LABORATORY TESTING REPORT

FOR

Eagle Industrial Minerals Corp.

Sedimentation, Filtration, and Rheology Tests

On

Magnetite Concentrate and Tails

For

Whitehorse Project

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1.0 SUMMARY

FLSmidth Salt Lake City Inc. (FLS) was contracted by Eagle Industrial Minerals Corp. to conduct sedimentation, filtration and rheology testing on the Magnetite Concentrate and Tails samples for the Whitehorse Project. Testing was conducted at the FLS Separations Laboratory in Midvale, Utah during December 2010.

1.1 Tails

Thickening objectives were accomplished by screening flocculants, determining feedwell design criteria related to effective feed conditioning for flocculation, conducting settling tests to determine sizing and design criteria, and by measuring thickened mud rheology to determine required rake torque and predict underflow manageability.

Flocculant screening showed that SNF Flomin 905MC produced the best settling rates and overflow clarity. SNF Flomin 905MC was used for this test campaign however any flocculant meeting those criteria could be substituted.

The test results show that to provide the best condition for flocculation, the optimum feed solids concentration is 17.5-wt% for thickening the Tails stream. The necessary feed dilution in the full scale thickener can be accomplished internally by an FLS E-Duc®, without adding any additional water to the system.

Two Flowsheet options were investigated for the Tails stream:

1. Conventional Thickener
2. Paste Thickener

Sizing and test results are shown in Table 1 for both options.

TEST CONDITIONS	**Conventional**	**Paste**
Design Feed Rate (mtph)	450	450
Feed Solids Concentration (wt%)	17.5	17.5
Flocculant	Flomin 905MC	Flomin 905MC
Recommended Total Floc Dose (g/t)	0	10-15
THICKENER SIZING		
Design Underflow Density (wt%)	52	72-73
Design Overflow Solids (ppm)	150	<100
Required U/F Retention Time (hr)	1	6-8
Design U/F Yield Stress (Pa)	<50	90-150
Recommended Minimum Unit Area (m^2/tpd)	0.80	0.04
Recommended Minimum Thickener Diameter (m)	105	24

Table 1: Tails Thickener Results Summary

FLS recommends the use of a paste thickener to process the Tails stream. By using a paste thickener, higher U/F densities can be achieved at lower unit areas.

1.2 Magnetite Concentrate

Two different flowsheet options are presented to process the magnetite concentrate material:

1. Thicken Magnetite Concentrate (Conventional Thickener) and filter underflow with Low Submergence Drum Filter.
2. Use Recessed Chamber Pressure Filter or Horizontal Belt Filter to process material as shown in flowsheet.

Thickener sizing and test results are shown in Table 2.

TEST CONDITIONS	Mag Con - Conventional	
Design Feed Rate (mtph)	70	70
Feed Solids Concentration (wt %)	22.5	55
THICKENER SIZING		
Design Underflow Density (wt% Solids)	78	78
Recommended Minimum Unit Area (m^2/tpd)	0.017	0.02
Recommended Minimum Thickener Diameter (m)	6	6.5
Design U/F Yield Stress (Pa)	<50	<50
Overflow Clarity (ppm)	<100	<100

Table 2: Magnetite Concentrate Thickener Results Summary

Filtration Testing was performed to simulate Drum Filter, Horizontal Belt Filter, and Recessed Chamber Pressure Filter operation. The objective of the filtration test work was to produce a filter cake with 9.5-wt% residual moisture.

Vacuum filtration testing indicated that the Magnetite Concentrate stream can be filtered using an FLS Low Submergence Drum Filter (LSDF) or a Horizontal Belt Filter (HBF) to residual cake moisture of 7-wt%. The vacuum filtration results are summarized in Table 2.

Vacuum Filtration Sizing Data	**LSDF**	**HBF**
Production Rate (mtph)	70	70
Filter Media	NY-547F	HE-4575
Feed Solids (wt%)	78	55
Cake Thickness (mm)	18	8
Cake Loading (kg/m^2)	47.8	20.1
Cycle Time, (min)	0.65	0.5
Cake Moisture (wt%)	7	7
Filtration Rate, (kg/m^2-hr)	1,560	1,923
Required Filtration Area (m^2)	45	36

Table 3: Magnetite Concentrate Vacuum Filter Results Summary

Both the LSDF and HBF will produce cakes with residual moistures less than the required 9.5-wt% moisture.

Recessed Chamber Pressure Filtration testing indicated that the Magnetite Concentrate stream can be filtered using an FLS Automatic Recessed Chamber Filter Press. The results and are summarized in Table 4.

Pressure Filtration Sizing Data	
Production Rate (mtph)	70
Feed Solids (wt%)	55
Filter Media	POPR-955
Cake Thickness (mm)	50
Plate Size (mm x mm)	1200 x 1200
# of Chambers	40
Cycle Time (min)	5.7
Cake Moisture (wt %)	9
Dry Cake Bulk Density (kg/m^3)	2,820

Table 4: Magnetite Concentrate Pressure Filtration Results Summary & Sizing

FLS recommends a (1) Model *1200FBM-40-PP-RP-HS-225-50mmFwash* with 40 chambers to produce a filter cake with 9.5-wt% residual cake moisture.

2.0 INTRODUCTION

FLSmidth Salt Lake City Inc. (FLS) conducted sedimentation, filtration and rheology testing on the Magnetite Concentrate and Tails samples for the Whitehorse Project in December 2010.

Thickening and rheology tests were conducted on both the tails and concentrate materials. Filtration tests were only conducted on the magnetite concentrate.

Thickener testing included screening flocculants, determining feedwell design criteria related to effective feed conditioning for flocculation, conducting settling tests to determine sizing and design criteria, and by measuring thickened mud rheology to determine required rake torque and predict underflow manageability.

Filtration testing included vacuum and pressure filtration technologies.

3.0 TEST RESULTS DETAILS

3.1 Sample Characterization

FLS received dry solids of both the Magnetite Concentrate and Tails. The dry solids from each material were diluted with process water (provided by client) to form a homogenous slurry. The slurries were agitated to give full suspension and a sample was taken for characterization and particle size analysis. As received sample characterization is summarized in Table 5. Particle size analysis is summarized in Table 6 with the results attached in the appendix.

Characterization	Concentrate	Tails
Solids Concentration (wt%)	50.4	68.6
SG Solids	4.87	2.87
SG Liquor	1	1
pH	7.1	7.7

Table 5: Sample Characteristic Summary

Percent Passing	Concentrate	Tails
D_{90} (µm)	112	208
D_{80} (µm)	88	152
D_{50} (µm)	48	64
D_{10} (µm)	8.8	3.9

Table 6: Malvern Laser Diffraction PSA

3.2 Flocculant Screening

A range of flocculants were tested that are typically effective in similar applications. The flocculants evaluated are summarized in Table 7.

Flocculant	Charge	Molecular Weight	Charge Density
Ciba MF-10	Anionic	High	Very Low
SNF Flomin 905MC	Anionic	Very High	Low
Hychem AF-309	Anionic	High	Medium
Hychem AF-306HH	Anionic	Very High	Medium
Ciba MF-351	Non-Ionic	Medium	None
Ciba MF-155	Anionic	Medium	Low-Medium

Table 7: Flocculants Evaluated

Flocculant solutions were made to 0.1 g/L and the samples were diluted to a solids concentration that would facilitate dispersion. Tests were conducted by adding the flocculant solution and mixing into a 250-mL cylinder and measuring the settling rate. Results are shown in Figures 1 and 2.

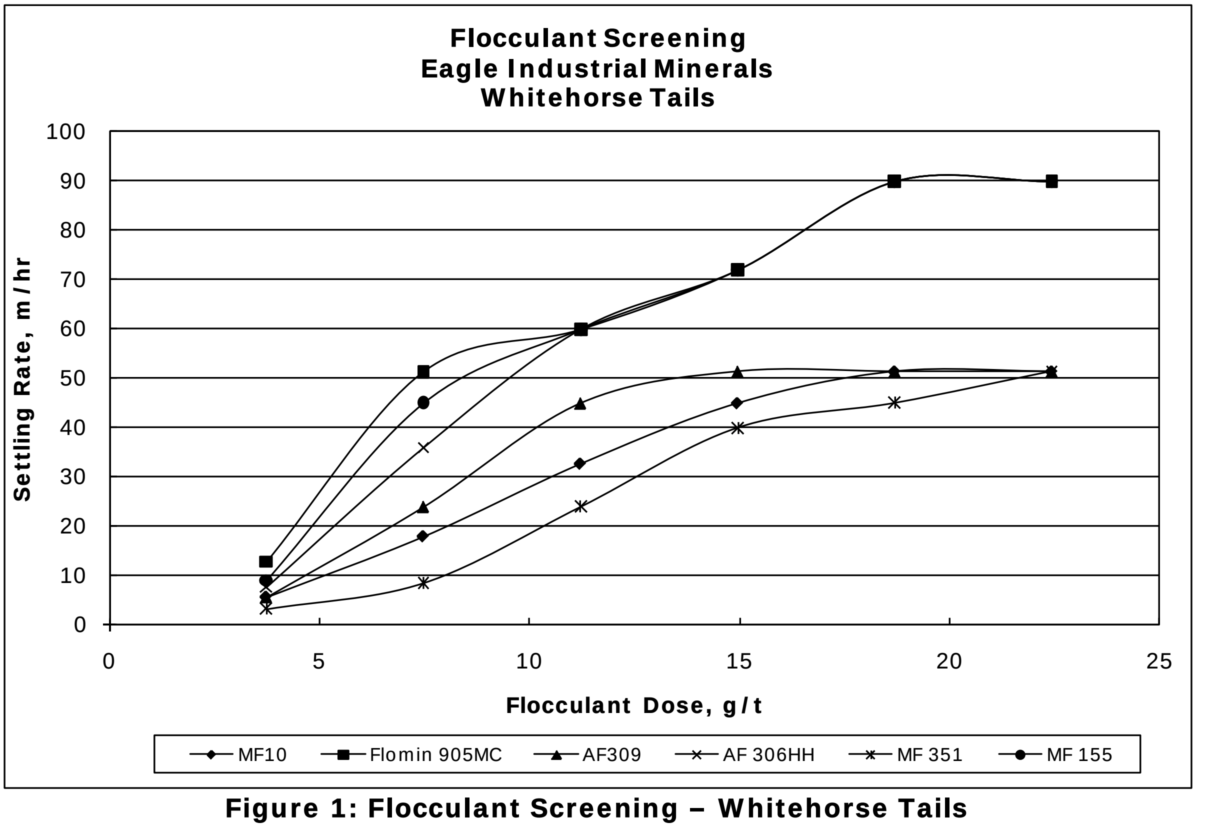


Figure 1: Flocculant Screening – Whitehorse Tails

The results showed that SNF Flomin 905MC produced the best settling rates for the tails material and was selected as the flocculant for the remainder of the testing.

FLS did not conduct flocculant screening tests on the Magnetite Concentrate. This material will settle without flocculation aid. The testing protocol did call for some tests to be completed with flocculant and therefore Flomin 905MC will be used for future testing on this stream as well.

3.3 Flux Testing

To determine the optimum slurry solids concentration for flocculation, settling flux tests were conducted. The optimum condition is determined by measuring the initial settling velocity at various flocculant doses and slurry solids concentrations.

A series of slurry solids concentrations were prepared in 250 mL cylinders and flocculant added over a range shown effective from the flocculant screening. The initial bulk settling rate was measured and converted into the solids initial settling flux, tpd/m^2. The solids concentration and floc dose giving the highest initial settling flux was chosen as the criteria for the Continuous Fill Deep Tube Test and 2-Liter Static Test. Results are shown in Figures 2 and 3.

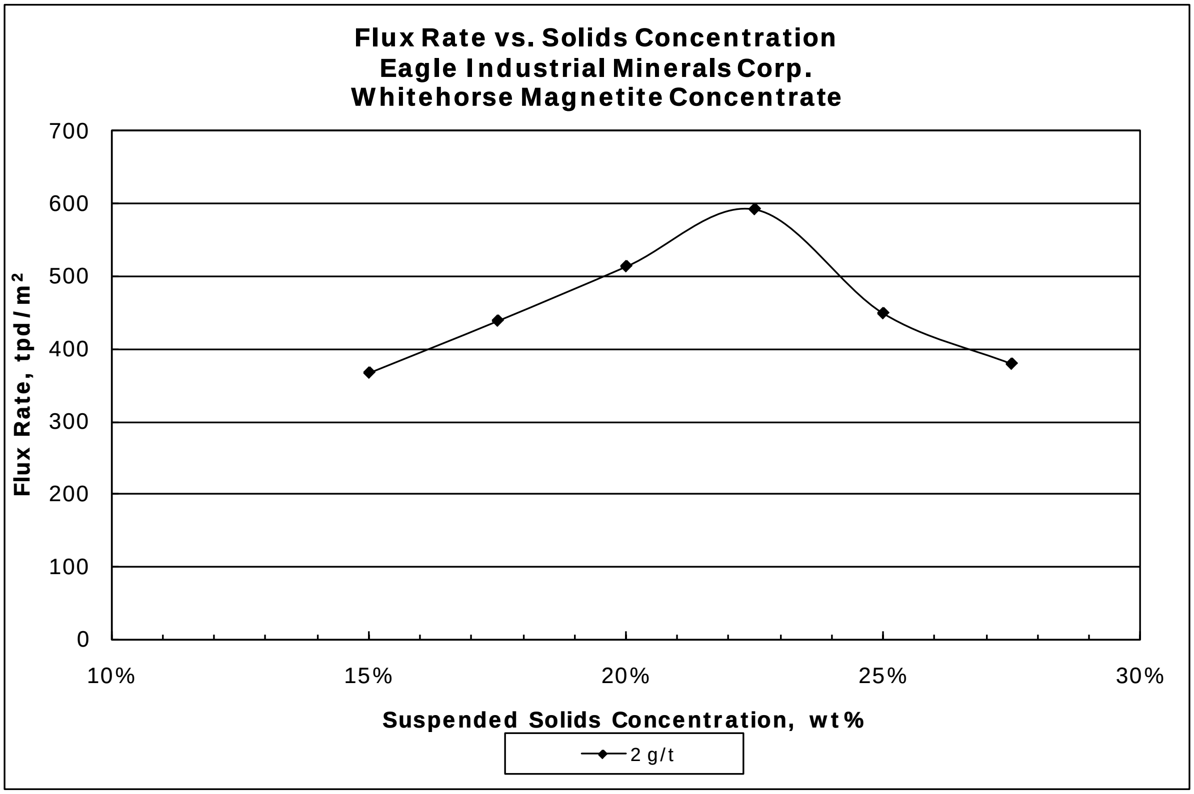


Figure 2: Flux Testing – Magnetite Concentrate

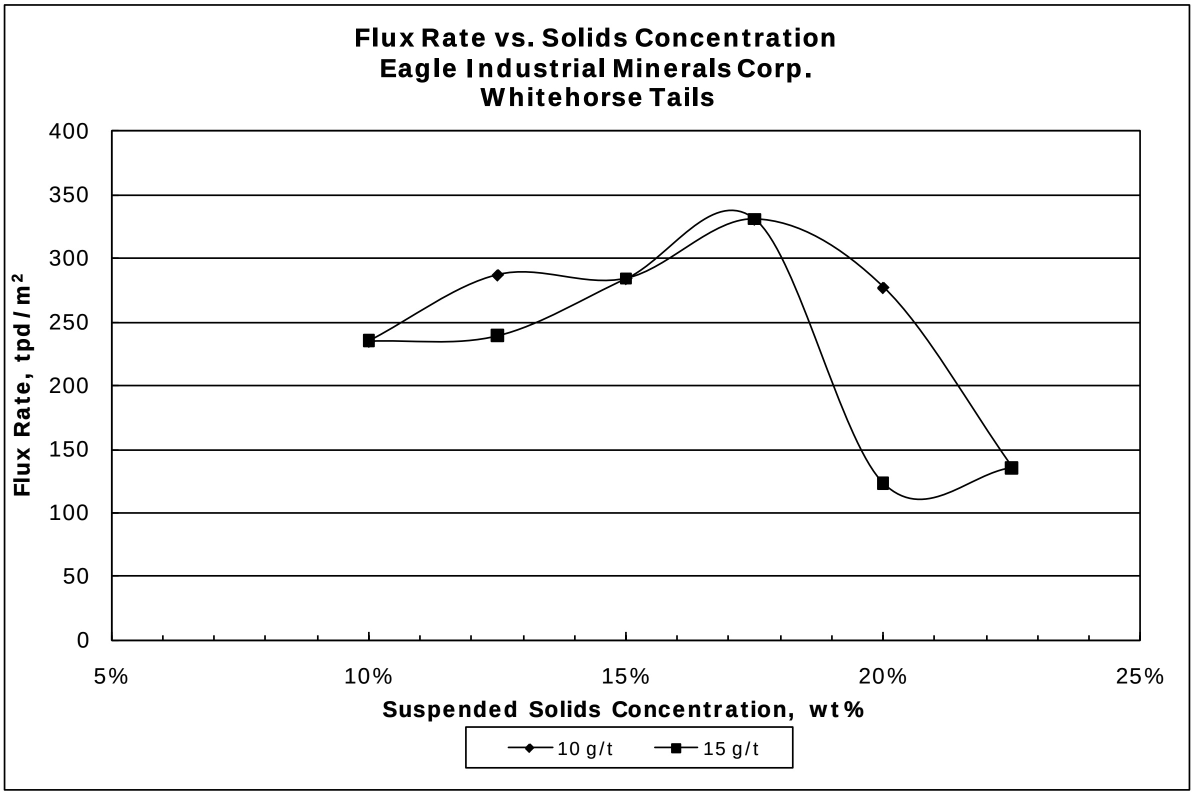


Figure 3: Flux Testing – Tails

The flux testing results indicate that a Concentrate thickener feed solids concentration of 22.5-wt% feed solids and a Tails thickener feed of 17.5-wt% will give the best conditions for flocculation. It should be noted that flux rates achieved during the flux testing are a relative comparison and cannot be used for final thickener sizing.

3.4 Continuous Fill Deep Tube Test

The Continuous Fill Deep Tube test serves two purposes: confirmation of the flocculant dose and solids settling flux which sets the unit diameter, and accumulation of a solids thickening bed as prescribed by the procedure to give a better prediction of the compaction rate and required bed residence time in a full scale thickener.

The Continuous Fill Deep Tube tests were conducted by preparing a batch of feed slurry at the solids concentrations determined from the flux tests. Flomin 905MC flocculant solution was prepared at 0.1 g/L and added via a metering pump at the feed well.

The typical fill time varies depending on the settling velocity. The fill rate and flocculant dosage are initially set to be about 50% of the predicted solids flux rate at 100% of the expected flocculant dosage on a g/t basis. After initial observations of floc structure and settling velocity, the test operator then increases the fill rate to approach the expected maximum while maintaining the floc solution flow rate, thus decreasing the floc dosage. If floc structure and overflow clarity continue to be good, the decrease in dosage is noted and the test continued. If degradation in floc structure or clarity is noted, the flocculant solution flow rate is increased until performance returns and the dosage noted.

Slow speed rakes are operating continuously during the fill and for the remainder of the test.

Once a sufficient solids bed depth is achieved, the fill is stopped and the static portion of the test is continued. Readings of bed height vs. time are taken until the drop in interface height ceases. The time is noted. Compacted slurry is then removed from the cylinder without dilution to measure the solids concentration. Results of the Continuous-Fill thickening test are summarized in Table 8 and shown in Figures 4.

Test Conditions	**Tails**
Diluted Feed Solids Concentration (wt %)	17.5
Floc Dose Range Tested Flomin 905MC (g/t)	10-24
Unit Area Range Tested (m^2/tpd)	0.017-0.10
Est. Bed Solids (wt%) – 1 hr Retention	69.8
Est. Bed Solids (wt%) – 2 hr Retention	71.2
Est. Bed Solids (wt%) – 4 hr Retention	71.9
Est. Bed Solids (wt%) – 6 hr Retention	72.6
Est. Bed Solids (wt%) – 8 hr Retention	73
Final Bed Solids (wt%)	74.2 (24 hr)
Overflow Clarity (ppm)	<100
Recommended Total Floc Dose (g/t)	10-15
Recommended Minimum Unit Area (m^2/tpd)	0.04

Table 8: Continuous Fill Deep Tube Cylinder Test Results

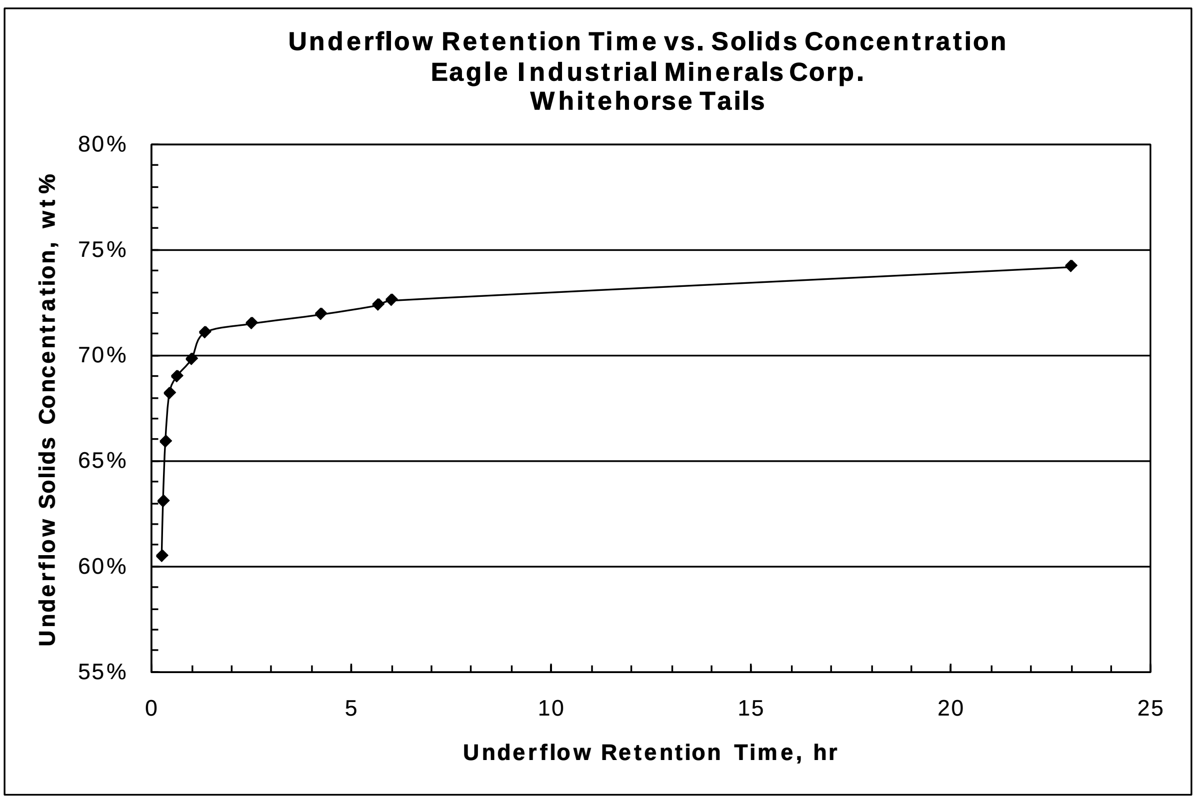


Figure 4: Continuous Fill Deep Tube Test Retention Results – Tails

3.5 2-Liter Static Tests.

Static 2-Liter cylinder batch tests were conducted to verify the initial settling velocity and other thickening sizing criteria for the Concentrate and Tails Samples at conditions selected as optimum from the flux testing. A 2-Liter cylinder is used to diminish sidewall effect.

The static tests are conducted by adding the flocculant solution to give the desired dose using a mixing plunger designed to add flocculant to the slurry as it is mixed in the cylinder. The methodology simulates the mixing intensity and retention time typical in the FLS E-Duc® feed well system.

Once flocculant was added, the mixing was stopped and measurements of interface height vs. time were noted. The test was run through the initial settling time until the drop in interface height ceased.

For data correlation of the static test results, the Wilhelm-Naide methodology was used. The correlated results, using this method, represent unit area sizing for High Rate Thickeners designed to operate at an average effective bed depth of 1m. The static test results also;

a) Establish preliminary criteria for the design of High Density and Paste thickeners (which operate at bed depths greater than 1 m)
b) Establish a basis for setting up the FLS Continuous Fill Deep Tube test, a discussion of which follows.

Results of static tests are summarized in Table 9 with the settling curves in the appendix.

Static Test Data	Concentrate			Tails		
Feed Solids (wt %)	22.5	22.5	55	17.5	17.5	26.8
Flocculant Dose (g/t)	0	2	0	0	15	0
Initial Settling Velocity (m/hr)	18.1	36.2	4.4	0.53	24.4	0.24
Final Underflow Solids (wt%)	82.7	79.8	84.3	62	67	60.2
Overflow Clarity (ppm)	<150	<100	<100	100	<100	100

Table 9: 2 Liter Static Test Results Summary

3.6 Underflow Rheology

Thickened underflow from the deep tube thickening tests was used for the determination of underflow rheology.

Process liquor was used to dilute the sample through a series of solids concentrations. The yield stress is measured as a function of solids concentration as the dilutions are preformed.

The apparatus used to measure the yield stress is the Haake VT550 Viscometer fitted with a custom vane. The vane is unique to FLS and was designed to measure yield stress for the purposes of selecting torque for FLS Thickeners and to predict limits of manageable underflow densities. Figures 5 and 6 show the thickened underflow rheology results for the samples tested.

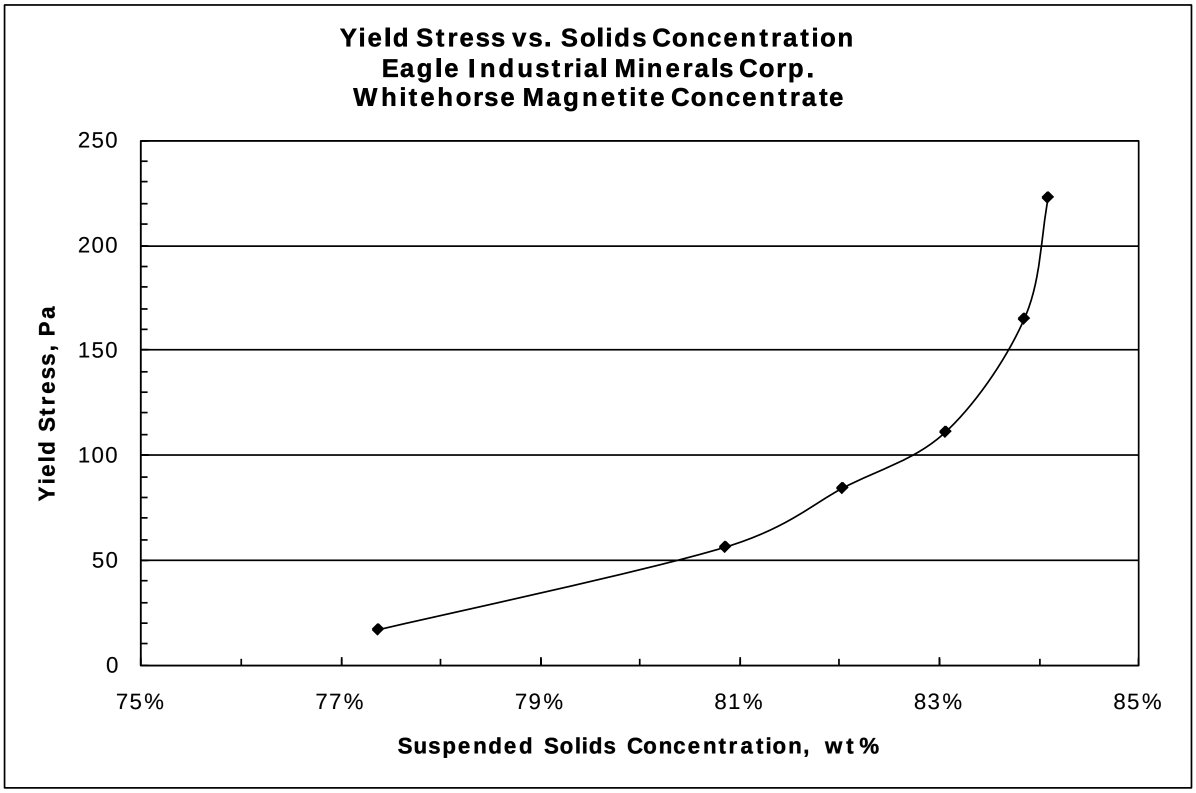


Figure 5: Underflow Rheology Results – Magnetite Concentrate

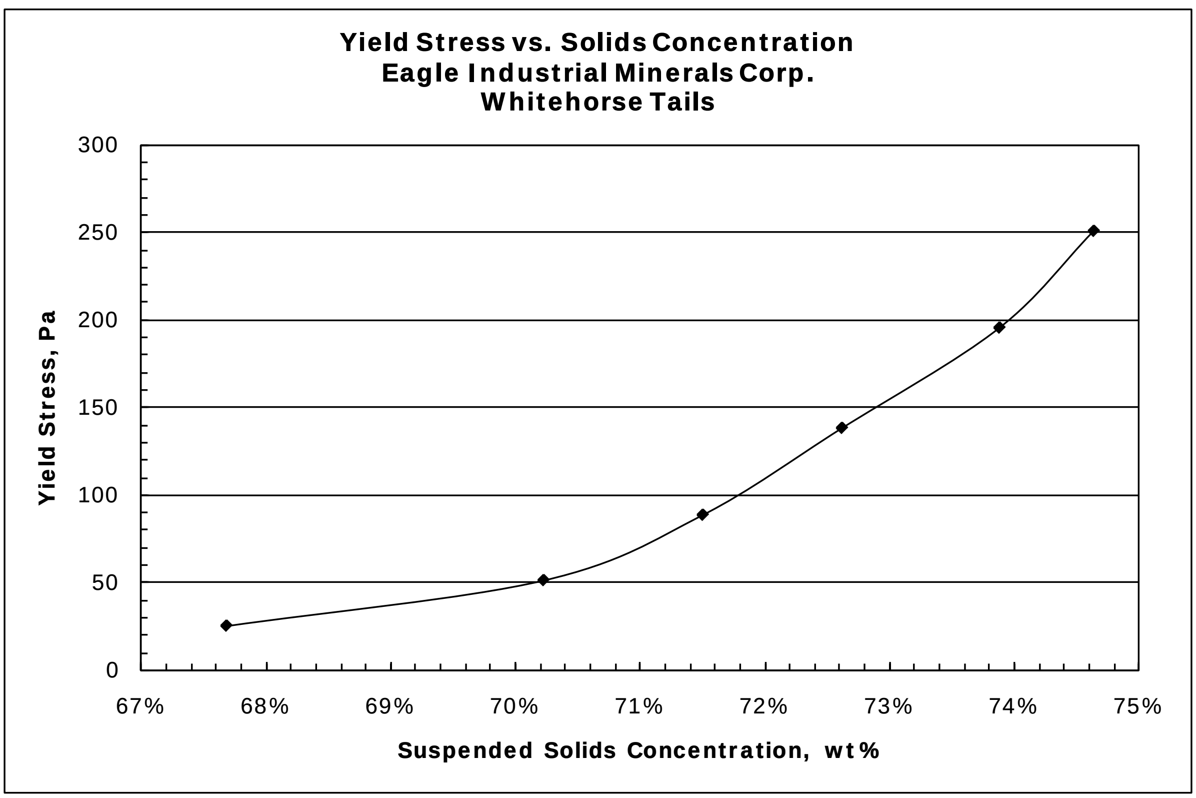


Figure 6: Underflow Rheology Results – Tails

Expected underflow densities from the Concentrate and Tails Thickeners will be approximately 78-80-wt% and 71-73-wt% respectively.

Figures 5 show the design thickener underflow solids will have a yield stress of less than 50 Pascals, which is indicative of a High Rate Thickener for the Magnetite Concentrate material. The Magnetite Concentrate thickener underflow will be used as the feed to a vacuum or pressure filter.

Figure 6 shows the design thickener underflow solids will have a yield stress between 75 and 150 Pa, which is indicative of a Paste thickener. The Tails material can be pumped up to 73-wt% solids by standard centrifugal pump guidelines (175 Pa). If higher underflow density is desired for the Tails material, a positive displacement pump is recommended.

3.7 Vacuum Filtration

Vacuum filtration leaf testing was conducted on the magnetite concentrate with top and bottom feed methods to simulate FLS Horizontal Belt and Low Submergence Drum Filter operation. The filter feed slurry was adjusted to 78-wt% for the Low Submergence Drum Filter (to simulate thickener underflow) and 55-wt% solids for the Horizontal Belt Filter. These two types of filters will represent different process conditions in the flowsheet.

Filter media screening was conducted and the chosen filter media exhibited the best overall performance based on filtration rate, filtrate clarity, cake release, and resistance to blinding. The screening resulted in the selection of a Polyester filter media designated HE-4570 with an air permeability of 14-scfm/ft^2 for the Belt Filter testing and a Nylon filter media designated NY-547F with an air permeability of 50-70-scfm/ft^2 for the Drum Filter testing.

The correlation curves relate cake thickness to dry cake loading, W (expressed as kg/m^2); cake dry solids weight to cake formation time; and cake moisture to drying time divided by cake loading or Moisture Correlation Factor. Figure 7 presents the relationship between cake loading and cake thickness. A cake thickness is selected and the dry cake loading is determined. Form time is determined from Figure 8 using the dry cake loading. The drying time is determined by selecting the desired moisture and using the dry cake loading factor along with the curve presented in Figure 9. Figures 7-9 are the correlation curves for the Low Submergence Drum Filter testing with the Figures 10-12 related to the Horizontal Belt Filter testing.

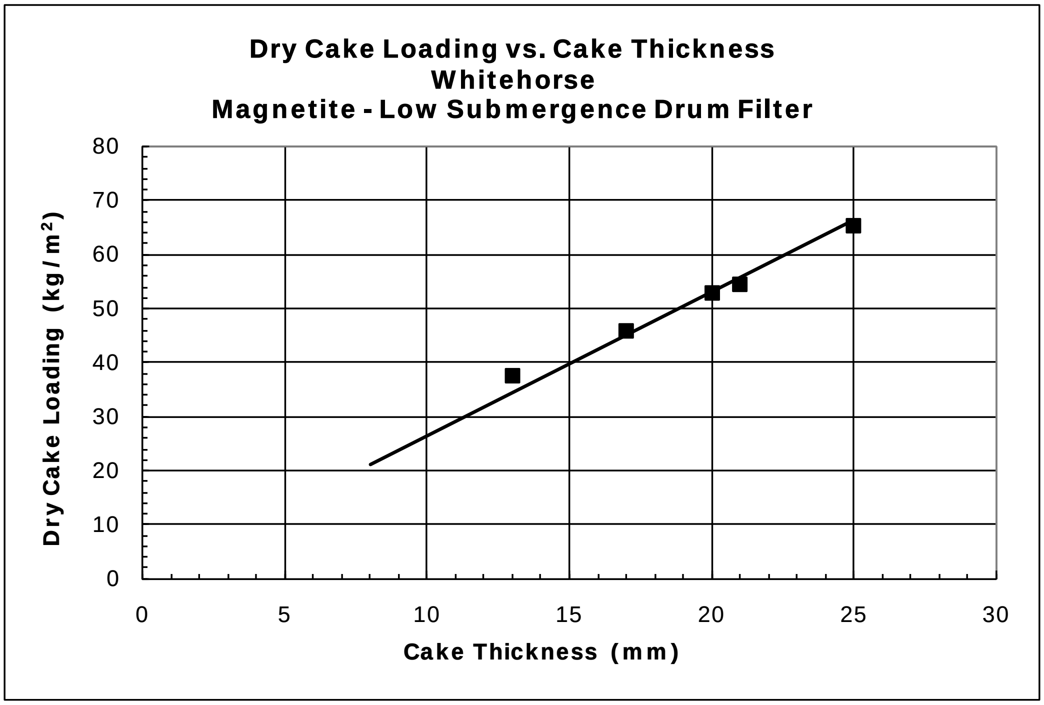


Figure 7: Cake Loading vs. Cake Thickness –Low Submergence Drum Filter

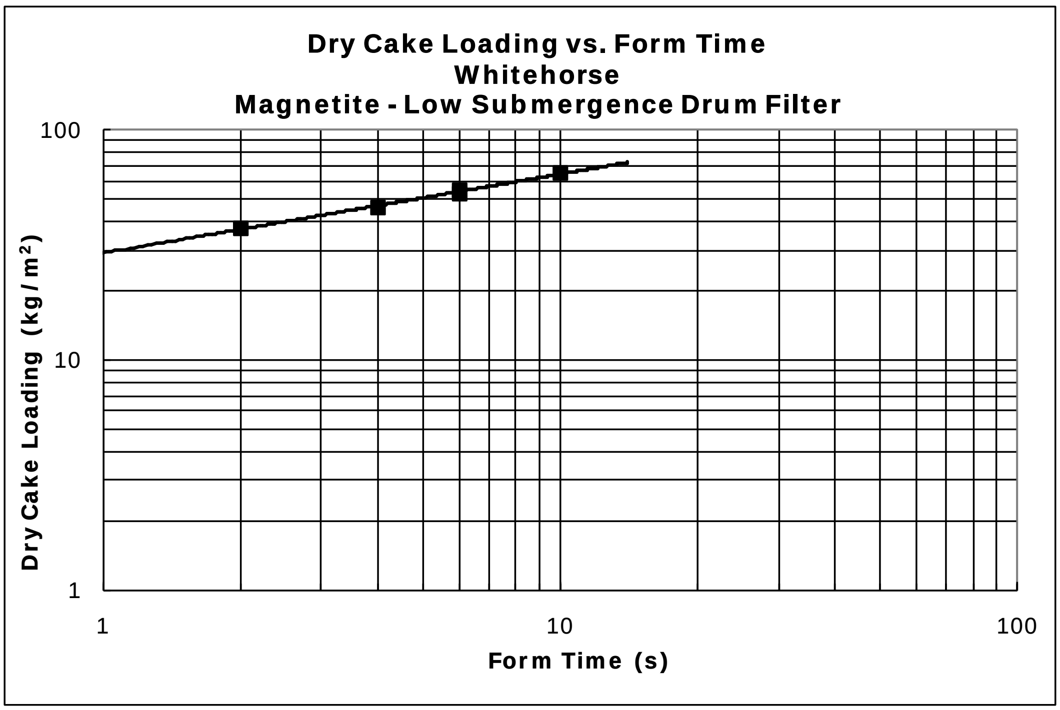


Figure 8: Cake Loading vs. Cake Form Time – Low Submergence Drum Filter

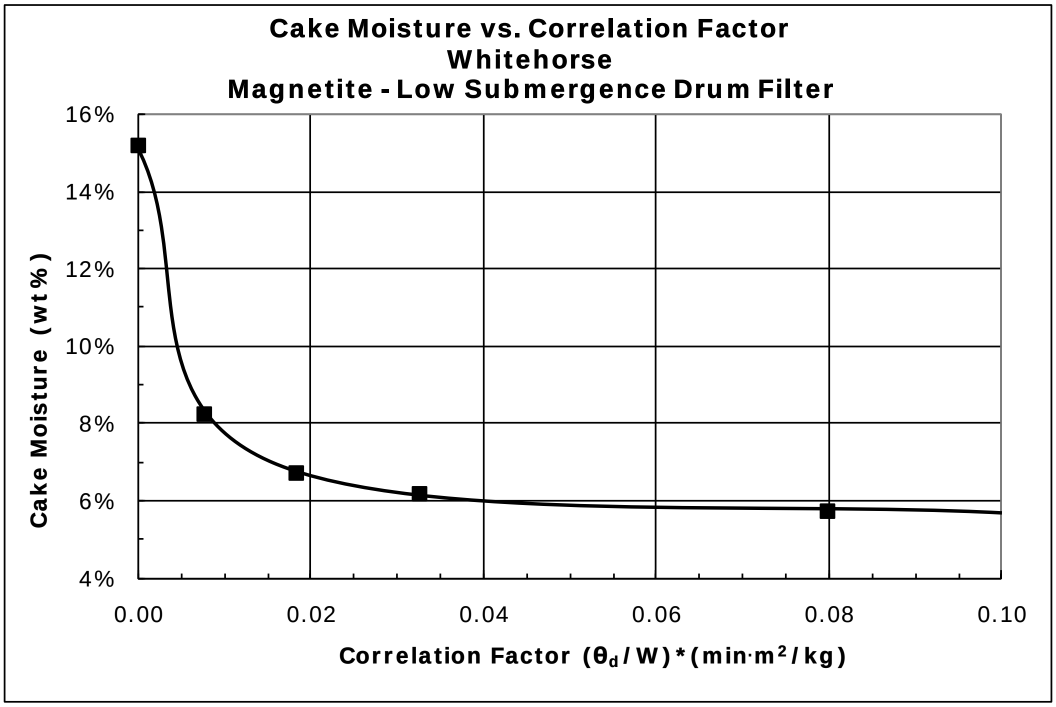


Figure 9: Cake Moisture vs. Moisture Factor – Low Submergence Drum Filter

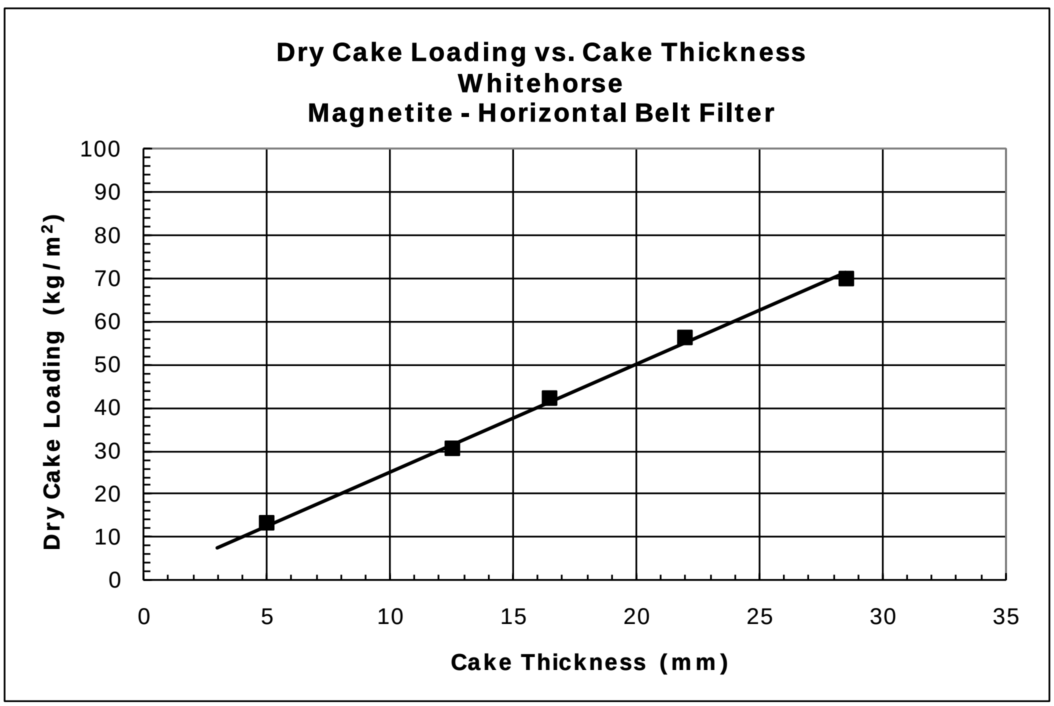


Figure 10: Cake Loading vs. Cake Thickness – Horizontal Belt Filter

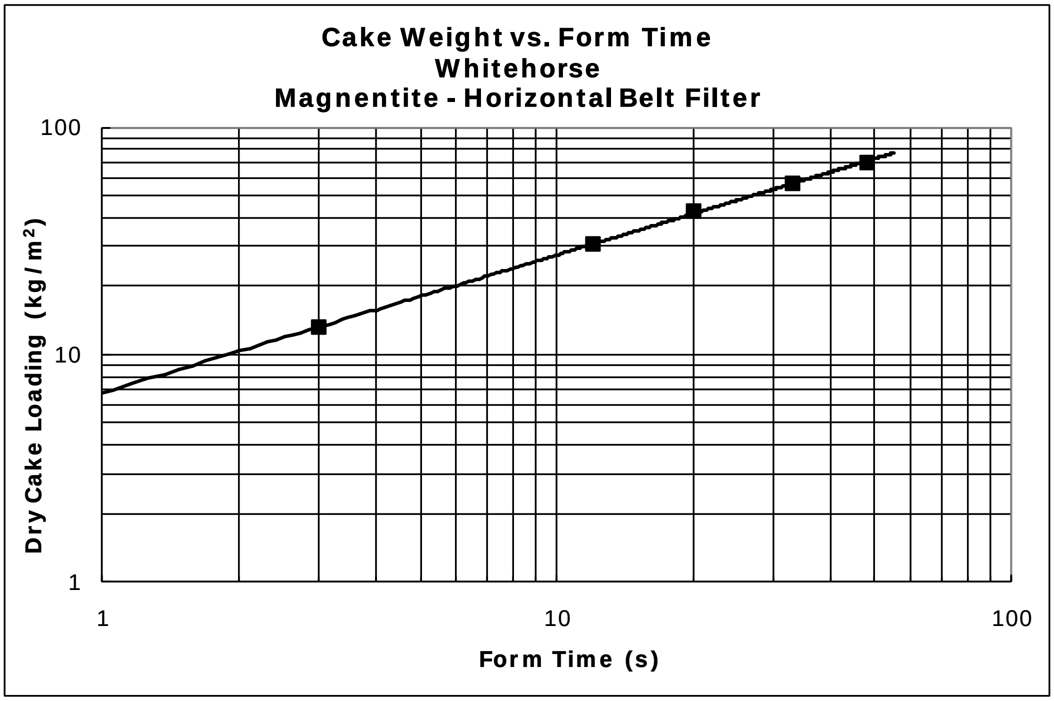


Figure 11: Cake Loading vs. Cake Form Time - Horizontal Belt Filter

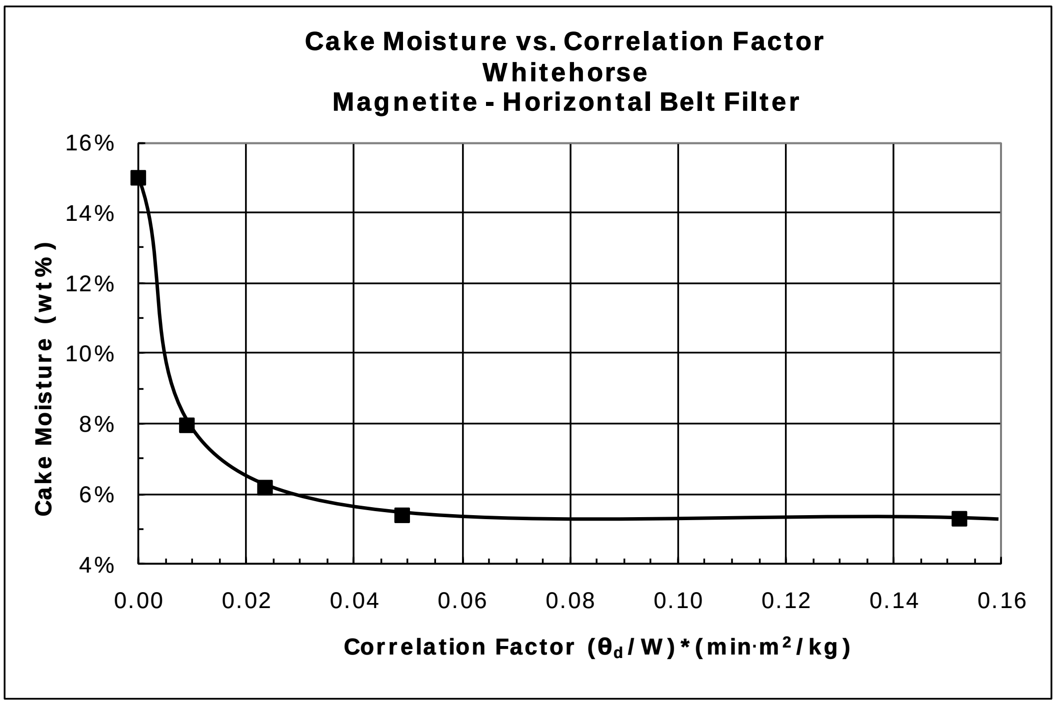


Figure 12: Cake Moisture vs. Moisture Factor - Horizontal Belt Filter

A summary of the vacuum filter tests are summarized in Table 11 with the actual filtration testing data located in the appendix.

Vacuum Test Data	Drum Filter	Belt Filter
Filter Media	NY-547F	HE-4570
Feed Solids (wt%)	78	55
Cake Thickness (mm)	13-25	5-28.5
Form Vacuum (in. Hg)	5	22
Form Time (s)	2-10	3-48
Dry Vacuum (in. Hg)	22	21
Dry Time (s)	0 – 180	0 – 120
Cake Moisture (wt%)	5.7 - 15.2	5.3 – 15.0

Table 11: Mag Con - Vacuum Filter Test Summary

The results from the vacuum filtration tests indicate the target cake moisture of 9.5-wt% can be achieved using a vacuum low submergence drum or belt filter.

3.9 Recessed Chamber Pressure Filtration

Recessed chamber pressure filtration work was conducted in a small single chamber bench test apparatus. The bench test apparatus allows for different cake thickness and feed pressures, as well as simulation of the recessed chamber process.

The bench test is conducted by pumping feed slurry into the double sided chamber. Filtrate production is measured with respect to time while the chamber is filling. Once the chamber is full the pumping is stopped and the air-blow portion of the cycle begins. Filtrate production is once again measured with respect to time throughout the air-blow cycle.

Once again, filter media screening was conducted. The tests were performed with the filter media Polypropylene 955 (POPR-955) with an air permeability of 5-scfm/ft^2.

The results for the pressure filtration tests conducted on the Whitehorse Magnetite Concentrate slurry are summarized in Table 12 with the actual filtration data located in the appendix.

Test Conditions	Test 1	Test 2
Feed Pressure (bar)	9.6	9.6
Cake Thickness (mm)	50	50
Feed Solids Concentration (wt%)	55	55
Feed Time (min)	2.5	4
Cake Blow Pressure (bar)	1.7	1.7
Cake Blow (min)	10	13
Final Cake Moisture (wt%)	4.5	4.7

Table 12: Mag Con - Pressure Filtration Results Summary

The results from the recessed chamber pressure filtration indicate the target cake moisture of 9.5-wt% at a dry bulk cake density of 2,820-kg/m^3-hr can be achieved using recessed chamber pressure filtration technologies.

4.0 CONCLUSIONS and RECOMMENDATIONS

4.1 Conclusions - Tails

Flocculant screening showed that an anionic polyacrylamide flocculant with a very high molecular weight and low charge density produced the best settling rates and overflow clarity. SNF Flomin 905MC was used for this test campaign however any flocculant meeting those criteria could be substituted.

Flux testing showed the optimum feedwell suspended solids concentration for flocculation is 17.5-wt% solids. Dilution to the target feed solids concentration can be achieved using FLS E-Duc® feedwell system and would not require adding additional water to the system.

Two different flowsheet options are presented to process the Tails material:

1. Conventional Thickener
2. Paste Thickener

Sizing for both of these options are shown in the following sections.

4.1.1 Conventional Thickener

The conventional thickener for the Tails material will not employ flocculation aid but the option exists to dilute the feed solids using FLS E-Duc technology. Sizing is shown in Table 13.

TEST CONDITIONS	**Tails - Conventional**	
Design Feed Rate (mtph)	450	450
Feed Solids Concentration (wt%)	17.5	26.8
RHEOLOGICAL CHARACTERISTICS		
Est. Bed Solids at 0.5 hr Retention Time (wt%)/ Est. Yield Stress	36 (<50 Pa)	35 (<50 Pa)
Est. Bed Solids at 1 hr Retention Time (wt%)/ Est. Yield Stress	52 (<50 Pa)	46 (<50 Pa)
Est. Bed Solids at 1.5 hr Retention Time (wt%) / Est. Yield Stress	57 (<50 Pa)	56 (<50 Pa)
Est. Bed Solids at 2 hr Retention Time (wt%) / Est. Yield Stress	62 (<50 Pa)	60 (<50 Pa)
THICKENER SIZING		
Design Underflow Density (wt% Solids)	52	46
Recommended Minimum Unit Area (m^2/tpd)	0.80	1.07
Recommended Minimum Thickener Diameter (m)	105	122
Design U/F Yield Stress (Pa)	<50	<50
Overflow Clarity (ppm)	150	150

Table 13: Summary of Thickener Test Results – Tails Conventional

Results show that U/F densities between 46-52 wt% solids can be achieved using a conventional thickener. Diluting the feed solids to 17.5 wt% solids will increase the U/F solids to 52 wt% as compared to a non diluting thickener that will produce U/F solids of 46 wt% solids. Dilution of feed solids will also results in a lower unit area.

4.1.2 Paste Thickener

Paste thickener option for the Whitehorse Tails streams yields the following test results and sizing shown in Table 14.

TEST CONDITIONS	Tails - Paste
Design Feed Rate (MTPH)	450
Feed Solids Concentration (wt %)	17.5
Recommended Total Floc Dose 905MC (g/t)	10-15
RHEOLOGICAL CHARACTERISTICS	
Est. Bed Solids at 1 hr Retention Time (wt%)/ Est. Yield Stress	69.8 (<50 Pa)
Est. Bed Solids at 2 hr Retention Time (wt%) / Est. Yield Stress	71.2 (75 Pa)
Est. Bed Solids at 4 hr Retention Time (wt%) / Est. Yield Stress	71.9 (90 Pa)
Est. Bed Solids at 6 hr Retention Time (wt%) / Est. Yield Stress	72.6 (140 Pa)
Est. Bed Solids at 8 hr Retention Time (wt%) / Est. Yield Stress	73 (150 Pa)
THICKENER SIZING	
Design Underflow Density (wt% Solids)	72-73
Recommended Minimum Unit Area (m^2/tpd)	0.04
Recommended Minimum Thickener Diameter (m)	24
Design U/F Yield Stress (Pa)	90-150
Overflow Clarity (ppm)	<100

Table 14: Summary of Thickener Test Results – Tails Paste

A paste thickener can be used to produce underflow at 72-73-wt% solids at a recommended minimum unit area of 0.04-m^2/tpd. The underflow at this density will have a yield stress between 90-150 Pa.

4.2 Recommendations – Tails

FLS recommends a 24-m paste thickener to produce underflow at 72-73wt% solids. This is preferred over a conventional thickener. The paste thickener will use a low dosage of flocculant (10-15 g/t) to achieve high underflow density.

4.3 Conclusions – Magnetite Concentrate

Flocculant screening showed that an anionic polyacrylamide flocculant with a high molecular weight and low to medium charge density produced the best settling rates and overflow clarity. Ciba Magnafloc 1011 was used for this test campaign however any flocculant meeting those criteria could be substituted.

Flux testing showed the optimum feedwell suspended solids concentration for flocculation is 22.5-wt% solids. Dilution to the target feed solids concentration can be achieved using FLS E-Duc® feedwell system and would not require adding additional water to the system.

Four different filtration technologies were simulated during this test campaign (Low Submergence Drum Filter, Horizontal Belt Filter, and Recessed Chamber Pressure Filter)The results contained in this report indicate that the Magnetite can be dewatered using any of the technologies.

Two different flowsheet options are presented to process the magnetite concentrate material:

1. Thicken Magnetite Concentrate and filter underflow with Low Submergence Drum Filter
2. Use Recesssed Chamber Pressure Filter or Horizontal Belt Filter to process material as shown in flowsheet.

Flowsheet shows that residual cake moisture must be below 9.5-wt%.

4.3.1 Conventional Thickener/Low Submergence Drum Filter

The conventional thickener for the magnetite concentrate material will not employ flocculation aid but the option exists to dilute the feed solids using FLS E-Duc technology. Sizing is shown in Table 5.

TEST CONDITIONS	**Mag Con - Conventional**	
Design Feed Rate (mtph)	70	70
Feed Solids Concentration (wt%)	22.5	55
THICKENER SIZING		
Design Underflow Density (wt% Solids)	78	78
Recommended Minimum Unit Area (m^2/tpd)	0.017	0.02
Recommended Minimum Thickener Diameter (m)	6	6.5
Design U/F Yield Stress (Pa)	<50	<50
Overflow Clarity (ppm)	<100	<100

Table 15: Summary of Thickener Test Results – Mag Con

A conventional thickener will produce U/F solids of 78-wt% for the magnetite concentrate. This can be accomplished with and without dilution of feed solids. Diluting the feed solids will results in a lower unit area. The underflow from the conventional thickener will be used as feed to a low submergence drum filter (LSDF). Table 16 shows the test results and sizing for the low submergence drum filter.

Test Data	LSDF
Solids (mtph)	70
Filter Media	NY-547F
Feed Solids (wt%)	78
Cake Thickness (mm)	18
Cake Loading (kg/m^2)	47.8
Cycle Time (min)	0.65
Cake Moisture (wt%)	7
Filtration Rate (kg/m^2-hr)	1,560
Required Filter Area (m^2)	45

Table 16: Summary of Low Submergence Drum Filter Test Results – Mag Con

The LSDF will produce residual cake moisture lower than 9.5-wt%. Residual cake moisture of 7-wt% was chosen for this material based on total cycle time that is fixed by the geometry of the LSDF.

4.3.1 <u>Horizontal Belt Filter / Recessed Chamber Pressure Filter</u>

The magnetite concentrate is produced at 55-wt% per the flowsheet design. At this feed density, the material can be filtered using two filter technologies: Horizontal Belt Filter (HBF) and Recessed Chamber Pressure Filter. Test results and sizing rates are found in table 17-18.

Test Data	HBF
Solids (mtph)	70
Filter Media	HE-4575
Feed Solids (wt%)	55
Cake Thickness (mm)	8
Cake Loading (Kg/m2)	20.1
Cycle Time (min)	0.5
Cake Moisture (wt%)	7
Filtration Rate (kg/m^2-hr)	1,923
Required Filter Area (m^2)	37

Table 17: Summary of Horizontal Belt Filter Test Results – Mag Con

Test Conditions	
Feed Pressure (bar)	9.6
Cake Thickness (mm)	50
Feed Solids Concentration (wt%)	55
Cake Blow Pressure (bar)	1.7
Total Cycle Time (min)	5.7
Final Cake Moisture (wt%)	9.5

Table 18: Summary of Automatic Filter Press Test Results – Mag Con

Both technologies (HBF and Pressure) will produce cakes with residual cake moistures less than 9.5-wt%. The HBF was designed at residual cake moisture of 7-wt%. This was chosen based on the geometry and belt speed of the filter. The pressure filter was designed to produce residual cake moisture of 9.5-wt%.

4.2 Recommendations – Magnetite Concentrate

Both options presented will produce cakes with less than 9.5 wt% moisture. An economical analysis will need to be completed to determine which option will allow the process to be most efficient.

APPENDIX

A1. Particle Size Analysis

Concentrate

FLSmidth
DORR-OLIVER EIMCO

Particle Size Analysis Result Report

Sample Name:
Eagle Resources Whitehorse Mag Con After Ultrasound - Average

SOP Name:

Measured:
Thursday, November 11, 2010 3:21:01 PM

Result Source:
Averaged

Analysed:
Thursday, November 11, 2010 3:21:02 PM

Particle Name:
Default

Particle RI:
1.520

Size range:
0.020 to 2000.000 um

Sensitivity:
Normal

Dispersant Name:
Water

Absorption:
0.1

Weighted Residual:
0.206 %

Obscuration:
13.01 %

Dispersant RI:
1.330

Concentration:
0.0380 %Vol

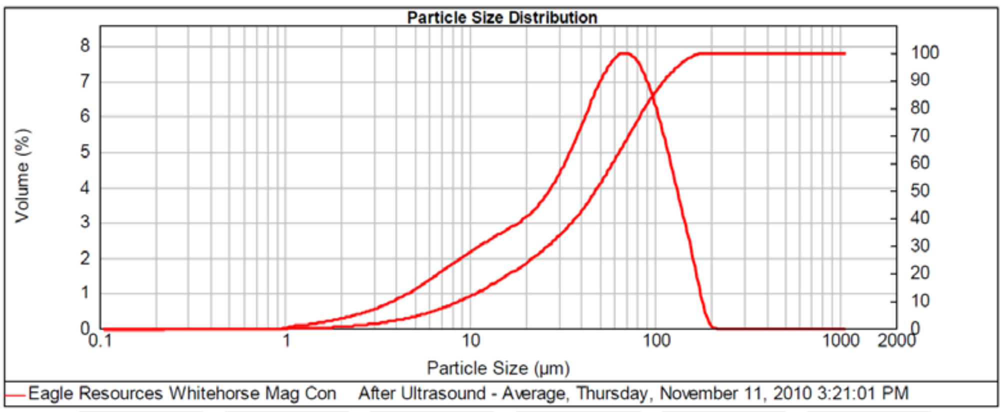
Result units:
Volume

Specific Surface Area:
0.292 m²/g

Surface Weighted Mean D[3,2]:
20.513 um

Vol. Weighted Mean D[4,3]:
54.682 um

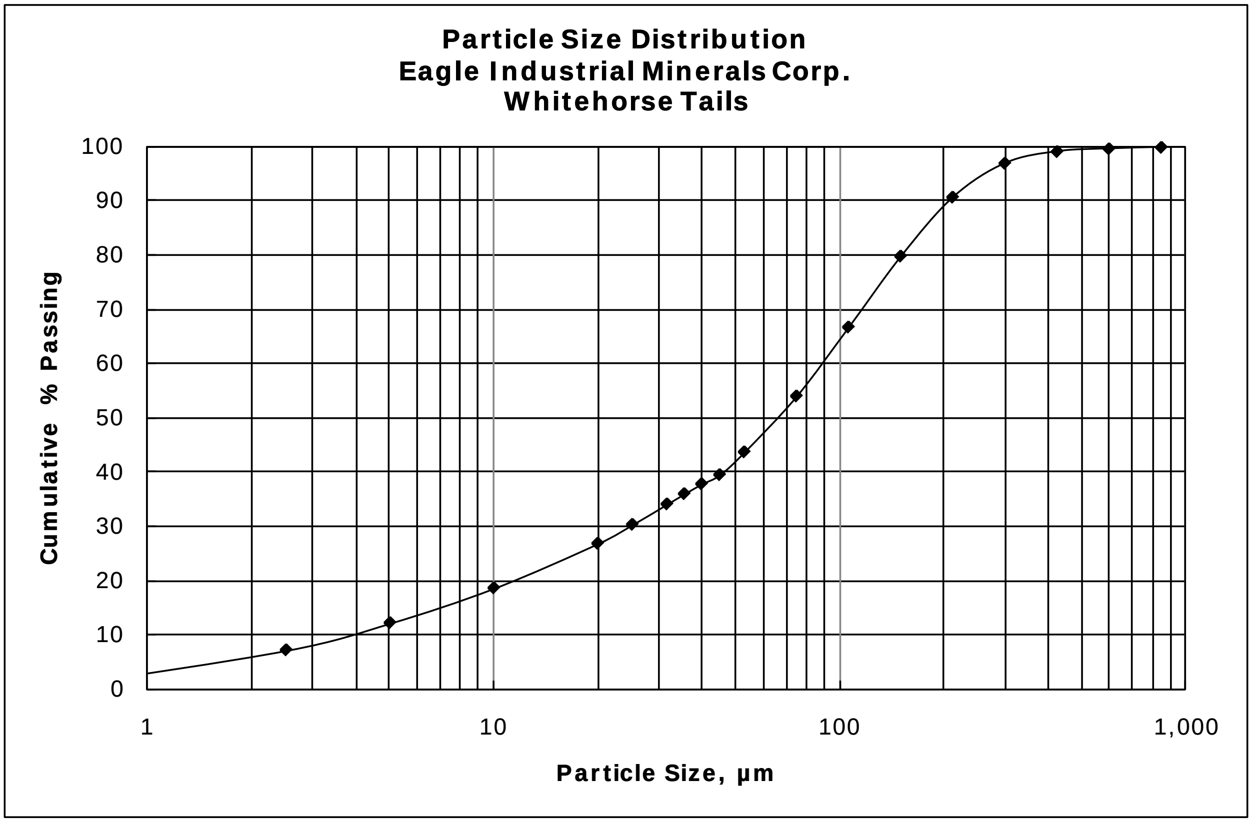
d(0.1): **8.799** **um** **d(0.5):** **47.723** **um** **d(0.8):** **88.024** **um** **d(0.9):** **111.883** **um**



Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %
0.020	0.00	0.142	0.00	1.002	0.00	7.096	7.48	44.774	47.27	316.979	100.00
0.022	0.00	0.159	0.00	1.125	0.03	7.962	8.77	50.238	52.29	355.656	100.00
0.025	0.00	0.178	0.00	1.262	0.11	8.934	10.20	56.368	57.73	399.052	100.00
0.028	0.00	0.200	0.00	1.416	0.20	10.024	11.76	63.246	63.45	447.744	100.00
0.032	0.00	0.224	0.00	1.589	0.31	11.247	13.46	70.963	69.32	502.377	100.00
0.036	0.00	0.252	0.00	1.783	0.47	12.619	15.28	79.621	75.14	563.677	100.00
0.040	0.00	0.283	0.00	2.000	0.66	14.159	17.21	89.337	80.69	632.456	100.00
0.045	0.00	0.317	0.00	2.244	0.89	15.887	19.26	100.237	85.76	709.627	100.00
0.050	0.00	0.356	0.00	2.518	1.18	17.825	21.42	112.468	90.19	796.214	100.00
0.056	0.00	0.399	0.00	2.825	1.52	20.000	23.72	126.191	93.82	893.367	100.00
0.063	0.00	0.448	0.00	3.170	1.93	22.440	26.17	141.589	96.63	1002.374	100.00
0.071	0.00	0.502	0.00	3.557	2.41	25.179	28.83	158.866	98.62	1124.683	100.00
0.080	0.00	0.564	0.00	3.991	2.98	28.251	31.74	178.250	99.75	1261.915	100.00
0.089	0.00	0.632	0.00	4.477	3.65	31.698	34.99	200.000	100.00	1415.892	100.00
0.100	0.00	0.710	0.00	5.024	4.42	35.566	38.63	224.404	100.00	1588.656	100.00
0.112	0.00	0.796	0.00	5.637	5.31	38.000	40.92	251.785	100.00	2000.000	100.00
0.126	0.00	0.893	0.00	6.325	6.32	39.905	42.71	282.508	100.00		

Operator notes:

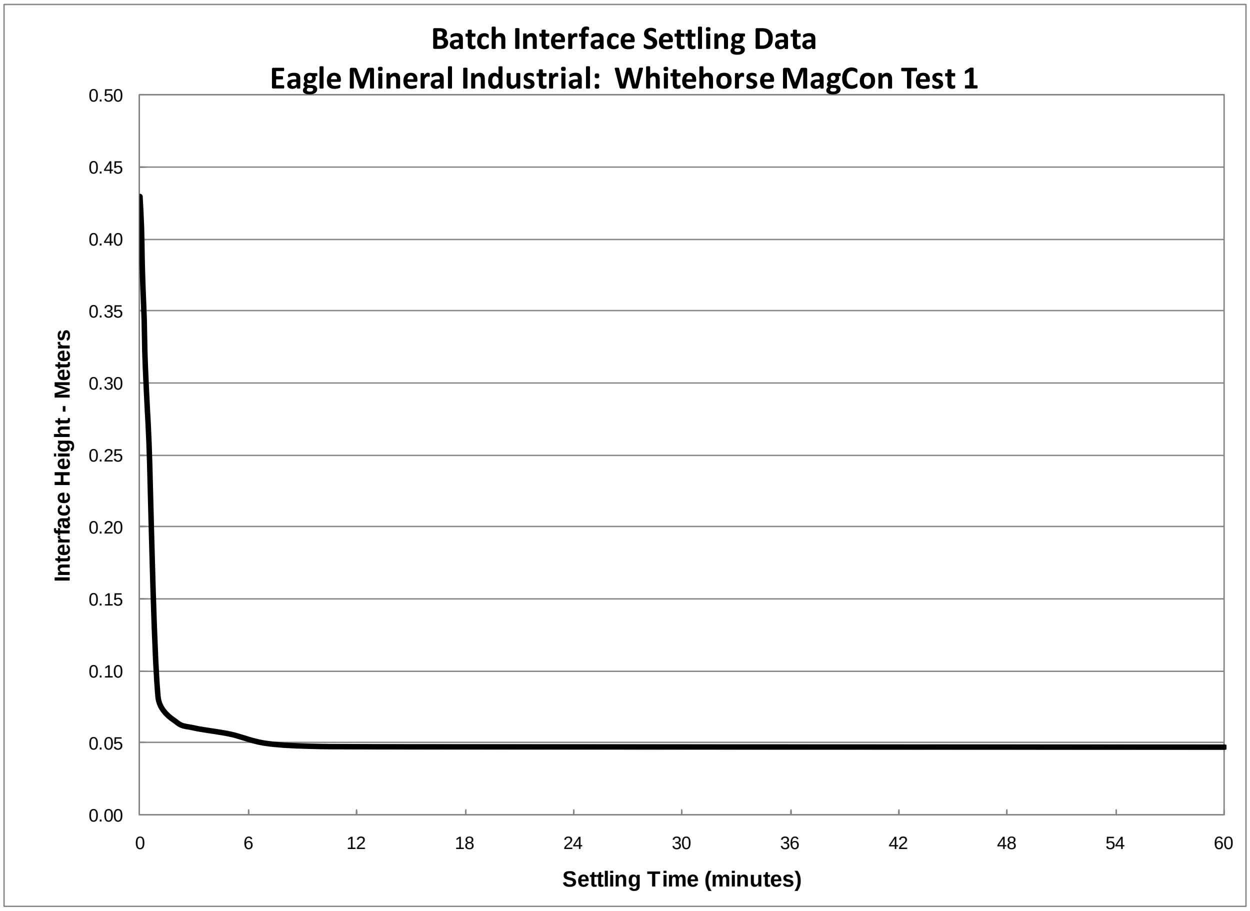
Tails



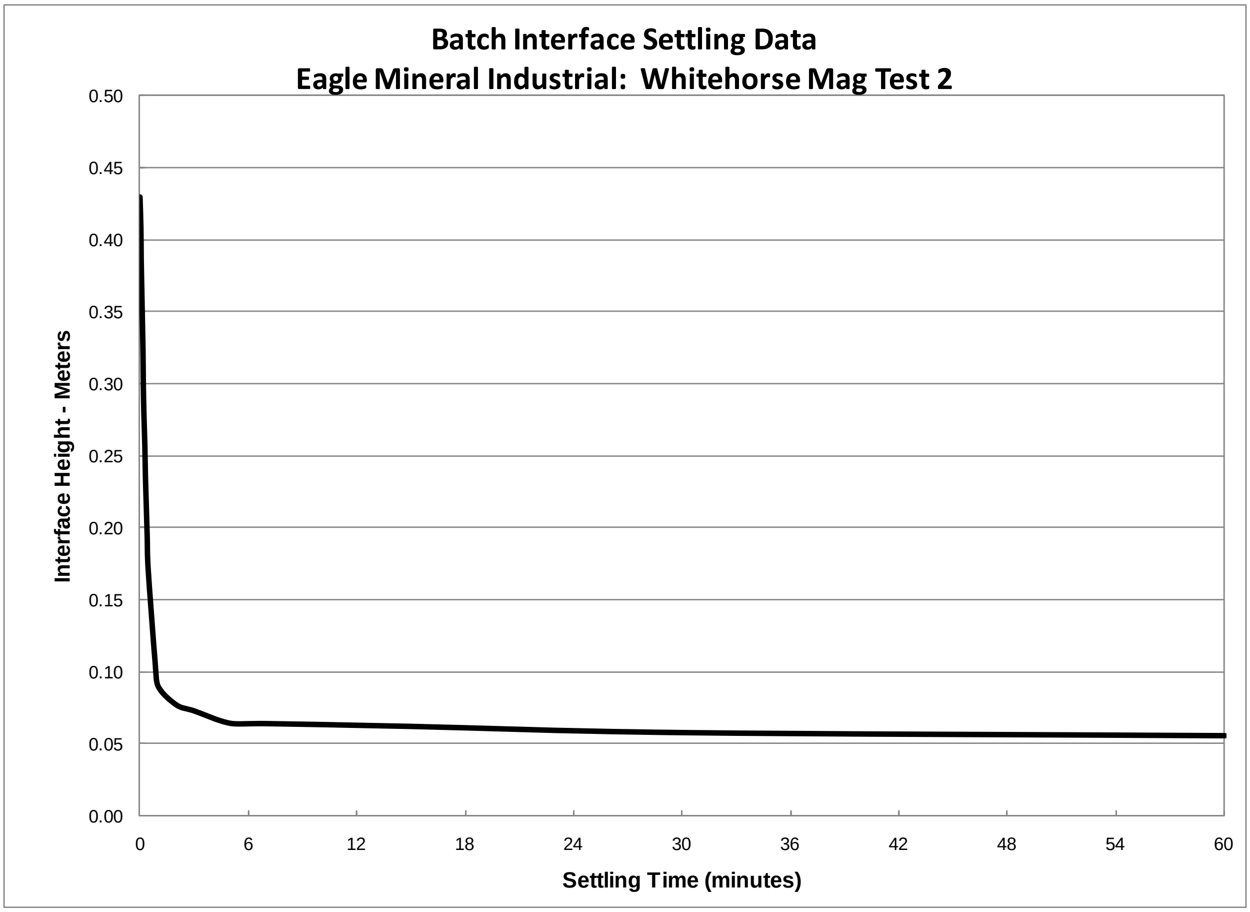
The Tails Sample required wet screening and the fine fraction measured using a Malvern Laser Diffraction Analyzer, for the appropriate particle size distribution.

A2. 2-Liter Static Test Settling Curves

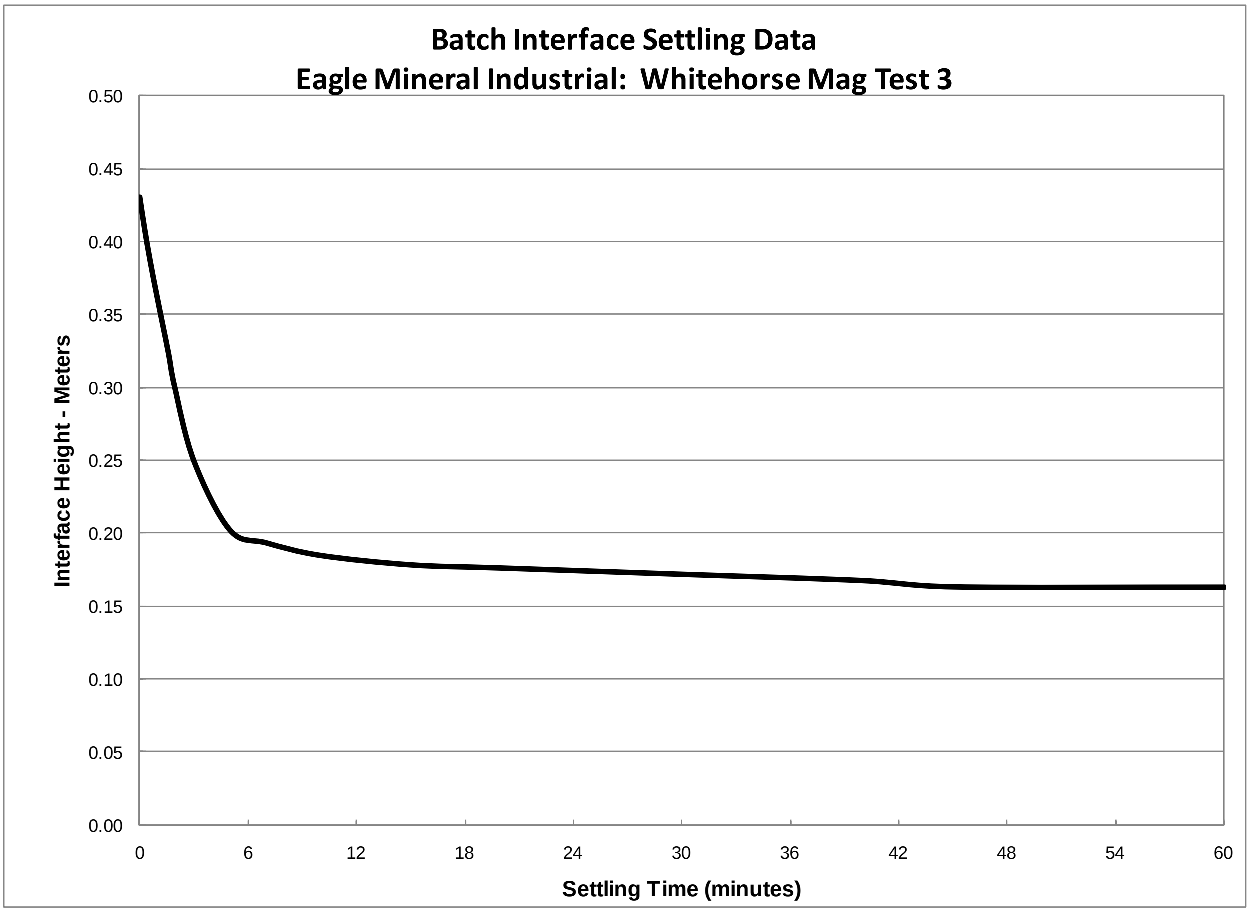
Magnetite Con, 22.5 wt% Feed, No flocculant



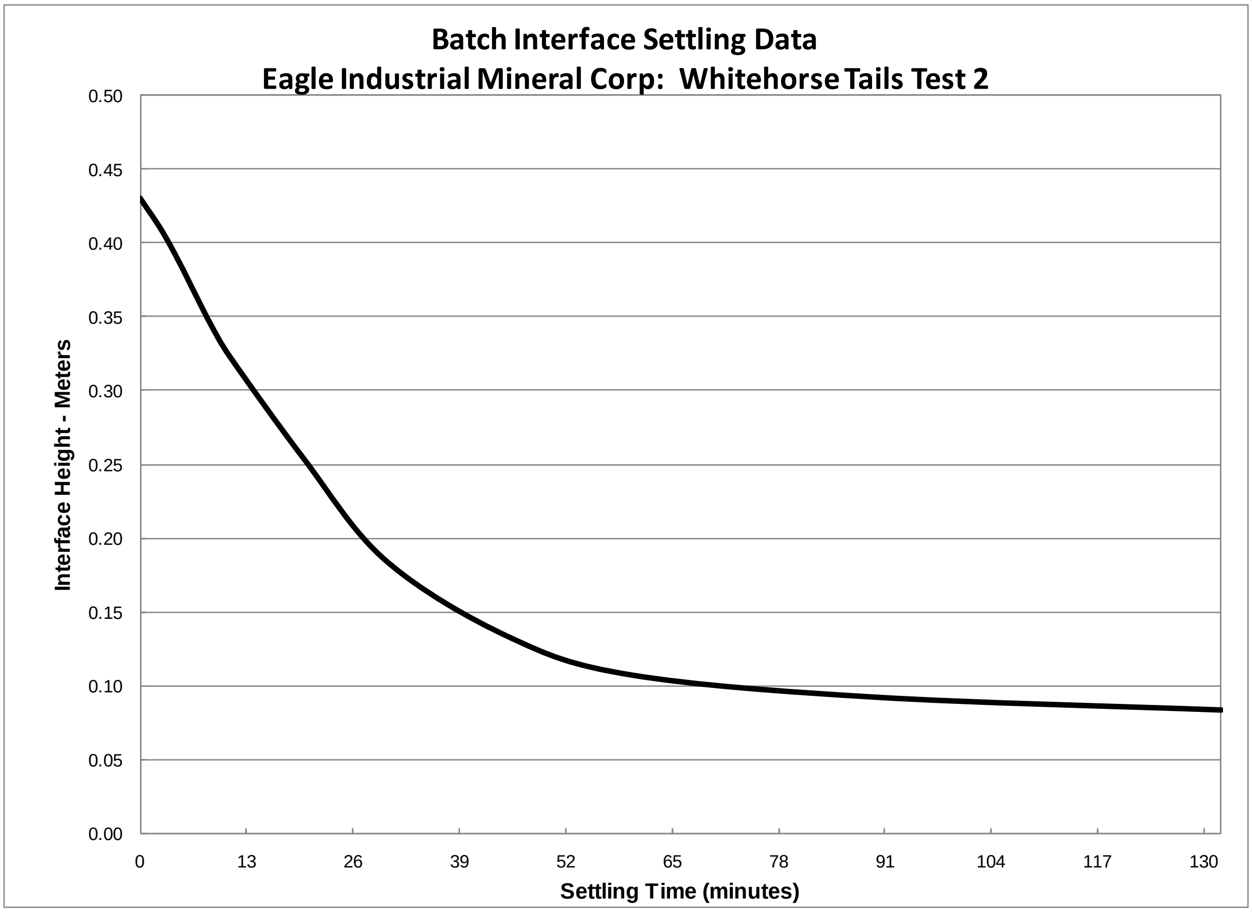
Magnetite Con, 22.5 wt% Feed, 2 g/t Flocculant



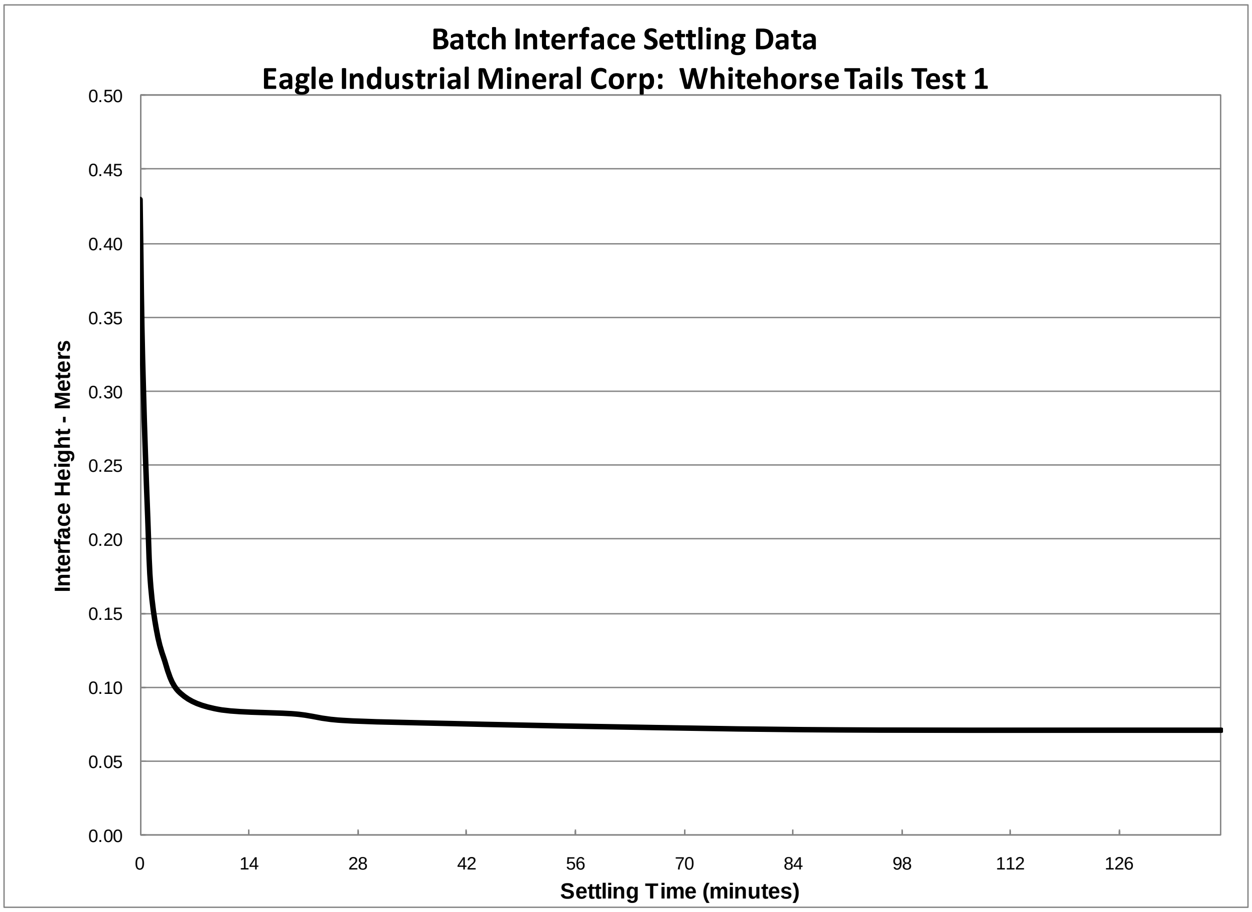
Magnetite Con, 55 wt% Solids, No Flocculant



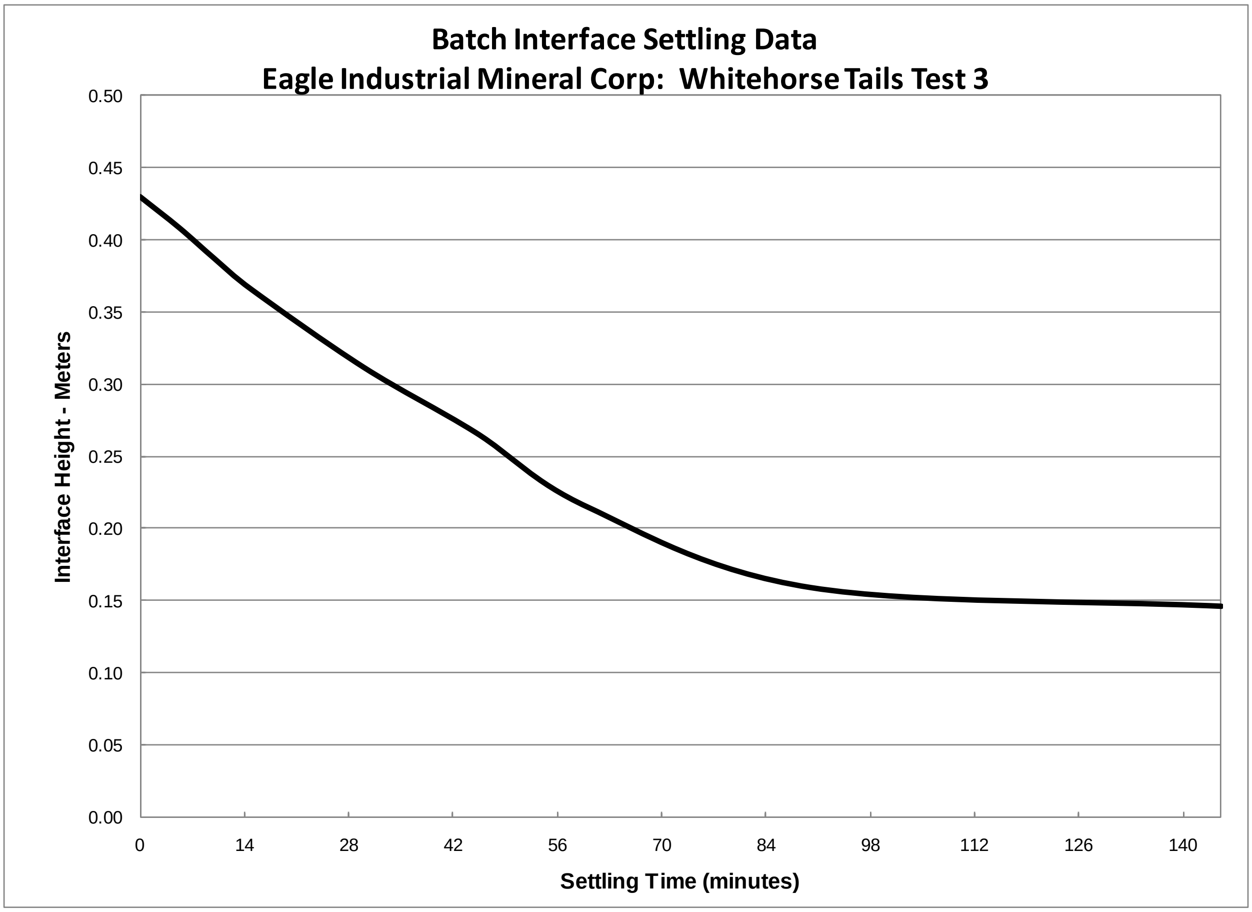
Tails, 17.5 wt% Solids, No Flocculant



Tails, 17.5 wt% Solids, 15 g/t



Tails, 26.8 wt%, No flocculant



A3. Vacuum Filtration Data

Horizontal Belt Filter Data

Filtration Test Summary 12/16/2010

Job Name:	Whitehorse	Filter Area (sq.ft):	0.0767	Liquid Specific Gravity:	1.000
Company:	Eagle Industrial Minerals Corp.	Barometric Pressure (In.Hg):	25.730	Solids Specific Gravity:	4.870
Address:	Whitehorse	Air Leakage (cu.ft/min):	0.000	Slurry Feed Technique:	Top
Material:	Mag Con	Filtrate Susp. Solids (mg/l):	0.000	Air Flow Meter:	Gas

Notes: Horizontal Belt Filter

Test 1

Form Vacuum (inches Hg):	21.500	Cake Thickness (mm):	5.000	Net Dry Cake Weight (g):	93.760
Wash Vacuum (inches Hg):	0.000	Cake Tare Wt. (g):	15.130	Cake Moisture Calc. (wt%):	5.322
Dry Vacuum (inches Hg):	17.000	Cake Total Wet Wt. (g):	114.160	Air Flow (CFM/ft2):	0.000
Form Time (seconds):	3.000	Cake Partial Wet Wt. (g):	0.000	Back Calc Feed S.S. (wt%):	53.264
Wash Time (seconds):	0.000	Cake Partial Dry Wt. (g):	108.890	Cake Loading (lbs/ft2):	2.693
Dry Time (seconds):	120.000	Feed Suspended Solids (wt%):	0.000	Moist Factor (min-ft2/lb):	0.743
Air Reading Before (cu.ft):	0.000	Feed Dissolved Solids (wt%):	0.000	Moist Factor 2 (graph 4):	0.000
Air Reading After (cu.ft):	0.000	Slurry Temp. (deg.C):	0.000	Wash Displacements:	0.000
Filtrate Vol. incl.wash (ml):	77.000	Slurry pH:	0.000	WVw (lb/ft2) (gal/ft2):	0.000
Wash Volume (ml):	0.000	Cake Moisture (wt%):	0.000	Media: HE 4575	
				Tag:	

Test 2

Form Vacuum (inches Hg):	22.000	Cake Thickness (mm):	12.500	Net Dry Cake Weight (g):	218.610
Wash Vacuum (inches Hg):	0.000	Cake Tare Wt. (g):	15.130	Cake Moisture Calc. (wt%):	5.384
Dry Vacuum (inches Hg):	19.500	Cake Total Wet Wt. (g):	246.180	Air Flow (CFM/ft2):	0.000
Form Time (seconds):	12.000	Cake Partial Wet Wt. (g):	0.000	Back Calc Feed S.S. (wt%):	52.418
Wash Time (seconds):	0.000	Cake Partial Dry Wt. (g):	233.740	Cake Loading (lbs/ft2):	6.278
Dry Time (seconds):	90.000	Feed Suspended Solids (wt%):	0.000	Moist Factor (min-ft2/lb):	0.239
Air Reading Before (cu.ft):	0.000	Feed Dissolved Solids (wt%):	0.000	Moist Factor 2 (graph 4):	0.000
Air Reading After (cu.ft):	0.000	Slurry Temp. (deg.C):	0.000	Wash Displacements:	0.000
Filtrate Vol. incl.wash (ml):	186.000	Slurry pH:	0.000	WVw (lb/ft2) (gal/ft2):	0.000
Wash Volume (ml):	0.000	Cake Moisture (wt%):	5.322	Media: HE 4575	
				Tag:	

Test 3

Form Vacuum (inches Hg):	22.000	Cake Thickness (mm):	16.500	Net Dry Cake Weight (g):	302.500
Wash Vacuum (inches Hg):	0.000	Cake Tare Wt. (g):	15.180	Cake Moisture Calc. (wt%):	6.193
Dry Vacuum (inches Hg):	21.000	Cake Total Wet Wt. (g):	337.650	Air Flow (CFM/ft2):	0.000
Form Time (seconds):	20.000	Cake Partial Wet Wt. (g):	0.000	Back Calc Feed S.S. (wt%):	51.580
Wash Time (seconds):	0.000	Cake Partial Dry Wt. (g):	317.680	Cake Loading (lbs/ft2):	8.687
Dry Time (seconds):	60.000	Feed Suspended Solids (wt%):	0.000	Moist Factor (min-ft2/lb):	0.115
Air Reading Before (cu.ft):	0.000	Feed Dissolved Solids (wt%):	0.000	Moist Factor 2 (graph 4):	0.000
Air Reading After (cu.ft):	0.000	Slurry Temp. (deg.C):	0.000	Wash Displacements:	0.000
Filtrate Vol. incl.wash (ml):	264.000	Slurry pH:	0.000	WVw (lb/ft2) (gal/ft2):	0.000
Wash Volume (ml):	0.000	Cake Moisture (wt%):	5.384	Media: HE 4575	
				Tag:	

Test 4

Form Vacuum (inches Hg):	22.000	Cake Thickness (mm):	22.000	Net Dry Cake Weight (g):	401.910
Wash Vacuum (inches Hg):	0.000	Cake Tare Wt. (g):	15.150	Cake Moisture Calc. (wt%):	7.977
Dry Vacuum (inches Hg):	21.000	Cake Total Wet Wt. (g):	451.900	Air Flow (CFM/ft2):	0.000
Form Time (seconds):	33.000	Cake Partial Wet Wt. (g):	0.000	Back Calc Feed S.S. (wt%):	52.281
Wash Time (seconds):	0.000	Cake Partial Dry Wt. (g):	417.060	Cake Loading (lbs/ft2):	11.542
Dry Time (seconds):	30.000	Feed Suspended Solids (wt%):	0.000	Moist Factor (min-ft2/lb):	0.043
Air Reading Before (cu.ft):	0.000	Feed Dissolved Solids (wt%):	0.000	Moist Factor 2 (graph 4):	0.000
Air Reading After (cu.ft):	0.000	Slurry Temp. (deg.C):	0.000	Wash Displacements:	0.000
Filtrate Vol. incl.wash (ml):	332.000	Slurry pH:	0.000	WVw (lb/ft2) (gal/ft2):	0.000
Wash Volume (ml):	0.000	Cake Moisture (wt%):	6.193	Media: HE 4575	
				Tag:	

EIMCO T&D Sizing *1*

Filtration Test Summary

12/16/2010

Test 5

Form Vacuum (inches Hg):	22.000	Cake Thickness (mm):	28.500	Net Dry Cake Weight (g):	499.850
Wash Vacuum (inches Hg):	0.000	Cake Tare Wt. (g):	15.150	Cake Moisture Calc. (wt%):	15.016
Dry Vacuum (inches Hg):	0.000	Cake Total Wet Wt. (g):	603.320	Air Flow (CFM/ft2):	0.000
Form Time (seconds):	48.000	Cake Partial Wet Wt. (g):	0.000	Back Calc Feed S.S. (wt%):	52.167
Wash Time (seconds):	0.000	Cake Partial Dry Wt. (g):	515.000	Cake Loading (lbs/ft2):	14.355
Dry Time (seconds):	0.000	Feed Suspended Solids (wt%):	0.000	Moist Factor (min-ft2/lb):	0.000
Air Reading Before (cu.ft):	0.000	Feed Dissolved Solids (wt%):	0.000	Moist Factor 2 (graph 4):	0.000
Air Reading After (cu.ft):	0.000	Slurry Temp. (deg.C):	0.000	Wash Displacements:	0.000
Filtrate Vol. incl.wash (ml):	370.000	Slurry pH:	0.000	WVw (lb/ft2) (gal/ft2):	0.000
Wash Volume (ml):	0.000	Cake Moisture (wt%):	7.977	Media: HE 4575	
				Tag:	

LSDF Vacuum Filter Data

Filtration Test Summary

12/16/2010

Job Name:	Whitehorse	Filter Area (sq.ft):	0.0767	Liquid Specific Gravity:	1.000
Company:	Eagle Industrial Minerals Corp	Barometric Pressure (In.Hg):	25.730	Solids Specific Gravity:	4.870
Address:	Whitehorse	Air Leakage (cu.ft/min):	0.000	Slurry Feed Technique:	Bottom
Material:	Mag Con	Filtrate Susp. Solids (mg/l):	0.000	Air Flow Meter:	Gas

Notes: Low Submergence Drum Filter

Test 1

Form Vacuum (inches Hg):	5.000	Cake Thickness (mm):	25.000	Net Dry Cake Weight (g):	464.960
Wash Vacuum (inches Hg):	0.000	Cake Tare Wt. (g):	15.200	Cake Moisture Calc. (wt%):	8.252
Dry Vacuum (inches Hg):	22.000	Cake Total Wet Wt. (g):	521.980	Air Flow (CU M/MIN/SQ.M):	9.268
Form Time (seconds):	10.000	Cake Partial Wet Wt. (g):	0.000	Back Calc Feed S.S. (wt%):	74.182
Wash Time (seconds):	0.000	Cake Partial Dry Wt. (g):	480.160	Cake Loading (KG/SQ.M):	65.160
Dry Time (seconds):	30.000	Feed Suspended Solids (wt%):	0.000	Moist Factor (min-SQ.M/KG)	0.008
Air Reading Before (cu.ft):	4.047	Feed Dissolved Solids (wt%):	0.000	Moist Factor 2 (graph 4):	1.565
Air Reading After (cu.ft):	4.216	Slurry Temp. (deg.C):	0.000	Wash Displacements:	0.000
Filtrate Vol. incl.wash (ml):	120.000	Slurry pH:	0.000	WVw (KG/SQ.M)(L/SQ.M):	0.000
Wash Volume (ml):	0.000	Cake Moisture (wt%):	0.000	Media: NY 547F	
				Tag:	

Test 2

Form Vacuum (inches Hg):	5.000	Cake Thickness (mm):	21.000	Net Dry Cake Weight (g):	389.190
Wash Vacuum (inches Hg):	0.000	Cake Tare Wt. (g):	15.180	Cake Moisture Calc. (wt%):	6.703
Dry Vacuum (inches Hg):	22.000	Cake Total Wet Wt. (g):	432.330	Air Flow (CU M/MIN/SQ.M):	9.761
Form Time (seconds):	6.000	Cake Partial Wet Wt. (g):	0.000	Back Calc Feed S.S. (wt%):	75.257
Wash Time (seconds):	0.000	Cake Partial Dry Wt. (g):	404.370	Cake Loading (KG/SQ.M):	54.542
Dry Time (seconds):	60.000	Feed Suspended Solids (wt%):	0.000	Moist Factor (min-SQ.M/KG)	0.018
Air Reading Before (cu.ft):	5.399	Feed Dissolved Solids (wt%):	0.000	Moist Factor 2 (graph 4):	3.937
Air Reading After (cu.ft):	5.755	Slurry Temp. (deg.C):	0.000	Wash Displacements:	0.000
Filtrate Vol. incl.wash (ml):	100.000	Slurry pH:	0.000	WVw (KG/SQ.M)(L/SQ.M):	0.000
Wash Volume (ml):	0.000	Cake Moisture (wt%):	8.252	Media: NY 547F	
				Tag:	

Test 3

Form Vacuum (inches Hg):	5.000	Cake Thickness (mm):	17.000	Net Dry Cake Weight (g):	327.190
Wash Vacuum (inches Hg):	0.000	Cake Tare Wt. (g):	15.210	Cake Moisture Calc. (wt%):	6.190
Dry Vacuum (inches Hg):	22.000	Cake Total Wet Wt. (g):	363.990	Air Flow (CU M/MIN/SQ.M):	11.260
Form Time (seconds):	4.000	Cake Partial Wet Wt. (g):	0.000	Back Calc Feed S.S. (wt%):	72.907
Wash Time (seconds):	0.000	Cake Partial Dry Wt. (g):	342.400	Cake Loading (KG/SQ.M):	45.853
Dry Time (seconds):	90.000	Feed Suspended Solids (wt%):	0.000	Moist Factor (min-SQ.M/KG)	0.033
Air Reading Before (cu.ft):	6.698	Feed Dissolved Solids (wt%):	0.000	Moist Factor 2 (graph 4):	8.104
Air Reading After (cu.ft):	7.314	Slurry Temp. (deg.C):	0.000	Wash Displacements:	0.000
Filtrate Vol. incl.wash (ml):	100.000	Slurry pH:	0.000	WVw (KG/SQ.M)(L/SQ.M):	0.000
Wash Volume (ml):	0.000	Cake Moisture (wt%):	6.703	Media: NY 547F	
				Tag:	

Test 4

Form Vacuum (inches Hg):	5.000	Cake Thickness (mm):	13.000	Net Dry Cake Weight (g):	267.860
Wash Vacuum (inches Hg):	0.000	Cake Tare Wt. (g):	15.220	Cake Moisture Calc. (wt%):	5.723
Dry Vacuum (inches Hg):	20.000	Cake Total Wet Wt. (g):	299.340	Air Flow (CU M/MIN/SQ.M):	10.287
Form Time (seconds):	2.000	Cake Partial Wet Wt. (g):	0.000	Back Calc Feed S.S. (wt%):	69.733
Wash Time (seconds):	0.000	Cake Partial Dry Wt. (g):	283.080	Cake Loading (KG/SQ.M):	37.538
Dry Time (seconds):	180.000	Feed Suspended Solids (wt%):	0.000	Moist Factor (min-SQ.M/KG)	0.080
Air Reading Before (cu.ft):	8.526	Feed Dissolved Solids (wt%):	0.000	Moist Factor 2 (graph 4):	16.442
Air Reading After (cu.ft):	10.255	Slurry Temp. (deg.C):	0.000	Wash Displacements:	0.000
Filtrate Vol. incl.wash (ml):	100.000	Slurry pH:	0.000	WVw (KG/SQ.M)(L/SQ.M):	0.000
Wash Volume (ml):	0.000	Cake Moisture (wt%):	6.190	Media: NY 547F	
				Tag:	

EIMCO T&D Sizing *1*

Filtration Test Summary

12/16/2010

Test 5	Form Vacuum (inches Hg):	5.000	Cake Thickness (mm):	20.000	Net Dry Cake Weight (g):	377.700
	Wash Vacuum (inches Hg):	0.000	Cake Tare Wt. (g):	15.150	Cake Moisture Calc. (wt%):	15.186
	Dry Vacuum (inches Hg):	0.000	Cake Total Wet Wt. (g):	460.480	Air Flow (CU M/MIN/SQ.M):	0.000
	Form Time (seconds):	6.000	Cake Partial Wet Wt. (g):	0.000	Back Calc Feed S.S. (wt%):	78.145
	Wash Time (seconds):	0.000	Cake Partial Dry Wt. (g):	392.850	Cake Loading (KG/SQ.M):	52.932
	Dry Time (seconds):	0.000	Feed Suspended Solids (wt%):	0.000	Moist Factor (min-SQ.M/KG)	0.000
	Air Reading Before (cu.ft):	0.000	Feed Dissolved Solids (wt%):	0.000	Moist Factor 2 (graph 4):	0.000
	Air Reading After (cu.ft):	0.000	Slurry Temp. (deg.C):	0.000	Wash Displacements:	0.000
	Filtrate Vol. incl.wash (ml):	38.000	Slurry pH:	0.000	WVw (KG/SQ.M)(L/SQ.M):	0.000
	Wash Volume (ml):	0.000	Cake Moisture (wt%):	5.723	Media: NY 547F	
					Tag:	

A4. Pressure Filtration Data

Pressure Test 1

LABORATORY PRESSURE FILTRATION TEST DATA

Customer:	White Horse	Test No:	1
Material:	Mag Concentrate	Test Date:	1-Dec-2010
Filter Cloth:	POPR 955	Slurry Solids concentration, wt%:	55%
Test Performed By:	CB		

Filtration Test Data:

Chamber Diameter, mm	78	Units:	g-ml_X_	kg-l___	
Chamber Area, ft2:	0.05143	Cake Weight:	Total	Partial	Tare
Chamber Volume, ft3:	0.00844	Wet:	720.06	224.52	15.09
Cake Thickness, mm		Dry:	688.35	215.10	15.09
Initial:	50	Line # of Constant Pressure:			3
Final:	50	Slurry Temperature,C:			25
Density, g/cc		Wash Temperature,C:			
Dry Solids:	4.86	Solute Analysis conversion factor(to g/l or kg):			
Liquid:	1.00	Solute Analysis units:			
Cake Density,g/cc:					

	FILTRATION DATA			AIR BLOW			
	Time, min	Feed Pressure, psig	Volume, mL	Time, min	Air Pressure, psig	Volume, mL	Air Flow, L/min
1	0	0	0	0	0	0	0
2	0.25	70	382	0.5	40	64	2.9
3	0.5	70	160	1	40	74	2.9
4	0.75	100	90	2	30	6.2	2.9
5	1	140	50	3	30	4.2	2.9
6	1.5	140	50	4	25	2.4	2.9
7	2	140	52	5	25	2.2	2.9
8	2.5	140	44	6	25	1.4	2.9
9				8	25	1.8	2.9
10				9	25	0.9	2.9
11				10	25	0.6	2.9
12							
16							
17							
18							
19							
20							
21							
22							

Filtrate pH: ______ Filtrate Suspended Solids,mg/l: ______

Cake Solute Analysis, g/kg(report only :Wet Cake: ______ Dry Cake: ______

Comments: (cake, filtrate description, chemical addition,etc.)

Pressure Test 2

LABORATORY PRESSURE FILTRATION TEST DATA

Customer:	White Horse	Test No:	2
Material:	Mag Concentrate	Test Date:	2-Dec-2010
Filter Cloth:	POPR 955	Slurry Solids concentration, wt%:	55%
Test Performed By:	CB		

Filtration Test Data:

Chamber Diameter, mm	78	Units:	g-ml_X_	kg-l___	
Chamber Area, ft2:	0.05143	Cake Weight:	Total	Partial	Tare
Chamber Volume, ft3:	0.00844	Wet:	723.56	242.08	15.05
Cake Thickness, mm		Dry:	690.39	231.45	15.05
Initial:	50	Line # of Constant Pressure:			3
Final:	50	Slurry Temperature,C:			25
Density, g/cc		Wash Temperature,C:			
Dry Solids:	4.86	Solute Analysis conversion factor(to g/l or kg):			
Liquid:	1.00	Solute Analysis units:			
Cake Density,g/cc:					

	FILTRATION DATA			AIR BLOW			
	Time, min	Feed Pressure, psig	Volume, mL	Time, min	Air Pressure, psig	Volume, mL	Air Flow, L/min
1	0	0	0	0	0	0	0
2	0.25	70	483	0.5	25	62	2.9
3	0.5	100	50	1	23	8	2.9
4	0.75	140	68	2	20	5.9	2.9
5	1	140	43	3	20	4.4	2.9
6	1.25	140	36	4	20	2.4	2.9
7	1.5	140	30	5	20	2.2	2.9
8	1.75	140	28	7	20	2.4	2.9
9	2	140	24	10	17	2.8	2.9
10	2.25	140	17	13	17	1	2.9
11	2.75	140	37				
12	3.15	140	25				
16	4	140	26				
17							
18							
19							
20							
21							
22							

Filtrate pH: ______ Filtrate Suspended Solids,mg/l: ______

Cake Solute Analysis, g/kg(report only :Wet Cake: ______ Dry Cake: ______

Comments: (cake, filtrate description, chemical addition,etc.)