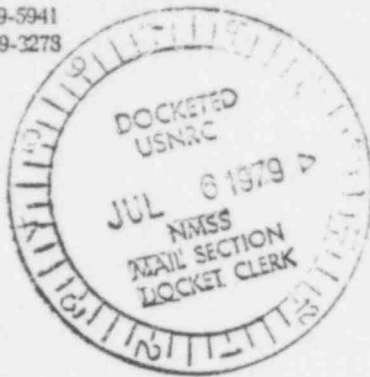


PDR

OGLE PETROLEUM INC.

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P.O. Box 5549
559 SAN YSIDRO ROAD
SANTA BARBARA, CALIFORNIA 93108



June 27, 1979

PLEASE DIRECT REPLY TO:

150 North Nichols Ave.
Casper, Wyoming 82601
(307) 266-6456

Mr. Edward Francis
Environmental Specialist, District III
Division of Land Quality
Department of Environmental Quality
Hathaway Building
Cheyenne, Wyoming 82002

and

Dr. Ray Cooperstein
Fuel Processing and Fabrication Branch
Office of Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555



RE: License to Explore No. 38

Source Material License SUA-1336
Docket Number 40-8693

SUBJECT: Special Report on Monitor Well Analytical Results

Gentlemen:

Pursuant to a meeting with Mr. Edward Francis, Land Quality Division, on June 21, 1979 and a telephone conversation with Dr. Ray Cooperstein, NRC, on June 25, 1979, Ogle Petroleum Inc. (OPI) herewith submits operational water quality data for monitor wells 303-6-M 2 and 303-6-M 3. These data have been collected and are being forwarded in accordance with the requirements of the referenced Licenses.

On May 1, 1979, OPI commenced pilot uranium solution mining operations within its one-acre test area using sodium carbonate/bicarbonate as the leaching agent. On May 15, 1979, water quality samples were collected from the six monitor wells (see Enclosure One), and these samples were submitted to a commercial laboratory for analyses. The results of the analyses were received by OPI on May 30, 1979 and revealed that the excursion limits or upper control limits (UCL) were not exceeded except for carbonate plus bicarbonate for well 303-6-M 2 and chloride for well 303-6-M 3.

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FEE EXEMPT

info only

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12370

DENVER

TUCSON

Mr. Edward Francis
 Dr. Ray Cooperstein
 June 27, 1979
 PAGE TWO

In the case of well 303-6-M 2, the baseline and first sample round data are as follows:

<u>EXCURSION PARAMETER</u>	<u>BASELINE MEAN</u>	<u>EXCURSION LIMIT (UCL)</u>	<u>FIRST SAMPLE ROUND CONCENTRATION</u>
pH	10.3	12.3	9.1
Specific Conductivity (micromhos/cm)	1875	2250	1775
Ammonia (mg/l)	1.1	1.3	0.24
Chloride (mg/l)	44	53	40
Sodium (mg/l)	450	540	428
Sulfate (mg/l)	802	962	827
Uranium (mg/l)	0.001	1.001	0.007
Carbonate plus Bicarbonate (mg/l)	59	71	109

The above data indicate that the first sample round concentrations for all excursion parameters for well 303-6-M 2 are essentially the same as baseline values except for carbonate plus bicarbonate. It was felt that an excursion had not taken place since no other excursion parameters, including specific conductivity and pH, had increased from the baseline values. The well was, however, sampled for seven consecutive days as required by the referenced Licenses. The analytical results of the seven days of sampling well 303-6-M 2 for carbonate plus bicarbonate are as follows:

<u>DATE SAMPLED</u>	<u>CARBONATE PLUS BICARBONATE CONCENTRATION (mg/l)</u>
06-02-79	122
06-03-79	110
06-04-79	134
06-05-79	122
06-06-79	109
06-07-79	109
06-08-79	109

The above data plus the baseline data for carbonate plus bicarbonate for well 303-6-M 2 are presented in graphical form in Enclosure Two.

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 PAGE THREE

The data obtained from the seven days of sampling well 303-6-M 2 confirmed that carbonate plus bicarbonate significantly exceeded the established UCL. OPI contends that this condition resulted from an erroneous mean baseline value and not from the movement of leaching chemicals toward the monitor well. The apparent erroneous mean baseline value for carbonate plus bicarbonate resulted from a zero value for bicarbonate for three of the four baseline sample rounds. The fourth round value for bicarbonate was 61 mg/l resulting in a carbonate plus bicarbonate value of 109 mg/l. It is felt that this fourth round value of 109 mg/l for well 303-6-M 2 is representative of the actual baseline water quality since the carbonate plus bicarbonate mean baseline values for the other four production zone monitor wells are 99 mg/l, 140 mg/l, 134 mg/l and 109 mg/l. OPI, therefore, recommends that the fourth round baseline sampling value for carbonate plus bicarbonate of 109 mg/l be used as the mean baseline value for establishing the UCL. The UCL in this event would be 131 mg/l (109 mg/l plus 20% = 131 mg/l) for carbonate plus bicarbonate for well 303-6-M 2.

In the case of well 303-6-M 3, the baseline and first sample round data are as follows:

<u>EXCURSION PARAMETER</u>	<u>BASELINE MEAN</u>	<u>EXCURSION LIMIT (UCL)</u>	<u>FIRST SAMPLE ROUND CONCENTRATION</u>
pH	8.4	10.4	8.6
Specific Conductivity (micromhos/cm)	2225	2670	2275
Ammonia (mg/l)	1.13	1.37	0.24
Chloride (mg/l)	18	22	24
Sodium (mg/l)	532	638	532
Sulfate(mg/l)	1209	1451	1179
Uranium(mg/l)	0.001	1.001	0.002
Carbonate plus Bicarbonate (mg/l)	110	132	97

The above data indicate that the first sample round concentrations for all excursion parameters for well 303-6-M 3 are essentially the same as baseline values, however, chloride exceeds the UCL by 2 mg/l. Because of the chloride value, OPI sampled this well for seven consecutive days and submitted the samples to a commercial laboratory for analyses. The value reported by the laboratory for chloride for each of these seven sampling events was 22 mg/l which does not exceed the UCL. These data along with the baseline data for chloride for well 303-6-M 3 are presented in graphical form in Enclosure Three.

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PAGE FOUR


OPI feels that an excursion has not taken place at monitor wells 303-6-M 2 or 303-6-M 3 and has, therefore, returned to the normal schedule for sampling monitor wells (once every two weeks). In the case of well 303-6-M 2, it appears that erroneous analytical results from the baseline sampling program have produced a mean baseline value (and corresponding UCL) for carbonate plus bicarbonate that is significantly lower than the actual value. In the case of well 303-6-M 3, it appears that the surpassing of the UCL for chloride by 2 mg/l in the first sample round can be attributed to natural ground water quality variation and/or the analytical precision of the laboratory which, according to the lab, is 3 to 4 mg/l for chloride.

In order to reduce the likelihood of reporting an excursion when none has occurred, it is recommended that the excursion definition be modified such that a minimum of two excursion parameters must exceed their respective upper control limits before special sampling, excursion control, and reporting procedures are required. ✓

Please contact me at our Casper office if additional information relating to this special report is required. The operational water quality data for all the monitor wells will be included with the next quarterly report.

Sincerely,

OGLE PETROLEUM INC.


Glenn J. Catchpole
Project Manager

GJC:jm

Enclosures

CC: NRC, Region IV w/enclosures
W. R. Merrill w/enclosures
H. P. Miller w/enclosures

587 287

Direction of
Natural Ground Water
Movement

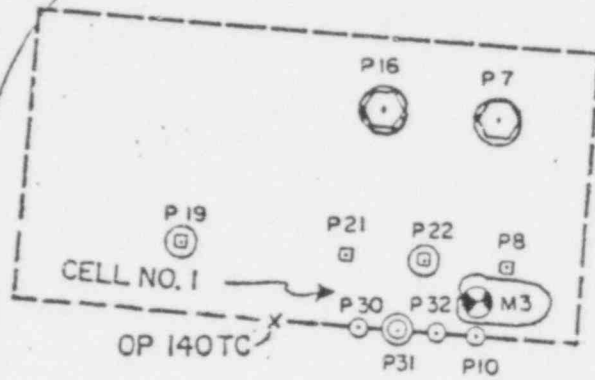


M6

M1

M5

Generalized
Ore Body
Outline



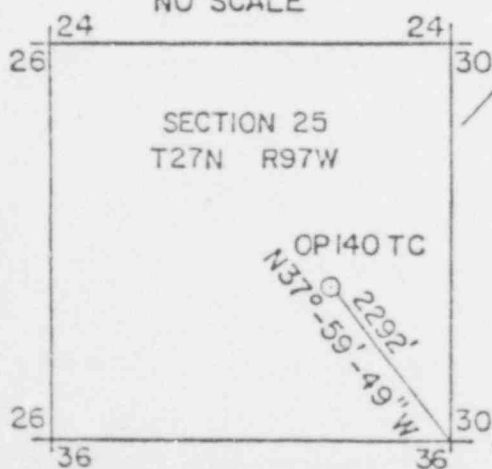
P35 P13

M4

M2



LOCATION GUIDE
NO SCALE



LEGEND

- ⊙ INJECTION WELL (4)
 - ⊠ PRODUCTION WELL (3)
 - ▽ INJECTION GUARD WELL (2)
 - ⊕ PRODUCTION GUARD WELL (2)
 - ⊠ PRODUCTION ZONE MONITOR WELL (5)
 - ⊙ UPPER AQUIFER MONITOR WELL (1)
 - ⊙ ⊙ ⊙ RESTORATION SAMPLING WELLS
 - TEST AREA BOUNDARY
- Prefix for well numbers is 303-6-

OGLE PETROLEUM INC.

BISON BASIN PROJECT
BISON BASIN MINE

WELL FIELD LAYOUT

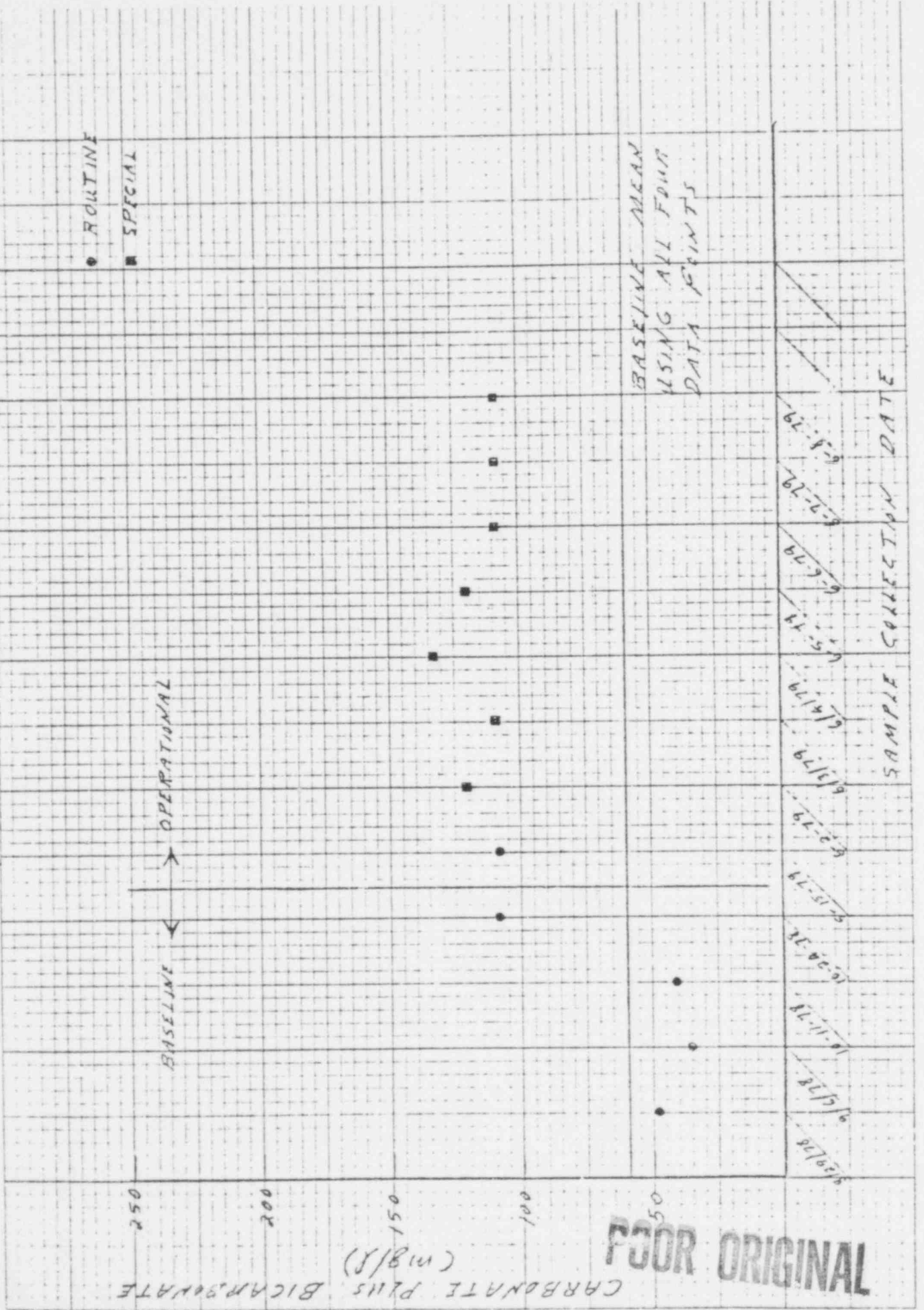
ENCLOSURE ONE

REVISED 10/20/78

THE FINE CORPORATION
MADE IN U.S.A.

THE FINE CORPORATION
10 X 10 PER HIGH

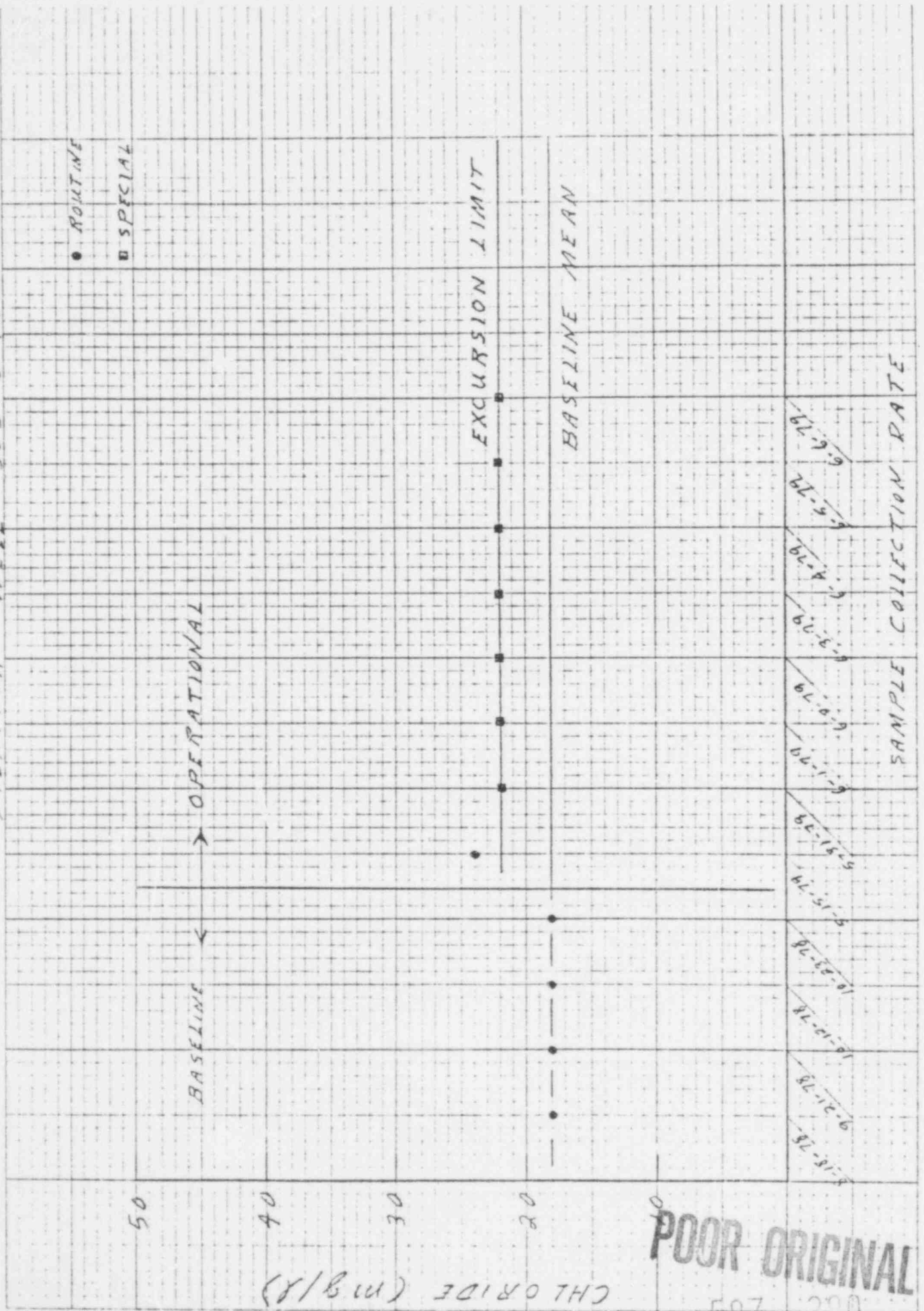
Monitor Well 303-6-M 2



FOR ORIGINAL

THE FINE G. CORPORATION
MADE IN U.S.A.

MONITOR WELL 303-6-M3



POOR ORIGINAL

587 290