10	4.2	830	0.1	0.1	0.1	0.1	0.0	0.1	3.4	1.8	1.4	14.0	-12.2	7.6	PAF-III
TP7 (primary profile)																
TP7-P1-1	0 to 1	3.0	1,820	6.9	6.5	1.1	0.2	0.9	5.8	211.1	176.6	0.1	0.5	176.1	0.0	PAF-I
TP7-P1-2	1 to 2	3.3	1,121	5.2	4.5	1.8	0.1	1.7	3.5	160.3	106.5	0.1	0.5	106.0	0.0	PAF-I
TP7-P1-3	2 to 3	3.5	1,095	4.8	4.3	0.1	0.1	0.1	4.7	148.1	144.4	0.2	2.2	142.2	0.0	PAF-I
TP7-P1-4	3 to 4	4.2	649	5.1	4.6	0.1	0.0	0.1	5.0	156.1	153.3	0.9	8.4	144.9	0.1	PAF-I
TP7-P1-5	4 to 5	5.2	474	4.8	4.2	0.1	0.0	0.1	4.7	145.7	142.6	0.2	2.4	140.2	0.0	PAF-I
TP7-P1-6	5 to 6	4.3	700	4.9	4.3	0.3	0.0	0.2	4.6	149.0	140.8	0.3	3.0	137.8	0.0	PAF-I
TP7-P1-7	6 to 7	4.1	1,138	5.4	5.0	0.1	0.0	0.1	5.2	164.0	160.3	0.2	1.7	158.6	0.0	PAF-I
TP7-P1-8	7 to 8	4.6	1,198	5.0	4.4	0.2	0.1	0.1	4.8	151.8	146.6	0.8	7.8	138.8	0.1	PAF-I
TP7-P1-9	8 to 9	3.5	3,190	4.1	3.7	0.6	0.1	0.5	3.4	124.5	105.3	0.3	2.8	102.5	0.0	PAF-I
TP7-P1-10	9 to 10	3.7	3,420	3.9	3.3	0.8	0.2	0.6	3.1	118.7	95.2	0.3	2.6	92.6	0.0	PAF-I
TP7-P1-11	10 to 11	3.1	10,920	5.2	4.6	1.9	0.5	1.4	3.3	159.1	100.4	0.1	0.5	99.9	0.0	PAF-I
TP7-P1-12	11 to 12	2.9	16,520	6.2	6.0	1.9	1.2	0.7	4.3	190.3	132.8	0.1	0.5	132.3	0.0	PAF-I
TP7-P1-13	12 to 13	2.9	16,480	6.6	6.5	1.9	1.1	0.9	4.7	202.0	142.6	0.1	0.5	142.1	0.0	PAF-I
TP7-P1-14	13 to 14	3.2	9,690	4.9	4.5	1.9	0.6	1.3	3.1	149.9	93.3	0.1	0.5	92.8	0.0	PAF-I
TP7-P1-15	14 to 15	3.2	4,540	4.0	3.5	1.7	0.3	1.4	2.3	122.4	69.2	0.1	0.5	68.7	0.0	PAF-I

Notes:

MPA = Maximum Potential Acidity

AP = Acid Generating Potential

ANC = Acid Neutralization Capacity

NAPP = AP - ANC

Table F4. Sulphur Measurements and ABA Results for TP6, Dyson's WRD

Sample ID	Depth, m	Rinse pH	Rinse EC, $\mu\text{S}/\text{cm}$	$S_{\text{total}} (\text{Leco})$, %	$S_{\text{total}} (\text{aqua regia})$, %	$S_{\text{jar}} + S_{\text{SO}_4}$, %	S_{SO_4} , %	S_{Jar} , %	S_{sulphide} , %	MPA, kg $\text{H}_2\text{SO}_4/\text{t}$	AP, kg $\text{H}_2\text{SO}_4/\text{t}$	% CaCO_3	ANC, kg $\text{H}_2\text{SO}_4/\text{t}$	NAPP, kg $\text{H}_2\text{SO}_4/\text{t}$	ANC/AP	Class
Method Code:				ED042T	ME-ICP41	S-GRA06	ED040S	Calc.	Calc.	Calc.	Calc.	EA013	Calc.	Calc.	Calc.	
TP6 (primary profile)																
TP6-P1-2	1 to 2	3.6	2,830	0.3	0.3	0.1	0.1	0.0	0.2	7.7	4.6	0.1	0.5	4.1	0.1	PAF-III
TP6-P1-3	2 to 3	4.5	740	0.1	0.1	0.0	0.0	0.0	0.1	2.1	1.8	0.2	1.8	0.0	0.8	PAF-III
TP6-P1-4	3 to 4	6.7	542	0.0	0.1	0.0	0.0	0.0	0.0	0.6	0.3	0.9	8.8	-8.5	14.4	NAF
TP6-P1-5	4 to 5	6.8	210	0.1	0.1	0.0	0.0	0.0	0.0	1.8	1.2	0.3	2.8	-1.6	1.5	PAF-III
TP6-P1-6	5 to 6	6.6	1,580	0.1	0.1	0.0	0.0	0.0	0.1	3.1	2.1	1.2	11.7	-9.6	3.8	NAF
TP6-P1-7	6 to 7	6.9	938	0.1	0.1	0.0	0.0	0.0	0.1	2.1	1.5	0.7	6.7	-5.2	3.1	NAF
TP6-P1-8	7 to 8	6.8	854	0.1	0.1	0.0	0.0	0.0	0.1	2.4	2.1	0.7	6.7	-4.6	2.7	NAF
TP6-P1-9	8 to 9	7.1	540	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.9	1.7	16.4	-15.5	13.4	NAF
TP6-P1-10	9 to 10	7.2	350	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.3	1.1	10.7	-10.4	17.5	NAF
TP6-P1-11	10 to 11	7.5	286	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.3	1.7	17.1	-16.8	27.9	NAF
TP6-P1-12	11 to 12	7.7	260	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.3	2.0	19.4	-19.1	31.7	NAF
TP6-P1-13	12 to 13	7.5	400	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.3	2.3	22.4	-22.1	36.6	NAF
TP6-P1-14	13 to 14	6.8	262	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.3	1.5	14.4	-14.1	23.5	NAF
TP6-P1-15	14 to 15	6.5	790	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.9	0.9	9.0	-8.1	7.4	NAF
TP6 (secondary profile)																
TP6-P2-2	1 to 2	2.9	1,333	0.2	-	0.1	0.0	0.1	0.1	5.8	2.1	0.1	0.5	1.6	0.1	PAF-III
TP6-P2-3	2 to 3	3.3	845	0.1	-	0.0	0.0	0.0	0.1	2.8	1.5	0.1	0.8	0.7	0.3	PAF-III
TP6-P2-4	3 to 4	3.7	1,093	0.2	-	0.2	0.1	0.1	0.1	6.7	1.5	1.9	18.4	-16.9	2.7	PAF-III
TP6-P2-5	4 to 5	4.4	719	0.0	-	0.0	0.0	0.0	0.0	1.2	0.6	0.2	2.1	-1.5	1.7	PAF-III
TP6-P2-6	5 to 6	6.2	708	0.0	-	0.0	0.0	0.0	0.0	0.6	0.3	0.1	1.2	-0.9	2.0	NAF
TP6-P2-7	6 to 7	6.5	1,112	0.1	-	0.0	0.0	0.0	0.0	1.5	0.6	0.2	2.5	-1.9	1.6	PAF-III
TP6-P2-8	7 to 8	7.0	988	0.0	-	0.1	0.0	0.0	0.0	1.2	0.0	0.3	2.9	-2.9	2.4	PAF-III
TP6-P2-9	8 to 9	5.5	1,199	0.1	-	0.1	0.0	0.0	0.0	1.5	0.0	0.4	3.6	-3.6	2.4	PAF-III
TP6-P2-10	9 to 10	6.4	1,214	0.1	-	0.0	0.0	0.0	0.0	1.5	0.9	2.3	22.8	-21.9	14.9	NAF

Notes:

MPA = Maximum Potential Acidity

AP = Acid Generating Potential

ANC = Acid Neutralization Capacity

NAPP = AP - ANC

Appendix G
Calculated Acidity Contents of Waste Rock

Table G1. Acidity Content of Waste Rock from TP1, Main WRD

Sample ID	Depth, m	Extract pH	Extract EC	Jarosite, wt. %	Jarosite, kg/t	Jarosite, moles/t	Jarosite, moles H ⁺ /t	Jarosite Acidity, kg H ₂ SO ₄ /t	Titratable Acidity, kg H ₂ SO ₄ /t	Existing Acidity, kg H ₂ SO ₄ /t	Incipient Acidity, kg H ₂ SO ₄ /t	Total Acidity, kg H ₂ SO ₄ /t	Class
Method Code:				Calc.	Calc.	Calc.	Calc.	Calc.	Titration	Calc.	Calc.	Calc.	
TP1 (primary profile)													
TP1-P1-2	1 to 2	6.8	2125	0.3	3.0	5.9	17.8	0.9	0.1	0.9	67.3	68.3	PAF-III
TP1-P1-3	2 to 3	6.9	2056	2.6	26.1	52.1	156.3	7.7	0.2	7.9	48.3	56.2	PAF-III
TP1-P1-4	3 to 4	6.4	2820	1.9	18.8	37.6	112.7	5.5	0.2	5.7	23.0	28.6	PAF-II
TP1-P1-5	4 to 5	6.3	1692	0.3	3.0	6.1	18.2	0.9	0.2	1.1	20.5	21.6	PAF-II
TP1-P1-6	5 to 6	6.0	1177	1.1	11.1	22.2	66.6	3.3	0.7	4.0	9.2	13.2	PAF-II
TP1-P1-7	6 to 7	4.7	932	1.4	14.2	28.5	85.4	4.2	0.3	4.5	14.1	18.5	PAF-III
TP1-P1-8	7 to 8	5.7	2114	0.9	9.5	19.0	56.9	2.8	0.3	3.1	14.1	17.2	PAF-III
TP1-P1-9	8 to 9	5.7	1949	1.0	10.0	20.0	60.1	2.9	0.3	3.3	14.4	17.6	PAF-III
TP1-P1-10	9 to 10	5.3	1688	1.7	17.0	34.0	101.9	5.0	0.5	5.5	17.7	23.3	PAF-II
TP1-P1-11	10 to 11	5.0	2041	1.8	18.3	36.6	109.7	5.4	0.3	5.7	35.5	41.2	PAF-II
TP1-P1-12	11 to 12	5.0	461	4.7	46.7	93.3	280.0	13.7	1.0	14.7	22.6	37.3	PAF-II
TP1-P1-13	12 to 13	5.1	605	2.3	22.8	45.6	136.8	6.7	0.6	7.3	46.2	53.5	PAF-I
TP1-P1-14	13 to 14	5.1	417	5.4	53.8	107.7	323.1	15.8	0.9	16.7	70.4	87.1	PAF-I
TP1-P1-15	14 to 15	5.0	547	4.3	42.7	85.3	256.0	12.5	0.7	13.2	36.7	50.0	PAF-II
TP1-P1-16	15 to 16	4.7	903	1.4	14.2	28.5	85.5	4.2	0.7	4.9	44.4	49.2	PAF-II
TP1-P1-17	16 to 17	4.7	846	1.2	12.3	24.7	74.0	3.6	0.7	4.3	74.1	78.4	PAF-I
TP1-P1-18	17 to 18	4.7	1004	1.6	16.4	32.8	98.4	4.8	0.7	5.5	55.4	60.9	PAF-I
TP1-P1-19	18 to 19	6.2	1206	0.2	1.5	3.1	9.3	0.5	0.1	0.6	6.7	7.3	NAF
TP1-P1-19 (grab)	18 to 19	-	-	-	-	-	-	-	-	-	-	-	PAF-III
TP1-P1-20	19 to 20	6.8	1004	0.0	0.0	0.1	0.3	0.0	0.0	0.0	2.8	2.8	NAF
TP1-P1-21	20 to 21	6.6	1310	0.2	1.7	3.4	10.3	0.5	0.0	0.5	1.8	2.3	NAF
TP1-P1-22	21 to 22	7.6	30	1.1	10.9	21.8	65.3	3.2	0.0	3.2	4.0	7.2	PAF-III
TP1-P1-23	22 to 23	7.0	1708	0.2	1.7	3.4	10.1	0.5	0.0	0.5	0.3	0.8	NAF
TP1 Secondary Profile													
TP1-P2-2	1 to 2	7.6	57	0.1	0.7	1.4	4.1	0.2	0.0	0.2	0.6	0.8	NAF
TP1-P2-3	2 to 3	7.6	50	0.2	1.5	3.0	9.1	0.4	0.0	0.4	0.3	0.8	NAF
TP1-P2-4	3 to 4	7.8	65	0.1	0.7	1.4	4.2	0.2	0.0	0.2	0.3	0.5	NAF
TP1-P2-5	4 to 5	8.1	83	0.1	0.7	1.5	4.4	0.2	0.0	0.2	0.3	0.5	NAF
TP1-P2-6	5 to 6	7.1	464	0.0	-0.1	-0.2	-0.5	0.0	0.0	0.0	19.0	18.9	PAF-III
TP1-P2-7	6 to 7	7.6	349	0.2	2.3	4.7	14.0	0.7	0.0	0.7	26.0	26.7	PAF-III
TP1-P2-8	7 to 8	6.7	617	0.7	6.8	13.5	40.6	2.0	0.1	2.1	42.8	44.9	PAF-II
TP1-P2-9	8 to 9	5.6	961	1.0	9.8	19.7	59.1	2.9	0.3	3.2	56.6	59.8	PAF-I
TP1-P2-10	9 to 10	6.5	832	0.7	6.6	13.1	39.4	1.9	0.1	2.0	18.7	20.7	PAF-III

Notes:

Existing acidity is the sum of jarosite acidity and titratable acidity

Incipient (future) acidity is equivalent to AP

Total acidity is the sum of existing acidity and incipient acidity

Table G2. Acidity Content of Waste Rock from TP2, Main WRD

Sample ID	Depth, m	Extract pH	Extract EC	Jarosite, wt. %	Jarosite, kg/t	Jarosite, moles/t	Jarosite, moles H ⁺ /t	Jarosite Acidity, kg H ₂ SO ₄ /t	Titratable Acidity, kg H ₂ SO ₄ /t	Existing Acidity, kg H ₂ SO ₄ /t	Incipient Acidity, kg H ₂ SO ₄ /t	Total Acidity, kg H ₂ SO ₄ /t	Class
Method Code:				Calc.	Calc.	Calc.	Calc.	Calc.	Titration	Calc.	Calc.	Calc.	
TP2 (primary profile)													
TP2-P1-1	0 to 1	3.6	1019	4.0	40.3	80.6	241.9	11.9	2.8	14.7	12.9	27.5	PAF-II
TP2-P1-2	1 to 2	3.4	2421	5.2	51.6	103.2	309.7	15.2	4.1	19.3	37.0	56.3	PAF-II
TP2-P1-3	2 to 3	3.6	973	2.1	20.9	41.7	125.2	6.1	2.4	8.5	197.7	206.2	PAF-I
TP2-P1-4	3 to 4	4.1	978	3.3	33.0	66.1	198.3	9.7	2.3	12.0	118.4	130.4	PAF-I
TP2-P1-5	4 to 5	4.1	723	1.1	11.0	21.9	65.8	3.2	1.4	4.6	37.3	42.0	PAF-II
TP2-P1-6	5 to 6	4.5	287	0.0	0.0	0.0	0.0	0.0	1.6	1.6	14.1	15.6	PAF-II
TP2-P1-7	6 to 7	4.3	436	0.0	0.0	0.0	0.0	0.0	0.9	0.9	34.6	35.5	PAF-II
TP2-P1-8	7 to 8	4.4	386	0.0	0.0	0.0	0.0	0.0	0.7	0.7	42.2	42.9	PAF-II
TP2-P1-9	8 to 9	4.8	193	0.0	-0.2	-0.5	-1.5	0.0	0.6	0.6	2.1	2.8	NAF
TP2-P1-10	9 to 10	5.1	280	0.0	-0.1	-0.2	-0.7	0.0	0.6	0.6	15.6	16.2	PAF-II
TP2-P1-11	10 to 11	4.8	352	0.6	5.7	11.3	34.0	1.7	0.6	2.3	40.4	42.7	PAF-II
TP2-P1-12	11 to 12	5.0	235	0.0	0.0	0.0	0.0	0.0	0.5	0.5	1.5	2.0	PAF-III
TP2-P1-13	12 to 13	4.5	247	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	2.4	PAF-III
TP2-P1-14	13 to 14	4.4	241	0.0	0.0	0.0	0.0	0.0	1.5	1.5	1.2	2.7	PAF-II
TP2-P1-15	14 to 15	5.0	226	0.0	0.0	0.0	0.0	0.0	0.4	0.4	1.8	2.2	NAF
TP2-P1-16	15 to 16	5.2	235	0.0	0.0	0.0	0.0	0.0	0.2	0.2	1.2	1.5	NAF
TP2-P1-17	16 to 17	6.1	299	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.5	1.6	NAF
TP2-P1-18	17 to 18	6.8	226	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	NAF
TP2-P1-19	18 to 19	4.6	216	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.9	1.4	PAF-III
TP2-P1-20	19 to 20	4.4	257	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.9	1.6	PAF-III
TP2 (secondary profile)													
TP2-P2-2	1 to 2	3.6	502	2.3	22.9	45.8	137.5	6.7	1.2	7.9	9.5	17.4	PAF-III
TP2-P2-3	2 to 3	3.8	296	3.1	31.5	63.0	188.9	9.3	1.1	10.3	4.6	14.9	PAF-III
TP2-P2-4	3 to 4	3.9	336	3.4	33.5	67.0	201.1	9.9	1.4	11.3	8.6	19.9	PAF-III
TP2-P2-5	4 to 5	3.4	701	1.5	15.4	30.8	92.3	4.5	2.5	7.0	18.4	25.4	PAF-II
TP3 (primary profile)													
TP3-P1-2	1 to 2	6.5	422	0.4	4.4	8.8	26.4	1.3	0.2	1.5	15.9	17.4	PAF-III
TP3-P1-3	2 to 3	6.9	116	0.0	0.3	0.7	2.1	0.1	0.0	0.1	5.2	5.3	NAF
TP3-P1-4	3 to 4	5.7	288	0.2	1.9	3.9	11.6	0.6	0.2	0.8	17.7	18.6	PAF-II
TP3-P1-5	4 to 5	4.4	343	1.2	11.6	23.2	69.6	3.4	0.9	4.3	36.4	40.7	PAF-II
TP3 (secondary profile)													
TP3-P2-2	1 to 2	4.7	1450	4.8	48.4	96.7	290.1	14.2	0.9	15.1	9.8	24.9	PAF-III
TP3-P2-3	2 to 3	3.4	1256	5.3	52.9	105.8	317.5	15.6	0.5	16.1	23.3	39.3	PAF-II
TP3-P2-4	3 to 4	3.2	1527	6.1	60.5	121.1	363.2	17.8	0.8	18.6	22.6	41.2	PAF-II
TP3-P2-5	4 to 5	3.3	893	5.3	52.6	105.1	315.4	15.5	0.5	16.0	15.3	31.3	PAF-II

Notes:

Existing acidity is the sum of jarosite acidity and titratable acidity

Incipient (future) acidity is equivalent to AP

Total acidity is the sum of existing acidity and incipient acidity

Table G3. Acidity Content of Waste Rock from TP4, TP5, and TP7, Intermediate WRD

Sample ID	Depth, m	Extract pH	Extract EC	Jarosite, wt.%	Jarosite, kg/t	Jarosite, moles/t	Jarosite, moles H ⁺ /t	Jarosite Acidity, kg H ₂ SO ₄ /t	Titratable Acidity, kg H ₂ SO ₄ /t	Existing Acidity, kg H ₂ SO ₄ /t	Incipient Acidity, kg H ₂ SO ₄ /t	Total Acidity, kg H ₂ SO ₄ /t	Class
Method Code:				Calc.	Calc.	Calc.	Calc.	Calc.	Titration	Calc.	Calc.	Calc.	
TP4 (primary profile)													
TP4-P1-2	1 to 2	4.3	2610	3.8	37.6	75.2	225.6	11.1	3.0	14.0	146.3	160.3	PAF-I
TP4-P1-3	2 to 3	4.6	824	0.2	2.0	4.0	11.9	0.6	0.9	1.5	158.2	159.7	PAF-I
TP4-P1-4	3 to 4	4.0	703	2.9	29.0	58.0	173.9	8.5	1.3	9.8	104.3	114.2	PAF-I
TP4-P1-5	4 to 5	4.0	558	2.8	28.0	55.9	167.8	8.2	1.4	9.6	104.0	113.6	PAF-I
TP4-P1-6	5 to 6	4.1	1112	4.3	43.1	86.2	258.5	12.7	2.3	15.0	76.5	91.5	PAF-I
TP4-P1-7	6 to 7	4.4	756	1.2	12.1	24.2	72.5	3.6	1.0	4.6	142.3	146.9	PAF-I
TP4-P1-8	7 to 8	4.4	787	0.6	5.8	11.7	35.0	1.7	1.0	2.7	155.1	157.8	PAF-I
TP4-P1-9	8 to 9	4.4	1126	0.4	4.4	8.9	26.6	1.3	0.8	2.1	162.8	164.9	PAF-I
TP4-P1-10	9 to 10	4.3	897	0.0	0.0	0.0	0.0	0.0	1.0	1.0	155.1	156.2	PAF-I
TP4-P1-11	10 to 11	4.0	1910	0.2	2.1	4.3	12.8	0.6	2.3	3.0	147.5	150.5	PAF-I
TP4-P1-12	11 to 12	4.0	2027	0.4	4.3	8.6	25.8	1.3	2.8	4.1	133.4	137.5	PAF-I
TP4-P1-13	12 to 13	4.2	539	0.7	6.7	13.5	40.4	2.0	1.5	3.5	11.6	15.2	PAF-II
TP5 (primary profile)													
TP5-P1-2	1 to 2	5.9	74	0.5	5.1	10.1	30.3	1.5	0.2	1.7	84.8	86.5	PAF-I
TP5-P1-3	2 to 3	6.1	75	0.5	5.1	10.1	30.3	1.5	0.3	1.8	101.6	103.4	PAF-I
TP5-P1-4	3 to 4	5.6	151	0.1	1.4	2.8	8.5	0.4	0.7	1.1	5.8	6.9	PAF-III
TP5-P1-5	4 to 5	6.0	78	0.4	4.2	8.5	25.5	1.2	0.3	1.5	55.4	56.9	PAF-I
TP5-P1-6	5 to 6	5.9	157	0.4	4.5	9.0	26.9	1.3	0.5	1.8	67.6	69.5	PAF-I
TP5-P1-7	6 to 7	6.0	159	0.5	5.3	10.6	31.9	1.6	0.4	1.9	45.0	46.9	PAF-I
TP5-P1-8	7 to 8	5.1	499	0.4	3.9	7.8	23.5	1.2	1.8	2.9	111.1	114.0	PAF-I
TP5-P1-9	8 to 9	5.2	347	0.5	4.6	9.2	27.5	1.3	0.9	2.2	90.6	92.8	PAF-I
TP5-P1-10	9 to 10	4.7	515	0.0	0.0	-0.1	-0.2	0.0	2.5	2.5	1.8	4.3	PAF-III
TP7 (primary profile)													
TP7-P1-1	0 to 1	2.9	1961	7.3	73.3	146.6	439.7	21.5	6.4	28.0	176.6	204.5	PAF-I
TP7-P1-2	1 to 2	3.5	856	13.1	131.5	262.9	788.7	38.6	5.3	44.0	106.5	150.5	PAF-I
TP7-P1-3	2 to 3	3.7	662	0.5	5.0	10.0	29.9	1.5	1.3	2.7	144.4	147.2	PAF-I
TP7-P1-4	3 to 4	4.4	394	0.5	4.6	9.1	27.3	1.3	0.6	1.9	153.3	155.2	PAF-I
TP7-P1-5	4 to 5	4.7	300	0.6	6.1	12.2	36.5	1.8	0.3	2.1	142.6	144.7	PAF-I
TP7-P1-6	5 to 6	4.5	481	1.8	18.2	36.5	109.4	5.4	0.8	6.1	140.8	146.9	PAF-I
TP7-P1-7	6 to 7	4.5	621	0.6	5.6	11.1	33.3	1.6	0.5	2.2	160.3	162.5	PAF-I
TP7-P1-8	7 to 8	4.5	753	0.9	8.5	17.0	51.1	2.5	0.7	3.2	146.6	149.8	PAF-I
TP7-P1-9	8 to 9	4.2	1422	3.8	37.7	75.3	226.0	11.1	1.1	12.2	105.3	117.5	PAF-I
TP7-P1-10	9 to 10	4.2	1658	4.7	46.8	93.6	280.7	13.8	1.5	15.2	95.2	110.4	PAF-I
TP7-P1-11	10 to 11	3.6	3770	11.3	113.1	226.2	678.6	33.3	2.9	36.1	100.4	136.5	PAF-I
TP7-P1-12	11 to 12	3.3	7380	5.5	54.8	109.6	328.9	16.1	7.7	23.8	132.8	156.6	PAF-I
TP7-P1-13	12 to 13	3.3	6740	6.6	66.5	132.9	398.8	19.5	9.3	28.8	142.6	171.4	PAF-I
TP7-P1-14	13 to 14	3.5	4250	9.9	98.9	197.7	593.2	29.1	8.6	37.6	93.3	131.0	PAF-I
TP7-P1-15	14 to 15	3.5	2500	11.3	112.8	225.6	676.8	33.2	6.1	39.3	69.2	108.4	PAF-I

Notes:

Existing acidity is the sum of jarosite acidity and titratable acidity

Incipient (future) acidity is equivalent to AP

Total acidity is the sum of existing acidity and incipient acidity

Table G4. Acidity Content of Waste Rock from TP6, Dyson's WRD

Sample ID	Depth, m	Extract pH	Extract EC	Jarosite, wt.%	Jarosite, kg/t	Jarosite, moles/t	Jarosite, moles H ⁺ /t	Jarosite Acidity, kg H ₂ SO ₄ /t	Titratable Acidity, kg H ₂ SO ₄ /t	Existing Acidity, kg H ₂ SO ₄ /t	Incipient Acidity, kg H ₂ SO ₄ /t	Total Acidity, kg H ₂ SO ₄ /t	Class
Method Code:				Calc.	Calc.	Calc.	Calc.	Calc.	Titration	Calc.	Calc.	Calc.	
TP6 (primary profile)													
TP6-P1-2	1 to 2	3.7	1153	0.0	0.0	0.0	0.0	0.0	3.0	3.0	4.6	7.5	PAF-III
TP6-P1-3	2 to 3	5.0	241	0.0	0.0	0.0	0.0	0.0	0.3	0.3	1.8	2.2	PAF-III
TP6-P1-4	3 to 4	7.1	178	0.0	0.0	-0.1	-0.3	0.0	0.0	0.0	0.3	0.3	NAF
TP6-P1-5	4 to 5	7.0	131	0.1	1.0	2.1	6.3	0.3	0.0	0.3	1.2	1.5	PAF-III
TP6-P1-6	5 to 6	7.1	395	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	2.1	NAF
TP6-P1-7	6 to 7	7.2	357	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.5	NAF
TP6-P1-8	7 to 8	6.9	412	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	2.1	NAF
TP6-P1-9	8 to 9	7.5	211	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	NAF
TP6-P1-10	9 to 10	7.5	122	0.0	0.2	0.4	1.1	0.1	0.1	0.1	0.3	0.4	NAF
TP6-P1-11	10 to 11	7.7	101	0.0	0.3	0.6	1.7	0.1	0.1	0.1	0.3	0.4	NAF
TP6-P1-12	11 to 12	7.8	126	0.0	0.4	0.8	2.5	0.1	0.1	0.1	0.3	0.4	NAF
TP6-P1-13	12 to 13	7.7	129	0.0	0.2	0.3	1.0	0.0	0.0	0.0	0.3	0.4	NAF
TP6-P1-14	13 to 14	7.1	104	0.0	0.3	0.5	1.6	0.1	0.1	0.1	0.3	0.4	NAF
TP6-P1-15	14 to 15	7.0	292	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	NAF
TP6 (secondary profile)													
TP6-P2-2	1 to 2	3.4	442	0.7	7.1	14.2	42.5	2.1	3.3	5.3	2.1	7.5	PAF-III
TP6-P2-3	2 to 3	3.6	256	0.2	1.8	3.7	11.0	0.5	1.6	2.1	1.5	3.6	PAF-III
TP6-P2-4	3 to 4	4.1	752	0.7	7.1	14.2	42.7	2.1	1.4	3.5	1.5	5.1	PAF-III
TP6-P2-5	4 to 5	5.0	201	0.0	0.4	0.7	2.1	0.1	0.4	0.5	0.6	1.1	PAF-III
TP6-P2-6	5 to 6	6.2	199	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.4	NAF
TP6-P2-7	6 to 7	6.4	286	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.7	PAF-III
TP6-P2-8	7 to 8	7.0	320	0.2	2.3	4.5	13.5	0.7	0.0	0.7	0.0	0.7	PAF-III
TP6-P2-9	8 to 9	6.9	337	0.3	2.9	5.7	17.1	0.8	0.0	0.8	0.0	0.8	PAF-III
TP6-P2-10	9 to 10	6.8	345	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	NAF

Notes:

Existing acidity is the sum of jarosite acidity and titratable acidity

Incipient (future) acidity is equivalent to AP

Total acidity is the sum of existing acidity and incipient acidity

Appendix H
Water Leachable Sulphate and Metal Concentrations

Table H1. Water Leachable Sulphate and Metal Concentrations for TP1, Main WRD

Sample ID	SO ₄	Ca	Mg	Al	As	Cd	Co	Cu	Mn	Mo	Ni	U	Zn	Fe
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Method Code	ED040W	ED093W	ED093W	EG020W										
TP1 (primary profile)														
TP1-P1-2	1480	500	82	0.0	0.031	0.0002	0.031	0.031	1.44	0.016	0.031	0.037	0.005	0.05
TP1-P1-3	1930	582	148	0.0	0.028	0.0002	0.081	0.036	2.65	0.006	0.501	0.03	0.005	0.05
TP1-P1-4	1280	338	112	0.0	0.009	0.0002	0.069	0.014	0.958	0.004	0.438	0.006	0.005	0.05
TP1-P1-5	584	139	66	0.0	0.002	0.0001	0.044	0.017	0.978	0.002	0.193	0.002	0.006	0.05
TP1-P1-6	441	94	36	0.2	0.001	0.0003	0.278	39.9	0.397	0.001	1.02	0.026	0.299	0.05
TP1-P1-7	1430	448	89	0.0	0.025	0.0011	0.274	0.083	1.46	0.003	1.13	0.003	0.036	0.05
TP1-P1-8	1330	428	86	0.0	0.003	0.0018	0.248	0.048	1.36	0.002	0.596	0.002	0.06	0.05
TP1-P1-9	1140	362	69	0.0	0.024	0.0034	0.574	1.83	2.52	0.001	1.34	0.011	0.71	0.05
TP1-P1-10	1370	423	84	0.1	0.004	0.0074	1.31	12.3	3.07	0.001	2.13	0.02	2.34	0.05
TP1-P1-11	406	62	73	0.0	0.001	0.0002	0.022	0.038	0.27	0.001	0.031	0.002	0.005	0.05
TP1-P1-12	265	26	52	0.1	0.001	0.0002	0.052	0.169	0.197	0.001	0.059	0.002	0.012	0.05
TP1-P1-13	357	39	68	0.2	0.001	0.0002	0.1	0.689	0.274	0.001	0.116	0.004	0.021	0.05
TP1-P1-14	255	22	51	0.2	0.001	0.0002	0.078	0.607	0.202	0.001	0.082	0.004	0.017	0.07
TP1-P1-15	341	29	71	0.3	0.001	0.0001	0.081	0.096	0.295	0.001	0.107	0.01	0.017	0.05
TP1-P1-16	442	52	84	0.2	0.001	0.0004	0.073	0.041	0.392	0.001	0.097	0.007	0.023	0.05
TP1-P1-17	368	42	75	0.3	0.001	0.0003	0.124	0.292	0.432	0.001	0.129	0.009	0.038	0.08
TP1-P1-18	480	76	82	0.4	0.001	0.0004	0.153	0.456	0.469	0.001	0.191	0.018	0.049	0.07
TP1-P1-19	781	141	126	0.0	0.001	0.0001	0.022	0.006	0.921	0.001	0.023	0.002	0.005	0.05
TP1-P1-19 (grab)	983	239	90	3.7	0.001	0.0002	0.152	3.51	0.534	0.001	0.142	0.136	0.032	0.25
TP1-P1-20	896	187	128	0.0	0.001	0.0001	0.007	0.004	0.506	0.001	0.005	0.001	0.005	0.05
TP1-P1-21	877	78	202	0.0	0.001	0.0001	0.003	0.001	0.419	0.002	0.003	0.012	0.005	0.05
TP1-P1-22	5	6	1	67.5	0.059	0.0099	0.041	1.55	0.695	0.004	0.114	0.013	4.42	37.6
TP1-P1-23	1270	116	273	0.0	0.001	0.0001	0.004	0.002	1.12	0.002	0.003	0.01	0.005	0.05

Below detection limit

Table H2. Water Leachable Sulphate and Metal Concentrations for TP2, Main WRD

Sample ID	SO ₄ mg/L	Ca mg/L	Mg mg/L	Al mg/L	As mg/L	Cd mg/L	Co mg/L	Cu mg/L	Mn mg/L	Mo mg/L	Ni mg/L	U mg/L	Zn mg/L	Fe mg/L
Method Code	ED040W	ED093W	ED093W	EG020W	EG020W	EG020W	EG020W							
TP2 (primary profile)														
TP2-P1-1	559	115	46	10.5	0.001	0.0002	0.252	1.68	11.7	0.001	0.373	0.024	0.088	0.31
TP2-P1-2	1610	423	80	42.6	0.004	0.0004	0.376	5.65	3.56	0.001	0.722	0.031	0.192	7.47
TP2-P1-3	581	39	31	17.7	0.333	0.0003	8.79	127	0.746	0.001	13.2	0.05	0.137	13.6
TP2-P1-4	540	46	33	3.7	0.063	0.0005	7.25	168	2.02	0.001	8.27	0.012	0.184	0.84
TP2-P1-5	354	54	31	2.6	0.031	0.0004	3.1	40.4	0.744	0.001	3.59	0.01	0.16	0.39
TP2-P1-6	164	12	22	0.9	0.001	0.0004	0.521	26.5	0.128	0.001	0.446	0.002	0.244	0.05
TP2-P1-7	238	24	41	0.8	0.001	0.0026	0.7	6.78	1.43	0.001	0.589	0.035	0.493	0.08
TP2-P1-8	215	20	34	1.3	0.001	0.0052	1.27	9.72	1.96	0.001	0.993	0.143	0.608	0.16
TP2-P1-9	98	7	17	0.9	0.001	0.0006	0.235	1.26	0.299	0.001	0.336	0.008	0.174	0.05
TP2-P1-10	154	11	26	0.7	0.001	0.001	0.608	12.4	0.397	0.001	0.616	0.018	0.29	0.05
TP2-P1-11	202	12	32	0.6	0.001	0.0059	1.37	25.6	1.05	0.001	0.927	0.058	1.66	0.05
TP2-P1-12	132	7	28	0.1	0.001	0.001	0.447	0.339	0.425	0.001	0.357	0.001	0.196	0.05
TP2-P1-13	135	7	28	0.2	0.001	0.0003	0.273	1.31	0.454	0.001	0.27	0.005	0.107	0.05
TP2-P1-14	131	7	27	0.2	0.001	0.0002	0.268	1.47	0.374	0.001	0.276	0.004	0.088	0.05
TP2-P1-15	120	6	26	0.1	0.001	0.0004	0.38	0.858	0.585	0.001	0.261	0.002	0.11	0.05
TP2-P1-16	112	5	25	0.2	0.001	0.0002	0.208	0.234	0.362	0.001	0.158	0.001	0.044	0.05
TP2-P1-17	152	9	36	0.0	0.001	0.0003	0.109	0.012	0.583	0.001	0.045	0.001	0.009	0.05
TP2-P1-18	99	5	30	0.0	0.002	0.0001	0.001	0.001	0.007	0.001	0.001	0.001	0.005	0.05
TP2-P1-19	114	7	22	0.6	0.001	0.0007	0.294	3.12	0.375	0.001	0.19	0.009	0.366	0.05
TP2-P1-20	124	9	25	0.2	0.001	0.0004	0.14	0.524	0.372	0.001	0.092	0.003	0.117	0.05

Below detection limit

Table H3. Water Leachable Sulphate and Metal Concentrations for TP3, Main WRD

Sample ID	SO ₄ mg/L	Ca mg/L	Mg mg/L	Al mg/L	As mg/L	Cd mg/L	Co mg/L	Cu mg/L	Mn mg/L	Mo mg/L	Ni mg/L	U mg/L	Zn mg/L	Fe mg/L
Method Code	ED040W	ED093W	ED093W	EG020W	EG020W	EG020W	EG020W							
TP3 (primary profile)														
TP3-P1-2	242	48	45	0.0	0.001	0.0001	0.001	0.003	0.102	0.001	0.001	0.001	0.005	0.05
TP3-P1-3	50	6	11	0.0	0.001	0.0001	0.001	0.002	0.027	0.001	0.001	0.001	0.005	0.05
TP3-P1-4	128	13	22	0.0	0.001	0.0002	0.087	0.019	0.49	0.001	0.043	0.001	0.085	0.05
TP3-P1-5	167	18	27	0.4	0.001	0.0008	0.47	0.34	2.51	0.001	0.238	0.008	1.03	0.08
TP3 (secondary profile)														
TP3-P2-2	758	172	82	0.0	0.001	0.0003	0.083	0.011	0.71	0.001	0.091	0.001	0.007	0.05
TP3-P2-3	823	216	42	12.8	0.002	0.0006	0.272	0.905	2.56	0.001	0.282	0.932	0.126	5.49
TP3-P2-4	756	180	45	14.3	0.003	0.0005	0.313	0.537	2.31	0.001	0.274	0.259	0.076	5.16
TP3-P2-5	489	124	22	9.0	0.002	0.0003	0.189	0.546	0.865	0.001	0.159	0.171	0.111	1.39

Below detection limit

Table H4. Water Leachable Sulphate and Metal Concentrations for TP4 and TP5, Intermediate WRD

Sample ID	SO ₄	Ca	Mg	Al	As	Cd	Co	Cu	Mn	Mo	Ni	U	Zn	Fe
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Method Code	ED040W	ED093W	ED093W	EG020W										
TP4 (primary profile)														
TP4-P1-2	2090	374	165	10.0	0.222	0.0077	14.5	283	5.22	0.001	13.2	0.048	2.28	1.13
TP4-P1-3	466	82	21	1.6	0.01	0.002	1.17	108	0.466	0.001	1.47	0.008	0.665	0.57
TP4-P1-4	516	86	40	7.5	0.047	0.0051	3.05	48.3	3.42	0.001	3.59	0.03	1.53	1.23
TP4-P1-5	317	31	40	2.8	0.005	0.0038	0.902	33	1.24	0.001	1.15	0.023	1.52	1.11
TP4-P1-6	579	70	103	3.4	0.001	0.0138	3	4.56	3.52	0.001	2.62	0.036	2.59	1.66
TP4-P1-7	372	16	57	1.2	0.003	0.0042	2.21	61.3	2.31	0.001	1.77	0.018	1.6	0.53
TP4-P1-8	454	45	58	1.1	0.002	0.0066	2.57	74.3	2.86	0.001	1.96	0.016	1.78	0.51
TP4-P1-9	591	106	70	3.3	0.002	0.0058	2.7	35.4	3.15	0.001	1.96	0.026	2.11	1.55
TP4-P1-10	454	33	73	3.5	0.007	0.0093	3.61	46.5	3.63	0.001	2.75	0.025	2.41	1.52
TP4-P1-11	1160	34	205	30.4	0.022	0.0544	6.64	70.9	9.67	0.001	7	0.098	15.4	7.08
TP4-P1-12	1470	24	276	45.6	0.01	0.095	7.46	65.6	7.75	0.001	8.62	0.216	24.2	13.6
TP4-P1-13	282	12	55	2.6	0.001	0.0957	2.26	6.24	2.77	0.001	1.98	0.034	4.39	0.19
TP5 (primary profile)														
TP5-P1-2	33	2	1	0.0	0.016	0.0001	0.822	10.6	0.235	0.001	0.709	0.001	0.006	0.05
TP5-P1-3	33	5	1	0.0	0.007	0.0001	0.746	8.17	0.246	0.001	0.457	0.001	0.005	0.05
TP5-P1-4	75	10	1	0.2	0.006	0.0002	1.42	24.3	1.13	0.001	0.942	0.001	0.018	0.05
TP5-P1-5	36	5	1	0.0	0.023	0.0001	1.19	8.43	0.257	0.001	0.984	0.001	0.007	0.05
TP5-P1-6	79	7	4	0.0	0.076	0.0001	4.32	15.6	2.19	0.001	3.68	0.001	0.031	0.05
TP5-P1-7	77	8	6	0.0	0.027	0.0001	3.1	9.77	2.96	0.001	1.78	0.001	0.036	0.05
TP5-P1-8	313	25	11	0.1	0.026	0.001	6.52	113	7.29	0.001	3.92	0.001	0.224	0.05
TP5-P1-9	200	17	13	0.0	0.049	0.0006	4.62	49.9	6.4	0.001	3.01	0.001	0.175	0.05
TP5-P1-10	312	27	34	0.4	0.005	0.0012	8.41	41.9	14.9	0.001	3.9	0.001	0.294	0.05

Below detection limit

Table H5. Water Leachable Sulphate and Metal Concentrations for TP7, Intermediate WRD

Sample ID	SO ₄ mg/L	Ca mg/L	Mg mg/L	Al mg/L	As mg/L	Cd mg/L	Co mg/L	Cu mg/L	Mn mg/L	Mo mg/L	Ni mg/L	U mg/L	Zn mg/L	Fe mg/L
Method Code	ED040W	ED093W	ED093W	EG020W	EG020W	EG020W	EG020W							
TP7 (primary profile)														
TP7-P1-1	1280	97	16	61.7	0.267	0.0031	2.46	254	3.06	0.008	4.01	0.09	0.777	107
TP7-P1-2	471	62	35	11.7	0.003	0.0044	1.08	64.5	3.63	0.001	1.97	0.08	1.88	10.6
TP7-P1-3	383	23	33	10.6	0.025	0.0854	6.04	57.8	0.638	0.001	6.65	0.941	13.5	9.48
TP7-P1-4	200	21	26	1.3	0.001	0.182	2.2	2.31	0.454	0.001	3.22	0.077	15.6	0.2
TP7-P1-5	144	10	22	0.6	0.001	0.12	1.61	0.511	0.296	0.001	1.77	0.007	7	0.05
TP7-P1-6	256	21	39	0.4	0.001	0.146	4.65	6.08	0.526	0.001	5.11	0.012	13.6	0.06
TP7-P1-7	352	32	52	0.7	0.001	0.273	3.48	1.24	0.59	0.001	4.63	0.006	31.4	0.16
TP7-P1-8	432	43	66	0.6	0.001	0.269	5.49	1.48	0.757	0.001	7.03	0.01	35.2	0.12
TP7-P1-9	941	65	186	0.9	0.001	0.0752	8.9	5.97	2.05	0.001	14.1	0.062	30.3	0.44
TP7-P1-10	1150	66	234	0.9	0.001	0.103	9.92	5.36	2.39	0.001	14.9	0.059	34.5	0.49
TP7-P1-11	3240	44	770	6.5	0.001	0.167	13.9	14	8.2	0.001	10.9	0.024	58.7	9.84
TP7-P1-12	7680	35	1600	33.6	0.005	0.647	93.9	88.6	6.92	0.001	82.4	0.047	461	124
TP7-P1-13	6770	34	1360	46.2	0.005	0.468	80.1	57.5	6.43	0.001	70.7	0.138	418	202
TP7-P1-14	4000	32	737	87.1	0.005	0.398	32.7	56	4.04	0.001	33.5	0.263	216	64
TP7-P1-15	2010	46	383	45.1	0.003	0.161	9.24	38.3	3.19	0.001	10.3	0.243	67.5	6.14

Below detection limit

Table H6. Water Leachable Sulphate and Metal Concentrations for TP6, Dyson's WRD

Sample ID	SO ₄ mg/L	Ca mg/L	Mg mg/L	Al mg/L	As mg/L	Cd mg/L	Co mg/L	Cu mg/L	Mn mg/L	Mo mg/L	Ni mg/L	U mg/L	Zn mg/L	Fe mg/L
Method Code	ED040W	ED093W	ED093W	EG020W	EG020W	EG020W	EG020W							
TP6 (primary profile)														
TP6-P1-2	853	17	142	46.6	0.008	0.0008	0.292	1.64	1.58	0.001	0.795	0.235	0.166	0.06
TP6-P1-3	106	2	25	0.1	0.01	0.0001	0.016	0.061	0.187	0.001	0.032	0.001	0.005	0.05
TP6-P1-4	73	1	20	0.0	0.002	0.0001	0.001	0.001	0.003	0.008	0.001	0.001	0.005	0.05
TP6-P1-5	47	1	13	0.0	0.002	0.0001	0.001	0.001	0.002	0.005	0.001	0.001	0.005	0.05
TP6-P1-6	205	3	54	0.0	0.001	0.0001	0.001	0.001	0.008	0.001	0.003	0.001	0.005	0.05
TP6-P1-7	178	1	48	0.0	0.001	0.0001	0.001	0.001	0.001	0.004	0.001	0.001	0.005	0.05
TP6-P1-8	212	4	56	0.0	0.001	0.0001	0.001	0.001	0.001	0.003	0.001	0.001	0.005	0.05
TP6-P1-9	93	2	29	0.0	0.002	0.0001	0.001	0.001	0.001	0.007	0.001	0.001	0.005	0.05
TP6-P1-10	51	1	15	0.0	0.002	0.0001	0.001	0.001	0.001	0.003	0.001	0.001	0.005	0.05
TP6-P1-11	41	1	14	0.0	0.002	0.0001	0.001	0.001	0.001	0.002	0.001	0.001	0.005	0.05
TP6-P1-12	34	1	13	0.1	0.002	0.0001	0.001	0.001	0.001	0.002	0.001	0.001	0.005	0.06
TP6-P1-13	52	1	19	0.0	0.002	0.0001	0.001	0.001	0.001	0.002	0.001	0.001	0.005	0.05
TP6-P1-14	44	1	15	48.7	0.001	0.0001	0.001	0.001	0.01	0.001	0.001	0.001	0.005	0.94
TP6-P1-15	157	4	42	0.0	0.001	0.0001	0.001	0.001	0.012	0.001	0.001	0.001	0.005	0.05
TP6 (secondary profile)														
TP6-P2-2	184	31	8	9.4	0.001	0.0005	0.104	0.584	0.226	0.001	0.226	0.006	0.051	0.15
TP6-P2-3	105	24	4	3.1	0.001	0.0003	0.032	0.215	0.098	0.001	0.098	0.004	0.034	0.05
TP6-P2-4	481	173	14	6.3	0.002	0.0016	0.046	0.074	0.29	0.001	0.219	0.014	0.046	0.05
TP6-P2-5	98	7	19	0.2	0.001	0.0006	0.005	0.001	0.488	0.001	0.113	0.008	0.005	0.05
TP6-P2-6	97	1	24	0.0	0.001	0.0001	0.001	0.001	0.01	0.001	0.001	0.001	0.005	0.05
TP6-P2-7	146	1	37	0.0	0.001	0.0001	0.001	0.001	0.004	0.001	0.002	0.001	0.005	0.05
TP6-P2-8	135	1	34	0.0	0.001	0.0001	0.001	0.001	0.002	0.001	0.001	0.001	0.005	0.05
TP6-P2-9	147	1	37	0.0	0.001	0.0001	0.001	0.001	0.003	0.001	0.001	0.001	0.005	0.05
TP6-P2-10	160	1	41	0.0	0.001	0.0001	0.001	0.001	0.002	0.001	0.001	0.001	0.005	0.05

Below detection limit

Table H7. Water Leachable Sulphate and Metal Concentrations for Waste Rock from Main North WRD and the Copper Extraction Pad area

Sample ID	SO ₄ mg/L	Ca mg/L	Mg mg/L	Al mg/L	As mg/L	Cd mg/L	Co mg/L	Cu mg/L	Mn mg/L	Mo mg/L	Ni mg/L	U mg/L	Zn mg/L	Fe mg/L
Method Code	ED040W	ED093W	ED093W	EG020W	EG020W	EG020W	EG020W							
Main North WRD														
TP8-4	294	62	33	0.0	0.001	0.0011	0.424	6.55	0.251	0.001	0.188	0.015	0.271	0.05
TP8-5	187	11	37	0.3	0.001	0.0021	0.577	6.38	1.03	0.001	0.381	0.04	0.638	0.05
TP9-4	81	10	12	0.1	0.001	0.0004	0.135	2.7	0.096	0.001	0.119	0.005	0.179	0.05
TP10-2	590	111	35	30.7	0.001	0.0004	1.95	3.67	0.401	0.001	1.09	0.068	0.148	3.5
TP10-5	241	45	24	6.1	0.001	0.0003	0.442	1.58	0.279	0.001	0.351	0.036	0.15	0.05
TP11-3	1190	385	52	11.8	0.003	0.0005	0.406	4.46	0.469	0.001	0.626	0.071	0.093	1.78
TP12-1	438	68	72	1.1	0.001	0.0013	0.371	1.71	8.47	0.001	0.405	0.012	0.305	0.05
Copper Extraction Pad area														
TP19-1	817	152	84	5.9	0.003	0.004	6.05	40.3	11.6	0.001	3.73	0.031	0.9	0.05
TP20-3	165	4	35	0.1	0.001	0.0002	0.88	5.18	1.77	0.001	0.832	0.007	0.195	0.05
TP21-1	613	58	57	18.7	0.004	0.0021	4.8	81.2	8.13	0.001	3.79	0.053	0.899	0.3
TP21-3	380	12	53	2.2	0.001	0.0009	4.41	59.1	9.67	0.001	3.05	0.048	0.553	1.26

Below detection limit

Table H8. Water Leachable Sulphate and Metal Concentrations for Waste near the Pits and the Old Ore Stockpile

Sample ID	SO ₄ mg/L	Ca mg/L	Mg mg/L	Al mg/L	As mg/L	Cd mg/L	Co mg/L	Cu mg/L	Mn mg/L	Mo mg/L	Ni mg/L	U mg/L	Zn mg/L	Fe mg/L
Method Code	ED040W	ED093W	ED093W	EG020W	EG020W	EG020W	EG020W							
Main Pit bund														
TP13-1	860	8	69	64.8	0.046	0.0004	1.55	56.7	2.58	0.001	4.73	0.484	0.264	23.8
TP14-4	249	28	39	0.2	0.001	0.0032	2.01	9.57	2.46	0.001	1.67	0.011	0.272	0.05
TP15-2	596	54	81	2.2	0.002	0.0126	13.9	51.8	8.26	0.001	13.5	0.223	1.01	0.53
TP16-2	56	9	7	0.0	0.001	0.0001	0.033	0.051	0.028	0.001	0.047	0.005	0.005	0.05
TP17-1	165	17	25	1.5	0.001	0.0074	0.367	0.88	0.389	0.001	0.268	0.011	1.65	0.05
TP39-1	193	9	14	0.3	0.001	0.0003	0.195	71.4	0.229	0.001	0.249	0.005	0.144	0.05
TP40-1	487	103	52	2.9	0.001	0.0028	0.594	11.2	1.41	0.001	0.816	0.028	0.944	0.2
Intermediate Pit bund														
TP24-1	111	15	13	1.1	0.005	0.0002	0.37	3.14	0.545	0.001	0.441	0.001	0.082	0.05
TP26-1b	543	44	91	9.7	0.002	0.0016	0.737	9.26	9.1	0.001	0.967	0.015	0.49	0.05
TP25-1	98	4	18	2.1	0.001	0.0001	0.086	0.054	0.247	0.001	0.13	0.001	0.056	0.05
TP36-1	86	6	15	0.1	0.001	0.0001	0.3	0.708	2.31	0.001	0.24	0.001	0.113	0.05
Old Stockpile area														
TP45-1	683	177	26	23.3	0.004	0.0002	0.188	7.35	1.43	0.001	0.386	0.124	0.093	0.12

Below detection limit

Appendix I
Leachate and pH 7 Titration Results

Table I1. Leachate and pH 7 Titration Analyses for TP1, Main WRD

Sample ID	Al mg/L	As mg/L	Cd mg/L	Co mg/L	Cu mg/L	Mn mg/L	Mo mg/L	Ni mg/L	U mg/L	Zn mg/L	Fe mg/L
Method Code	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41							
LOD	0.010	0.001	0.000	0.001	0.001	0.00	0.001	0.001	0.001	0.005	0.050
TP1 (primary profile)											
TP1-P1-3	0.02	0.014	0.0001	0.004	0.017	0.07	0.015	0.146	0.093	0.005	0.05
TP1-P1-5	0.01	0.01	0.0002	0.048	0.029	0.99	0.003	0.476	0.006	0.005	0.05
TP1-P1-6	0.01	0.004	0.0002	0.049	0.02	0.41	0.002	0.426	0.002	0.005	0.05
TP1-P1-7	0.01	0.001	0.0002	0.04	0.025	0.46	0.001	0.221	0.001	0.01	0.05
TP1-P1-8	0.01	0.001	0.0001	0.097	0.489	0.18	0.001	0.356	0.001	0.035	0.05
TP1-P1-9	0.01	0.01	0.0008	0.206	0.073	1.08	0.002	0.813	0.001	0.03	0.05
TP1-P1-10	0.01	0.002	0.001	0.158	0.031	0.84	0.002	0.452	0.001	0.032	0.05
TP1-P1-11	0.01	0.001	0.0001	0.008	0.002	0.19	0.001	0.016	0.001	0.005	0.05
TP1-P1-12	0.01	0.001	0.0001	0.011	0.001	0.08	0.001	0.022	0.001	0.005	0.05
TP1-P1-13	0.01	0.001	0.0001	0.038	0.009	0.16	0.001	0.064	0.001	0.005	0.05
TP1-P1-14	0.01	0.001	0.0001	0.026	0.004	0.13	0.001	0.042	0.001	0.005	0.05
TP1-P1-15	0.01	0.001	0.0001	0.05	0.003	0.23	0.001	0.084	0.001	0.005	0.05
TP1-P1-16	0.01	0.001	0.0037	1.83	1.12	2.23	0.001	1.26	0.001	0.793	0.05
TP1-P1-17	0.01	0.005	0.0055	2.46	1.8	2.52	0.001	1.79	0.001	1.04	0.05
TP1-P1-18	0.04	0.006	0.0246	2.71	0.421	8.55	0.002	2.02	0.001	2.18	0.05
TP1-P1-19	0.01	0.001	0.0001	0.028	0.004	0.50	0.001	0.092	0.001	0.006	0.05

Below detection limit

Table I2. Leachate and pH 7 Titration Analyses for TP2, Main WRD

Sample ID	Al mg/L	As mg/L	Cd mg/L	Co mg/L	Cu mg/L	Mn mg/L	Mo mg/L	Ni mg/L	U mg/L	Zn mg/L	Fe mg/L
Method Code	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41							
LOD	0.010	0.001	0.000	0.001	0.001	0.00	0.001	0.001	0.001	0.005	0.050
TP2 (primary profile)											
TP2-P1-1	0.01	0.003	0.0009	0.148	0.046	1.04	0.001	0.394	0.001	0.044	0.05
TP2-P1-2	0.01	0.001	0.002	0.403	0.152	1.39	0.001	0.796	0.001	0.189	0.05
TP2-P1-3	0.56	0.004	0.0001	0.001	0.002	0.00	0.002	0.001	0.014	0.005	0.18
TP2-P1-4	0.66	0.003	0.0001	0.001	0.001	0.00	0.001	0.001	0.007	0.005	0.17
TP2-P1-5	0.33	0.001	0.0001	0.001	0.001	0.00	0.001	0.001	0.006	0.005	0.08
TP2-P1-6	0.02	0.004	0.0001	0.014	0.016	0.01	0.002	0.006	0.001	0.006	0.05
TP2-P1-7	0.02	0.001	0.0008	0.212	0.157	0.64	0.001	0.131	0.002	0.084	0.05
TP2-P1-8	0.28	0.026	0.0031	0.745	1.87	1.39	0.001	0.456	0.06	0.287	0.05
TP2-P1-9	0.01	0.002	0.0001	0.037	0.00607	0.07	0.001	0.036	0.001	0.008	0.05
TP2-P1-10	0.02	0.01	0.0004	0.288	0.495	0.22	0.001	0.229	0.004	0.077	0.05
TP2-P1-11	0.04	0.029	0.0034	0.847	2.8	0.91	0.001	0.475	0.015	0.791	0.05
TP2-P1-12	0.01	0.005	0.0002	0.154	0.01886	0.24	0.001	0.118	0.001	0.02	0.05
TP2-P1-13	0.01	0.001	0.0001	0.025	0.008	0.05	0.001	0.015	0.001	0.006	0.05
TP2-P1-14	0.01	0.001	0.0001	0.007	0.004	0.01	0.001	0.001	0.001	0.006	0.05
TP2-P1-15	0.01	0.005	0.0001	0.134	0.013	0.39	0.001	0.075	0.001	0.012	0.05
TP2-P1-16	0.01	0.004	0.0001	0.084	0.007	0.25	0.001	0.055	0.001	0.006	0.05
TP2-P1-17	0.01	0.003	0.0002	0.049	0.004	0.53	0.002	0.009	0.002	0.005	0.05
TP2-P1-19	0.01	0.001	0.0001	0.008	0.01	0.14	0.001	0.001	0.001	0.006	0.05
TP2-P1-20	0.01	0.001	0.0001	0.008	0.001	0.09	0.001	0.001	0.001	0.005	0.05

Below detection limit

Table I3. Leachate and pH 7 Titration Analyses for TP3, Main WRD

Sample ID	Al mg/L	As mg/L	Cd mg/L	Co mg/L	Cu mg/L	Mn mg/L	Mo mg/L	Ni mg/L	U mg/L	Zn mg/L	Fe mg/L
Method Code	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41							
LOD	0.010	0.001	0.000	0.001	0.001	0.00	0.001	0.001	0.001	0.005	0.050
TP3 (primary profile)											
TP3-P1-2	0.15	0.003	0.0001	0.001	0.001	0.00	0.001	0.001	0.004	0.005	0.05
TP3-P1-4	0.01	0.001	0.0001	0.006	0.004	0.12	0.004	0.004	0.001	0.005	0.05
TP3-P1-5	0.01	0.001	0.0001	0.002	0.002	0.11	0.006	0.001	0.001	0.005	0.05
TP3 (secondary profile)											
TP3-P2-2	0.01	0.001	0.0001	0.015	0.003	0.34	0.001	0.012	0.001	0.005	0.05
TP3-P2-3	0.01	0.001	0.0001	0.043	0.002	0.51	0.001	0.057	0.001	0.005	0.05
TP3-P2-4	0.01	0.001	0.0001	0.007	0.001	0.25	0.001	0.007	0.001	0.005	0.05
TP3-P2-5	0.01	0.001	0.0001	0.006	0.001	0.43	0.001	0.022	0.001	0.005	0.05

Below detection limit

Table I4. Leachate and pH 7 Titration Analyses for TP4 and TP5, Intermediate WRD

Sample ID	Al mg/L	As mg/L	Cd mg/L	Co mg/L	Cu mg/L	Mn mg/L	Mo mg/L	Ni mg/L	U mg/L	Zn mg/L	Fe mg/L
Method Code	S-GRA06	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41						
LOD	0.010	0.001	0.000	0.001	0.001	0.00	0.001	0.001	0.001	0.005	0.050
TP4 (primary profile)											
TP4-P1-2	0.02	0.127	0.0001	1.78	6.12	0.23	0.001	2.45	0.001	0.033	0.05
TP4-P1-3	0.02	0.036	0.0002	2.64	9.87	0.79	0.001	2.86	0.001	0.061	0.05
TP4-P1-4	0.01	0.023	0.0001	0.373	0.181	0.09	0.001	0.42	0.001	0.009	0.05
TP4-P1-5	0.01	0.001	0.0001	0.014	0.003	0.14	0.005	0.025	0.001	0.005	0.05
TP4-P1-6	0.01	0.001	0.0001	0.001	0.001	0.00	0.006	0.001	0.001	0.005	0.05
TP4-P1-7	0.01	0.001	0.0001	0.001	0.001	0.00	0.004	0.001	0.001	0.005	0.05
TP4-P1-8	0.01	0.001	0.0001	0.001	0.001	0.00	0.003	0.001	0.001	0.005	0.05
TP4-P1-9	0.01	0.001	0.0001	0.001	0.001	0.00	0.003	0.001	0.001	0.005	0.05
TP4-P1-10	0.01	0.001	0.0001	0.001	0.001	0.00	0.003	0.001	0.001	0.005	0.05
TP4-P1-11	0.03	0.001	0.004	0.946	0.07	1.30	0.001	0.855	0.001	0.36	0.05
TP4-P1-12	0.01	0.002	0.0027	1.57	4.84	1.50	0.001	1.21	0.001	0.912	0.05
TP4-P1-13	0.01	0.002	0.0054	2.16	9	2.12	0.001	1.63	0.001	1.26	0.05
TP4-5 Primary Profile											
TP5-P1-4	0.01	0.01	0.0001	0.215	1.7	0.06	0.001	0.192	0.001	0.005	0.05
TP5-P1-5	0.01	0.004	0.0001	0.13	0.704	0.04	0.001	0.079	0.001	0.005	0.05
TP5-P1-6	0.01	0.003	0.0001	0.073	0.377	0.06	0.001	0.046	0.001	0.005	0.05
TP5-P1-8	0.01	0.009	0.0001	0.328	0.918	0.06	0.001	0.273	0.001	0.005	0.05
TP5-P1-9	0.01	0.029	0.0001	0.848	0.198	0.39	0.006	0.707	0.001	0.005	0.05
TP5-P1-10	0.01	0.008	0.0001	1.27	0.93	1.14	0.002	0.738	0.001	0.005	0.05

Below detection limit

Table I5. Leachate & pH 7 Titration Analyses for TP7, Intermediate WRD

Sample ID	Al mg/L	As mg/L	Cd mg/L	Co mg/L	Cu mg/L	Mn mg/L	Mo mg/L	Ni mg/L	U mg/L	Zn mg/L	Fe mg/L
Method Code	S-GRA06	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41						
LOD	0.010	0.001	0.000	0.001	0.001	0.00	0.001	0.001	0.001	0.005	0.050
TP7 (primary profile)											
TP7-P1-1	0.03	0.028	0.0011	0.627	10.8	1.06	0.007	0.707	0.001	0.153	0.05
TP7-P1-2	0.02	0.001	0.0001	0.03	0.28311	0.11	0.001	0.038	0.001	0.039	0.05
TP7-P1-3	0.21	0.108	0.0514	4.54	16.4	0.40	0.001	2.93	0.144	6.75	0.12
TP7-P1-4	0.17	0.048	0.139	1.39	0.06167	0.37	0.001	1.81	0.014	7.67	0.05
TP7-P1-5	0.06	0.043	0.114	1.32	3.29651	0.28	0.001	1.36	0.001	3.58	0.05
TP7-P1-6	0.08	0.092	0.101	3.78	0.5	0.43	0.001	2.78	0.002	5.1	0.05
TP7-P1-7	0.05	0.07	0.228	2.23	0.016	0.48	0.001	2.44	0.001	12.6	0.05
TP7-P1-8	0.04	0.002	0.217	2.86	0.009	0.59	0.001	3.12	0.001	11.4	0.05
TP7-P1-9	0.07	0.162	0.0572	6.89	0.204	1.66	0.001	7.47	0.005	10.9	0.05
TP7-P1-10	0.02	0.185	0.0851	7.92	0.062	2.20	0.001	8.17	0.003	11.4	0.05
TP7-P1-11	0.07	0.198	0.123	8.36	0.205	8.64	0.001	3.89	0.001	14.4	0.08
TP7-P1-12	0.01	1.4	0.512	58.2	0.308	8.02	0.001	24	0.001	132	0.05
TP7-P1-13	0.01	0.75	0.161	31	0.173	7.63	0.001	8.24	0.001	64.1	0.05
TP7-P1-14	0.04	0.118	0.122	4.69	0.127	2.73	0.001	1.62	0.001	7.45	0.05
TP7-P1-15	0.01	0.02	0.03	0.589	0.041	1.26	0.001	0.377	0.001	1.33	0.05

Below detection limit

Table I6. Leachate and pH 7 Titration Analyses for TP6, Dyson's WRD

Sample ID	Al mg/L	As mg/L	Cd mg/L	Co mg/L	Cu mg/L	Mn mg/L	Mo mg/L	Ni mg/L	U mg/L	Zn mg/L	Fe mg/L
Method Code	S-GRA06	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41						
LOD	0.010	0.001	0.000	0.001	0.001	0.00	0.001	0.001	0.001	0.005	0.050
TP14-6 Primary Profile											
TP6-P1-2	0.01	0.001	0.0001	0.005	0.002	0.01	0.001	0.006	0.001	0.005	0.05
TP6-P1-3	0.01	0.001	0.0001	0.003	0.001	0.03	0.001	0.005	0.001	0.006	0.05
TP14-6 Secondary Profile											
TP6-P2-2	0.01	0.004	0.0001	0.99	0.238	1.28	0.004	0.436	0.001	0.005	0.05
TP6-P2-3	0.01	0.015	0.0002	2.48	5.24	3.02	0.001	1.55	0.001	0.064	0.05
TP6-P2-4	0.01	0.003	0.0001	1.53	0.454	2.44	0.001	0.71	0.001	0.01	0.05
TP6-P2-5	0.01	0.001	0.0001	0.002	0.001	0.00	0.001	0.002	0.001	0.005	0.05
TP6-P2-7	0.01	0.001	0.0001	0.001	0.001	0.00	0.001	0.001	0.001	0.005	0.05
TP6-P2-8	0.04	0.001	0.0002	0.01	0.001	0.14	0.001	0.076	0.001	0.005	0.05
TP6-P2-9	0.01	0.001	0.0001	0.001	0.001	0.06	0.002	0.007	0.001	0.005	0.05

Below detection limit

Table I7. Leachate and pH 7 Titration Analyses for Test Pits in Main North WRD and Copper Extraction Pad area

Sample ID	Al mg/L	As mg/L	Cd mg/L	Co mg/L	Cu mg/L	Mn mg/L	Mo mg/L	Ni mg/L	U mg/L	Zn mg/L	Fe mg/L
Method Code	S-GRA06	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41						
LOD	0.010	0.001	0.000	0.001	0.001	0.00	0.001	0.001	0.001	0.005	0.050
Main North WRD											
TP8-4	0.01	0.001	0.0004	0.102	0.097	0.22	0.002	0.036	0.014	0.013	0.05
TP8-5	0.01	0.001	0.0001	0.022	0.01	0.10	0.001	0.011	0.001	0.006	0.05
TP9-4	0.01	0.001	0.0003	0.01	0.004	0.02	0.001	0.009	0.001	0.005	0.05
TP10-2	0.01	0.001	0.0002	0.038	0.001	0.05	0.001	0.036	0.001	0.006	0.05
TP10-5	0.01	0.001	0.0001	0.008	0.001	0.03	0.001	0.007	0.001	0.006	0.05
TP11-3	0.01	0.001	0.0001	0.028	0.001	0.10	0.002	0.063	0.001	0.006	0.05
TP12-1	0.01	0.001	0.0002	0.02	0.002	2.05	0.001	0.033	0.001	0.006	0.05
Copper Extraction Pad area											
TP18-1	0.01	0.002	0.0003	0.62	0.036	4.08	0.001	0.313	0.001	0.012	0.05
TP20-3	0.01	0.001	0.0001	0.124	0.028	0.28	0.001	0.098	0.001	0.012	0.05
TP21-1	0.01	0.002	0.0002	0.565	0.083	2.88	0.001	0.223	0.001	0.017	0.05
TP21-3	0.01	0.001	0.0001	0.103	0.093	0.29	0.001	0.061	0.001	0.006	0.05

Below detection limit

Table I8. Leachate and pH 7 Titration Analyses for Test Pits Near the Pits and Old Ore Stockpile

Sample ID	Al mg/L	As mg/L	Cd mg/L	Co mg/L	Cu mg/L	Mn mg/L	Mo mg/L	Ni mg/L	U mg/L	Zn mg/L	Fe mg/L
Method Code	S-GRA06	ME-ICP41									
LOD	0.010	0.001	0.000	0.001	0.001	0.00	0.001	0.001	0.001	0.005	0.050
Main Pit											
TP13-1	0.01	0.008	0.0001	0.124	0.12	0.39	0.001	0.328	0.001	0.007	0.05
TP14-4	0.01	0.001	0.0004	0.273	0.024	1.00	0.001	0.21	0.001	0.006	0.05
TP15-2	0.01	0.001	0.0016	1.94	0.079	3.52	0.001	1.46	0.001	0.024	0.05
TP16-2	0.01	0.001	0.0001	0.001	0.001	0.00	0.001	0.001	0.002	0.005	0.05
TP17-1	0.01	0.001	0.0003	0.01	0.001	0.03	0.001	0.008	0.001	0.008	0.05
TP39-1	0.01	0.002	0.0001	0.022	0.597	0.03	0.002	0.023	0.001	0.008	0.05
TP40-1	0.01	0.001	0.0002	0.028	0.017	0.38	0.001	0.032	0.001	0.008	0.05
Intermediate Pit											
TP24-1	0.01	0.012	0.0001	0.006	0.003	0.01	0.001	0.006	0.001	0.006	0.05
TP26-1b	0.01	0.001	0.0001	0.016	0.003	0.92	0.001	0.018	0.001	0.006	0.05
TP25-1	0.01	0.001	0.0001	0.001	0.001	0.01	0.001	0.001	0.001	0.006	0.05
TP36-1	0.01	0.001	0.0001	0.013	0.002	0.22	0.001	0.009	0.001	0.005	0.05
Old Stockpile											
TP45-1	0.01	0.002	0.0002	0.015	0.013	0.42	0.001	0.028	0.001	0.006	0.05

Appendix J
Elemental Concentrations by Aqua Regia

Table J1. Elemental Concentrations by Aqua Regia (TP1 in the Main WRD)

Sample ID	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cu ppm	Fe %	Hg ppm	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	U ppm	Zn ppm
Method Code	ME-ICP41																						
LOD	0.2						2	1				1			1	0							
TP1 (primary profile)																							
TP1-P1-2	3.9	2.7	1355	240	3.3	253	3.22	0.5	285	3260	11.7	1	0.14	3.92	3430	23	0.01	2040	1550	709	2.23	220	157
TP1-P1-3	8.5	2.78	1110	130	2.9	225	2.17	0.5	208	5010	9.61	1	0.24	4.29	1295	29	0.01	1660	1820	1390	2.12	170	215
TP1-P1-4	4.6	2.63	594	60	1.9	142	0.71	0.5	172	2720	7.34	1	0.29	2.89	303	63	0.01	931	1110	559	1.4	110	132
TP1-P1-5	2.3	3.66	199	70	2.3	59	0.52	0.5	397	2270	7.16	1	0.24	4.02	277	27	0.01	745	1550	607	0.84	50	388
TP1-P1-6	1.1	2.39	80	50	1.3	23	0.2	0.5	259	2520	5.7	1	0.25	1.99	93	18	0.01	352	880	760	0.47	50	74
TP1-P1-7	3.3	3.42	400	50	2.3	58	0.75	0.5	461	3100	7	1	0.25	3.99	163	20	0.01	885	1850	1845	0.98	80	582
TP1-P1-8	2.2	3.95	160	70	2.4	30	0.74	0.5	405	2580	6.06	1	0.2	5.18	167	15	0.01	637	1970	1380	0.88	70	906
TP1-P1-9	1.7	3.83	156	60	2.2	16	0.62	0.5	303	3400	6.3	1	0.22	4.98	189	14	0.01	557	2140	461	0.84	70	206
TP1-P1-10	2.3	3.93	157	50	2.3	21	0.61	0.5	360	4610	6.01	1	0.25	5.2	179	16	0.01	604	1800	720	1.15	80	345
TP1-P1-11	0.5	3.76	35	80	1.9	7	0.19	0.5	40	504	6.12	1	0.29	4.09	126	19	0.01	95	420	50	1.5	30	43
TP1-P1-12	1.1	3.52	38	50	1.8	10	0.12	0.5	73	283	5.49	1	0.44	2.78	116	53	0.01	126	470	75	1.41	10	41
TP1-P1-13	0.5	3.9	58	50	2.6	9	0.18	0.5	65	569	6.37	1	0.32	3.52	153	49	0.01	134	800	47	1.84	10	51
TP1-P1-14	0.4	3.01	33	50	1.5	5	0.11	0.5	51	351	5.89	1	0.5	2.45	112	23	0.01	110	410	47	2.68	10	38
TP1-P1-15	0.2	3.67	25	40	2.1	4	0.13	0.5	43	160	6.27	1	0.41	3.27	114	24	0.01	93	450	32	1.79	10	44
TP1-P1-16	0.2	3.74	17	70	2.1	5	0.16	0.5	35	81	6.85	1	0.31	3.78	124	13	0.02	86	560	64	1.82	10	41
TP1-P1-17	0.2	3.13	19	50	1.8	9	0.08	0.5	33	98	6.29	1	0.25	3.06	111	9	0.01	79	290	22	2.36	10	29
TP1-P1-18	0.2	3.48	16	90	2	6	0.29	0.5	32	127	5.55	1	0.28	3.44	103	10	0.01	78	1370	33	1.94	20	37
TP1-P1-19	0.2	3.87	20	70	1.8	3	1.31	0.5	50	174	5.01	1	0.11	6.76	269	2	0.01	79	5700	18	0.35	40	28
TP1-P1-19 (grab)	0.2	2.31	31	30	0.6	5	3.31	0.5	20	587	3.18	1	0.54	0.7	28	2	0.01	30	16500	31	0.46	130	4
TP1-P1-20	0.2	3.99	21	40	1.5	2	1.57	0.5	32	248	4.81	1	0.04	7.97	179	1	0.01	51	6600	14	0.17	20	20
TP1-P1-21	0.2	3.72	17	30	1.3	2	0.9	0.5	27	91	3.62	1	0.03	8.23	186	1	0.01	51	3550	14	0.2	30	23
TP1-P1-22	0.2	5.43	35	70	3.3	2	1.27	0.5	61	989	6.92	1	0.04	8.79	300	1	0.01	178	4720	26	0.23	60	53
TP1-P1-23	0.2	4.71	27	60	2.7	2	0.73	0.5	61	637	6.32	1	0.08	7.88	286	4	0.01	134	2790	32	0.42	50	50

Below detection limit

Table J2. Elemental Concentrations by Aqua Regia (TP2 and TP3 in the Main WRD)

Sample ID	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cu ppm	Fe %	Hg ppm	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	U ppm	Zn ppm
Method Code	ME-ICP41																						
LOD	0.2					2	1					1			1	0							
TP2 (primary profile)																							
TP2-P1-1	0.7	2.58	36	40	1.1	8	0.15	0.5	78	367	7.01	1	0.32	2.48	241	11	0.01	108	1130	326	1.21	10	27
TP2-P1-2	0.8	2.75	48	30	1.1	8	0.31	0.5	52	423	6.63	1	0.38	2.69	99	13	0.01	118	1410	117	2	10	29
TP2-P1-3	1.9	1.22	1145	10	0.6	25	0.03	0.5	449	3150	6.49	1	0.31	0.67	30	37	0.01	555	130	365	6.73	10	9
TP2-P1-4	1.5	1.44	634	30	0.6	7	0.06	0.5	217	6350	5.69	1	0.35	0.94	121	21	0.01	293	620	1255	3.91	10	54
TP2-P1-5	0.8	1.5	218	60	0.6	8	0.21	0.5	125	1640	5.27	1	0.24	0.6	45	11	0.01	153	1300	545	1.37	20	14
TP2-P1-6	1.2	3.21	30	50	1.5	50	0.27	0.5	477	4550	4.04	1	0.14	3.45	40	4	0.01	703	1640	114	0.36	40	108
TP2-P1-7	0.3	1.34	23	50	0.5	8	0.18	0.5	76	296	5.99	1	0.14	0.5	42	5	0.01	79	1270	19	1.29	40	20
TP2-P1-8	0.4	0.95	25	20	0.5	8	0.03	0.5	62	215	5.34	1	0.11	0.25	27	10	0.01	61	340	22	1.48	20	10
TP2-P1-9	0.2	1.64	22	100	0.5	9	0.12	0.5	93	351	7.89	1	0.17	0.71	32	1	0.01	123	1010	13	0.06	50	22
TP2-P1-10	0.7	2.81	31	80	1.3	14	0.35	0.5	266	4650	5.92	1	0.16	2.67	59	4	0.01	287	2020	39	0.36	100	46
TP2-P1-11	1.7	2.87	20	50	1.4	15	0.22	0.5	304	3860	5.08	1	0.14	3.12	119	7	0.01	413	1410	1890	1.43	130	477
TP2-P1-12	0.2	1.55	45	50	0.6	8	0.04	0.5	58	277	10.6	1	0.09	0.26	30	8	0.01	76	1490	39	0.05	50	31
TP2-P1-13	0.2	1.31	21	60	0.6	5	0.06	0.5	38	342	6.71	1	0.13	0.36	31	2	0.01	63	2150	15	0.04	50	13
TP2-P1-14	0.2	1.17	18	60	0.5	6	0.04	0.5	27	231	5.96	1	0.16	0.21	25	1	0.01	34	1450	13	0.04	30	7
TP2-P1-15	0.2	2.24	30	50	1.2	8	0.33	0.5	186	1340	6.83	1	0.12	1.6	167	6	0.01	195	2450	62	0.05	90	39
TP2-P1-16	0.2	2.6	25	60	1.3	7	0.42	0.5	146	799	6.55	1	0.14	1.5	148	3	0.01	157	4560	35	0.04	120	31
TP2-P1-17	0.2	2.36	23	90	1.3	8	0.3	0.5	251	1235	5.97	1	0.14	1.67	151	3	0.01	220	2580	295	0.06	90	78
TP2-P1-18	0.2	2.49	25	80	1.1	8	0.61	0.5	104	374	5.82	1	0.18	1.51	282	2	0.01	102	5310	19	0.02	110	16
TP2-P1-19	0.2	0.94	5	20	0.5	2	0.01	0.5	8	262	1.37	1	0.05	0.04	17	1	0.01	63	100	8	0.03	10	9
TP2-P1-20	0.2	1.27	3	20	0.5	2	0.01	0.5	3	57	1.04	1	0.06	0.05	17	1	0.01	6	80	9	0.03	10	5
TP3 (primary profile)																							
TP3-P1-2	0.2	3.11	16	50	1.8	2	0.46	0.5	103	507	5.92	1	0.23	3.26	228	14	0.01	118	1020	118	0.6	10	57
TP3-P1-3	0.2	6.32	18	90	4	2	0.86	0.5	509	2470	7.46	1	0.14	8.89	1105	1	0.01	524	4180	65	0.19	50	718
TP3-P1-4	0.2	5.27	20	190	3.3	2	0.69	0.5	263	1645	5.87	1	0.14	7.85	296	5	0.01	359	3330	53	0.62	50	346
TP3-P1-5	0.2	3.69	26	110	2.1	6	0.39	0.5	142	610	6.1	1	0.28	4.93	444	11	0.01	215	2340	85	1.38	20	201
TP3 (secondary profile)																							
TP3-P2-2	0.3	1.86	25	110	0.6	9	0.71	0.5	30	108	4.75	1	0.28	1.04	39	9	0.01	34	4240	60	1.2	40	9
TP3-P2-3	0.5	1.63	32	130	0.5	12	0.64	0.5	22	118	4.78	1	0.28	0.64	88	11	0.01	34	4860	81	1.51	50	7
TP3-P2-4	0.4	2.13	33	100	0.9	10	0.34	0.5	30	103	5.78	1	0.32	1.34	165	24	0.01	45	3050	73	1.61	20	15
TP3-P2-5	0.4	1.74	27	130	0.5	9	0.27	0.5	26	136	4.81	1	0.35	1.04	38	17	0.01	34	2360	124	1.23	30	11

Below detection limit

Table J3. Elemental Concentrations by Aqua Regia (TP4, TP5, and TP7 in the Intermediate WRD)

Sample ID	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cu ppm	Fe %	Hg ppm	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	U ppm	Zn ppm	
Method Code	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	
LOD	0.2					2	1				1		1		1	0						10		
TP4 (primary profile)																								
TP4-P1-2	2.4	1.88	990	40	1.1	2	0.27	0.5	629	16300	5.33	1	0.41	1.16	93	23	0.01	764	660	159	5.02	10	49	
TP4-P1-3	2	1.57	131	40	0.6	12	0.07	0.5	154	3030	4.95	1	0.32	1.29	56	19	0.01	267	330	267	4.76	10	60	
TP4-P1-4	1.8	1.61	232	50	0.7	16	0.08	0.5	110	1280	5.24	1	0.37	1.26	144	16	0.01	201	700	206	3.55	10	66	
TP4-P1-5	1.8	1.72	106	40	0.5	7	0.04	0.5	55	1055	5.32	1	0.42	1.02	80	16	0.01	125	320	145	3.4	10	51	
TP4-P1-6	1.6	2.9	41	40	1.1	5	0.08	0.5	63	384	5.31	1	0.44	2.41	124	51	0.01	133	360	612	2.65	10	132	
TP4-P1-7	0.7	1.63	103	60	0.6	2	0.02	0.5	65	1250	4.59	1	0.26	0.91	86	19	0.01	128	190	68	4.04	10	47	
TP4-P1-8	1.1	2.16	75	50	0.9	11	0.03	0.5	189	1890	5.21	1	0.31	1.89	108	15	0.01	243	210	124	4.6	10	76	
TP4-P1-9	1.2	2.66	54	40	1.6	7	0.16	0.5	160	849	6.02	1	0.25	2.92	178	14	0.01	287	520	144	4.76	10	92	
TP4-P1-10	0.9	2.48	90	40	1.3	6	0.08	0.5	168	1190	5.65	1	0.28	2.52	144	16	0.01	256	510	138	4.47	10	87	
TP4-P1-11	1	2.27	94	50	1.4	5	0.09	0.5	169	1340	5.11	1	0.24	2.47	373	16	0.01	260	510	94	4.28	10	143	
TP4-P1-12	1.2	2.25	76	40	1.1	6	0.05	0.5	106	993	4.95	1	0.26	2.22	133	15	0.01	215	380	109	4.28	20	210	
TP4-P1-13	0.2	1.76	88	50	2	2	0.01	0.5	35	416	14.3	1	0.13	0.15	136	17	0.01	56	390	77	0.43	10	66	
TP5 (primary profile)																								
TP5-P1-2	1.9	1.33	3040	150	1.7	2	0.07	0.5	1705	28300	3.68	1	0.54	0.12	59	23	0.01	1525	1200	90	2.66	10	7	
TP5-P1-3	3.1	1	1210	130	1.6	17	0.1	0.5	853	28000	3.93	1	0.28	0.38	178	22	0.01	899	1200	76	2.96	10	18	
TP5-P1-4	1.5	2.39	996	210	4.3	138	0.27	0.5	1115	9850	4.54	1	0.39	1.79	1210	13	0.01	1695	2330	144	0.24	20	74	
TP5-P1-5	2.4	0.74	1245	140	1.1	2	0.07	0.5	275	13000	3.53	1	0.23	0.08	31	33	0.01	327	1090	40	1.7	10	5	
TP5-P1-6	1.4	1.25	1430	130	1.3	6	0.07	0.5	357	7680	4.18	1	0.37	0.12	69	31	0.01	376	1200	39	1.94	10	5	
TP5-P1-7	2.1	0.99	1005	210	1.7	2	0.08	0.5	493	10700	3.08	1	0.27	0.09	130	22	0.01	417	1360	53	1.47	10	5	
TP5-P1-8	2.2	1.65	397	100	1.9	2	0.23	0.5	401	8300	5.05	1	0.3	0.51	363	20	0.01	433	1700	65	3.17	10	23	
TP5-P1-9	2.2	1.93	585	110	1.9	19	0.14	0.5	404	7740	5.04	1	0.27	1.35	293	17	0.01	457	1290	135	2.57	10	51	
TP5-P1-10	0.2	4.71	258	190	7	3	0.89	0.5	615	5170	5.45	1	0.1	3.11	782	1	0.01	808	5650	59	0.11	30	67	
TP7 (primary profile)																								
TP7-P1-1	3	0.85	786	40	0.5	7	0.08	0.5	63	3840	5.9	1	0.52	0.1	28	38	0.01	97	320	63	6.5	10	10	
TP7-P1-2	0.7	2.2	84	60	0.7	9	0.07	0.5	34	646	6.38	1	0.82	0.69	63	16	0.01	97	280	66	4.48	10	81	
TP7-P1-3	3	1.68	84	30	0.9	13	0.03	0.6	307	998	4.85	1	0.21	1.68	71	20	0.01	362	240	766	4.27	30	252	
TP7-P1-4	2.8	1.99	85	40	1.2	3	0.06	11.4	138	580	5.42	1	0.24	1.92	106	18	0.01	272	430	3470	4.58	10	4140	
TP7-P1-5	6.5	1.52	51	40	0.8	3	0.03	11	307	609	4.31	1	0.2	1.52	72	25	0.01	392	380	13000	4.2	10	3980	
TP7-P1-6	5.8	1.68	49	40	0.8	9	0.05	7.9	485	1335	4.71	1	0.3	1.46	72	20	0.01	558	360	11000	4.3	10	2650	
TP7-P1-7	5.4	1.63	71	40	0.9	3	0.05	14.5	145	341	5.62	1	0.2	1.52	104	25	0.01	267	440	5210	5.02	10	5070	
TP7-P1-8	5	1.96	48	40	1	3	0.05	13.3	226	471	4.89	1	0.24	1.95	85	22	0.01	364	460	9100	4.4	10	4950	
TP7-P1-9	3.5	1.92	57	40	0.9	9	0.06	1.6	199	640	4.95	1	0.32	1.8	87	18	0.01	327	430	4360	3.74	10	841	
TP7-P1-10	2.																							

Table J4. Elemental Concentrations by Aqua Regia (TP6 in Dyson's WRD)

Sample ID	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cu ppm	Fe %	Hg ppm	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	U ppm	Zn ppm	
Method Code	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	
LOD	0.2				2	1					1				1	0						10		
TP6 (primary profile)																								
TP6-P1-2	0.2	1.72	257	30	0.5	2	0.02	0.5	5	87	8.63	1	0.09	0.17	29	26	0.01	22	200	13	0.25	10	8	
TP6-P1-3	0.2	2.09	164	50	0.9	2	0.04	0.5	8	55	8.13	1	0.11	1.5	35	23	0.01	41	370	14	0.07	10	8	
TP6-P1-4	0.2	2.85	121	70	2.1	2	0.17	0.5	12	19	10.4	1	0.11	3.56	88	15	0.01	81	1100	19	0.05	10	13	
TP6-P1-5	0.2	1.58	126	90	2.1	3	0.03	0.5	12	22	6.52	1	0.13	0.85	31	14	0.01	61	570	21	0.05	20	11	
TP6-P1-6	0.2	2.8	77	60	2.3	2	0.26	0.5	17	19	8.87	1	0.13	3.36	70	13	0.01	107	1460	15	0.07	50	16	
TP6-P1-7	0.2	2.63	87	70	1.9	2	0.06	0.5	9	13	10.55	1	0.11	3.69	71	12	0.01	62	510	22	0.05	20	11	
TP6-P1-8	0.2	2.19	102	80	3.1	4	0.1	0.5	18	12	10.75	1	0.08	2.52	58	19	0.01	125	840	26	0.05	30	37	
TP6-P1-9	0.2	3.26	37	50	3.5	2	0.23	0.5	11	4	8.8	1	0.05	5.44	71	9	0.01	102	1140	12	0.02	20	20	
TP6-P1-10	0.2	2.26	45	50	4.5	2	0.12	0.5	17	3	10.85	1	0.07	2.79	110	8	0.01	160	870	11	0.01	20	21	
TP6-P1-11	0.2	4.17	40	50	3.2	2	0.27	0.5	9	4	11.6	1	0.06	7.26	124	4	0.01	96	1430	13	0.01	10	15	
TP6-P1-12	0.2	4.39	23	50	2.8	2	0.19	0.5	8	5	9.4	1	0.05	8.12	120	2	0.01	79	940	10	0.01	10	14	
TP6-P1-13	0.2	4.5	31	40	2.6	2	0.32	0.5	7	4	12.35	1	0.03	8.14	138	5	0.01	68	1400	12	0.01	10	14	
TP6-P1-14	0.2	2.4	15	40	1.3	2	0.2	0.5	3	5	5.77	1	0.04	3.5	151	2	0.01	33	500	9	0.01	10	8	
TP6-P1-15	0.2	2.5	17	30	1.5	2	0.11	0.5	5	8	5.84	1	0.05	3.21	68	3	0.01	44	540	12	0.02	10	9	

Below detection limit

Table J5. Elemental Concentrations by Aqua Regia (Test Pits in the Main North WRD)

Sample ID	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cu ppm	Fe %	Hg ppm	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	U ppm	Zn ppm	
Method Code	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	
LOD	0.2				2	1					1		1		1	0						10		
White's North																								
TP8-1	0.3	2.6	12	490	3.2	6	1.99	0.5	111	461	7.08	1	0.07	1.57	2520	2	0.01	137	8600	208	0.19	120	86	
TP8-2	2.8	2.61	21	40	1.8	80	1.41	0.5	207	6460	5.75	1	0.21	3.36	496	6	0.01	502	1630	171	0.35	390	63	
TP8-3	6.2	1.94	13	50	1.1	26	0.36	0.5	949	14450	4.83	1	0.2	1.77	157	5	0.01	754	830	327	0.33	200	47	
TP8-4	6.4	1.86	14	50	1.3	33	0.3	0.5	1515	13550	5.43	1	0.2	1.58	65	9	0.01	1165	570	1205	0.6	210	97	
TP8-5	0.2	1.9	4	100	1.3	2	0.03	0.5	26	400	3.58	1	0.06	0.12	162	1	0.01	27	90	31	0.09	20	24	
TP8-6	0.2	2.28	26	70	2.4	4	0.37	0.5	163	1155	11.2	1	0.06	2.35	184	5	0.01	185	320	56	0.09	60	191	
TP9-1	1.2	2.65	35	170	1.4	39	0.52	0.5	294	1780	6.74	1	0.19	2.68	350	5	0.01	383	1480	998	0.46	110	175	
TP9-2	4.7	5.01	8	240	3.5	5	0.72	0.5	481	5900	4.25	1	0.11	8.75	254	2	0.01	511	3180	15000	0.49	40	299	
TP9-3	2.4	1.27	15	20	0.8	6	0.04	0.5	332	1675	4.14	1	0.14	1.15	64	12	0.01	373	410	12000	0.29	50	480	
TP9-4	2.4	1.32	18	30	0.7	3	0.03	0.5	78	1460	4.07	1	0.13	0.95	50	14	0.01	125	680	5260	0.21	30	240	
TP9-5	0.2	1.38	3	40	0.5	2	0.03	0.5	9	226	1.62	1	0.07	0.1	47	1	0.01	16	70	226	0.06	10	29	
TP9-6	0.3	1.54	5	70	0.7	7	0.05	0.5	25	1225	2.74	1	0.08	0.19	144	2	0.01	35	160	454	0.1	50	45	
TP10-1	1.8	2.1	34	30	0.8	18	0.28	0.5	156	467	4.67	1	0.35	2.17	63	18	0.01	191	1730	432	0.96	10	33	
TP10-2	1.7	2.34	34	30	0.9	18	0.13	0.5	333	345	5.64	1	0.24	2.57	63	17	0.01	289	870	273	1.29	10	32	
TP10-3	1.5	2.66	34	30	1.2	15	0.18	0.5	263	384	6.24	1	0.2	3.22	74	14	0.01	295	990	271	2.07	10	36	
TP10-4	1.6	3.07	23	260	1.7	36	0.56	0.5	211	736	7	1	0.17	3.25	1010	11	0.01	297	1300	191	1.27	20	65	
TP10-5	0.2	1.12	9	30	0.8	2	0.03	0.5	11	70	8.09	1	0.02	0.04	272	1	0.01	27	240	32	0.1	10	9	
TP10-6	0.2	1.23	14	20	2.1	2	0.02	0.5	16	65	12.5	1	0.02	0.05	313	2	0.01	51	470	40	0.11	10	14	
TP11-1	0.5	2.72	14	50	1.7	6	0.22	0.5	61	680	6.17	1	0.2	2.85	122	11	0.01	96	790	193	0.87	10	52	
TP11-2	0.5	1.78	17	50	1.7	36	3.18	0.5	259	1295	3.91	1	0.16	3.56	381	5	0.01	271	1450	304	0.74	60	106	
TP11-3	0.7	0.73	47	60	0.5	61	0.34	0.5	18	259	4.49	1	0.47	0.3	32	12	0.02	35	1510	86	1.11	20	8	
TP11-4	0.2	2.13	17	880	5.1	2	1.11	0.5	57	28	10.6	1	0.03	2.53	8090	3	0.01	121	770	34	0.22	10	19	
TP12-1	2.1	1.74	49	120	1.4	15	0.12	0.5	45	493	7.16	1	0.24	1.13	1225	30	0.01	71	640	601	0.73	10	38	
TP12-2	0.5	3.02	16	60	2.2	11	0.41	0.5	363	1965	5.26	1	0.16	3.74	267	5	0.01	425	1450	474	0.82	40	124	
TP12-3	0.5	3.08	27	80	2.6	20	0.77	0.5	312	2150	5.21	1	0.19	3.86	390	5	0.01	330	2110	448	0.49	60	125	
TP12-4	0.2	2.76	17	340	3.9	2	1.28	0.5	83	90	9.5	1	0.08	1.89	3190	3	0.01	113	510	52	0.36	10	29	
TP12-5	0.2	2.36	22	390	3.8	3	0.25	0.5	42	39	10.25	1	0.06	0.63	3100	6	0.01	91	730	38	0.12	10	13	

Below detection limit

Table J6. Elemental Concentrations by Aqua Regia (Test Pits in the Copper Extraction Pad area)

Sample ID	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cu ppm	Fe %	Hg ppm	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	U ppm	Zn ppm	
Method Code	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	
LOD	0.2				2		1				1		1		1		0					10		
Copper Extraction Pad area																								
TP18-1	1.2	1.93	376	120	1.8	83	0.12	0.5	117	1585	7.62	1	0.15	1.01	258	20	0.01	209	800	463	0.4	20	42	
TP18-2	0.2	1.69	12	110	1.6	2	0.32	0.5	156	1640	4.5	1	0.06	0.39	806	5	0.01	111	80	57	0.09	20	30	
TP18-3	0.3	1.46	195	80	1.3	12	0.07	0.5	83	1205	10.05	1	0.12	0.19	245	31	0.02	120	660	55	0.22	10	16	
TP19-1	1.5	2.57	35	50	1.5	21	0.14	0.5	178	963	5.9	1	0.24	2.86	82	13	0.01	223	990	1415	0.85	20	198	
TP19-2	0.2	1.17	50	160	0.9	2	0.02	0.5	45	660	4.34	1	0.07	0.09	292	6	0.01	42	250	55	0.13	10	22	
TP19-3	0.2	1.41	89	380	2.3	2	0.05	0.5	357	2100	11.9	1	0.08	0.1	2310	11	0.01	148	590	81	0.14	20	30	
TP19-4	0.2	0.53	50	30	0.6	2	0.03	0.5	37	1605	2.53	1	0.23	0.1	72	20	0.01	23	80	39	0.02	10	6	
TP20-1	0.4	2.42	27	70	1.5	10	0.13	0.5	75	433	8.48	1	0.14	1.72	475	14	0.01	119	840	362	0.26	20	63	
TP20-2	0.2	2.09	36	30	1.1	4	0.03	0.5	12	338	14.1	1	0.1	0.13	50	40	0.01	31	460	79	0.14	10	10	
TP20-3	0.2	1.87	19	110	0.9	2	0.03	0.5	95	907	10.7	1	0.16	0.36	171	28	0.01	91	320	29	0.07	10	27	
TP21-1	0.3	1.65	210	50	1.4	10	0.07	0.5	68	2190	11	1	0.14	0.17	165	24	0.01	128	800	78	0.27	10	70	
TP21-2	0.2	2.91	90	60	1.2	2	0.02	0.5	83	1980	6.11	1	0.1	0.09	138	8	0.01	120	670	36	0.35	20	15	
TP21-3	0.3	1.8	57	180	2.1	10	0.02	0.5	136	1680	11.2	1	0.15	0.25	284	20	0.01	210	340	39	0.12	10	25	
TP22-1	0.5	2.54	121	70	1.3	12	0.08	0.5	38	363	5.98	1	0.14	1.64	102	9	0.01	83	670	204	0.27	10	30	
TP22-2	0.2	3.98	17	50	1.5	2	0.02	0.5	19	354	7.06	1	0.1	0.05	78	6	0.01	55	230	34	0.12	10	16	
TP23-1	0.3	2.37	280	60	1.3	11	0.13	0.5	47	427	9.08	1	0.18	1.39	164	13	0.01	83	1040	219	0.42	30	36	
TP23-2	0.2	2.29	189	240	1.8	2	0.01	0.5	18	430	13.3	1	0.08	0.05	446	11	0.01	47	880	128	0.1	20	21	
TP29-1	3.1	2.96	35	60	1.5	61	0.39	0.5	250	2710	6.5	1	0.25	2.75	164	11	0.01	362	1100	2980	0.99	100	370	
TP29-2	0.2	0.87	2	40	0.5	2	0.01	0.5	13	467	0.85	1	0.08	0.04	71	1	0.01	14	60	14	0.03	10	9	

Below detection limit

Table J7. Elemental Concentrations by Aqua Regia (Test Pits near the Main Pit)

Sample ID	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cu ppm	Fe %	Hg ppm	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	U ppm	Zn ppm	
Method Code	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	
LOD	0.2				2		1				1			1		1	0					10		
Main Pit																								
TP13-1	2.7	1.21	675	70	0.8	94	0.02	0.5	43	698	5.38	1	0.32	0.79	78	25	0.01	100	610	414	0.96	30	26	
TP13-2	0.2	1.46	4	50	1.6	11	0.13	0.5	40	5240	1.83	1	0.06	0.72	84	1	0.01	115	600	32	0.19	170	44	
TP13-3	0.2	1.17	2	20	0.6	2	0.01	0.5	4	721	0.72	1	0.04	0.03	30	1	0.01	19	40	8	0.1	10	3	
TP13-4	0.2	1.66	2	30	2	3	0.01	0.5	6	266	3.07	1	0.04	0.05	55	1	0.01	24	120	14	0.11	20	5	
TP14-1	0.3	4.51	21	20	3.6	5	0.01	0.5	121	275	9.01	1	0.12	3.18	46	10	0.01	261	620	43	0.33	80	102	
TP14-2	0.3	2.88	14	30	1.8	10	0.27	0.5	153	1125	3.8	1	0.16	3.54	55	1	0.01	349	1320	31	0.05	170	34	
TP14-3	0.3	4.79	17	30	2.8	10	0.92	0.5	207	1240	6.6	1	0.11	6.56	66	1	0.01	419	4610	26	0.11	180	40	
TP14-4	0.8	3.18	28	50	2.1	9	0.59	0.5	355	6450	6.52	1	0.13	4.19	206	8	0.01	400	2640	96	0.99	90	65	
TP14-5	0.2	2.21	4	600	2.9	2	0.28	0.5	66	36	4.75	1	0.02	1.85	3370	1	0.01	77	460	16	0.13	10	14	
TP15-1	0.3	3.43	13	40	1.9	22	0.31	0.5	408	1355	4.82	1	0.15	4.16	102	2	0.01	407	1580	93	0.12	580	77	
TP15-2	0.5	3.69	38	30	2.5	7	1.67	0.5	390	2310	5.75	1	0.14	5.21	227	9	0.02	581	7850	119	2.04	140	71	
TP15-3	0.5	2.85	32	30	1.5	8	0.6	0.5	131	1360	5.82	1	0.2	3.66	131	18	0.01	218	2780	409	3.61	40	147	
TP15-4	0.2	1.02	2	10	0.5	2	17.9	0.5	7	15	1.42	1	0.01	11.35	232	1	0.02	21	220	3	0.05	10	15	
TP15-5	0.2	1.34	2	110	0.8	2	16.4	0.5	11	77	2.11	1	0.01	11	874	1	0.02	17	500	9	0.05	10	24	
TP16-1	0.2	2.21	12	40	1	2	0.12	0.5	26	169	6.52	1	0.02	3.2	194	2	0.01	33	170	30	0.03	30	32	
TP16-2	0.5	1.47	27	30	0.5	21	0.05	0.5	117	96	6	1	0.12	0.59	26	2	0.01	81	420	27	0.06	50	13	
TP16-3	0.2	1.08	11	50	1.2	3	0.44	0.5	57	48	3.67	1	0.16	0.5	182	9	0.02	131	140	63	0.19	10	18	
TP16-4	0.2	2.26	33	80	2.3	3	0.1	0.5	173	183	9.61	1	0.15	0.53	317	12	0.01	287	80	60	0.08	10	65	
TP16-5	0.2	1.76	10	60	0.8	2	2.82	0.5	16	44	4.07	1	0.17	6.8	59	5	0.02	66	70	26	0.03	10	15	
TP16-6a	0.2	1.49	12	70	2.3	2	2.56	0.5	109	44	4.6	1	0.19	1.42	313	9	0.01	236	120	49	0.05	10	42	
TP16-6b	0.2	3.29	20	20	1.8	7	0.13	0.5	72	369	6.3	1	0.18	3.81	139	14	0.01	121	760	215	2.19	20	56	
TP17-1	2.7	1.56	38	40	0.7	55	0.1	0.5	70	741	5.7	1	0.27	1.48	72	24	0.04	109	1230	8420	0.97	10	334	
TP17-2	1.4	2.39	53	40	1.5	11	0.45	0.5	190	1105	5.27	1	0.3	2.46	68	15	0.03	232	2790	4910	3.06	130	133	
TP17-3	0.2	5.48	34	290	7	2	0.1	0.5	688	1235	9.14	1	0.04	4.4	842	1	0.02	1070	920	189	0.09	30	397	
TP17-4	0.2	5.35	30	110	4.3	4	0.28	0.5	319	382	9.23	1	0.03	4.95	417	2	0.02	578	2140	103	0.06	10	126	
TP38-1	0.8	0.82	49	60	0.5	12	0.02	0.5	64	224	5.99	1	0.25	0.51	61	12	0.01	48	270	58	0.8	10	11	
TP38-2	0.2	2.61	9	450	2.4	2	6.41	0.5	21	203	7.59	1	0.03	7.49	3810	1	0.01	71	1250	20	0.03	10	17	
TP38-3	0.2	1.16	25	20	0.7	2	0.08	0.5	5	225	11.6	1	0.11	0.14	83	3	0.01	13	1040	25	0.03	80	5	
TP39-1	3.5	2.81	203	460	1.6	19	0.4	0.5	136	4710	5.14	1	0.23	3.19	169	11	0.01	254	2360	244	0.34	50	64	
TP39-2	0.2	1.06	19	30	0.7	2	0.02	0.5	8	447	5.15	1	0.08	0.14	53	3	0.01	20	410	16	0.03	60	6	
TP39-3	0.2	1.51	11	40	0.5	2	0.02	0.5	7	130	3.9	1	0.1	0.08	28	2	0.01	13	480	8	0.05	30	5	
TP40-1	0.5	2.79	90	80	2.1	21	0.36	0.5	108	824	7.77	1	0.18	3.44	139	7	0.01	175	1660	217	0.37	30	214	
TP40-2	0.2	1.85	25	20	1.1	3	0.04	0.5	32	171	11.65	1	0.04	0.07	180	6	0.01	41	330	22	0.05	10	20	

Below detection limit

Table J8. Elemental Concentrations by Aqua Regia (Test Pits near the Intermediate Pit)

Sample ID	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cu ppm	Fe %	Hg ppm	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	U ppm	Zn ppm	
Method Code	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	
LOD	0.2					2	1				1		1		1	0						10		
Intermediate Pit																								
TP24-1	3.2	1.47	1215	230	2.7	24	0.15	0.5	524	1800	6.1	1	0.17	0.46	1315	23	0.01	380	2250	88	0.16	20	26	
TP24-2	2	1.8	36	60	1.3	6	0.08	0.5	143	683	5.92	1	0.12	1.16	195	11	0.01	207	450	215	2.31	10	119	
TP24-3	0.3	3.47	14	160	2	2	0.31	0.5	148	6660	6.05	1	0.08	2.29	402	2	0.01	278	700	115	0.27	10	106	
TP25-1	0.8	2.66	43	40	1.2	8	0.08	0.5	13	114	6.56	1	0.23	3.1	113	12	0.01	46	1120	141	0.6	10	49	
TP25-2	0.5	2.01	49	120	1.5	6	0.1	0.5	44	401	4.88	1	0.12	1.12	114	7	0.01	109	620	62	0.11	10	70	
TP25-3	0.2	2.49	19	180	2.1	2	0.26	0.5	65	160	6.11	1	0.09	1.48	978	3	0.01	101	440	45	0.16	10	51	
TP25-4	0.2	1.33	3	180	1.2	2	0.07	0.5	16	25	1.68	1	0.09	0.22	346	1	0.01	18	90	18	0.06	10	10	
TP26-1a	0.3	1.76	64	460	1.8	2	0.04	0.5	39	338	8.36	1	0.12	0.2	2860	6	0.01	52	320	435	0.32	10	24	
TP26-1b	0.4	1.55	53	400	1.4	3	0.03	0.5	25	391	5.39	1	0.15	0.23	1835	5	0.01	42	240	436	0.33	10	24	
TP26-2	0.2	1.21	3	80	1.7	2	0.09	0.5	89	126	1.21	1	0.06	0.13	236	1	0.01	114	80	24	0.31	10	27	
TP27-1	0.2	1.33	264	180	2.4	13	0.03	0.5	416	1600	5.84	1	0.08	0.16	1890	7	0.01	188	740	54	0.01	10	26	
TP27-2	0.2	1.25	90	220	1.8	4	0.06	0.5	217	1330	3.8	1	0.1	0.26	1030	5	0.01	155	430	48	0.02	10	83	
TP27-3	0.2	1.13	111	150	1.8	11	0.04	0.5	264	1025	4.43	1	0.07	0.18	1295	4	0.01	132	500	42	0.01	10	31	
TP27-4	0.2	1.1	66	130	1.9	3	0.05	0.5	143	664	7.32	1	0.06	0.29	826	4	0.01	124	580	33	0.03	10	31	
TP28-1	0.2	1.23	2	60	1.6	2	0.02	0.5	26	84	1.19	1	0.08	0.05	247	1	0.01	15	60	17	0.02	10	7	
TP28-2	0.2	1.04	18	30	1.4	2	0.02	0.5	20	108	1.38	1	0.03	0.14	116	1	0.01	29	50	15	0.01	10	8	
TP30-1	0.2	1.34	4	70	0.7	2	0.02	0.5	8	150	2.8	1	0.07	0.05	221	1	0.01	15	90	20	0.05	10	10	
TP30-2	0.2	1.1	25	110	1.5	2	0.02	0.5	19	212	9.34	1	0.05	0.05	336	4	0.01	34	440	31	0.04	10	14	
TP31-1	1.3	3.13	19	80	2.3	10	0.3	0.5	493	12950	5.47	1	0.12	3.65	276	7	0.01	481	2070	1545	0.01	40	103	
TP31-2	0.2	2.42	16	350	2.3	3	0.08	0.5	49	1085	16.1	1	0.05	0.14	10650	2	0.01	96	490	132	0.03	10	22	
TP32-1	0.2	1.37	129	680	4.6	2	0.07	0.5	367	2240	7.86	1	0.04	0.25	5370	2	0.01	312	1050	27	0.01	10	78	
TP32-2	0.2	1.07	92	1040	5.7	2	0.03	0.5	294	2070	7.12	1	0.02	0.06	6840	1	0.01	454	360	16	0.05	10	54	
TP32-3	0.3	1.27	186	1380	8.1	2	0.02	0.5	409	3350	10.55	1	0.01	0.04	7310	1	0.01	579	740	26	0.07	20	84	
TP32-4	0.2	1.78	204	1130	6.7	2	0.02	0.5	455	3000	13	1	0.03	0.06	9370	4	0.01	685	890	50	0.01	10	119	
TP33-1	0.3	1.66	188	610	5.6	2	0.16	0.5	550	3670	8.17	1	0.04	0.52	4610	3	0.01	365	1650	44	0.01	10	66	
TP33-2	0.5	1.88	272	770	7	2	0.04	0.5	916	5880	7.55	1	0.04	0.64	6030	3	0.01	374	1370	60	0.01	10	43	
TP33-3	0.2	1.86	150	140	2.3	4	0.02	0.5	424	1095	8.04	1	0.04	0.04	2100	7	0.01	138	780	68	0.01	10	23	
TP33-4	0.2	2.18	98	180	4.2	3	0.01	0.5	436	964	12.35	1	0.03	0.03	5420	9	0.01	414	710	232	0.07	20	23	
TP33-5	0.2	1.57	97	440	7.5	3	0.03	0.5	379	1750	13.35	1	0.02	0.1	3700	3	0.01	419	830	112	0.06	20	61	
TP34-1	0.2	0.86	49	140	1.3	3	0.01	0.5	310	930	2.37	1	0.06	0.04	1385	1	0.01	50	410	15	0.01	10	15	
TP35-1	0.2	0.99	266	110	1.7	7	0.08	0.5	107	2040	4.83	1	0.13	0.28	392	17	0.01	120	670	58	0.01	10	31	
TP35-2	0.2	1.25	218	110	1.7	2	0.04	0.5	94	948	3.19	1	0.15	0.07	367	8	0.01	53	690	52	0.01	10	9	
TP35-3	0.2	1.06	837	130	2.4	46	0.03	0.5	501	1860	5.9	1	0.13	0.18	1105	17	0.01							

Table J9. Elemental Concentrations by Aqua Regia (Test Pits near the Old Stockpile)

Sample ID	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cu ppm	Fe %	Hg ppm	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	U ppm	Zn ppm	
Method Code	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	ME-ICP41	
LOD	0.2					2	1				1		1		1	0						10		
Old Stockpile																								
TP41-1	7.6	0.81	72	60	0.5	32	0.02	0.5	233	2230	3.05	1	0.16	0.26	70	14	0.01	283	340	40000	1.24	10	265	
TP41-2	0.2	1.22	13	40	0.7	2	0.01	0.5	19	138	5.64	1	0.01	0.06	375	1	0.01	36	110	126	0.06	10	32	
TP42-1	0.2	2.19	22	90	1.4	6	0.04	0.5	88	938	11.45	1	0.06	0.09	783	3	0.01	83	310	589	0.07	30	23	
TP42-2	6	1.15	127	60	0.6	74	0.04	0.5	117	3290	3.8	1	0.23	0.65	183	18	0.01	315	490	10000	0.69	80	45	
TP42-3	0.2	2.19	27	10	1.9	2	0.01	0.5	9	403	15.1	1	0.01	0.03	49	1	0.01	36	400	47	0.04	20	13	
TP43-1	0.2	2.79	16	260	3.8	4	0.22	0.5	85	394	12	1	0.03	0.37	6310	1	0.01	142	740	171	0.01	10	88	
TP43-2	3.8	1.27	40	80	0.7	377	0.03	0.5	192	15400	3.87	1	0.25	0.6	226	5	0.01	289	370	285	0.31	640	26	
TP43-3	0.2	0.72	6	10	0.5	2	0.01	0.5	2	396	3.88	1	0.01	0.01	35	1	0.01	5	80	11	0.01	20	5	
TP44-1	3.1	1.16	60	70	0.5	66	0.09	0.5	98	1210	5.27	1	0.17	0.69	82	7	0.01	190	860	1645	0.26	70	24	
TP44-2	0.2	0.7	9	10	0.5	2	0.01	0.5	3	195	4.77	1	0.02	0.06	47	1	0.01	14	160	109	0.02	10	12	
TP45-1	1.6	0.93	167	390	0.6	53	0.17	0.5	38	578	6.55	1	0.23	0.43	4760	9	0.01	81	1300	325	0.62	40	29	
TP45-2	0.2	0.93	23	10	0.5	2	0.01	0.5	1	58	7.75	1	0.03	0.02	62	2	0.01	6	320	18	0.05	10	3	
TP46-1	1.3	1.42	64	90	0.8	30	0.03	0.5	216	1480	6.99	1	0.12	0.45	431	6	0.01	206	470	1190	0.25	60	15	
TP46-2	0.2	2.32	11	30	1.2	2	0.02	0.5	22	263	8.72	1	0.02	0.05	372	1	0.01	37	170	27	0.07	20	17	
TP47-1	1.4	2.83	39	60	1.4	27	0.22	0.5	269	747	6.19	1	0.22	3	182	12	0.01	299	980	579	0.71	30	123	
TP47-2	0.2	2.21	24	120	1.8	7	0.08	0.5	21	430	15.3	1	0.05	0.14	1195	3	0.01	39	550	74	0.04	20	20	
TP48-1	0.2	1.41	12	10	0.5	2	0.02	0.5	8	188	7.26	1	0.02	0.02	38	1	0.01	16	140	19	0.02	20	7	
TP48-2	0.4	1.56	53	130	0.8	14	0.08	0.5	23	557	8.31	1	0.07	0.27	704	3	0.01	42	290	109	0.07	30	26	
TP48-3	0.2	2.52	23	230	2.6	2	0.11	0.5	53	158	15.8	1	0.04	0.25	6430	2	0.01	110	600	134	0.06	20	34	
TP49-1	0.6	1.03	33	40	0.6	33	0.07	0.5	44	1300	6.19	1	0.11	0.44	328	10	0.01	85	480	38	0.04	140	9	
TP49-2	0.2	0.51	3	10	0.5	2	0.01	0.5	3	105	2.68	1	0.06	0.02	32	1	0.01	5	60	5	0.01	10	5	
TP50-1	0.2	3.12	22	60	2.9	6	0.26	0.5	66	459	6.55	1	0.38	2.76	224	3	0.01	108	1240	357	0.29	240	102	
TP50-2	0.2	0.9	5	10	0.5	2	0.02	0.5	4	39	3.89	1	0.05	0.06	78	1	0.01	9	110	16	0.02	30	9	

Below detection limit