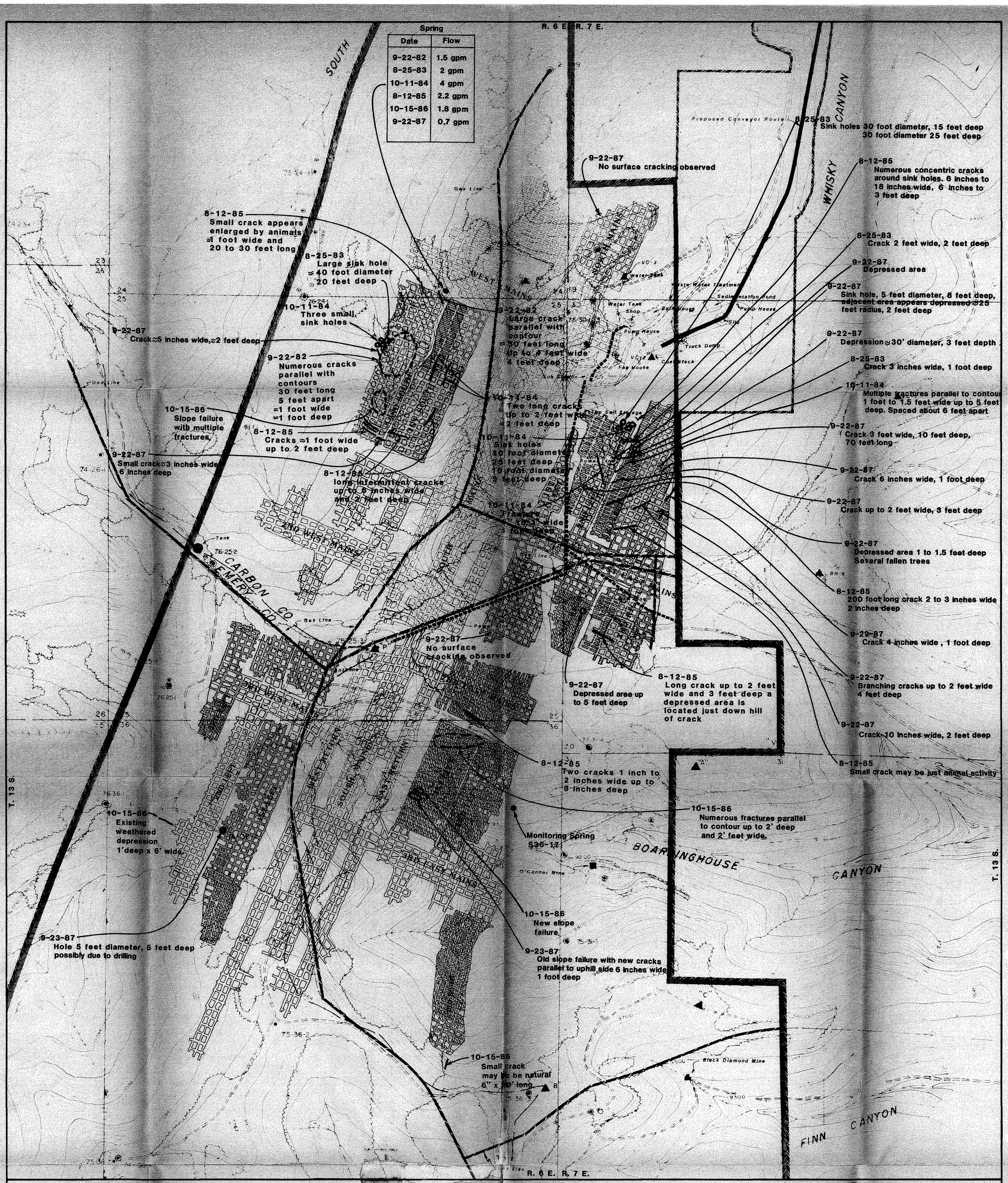

Spring	
Date	Flow
9-22-82	1.5 gpm
8-25-83	2 gpm
10-11-84	4 gpm
8-12-85	2.2 gpm
10-15-86	1.8 gpm
9-22-87	0.7 gpm

9-22-87
No surface cracking observed

8-25-83
Sink holes 30 foot diameter, 15 feet deep
30 foot diameter 25 feet deep

8-12-85
Numerous concentric cracks around sink holes. 6 inches to 18 inches wide, 6 inches to 3 feet deep

8-25-83
Crack 2 feet wide, 2 feet deep

9-22-87
Depressed area

9-22-87
Sink hole, 5 feet diameter, 8 feet deep, adjacent area appears depressed ≈25 feet radius, 2 feet deep

9-22-87
Depression ≈30' diameter, 3 feet depth

8-25-83
Crack 3 inches wide, 1 foot deep

10-11-84
Multiple fractures parallel to contour 1 foot to 1.5 feet wide up to 5 feet deep. Spaced about 6 feet apart

9-22-87
Crack 3 feet wide, 10 feet deep, 70 feet long

9-22-87
Crack 6 inches wide, 1 foot deep

9-22-87
Crack up to 2 feet wide, 3 feet deep

9-22-87
Depressed area 1 to 1.5 feet deep
Several fallen trees

8-12-85
200 foot long crack 2 to 3 inches wide 2 inches deep

9-22-87
Crack 4 inches wide, 1 foot deep

9-22-87
Branching cracks up to 2 feet wide 4 feet deep

9-22-87
Crack 10 inches wide, 2 feet deep

8-12-85
Small crack may be just animal activity

8-12-85
Small crack appears enlarged by animals ≈1 foot wide and 20 to 30 feet long

8-25-83
Large sink hole ≈40 foot diameter 20 feet deep

10-11-84
Three small sink holes

9-22-87
Crack ≈5 inches wide, ≈2 feet deep

9-22-82
Numerous cracks parallel with contours 30 feet long 5 feet apart ≈1 foot wide ≈1 foot deep

10-15-86
Slope failure with multiple fractures

8-12-85
Cracks ≈1 foot wide up to 2 feet deep

9-22-87
Small crack ≈3 inches wide 6 inches deep

8-12-85
long intermittent cracks up to 6 inches wide and 2 feet deep

9-22-87
No surface cracking observed

9-22-82
Large crack parallel with contour ≈30 feet long up to 4 feet wide 4 feet deep

10-11-84
Two long cracks up to 2 feet wide ≈2 feet deep

10-11-84
Sink holes 30 foot diameter 25 feet deep 10 foot diameter 5 feet deep

10-11-84
Fractures ≈1 foot wide 1 foot deep

9-22-87
Depressed area up to 5 feet deep

8-12-85
Long crack up to 2 feet wide and 3 feet deep a depressed area is located just down hill of crack

8-12-85
Two cracks 1 inch to 2 inches wide up to 8 inches deep

10-15-86
Numerous fractures parallel to contour up to 2' deep and 2' feet wide.

Monitoring Spring
S36-1

10-15-86
New slope failure

9-23-87
Old slope failure with new cracks parallel to uphill side 6 inches wide 1 foot deep

10-15-86
Existing weathered depression 1'deep x 6' wide

9-23-87
Hole 5 feet diameter, 5 feet deep possibly due to drilling

10-15-86
Small crack may be be natural 6" x 20' long

SURVEY MONUMENT COORDINATES

SURVEY STATION	VALLEY CAMP LOCAL COORDINATES NORTH	EAST	STATE PLANE COORDINATES NORTH	EAST	ELEVATION
BH 3	4617.75	7,538.16	483,094.07	2,090,182.13	9,633.90
BH 5	8007.62	10,995.79	486,456.40	2,086,701.37	9,477.02
VC 1	6675.64	6,658.70	485,157.19	2,091,045.80	9,645.43
VC 2	7085.35	9,508.81	485,546.56	2,088,194.29	8,973.99
VC 3	8016.68	9,869.89	486,474.13	2,087,886.47	9,211.76
B	1415.58	10,715.16	477,846.93	2,087,051.59	9,897.29
P	3700.00	12,700.00	482,137.84	2,085,025.59	9,942.39
C	454.00	9,973.00			9,735.00
A	2375.41	9,406.59			9,562.00
FAN	7130.103	9,923.041			9,041.30

NOTE:
Vaughn Hansen Associates changed to Hansen, Allen & Luce, Inc. March 1, 1987.

LEGEND

- Lease boundary
- Gas line
- ▲ BH-5 — Survey Monument
- Mine workings
- Pillard area
- Full seam extraction
- 9-22-82 — Date surface subsidence first identified (mo-day-yr)

UPDATES			
DATE	BY	DATE	BY
2-82	DRB		
2-83	JVH		
9-83	DRB		
1-85	DRB		
8-85	JVH		
10-86	SDM		
9-87	JVH		

SCALE: 1 Inch = 500 Feet

SUBSIDENCE BASE MAP

VALLEY CAMP OF UTAH, INC.
Scofield, Utah

PREPARED BY
CONSULTANTS/ENGINEERS
HANSEN ALLEN & LUCE inc
SALT LAKE CITY, UTAH