

# MIRROR LAKE

July 26th, 2006

“Mirror Lake” section is on a small creek, [CRW\\_1575](#), [CRW\\_1584](#) west of the actual Mirror Lake. Section is underlain by Proterozoic red nodular Dead End Shale, which is in turn overlain by red-banded grey Dead End Shale/Little Dal carbonate(?), [CRW\\_1579](#), [CRW\\_1581](#), [CRW\\_2315](#), [CRW\\_2318](#), [CRW\\_2319](#), [DSCN09140030](#), [IMG\\_3676](#), [IMG\\_4938](#). The Proterozoic is unconformably overlain by Mount Cap and Saline River formations, [CRW\\_1582](#), [CRW\\_1585](#), [CRW\\_1586](#), [CRW\\_1587](#), [CRW\\_2312](#), [DSCN09120028](#), [DSCN09130029](#), [IMG\\_4933](#), [IMG\\_4936](#), [IMG\\_4937](#). Measurement began up creek (down section) in the H5 carbonate unit, up to a slump block that represents the highest exposed Mount Cap Formation. [GPS @ touchdown 09 0596392N 7188435W](#)



0.0m-6.0m                      6.0m                      Grey colored massive bedded limestone to very fine-grained siltstone, occasionally red-banded and overlying the red nodular Dead End shale, [CRW\\_2592](#), [CRW\\_2593](#), [CRW\\_2594](#), [DSCN12720002](#), [IMG\\_5686](#), [IMG\\_5687](#), [IMG\\_5690](#), [LPyle\\_129](#). Bedding 5-25 cm thickness, weathers brown - orange grey.

6.0m-7.5m                      1.5m                      Flaggy, calcareous tan weathered limestone with numerous soft-sediment sedimentary deformation/ slump structures, [CRW\\_2597](#), [CRW\\_2598](#), [DSCN12730003](#), [DSCN12740004](#), [IMG\\_5683](#), [LPyle\\_131](#), [LPyle\\_132](#).



7.5m-9.0m                      1.5m                      Similar to below, occasional massive flaggy beds up to 20-30cm thickness. **Sample at 7.5m: 06-JT-01-01(Jul 26).** The unit may be progradational(?) and near its top it has interbedded laminated lime siltstones and more “structure-less” lime. Leanne sampled these, **DSCN12750005, DSCN12760006, DSCN12770007, IMG\_5694, LPyle\_133.**



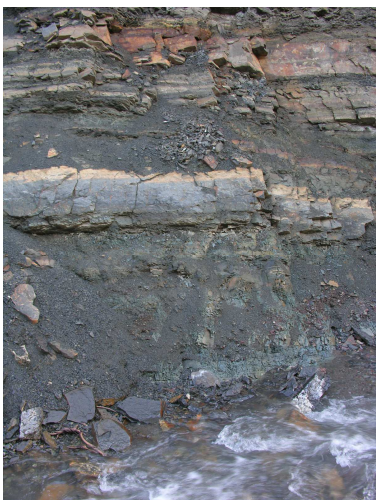
9.0m-17.5m                      8.5m                      Laminated fine siltstone to limestone, becoming more calcareous upwards with possible transition into Little Dal formation. **Sample: 06-JT-01-02(Jul 26),** upper 3 to 4 m contains thin lime mudstone beds that weather light grey, **Sampled for SSF as 06LP-ML-01, CRW\_2590, CRW\_2601, IMG\_5682, IMG\_5696, P7261106.**

17.5m-17.7m                      0.2m                      20cm thick basal lag sand, medium to coarse grained, green-colored (glauconite?) and full of small scale ripples and mud cracks (syneresis?) **DSCN12850015, IMG\_5700, IMG\_5707, IMG\_5708, IMG\_5709, LPyle\_127, LPyle\_136, LPyle\_137, LPyle\_139, LPyle\_140, LPyle\_141, P7261114,** also some mud chip breccia, **CRW\_2602, DSCN121790009.** The top surface is rippled with the odd mud chip, **CRW\_2605, CRW\_2610, CRW\_2611, P7261108, P7261109.** Sits unconformably on underlying Proterozoic limestones with a ~5 degree angularity under the unconformity, **CRW\_2603, CRW\_2604, DSCN12820012, DSCN12830013, IMG\_5704.** Lag sand represents the base of the Cambrian section, **CRW\_2606, CRW\_2607, DSCN12880018, IMG\_5710, LPyle\_135, P7261111.**



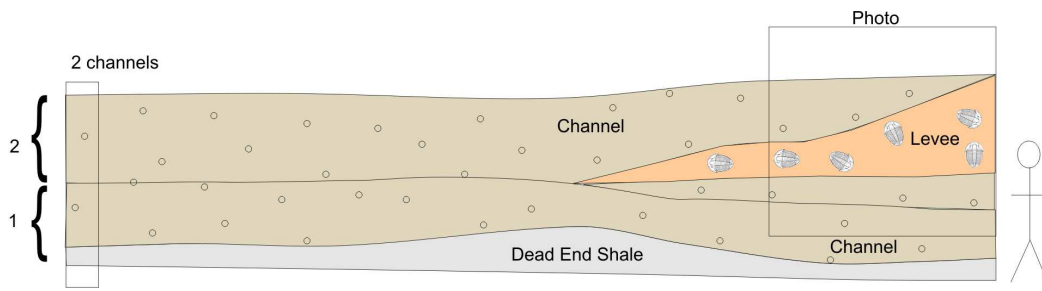
17.7m-21.5m      3.8m      Interbedded 20-40cm massive thick bioturbated fine-grained sandstones, siltstones and “super-green” shales. **Sample: 06-JT-01-03(Jul 26), CRW\_2600, CRW\_2608, DSCN12800010.** Section cut by several normal faults trending both ~N-S and ~E-W, **DSCN12810011, DSCN12860016, DSCN12870017, IMG\_5699, IMG\_5703, IMG\_5711, IMG\_5712, LPyle\_128, LPyle\_142.**

21.5m-22.0m      0.5m      “Super green” shaley siltstone to fine-grained sand, weathers brilliant green (photo 0205), massive-bedded, may be super green marker bed also seen in Sheep Mtn, Dodo Canyon and Imperial Canyon, **CRW\_2609, CRW\_2614, CRW\_2615, IMG\_5706.**



22.0m-24.0m      2.0m      Mixed lithology of coarse siltstones and fine-grained sands, friable and thoroughly bioturbated, interpreted turbidite levee facies, [CRW\\_2616](#), [CRW\\_2618](#), [IMG\\_5680](#).

24.0m-26.0m      2.0m      Medium-grained whitish-colored quartzite similar to that seen in Dodo Canyon, [CRW\\_2588](#), [CRW\\_2617](#), hard, dense with sand 'tipping out' into adjacent interbedded levee facies, [CRW\\_2619](#), [CRW\\_2622](#), [CRW\\_2623](#), [DSCN12700001](#), [DSCN12890019](#), [IMG\\_5713](#), [IMG\\_5715](#), [P7261124](#). Stratigraphic interpretation of stacked massive down-cutting channel sands, see below:



GPS location: [09 0596288N 7188070W](#); ...turbidite channels that stack off center





An alternate interpretation is a possible small-scale thrust fault, based on general aspect in outcrop and E-W trending slickenlines on the base of upper “channel” sand, [DSCN12900020](#), [DSCN12910021](#), [IMG\\_5677](#), [IMG\\_5678](#), [IMG\\_5679](#), [IMG\\_5717](#), [LPyle\\_125](#), [LPyle\\_126](#), [P7261123](#). Close examination along strike in outcrop favors fault model. **Sample: 06-JT-01-04 (Jul 26), 06-JT-01-05 (Jul 26).**

26.0m-28.5m                      2.5m                      In the section overlying (and possible marginal to) the big channel there are thin (15 cm) beds of glauconitic sands with abundant fossil flays (probably trilobites), [CRW\\_2628](#), [CRW\\_2629](#), [DSCN12920022](#), [IMG\\_5673](#), [IMG\\_5674](#), [IMG\\_5675](#), [IMG\\_5676](#). There are large **th** and **pl**  $\Theta$  and an overprint of chondrites (sample). Some of the fossil frags may be concentrated in burrows [lots of photos]. These (levee-like) overbank sections are full of trilobites. The shales are very **fragile** and often fall apart shortly after exposure. Mixed lithology levee facies as below, 40% siltstone beds, **Sample: 06-JT-01-06(Jul 26)** Grading to more 10-20cm siltstones upwards, capped by 4 cm beds; burrow mottled; black mud chips; **Sampled 06LP-ML-02 for SSF** in burrow mottled dolo-siltstone, medium grey, weathers orange (photo 0206-208), interbedded with glauconitic sandstone; (facies similar to cone beds at type Mount Cap section), [CRW\\_2586](#), [CRW\\_2587](#), [CRW\\_2625](#), [CRW\\_2627](#), [DSCN12930023](#), [IMG\\_5719](#), [LPyle\\_143](#), [LPyle\\_144](#), [LPyle\\_145](#), [P7261126](#), [P7261127](#), [P7261128](#), [P7261129](#), [P7261130](#), [P7261131](#), [P7261132](#); seen elsewhere e.g. Carcajou Canyon. **Sample: 06-JT-01-07(Jul 26)**, increasing bioturbation with pervasive horizontal burrowing, including thelasinoides and chondrites.

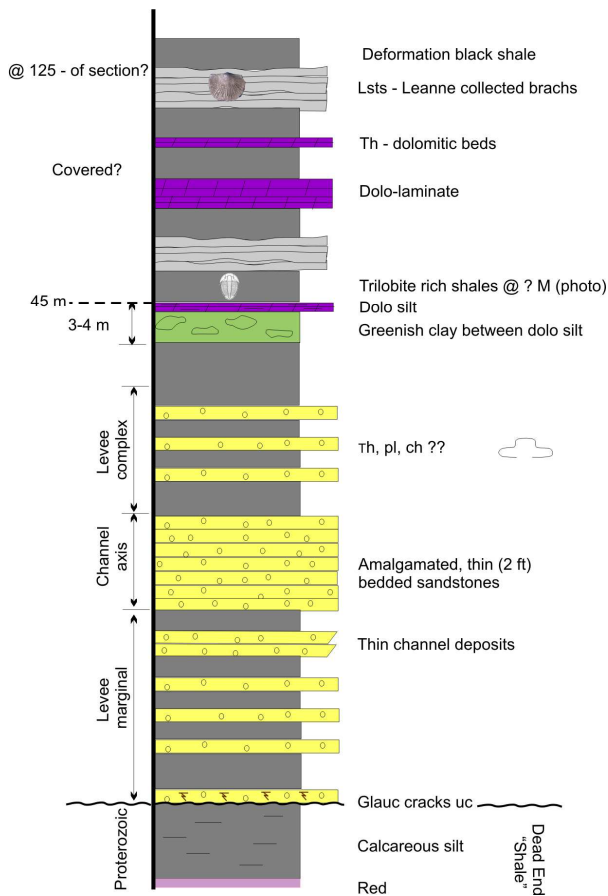


28.5m-34.5m      6.0m      Recessive siltstone, primarily covered, **Samples: 06-JT-01-08(Jul 26), O6LP-ML-03** for SSF, LPyle\_146, LPyle\_148, P7261119, P7261120.

34.5m-45.0m      10.5m      Basal 5-10cm thick light grey glauconitic fine-grained sand, overlain in upper part by dark grey to black silstones and shale with abundant bedded 2-3cm loadcast nodules in discrete beds at the base and have green clay between the nodules, **CRW\_2585, CRW\_2630, DSCN12940024, IMG\_5670, IMG\_5671, IMG\_5672, LPyle\_123, LPyle\_147, LPyle\_149, LPyle\_150, P7261133, P7261134.** Dolostone nodular interbeds weather orange, may be diagenetic? Occasional thin fine sands interbeds. **Sample: 06-JT-01-09 (Jul 26).**



45.0m-65.0m      19.5m      Massive recessive trilobite rich black silty shale, **P7261135, P7261136**, 30cm light grey siltstone bed at 49.5m and small trilobites in upper part of section, **P7261138, P7261139, P7261140, P7261141**, with 2 ft thick ss beds interbedded with greenish shales, **DSCN12970027, DSCN12980028, LPyle\_151.** **Samples: 06-JT-01-10(Jul 26) @46.5m, Additional TOC and macropaleo Samples: #12@46m, #13@48m, #14@50m, #15@52m, #16@54m, #17@56m, #18@58m, #19@60m, #20@62m, #21@64m.** At top laminated silty dolostone, orange/black alternating pinstripes in weathering as per Dodo Canyon in uppermost resistive Mt Cap beds, **Sample: 06-JT-01-11(Jul 26),** rare ripple-laminated sand. **Sampled black trilobitic shale at 48m as O6LP-ML-04** (retain best pieces as “macrofossils”, dissolve others to free phosphatic specimens, LPyle\_153.



65.0m-80.0m      15.0m      Laminated grey fine, soft silty shale with 30cm thick silty laminated dolomite at top, **CRW\_2634**. Dolomite weathers orange, becomes thinner bedded at top, **CRW\_2635**, **DSCN12950025**, **DSCN12990029**, **LPyle\_154**, **LPyle\_155**, **P7261137**. Sample: 06-JT-01-22(Jul 26).

80.0m-110.5m      30.5m      Laminated black shale and dark grey dolo-siltstones, weathering orange, thin to medium bedded, **DSCN13000030**, **DSCN13010031**, **DSCN13020032**, **DSCN13030033**, **IMG\_5695**, **IMG\_156**.

110.5m-123.0m      12.5m      Brecciated dolo-siltstones and black shale, **CRW\_2636**, **CRW\_2637**, **DSCN13040034**, upper part apparent phosphatic hardgrounds(?) and fine-grained glauconitic sand, burrows enhanced by dolomitization; glauconitic; interbedded with light greenish grey shale and siltstone containing abundant ?acrotretid brachiopods, **Sampled as 06LP-ML-O5** at 117.0 m (retain some "macrofossils", dissolve other to free phosphatic specimens). Samples: laminated dolo-siltstone 06-JT-01-23(Jul 26) @ 113.5m, black shale TOC 06-JT-01-24(Jul 26) @ ~116.0m, phosphatic hardground 06-JT-01-25(Jul 26) @ 119m, black shale TOC 06-JT-01-26 @ 120m, **CRW\_2639**, **CRW\_2640**, **CRW\_2641**, **CRW\_2642**, **CRW\_2643**, **DSCN13050035**, **DSCN13060036**, **DSCN13070037**, **DSCN13080038**, **DSCN13090039**, **LPyle\_157**.



GPS at end section: 09 0596425N 7188350W, CLB waypoint 36.

Basal Saline River unconformity not clear as outcrop poor, [CRW\\_2644](#), however to north of this outcrop (down-stream) additional section identified as interbedded dolostones and black shale, [DSCN2094](#), [DSCN2095](#), [DSCN2097](#), [DSCN2099](#), [DSCN2100](#), [DSCN2101](#), [DSCN2102](#). Assume the base of this section is the “End of Section” from the 2006 fieldwork @ ~123m. Interbedded section estimated at 25m total thickness, which is in turn overlain by 10+ metres of greenish-grey Saline River clastics, [DSCN2096](#). Adding this interbedded section yields a total thickness of this measured section as 123m & 25 & 10m = 158m.

