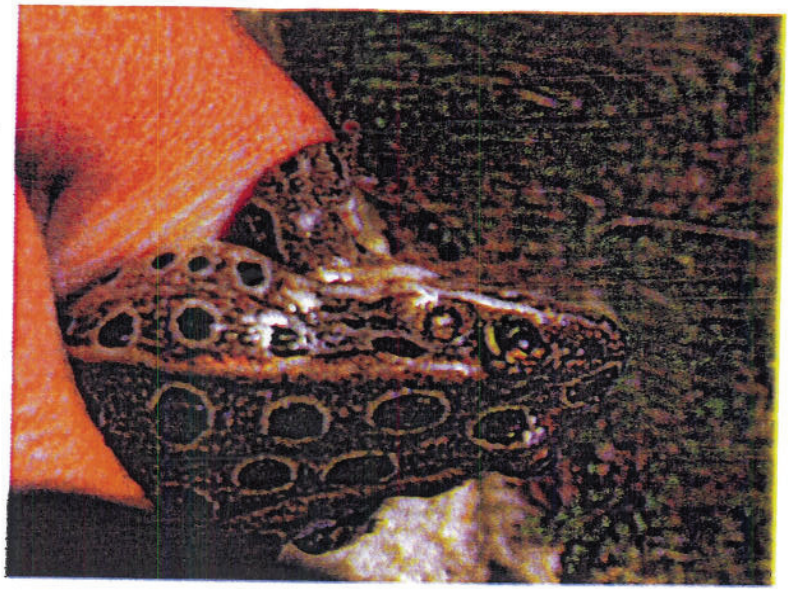


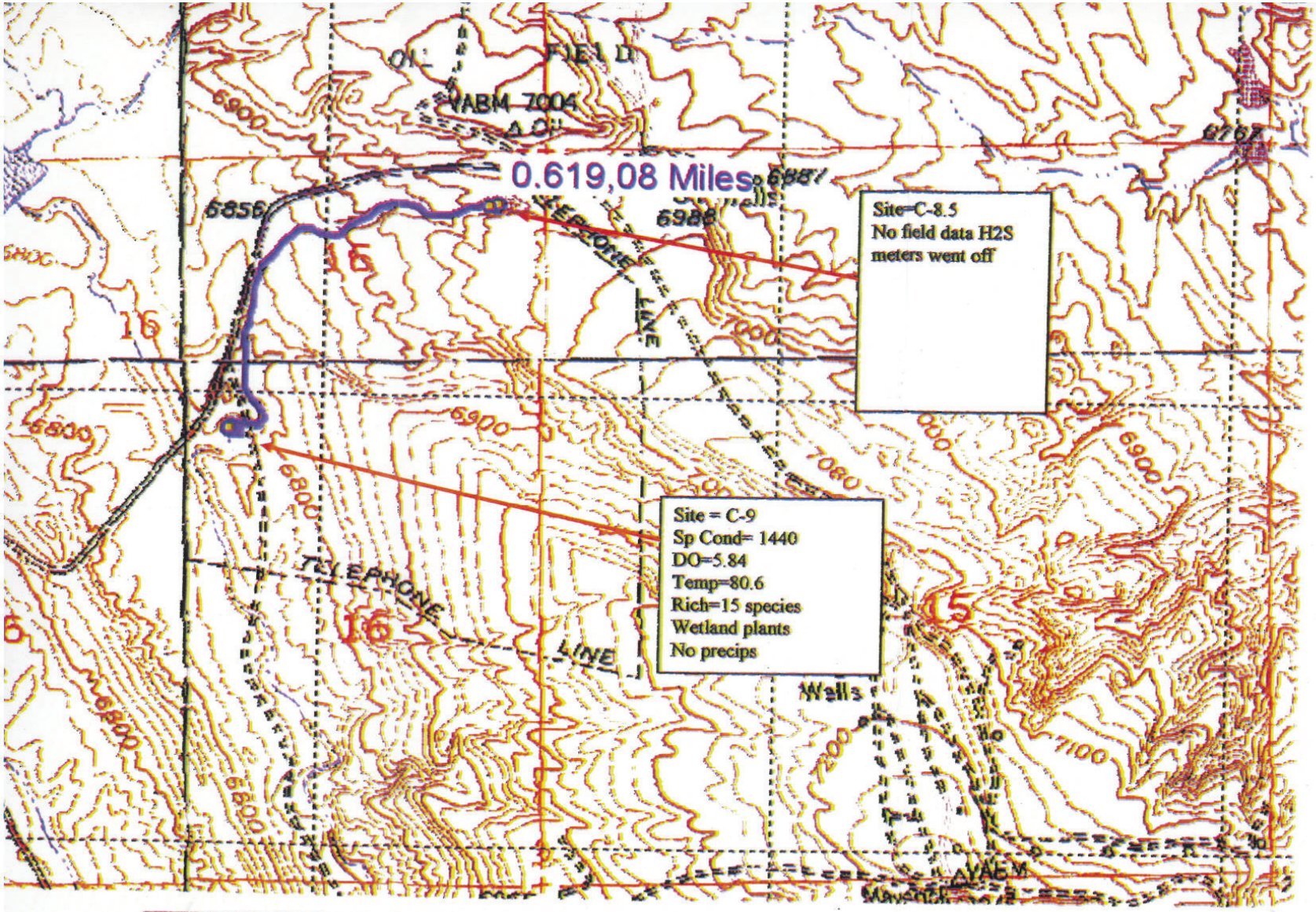
CR8-3: A northern leopard frog was caught and released at this site.

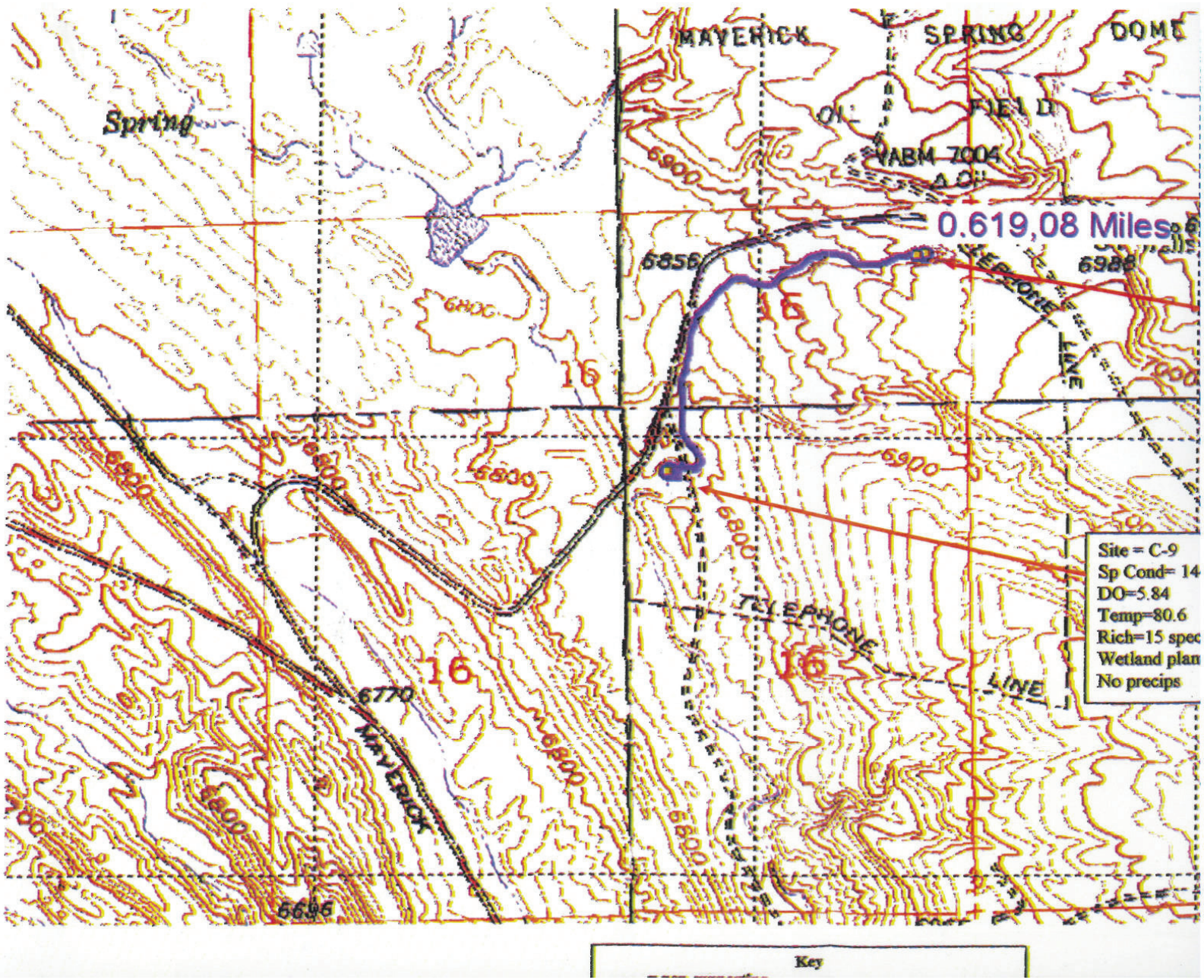
Chatterton site C8.5

NPDES sites															
Site	Site name	Str or Lk name	II_Geology	VI_Ros I_1	VI_Ros II_1	VI_Ros I_2	VI_Ros II_2	elev	Lat	Long	VIII_Anth_Ps_6	IX_Degree_6	Lim Season_6	X_Status	XI_Mgmt
C-8.5	Chatterton at NPDES pt.	Chatterton NPDES creek	Sed	G	4			6680	43° 30' 12.4"N	108° 59' 30.4"W	NPDES_O&G	Dep	AS	FS	Perm

This site was not evaluated because our H_2S meters took two long sustained hits and the stream was located down in a gully where the heavier than air poisonous gases would tend to accumulate. Marathon's toxic screen values will be evaluated when the tests are done.

The stream is at the bottom of a gully and our H_2S meters went off before any testing could be done.


0.619,08 Miles
Site=C-8.5
No field data H2S
meters went off
Site = C-9
Sp Cond= 1440
DO=5.84
Temp=80.6
Rich=15 species
Wetland plants
No precips
TELEPHONE LINE
Wells
Key
= non-supporting,
=partially supporting
=fully supporting, prod water influenced


MAVERICK
SPRING
DOME
FIELD
Spring
YABM 7004
0.619,08 Miles
6856
6988
TELEPHONE
LINE
6900
6800
6770
6696
16
Site = C-9
Sp Cond= 14
DO=5.84
Temp=80.6
Rich=15 spec
Wetland plan
No precips
Key

Chatterton site C-9

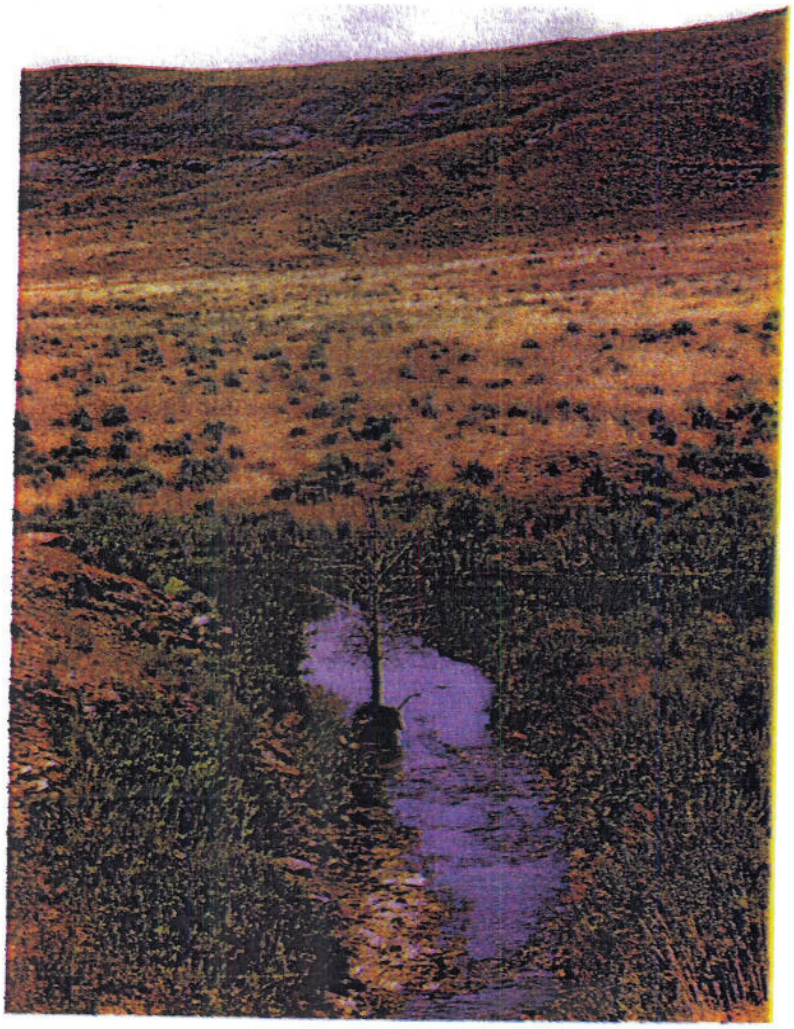
NPDES sites															
Site	Site name	Str or Lk name	II_Geology	VI_Ros I_1	VI_Ros II_1	VI_Ros I_2	VI_Ros II_2	elev	Lat	Long	VIII_Anth_Ps_6	IX_Degree_6	Lim Season_6	X_Status	XI_Mgmt
C-9	Chatterton 1/4 mile downstream from NPDES pt.	Chatterton NPDES Creek	Sed	C	3	C	4	6600	43° 29' 55.0"N	108° 59' 59.5"W	NPDES_O&G	Dep	AS	FS	Perm

There were no precipitates and the water was clear. Wetlands with cattails and sedges were mixed with faster runs that had some cobble and gravel substrates. All chemical parameters looked well below any limits and the DO was good at 5.84 mg/l.

The macroinvertebrate fauna support the conclusion that this water is meeting its beneficial uses. There were 16 species of macroinvertebrates and fair numbers (46 individuals).

C9-1: lush riparian wetlands add greatly to the water quality of this stream segment. The clear water and lack of precipitates allows for both emergents and macrophytes to grow.

C9-2: The faster reaches have a cobble and gravel substrate. The macroinvertebrate richness is 16 species.



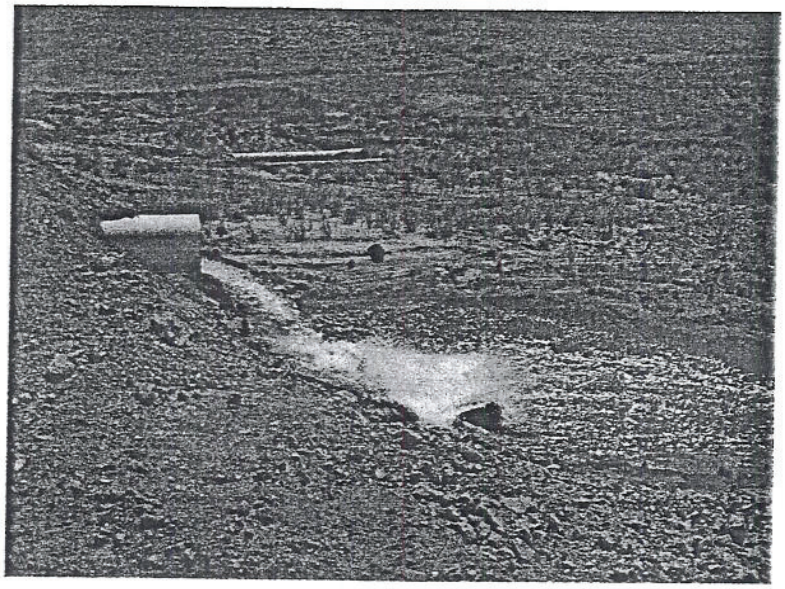
C9-3: There is a stark contrast between the lush green riparian areas and the very dry upland areas. This produced water adds greatly to the diversity of this landscape.

Maverick Springs site MS-9.5

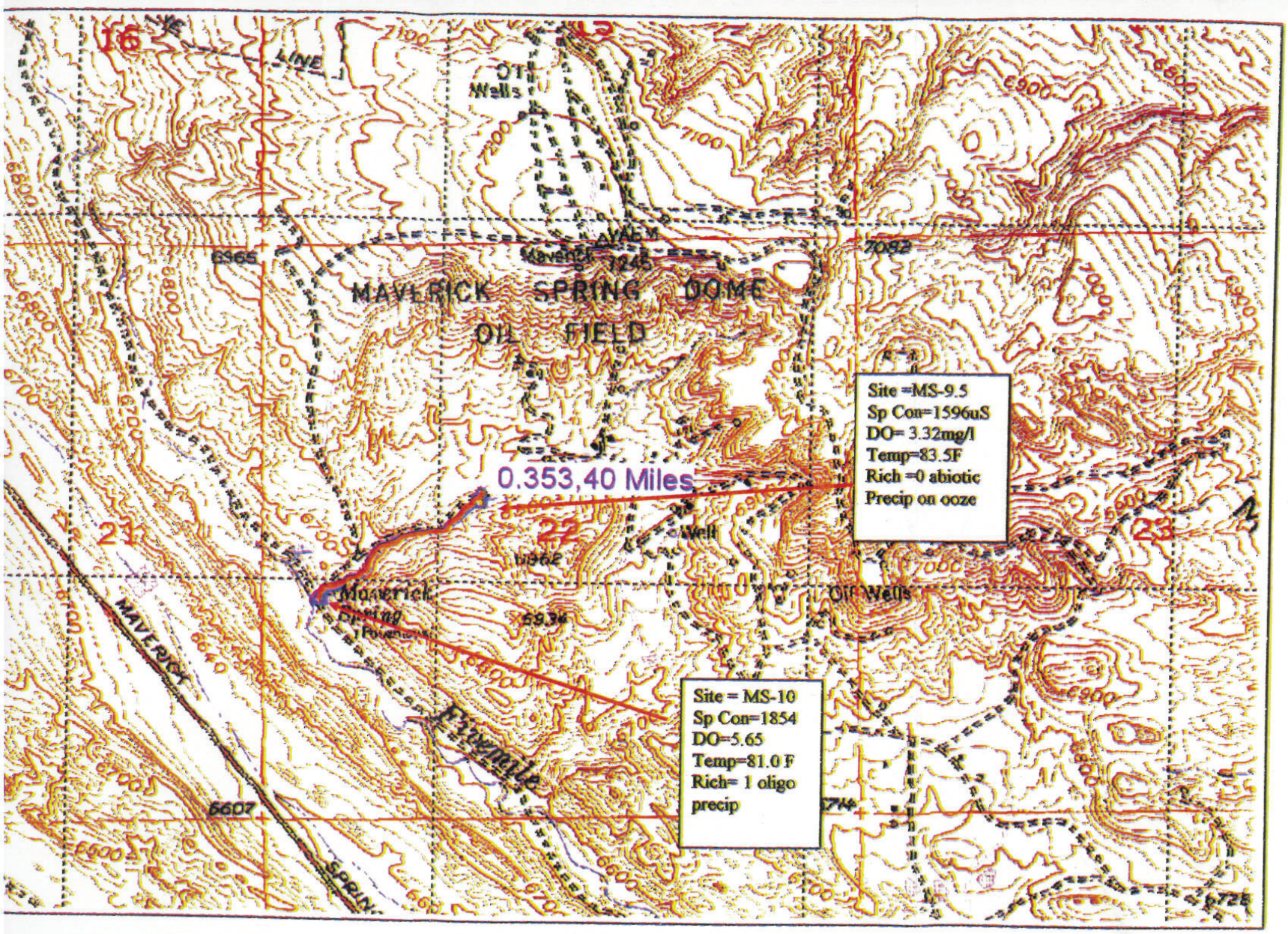
NPDES sites																
Site	Site name	Str or Lk name	II_Geology	VI_Ros I_1	VI_Ros II_1	VI_Ros I_2	VI_Ros II_2	elev	Lat	Long	VIII_Anth_Ps_6	IX_Degree_6	Lim Season_6	X_Status	XI_Mgmt
MS-9.5	Maverick Springs 9.5	Maverick Springs at NPDES pt.	Sed	G	5			6900	43° 29' 01.8"N	108° 58' 53.4"W	NPDES_O&G	Dep	AS	PS?	Perm

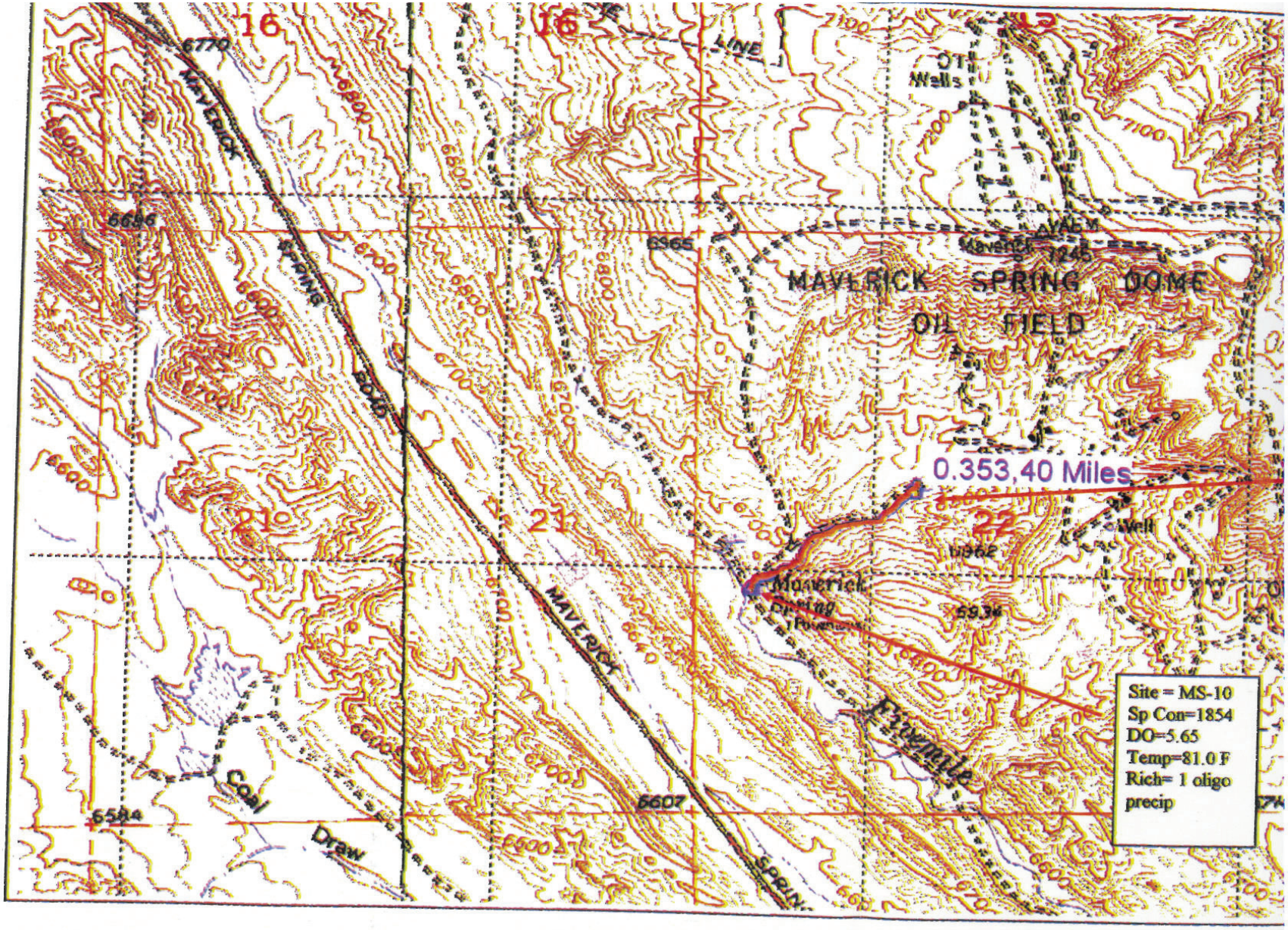
Heavy precipitates and some precipitation terracing were characteristic of this site. The water temperature is slightly higher at 84 degrees F and this allows for more dissolved substances to be in the ground water. This water had the highest hardness at 944 mg/l and appears to be composed mostly of calcium carbonate.

There were no macroinvertebrates found in the sample that was collected and is probably due to the precipitates. The oxygen is moderately low at 3.32mg/l. The water was clear.



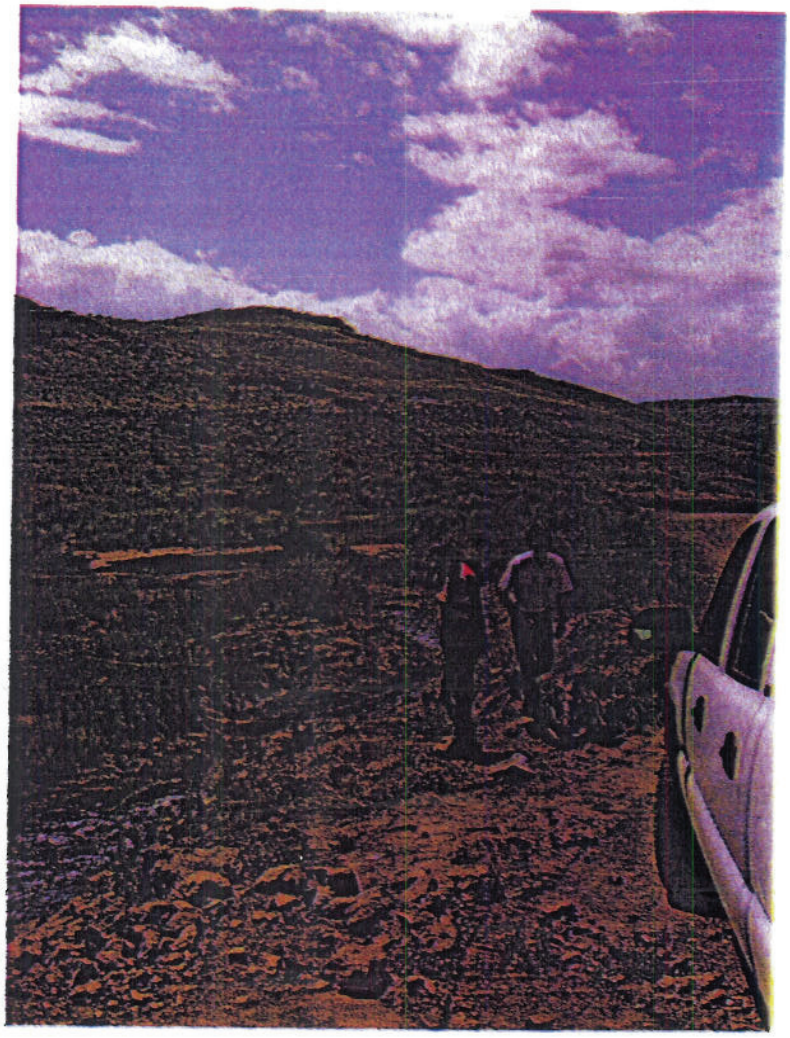
MS9.5-1: An oil coating can be seen on the banks below the discharge outfall.


MAVERICK SPRING DOME
OIL FIELD
0.353,40 Miles
Site =MS-9.5
Sp Con=1596uS
DO= 3.32mg/l
Temp=83.5F
Rich =0 abiotic
Precip on ooze
Site = MS-10
Sp Con=1854
DO=5.65
Temp=81.0 F
Rich= 1 oligo
precip
Maverick
Spring
Oil Wells
Well
MAVERICK
Fivemile
16
21
22
23
7082
6965
6607
6725

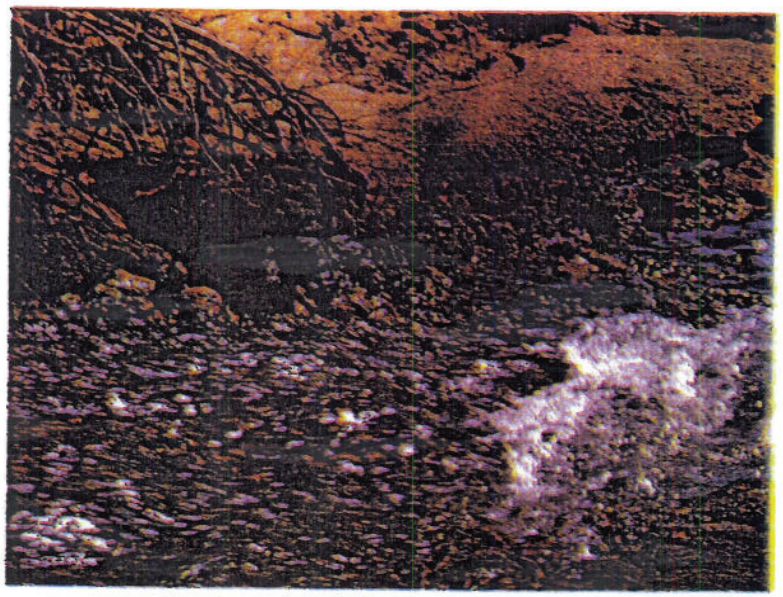


MAVERICK SPRING DOME
OIL FIELD
0.353,40 Miles
Maverick Spring
Site = MS-10
Sp Con=1854
DO=5.65
Temp=81.0 F
Rich= 1 oligo
precip
Coal Draw
MAVERICK SPRING ROAD
Fivemile
Wells
Well
16
21
22
6770
6686
6965
6607
6584

Key



MS9.5-2: The current is fast and the water temperatures are a bit warm at 84 degrees F. No macroinvertebrates were found at this site. The calcium carbonate is mostly still in solution here and the water is clear.



MS9.5-3: A closer look at the oil coated banks that are probably from an earlier spill or failure at the field. The water is relatively clear unlike that of Circle Ridge.

MS9.5-4: This is the hardest water sampled and the precipitates along the edges are probably calcium carbonate.

Maverick Springs Site MS-10 just before the confluence with Chatterton.

NPDES sites															
Site	Site name	Str or Lk name	II_Geology	VI_Ros I_1	VI_Ros II_1	VI_Ros I_2	VI_Ros II_2	elev	Lat	Long	VIII_Anth_Ps_6	IX_Degree_6	Lim Season_6	X_Status	XI_Mgmt
MS-10	Maverick Springs 10	Maverick Springs below NPDES	Sed	G	5			6640	43° 28' 49.9"N	108° 59' 19.3"W	NPDES_O&G	Dep	AS	FS?	Perm

This reach is entrenched in a gully with steep drops and fast flows. The calcium carbonate precipitates dominate the substrate. Further upstream the channel flows through the Gypsum Springs layer and this may also lead to a very unstable substrate because the calcium sulfate layer dissolves. Even so, the sulfates were not particularly high at this station. The water is cooler at this station at 81 degrees F and the calcium carbonate precipitates cloud the water.

The only macroinvertebrate found was the Oligochaete, *Tubfex tubifex* and these worms were plentiful underneath the precipitate crust. They are tolerant of very low DO conditions and are found in both organically enriched conditions and also cleaner water (facultative).