

SIDEWALL CORE DESCRIPTIONS

Date	October 7, 2009	Service Company:	Baker Hughes
Run No	1	Tool Type	RCOR
Top Depth	2,172.61	Cores Required	30
Base Depth	3,310.69	Cores Obtained	28
Geologist:	Michael Smith	Cores Lost	(2 Canceled due to Sticky Hole)

Geologist Comments regarding visual / microscopic porosity estimates:

The estimates of porosity / cementation in the Sidewall Cores and Cuttings during the drilling operation of the Robinsons # 1 well are based on the Geologists System and Methods, developed during the drilling of the McCully Gas Field in New Brunswick, and adopted for Vulcan Minerals in order to remain consistent within the Carboniferous Basin as a whole.

To avoid confusion with terminology over the Porosity estimates for the Sidewall Cores below and cuttings recorded in the sample descriptions - The following definitions should be reviewed.

Porosity Estimates Criteria: Sample / Sidewall Core Descriptions and Porosity Estimates are generally recorded under an x10 power magnification. The Wellsite geologist used an x20 power magnification for the Robinsons # 1 well. Maximum magnification of x45 power was used as required but as a general "rule of thumb" - any visual porosity not seen with an x20 magnification would be considered ineffective.

Visual Porosity: Naturally occurring "holes" within the rock matrix or generally – between or besides touching grains that can be seen with the naked eye - or up to and including an x20 magnification. Also would include secondary "after the fact" porosity generally found in Carbonates but also possible within clastics such as Sandstone – Siltstones resulting from fracturing, diagenesis or leaching.

Effective Porosity: The volume of rock that would be filled by Recoverable Oil and or Gas. For the Robinsons # 1 Well, the stated effective porosity is for possible Gas, as generally, effective gas porosity would be higher than effective oil porosity. Effective Porosity does not always equal visible porosity but visible porosity is generally effective. Effective porosity as qualified in this report would also include an educated unseen porosity estimate.

Ineffective Porosity: The volume of rock that is occupied by "hidden" porosity such as Clays, Argillaceous material such as Shale clasts, grains, laminae, and or other material such as a weaker cemented silica silty matrix. Although the Neutron Porosity Tool would record this hidden porosity, the physical characteristics of the "fill" material would not be capable of holding gas within its volume and/or incapable of liberating gas, and could be considered as non Recoverable porosity.

Total Porosity: Visual porosity including Effective + Ineffective porosity. (Generally Neutron Logging Tool)

Grain Relief / Cementation: The Relief of the rock / grains / cuttings / sidewall cores is generally inversely proportional to the cementation. High Relief cuttings generally required weaker cement and/or compaction, and the matrix of the rock will break and/or fracture prior to the quartz grains. Low Relief cuttings are generally very well cemented, resulting in much lower total porosity. The cement is generally silica or calcite/dolomite. The rock with the estimated low relief will be observed to break through the grains as the cement is harder / tougher and the lower stress point would be the quartz grains verses the matrix/cement. High relief can also be observed in cuttings with high ineffective porosity due to the intergranular volume being filled by clays, silica material, argillaceous / shale, pyrobitumen or any other "filling" material.

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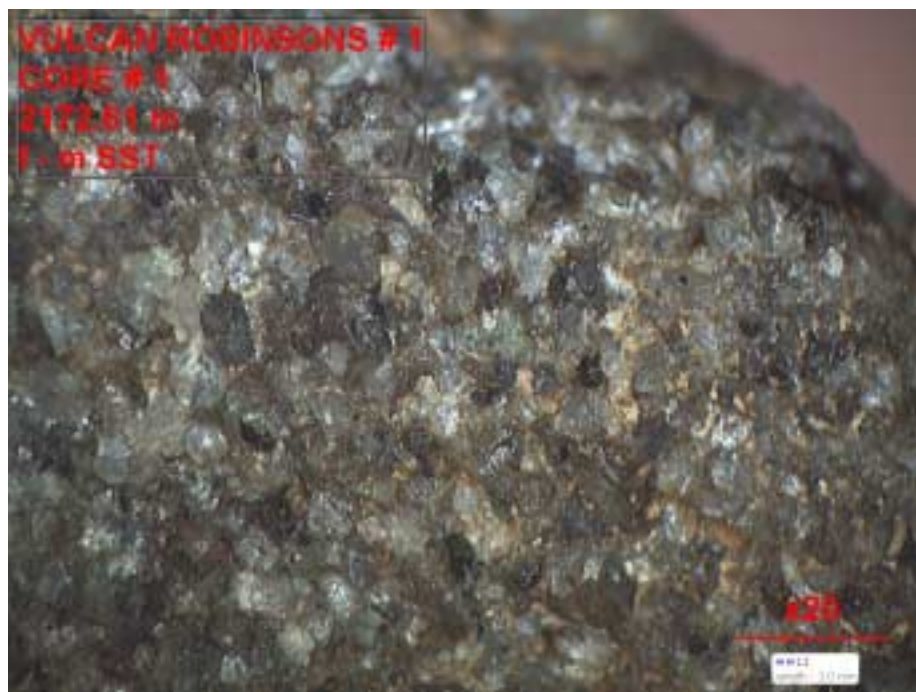
Core #1

Recovered 80%

2,172.61 m

SANDSTONE

Lighter to medium grey, lower to upper fine with minor medium, quartz, translucent, opaque, greyish, trace black argillaceous lithics, rare trace altered clay ? lithics, massive, moderate well cemented, siliceous with 1-2% calcareous, crystalline, grain supported with siliceous silty? infilling cement to 5-10% very light greyish white clay?, moderate sorted, angular to subangular to subrounded with lower medium rounded, moderate high relief (Core broken around quartz grains to minor fractured larger translucent quartz, 7-10% ineffective porosity, 2-3% effective porosity, CN 16.2%, ZDEN 5.4%, No Shows.



SIDEWALL CORE DESCRIPTIONS

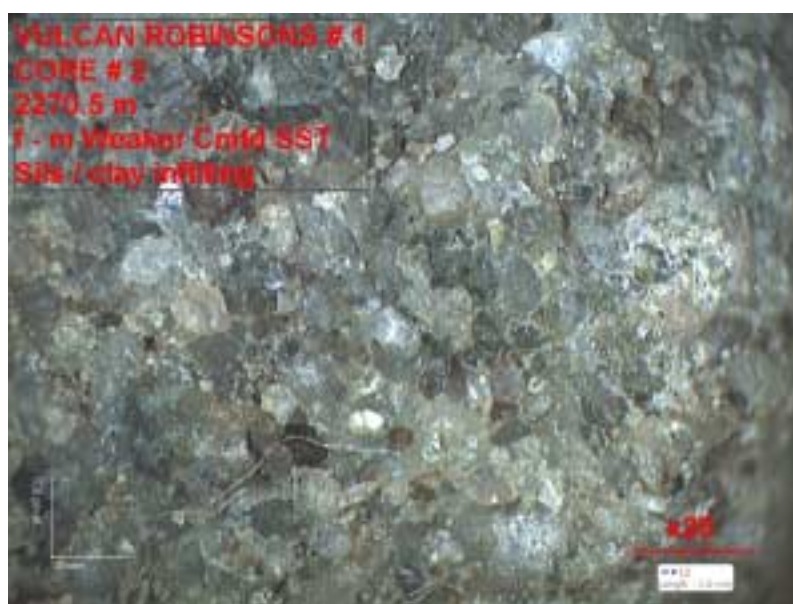
Core #2

Recovered 20%

2,270.50 m

SANDSTONE

Very light grey, grayish white, fine to upper medium, quartz, opaque, translucent, white, rare trace black lithic, moderate sorted, subangular to subrounded, minor angular to abundant medium rounded, weaker cemented, poorer recovery of core and overall softness to friability of core suggest poorer weaker cemented, siliceous with minor to 2% calcareous, localized minor very light greyish to rare very slightly pale greenish clay infilling, high relief, (Core broken and fractured around grains), 7-9% ineffective porosity, 3-4% effective porosity due to apparent clay to soft siliceous component, questionable black "dry" argillaceous? Isolated infilling to micro blotches around quartz grains, character and appearance of Pyrobitumen, CN 13.7% ZDEN 4.3%, No Shows.

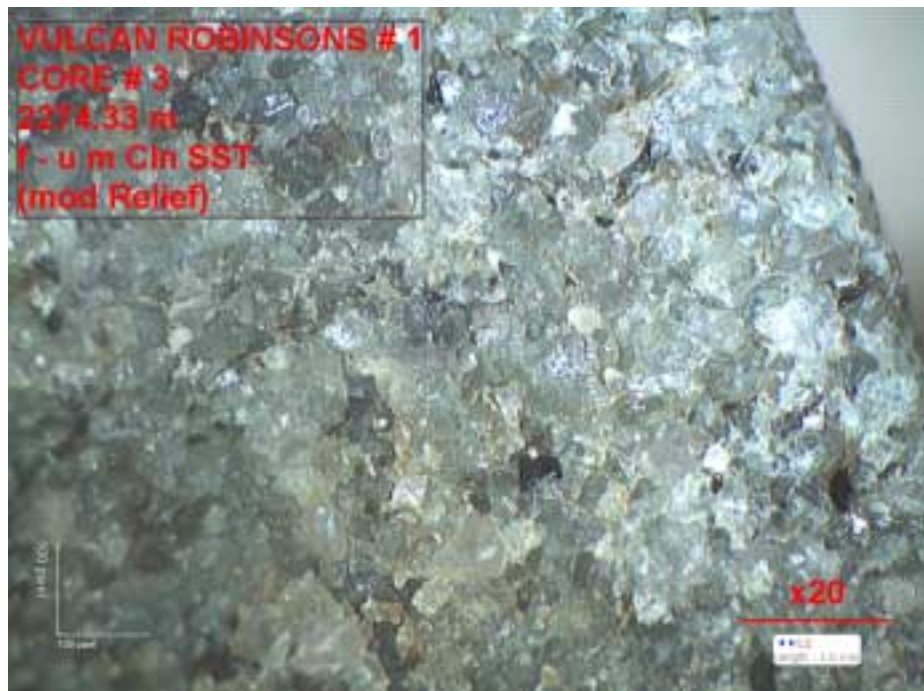


SIDEWALL CORE DESCRIPTIONS

Core #3
Recovered 100%
2,274.33 m

SANDSTONE

Very light grey, fine to upper medium, quartz, opaque, white, translucent, grayish, clean, trace white mica, rare trace argillaceous lithic fragments only, crystalline, massive, moderate sorted, subangular to subrounded with abundant rounded, moderate cemented, competent but slightly friable, siliceous to less than 5% calcareous component, trace greenish clay grains, rare to minor apparent very light grayish white to siliceous clay infilling only, moderate relief, 2-3% ineffective porosity, 3-4% effective porosity?, CN 15.1% ZDEN 5.1%, No Shows.

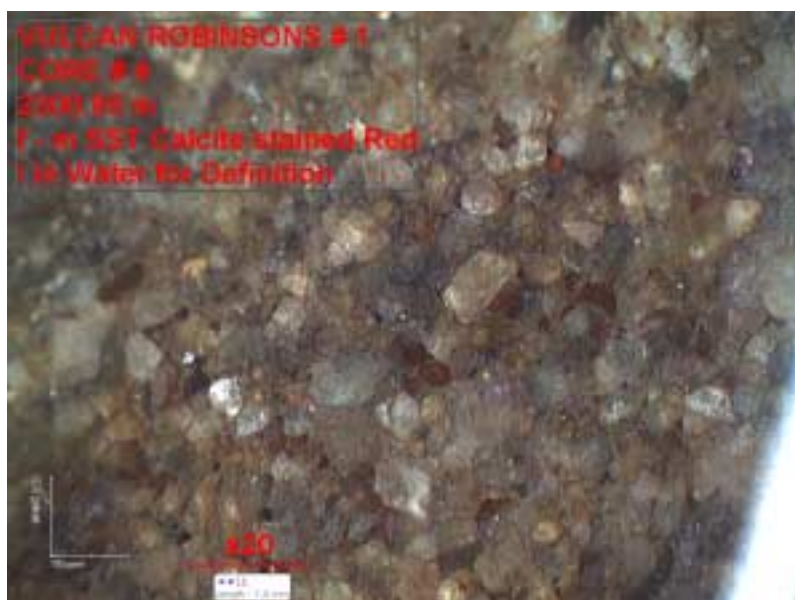
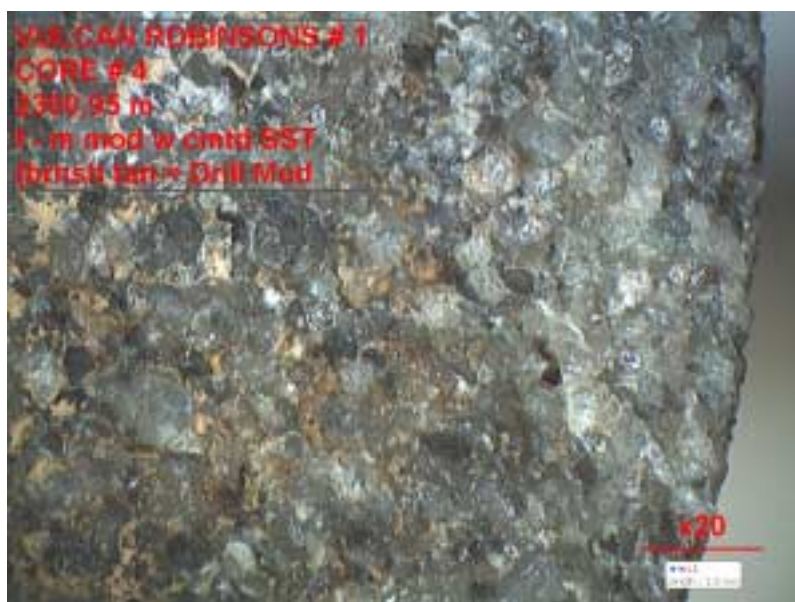


SIDEWALL CORE DESCRIPTIONS

Core #4
Recovered 50%
2,300.95 m

SANDSTONE

Very light grey, fine to upper medium with minor isolated floating coarse, quartz, opaque, white - light greyish, some translucent, rare trace black shale lithics, overall clean, no apparent clay matrix, moderate well cemented, siliceous with less 1% calcareous, moderate sorted, subangular to subrounded with rounded upper medium to coarse quartz, grain supported with fine to very fine matrix infilling to siliceous silt cement ?, moderate relief, Core fractures and breaks through matrix and around quartz grains, 4-6% ineffective porosity, 1-2% effective porosity, CN 14.5% ZDEN 3.4%, No Shows.

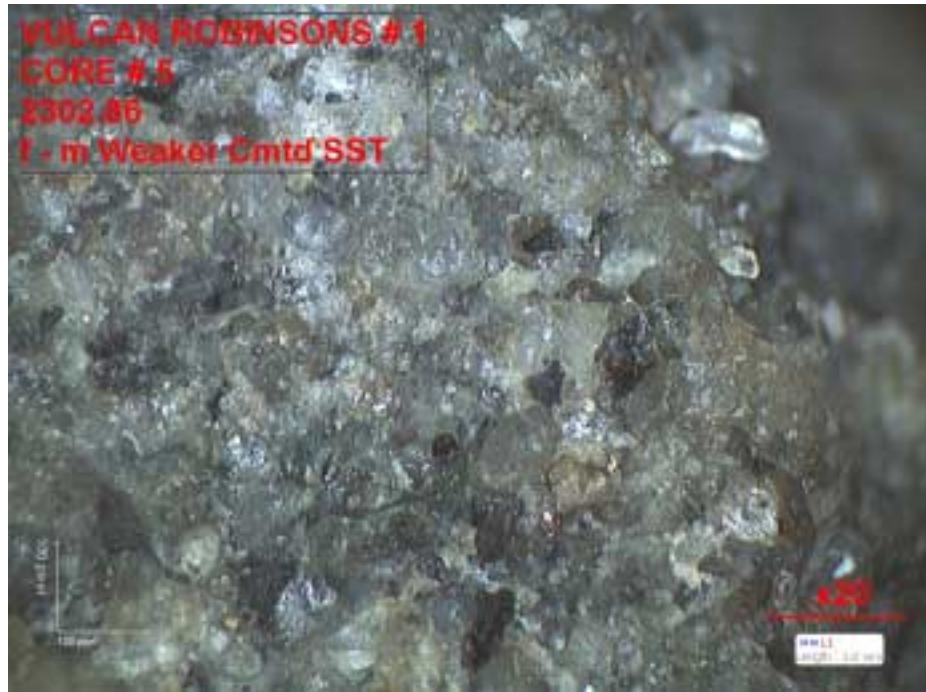


SIDEWALL CORE DESCRIPTIONS

Core #5
Recovered 20%
2,302.86 m

SANDSTONE

Light grey, fine to upper medium with 10% coarse, quartz, opaque, white, greyish, translucent, trace black argillaceous lithic only, moderate to moderate poor sorted, subangular to generally subrounded with abundant coarse rounded, rare angular, grain supported, appearance clean, weaker cemented, siliceous with apparent siliceous whiter clay matrix infilling to cement, minor to less than 1% calcareous component, (core sides very rough), poor core recovery, friable remaining piece, higher relief, 8-10% ineffective porosity, 1-2% effective porosity due to clays?, CN 14% ZDEN 3.5%, No Shows.

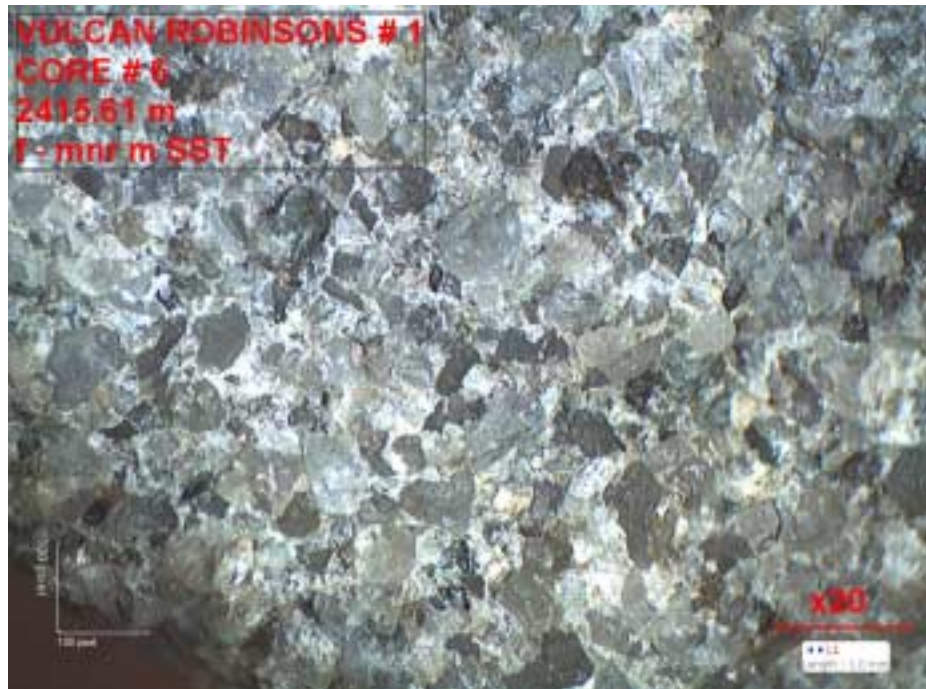


SIDEWALL CORE DESCRIPTIONS

Core #6
Recovered 75%
2,412.81 m

SANDSTONE

Light grey, predominately lower to upper fine with 15% medium, rare lower coarse, quartz, opaque, white, grayish, semi translucent, rare trace black argillaceous? lithics, overall clean, moderate sorted, subangular to subrounded, minor trace coarser rounded, moderate well cemented, siliceous with 2-3% calcareous, staining indicates minor calcareous clay ? matrix infilling, grain supported, visible silty? siliceous cement, overall more competent core but stress fractures from coring? cutting across axis, (Core breaks around quartz grains), varied relief, moderate lower relief within finer quartz to moderate higher within poorer sorted medium to fine, 6-8% ineffective porosity, 2-3% effective porosity, CN 15.1% ZDEN 4.5%, No Shows.



SIDEWALL CORE DESCRIPTIONS

Core #7
Recovery 100%
2,418.12 m

SANDSTONE

Lighter grey, fine to lower medium with 10% upper medium, rare coarse, quartz, opaque, white, greyish, translucent, rare to trace black lithics, trace white mica, overall clean, minor very light grayish clay? isolated infilling, moderate sorted, subangular to subrounded with minor rounded, competent, moderate well cemented, siliceous with 5-7% calcareous component, rare apparent clay infilling, silty to abundant very fine matrix, grain supported, moderate to local moderate low relief, Core breaks around and 20% through quartz grains, 4-5% ineffective porosity, 2-3% effective porosity, CN 13.4% ZDEN 3.9%, No Shows.



SIDEWALL CORE DESCRIPTIONS

Core #8
Recovery 90%
2,433.73 m

SANDSTONE

Lighter grey, fine to medium, quartz, opaque, translucent, grayish to white, minor black lithics, minor very slightly argillaceous, trace white mica, rare trace disseminated pyrite specks, moderate well cemented, siliceous with 5-7% calcareous component ?, moderate to moderate poorer sorted, subangular to subrounded, grain supported, with silty to very fine quartz siliceous matrix infilling, no apparent clay, moderate lower relief, Core breaks around finer grains but through coarser quartz, 4-5% ineffective porosity, 1-2% effective porosity, CN 14.1% ZDEN 2.9%, No Shows.

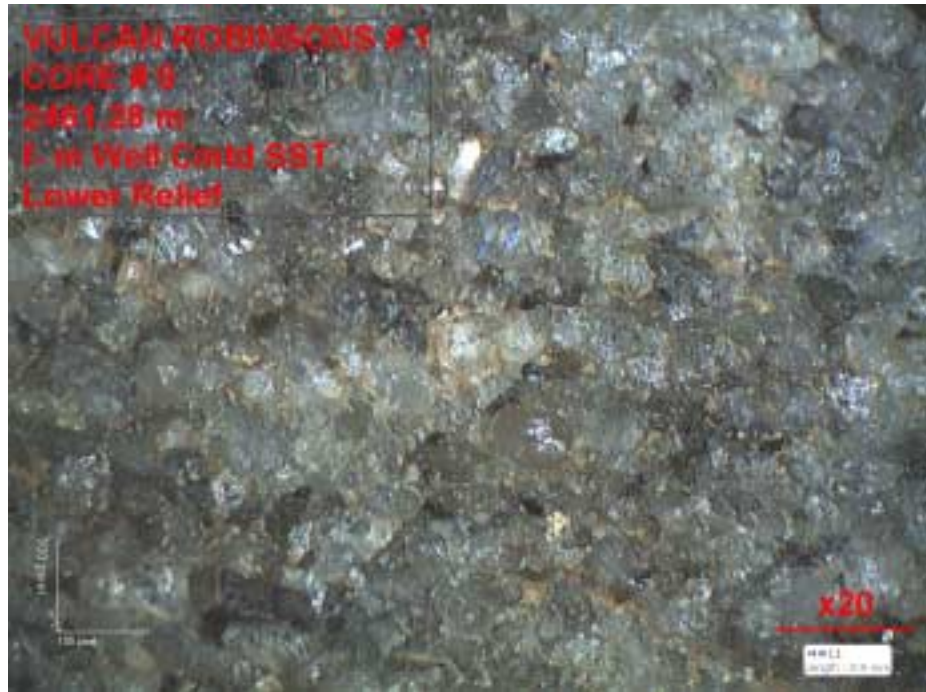


SIDEWALL CORE DESCRIPTIONS

Core #9
Recovered 100%
2,461.28 m

SANDSTONE

Lighter grey, lower fine to upper medium, rare trace lower coarse, abundant very fine matrix, quartz, opaque, greyish, translucent, minor trace black lithics, trace white mica, moderate poorer sorted, subangular to subrounded to rounded coarser, moderate well cemented, siliceous with 6-8% calcareous component, (moderate good fizz to core), no apparent clays, grain support with minor silty matrix, siliceous to calcareous silty? cement, lower relief, tighter, 3-5% ineffective porosity, 1% effective porosity, CN 13.3% ZDEN 3.9%, No Shows.

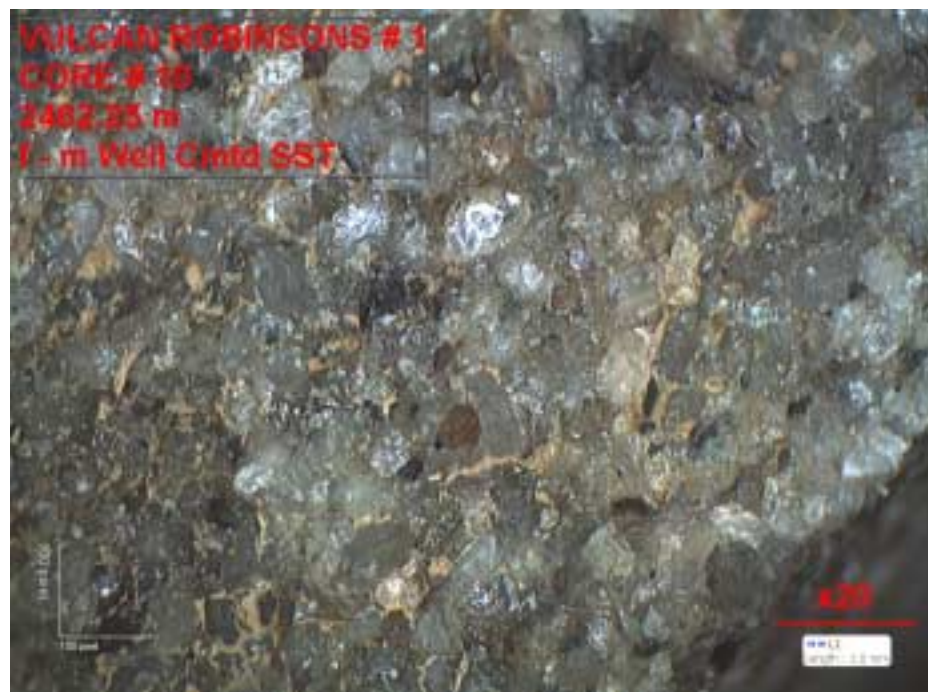


SIDEWALL CORE DESCRIPTIONS

Core #10
Recovered 70%
2,462.25 m

SANDSTONE

Light grey, fine to upper medium with very fine matrix, quartz, grayish, translucent, opaque, trace lithics, trace white mica, moderate sorted, subangular to subrounded to medium rounded, clean, no visible clays, moderate well cemented, siliceous with 3-5% calcareous component, competent, moderate relief, Core breaks fractures around quartz grains, 4-6% ineffective porosity, 1-2% effective porosity?, CN 13.1% ZDEN 3.6%, No Shows.

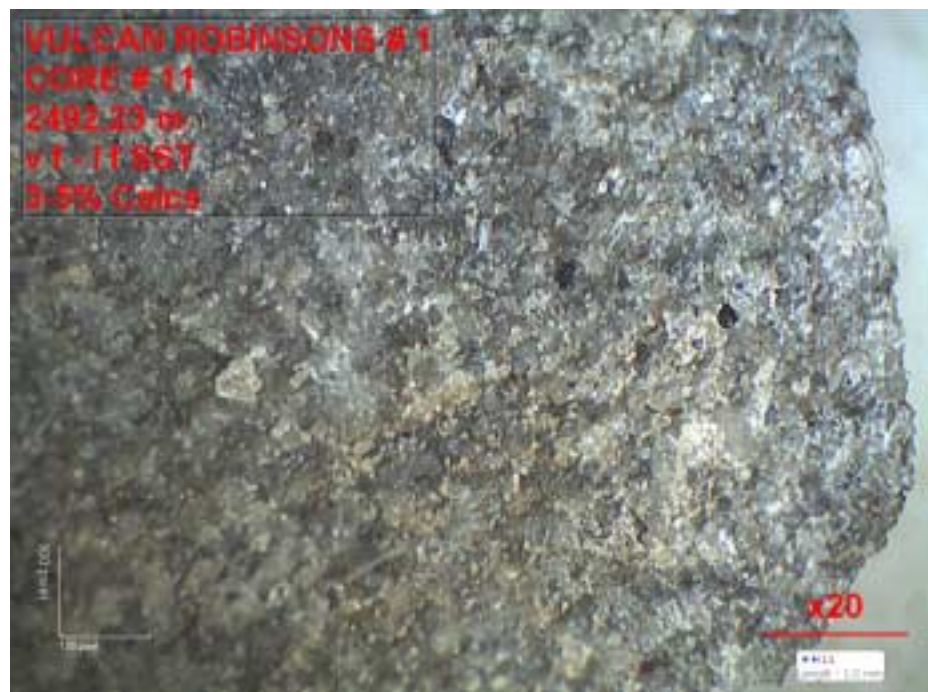


SIDEWALL CORE DESCRIPTIONS

Core #11
Recovered 90%
2,492.23 m

SILTSTONE

Light grey, very fine to lower fine, quartz, opaque, greyish, translucent, minor trace black lithics to possible vitreous black coaly specks?, rare white mica, moderate sorted, subangular to subrounded, moderate well cemented, siliceous with 3-5% calcareous component, clean, no apparent clay infilling, moderate relief, 3-5% ineffective porosity, 1-2% effective porosity?, CN 14.3% ZDEN 3.9%, No Shows.

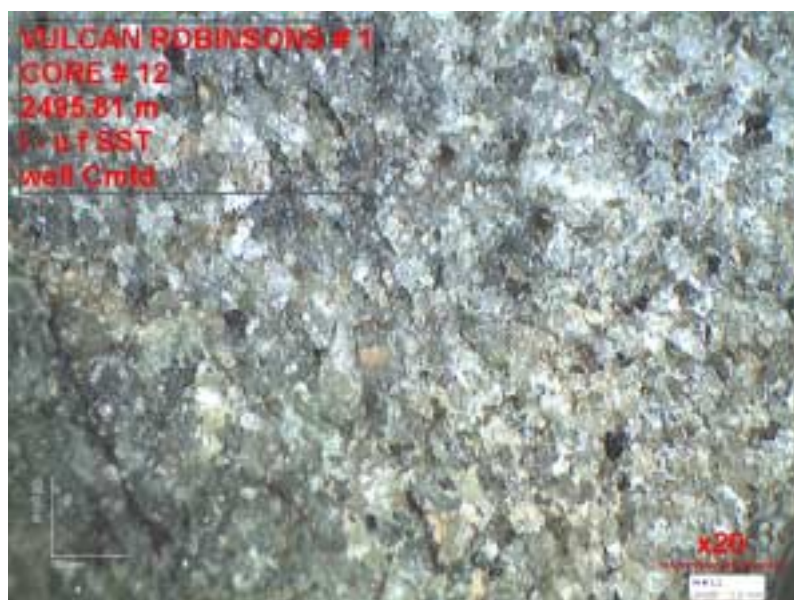


SIDEWALL CORE DESCRIPTIONS

Core #12
Recovered 70%
2,495.81 m

SANDSTONE

Very light grey, very fine to lower to upper fine, quartz, opaque, translucent, grayish, trace black lithics to micro laminae coaly to carbonaceous, coaly specks ?, trace white mica, moderate sorted, subangular to subrounded, minor lower medium rounded, moderate well cemented, siliceous to 5-7% calcareous component, clean, no apparent clays, moderate to moderate lower relief, 4-6% ineffective porosity, 2-3% effective porosity, CN 14.9% ZDEN 5.6%, No Shows.

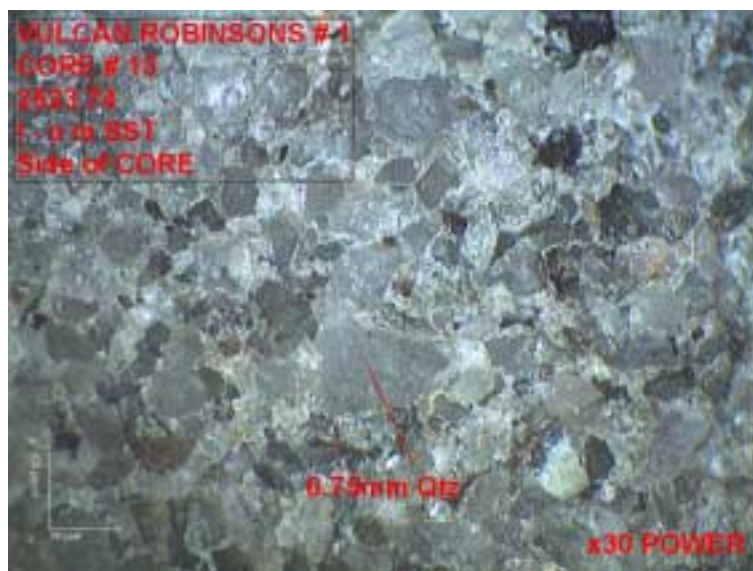
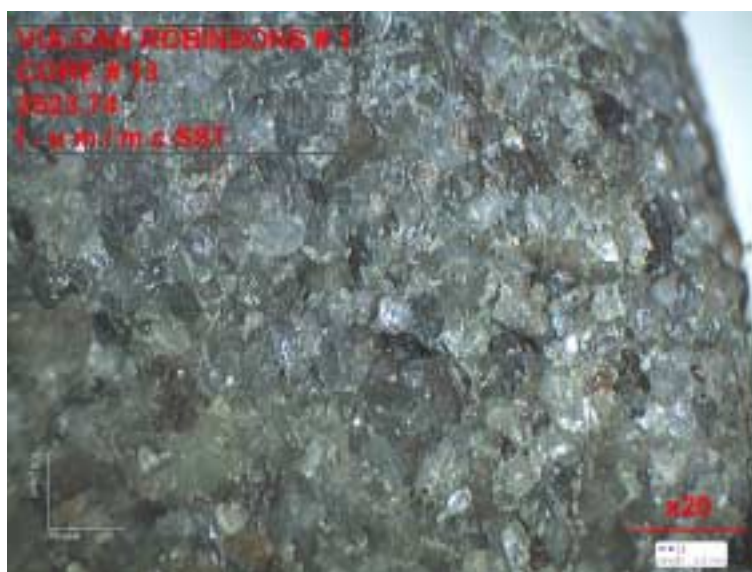


SIDEWALL CORE DESCRIPTIONS

Core #13
Recovered 80%
2,523.74 m

SANDSTONE

Light grey, predominately lower to upper medium with rare lower coarse and finer to very fine matrix, quartz, opaque, translucent, grayish, trace lithics, rare trace white mica, moderate poorer sorted, subangular to subrounded with abundant upper medium to lower coarse rounded, moderate cemented, siliceous with 3-5% calcareous component, no apparent clay infilling, moderate to higher relief, competent, 4-7% ineffective porosity, 2-3% effective porosity, CN 15.2% ZDEN 5.1%, No Shows.

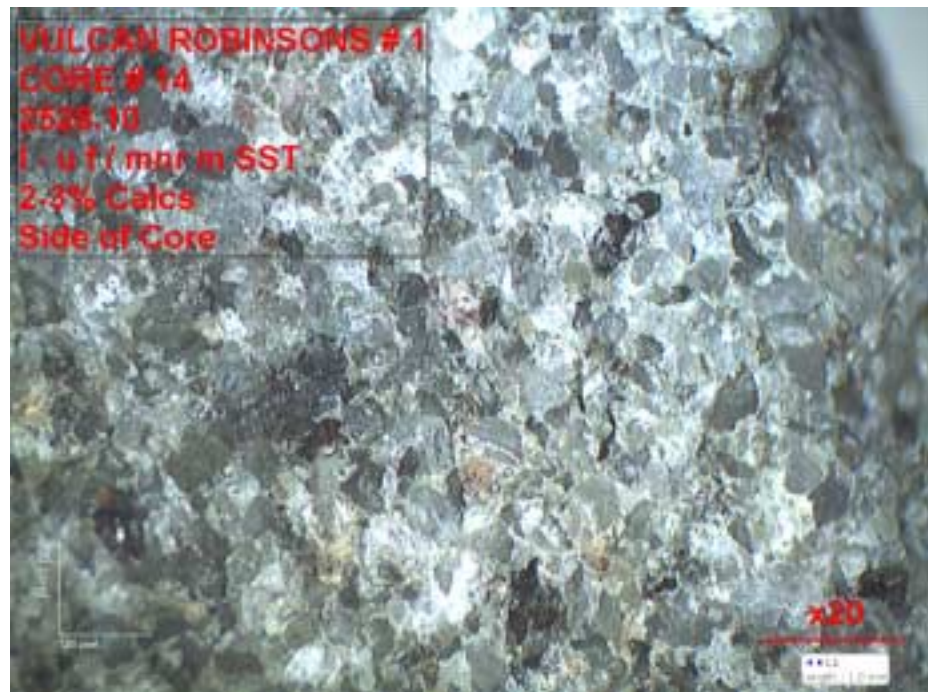


SIDEWALL CORE DESCRIPTIONS

Core #14
Recovered 70%
2,528.10 m

SANDSTONE

Light grey, lower to upper fine with 20% lower medium, quartz, opaque, translucent, grayish, trace black lithics, rare white mica, moderate sorted, subangular to subrounded with coarser rounded, moderate well cemented, siliceous with 2-3% calcareous only, competent, grain supported, moderate possible clay infilling, clean, silty siliceous matrix?, moderate relief, 5-7% ineffective porosity, 2-3% effective porosity, CN 15.3% ZDEN 3.3%, No Shows.

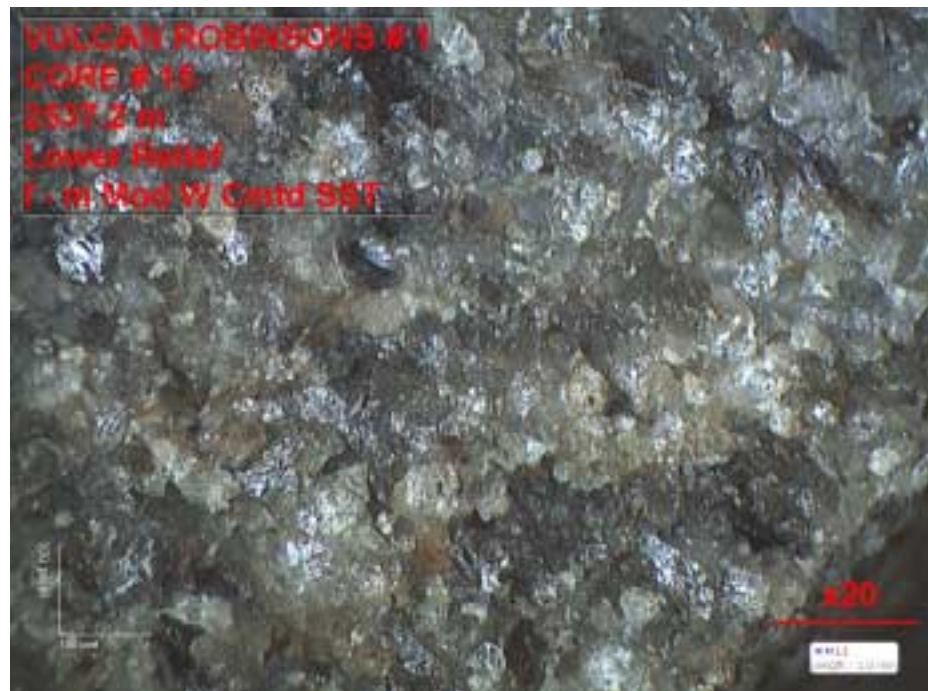


SIDEWALL CORE DESCRIPTIONS

Core #15
Recovered 90%
2,537.20 m

SANDSTONE

Lighter to slightly medium grey, lower to upper fine to upper medium, quartz, opaque, translucent, grayish, trace black argillaceous lithic only, rare trace white mica, clean, no apparent clay infilling, moderate sorted, subangular to subrounded with abundant medium rounded, well cemented, siliceous with 2-3% calcareous component, grain supported, Core broken and fractured through and around quartz grains, minor very fine matrix only, moderate to moderate lower relief, 3-4% ineffective porosity, 1-2% effective porosity, CN 13.5% ZDEN 3.3%, No Shows.

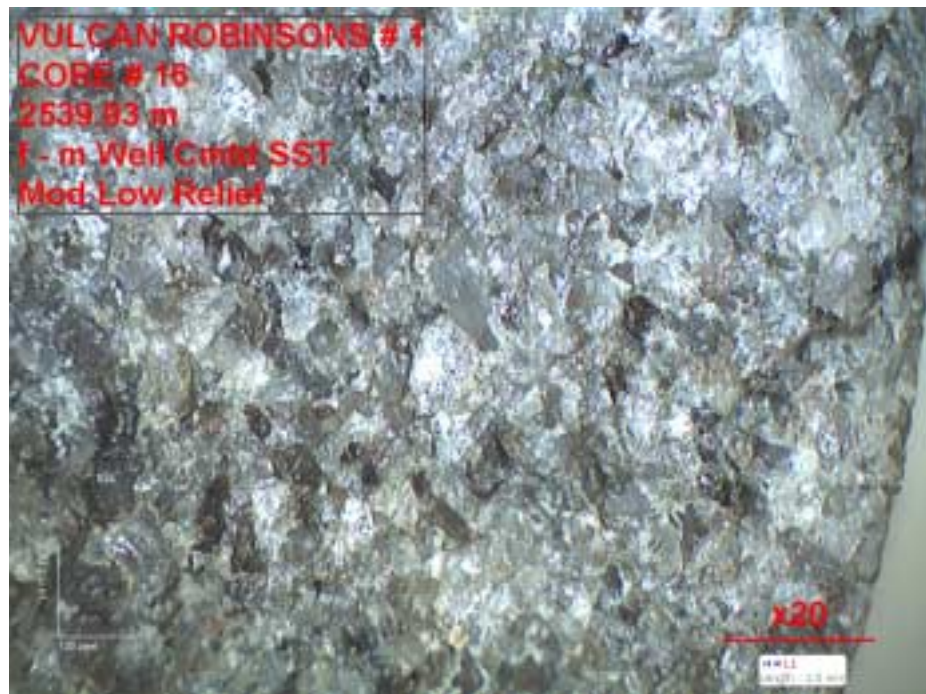


SIDEWALL CORE DESCRIPTIONS

Core #16
Recovered 40%
2,539.93 m

SANDSTONE

Lighter grey, grayish white, very slightly salt and pepper, quartz, translucent, opaque, grayish, good trace black lithics, trace white mica, moderate sorted, subangular to subrounded, abundant medium rounded, well cemented, siliceous with 2-3% calcareous component, no apparent clay infilling, very rare clay slightly greenish? micro clasts, black argillaceous micro laminae through center of core, competent, some fracturing to core across axis due to coring?, moderate to lower relief, 4-5% ineffective porosity, 1-2% effective porosity, CN 14.7% ZDEN 4.0%, No Shows.



SIDEWALL CORE DESCRIPTIONS

Core #17
Recovered
2,586.00 m

SILTSTONE

Very light grey, medium to upper silt to rare very fine, quartz, opaque, translucent, minor grayish, rare trace micro lithic specks, trace vitreous black micro specks, rare white mica, faint micro argillaceous laminations throughout core, no apparent clay infilling, moderate well cemented, siliceous with 6-8% calcareous component, moderate well sorted, subangular to subrounded, moderate lower relief, 8-10% ineffective porosity, 2-3% effective porosity ?, CN 14.3% ZDEN 4.9%, No Shows.

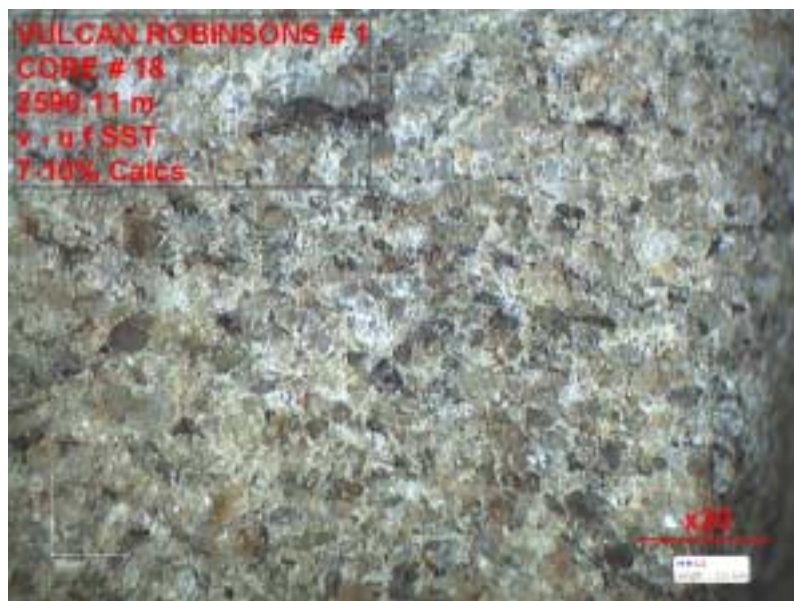


SIDEWALL CORE DESCRIPTIONS

Core #18
Recovered 90%
2590.11 m

SANDSTONE

Lighter grey, lower to upper fine, abundant very fine, quartz, opaque, grey, translucent, minor black argillaceous lithics, possible trace black micro carbonaceous specks, rare micro argillaceous laminae, trace white mica, very faintly banded slightly grayer more siliceous with whiter more calcareous, grain supported with micro to silty siliceous infilling to matrix, well cemented, siliceous with 8-10% calcareous component, moderate relief, 7-10% ineffective porosity, 2-3% effective porosity, CN 13.6% ZDEN 5.6% , No Shows.

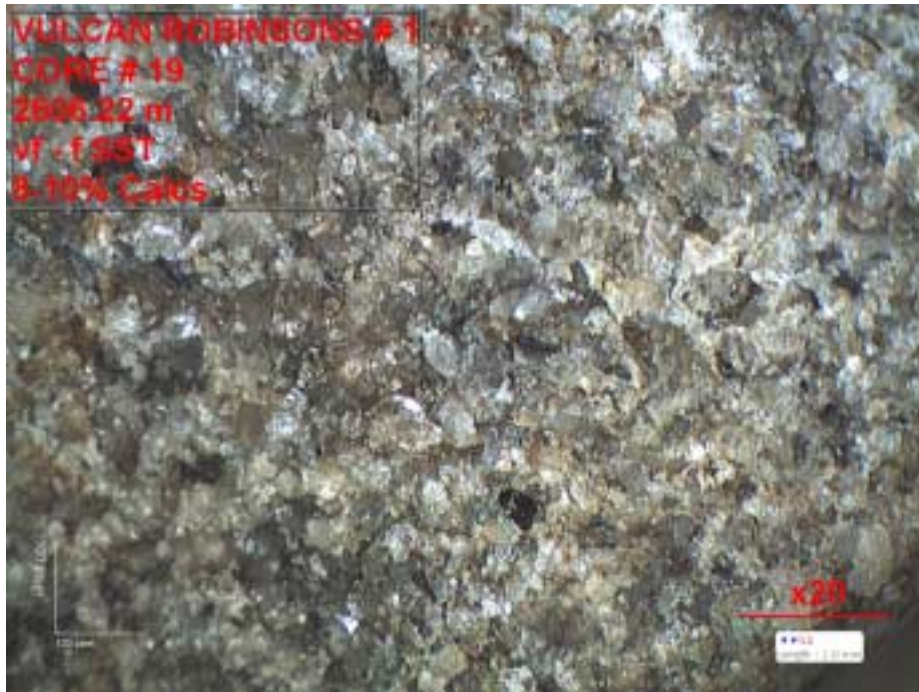


SIDEWALL CORE DESCRIPTIONS

Core #19
Recovered 80%
2,606.22 m

SANDSTONE

Light to slightly medium grey, very fine to lower to upper fine with trace lower medium, quartz, opaque, translucent, grey, trace to 1% argillaceous lithics, trace black carbonaceous specks?, trace micro argillaceous laminae, trace white mica, moderate sorted, subangular to subrounded with rounded upper fine to lower medium quartz, well cemented, siliceous with 8-10% calcareous component, minor to 2% argillaceous component, grain supported, siliceous to silty matrix, moderate cemented, Core breaks or fractures around and through quartz grains, trace clays around some quartz grains only, 8-10% ineffective porosity, 1-2% effective porosity, CN 13.5% ZDEN 3.9%, No Shows.



SIDEWALL CORE DESCRIPTIONS

Core #20
Recovered 100%
2,629.54 m

SHALE

Grey black, massive, amorphous, hard, siliceous with trace calcareous, grading to lower Silt, faint laminations to banding, uniform, No effective porosity, CN 13.1% ZDEN 7.8%, No Shows. (Core Cut off Depth ?)



SIDEWALL CORE DESCRIPTIONS

Core #21
Recovered 60%
2,631.85 m

SHALE

Black, massive, Fractured Core, fractures apx 20 degrees to core axis, convoluted shiny vitreous black surfaces, slickenside?, brownish calcite within healed fractures to no calcareous, possible carbonaceous?, Shale itself is hard, massive, Good Gas show of 295 units through interval, No Primary porosity but assuming some secondary fracture porosity, CN 28.3% ZDEN - 3.7%, No Shows.

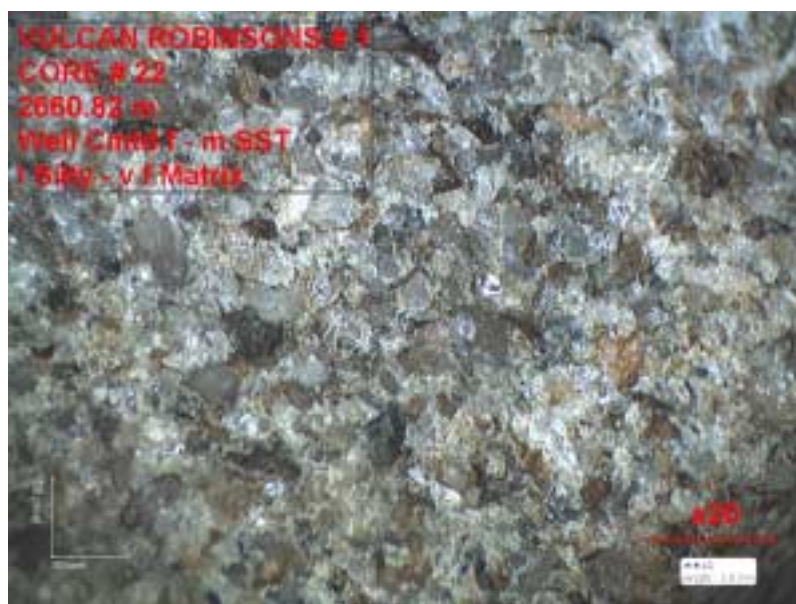


SIDEWALL CORE DESCRIPTIONS

Core #22
Recovered 60%
2,660.82 m

SANDSTONE

Light to slightly medium grey, lower to upper fine with minor medium, quartz, opaque, translucent, grey, trace to 1% shale lithics, minor black micro coaly? specks, trace micro argillaceous laminae to micro argillaceous infilling around grains, trace white mica, moderate to moderate poorer sorted, subangular to subrounded, abundant upper fine to lower medium rounded, grain supported, with finer silty to very fine matrix infilling, minor argillaceous only, well cemented, siliceous with 3-5% calcareous component, moderate relief, Core breaks or fractures around quartz grains, 6-8% ineffective porosity, 2-3% effective porosity, CN 14.0% ZDEN 3.5%, No Shows.

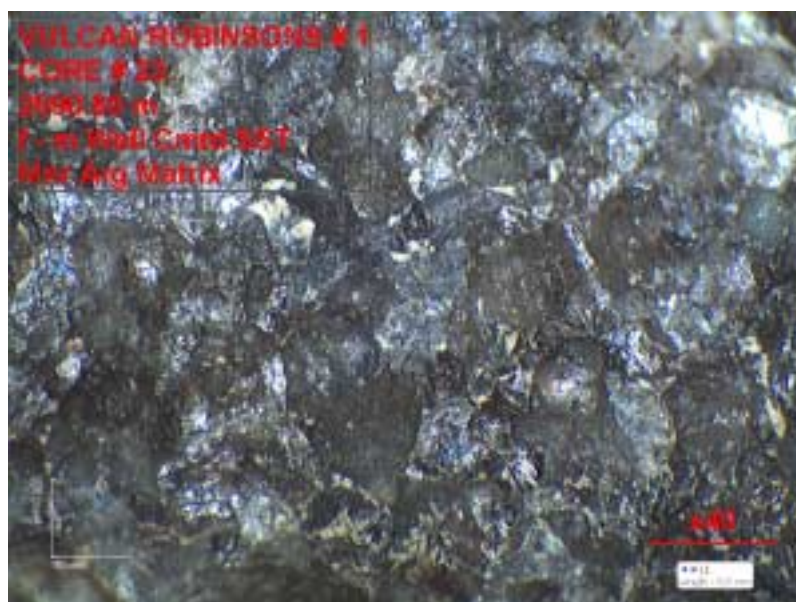
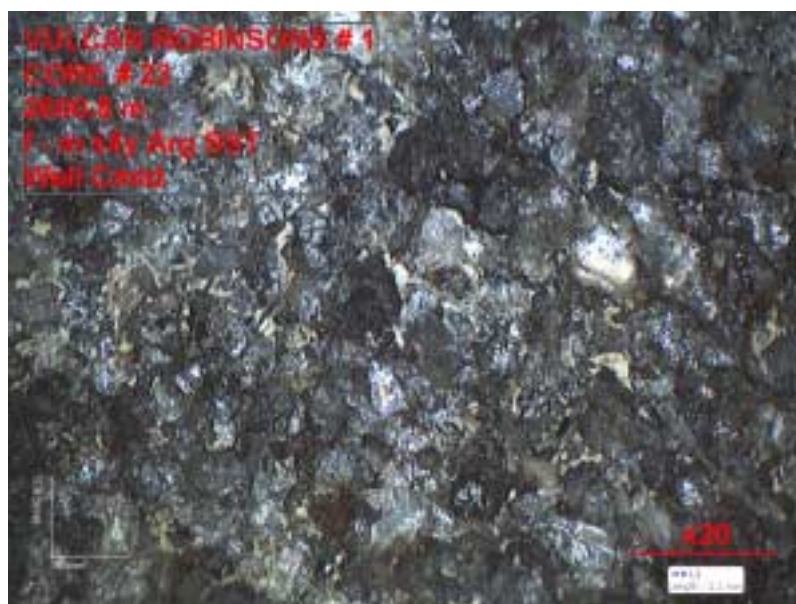


SIDEWALL CORE DESCRIPTIONS

Core #23
Recovered 100%
2,690.80 m

SANDSTONE

Medium grey, predominately lower to upper fine with 20% medium, quartz, opaque, translucent, grey, 3-5% grayish to black Shale lithics grains, with 5-8% argillaceous matrix, possible some micro pyrobitumen ? within argillaceous component?, poorer sorted, subangular to subrounded with upper medium rounded, rare angular, abundant very fine angular matrix within argillaceous infilling, grain supported with minor floating quartz within argillaceous matrix, well cemented, siliceous with 2-3% calcareous component, moderate poorer relief overall, Core broken predominately through quartz grains, 10-13% ineffective porosity, 2-3% effective porosity, CN 14.1% ZDEN 2.6%, No Shows.

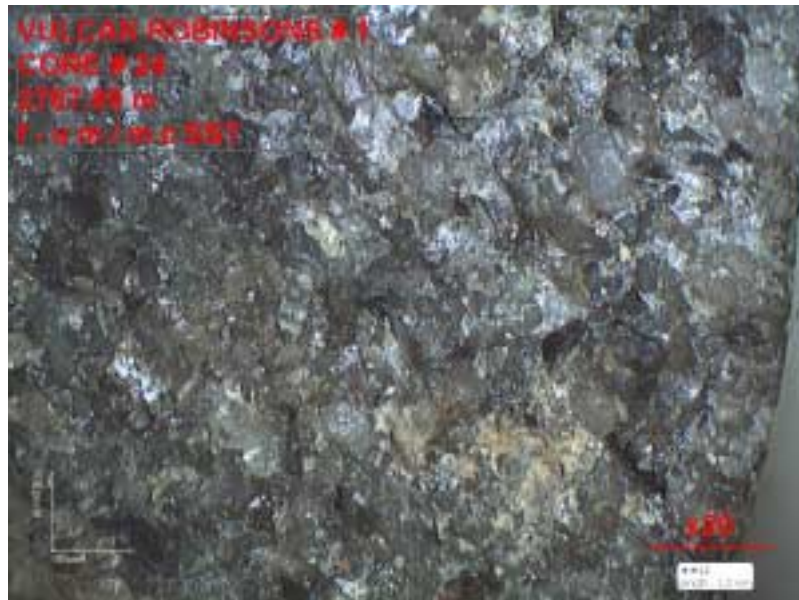
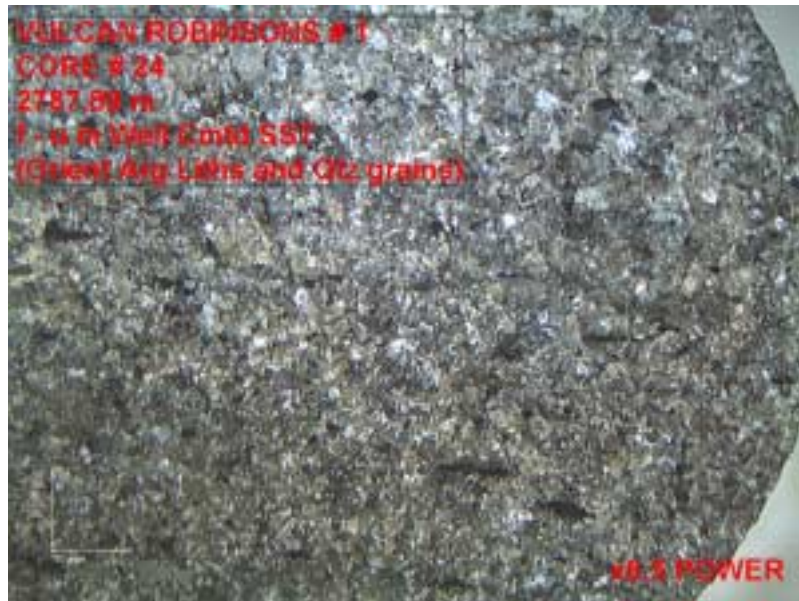


SIDEWALL CORE DESCRIPTIONS

Core #24
Recovered 100%
2,787.89

SANDSTONE

Light to slightly medium grey, lower to upper fine to upper medium with medium coarse, quartz, opaque, translucent, grey, minor to 1% black argillaceous lithic grains with orientated argillaceous laminae, moderate sorted, subangular to subrounded with more rounded upper medium to rare coarse, possible minor very light grey white clay infilling, moderate well cemented, siliceous with 4-6% calcareous component, moderate to moderate low relief, grain supported, 4-6% ineffective porosity, 1-2% effective porosity, CN 12.1% ZDEN 3.7%, No Shows.

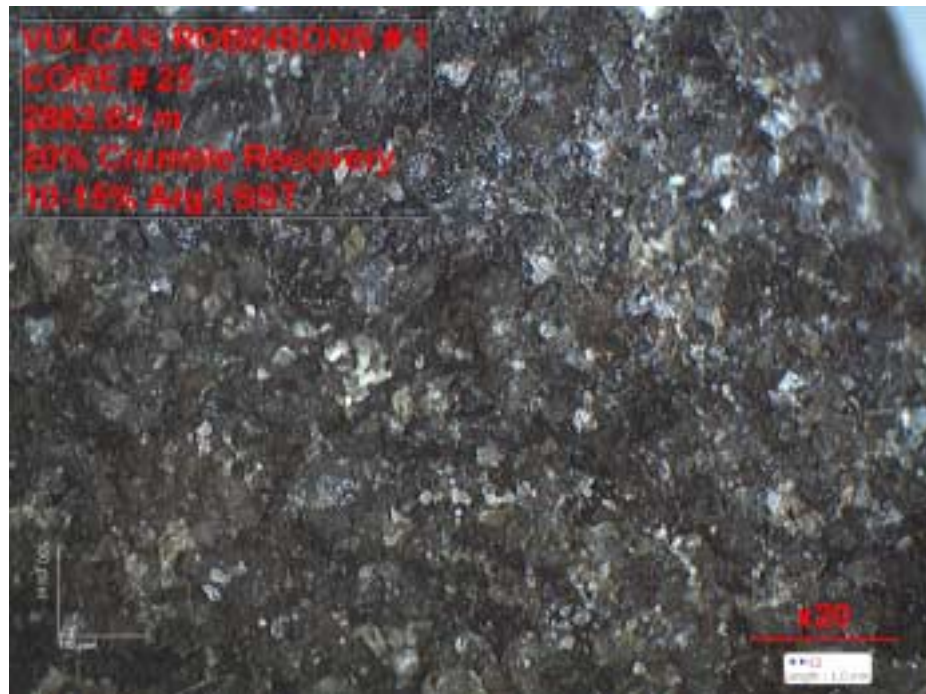


SIDEWALL CORE DESCRIPTIONS

Core #25
Recovered 20%
2,862.62

SANDSTONE

Medium to darker grey, lower to upper fine, minor medium, quartz, opaque, grey, translucent, 3-5% grey to grey black argillaceous lithics, 10-15% argillaceous matrix?, moderate sorted, subangular to subrounded with upper fine to medium rounded, moderate weaker cemented, siliceous with 5-7% calcareous component with argillaceous matrix?, moderate relief, 8-10% ineffective porosity, 1% effective porosity, CN 10.3% ZDEN 4.6%, No Shows.

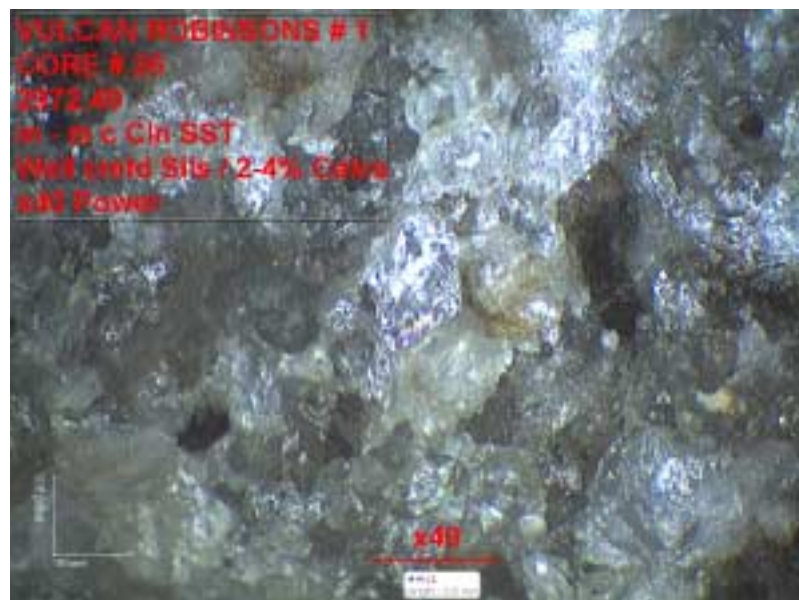
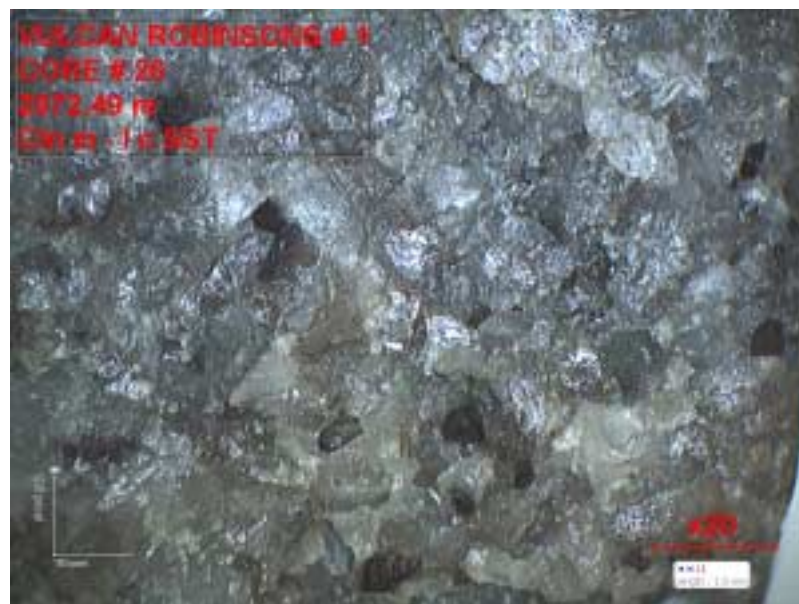


SIDEWALL CORE DESCRIPTIONS

Core #26
Recovered 60%
2,972.49 m

SANDSTONE

Light grey, fine to upper medium with minor lower coarse, quartz, opaque, translucent, minor black to grey lithics only, clean, well crystalline, moderate sorted, subangular to subrounded, minor rounded, grain supported, minor finer matrix, well cemented, siliceous with 2-4% calcareous component only?, lower overall relief, Core broken predominately through quartz grains, Good overall Sandstone but well cemented, 4-5% ineffective, 1-2% effective porosity, CN 11.0% ZDEN 4.1%, No Shows.

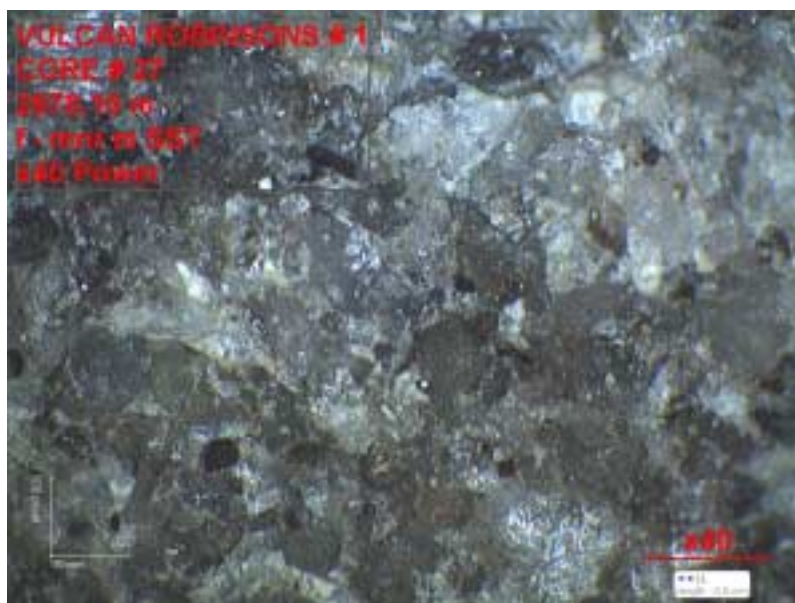
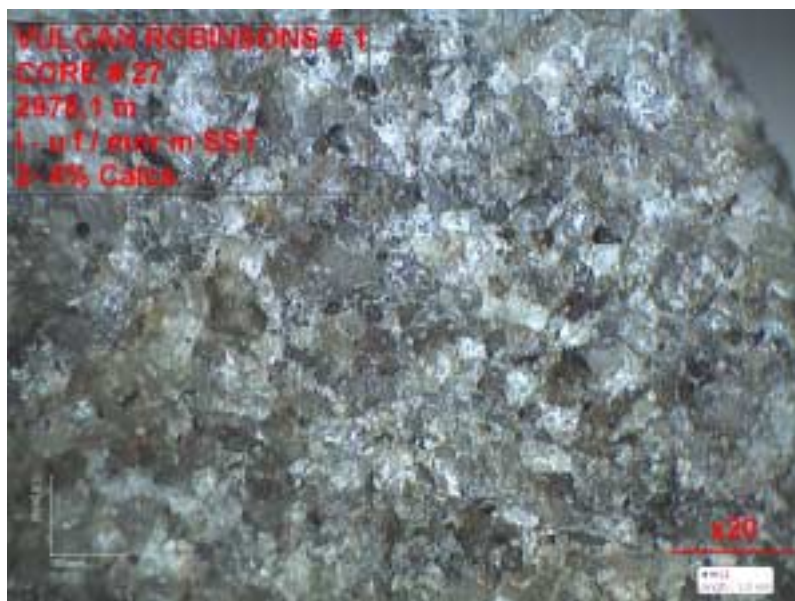


SIDEWALL CORE DESCRIPTIONS

Core #27
Recovered 70%
2,978.10 m

SANDSTONE

Light grey, lower to upper fine with minor medium, quartz, opaque, translucent, grayish, trace to less than 1% black lithics, clean, moderate sorted, subangular to subrounded with minor rounded medium, minor finer silty matrix, well cemented, siliceous with 2-4% calcareous component, grain supported, moderate relief, Core breaks generally around quartz grains, 6-8% ineffective porosity, 2-3% effective porosity, CN 11.6% ZDEN 5.4%, No Shows.



SIDEWALL CORE DESCRIPTIONS

Core #28
Recovered 15%
3,310.69 m

Fractured SHALE with SANDSTONE

Rubble recovery, black massive Shale, micromicaceous, (partings) lithic clast? or intermixed with fine to upper fine Sandstone, poor sorted, quartz, opaque to white, translucent, lithic argillaceous fragments, siliceous to trace calcareous, no apparent porosity, very poor Sample, CN 12.6% ZDEN 0.0%, No Shows



END OF CORE DESCRIPTIONS