#1 Nelson
1250 FSL 4020 FEL (SE/4) Sec 18-T17S-R3W
McPherson County, Kansas

Core Description

Cored Interval: 3370-3400
Recovered: 29 Ft. (+)
Recovered approximately 1 foot shale and 28 (+) feet of Maquoketa Dolomite.

3370'-71'
Finely laminated, dark grey, non-calcareous shale. Some very minor specks or flakes of pyrite. Bottom portion of this foot is gradually grading into a transition zone between shale and Maquoketa dolomite.

3371'-72'
Top 2"-3" of this foot is the contact. The core shows alternating dark grey and very light grey lenticular bands of shale and chert. Chert is light grey. At the contact there is a marked ring of oil stain bleeding from very small vugs and pinpoint porosity. The lower portion of this section is only very slightly vuggy and is bleeding from pinpoint porosity.

3372'-73'
Dolomite with chert as above. Becoming much more vuggy. Vugs vary in size from 1/4" to 1" in diameter. In short "pinky to thumb" size.

3373'-74'
Very vuggy dolomite. This entire foot is actually one or two large size vugs. Oil is bleeding from these vugs which are actually large sized chert nodules within Maquoketa.

3374'-75'
As above but not quite as vuggy. Bleeding oil from pinpoint porosity and very small (1/4") vugs.

3375'-76'
Dolomite and chert as above. Very light oil staining and bleeding from pinpoint porosity.

3376'-77'
Dolomite with cherty lenticular bodies. Some minor styolites are surrounding these cherty bodies. The core is bleeding from pinpoint porosity and some small (1/4") diameter vugs. Again, the cherty nodules are where the majority of the oil is bleeding out of.

3377'-78'
As above. Note: Fresh open fractured surfaces seem to be bleeding oil profusely.

3378'-79'
Dolomite and chert as above. Some vugs are slightly larger than above (approximately 1/2" diameter). Chert nodules also are larger. Some minor styolites still developing along borders of chert nodules.

3379'-80'
Dolomite with chert as above. Some small vugs. Core is bleeding from pinpoint porosity.

3380'-81'
As above.

3381'-82'
As above with one large vug (1/2" to 1" diameter) bleeding a good amount of oil. Oil has good taste and not salty.

3382'-83'
Wavy and lenticular patterns of dolomite and chert. Some minor and spotty bleeding of oil from pinpoint porosity.

3383'-84'
Dolomite as above. Sparce and spotty bleeding of oil. Lower 6" has lenticular bands of chert.

3384'-85'
Very cherty dolomite. Possibly showing some small amount of microfractures.

3385'-86'
As above becoming slightly vuggy. Vugs are very small (< 1/4" diameter).

3386'-87'
As above. Bottom 5" of this section has large (1" diameter) (eg. thumbsize) vug filled with pyrite crystals and possibly some quartz crystals. No bleeding oil or stains on this section.

3387'-88'
Dolomite with cherty nodules. Nodules vary in size and some are eye shaped. Chert nodules are not bleeding and are not showing any vugs. Only one or two nodules exhibit slight oil staining.

3388'-89'
Dolomite with chert. No oil staining or bleeding.

3389'-90'
As abvove. Center of this section has another large vug (1/2" to 1" diameter) of chert filled by dolomite crystals.

3390'-91'
Top 1"-2" has spotted oil staining. Very sparse oil staining in dolomite and chert. Bottom 3"-4" has some vugs of small size (< 1/4" diameter) with minor bleeding of oil.

3391'-92'
Dolomite and chert as above. One small vug (1/4" diameter) of chert filled with dolomite crystals. Some very minor and spotty oil stains.

Core Description (Continued)

3392'-93'
Dolomite and chert as above. A couple more smaller vugs (< 1/4" diameter) of chert filled with pyrite crystals. Lots of smaller vugs (< 1/8" diameter) scattered from top to bottom of this section. Some minor oil staining and bleeding from pinpoint porosity within chert nodules.

3393'-94'
As above. Very few vugs. Some pinpoint porosity bleeding oil or stained with oil.

3394'-95'
As above to 3394.5. One large nodule here (approximately 3/4" diameter). Has fair amount of oil staining and is bleeding from microfractures.

3395'-96'
Break in dolomite at 3395.5 has very good oil show at contact with shaly partings (styolite) surrounding chert nodule. Minor amount of oil staining.

3396'-97'
Dolomite with chert nodules. Some very small vugs (1/4" diameter) filled with pyrite. One large vug (3/4" diameter) in a chert nodule has very good oil show and good taste. Not salty.

3397'-98'
As above. Losing small vugs. Very sparse and spotty oil staining. One fair size (1/2" diameter) vug in dolomite.

3398'-99'
Dolomite and chert as above. No vugs. No pinpoint porosity bleeding oil. Only slight oil staining.

Note of observation about whole core interval:

From a general view, overall the core was consistent in its color. Darker grey sections were generally dolomitic and lighter grey were consdidered chert nodules. The dolomite was easily scratched with a pocketknife and the chert was not scratched. Under the binocular microscope, the dolomite took on a much lighter color and was generally of a grainy texture. It exhibited a fair amount of porosity throughout the core.

Core described 5/11/86
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