GW - 32

REPORTS

YEAR(S):

1991 - EPA RCRA PHASE I

RFI FINAL BOOK I

GIANT
REFINING CO.

Route 3, Box 7
Gallup, New Mexico
87301

505
722-3833

April 8, 1991

Mr. Rich Mayer
U.S. Environmental Protection Agency
Region VI
1445 Ross Avenue Suite 1200
Dallas, Texas 75202-2733

RE: Phase I RFI Final Report

Dear Mr. Mayer:

The attached volumes are the Final Report for the Phase I RFI requirements for Giant Refining Company. The report is submitted as a requirement of HSWA Permit No. NMD000333211 and compliance with the March 26, 1991 Notice of Deficiencies.

The report consists of the Draft Report which has had modification to the Table of Contents and the cover sheets to each volume. Section 10 has been added and contains the response to the deficiencies.

If you have any questions, contact my office at (505) 722-0217.

Sincerely yours,

Claud Rosendale

Claud Rosendale
Environmental Manager
Ciniza Refinery

cc w/attachments (5 Volume Set - RFI Final Report):

David Boyer - Director; New Mexico Oil Conservation Division
Richard Mitzelfelt - Director; New Mexico Environmental Department
Kim Bullerdick - Corporate Counsel; Giant Industries of Arizona, Inc.
Linda Carleson - Head Librarian; Gallup Public Library
File - Giant Refining Company

RCRA FACILITY INVESTIGATION
PHASE I - FINAL REPORT
GIANT REFINING COMPANY
GALLUP, NEW MEXICO
APRIL 8, 1991
BOOK 1

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

SECTION 1.0
INTRODUCTION

INTRODUCTION

This document outlines the specific activities that have been conducted for the Phase I RFI requirements for Giant Refining Company. All sampling, analytical and statistical calculations have been completed with the results incorporated in this report.

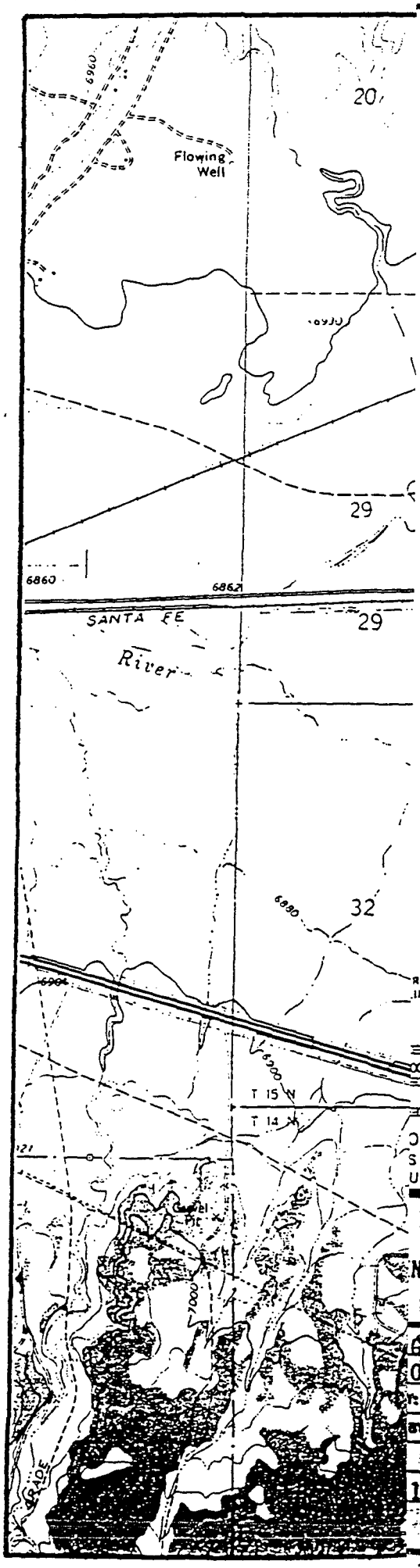
Soil samples were collected from SWMU's #6, #8, #9, and #10. Sample collection was conducted by Giant Refining Co. and Rodgers and Company from Albuquerque, New Mexico. Rodgers and Company used a drilling rig equipped with hollow stemmed augers to sample most of the angle borings. Giant Refining Co. sampled the vertical borings and the three angle borings around the tanks that were not accessible to the drilling rig. Giant used a backhoe, hand augers, and soil probes for sampling. Section 6.3 explains the sampling company technique and sampling notes for each individual boring. The soil samples were collected from June 25 to July 5, 1990. PRC Environmental Management Inc., a consultant for the EPA observed some of the sampling and participated by splitting several samples.

All soil samples were sent to Enseco-Rocky Mountain Analytical Laboratories in Arvada, Colorado for final testing. Section 4 explains all modifications of constituent requirements and reporting limits that were listed in the May 17, 1990 Generic Sampling Plan. Section 9 includes a copy of all original Enseco analytical data and QA/QC. Section 8 has the analytical data in a tabulated summary form.

Giant contracted American Liner Co. to inspect the contact wastewater collection system. Cook Construction Co., a division of American Liner Co., conducted the actual inspection. They used a vacuum truck equipped with a high pressure washer to clean the lines and sumps. A camera was used to video the lines. The final report and an edited version of the video tape (2 hours) is included in Section 5 of this document.

The statistical analysis and results are in Section 7. All statistical calculations were prepared by Mark Wilson, a math professor with the University of New Mexico. This section explains the methodology used in determining the background values for the metals and the actual comparisons of the background values to the sample results.

There was not any bench scale studies conducted at this phase of the project. They will be conducted in the corrective measures studies when alternatives and cost estimates are being evaluated.



GN MN

1°29' / 26 MILS

13½° / 240 MILS

RID AND 1963 MAGNETIC NORTH
INATION AT CENTER OF SHEET

SCALE 1:24000

0 1 MILE

000 3000 4000 5000 6000 7000 FEET

0 1 KILOMETER

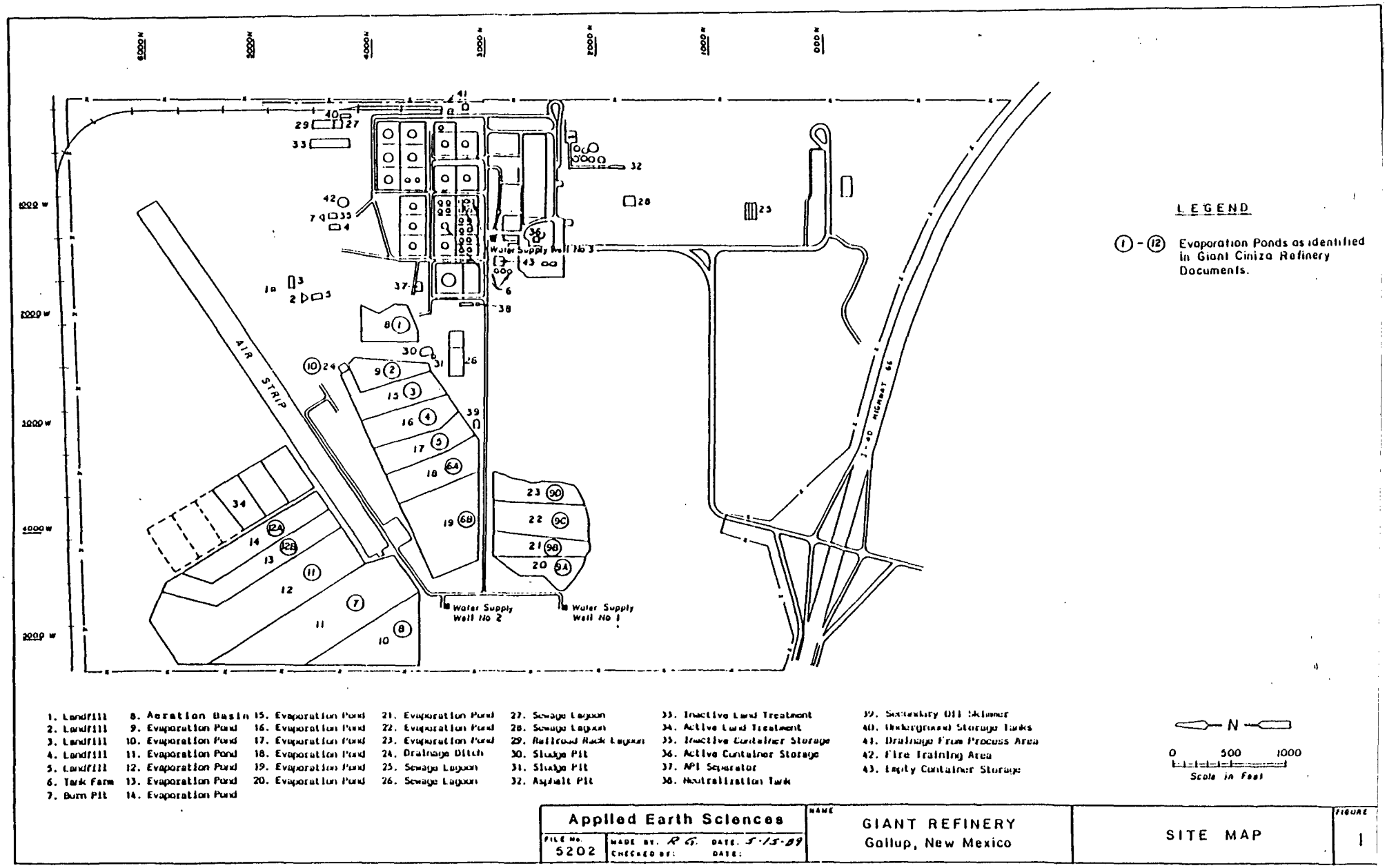
OUR INTERVAL 20 FEET
S REPRESENT 10-FOOT CONTOURS
UM IS MEAN SEA LEVEL

FIGURE 1-1

NERAL LOCATION MAP, CINIZA REFINERY AREA

GIANT	
OCTOBER, 1985	
: JCH	
BY:	
1:24,000	

FIGURE 1-2


LEGEND
(1) - (12) Evaporation Ponds as identified in Giant Ciniza Refinery Documents.
AIR STRIP
I-40 HIGHWAY 66
Water Supply Well No 2
Water Supply Well No 1
1. Landfill
2. Landfill
3. Landfill
4. Landfill
5. Landfill
6. Tank Farm
7. Burn Pit
8. Aeration Basin
9. Evaporation Pond
10. Evaporation Pond
11. Evaporation Pond
12. Evaporation Pond
13. Evaporation Pond
14. Evaporation Pond
15. Evaporation Pond
16. Evaporation Pond
17. Evaporation Pond
18. Evaporation Pond
19. Evaporation Pond
20. Evaporation Pond
21. Evaporation Pond
22. Evaporation Pond
23. Evaporation Pond
24. Drainage Ditch
25. Sewage Lagoon
26. Sewage Lagoon
27. Sewage Lagoon
28. Sewage Lagoon
29. Railroad Rack Lagoon
30. Sludge Pit
31. Sludge Pit
32. Asphalt Pit
33. Inactive Land Treatment
34. Active Land Treatment
35. Inactive Container Storage
36. Active Container Storage
37. API Separator
38. Neutralization Tank
39. Secondary Oil Skimmer
40. Underground Storage Tanks
41. Drainage From Process Area
42. Fire Training Area
43. Empty Container Storage
N
0 500 1000
Scale in Feet
Applied Earth Sciences
FILE No. 5202
MADE BY: R G. DATE: 5-15-89
CHECKED BY: DATE:
NAME
GIANT REFINERY
Gallup, New Mexico
SITE MAP
FIGURE 1

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to be the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Claud Rosendale 11-27-90

Claud Rosendale, Environmental Manager

GIANT REFINING CO. CINIZA REFINERY

GALLUP, NM

Please note that the enclosed diskettes are formatted on Lotus 1-2-3, with file names as follows:

A:\RFI06
A:\RFI08
A:\RFI09
A:\RFI10

These files include the tabulated analytical summary found in Section 8 of the *RFI Draft Report*.

Refer to Draft Report
Submitted November 27, 1990
For Diskette

Section 2.0
Quarterly Progress Reports

GIANT
REFINING CO.

Route 3, Box 7
Gallup, New Mexico
87301

505
722-3833

October 26, 1990

Mr. Rich Mayer
U. S. Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

RE: QUARTERLY PROGRESS REPORT

Dear Mr. Mayer:

Giant Refining Co. is submitting this quarterly progress report as required by the May 31, 1990 RFI Workplan approval letter and HSWA Permit condition C.4, page 11.

All soil sampling required by Phase I of the RFI has been completed and the analytical results from the sampling has been received by Giant. Mark Wilson, a professor at the University of New Mexico branch college, has been in contact with your office and is working on the statistical calculations required for reporting.

Phase I of the underground sewer system inspection has been completed and Giant is anticipating the arrival of the report and video tapes within the next two (2) weeks.

As soon as the statistical calculations are completed and the sewer system reports are received, Giant will submit the draft report to your office.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Claud Rosendale
Environmental Manager
Ciniza Refinery

CR:cam

cc: John Stokes, Giant Refining Co.
Carl Shook, Giant Industries Arizona, Inc.
Kim Bullerdick, Giant Industries Arizona, Inc.

GIANT
REFINING CO.

Route 3, Box 7
Gallup, New Mexico
87301

505
722-3833

July 9, 1990

Rich Mayer
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

RE: Status Report for Giant Refinery RFI

Dear Mr. Mayer:

The RCRA Facility Investigation Phase I sampling for Giant Refining Company's Ciniza Refinery was completed on July 5, 1990. All soil samples for SWMU's #6, #8, #9, and #10 have been collected and received at the contract laboratory. The only liquid required for this phase of the sampling was from the railroad rack lagoon if drainage was occurring. However, no drainage was occurring, therefore no sample was collected at this time. A sample may be collected from the lagoon at a later date to assure possible transfer of this liquid to the facility API Separator.

All sample points and corresponding sample numbers are specified on the attachments. A description of the sample numbering process is as follows:

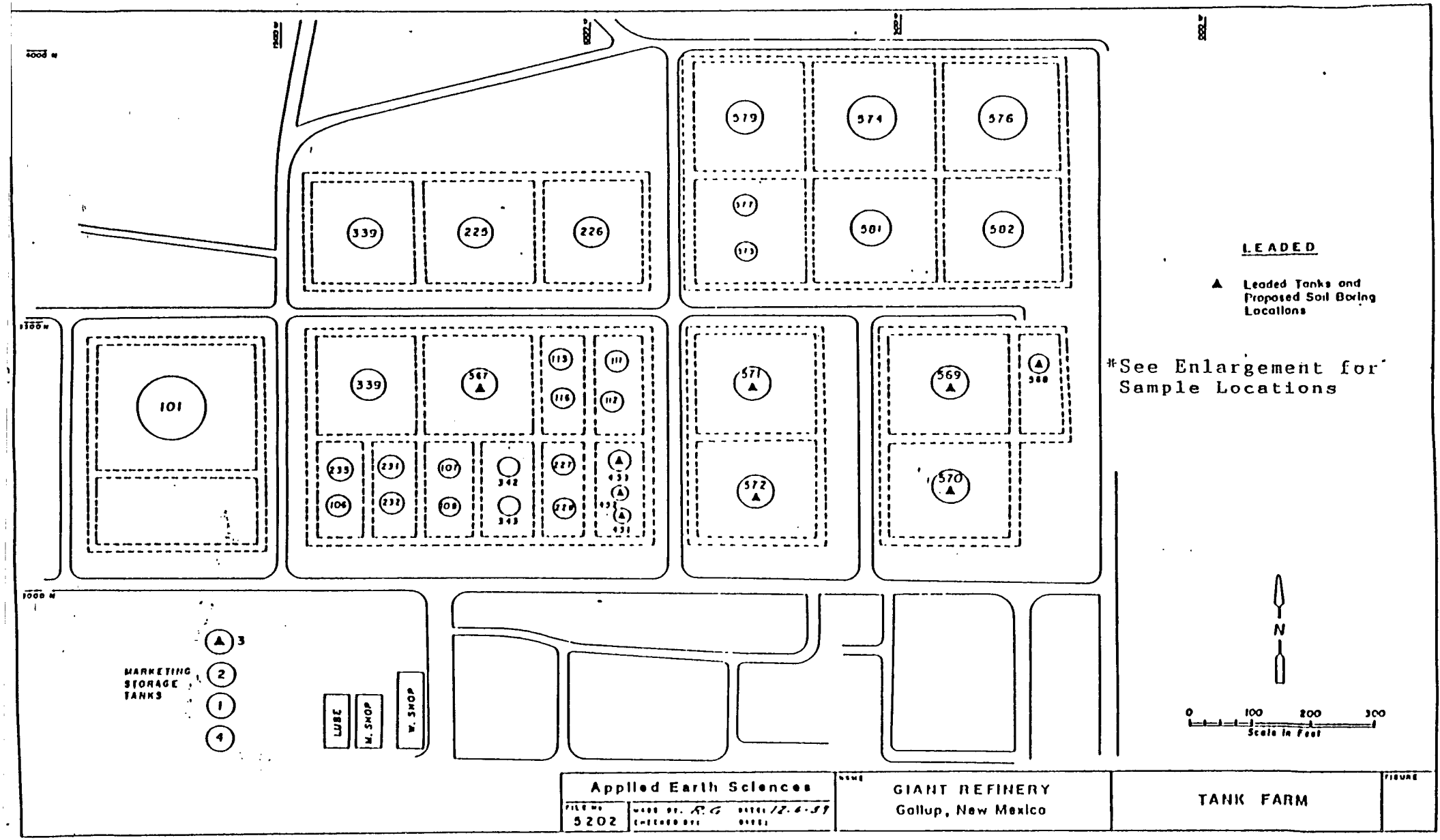
$$\frac{1}{\text{RFI}}\ \frac{2}{08}\ \frac{3}{06}\ \frac{4}{V}\ \frac{5}{0.0}$$

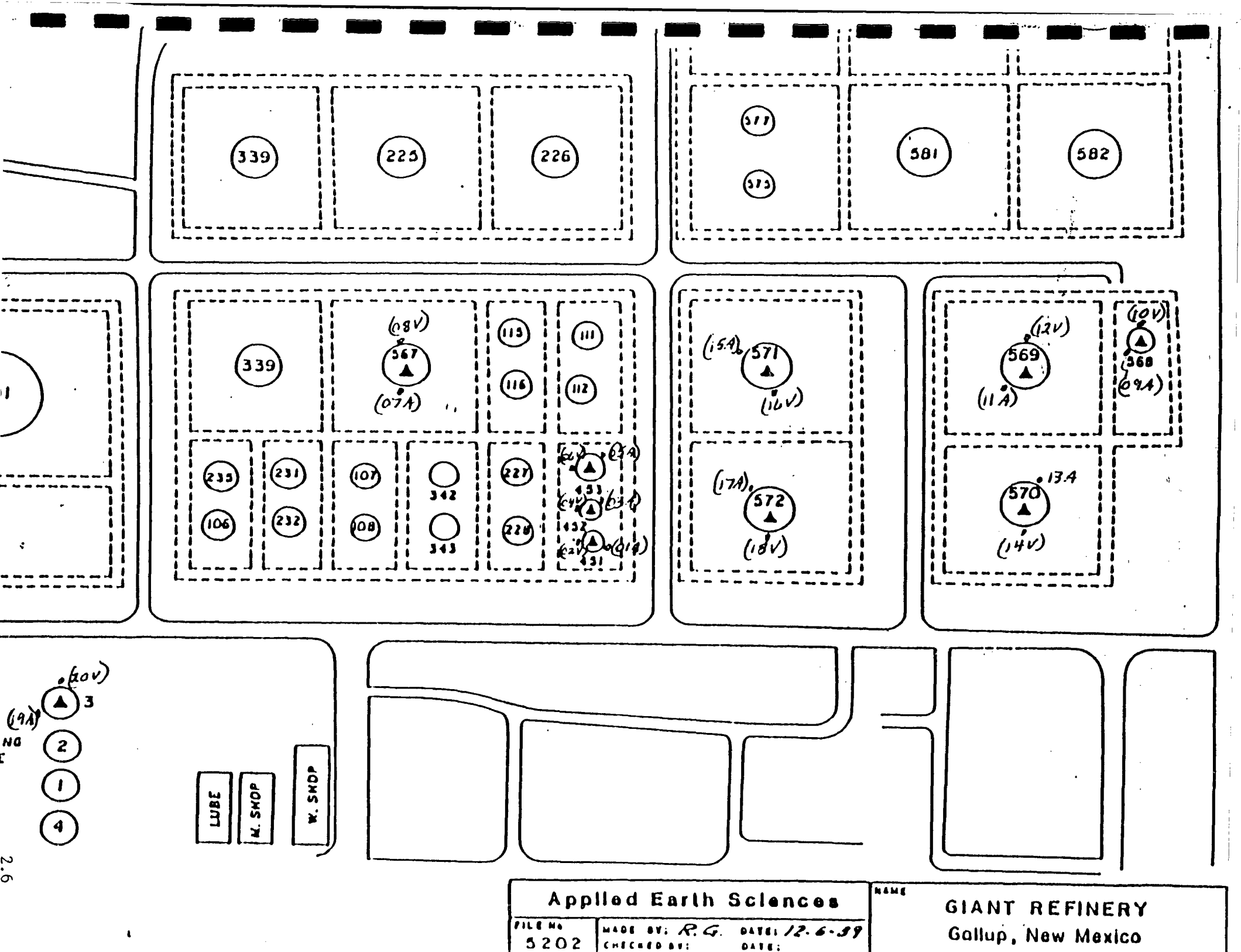
#1 = Sampling event
#2 = SWMU number
#3 = Specific sample hole number in each SWMU
#4 = Type sample
  V = Vertical
  A = Angle
  D = Duplicate
  E = Equipment rinse
#5 = Beginning depth of sample interval

The draft report will follow as required by the approved schedule.

Claud Rosendale
Environmental Manager
Ciniza Refinery

cc: w/attachments:
John Stokes - Refinery Manager; Giant Refining Co.
Kim Bullerdick- Corporate Counsel; Giant Ind. Inc.


4000 N
3500 N
3000 N
579
574
576
339
225
226
577
573
581
582
101
339
567
113
116
111
117
571
569
568
235
106
231
232
107
108
342
343
227
228
431
431
431
572
570
3
2
1
4
MARKETING STORAGE TANKS
LUBE
W. SHOP
W. SHOP
LEADED
Leaded Tanks and Proposed Soil Boring Locations
*See Enlargement for Sample Locations
N
0
100
200
300
Scale in Feet
Applied Earth Sciences
FILE NO 5202
GIANT REFINERY
Gallup, New Mexico
TANK FARM



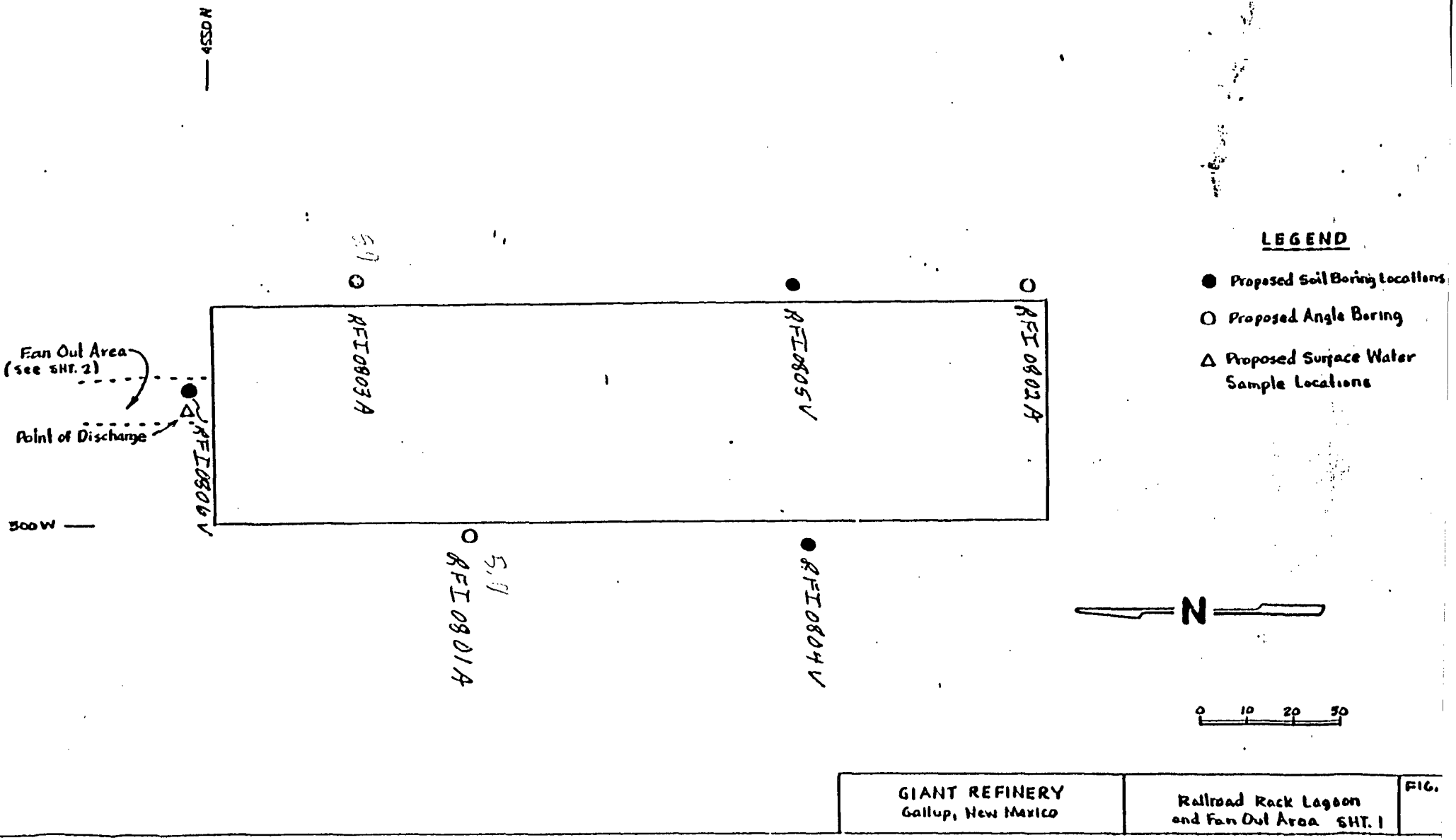
Applied Earth Sciences			
FILE No. 5202	MADE BY: R. G.	DATE: 12-6-89	
	CHECKED BY:	DATE:	

NAME

GIANT REFINERY
Gallup, New Mexico

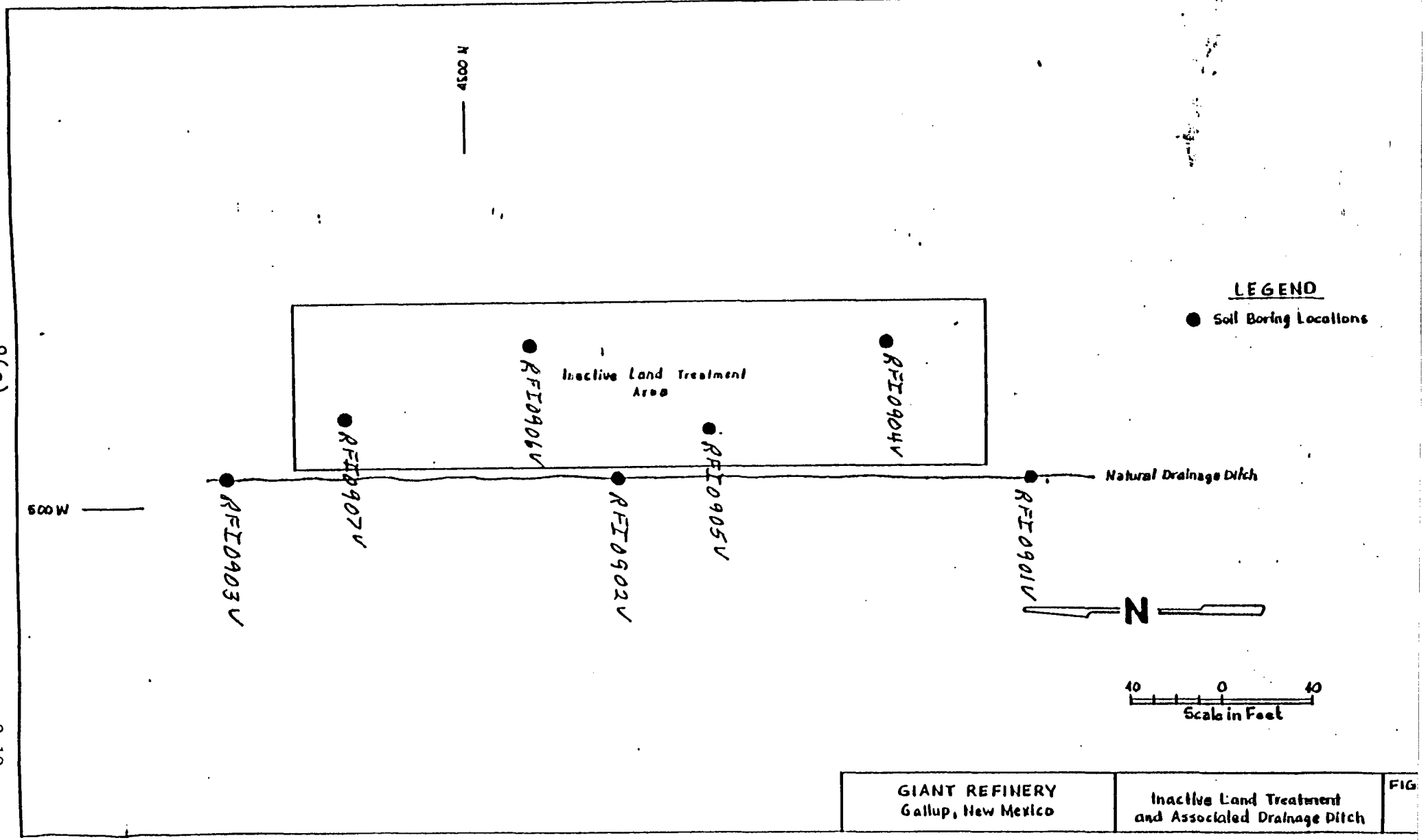
TANK SAMPLES

TANK #	TYPE	SAMPLE #
451	Angle	RFI0601A
	Vertical	RFI0602V
452	Angle	RFI0603A
	Vertical	RFI0604V
453	Angle	RFI0605A
	Vertical	RFI0606V
567	Angle	RFI0607A
	Vertical	RFI0608V
568	Angle	RFI0609A
	Vertical	RFI0610V
569	Angle	RFI0611A
	Vertical	RFI0612V
570	Angle	RFI0613A
	Vertical	RFI0614V
571	Angle	RFI0615A
	Vertical	RFI0616V
572	Angle	RFI0617A
	Vertical	RFI0618V
3	Angle	RFI0619A
	Vertical	RFI0620V



GIANT REFINERY Gallup, New Mexico	Railroad Rack Lagoon and Fan Out Area SHT. 1	FIG.

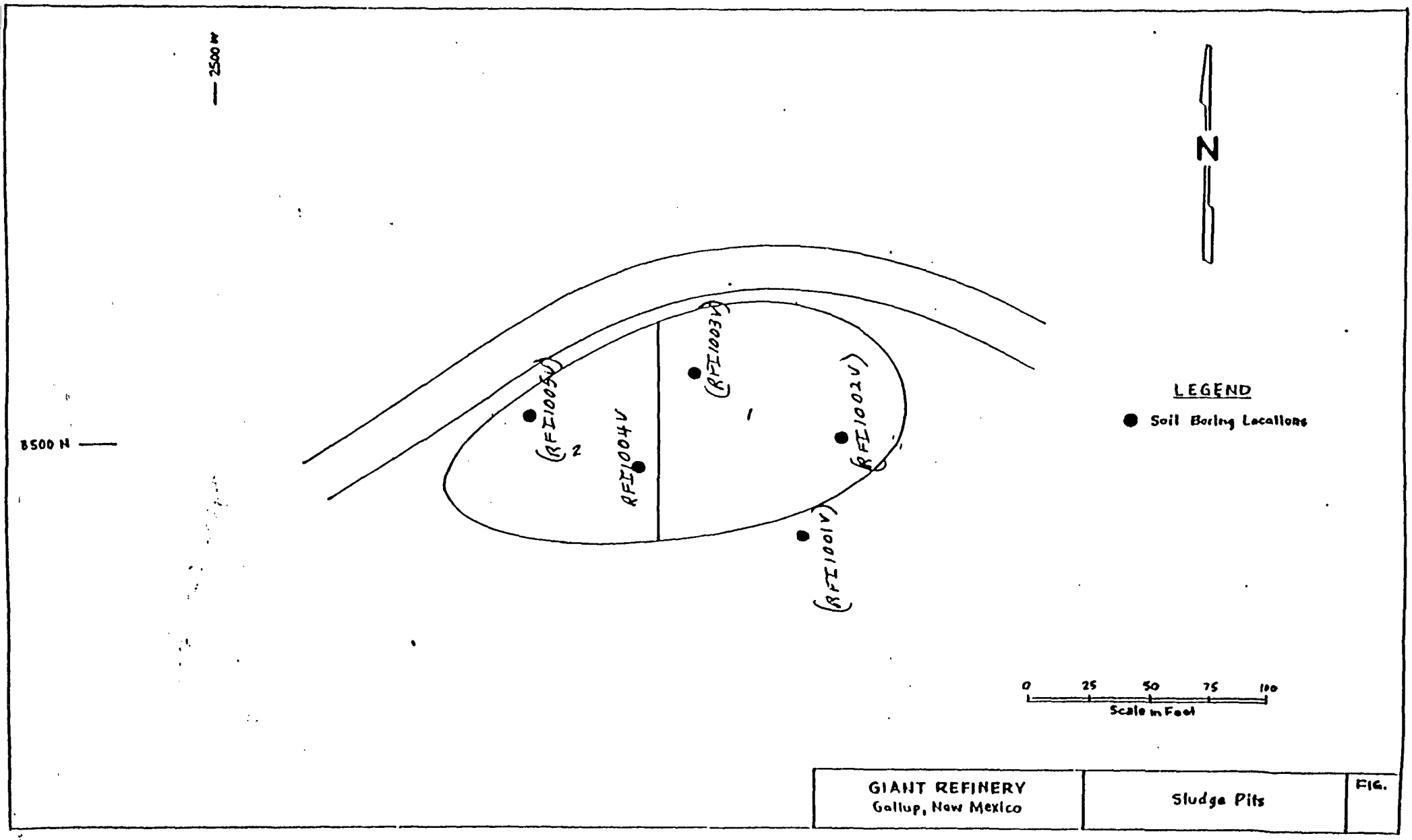
(See Sht. 1)
RFI0807V
RFI0808V
RFI0809V
RFI0810V
RFI0813V
RFI0812V
RFI0811V
LEGEND
Proposed Soil Boring Locations
Proposed Surface Water Sample Locations
0
30
60
Scale in Feet
N
N 515
375 W
8K
GIANT REFINERY
Gallup, New Mexico
Railroad Rack Lagoon and Fan Out Area Sht. 2



GIANT REFINERY Gallup, New Mexico	Inactive Land Treatment and Associated Drainage Ditch	FIG

9(8)

2.10



GIANT REFINERY Gallup, New Mexico	Sludge Pits	FIG.

Section 3.0
Project Notifications

GIANT
REFINING CO.

Route 3, Box 7
Gallup, New Mexico
87301

505
722-3833

June 11, 1990

Barbara Garrett
Legal Department
Gallup Independent
P. O. Box 1210
Gallup, New Mexico 87305

RE: PUBLIC NOTICE

Dear Ms. Garrett:

Please print the enclosed public notice in the Gallup Independent at the earliest possible date.

If you have any questions, contact me at (505) 722-3833 ext. 217.

Claud Rosendale
Environmental Manager
Ciniza Refinery

CCR:ctf

Enclosures

PUBLIC NOTICE FOR GIANT REFINING COMPANY'S RCRA FACILITY INVESTIGATION

ADDRESS: Giant Refining Company
Ciniza Refinery
Route 3, Box 7
Gallup, New Mexico 87301

LOCATION: Exit 39, I-40
Jamestown, New Mexico 87347
Sections 28 and 33
Township 15 North
Range 15 West
New Mexico Prime Meridian

Ciniza Refinery will be conducting a RCRA Facility Investigation (RFI) for all Solid Waste Management Units (SWMU) where the potential for contamination of regulated chemicals may exist. The RFI consist of collecting soil and water samples and analyzing them for specific parameters to determine if contamination exist. The RFI will begin on June 1990 and will conclude in 1992.

A copy of the RFI Workplan is available for public review at the Gallup Public Library, 115 West Hill, Gallup, New Mexico. All comments should be addressed to: Ciniza Refinery, ATTN: Claud Rosendale, Rt. 3, Box 7, Gallup, NM 87301.

Affidavit of Publication

STATE OF NEW MEXICO,

) ss

COUNTY OF McKINLEY

Barbara Garrett being duly sworn upon oath, deposes and says:

As Legal Clerk of the Gallup Independent, a newspaper published in and having a general circulation in McKinley County, New Mexico, and in the City of Gallup, therein: that this affiant makes this affidavit based upon personal knowledge of the facts herein sworn to. That the publication, a copy of which is hereto attached was published in said newspaper during the period and time of publication and said notice was published in the newspaper proper, and not in a supplement thereof,

for One (1) Time, the first publication being on the 16th day of June, 19 90 the second publication being on the _____ day of _____, 19____ the third publication on the _____ day of _____, 19____

and the last publication being on the _____ day of _____, 19____

That such newspaper, in which such notice or advertisement was published, is now and has been at all times material hereto, duly qualified for such purpose, and to publish legal notices and advertisements within the meaning of Chapter 12, of the statutes of the State of New Mexico, 1941 compilation.

Miriam Manett

Affiant.

Sworn and subscribed to before me this 18th day of June A.D., 19 90

Linda Kay Pelano

Notary Public.

My commission expires

8-29-93

LEGAL NOTICE

PUBLIC NOTICE FOR
GIANT REFINING COMPANY'S
RCRA FACILITY INVESTIGATION

ADDRESS:
Giant Refining Company
Ciniza Refinery
Route 3 Box 7
Gallup, New Mexico 87301

LOCATION:
Exit 39, I-40
Jamestown, New Mexico 87347
Sections 28 and 33
Township 15 North
Range 15 West
New Mexico Prime Meridian

Ciniza Refinery will be conducting a RCRA Facility Investigation (RFI) for all Solid Waste Management Units (SWMU) where the potential for contamination of regulated chemicals may exist. The RFI consist of collecting soil and water samples and analyzing them for specific parameters to determine if contamination exist. The RFI will begin on June 1990 and will conclude in 1992.

A copy of the RFI Workplan is available for public review at the Gallup Public Library, 115 West Hill, Gallup, New Mexico. All comments should be addressed to: Ciniza Refinery, ATTN: Claud Rosendale, Rt. 3, Box 7, Gallup, NM 87301.

Legal #5588 published in the Gallup Independent June 16, 1990.

997-9004-37

RECEIVED
JUN 19 1990
GIANT REFINING CO.
CINIZA REFINERY

GIANT
REFINING CO.

Route 3, Box 7
Gallup, New Mexico
87301

505
722-3833

June 11, 1990

Linda Carleson
Head Librarian
Gallup Public Library
115 W. Hill
Gallup, New Mexico 87301

RE: SUBMITTAL OF THE CINIZA REFINERY RFI

Dear Ms. Carleson:

Federal law requires the enclosed documents be placed on file for public review. A public notice will be placed in the Gallup Independent informing the public of the availability of these documents in the Gallup Public Library.

If you have any questions, contact me at (505) 722-3833 ext. 217.

Thank you,

Claud Rosendale

Claud Rosendale
Environmental Manager
Ciniza Refinery

CCR:ctf

Enclosures

Section 4.0

Modification to Constituent Requirements and Reporting Limits

Section 4.1

DISCUSSION

The list of analytical parameters and their reporting limits vary from those specified in Attachment C of the approved Generic Sampling Plan. The constituent variation for each SWMU is as follows:

SWMU #6 - No variation
SWMU #8 - Methylchrysene was requested but was not analyzed.
SWMU #9 - 1, 4-Dichloro-2-butane was requested but was not analyzed (see page 4.3).
SWMU #10- 1, 4-Dichloro-2-butane was requested but was not analyzed (see page 4.3).

The soils reporting limits for this report is outlined on the following pages of this section:

These minimum detection limits may vary depending on interferences with analyses and the dilutions that are necessary to minimize or eliminate these interferences.

Rocky Mountain
Analytical Laboratory

Enseco Incorporated

Enseco

TO: FAX # 505-722-3833 ext 210

NAME David Rosendale

COMPANY Giant

CITY Gallup

FROM: NAME Julie Essay

COMPANY: Enseco-Rocky Mountain Analytical Lab

NUMBER OF PAGES (INCLUDING THIS COVER PAGE) 3

If you do not receive all pages, please phone (303) 421-6611 extension 145.

COMMENTS Compounds we do not do:

8270- Dibenzofurans - tetrachloro

- pentachloro

- hexachloro

Dibenz(a,j) acridine

8240 - 1,4-Dichloro-2-butane (We think this is a typo and does not exist).

Please respond as soon as possible. Thank you

Julie

Our Facsimile Information:
8150 Pitney Bowes - 1-303-431-7171

OPERATOR _____ TIME _____ DATE _____

4955 Yarrow Street
Arvada, Colorado 80002
303 421-6611 Facsimile: 303 431-7171

** TOTAL PGS=4-3

Rocky Mountain
Analytical Laboratory

Enseco Incorporated

Enseco

TO: FAX # 505-722-3833 ext 210

NAME Cloud Rosendale

COMPANY Giant Refining

CITY Gallup

FROM: NAME Julie Essley

COMPANY: Enseco-Rocky Mountain Analytical Lab

NUMBER OF PAGES (INCLUDING THIS COVER PAGE)_____
If you do not receive all pages, please phone (303) 421-6611 extension 145.

COMMENTS Soils Reporting Limits

The medium reporting limits are those used for the soil samples for the BTEX analysis

Our Facsimile Information:
8150 Pitney Bowes - 1-303-431-7171

OPERATOR_____ TIME_____ DATE_____

4955 Yarrow Street
Arvada, Colorado 80002

Claud —

Regarding the "Radian" list of Components:

(1) 2-Chloronaphthane appears to be a typo. We can find no references for this name. We think it should be: 2-Chloronaphthalene ✓

(2) Hexachloro-1,3-butadiene is equivalent to Hexachlorobutadiene

(3) 3-Methylphenol and 4-Methylphenol cannot be resolved on a capillary column and are therefore reported as 3/4-Methylphenol

05/01/90

Title: **Volatile Organics - Priority Pollutant List**
Method 8240

DRAFT

Pkge code: **CPVOA-PP-S**
Units: **ug/kg**
Matrix: **Soil**

Analyte	Reporting Limits Low	Medium
Acrolein	100	10000
Acrylonitrile	100	10000
Benzene	5	500
Bromodichloromethane	5	500
Bromoform	5	500
Bromomethane	10	1000
Carbon tetrachloride	5	500
Chlorobenzene	5	500
Chloroethane	10	1000
Chloroform	5	500
Chloromethane	10	1000
Dibromochloromethane	5	500
1,1-Dichloroethane	5	500
1,2-Dichloroethane	5	500
1,1-Dichloroethene	5	500
1,2-Dichloroethene^(total)	5	500
1,2-Dichloropropane	5	500
cis-1,3-Dichloropropene	5	500
trans-1,3-Dichloropropene	5	500
Ethylbenzene	5	500
Methylene chloride	5	500
1,1,2,2-Tetrachloroethane	5	500
Tetrachloroethene	5	500
1,1,1-Trichloroethane	5	500
1,1,2-Trichloroethane	5	500
Trichloroethene	5	500
Toluene	5	500
Vinyl chloride	10	1000
Add-on to 8240-Priority Pollutant		
trans-1,2-Dichloroethene	5	500
2-Chloroethylvinyl ether	--	--
Chloroethane	10	1000

05/01/90

Title: **Semivolatile Organics - Priority Pollutant List**
Method 8270

Pkge code: **CPBNA-PP-S**
Units: **ug/kg**
Matrix: **Soil**

DRAFT

Analyte	Reporting Limits Low	Medium
Acenaphthene	330	5000
Acenaphthylene	330	5000
Anthracene	330	5000
Benzidine	3300	50000
Benzo(a)anthracene	330	5000
Benzo(a)pyrene	330	5000
Benzo(b)fluoranthene	330	5000
Benzo(g,h,i)perylene	330	5000
Benzo(k)fluoranthene	330	5000
4-Bromophenyl^phenyl ether	330	5000
Butyl benzyl phthalate	330	5000
bis(2-Chloroethoxy)-^methane	330	5000
bis(2-chloroethyl) ether	330	5000
bis(2-Chloroisopropyl) ether	330	5000
4-Chloro-3-methylphenol	330	5000
2-Chloronaphthalene	330	5000
2-Chlorophenol	330	5000
4-Chlorophenyl^phenyl ether	330	5000
Chrysene	330	5000
Dibenz(a,h)anthracene	330	5000
Di-n-butyl phthalate	330	5000
1,2-Dichlorobenzene	330	5000
1,3-Dichlorobenzene	330	5000
1,4-Dichlorobenzene	330	5000
3,3'-Dichlorobenzidine	660	10000
2,4-Dichlorophenol	330	5000
Diethyl phthalate	330	5000
2,4-Dimethylphenol	330	5000
Dimethyl phthalate	330	5000
4,6-Dinitro-^2-methylphenol	1600	25000
2,4-Dinitrophenol	1600	25000
2,4-Dinitrotoluene	330	5000
2,6-Dinitrotoluene	330	5000
Di-n-octyl phthalate	330	5000
1,2-Diphenylhydrazine	330	5000

05/01/90

DRAFT

Analyte	Reporting Limits Low	Medium
bis(2-Ethylhexyl) ^phthalate	330	5000
Fluoranthene	330	5000
Fluorene	330	5000
Hexachlorobenzene	330	5000
Hexachlorobutadiene	330	5000
Hexachlorocyclopentadiene	330	5000
Hexachloroethane	330	5000
Indeno(1,2,3-cd)pyrene	330	5000
Isophorone	330	5000
Naphthalene	330	5000
Nitrobenzene	330	5000
2-Nitrophenol	330	5000
4-Nitrophenol	1600	25000
N-Nitrosodimethylamine	330	5000
N-Nitrosodiphenylamine	330	5000
N-Nitroso-di-^n-propylamine	330	5000
Pentachlorophenol	1600	25000
Phenanthrene	330	5000
Phenol	330	5000
Pyrene	330	5000
1,2,4-Trichlorobenzene	330	5000
2,4,6-Trichlorophenol	330	5000

05/01/90

DRAFT

Title: **Volatile Organics - Refinery List**
Method 8240

Pkge code: **CPVOA-REF-S**
Units: **ug/kg**
Matrix: **Soil**

Analyte	Reporting Limits Low	Medium
Benzene	5	500
2-Butanone (MEK)	10	1000
Carbon disulfide	5	500
Chlorobenzene	5	500
Chloroform	5	500
1,2-Dibromoethane (EDB)	10	1000
1,2-Dichloroethane	5	500
1,4-Dioxane	500	50000
Ethylbenzene	5	500
Styrene	5	500
Toluene	5	500
Xylenes (total)	5	500

05/01/90

Title: **Semivolatile Organics - Refinery List**
Method 8270

DRAFT

Pkge code: **CPBNA-REF-S**
Units: **ug/kg**
Matrix: **Soil**

Analyte	Reporting Limits Low	Medium
Anthracene	330	5000
Benzenethiol	---	----
Benzo(a)anthracene	330	5000
Benzo(a)pyrene	330	5000
Benzo(b)fluoranthene	330	5000
Benzo(k)fluoranthene	330	5000
Butyl benzyl phthalate	330	5000
Chrysene	330	5000
Dibenz(a,h)anthracene	330	5000
Di-n-butyl phthalate	330	5000
1,2-Dichlorobenzene	330	5000
1,3-Dichlorobenzene	330	5000
1,4-Dichlorobenzene	330	5000
Diethyl phthalate	330	5000
7,12-Dimethylbenz(a)-^anthracene	330	5000
2,4-Dimethylphenol	330	5000
Dimethyl phthalate	330	5000
2,4-Dinitrophenol	1600	25000
Di-n-octyl phthalate	330	5000
bis(2-Ethylhexyl) ^phthalate	330	5000
Fluoranthene	330	5000
Indene	330	5000
1-Methylnaphthalene	330	5000
2-Methylphenol	330	5000
3/4-Methylphenol	330	5000
Naphthalene	330	5000
4-Nitrophenol	1600	25000
Phenanthrene	330	5000
Phenol	330	5000
Pyrene	330	5000
Pyridine	660	10000
Quinoline	1600	25000
Add-on to 8270-Refinery		
Methyl chrysene	--	--
Dibenz(a,h)acridine	--	--

05/01/90

DRAFT

BTEX by Method 8020

Compound	Reporting Limits (ug/kg)
Benzene	50
Toluene	50
Ethylbenzene	50
Xylenes (total)	100

DRAFT

ATTACHMENT I.a

Giant Refining
Background Metals
soils

Metals	Method	Reporting Limits (mg/kg)
Antimony	6010	6
Arsenic	7060	0.5
Barium	6010	1.0
Beryllum	6010	0.2
Cadmium	6010	0.5
Chromium	6010	1.0
Cobalt	6010	1.0
Copper	6010	2.0
Lead	6010	5.0
Mercury	7471	0.2
Nickle	6010	4.0
Potassium	6010	500
Selenium	7740	0.5
Vanadium	6010	1.0
Zinc	6010	2.0

Section 5.0
Contact Wastewater Collection System

SECTION 5.1

GENERAL DISCUSSION

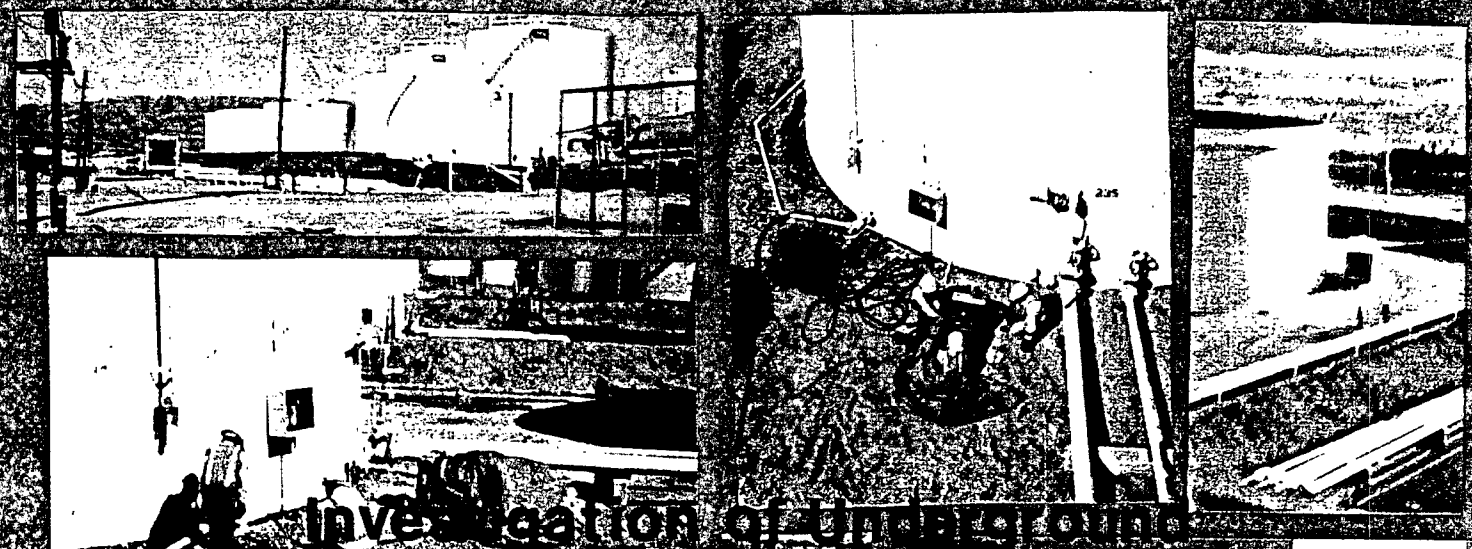
In accordance with Section 12 and the Site Specific Investigation Schedule of the May 17, 1990 SWMU Site-specific Facility Investigative Workplan, Giant Refining Company has completed the first phase of the contact wastewater collection system (CWCS) inspection. The section of the CWCS that was inspected in Phase I of the RFI included the tank farm drainage system with all associated primary drainage lines.

The inspection consisted of using a Vactor system to clean the sewer boxes and underground lines. The inspection was conducted by inserting TV cameras inside the pipe and video taping the inside of the lines. The cameras were pulled through the lines by cables or mounted on self propelled mobile transporters. The actual video taping of the lines consists of ten (10), two (2) hour tapes with a total pipeline video inspection time of approximately sixteen (16) hours. This video was edited to a one (1), two (2) hour tape which introduces and highlights the entire project. The edited tape is included with this report as Tape #1. The original ten (10) tapes can be copied and submitted if requested.

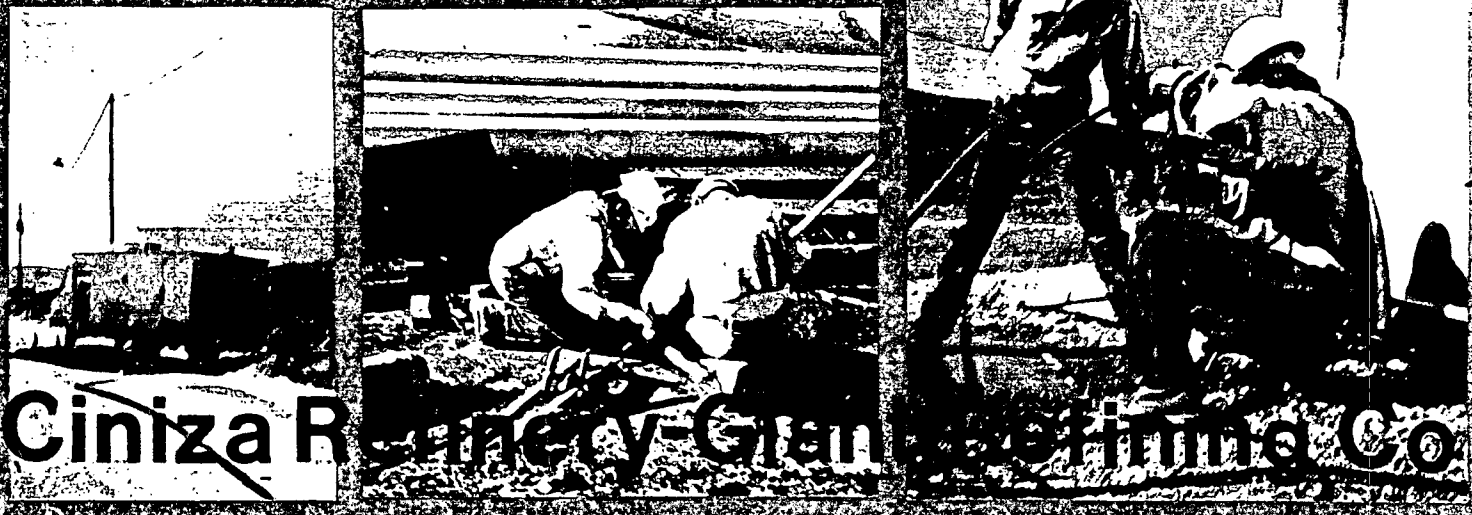
FIGURE 5-1 lists all reference points used in the tape to designate specific pipeline designation. The four (4) inch lateral lines are designated by the adjacent tank number. The main line inspections were referenced by the CBZ or sump numbers. Additional detail for each of these lines may be found in Engineering Drawings EZ80-09-508-EP, EZ80-09-509-EP, EZ80-09-514-EP and EZ80-09-515-EP.

One incident occurred during the inspection. This was a small fire in CBZ-6 which started as a result of explosive vapors and equipment usage. The fire was contained in CBZ-6 and extinguished within five (5) minutes after ignition. There was not any associated injuries.

Although the inspection shows evidence of pitting and corrosion throughout the contact wastewater collection system, it does not show any evidence of leaks or exfiltration of hydrocarbons into the surrounding ground.



Investigation of Underground Drainage Systems



Ciniza Refinery-Giant Industries Co.

Gallup, New Mexico

American Liner, Inc. Oct. 1990 Albuquerque, NM

Report on CCTV Inspections of Giant Refining Company's Ciniza Refinery, Tank Underground Drainage System Gallup, New Mexico

Inspected by:

Cook Construction Company, Inc.

Daniel W. Cook

Executive Vice President

Report by:

American Liner, Inc.

Eldon E. Brown, P.E.

President

November 1990

506 Carmony Lane, NE

Albuquerque, New Mexico 87107

(505)345-1897

N.M.C.L. No. 12976

(505)344-7719

N.M.C.L. No. 29460

U-LINER®
A pipe within a pipe

Table of Contents

U-LINER®
A pipe within a pipe

Introduction and Purpose of Inspection

In response to the environmental concerns of the Giant Refinery personnel, an agreement was structured to provide a CCTV inspection of the majority of the tank farm drainage system. The inspection was made to determine if there were any failures in the complex that could cause some pollution to the environs. This report was prepared to comment on the investigation.

Pipeline cleaning and TV inspection of the drainage network was accomplished between Sept. 18th, 1990 and Oct. 12th, 1990.

Personnel and Equipment

A. Personnel.

COOK CONSTRUCTION COMPANY, INC., is a member of the National Association of Sewer Service Companies and subscribes to the procedures of their Inspection Handbook for Sewer Collection Systems Rehabilitation and Recommended Specifications for Sewer Collection System Rehabilitation, copies of which are readily available for review by all agencies involved in pipeline rehabilitation work. Additionally, all employees are instructed in NASSCO's safety procedures and are required to view NASSCO's safety tapes.

An experienced four-man crew employed by COOK CONSTRUCTION COMPANY, INC., accomplished the actual inspection and necessary cleaning of the subject pipelines. Daniel W. Cook, an officer of COOK CONSTRUCTION COMPANY, INC., also visited the project site several times during the cleaning and TV inspection operation.

B. Equipment.

COOK CONSTRUCTION COMPANY, INC., owns and operates all equipment necessary to adequately and safely perform all portions of the pipeline cleaning and TV inspection necessary to evaluate the present condition of the lines.

The major equipment available include the following:

1. Cues,Inc. - Radial view camera (RVC-360" tm) TV inspections systems with self propelled mobile camera transporter, multi-conductor and low viscosity chemical sealing system.

    a. Radial view camera system multi-conductor, with 3" diameter solid state color sewer TV camera with a dome enclosed, 360 degree side viewing lens, remote adjustable optical focus, automatic light compensating iris and automatic white balance circutry, multi-conductor, NTSC color standard. Also associated cover, transportable cases, lens controller, focus control, and high intensity side viewing lighting system.

b. Self-propelled camera transported with transmission coupling for 8" to 15" pipe sizes. Also associated air motor drive, positive displacement pumps, quick disconnect valve at pump.

2. Peabody Myers - Series 2100 Vactor, with extension boom and 180 degree boom rotation, 1500 gallon capacity, telescopic/rotating front hose real, 0 to 8000 cfm centrifugal compressor with 0 to 114 psi pressures. 16 cu.yd. debris box.

U-LINER®
A pipe within a pipe

Index of Line Inspections

Phase I
Line #

1 4" line from tank #568 to Clean-out
This tank was not connected to the pipeline system inspected at this time.

2 4" line from tank #570 to Wye from tank #569
See tape-B; Segment 09, time interval; 01:25:16:59 to 01:29:06:22.

3 4" line from tank #569 to 6" Main at CBZ-1
See tape-B; Segment 10, time interval; 01:29:06:23 to 01:37:51:17.

4 4" line from tank #572 to Wye from tank #571
See tape-B; Segment 11, time interval; 01:37:52:00 to 01:44:36:18.

5 4" line from tank #571 to 6" Main at CBZ-2
See tape-B; Segment 12, time interval; 01:44:36:18 to 01:53:03:20.

6 6" Main from Clean-out to CBZ-1
This line does not exist as shown on drawings.

7 6" Main from CBZ-1 to CBZ-2
See tape-1; Segment 01, time interval; 00:00:00:00 to 00:22:02:17.

Phase II
Line #

1 4" line from tank #226 to 8" Main (CBZ-3)
See tape-C; Segment 03, time interval; 00:21:55:11 to 00:31:40:12.

2 4" line from tank #112 to Wye from tank 111
See tape-C; Segment 01, time interval; 00:00:00:00 to 00:10:50:00.

3 4" line from tank #111 to 8" Main CBZ-3
See tape-C; Segment 02, time interval; 00:10:50:08 to 00:21:55;00.

4 4" line from tank #116 to Wye from tank 115
See tape-C; Segment 04, time interval; 00:31:45:00 to 00:42:19:05.

5 4" line from tank #115 to 8" Main(Drop-in) No CB#
See tape-C; Segment 05, time interval; 00:42:20:23
to 00:49:06:00.

6 8" Main from CBZ-2 to CBZ-3
See tape-4; Segment 01, time interval; 00:00:00:00
to 00:06:53:00.

7 8" Main from CBZ-3 to CBZ-4
See tape-4; Segment 02, time interval; 00:06:53:28
to 00:22:23:28.

Phase III
Line #

1 4" line from tank #567 to 8" Main @ CBZ-4
Line not in service between tank and CBZ-4.

2 4" line from tank #225 to 8" Main @ CBZ-4
See tape-C; Segment 06, time interval; 00:49:06:05
to 01:02:59:01.

3 4" line from tank #338 to 10" Main @ CBZ-5
See tape-D; Segment 02, time interval; 00:10:08:00
to 00:15:27:05.

4 4" line from tank #339 to 10" Main @ CBZ-5
See tape-D; Segment 01, time interval; 00:00:00:00
to 00:10:07:20.

5 4" line from tank Booster and Charge pumps to
10" Main @ CBZ-6. See tape-A; Segment 12, time
interval; 01:40:14:00 to 01:41:06:02.

6 10" line from CBZ-4 to CBZ-5
See tape-5; Segment 01, time interval; 00:00:00:00
to 00:04:33:20.

7 10" line from CBZ-5 to CBZ-6
See tape-5; Segment 02, time interval; 00:04:34:00
to 00:15:08:06.

Phase IV
Line #

1 4" line from tank #453 to Wye from tank #452
See tape-A; Segment 07, time interval; 00:59:15:01
to 01:12:15:28.

2 4" line from tank #452 to Wye from tank #451
See tape-A; Segment 08, time interval; 01:12:15:30
to 01:16:14:00.

3 4" line from tank #451 to 10" Main @ CBZ-19
See tape-A; Segment 09, time interval; 01:16:14:30
to 01:20:37:00.

4 10" Main from CBZ-20 to CBZ-19
This line has been abandoned.

5 4" line from tank #227 to Wye from tank #228
See tape-B; Segment 01, time interval; 00:00:00:00
to 00:07:54:07.

6 4" line from tank #228 to 10" Main @ CBZ-18
See tape-B; Segment 02, time interval; 00:07:56:25
to 00:18:37:00.

7 4" line from tank #342 to Wye from tank #343
See tape-B; Segment 03, time interval; 00:18:37:00
to 00:28:26:23.

8 4" line from tank #343 to 10" Main CBZ-18
See tape-B; Segment 04, time interval; 00:28:26:24
to 00:38:42:00.

9 4" line from tank #107 to Wye from tank #108
See tape-B; Segment 05, time interval; 00:38:42:02
to 00:49:56:12.

10 4" line from tank #108 to 10" Main @ CBZ-17
See tape-B; Segment 06, time interval; 00:49:58:00
to 01:02:54:11.

11 4" line from tank #231 to Wye from tank #232
See tape-B; Segment 07, time interval 01:03:00:26
to 01:11:40:30.

12 4" line from tank #232 to 10" Main @ CBZ-16
See tape-B; Segment 08, time interval; 01:11:42:10
to 01:22:16:00.

13 4" line from tank #235 to Wye from tank 106
See tape-A; Segment 10, time interval; 01:20:37:23
to 01:30:34:23.

14 4" line from tank #106 to 10" Main @ CBZ-15
See tape-A; Segment 11, time interval; 01:30:34:33
to 01:40:12:19.

15 10" Main from CBZ-19 to CBZ-18
See tape-6; Segment 01, time interval; 00:00:54:00
to 00:05:43:28.

16 10" Main from CBZ-18 to CBZ-17
Not inspected at this time due to plant operations and large volumes of liquid in lines.

17 10" Main from CBZ-17 to CBZ-16
Not inspected at this time due to plant operations and large volumes of liquid in lines.

18 10" Main from CBZ-16 to CBZ-15
Not inspected at this time due to plant operations and large volumes of liquid in lines.

19 10" Main from CBZ-15 to CBZ-14
Not inspected at this time due to plant operations and large volumes of liquid in lines.

Phase V
Line #

1 4" line from tank #1 to Wye from tank #2
See tape-A; Segment 06, time interval; 00:53:09:24 to 00:58:00:00.

2 4" line from tank #2 to Wye from tank #3
See tape-A; Segment 06, time interval; 00:53:09:24 to 00:58:00:00.

3 4" line from tank #3 to CB No #
See tape-A; Segment 06, time interval; 00:53:09:24 to 00:58:00:00.

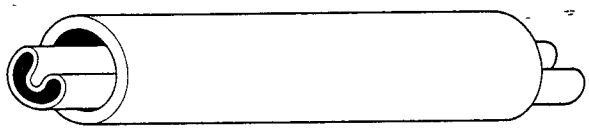
4 8" line from CB No.30 to CBZ-14
Not inspected at this time due to blockage of line approximately 40' from tank #3.

5 10" Main from CBZ-14 to CBZ-6
See tape-3; Segment 01, time interval; 00:00:00:00 to 00:09:20:00.

6 10" Main from CBZ-6 to CBZ-26
Not inspected at this time due to plant operations and large volume of liquids in line.

Phase VI
Line #

1 4" line from tank #582 to CBZ-7
See tape-A; Segment 01, time interval; 00:00:00:00 to 00:04:36:10.



2 4" line from tank #581 to CBZ-8
See tape-A; Segment 02, time interval; 00:04:36:29
to 00:18:09:01.

3 4" line from tank #575 to Wye from tank 577
See tape-A; Segment 03, time interval; 00:18:10:01
to 00:37:07:19.

4 4" line from tank #577 to CBZ-8
See tape-A; Segment 04, time interval; 00:37:07:20
to 00:51:09:24.

5 8" Main from CBZ-7 to CBZ-8
See tape-2; Segment 06, time interval; 01:24:01:20
to 01:40:48:04.

6 8" Main from CBZ-8 to CBZ-9
See tape-1; Segment 02, time interval; 00:00:00:00
to 00:10:55:20.

7 4" line from tank #579 to CBZ-10
See tape-A; Segment 05, time interval; 00:51:12:00
to 00:53:09.

8 10" Main from CBZ-9 to CBZ-10
See tape-2; Segment 02, time interval; 00:10:57:00
to 00:16:33:20.

9 12" Main from CBZ-10 to CBZ-11
See tape-2; Segment 03, time interval; 00:16:34:00
to 00:40:45:00.

10 12" Main from CBZ-11 to CBZ-12
See tape-2; Segment 04, time interval; 00:56:44:10
to 01:11:56:26.

11 12" Main from CBZ-12 to CBZ-13
See tape-2; Segment 05, time interval; 01:11:56:29
to 01:24:00:20.

12 12" Main from CBZ-13 to CBZ-26
See tape-3; Segment 03, time interval; 00:20:21:13
to 00:30:10:00.

13 6" line from tank #101 to CBZ-26
Not inspected at this time due to plant operations and
large volume of liquids in line.

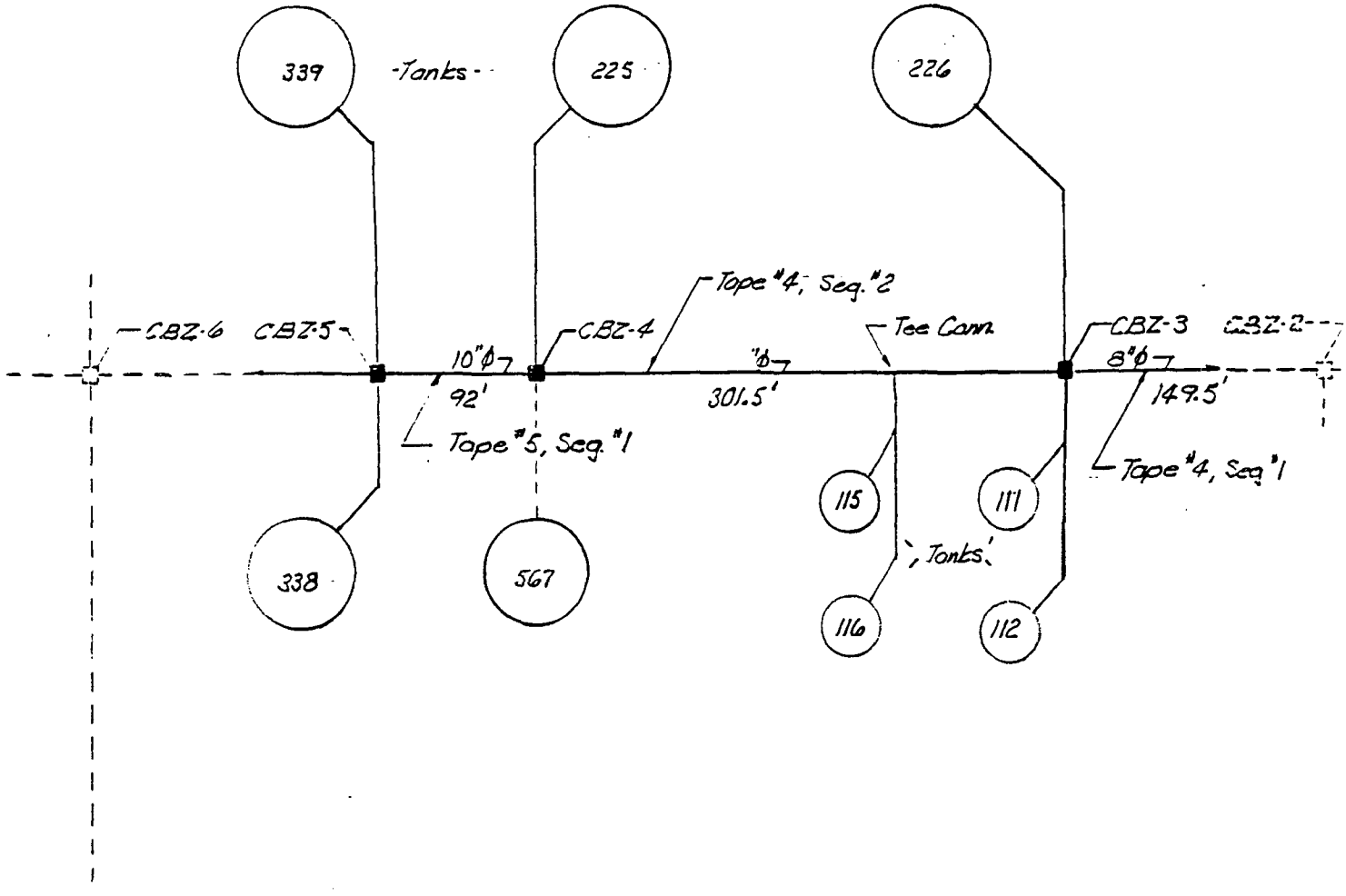
U-LINER®
A pipe within a pipe

Phase VII
Line #

1 16" Main from CBZ-26 to CBZ-27
Not inspected at this time due to plant operations and large volume of liquids in line.

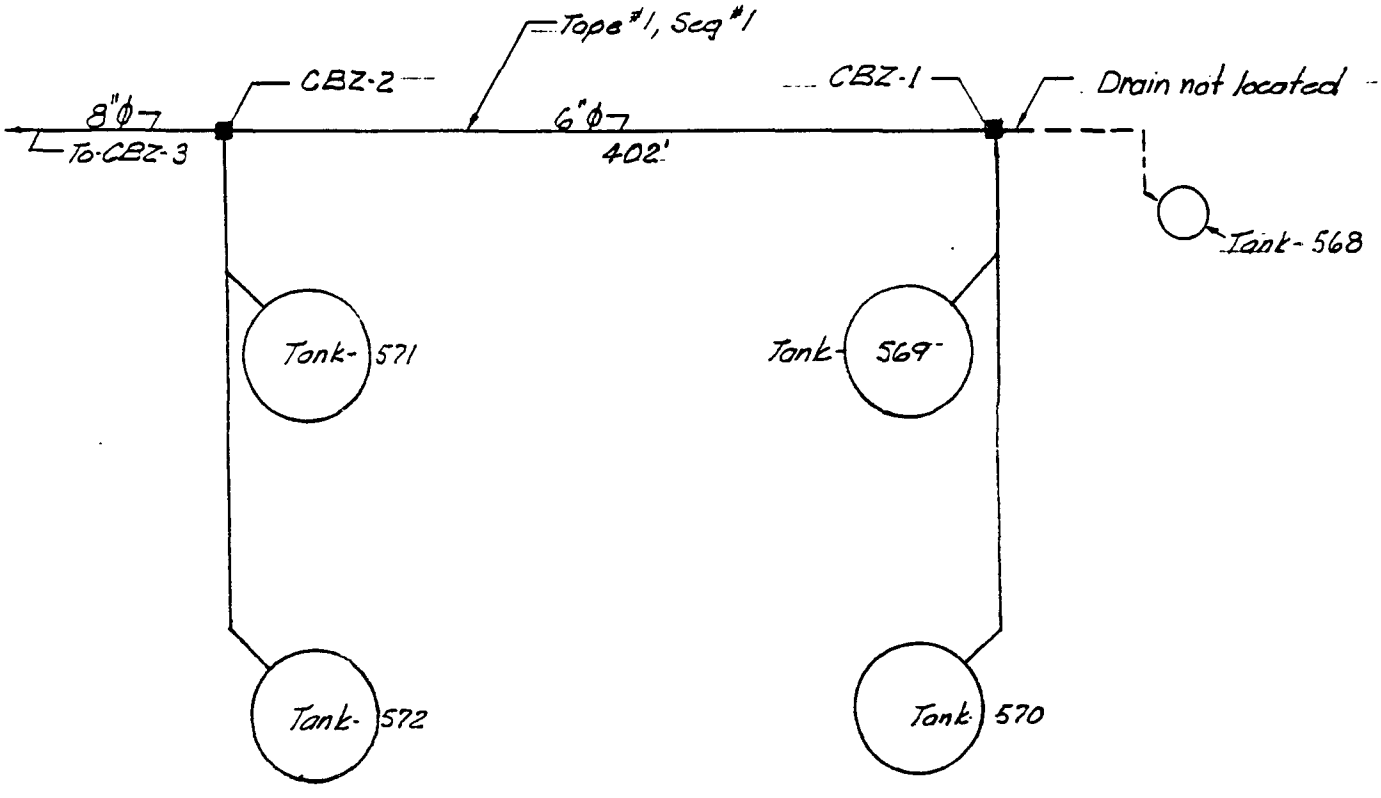
2 16" Main from CBZ-27 to Dishorge E.O.L.
Not inspected at this time due to plant operations and large volume of liquids in line.

U-LINER®
A pipe within a pipe



Tank Farm Drain System
CCTV - Tape Reference

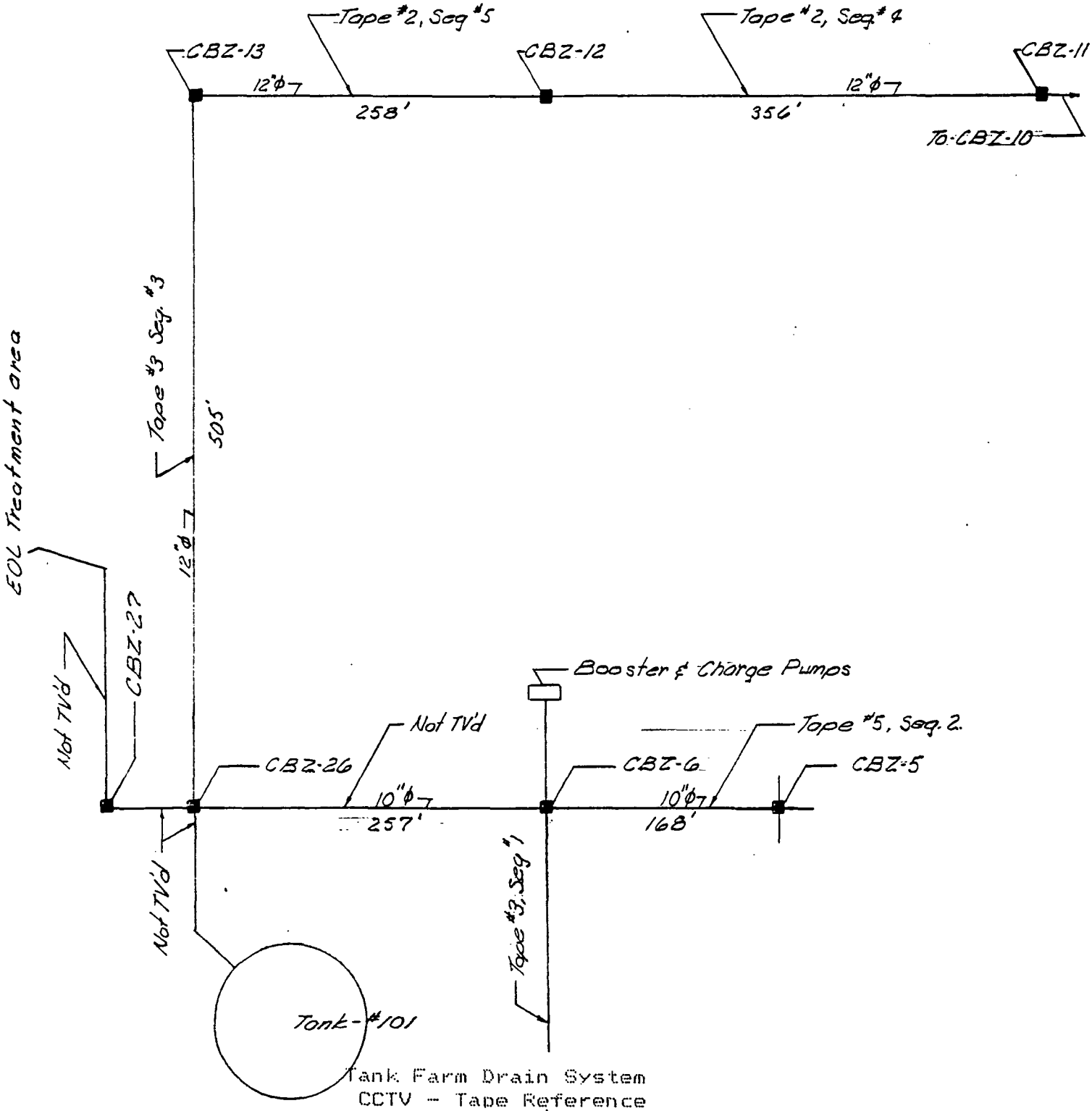
Scale: 1" = 100'



Tank Farm Drain System
CCTV - Tape Reference

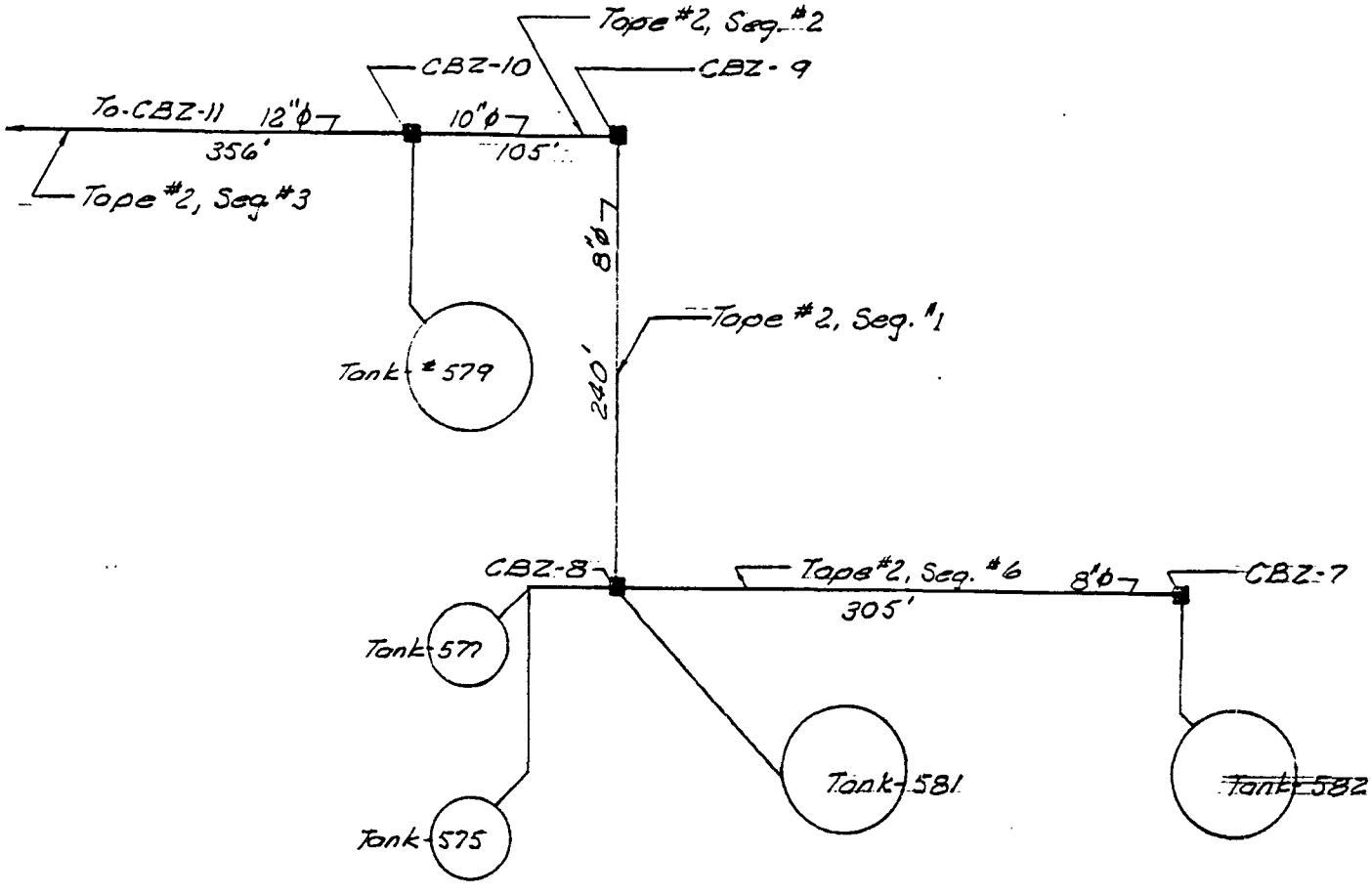
(11) Scale: 1" = 100'

U-LINER®
A pipe within a pipe



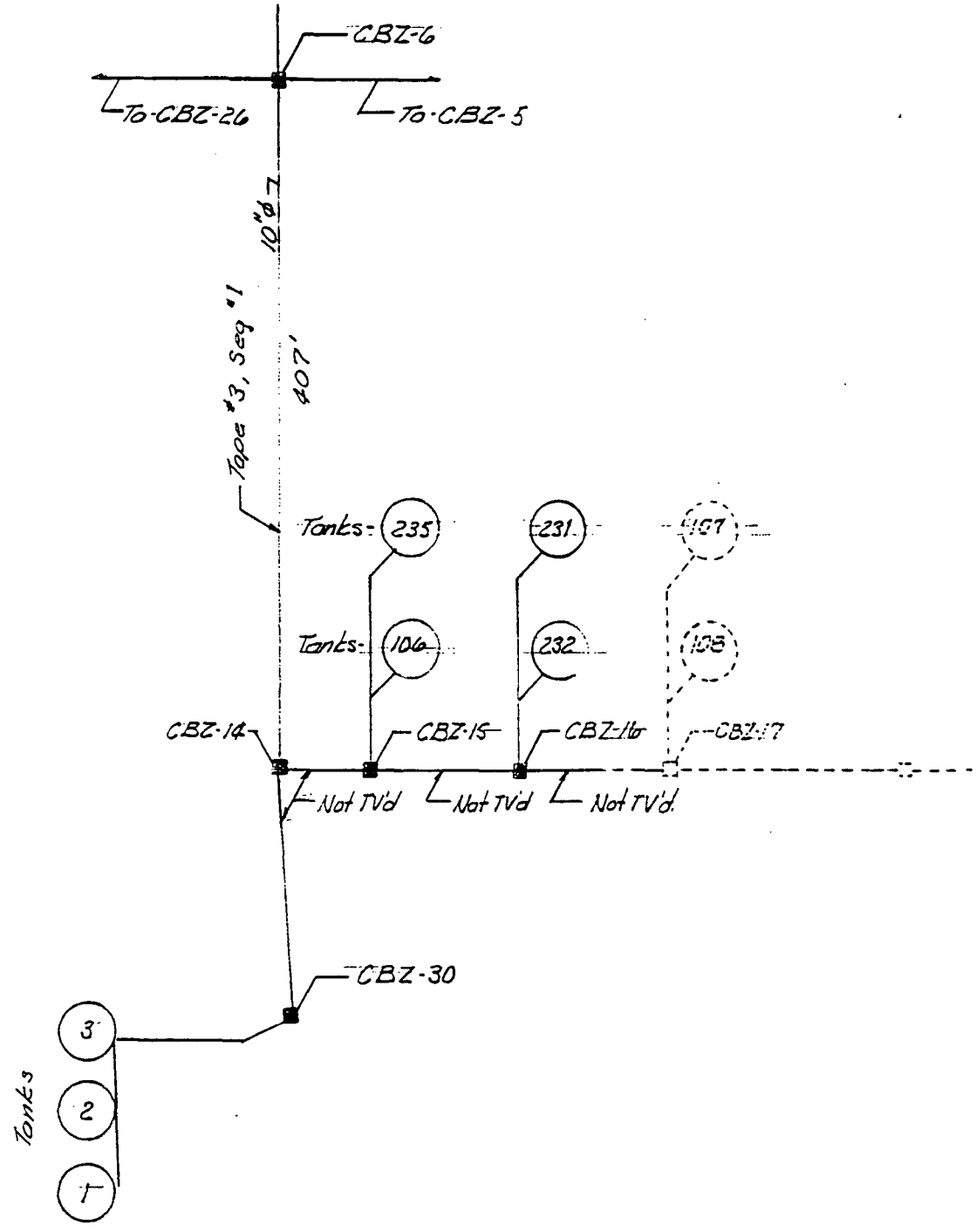
Tank Farm Drain System
CCTV – Tape Reference

Scale: 1" = 100'



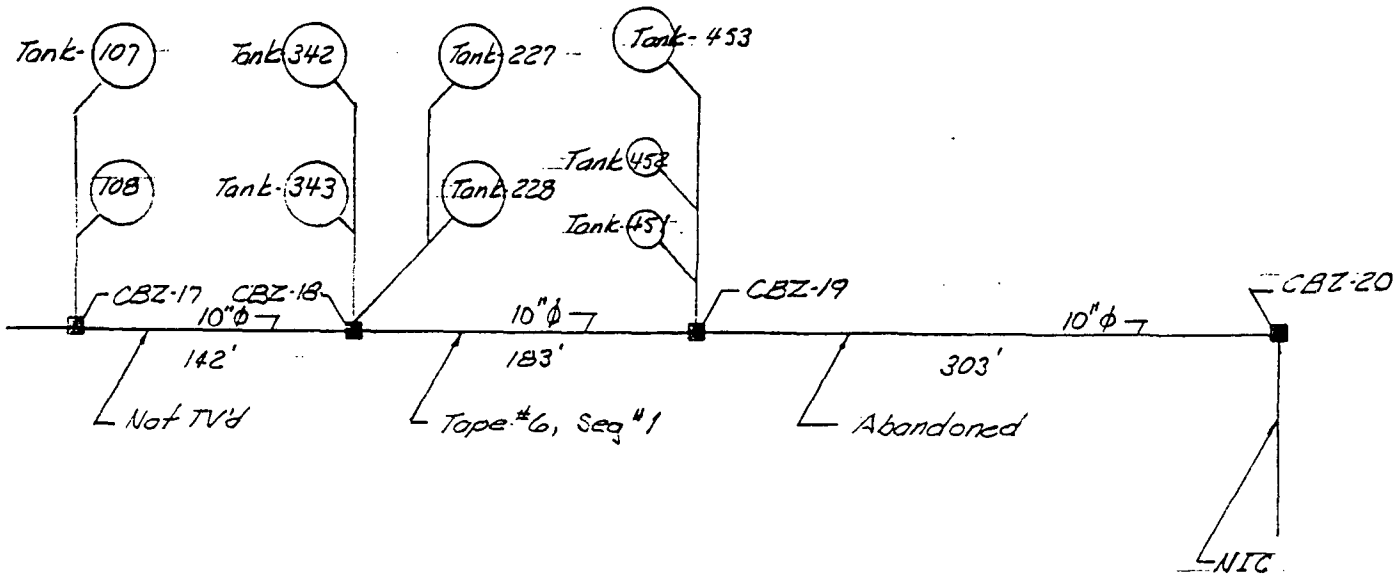
Tank Farm Drain System
CCTV – Tape Reference

Scale: 1" = 100'



Tank Farm Drain System
CCTV - Tape Reference

Scale: 1" = 100'

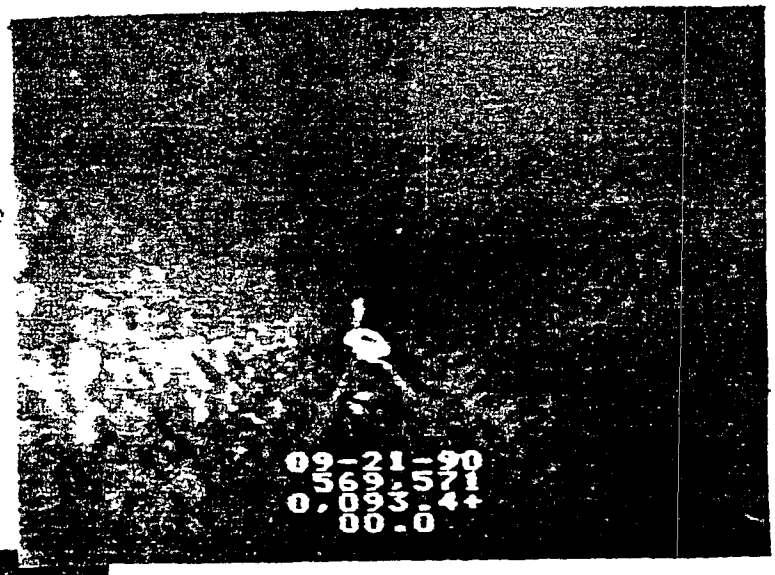


Tank Farm Drain System
CCTV - Tape Reference

Scale: 1" = 100'

U-LINER®
A pipe within a pipe

Photo #1
CBZ-#1 to CBZ-#2
Shows pitting in crown of pipe and build-up along flow line.



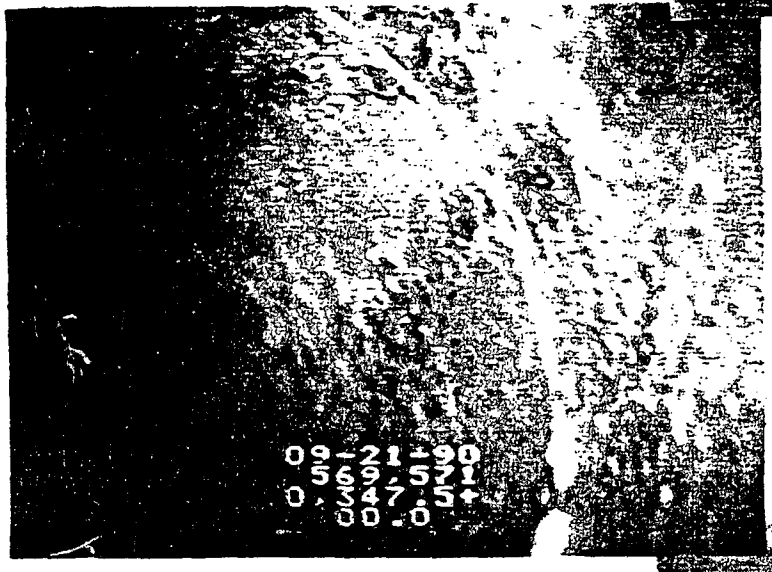
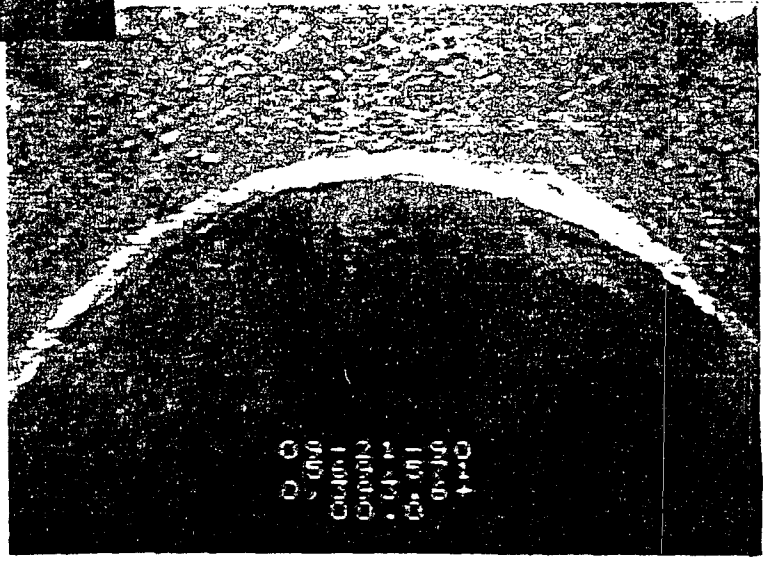


Photo #2
CBZ-#1 to CBZ-#2
Shows deterioration in walls of pipe adjacent to weld.

Photo #3
CBZ-#1 to CBZ-#2
Shows deterioration in crown of pipe adjacent to weld.



U-LINER®
A pipe within a pipe

Photo #4
CBZ-#8 to CBZ-#9
Shows pitting at pipe crown and build-up in flow line.

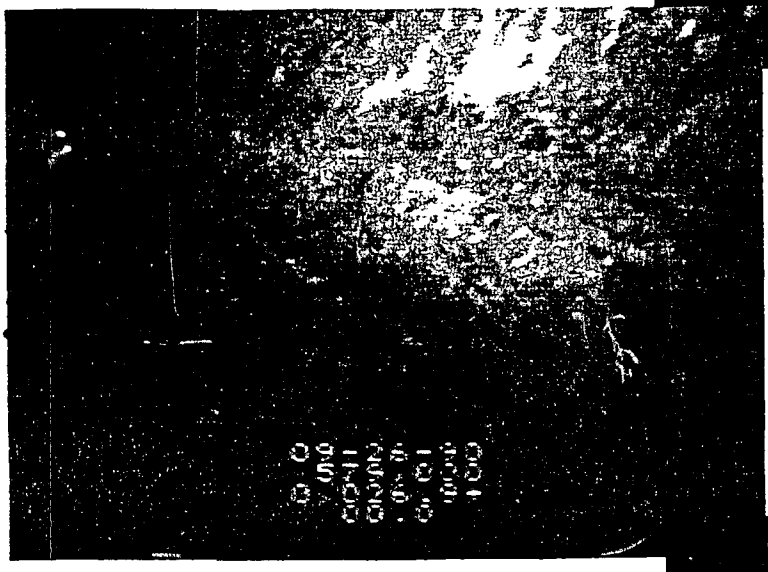
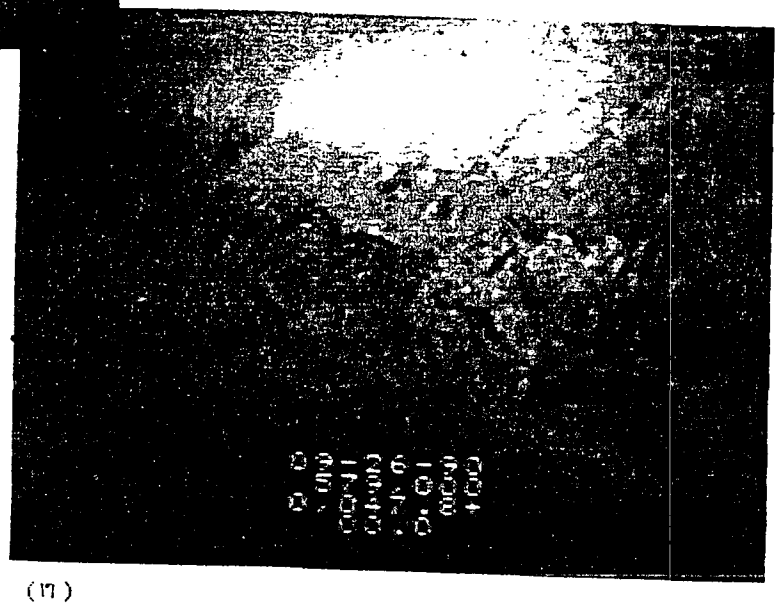


Photo #5
CBZ-#10 to CBZ-#11
Shows some flaking and pitting along pipe side walls.

Photo #6
CBZ-#10 to CBZ-#11
Shows general decay of pipe side walls at flow line.



U-LINER®
A pipe within a pipe

Photo #7
CBZ-#10 to CBZ-#11
Shows a corroded area on side of pipe.

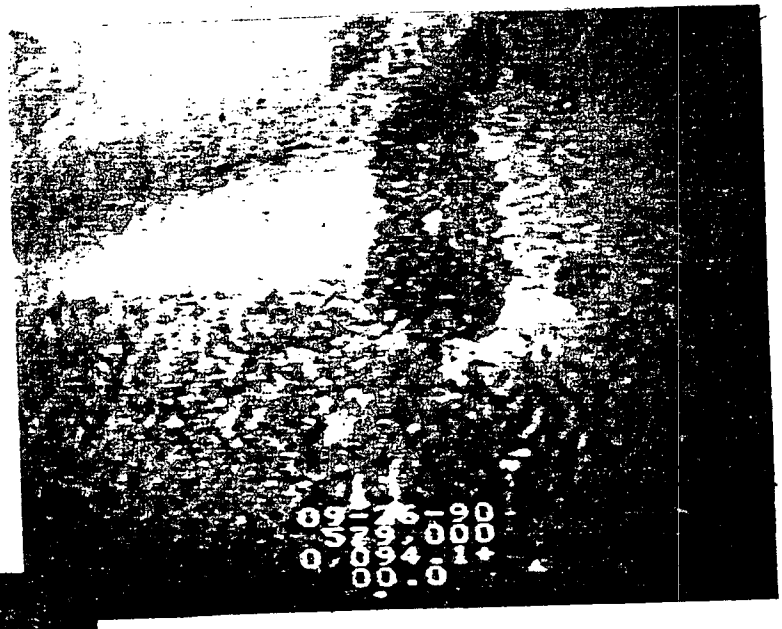


Photo #8
CBZ-#11 to CBZ-#12
Shows general deterioration in walls of pipe.

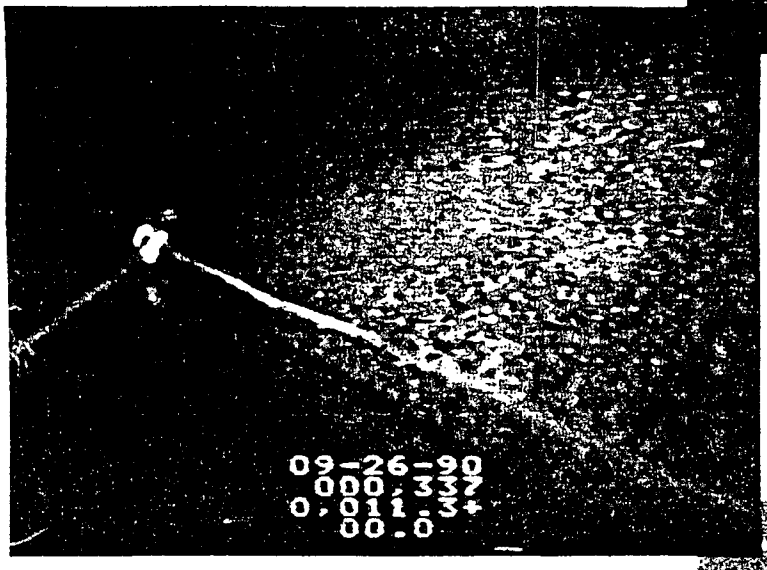
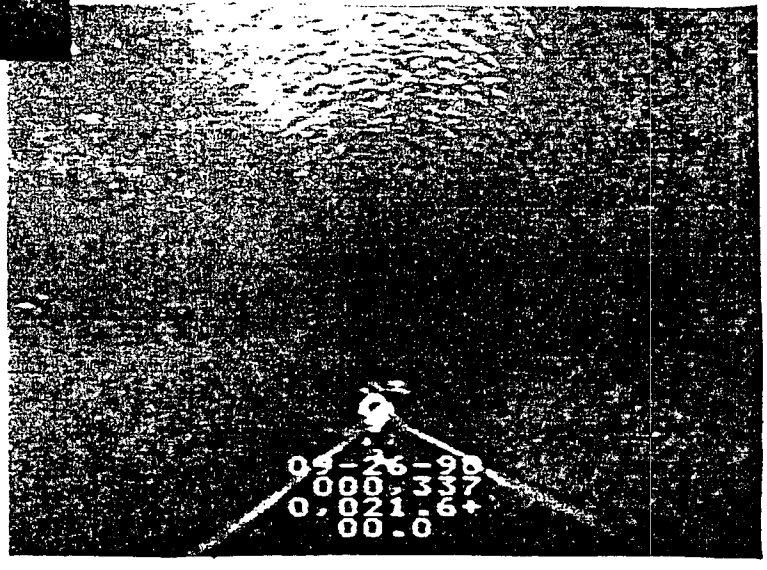
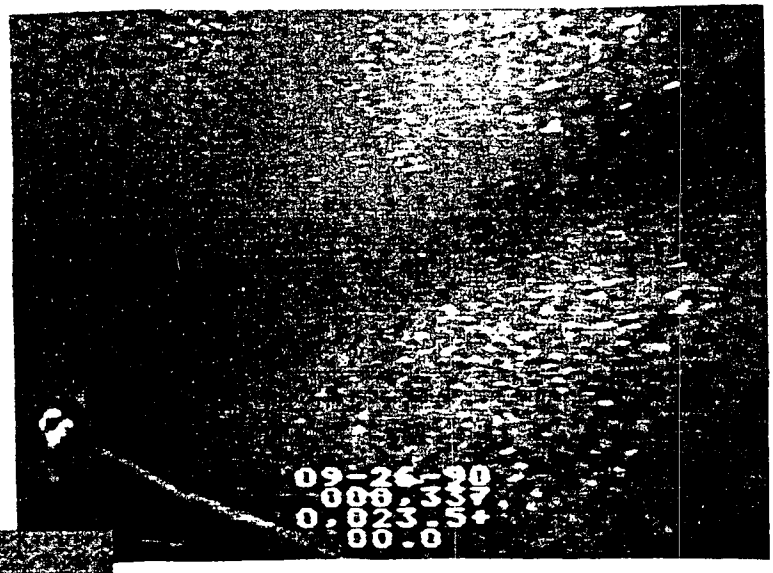


Photo #9
CBZ-#11 to CBZ-#12
Shows general deterioration in crown of pipe.



U-LINER®
A pipe within a pipe

Photo #10
CBZ-#11 to CBZ-#12
Shows pitting on walls of pipe.



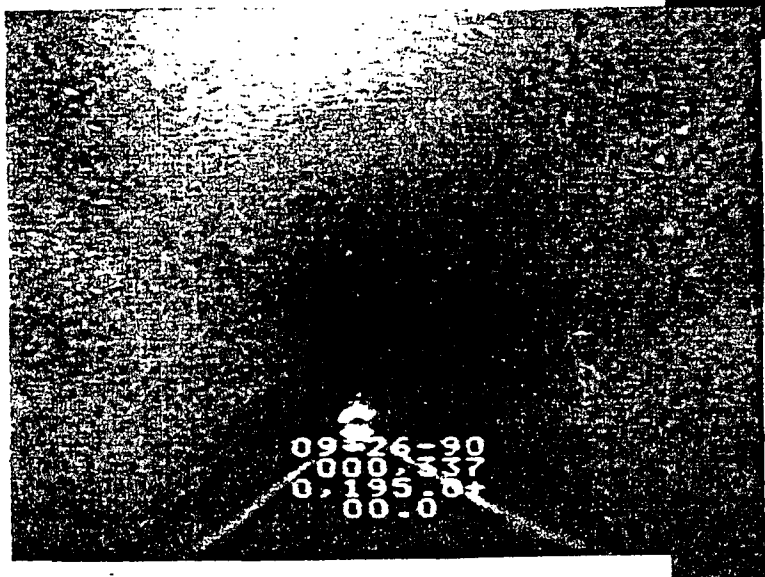


Photo #11
CBZ-#11 to CBZ-#12
Shows over all interior condition of pipe.

Photo #12
CBZ-#12 to CBZ-#13
Shows corrosion and build-up along pipe flow line.

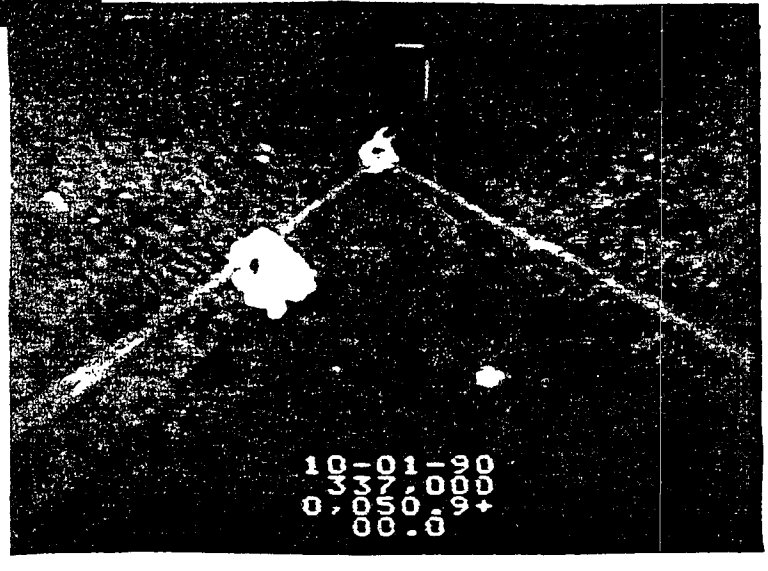
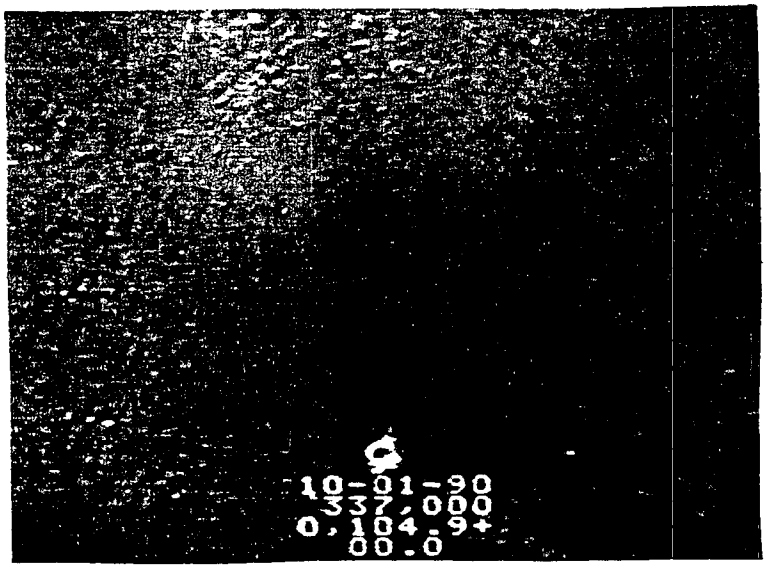


Photo #13
CBZ-#12 to CBZ-#13
Shows overall interior deterioration of pipe.



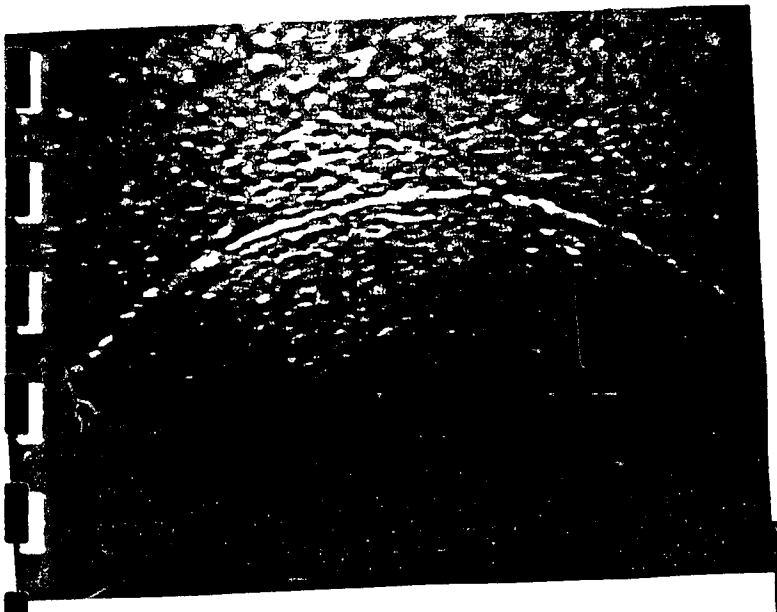
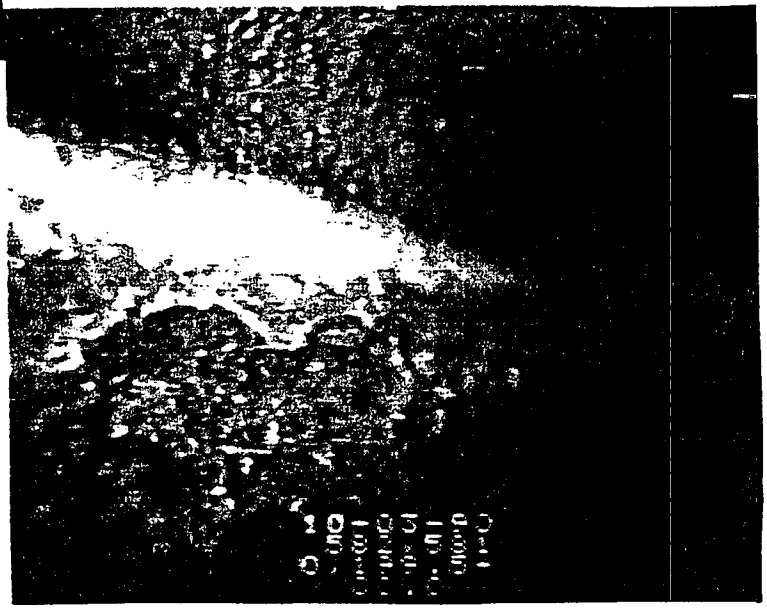


Photo #14
CBZ-#7 to CBZ-#8
Shows weld resistance to corrosion.

Photo #15
CBZ-#7 to CBZ-#8
Shows area of corrosion on pipe side wall.



Specific Line Evaluation

Each segment of the drainage net work was TV'ed, taped and analyzed. To narrate on each part of the pipeline within the drainage system would only result in a redundancy of physical condition statements. Consequently, the descriptions and statements below are relative to all drain pipelines and individual tank line drains respectively.

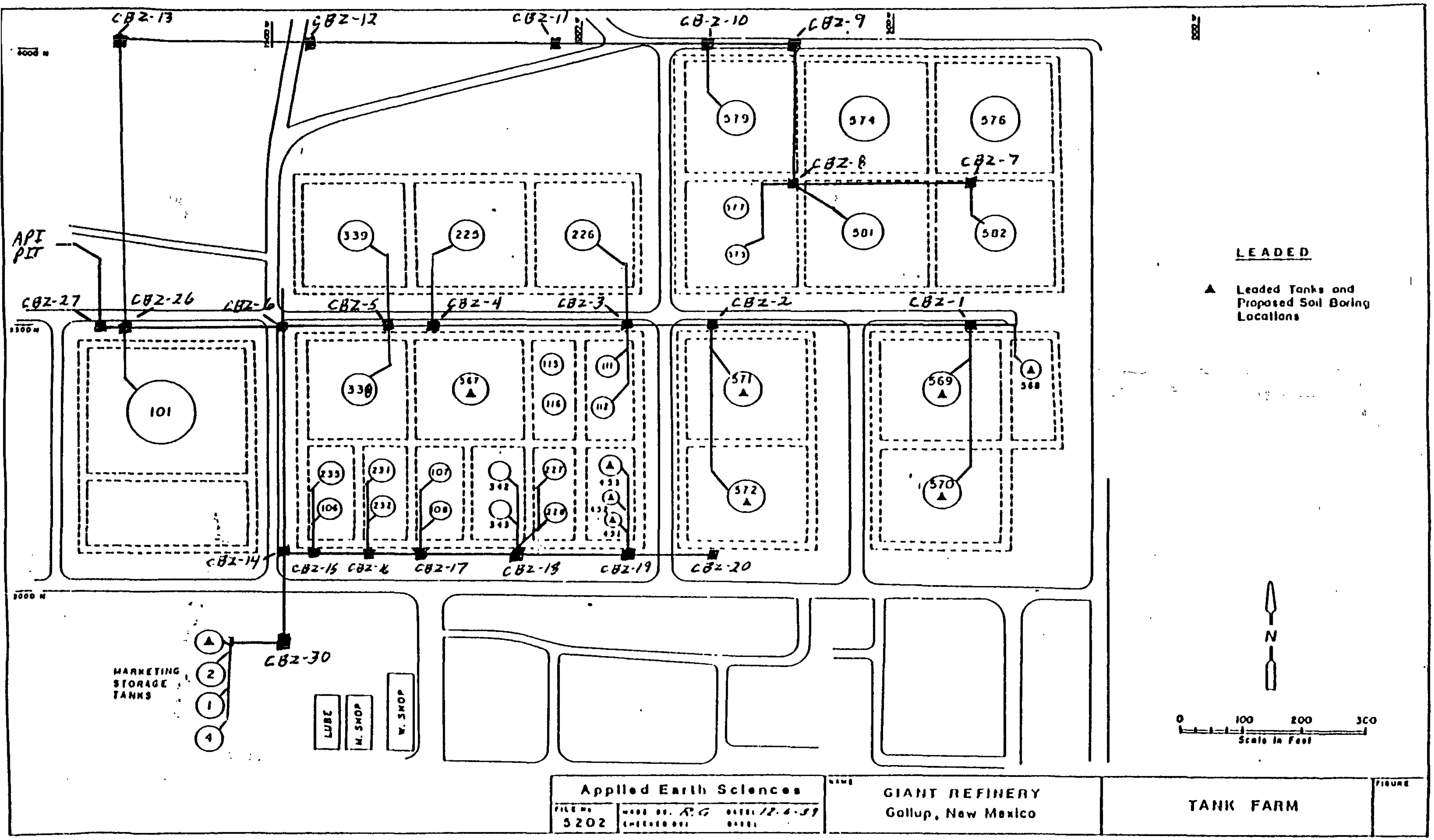
The most sever damage observed was the general deterioration of the inverts of most of the pipes. It appears that chemicals and abrasive action has reduced the pipe wall thickness.

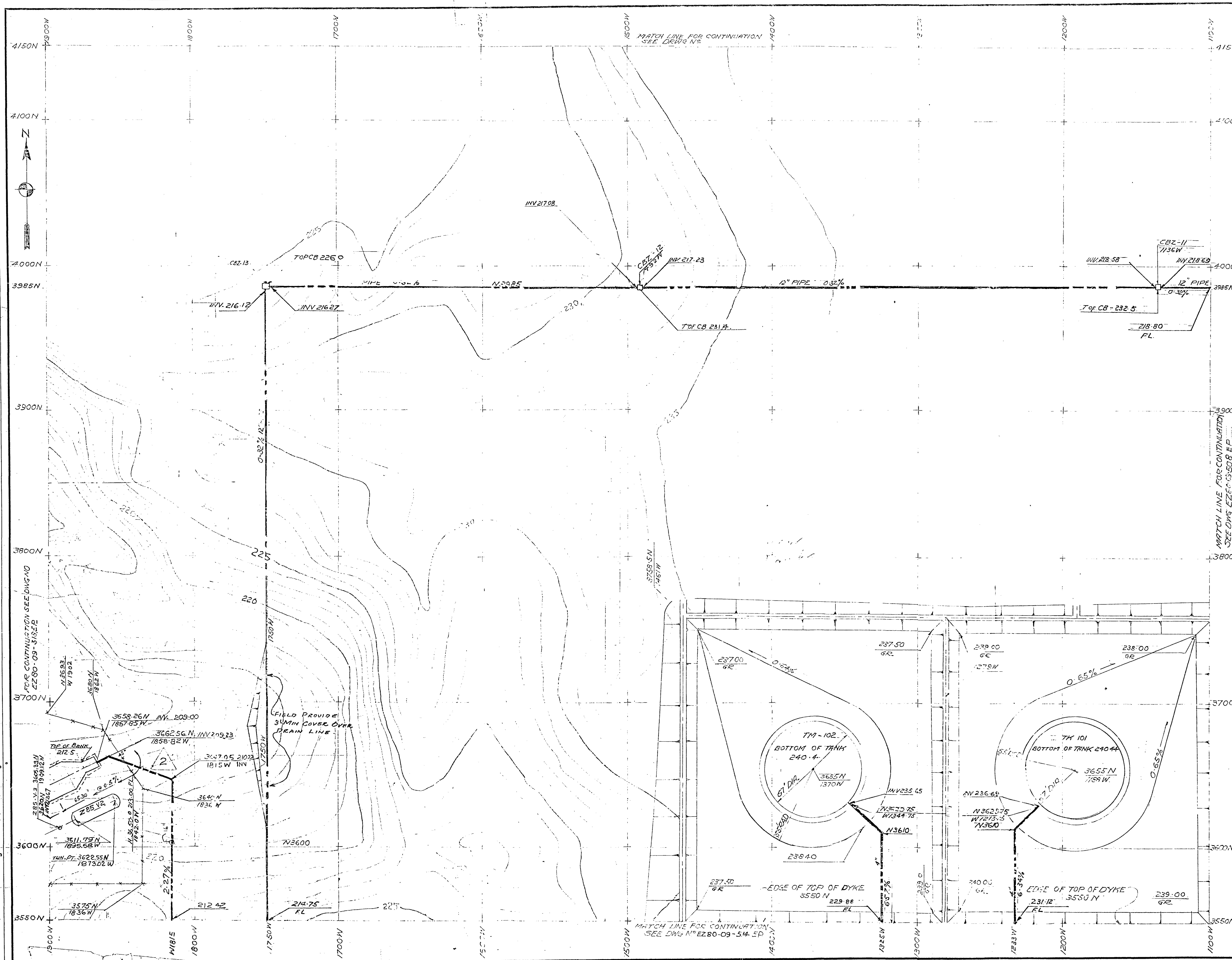
All 6", 8", 10" and 12" lines in the collection system showed signs of deterioration. The pipes are corroded, pitted, and in places it appears that some electrolysis has dissolved some of the pipe shell. Also, the petroleum products have adhered to the walls and reduced the flow and capacity of the lines. At two locations, a wrench and a bar were observed within the drain lines. These appear to be tools previously used to try to unplug the lines.

It should be noted that some corrosion was evident at the welds, however the welded areas in general were in better condition than the pipe itself. This is probably due to an alloy introduced during the welding process.

At tanks # 1, 2 and 3, an obstruction in the line prevented complete cleaning and television. Also, the reduction in line size from 4" diameter to 1" diameter on the drain line between the booster pumps and CBZ - #6, obstructed the cleaning and television.

FIGURE 5-1


LEADED
Leaded Tanks and Proposed Soil Boring Locations
N
0 100 200 300
Scale in Feet
CBZ-1
CBZ-2
CBZ-3
CBZ-4
CBZ-5
CBZ-6
CBZ-7
CBZ-8
CBZ-9
CBZ-10
CBZ-11
CBZ-12
CBZ-13
CBZ-14
CBZ-15
CBZ-16
CBZ-17
CBZ-18
CBZ-19
CBZ-20
CBZ-26
CBZ-27
CBZ-30
API PIT
101
339
225
226
338
567
113
116
111
112
235
106
231
232
107
108
342
343
227
228
579
574
576
501
502
571
572
569
570
568
MARKETING STORAGE TANKS
2
1
4
LUBE
M. SHOP
W. SHOP
Applied Earth Sciences
5202
12-4-89
GIANT REFINERY
Gallup, New Mexico
TANK FARM


MATCH LINE FOR CONTINUATION SEE DWG Nº
4150N
4100N
4000N
3985N
3900N
3800N
3700N
3600N
3550N
1900W
1800W
1700W
1500W
1400W
1200W
1100W
CBZ-13
TOPCB 226.0
INV 216.12
INV 216.27
INV 217.08
CBZ-12
INV 217.23
T of CB 231.4
12" PIPE 0.32%
CBZ-11
1136W
INV 218.58
INV 218.69
12" PIPE
0.30%
T of CB - 232.5
218.80
FL
0.32% 12"
225
220
230
FOR CONTINUATION SEE DWG NO EZ80-09-516 EP
FIELD PROVIDE 3' MIN COVER OVER DRAIN LINE
N3600
3658.26N INV 209.00
1867.65W
3662.56N INV 209.23
1858.82W
3647.05 210.12
1815W INV
3640N
1836W
TOP OF BANK 212.5
Z85 V2
3611.79N
1895.58W
TAN-PT. 3622.55N
1873.22W
3575N
1836W
212.42
214.75
FL
0.227%
TM-102
BOTTOM OF TANK 240.4
3685N
1370W
67' DIA.
TK 101
BOTTOM OF TANK 240.44
3655N
1158W
237.00
GR
0.74%
237.50
GR
239.00
GR
238.00
GR
0.65%
INV 235.45
INV 236.65
N3610
238.40
EDGE OF TOP OF DYKE 3550N
229.88
FL
65.7%
231.12
FL
MATCH LINE FOR CONTINUATION SEE DWG Nº EZ80-09-514 EP
MATCH LINE FOR CONTINUATION SEE DWG EZ80-09-508 EP
NOTE
FOR GENERAL NOTES & TYPICAL DETAILS SEE DWG. EZ-09-165-EP.
APPROVED FOR CONSTRUCTION
DATE 3-18-57

DWG. Nº	REFERENCE DRAWINGS.
EZ-03-119 EP	CATCH BASIN & MANHOLE DETAILS
EZ84-03-101 EP	SEPARATOR DETAILS
EZ-09-165 EP	DETAILS. SEE DETAIL D TANK SHELL ASSEMBLY
EZ-02-115 EP	SITE GRADING PLAN

NO.	BY	DATE	REVISIONS
3	SPS	10-11-88	ADD. TANK 340 DYKE
2	RHB	6-1-57	REVISED COOR. ON FLARE & Z-85-V2
			CHANGED POSITION OF SEPARATOR ADDED FENCE
1	RWA	4-28-57	NEW SERVICE ROAD TO SEPARATOR & TANK Z85-V2
			FLARE & OILY DRAIN
0	JH	3-18-57	ISSUED FOR CONSTRUCTION

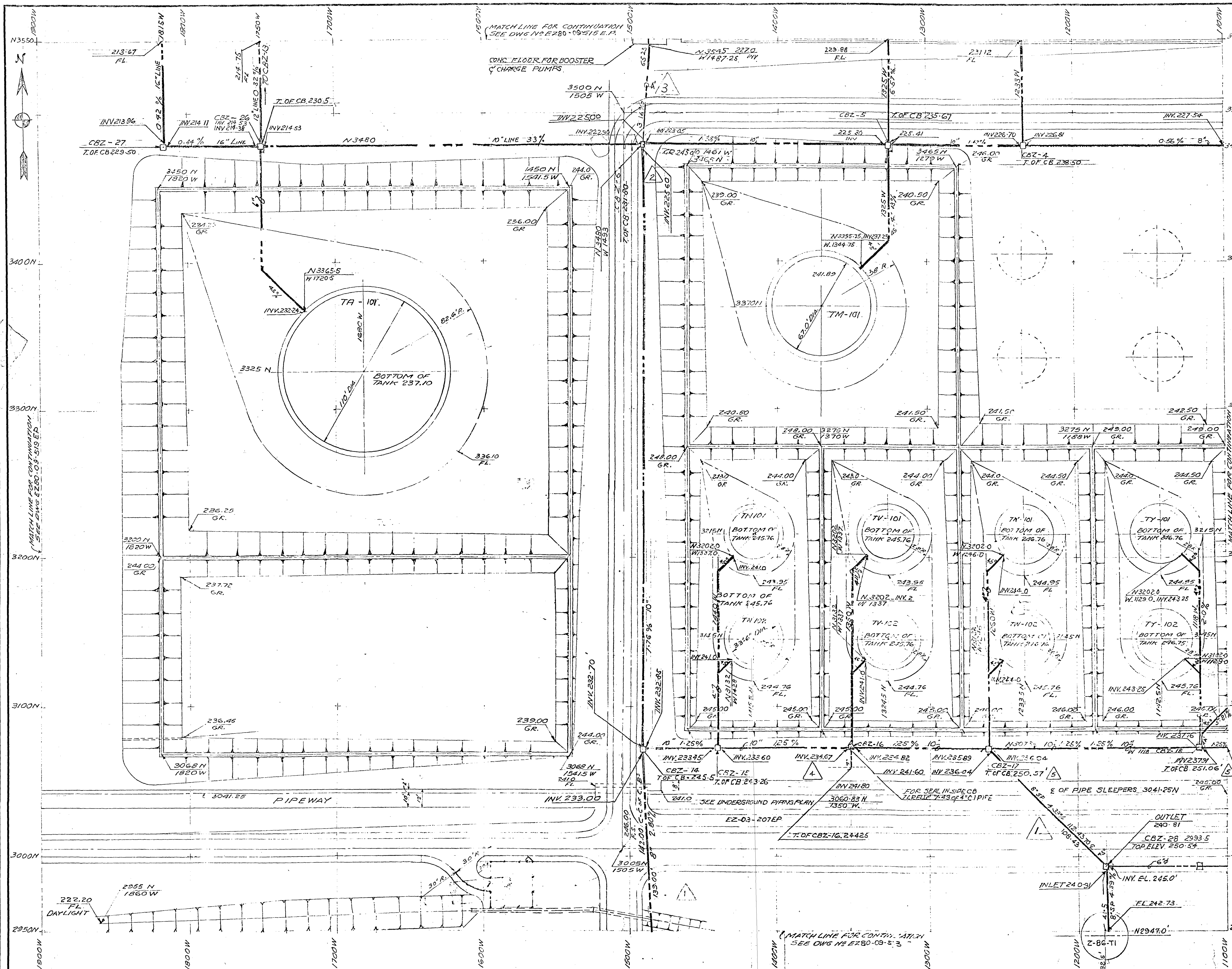
DRAINAGE & SEWERAGE
3550N TO 4150N.
AND
1100W TO 1900W

EL PASO NATURAL GAS PRODUCTS COMPANY
CINIZA REFINERY
GALLUP NEW MEXICO

SCALE 1/32" = 1'-0"	DATE
DRAWN BY RWP	3-11-57
CHECKED BY JH	3-15-57
APPROVED BY JH	3-18-57
JOB ENG'R	

EZ80-09-515 EP REV. 2

DRAWING SIZE A-7026



NOTE

FOR GENERAL NOTES & TYPICAL DETAILS SEE DRWG. EZ-09-165 EP.

APPROVED FOR CONSTRUCTION

DATE 3-15-57

DWG. NO.	REFERENCE DRAWINGS
EZ-72-03-104EP	TRANSFER PUMPS ETC.
EZ-03-119-EP	CATCH BASIN & MANHOLE DETAILS
EZ-09-165EP	DETAILS SEE DETAIL "D" TANK SHELL ASSEMBLY
EZ-02-114-EP	SITE GRADING PLAN

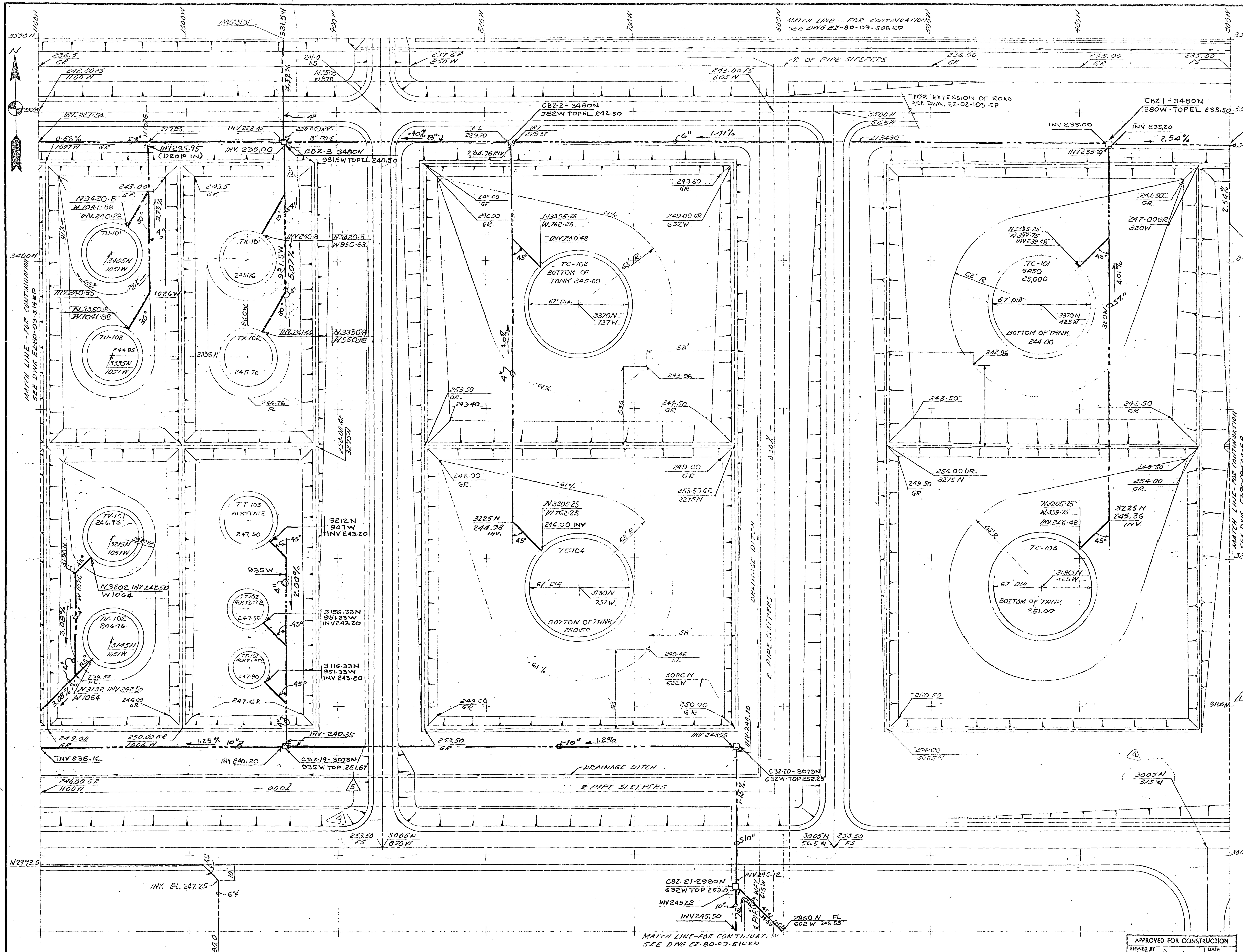
NO.	BY	DATE	REVISIONS
5	P.L.	4-19-60	CHG'D. TOP EL. OF CBZ-17 & CBZ-18
4	RWA	5-23-57	ADDED OILY DRAIN FROM TRANSFER PUMPS
3	RWA	5-15-57	OILY DRAIN FROM BOOSTER & CHARGE PUMPS ADDED
2	RWA	5-10-57	NEW W. COORD FOR CBZ-6 W1493
1	RWA	5-3-57	ADDED OILY DRAINS
0	H	3-18-57	ISSUED FOR CONSTRUCTION

DRAINAGE & SEWERAGE
2950N TO 3550N
1100W TO 1900W

EL PASO NATURAL GAS PRODUCTS COMPANY
CINIZA REFINERY
GALLUP NEW MEXICO

SCALE 1/30" = 1'-0"	DATE
DRAWN BY FRED W.	2-28-57
CHECKED BY	3-7-57
APPROVED BY:	3-18-57
JOB ENG'R.	3-18-57
EZ80-09-514EP	REV. 5

DRAWING SIZE A-7026


MATCH LINE – FOR CONTINUATION SEE DWG EZ-80-09-508 EP
MATCH LINE – FOR CONTINUATION SEE DWG EZ-80-09-514 EP
MATCH LINE – FOR CONTINUATION SEE DWG EZ-80-09-504-EP
MATCH LINE – FOR CONTINUATION SEE DWG EZ-80-09-510 EP
FOR EXTENSION OF ROAD SEE DWG. EZ-02-109-EP
℄ OF PIPE SLEEPERS
CBZ-2 – 3480N 782W TOPEL 242.50
CBZ-1 – 3480N 380W · TOPEL 238.50
CBZ-3 3480N 931.5W TOPEL 240.50
CBZ-19 – 3073N 935W TOP 251.67
CBZ-20 – 3073N 632W · TOP 252.25
CBZ-21 – 2980N 632W TOP 253.0
CLEAN OUT 3480N
TU-101
TU-102
TX-101
TX-102
TV-101
TV-102
TT-103 ALKYLATE
TT-102 ALKYLATE
TT-101 ALKYLATE
TC-102 BOTTOM OF TANK 245.00
TC-101 GASO 25,000 BOTTOM OF TANK 244.00
TC-104 BOTTOM OF TANK 250.5
TC-103 BOTTOM OF TANK 251.00
DRAINAGE DITCH
℄ PIPE SLEEPERS
3550N
3500N
3400N
3300N
3200N
3100N
3000N
1100W
1000W
931.5W
900W
800W
700W
600W
400W
300W

EZ-03-119 EP CATCH BASIN & MANHOLE DETAILS
EZ-80-09-501EP KEY PLAN
EZ-09-165EP DETAILS SEE DETAIL "D" – TANK SHELL ASSEMBLY
EZ-02-109EP SITE GRADING PLAN
DWG NO. REFERENCE DRAWING

NO.	BY	DATE	REVISIONS
5	P.H.L.	4-19-60	CHG'D. TOP EL. OF CBZ-19 FROM 250.0' TO 251.67'
4	J.G.	7/22/57	CHANGED ROAD ℄s TO AGREE W/ CIVIL DWG'S
3	RHB	6-10-57	MOVED CBZ-3 & OILY DRAIN – WAS W-935 – PER FIELD REQUEST
	RWA	5-13-57	CORRECT INVS. OILY DRAINS.
2	JH	3-15-57	ADDED DRAIN FROM COOLING TOWER
1	JH	3-12-57	REVISED COORD CBZ-3
0	JH	3-6-57	ISSUED FOR CONSTR.

APPROVED FOR CONSTRUCTION
SIGNED BY: W.D. Dyer — DATE 3-6-57
[signature] — 3-6-57

THIS PRINT IS THE PROPERTY OF
SOUTHWESTERN ENGINEERING COMPANY
4800 SANTA FE AVE., LOS ANGELES, CALIF.
AND IS SUBJECT TO RETURN ON DEMAND. IT IS ISSUED ON EXPRESS CONDITION THAT IT IS NOT TO BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTERESTS OF THIS COMPANY

DRAINAGE & SEWERAGE
2950N TO 3550N
300W TO 1100W

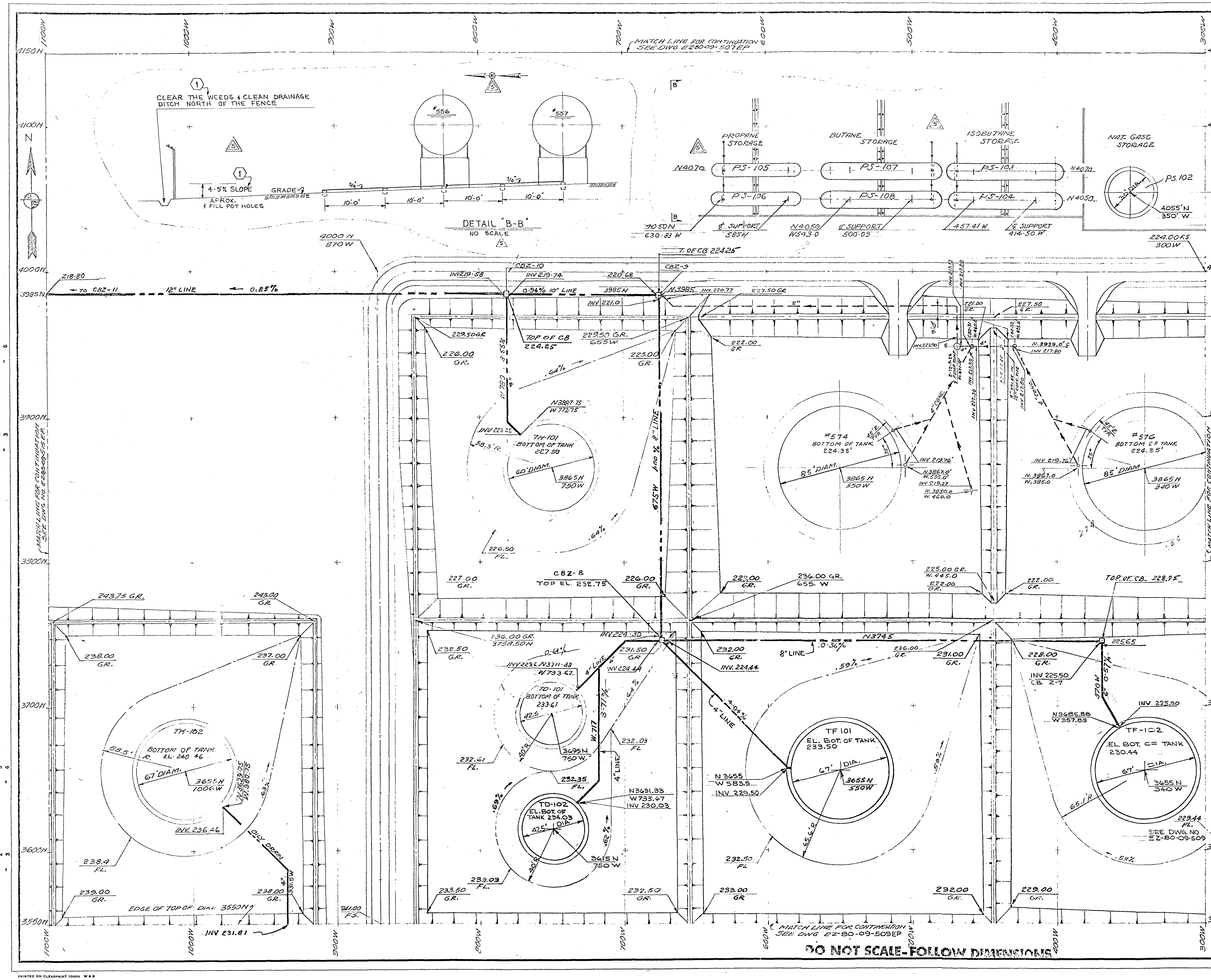
EL PASO NATURAL GAS PRODUCTS COMPANY
CINIZA REFINERY
GALLUP NEW MEXICO

SCALE 1/30" = 1'–0"		DATE
DRAWN BY	RWA	2-27-57
CHECKED BY	JH	3-6-57
APPROVED BY	JH	3-6-57
JOB ENG'R.	E. Lowe	3-6-57

EZ-80-09-509-EP REV. 5

DRAWING SIZE

PRINTED ON CLEARPRINT 1000H W & B



DO NOT SCALE-FOLLOW DIMENSIONS

NOTES

5 (1) MAINT. EXPENSE-20

EZ-03-119 CATCHBASIN & MANHOLE DETAILS
EZ-80-09-501EP KEY PLAN
EZ-C2-103EP SITEGRADING PLAN
DWG NO. REFERENCE DRAWINGS

APPROVED FOR CONSTRUCTION
SIGNED BY E. Lane — DATE 3-13-57
F. B. Dyer — 3-13-57

NO.	BY	DATE	REVISIONS
5	EFS	2-16-69	WATER DRAWS & DRAINAGE (WO 69560-11-20)
4	JFJ	-24-69	AS BUILT (WO 68511)
3	JFJ	6-19-68	ADDED TANKS #574 & 576-CBZ-31 & 32 (WO68511)
2	RWB	6-10-57	MOVED OILY DRAIN-WAS W=935-PER FIELD REQ.
1	RWA	4-3-57	ADDITIONAL STORAGE TANKS-CHD COOK
0	H	3/12/57	ISSUED FOR CONSTR.

THIS PRINT IS THE PROPERTY OF
SOUTHWESTERN ENGINEERING COMPANY
4800 SANTA FE AVE., LOS ANGELES, CALIF.
AND IS SUBJECT TO RETURN ON DEMAND. IT IS ISSUED ON EXPRESS CONDITION THAT IT IS NOT TO BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTERESTS OF THIS COMPANY

DRAINAGE & SEWERAGE PLAN
3550N TO 4150N
300W TO 1100W

		DATE
SCALE	1/30" = 1'-0"	
DRAWN BY	FRED W.	12-12-56
CHECKED BY	RWA	3-11-56
APPROVED BY		3-12-57
JOB ENG'R.	E. Lane	3-13-57

EL PASO NATURAL GAS PRODUCTS COMPANY
CINIZA REFINERY
GALLUP NEW MEXICO

EZ-80-09-508EP REV. 5

DRAWING SIZE

DET.
CHK.

ISSUED REV. 1 2 3
REV. 4 5 6

PRINTED ON CLEARPRINT 1000H W&S

M.F. 57