

1. Report No. TX-97/2908-3F	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle RESULTS OF THE THIRTY-SIX MONTH EVALUATION OF THE TEXAS SUPPLEMENTAL MAINTENANCE EFFECTIVENESS RESEARCH PROGRAM (SMERP) SITES		5. Report Date September 1996	
		6. Performing Organization Code	
7. Author(s) Thomas J. Freeman, P.E.		8. Performing Organization Report No. Research Report 2908-3F	
9. Performing Organization Name and Address Texas Transportation Institute The Texas A&M University System College Station, Texas 77843-3135		10. Work Unit No. (TRAIS)	
		11. Contract or Grant No. Study No. 7-2908	
12. Sponsoring Agency Name and Address Texas Department of Transportation Research and Technology Transfer Office P. O. Box 5080 Austin, Texas 78763-5080		13. Type of Report and Period Covered Final: April 1996 to August 1996	
		14. Sponsoring Agency Code	
15. Supplementary Notes Research performed in cooperation with the Texas Department of Transportation and continued as Interagency Agreement 7-0645. Research Study Title: Re-Inspection of the SMERP Sites			
16. Abstract The SMERP (Supplemental Maintenance Effectiveness Research Program) study was designed to study the types of maintenance treatments typically used in Texas. Six maintenance treatments and a control section were applied at twenty test locations throughout the state. Treatments included: asphalt rubber chip seal, polymer-modified emulsion chip seal, latex-modified asphalt chip seal, asphalt chip seal, and a micro-surfacing treatment. Researchers re-inspected the sites approximately thirty-six months after construction. The data was entered into ASCII files and is in the same format as the output from the SHRP NIMS (National Information Management System) data base. This report presents the preliminary analysis of the change in levels of distress.			
17. Key Words Maintenance Effectiveness, Chip Seal, AC, Asphalt Rubber, Latex, CRS-2P, Emulsion, Slurry, Micro-Surfacing, SMERP		18. Distribution Statement No restrictions. This document is available to the public through NTIS: National Technical Information Service 5285 Port Royal Road Springfield, Virginia 22161	
19. Security Classif.(of this report) Unclassified	20. Security Classif.(of this page) Unclassified	21. No. of Pages 132	22. Price

RESULTS OF THE THIRTY-SIX MONTH EVALUATION OF THE
TEXAS SUPPLEMENTAL MAINTENANCE EFFECTIVENESS RESEARCH
PROGRAM (SMERP) SITES

by

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Research Report 2908-3F
Research Study Number 7-02908
Interagency Agreement 7-0645
Research Study Title: Re-Inspection of the SMERP Sites

Sponsored by the
Texas Department of Transportation

September 1996

TEXAS TRANSPORTATION INSTITUTE
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IMPLEMENTATION STATEMENT

This report describes the continued data collection for the Supplemental Maintenance Effectiveness Research Program (SMERP) test sections constructed by Keystone Services, Inc., of Bixby, Oklahoma, with International Surfacing, Inc., as a subcontractor, for the Texas Department of Transportation. The data collected and described herein can be used to document the performance of these maintenance treatments and to determine whether the maintenance treatments described in this study are performing as expected. The results of this and continued studies of the SMERP treatments could provide data for the Texas pavement management system.

DISCLAIMER

The contents of this report reflect the views of the author who is responsible for the opinions, findings, and conclusions presented herein. The contents do not necessarily reflect the official views or policies of the Texas Department of Transportation (TxDOT). This report does not constitute a standard, specification, or regulation. Additionally, this report is not intended for construction, bidding, or permit purposes. Thomas J. Freeman was the Principal Investigator for the project.

ACKNOWLEDGMENT

Special thanks are given to Elias Rmeili, Larry Buttler, James Brown, and James Sassin of TxDOT for their assistance in the development and construction of the SMERP experiment.

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SUMMARY

In 1990, the administration of the Texas Department of Transportation decided to develop and construct test sites of various preventive maintenance treatments currently used in Texas. The primary objectives for the research are to establish the cost effectiveness of typical and promising maintenance treatments used in Texas to prolong the life of asphalt pavements, to determine the optimum time and preventive maintenance strategies to prolong pavement life, and to demonstrate positive rates of return on preventive maintenance funds.

1. Twelve districts participated in the study. The districts were: Paris (PAR), Amarillo (AMA), Odessa (ODA), Abilene (ABL), Waco (WAC), Tyler (TYL), Yoakum (YKM), San Antonio (SAT), Bryan (BRY), Atlanta (ATL), Beaumont (BMT), and Brownwood (BWD).
2. Twenty sites were constructed. Each site included a total of seven 213.4 m sections. The sections were Micro-surfacing, Fog Seal, a Control section, and four seal coat types: Asphalt Rubber, Latex-modified, Polymer-modified, and Conventional. Two sites did not have a Fog Seal or a Control section.
3. The contractor was Keystone Services, Inc., with International Surfacing, Inc., as a subcontractor. State forces constructed the fog seal sections. Overall, the project was completed with a TxDOT rating of "Good."
4. Construction of the test sections began April 5, 1993, and was completed July 14, 1993.
5. The sections were inspected approximately six, twelve, twenty-four, and thirty-six months after construction. In order to accomplish the objectives, the sites will be re-inspected once a year until failure of each of the treatments at a site.

Researchers collected considerable construction data in order to determine the quality of treatment. The data collected can be used by districts in Texas to decide if they should be collecting any additional data and by researchers studying the effectiveness of the SMERP treatments. Research report TX-93/1981-1F, "Development and Construction of the Texas Supplemental Maintenance Effectiveness Research Program (SMERP) Experiment," contains additional details on the construction sequence, data collection during construction, materials used, and other information pertinent to the construction of the test sites.

To date, two sites (48Q19, Site 17 in Panola county west of Carthage and 48H08, Site 8,

north of Snyder) have failed and been taken out of service; the entire roadway sections were to be rehabilitated due to structural failure for site 17 and due to flushing for site 8. The Fog Seal section and Control section at one other site (48G08, Site 7 in Taylor County southeast of Abilene, SH 36, Abilene District) have been lost because maintenance forces placed a chip seal on top of these sections. A contributing factor may have been that this site did not have the test section signs installed. At Site 1 (48A01 in Grayson County, southeast of Sherman, SH 11, Paris District) the Control section has been switched with the Fog Seal and the Fog Seal section has been included in the rehabilitation of the road to the east.

With only four post-construction inspections (six, twelve, twenty-four, and thirty six months), it is too early to establish the performance of the treatments. The phenomena of development or initiation of distress will need to be separated from those sections where the quantity of an existing distress is increasing. Another complicating factor is that the six month inspection was done during the cold season. The purpose of performing this early distress survey was to gather data in case of an early failure of a treatment and to establish a baseline performance for the treatments. However, the SHRP SPS-3 analysis indicated that there may be a seasonal factor in the results of distress surveys. If more distress surveys could be performed during various seasons, researchers could determine the effects of seasonal factors.

With the preceding cautions, it appears, in general, that as of approximately thirty-six months after construction, the treatments (except for the Fog and Control sections) have had a positive impact on reducing the occurrence of distresses, except for bleeding (flushing). Table 1 lists the trends for each distress type and treatment. It must be noted that this information is **very preliminary** and future analysis may contradict these trends.

Table 1. Preliminary Analysis of SMERP Sites

Age at Inspection Treatment	Alligator Cracking				Bleeding				(*) Block Cracking				Long and Trans Cracking				Long WP Cracking				(*) Ravelling			
	6	12	24	36	6	12	24	36	6	12	24	36	6	12	24	36	6	12	24	36	6	12	24	36
Rubber	R	R	R	R	I	I	I	I	R	R	R	R	R	R	R	R	R	R	R	R	i	i	I	i
Micro	R	R	r	r	R	r	r	r	R	R	R	R	R	r	i	i	r	i	i	i	R	R	R	R
Emulsion	R	R	R	R	R	r	i	I	R	R	R	R	R	R	R	R	R	R	R	R	i	r	I	i
Latex	R	R	R	R	R	i	I	I	R	R	R	R	R	R	R	R	R	R	R	R	r	r	I	i
AC	R	R	R	R	r	i	I	I	R	R	R	R	R	R	R	R	R	R	R	R	r	r	i	i
Fog	i	R	R	R	r	i	I	I	r	I	I	I	r	r	i	r	i	r	r	r	r	I	I	i
Control	I	r	r	R	r	I	I	i	r	I	I	I	R	R	r	r	i	i	i	r	I	I	I	I

R - Significant reduction r - Minor reduction I - Significant increase i - Minor increase
 (*) - Few sites affected, trends questionable.

CHAPTER 1. BACKGROUND AND OBJECTIVES

BACKGROUND

Now that most of the new road construction in the United States is complete, the major emphasis has switched to maintaining those roads. In an effort to improve the information available on the performance of maintenance treatments, the Strategic Highway Research Program (SHRP) implemented research on the effectiveness of maintenance treatments. SHRP is gathering field performance data from pavement test sections spread over the various climatic regions of the United States. However, the SHRP data is not applicable to all pavement preventive maintenance treatments currently used in Texas.

The SHRP (Strategic Highway Research Program) H-101 Maintenance Effectiveness program studied the effects of selected preventive maintenance treatments (1). Texas is in the SHRP Southern region. The SHRP Southern region has test sites throughout Texas, as far north as Tennessee, and as far east as Florida. The SHRP research required that the contractor use the same asphalt and aggregate at each site constructed within the specific SHRP region. In addition, the SHRP research studied the following maintenance treatments only: emulsified asphalt chip seal, crack seal, slurry seal, and a thin overlay. When SHRP personnel were looking for SHRP sites on which to build the Asphalt Maintenance Cost Effectiveness Study, Specific Pavement Study-3 (SPS-3), they offered to State Highway Agencies the option to build supplemental test sections adjoining the SPS-3 sections under the agreement that SHRP would monitor all test sections constructed. Several Texas districts expressed interest in the SHRP offer. However, a combination of limited funding in the individual district's maintenance allocation and lack of consensus on which treatments to place resulted in a decision by the administration to adjust the state's overall preventive maintenance program and develop a comprehensive preventive maintenance experiment.

The Texas Department of Transportation (TxDOT) spends approximately \$450 million per year on its overall maintenance program and approximately \$150 million per year on the Preventive Maintenance Program. The Texas Department of Transportation introduced the Texas Preventive Maintenance Research Program at the annual District SHRP Coordinators meeting in October 1990. The name of this program was later changed to SMERP (Supplemental Maintenance Effectiveness Research Program). One million dollars was allocated to the experiment to build test sections of

preventive maintenance treatments of interest to Texas but not considered in the SHRP national experiment.

The SMERP study was designed to study more closely the types of maintenance treatments typically used in Texas, and it allowed the contractor to use local materials if desired. The treatments constructed in the SMERP study were Asphalt Rubber chip seal, Polymer-modified emulsion chip seal, Latex-modified asphalt chip seal, Conventional asphalt chip seal, and a Micro-surfacing treatment. All treatments were placed on test sections that were 213.4 m long. Both lanes were treated and the shoulders were also treated, where they existed. Shoulders were not treated under the SHRP SPS-3 study. State forces treated the fog seal section and a control section was established on which no treatment was placed. In general, the SMERP contractor did not use local materials at each site, but did use local sources of asphalt and aggregate where available.

OBJECTIVES

The goal for the SMERP experiment is to establish the cost effectiveness of typical and promising maintenance treatments used in Texas to prolong the life of asphalt pavements.

Factors which contribute to increased maintenance effectiveness and optimum pavement life-cycle cost are maintenance planning, spending, and performance monitoring. TxDOT will be able to address these factors by using the pavement management system and the data collected from the SHRP SPS-3 and SMERP studies. By combining the data and analysis of both programs, the department will be assured optimal planning strategies in selecting preventive maintenance treatments. Once again, the primary objective is to determine optimum preventive maintenance strategies that prolong pavement life and to demonstrate positive rates of return on preventive maintenance funds.

EXPERIMENT DESIGN

It was decided that the experiment design should incorporate factors considered to be key variables in the analysis and that the basic design matrix should be similar to the one developed for the SHRP study. At that point, it was decided to fill the matrix with candidate projects that fit the following criteria.

- A. Performance Regions:
West, East, South, NorthWest, and Central.
- B. Pavement Condition:
Good and Fair.
- C. Traffic:
Low and high.

After reviewing all of the sites submitted, TxDOT determined that the goal of filling all of the above criteria could not be met. However, the performance regions criteria were met. Not all of the pavement condition and traffic criteria were met, but the sites were typical candidates to receive preventive maintenance treatments. Table 2 provides the final list of sites and Figure 1 shows the geographical distribution of the sites.

The sites where the SMERP sites were to be constructed were identified by districts that offered to participate in the study. The sites were then accepted by the TxDOT Design Division. The districts marked the beginning and end of each treatment and provided signs along the roadway to indicate each of the SMERP treatments.

Table 2. Test Sites, Locations, and Section Numbers

PROJ. NO.	DIST.	ROAD	COUNTY	REF. MARKER		LOCATION		SITE DESIG.
				FROM	TO	FROM	TO	
1	PAR	SH 11	Grayson	600+0.000	600+0.800	4.5 km S. of FM 637	1.22 km S.	48A01
2	PAR	SH 19	Hopkins	246+0.000	246+0.760	Sulphur Springs City Limits	1.22 ki S.	48B01
3	AMA	US 385	Deaf Smith	116+0.000	116+1.000	FM 1412	FM 1062	48C04
4	AMA	FM 1061	Potter	102+0.000	104+0.000	1.21 km E. of FM 2381	3.2 km E.	48D04
5	ODA	FM 181	Ector	326+0.000	336+0.500	Andrews County Line	Near SH 158	48E06
6	ODA	SH 349	Martin	288+0.000	302+1.850	Near FM 87	Dawson Co.	48F06
7	ABL	SH 36	Taylor	296+7.000	302+3.000	Abilene City Limits	Callahan Co.	48G08
8	ABL	US 84	Scurry	407+1.740	404+4.000	Snyder City Limits	US 180	48H08
9	WAC	FM 933	McLennan	356+1.367	358+0.161	FM 3051	0.8 mi S.	48I09
10	TYL	SH 135	Smith	302+1.962	304+1.752	420 m NE of SH 64	1.27 km NE	48J10
11	YKM	SH 35	Calhoun	602+0.000	606+0.260	Jackson Co. Line	FM 1593	48K13
12	YKM	SH 71	Fayette	644+0.283	648+0.310	Baylor Creek	FM 955	48L13
13	SAT	SH 46	Bandera	472+0.442	468+0.042	Kendall Co. Line	SH 16	48M15
14	SAT	FM 484	Comal	462+0.041	464+0.988	FM 32	FM 306	48N15
15	BRY	US 190	Milam	628+0.685	628+1.485	3.06 km S. of US 77	1.29 km S.	48O17
16	ATL	SH 49	Titus	700+1.111	700+1.774	1.77 km W. of Morris Co.	Morris Co.	48P19
17	ATL	SH 315	Panola	738+0.709	738+1.370	2.3 km W. of SH 149	480 m W of SH 149	48Q19
18	BMT	FM 105	Jasper	424+0.000	424+1.500	US 96	2.4 km S.	48R20
19	BWD	US 67	Brown	558+0.540	558+1.470	Blanket Creek Bridge	1.6 km N.	48S23
20	BWD	US 377	McCulloch	472+1.908	474+0.836	1.6 km N. of FM 2996 S.	FM 2996	48T23

LAYOUT, MARKING, AND SIGNING TEST SECTIONS

Figure 2 shows the typical layout of test sections within each site. All sections were grouped together unless there was a change in pavement structure, traffic, or condition. The monitoring section will be 152.4 m long and only in the designated lane. Some visual distress data has been collected on all lanes.

To alert the public to the existence of a test site, a sign was installed alongside the test section 1.8 m to the right of the shoulder and 61.0 m before the first test section. This sign reads "TEST SITE NEXT 1 MILE." Signs identifying the specific treatment type were installed near the right-of-way line at the beginning of each section. Each sign listed SMERP, the test section number, and the treatment type. At the one site where these signs were not installed, the fog seal and control section were chip sealed and have been removed from the experiment.

On most sites, white, non-reflectorized traffic buttons were placed on the edge of the shoulder at the beginning of every section and at every 30.5 m. If a site did not have a shoulder, buttons were not installed.

A white paint stripe (0.076 m - 0.102 m wide) was placed at the beginning and end of each treatment across the treatment lane. A white stripe (0.076 m - 0.102 m wide) was also placed at the beginning and end of the monitoring section across the treatment lane. The stripe at the end of a treatment was used for the beginning of the next treatment if the two treatments were adjacent.

White crosses were painted at the beginning and end of the monitoring section and at every 30.5 m within the monitoring section. The station numbers (0, 1, 2, 3, 4, and 5) were painted to the right of the crosses to aid in location for distress surveys and other data collection efforts.

The section number was painted to the right of the white stripe at the beginning of the monitoring test section (the numbers and letters were about 0.127 m high). The section numbering scheme of the SMERP sections is similar to the SHRP scheme. The numbering of a site consists of four parts. The first two digits (48) represent the state code for Texas. The next character is the site number expressed alphabetically (i.e., A is site 1, B is site 2, C is site 3, etc.). The next two digits signify the number designation of the TxDOT district where the site is located. The final character is the site type. Table 3 lists the site types and their appropriate description.

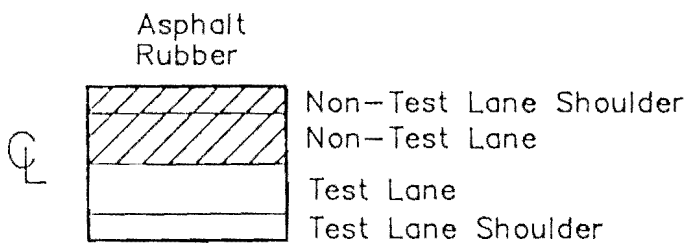
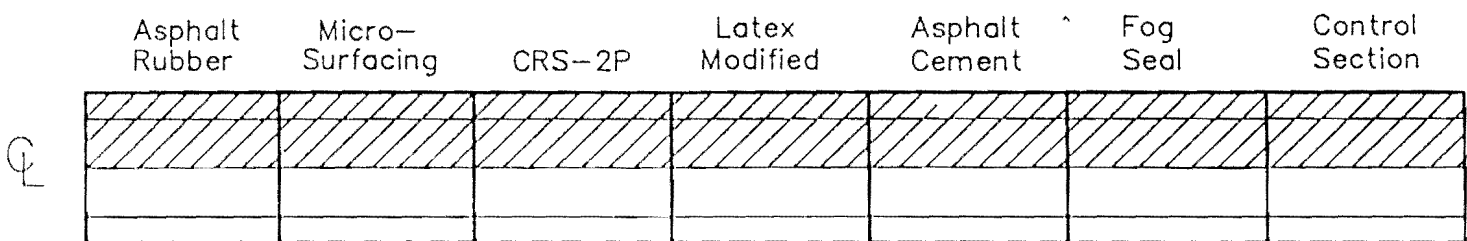


Figure 2. Typical SMERP Site Layout

Table 3. Site Numbering Description

Example: 48A01H

Abbrev.	Description	Abbrev.	Description
H -	Asphalt Rubber Test Lane	R -	Asphalt Rubber Non-Test Lane
M -	Micro-Surfacing Test Lane	I -	Micro-Surfacing Non-Test Lane
E -	CRS-2P Test Lane	U -	CRS-2P Non-Test Lane
L -	Latex Modified Test Lane	T -	Latex Modified Non-Test Lane
C -	Straight AC Test Lane	O -	Straight AC Non-Test Lane
F -	Fog Seal Test Lane	G -	Fog Seal Non-Test Lane
X -	Control Section Test Lane	N -	Control Section Non-Test Lane

PRE-CONSTRUCTION CONDITION SURVEYS

Prior to construction of the SMERP treatments, researchers conducted a manual condition survey and TxDOT personnel conducted an automated distress survey using the Automated Road Analyzer (ARAN) (video image analysis). The ARAN data has not yet been analyzed, but provides an excellent historical video log of the pavement prior to construction. In the initial survey, only the test lane was surveyed. Future manual distress surveys will be conducted on both lanes of the test sections. The manual survey was conducted in accordance with the procedures set up for a SHRP LTPP distress survey (2). In addition to measuring the number and quantity of each distress at each severity level, a crack map showing the location of each distress was also produced. Figure 3 shows an example of a completed form.

The distress data from the manual surveys were summarized and entered into a spreadsheet. The data were also placed in an ASCII file in a format that is compatible with the output from the SHRP LTPP database. Appendix A contains the results of the site inspections on a site by site basis.

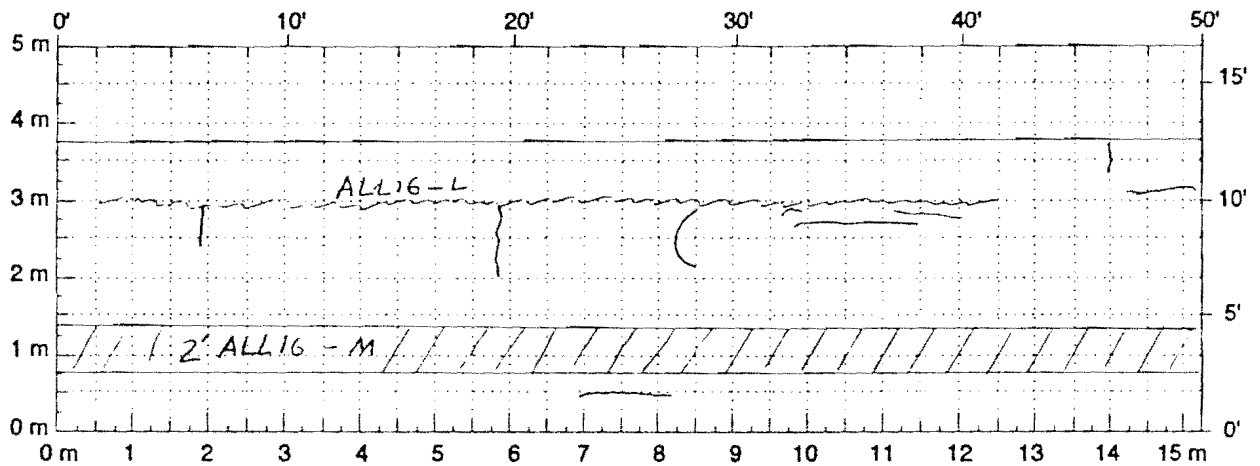
DATE 03/08/93

State Assigned ID 48017H

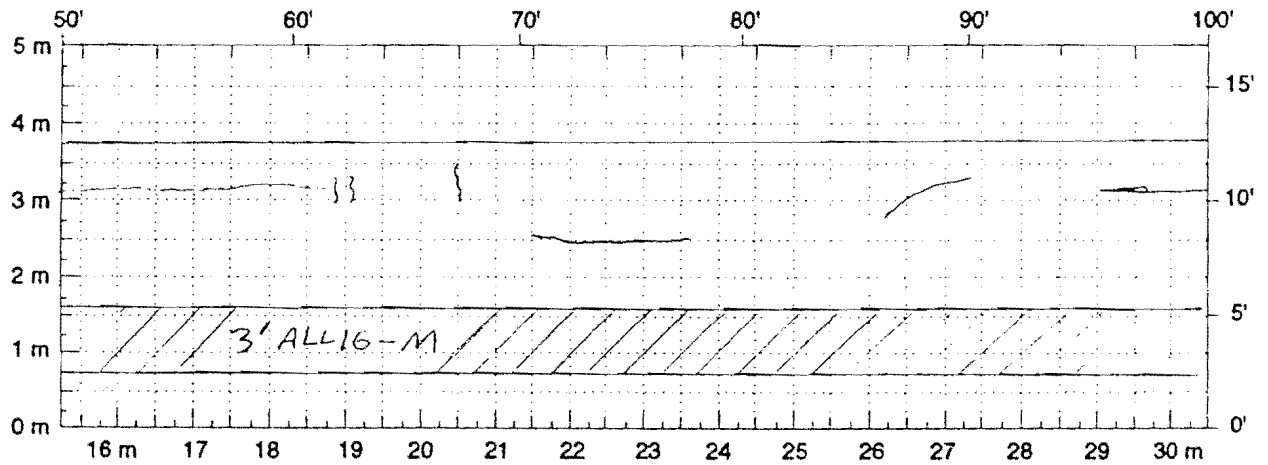
State Code

SHRP Section ID

13'



Comments:



Comments:

Figure 3. Completed SHRP LTPP Condition Survey Form

CHAPTER 2. CONSTRUCTION AND POST CONSTRUCTION DISTRESS SURVEYS

CONSTRUCTION

Twelve districts participated in the study. The districts were: Paris (PAR), Amarillo (AMA), Odessa (ODA), Abilene (ABL), Waco (WAC), Tyler (TYL), Yoakum (YKM), San Antonio (SAT), Bryan (BRY), Atlanta (ATL), Beaumont (BMT), and Brownwood (BWD). A total of twenty sites were constructed. Each site included a total of seven 213.4 m sections. The sections were micro-surfacing, fog seal, a control section, and four seal coat types: asphalt rubber, latex-modified, polymer-modified, and conventional. Two sites did not have a fog seal or a control section.

After preparation of the plans, specifications, and special provisions, bid documents were distributed to interested parties. Upon receipt and opening of the bids, Keystone Services of Bixby, Oklahoma, was selected as the prime contractor to perform the work.

Construction of the SMERP project started April 5, 1993, and was completed July 14, 1993. The contractor was Keystone Services, Inc. (KS), and the subcontractor was International Surfacing, Inc. (ISI). KS constructed the micro-surfacing section and three chip seals sections: polymer-modified, latex-modified, and conventional. ISI constructed the asphalt rubber chip seal section. Overall, the project was completed with a TxDOT rating of "Good." The fog seal sections were constructed by the local districts. No treatment was applied to the control section. This section will be used to track the "do nothing" approach.

Construction began on SH 35, Yoakum District, and began moving to the north because of rainy weather. The contractor constructed all five test sections within each site before moving to the next site. The contractor provided all materials and equipment to construct all sections and provided traffic control throughout construction.

Prior to beginning construction at each site, the contractor would meet with the design division personnel and the local district to review all construction details. After the meeting, the construction of the site was turned over to the local inspector and the site was constructed according to the normal construction procedures of the local district.

The contractor would always begin work on the non-test lane and shoulder. The traffic was then switched to the treated lane and the test lane and shoulder were then treated. The reason behind treating the non-test lane first was to make sure everything was working properly by the time the test section was

constructed. It usually took two days to construct the five treatments on both lanes and shoulders within a site. Usually three sections were treated the first day and the other two sections were treated the next day. Sometimes the contractor was able to construct four treatments the first day.

Table 4 lists the average target rates for the individual materials. The actual rate used for the sites in each district was provided by the local district. Target rates were modified in the field as necessary to ensure a high quality treatment.

Table 4. Target Application Rates

Treatment Type	Target Rate
Asphalt Rubber	1.8 - 2.7 l/m ²
Polymer Modified Emulsion	1.4 - 1.8 l/m ²
Asphalt Cement With Latex	1.4 - 1.8 l/m ²
Straight Asphalt Cement	1.4 - 1.8 l/m ²
Combined Micro-Surfacing	13.6 Kg/m ²
Lightweight Grade 4	6.5 Kg/m ²
Precoat Grade 4	11.4 - 12.5 Kg/m ²
Precoat Grade 3	12.5 - 16.3 Kg/m ²

After completing the Asphalt Rubber chip seal test section, construction of the chip seal with viscosity graded asphalt cement binder (Asphalt Cement) was begun. The previously described sequence of operations was followed for the Asphalt Cement chip seal section. The next treatment completed was the chip seal with polymer-modified cationic rapid set emulsified asphalt cement (CRS-2P) chip seal test section. After both sides of the CRS-2P emulsified asphalt chip seal were constructed, operations were usually halted until the next day. Prior to leaving the site, all chip seal sections except for the CRS-2P emulsified asphalt chip seal section were swept to remove loose rock. The emulsion test section was usually swept the next day.

Operation the next day typically began with the above construction sequence being performed on the chip seal with the Latex-Modified asphalt cement binder (Latex-Modified test section). After completing the Latex Modified chip seal test section, construction of the Micro-Surfacing test section was begun.

POST-CONSTRUCTION CONDITION SURVEYS

Researchers have now performed four post-construction distress. These were conducted manually in accordance with the procedures set up for a SHRP LTPP distress survey (2). In addition to measuring the number and quantity of each distress at each severity level, researchers also prepare a crack map showing the location of each distress. Figure 3 shows an example of a completed distress survey form. The surveys were conducted approximately six, twelve, twenty-four, and thirty-six months after construction. In addition to the distress surveys, researchers produced a video tape recording of the condition of each site during the twelve month survey by either walking through the section or by video taping from a car being driven down the lane or shoulder on higher traffic or reduced visibility sites.

The distress data from the manual surveys were summarized and entered into a spreadsheet. The data were also placed in an ASCII file in a format that is compatible with the output from the SHRP LTPP database. Appendix A includes the summarized distress data from the manual inspections. The data is arranged by site and includes all inspections, including the construction inspection where all distresses for all treatments were set to zero except for the Fog Seal and Control section.

OUTPUT FILE FORMATS

The data collected were entered into an Excel[®] spreadsheet for the purpose of properly formatting the data. The data is contained in ASCII files formatted into the SHRP LTPP SPS-3 compatible format. Data could not be entered directly into the SHRP LTPP data base because neither TTI nor TxDOT has access to the SHRP LTPP data base. Therefore, the format used to output data from the SHRP National Information Management System (NIMS) into ASCII files was selected (2). The data can then be easily combined with the SPS-3 data for analysis.

The data files follow the data sheets quite closely and since the data sheets include a longer description of the data item, it is advisable to have both the data sheets and this file format available during analysis.

CHAPTER 3. RESULTS AND FUTURE WORK

PRELIMINARY RESULTS

Although it is too early to determine the effectiveness of each of the treatments, the general trends of the data and an analysis of the construction process can be accomplished. Some early results regarding the application process were shown in research report TX-93/1981-1F, "Development and Construction of the Texas Supplemental Maintenance Effectiveness Research Program (SMERP) Experiment" (4). Actual application rates were shown and compared to the target rates for the treatments. In general, with the exception of the Asphalt Rubber test sections, the percent difference between proposed application and actual application rates were quite small. The previous report discussed possible complications in the application of the asphalt rubber.

With only four post-construction inspections (six, twelve, twenty-four, and thirty-six months), it is too early to establish the performance of the treatments. The phenomena of development or initiation of distress will need to be separated from those sections where the quantity of an existing distress is increasing. Another complicating factor is that the six month inspection was conducted during the cold season. The purpose of performing this early distress survey was to gather data in case of an early failure of a treatment and to establish a baseline performance for the treatments. However, a lesson learned during the SHRP SPS-3 analysis is that there may be a seasonal factor to the results of distress surveys. If more distress surveys could be performed during various seasons, researchers could determine the effect of seasonal factors.

With the preceding cautions, it generally appears that as of approximately thirty-six months after construction, the treatments (except for the Fog and Control sections) have had a positive impact on reducing the occurrence of distresses, except for bleeding (flushing). Table 5 lists the trends of each treatment for various distress types. Figures 4 - 18 illustrate the effects of the treatments on alligator cracking, longitudinal cracking in the wheelpaths, and other Transverse and Non Wheelpath Longitudinal Cracking (Figures 4 - 10), block cracking and reavelling/weathering (Figures 11-17), and bleeding (Figure 18).

It must be noted that the information presented here is very preliminary, and future analysis may contradict these trends. No attempt has been made to include the severity of the distress in the

yet quite enough data to support this type of analysis.

The distresses from the SHRP distress manual have been combined to produce the following six distress types: alligator (or fatigue) cracking, bleeding (or flushing), block cracking, longitudinal and transverse cracking (many SHRP distresses combined), longitudinal cracking in the wheelpaths, and ravelling. Other distresses did not occur often enough to warrant inclusion. These other distresses included edge cracking, patching, reflection cracking, shoving, potholes, polished aggregate, lane-to-shoulder- dropoff, and water bleeding and pumping. Rutting is included in another file and is not expected to have a short-term impact.

SITE PROBLEMS

To date, two sites (48Q19, Site 17 in Panola county west of Carthage and 48H08, Site 8, north of Snyder) have failed and been taken out of service; the entire roadway sections were to be rehabilitated due to structural failure for site 17 and due to flushing for site 8. The Fog Seal section and Control section at one other site (48G08, Site 7 in Taylor County southeast of Abilene, SH 36, Abilene District) have been lost because maintenance forces placed a chip seal on top of these sections. A contributing factor may have been that this site did not have the test section signs installed. At Site 1 (48A01 in Grayson County, southeast of Sherman, SH 11, Paris District) the Control section has been switched with the Fog Seal and the Fog Seal section has been included in the rehabilitation of the road to the east.

FUTURE WORK

Since the treatments have been constructed, the next stages will be to monitor the performance of the sections and to continue the analysis of that performance. It has been proposed that a distress survey be performed on a yearly basis. This data should be recorded in the SHRP compatible format. If possible, the frequency of inspection should be increased. The short-term nature of this maintenance research project suggests that the data should be taken as often as possible. This will allow us to determine a seasonal correction for distress and will improve the predictive nature of the experiment.

Table 5. Preliminary Analysis of SMERP Sites

Age at Inspection Treatment	Alligator Cracking				Bleeding				(*) Block Cracking				Long and Trans Cracking				Long WP Cracking				(*) Ravelling			
	6	12	24	36	6	12	24	36	6	12	24	36	6	12	24	36	6	12	24	36	6	12	24	36
Rubber	R	R	R	R	I	I	I	I	R	R	R	R	R	R	R	R	R	R	R	R	i	i	I	i
Micro	R	R	r	r	R	r	r	r	R	R	R	R	R	r	i	i	r	i	i	i	R	R	R	R
Emulsion	R	R	R	R	R	r	i	I	R	R	R	R	R	R	R	R	R	R	R	R	i	r	I	i
Latex	R	R	R	R	R	i	I	I	R	R	R	R	R	R	R	R	R	R	R	R	r	r	I	i
AC	R	R	R	R	r	i	I	I	R	R	R	R	R	R	R	R	R	R	R	R	r	r	i	i
Fog	i	R	R	R	r	i	I	I	r	I	I	I	r	r	i	r	i	r	r	r	r	I	I	i
Control	I	r	r	R	r	I	I	i	r	I	I	I	R	R	r	r	i	i	i	r	I	I	I	I

R - Significant reduction r - Minor reduction I - Significant increase i - Minor increase
 (*) - Few sites affected, trends questionable.

Additional data collection will include inspecting all of the test sections using the ARAN. Non-destructive deflection testing will be performed one year after construction, and then every two years. All of the sections will be monitored until failure.

The data analysis should begin after the next cycle of distress surveys. If these treatments behave similarly to the SHRP H-101 test sections, distress will remain relatively minimal until at least eighteen months after construction. However, due to the condition of some of the test sections prior to construction, the SMERP test sections may exhibit some early distresses including bleeding, rutting, and on one or two sections, alligator cracking. Future analysis will determine the effectiveness of each treatment based on the different conditions at each site. The analysis of cost-effectiveness should begin when adequate data is available. To date, no attempt has been made to include the severity of the distress in the analysis. While the analysis of progression of distress from low to high is very important, there is not yet enough data to support this type of analysis. However, the data will exist in the near future, and this task should be undertaken. This task will be made easier if the distress surveys are conducted twice per year.

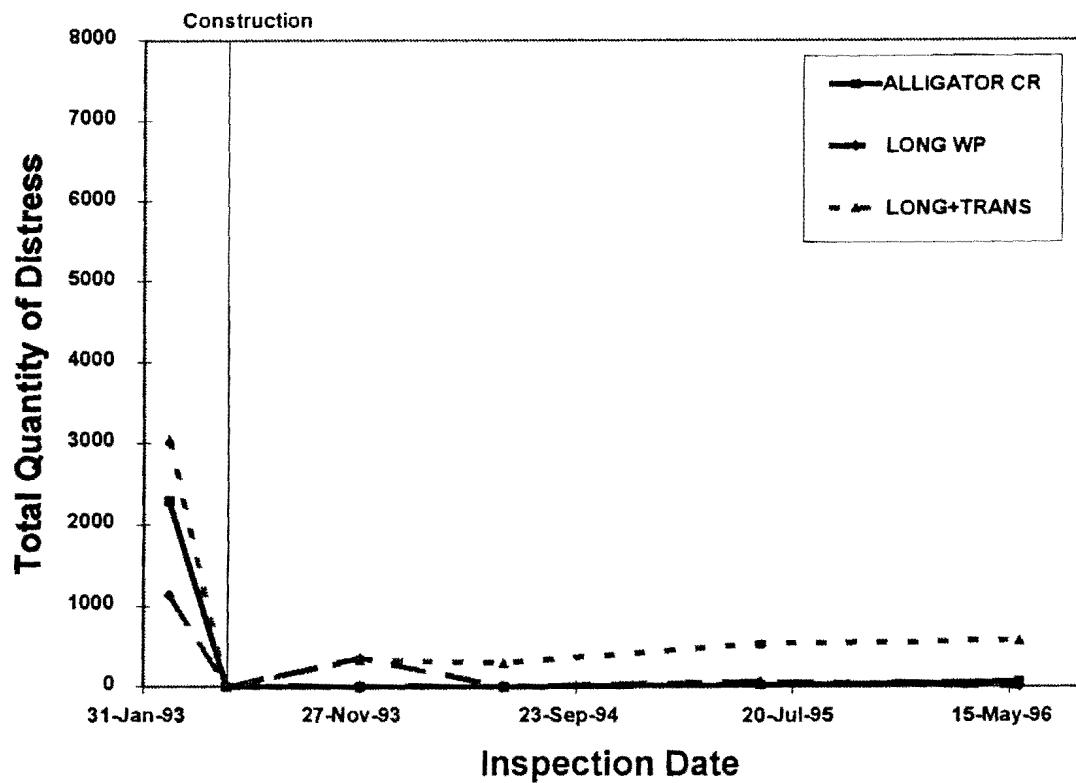


Figure 4. Effects of Rubber Chip Seal on Alligator Cracking, Longitudinal Cracking in the Wheelpaths, and Longitudinal and Transverse Cracking

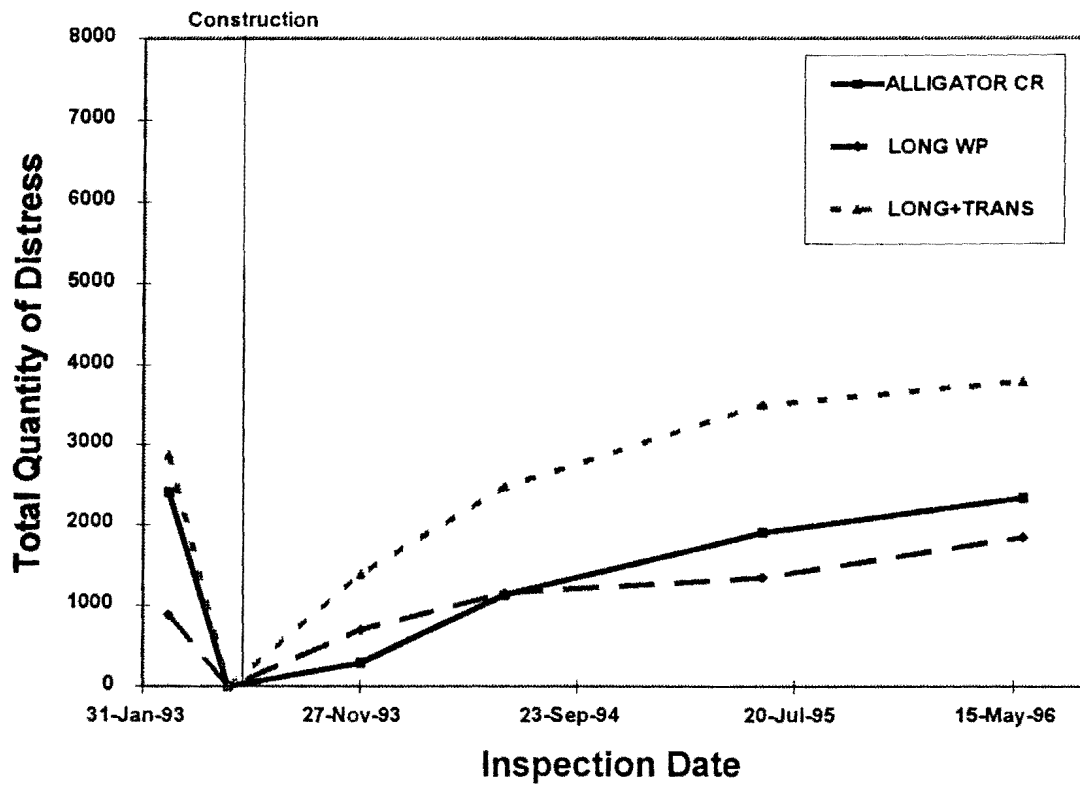


Figure 5. Effects of Microsurfacing on Alligator Cracking, Longitudinal Cracking in the Wheelpaths, and Longitudinal and Transverse Cracking

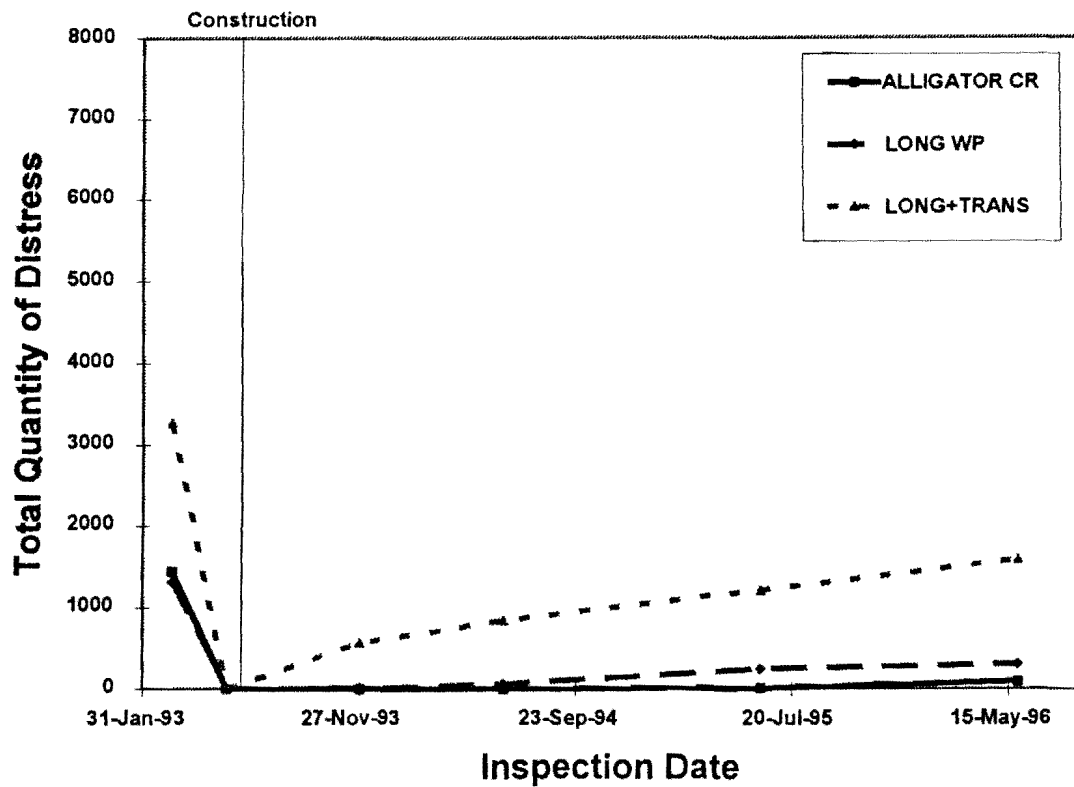


Figure 6. Effects of Emulsified Chip Seal on Alligator Cracking, Longitudinal Cracking in the Wheelpaths, and Longitudinal and Transverse Cracking

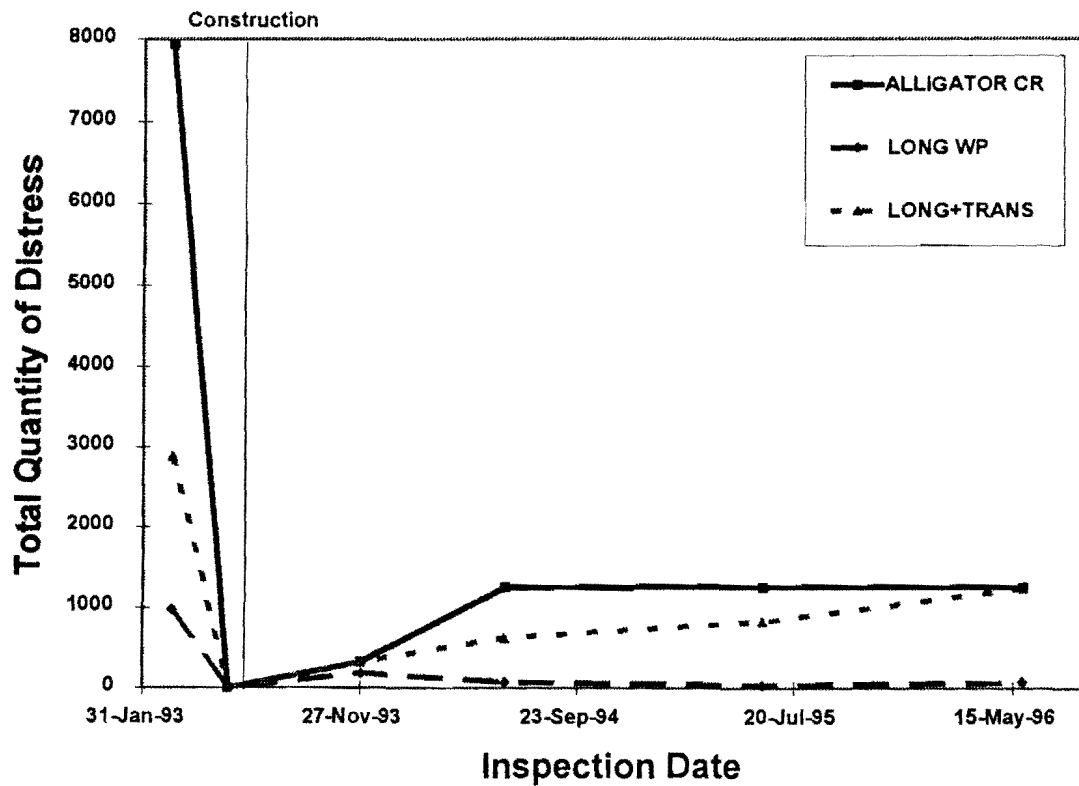


Figure 7. Effects of Latex Chip Seal on Alligator Cracking, Longitudinal Cracking in the Wheelpaths, and Longitudinal and Transverse Cracking

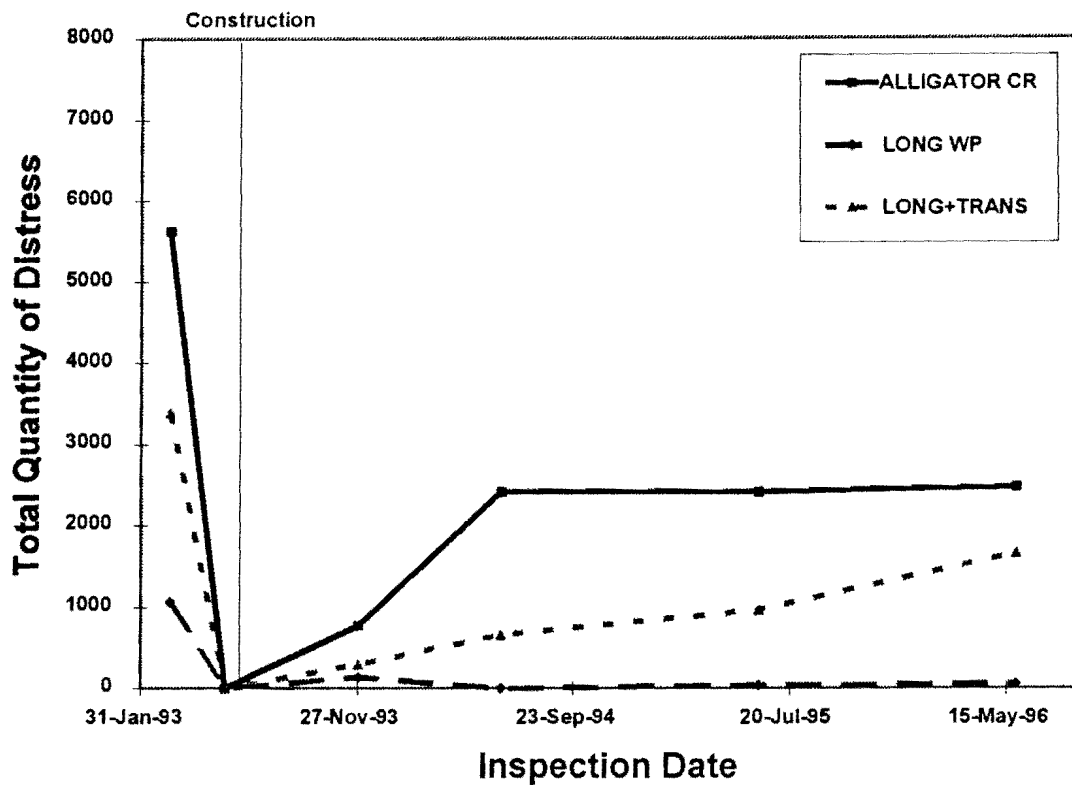


Figure 8. Effects of Conventional Chip Seal on Alligator Cracking, Longitudinal Cracking in the Wheelpaths, and Transverse and Non Wheelpath Longitudinal Cracking

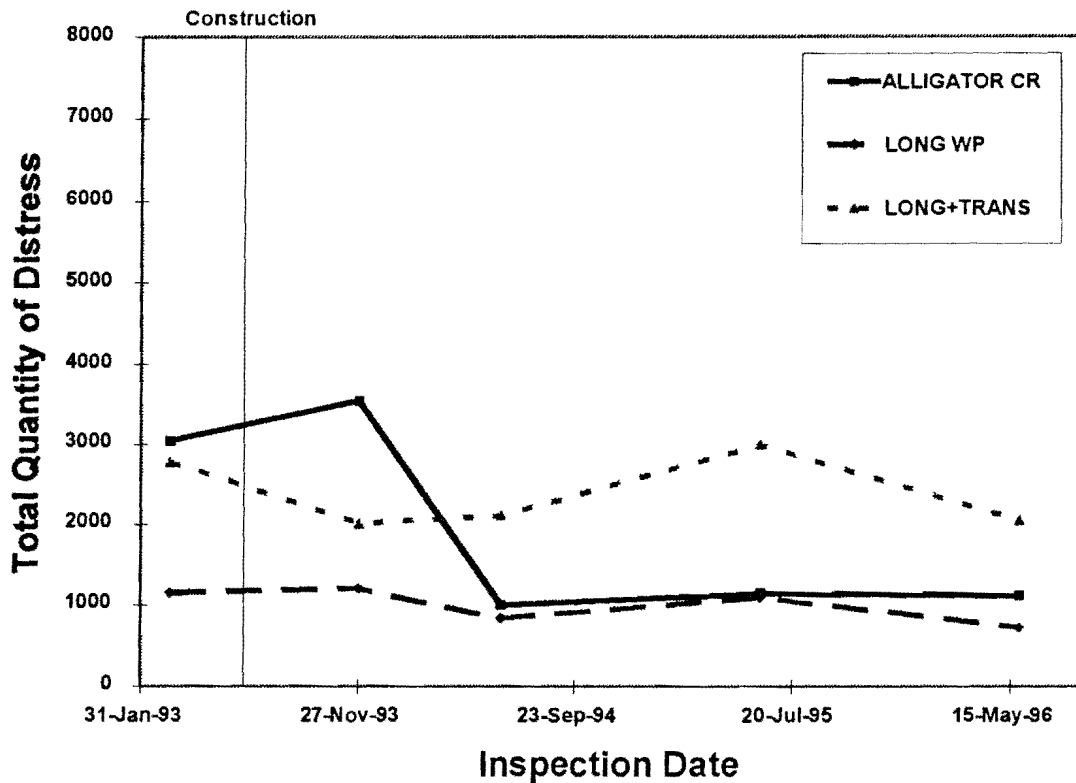


Figure 9. Effects of Fog Seal on Alligator Cracking, Longitudinal Cracking in the Wheelpaths, and Transverse and Non Wheelpath Longitudinal Cracking

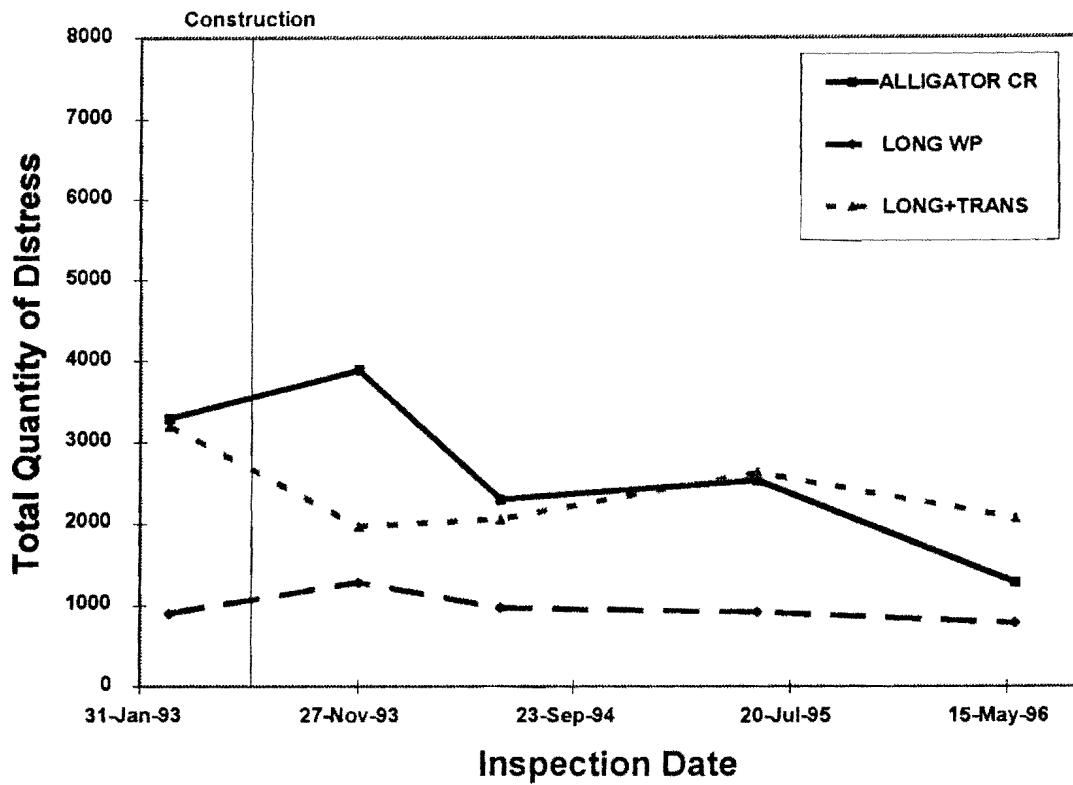


Figure 10. Effects of Control Section (Do Nothing) on Alligator Cracking, Longitudinal Cracking in the Wheelpaths, and Longitudinal and Transverse Cracking

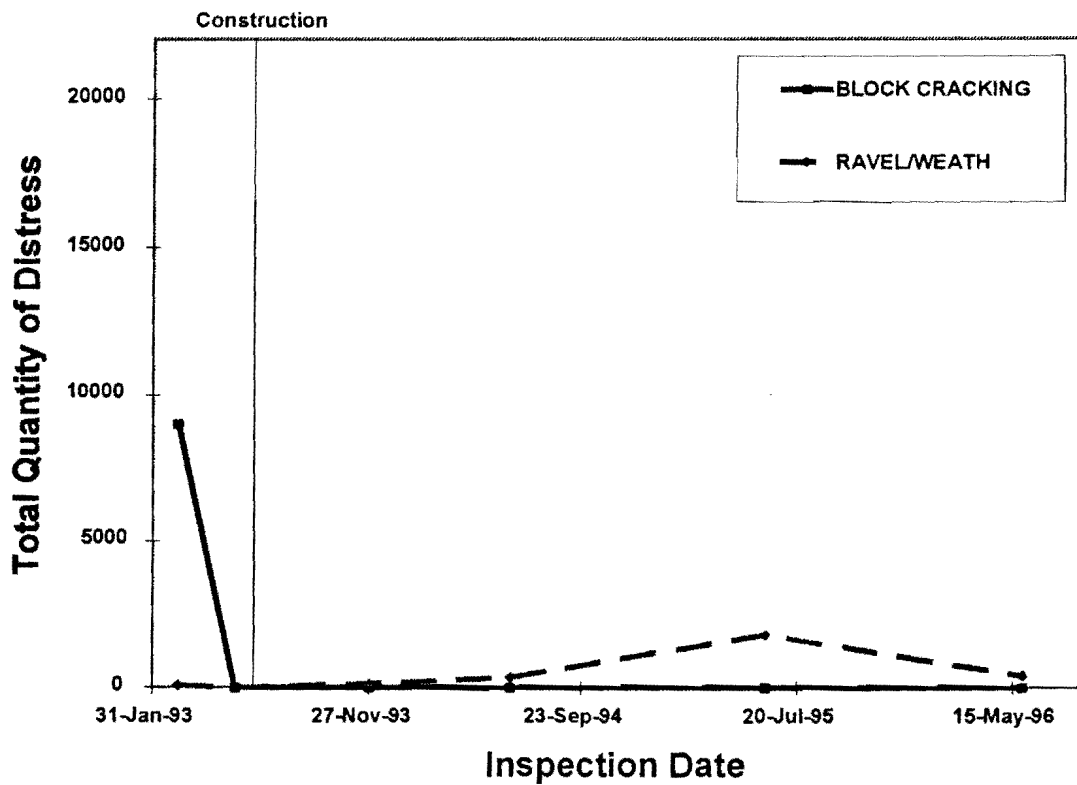


Figure 11. Effects of Rubber Chip Seal on Block Cracking, and Weathering and Ravelling

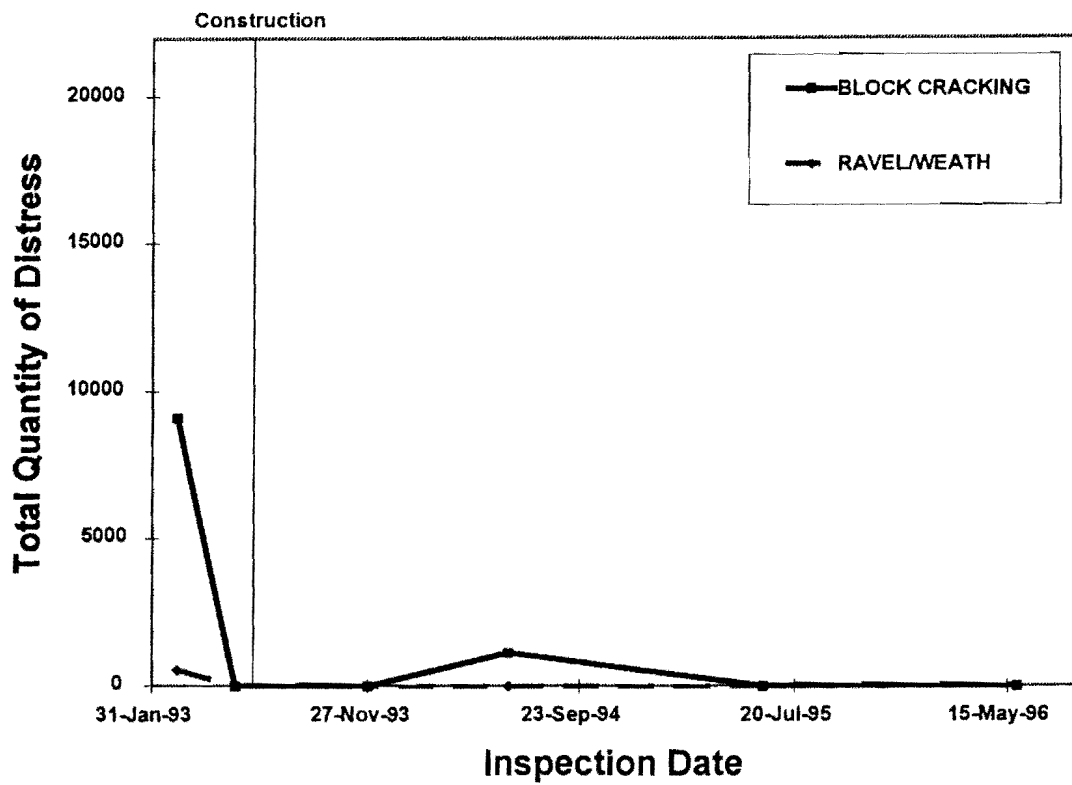


Figure 12. Effects of Microsurfacing on Block Cracking, and Weathering and Ravelling

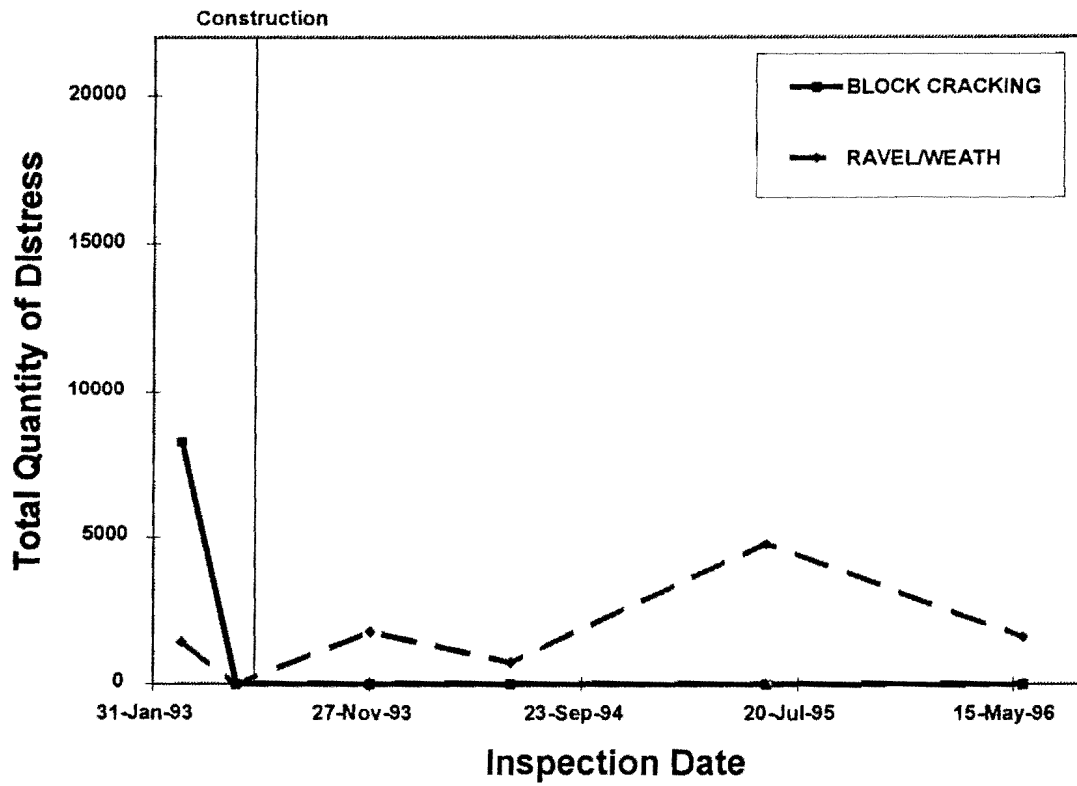


Figure 13. Effects of Emulsified Chip Seal on Block Cracking, and Weathering and Ravelling

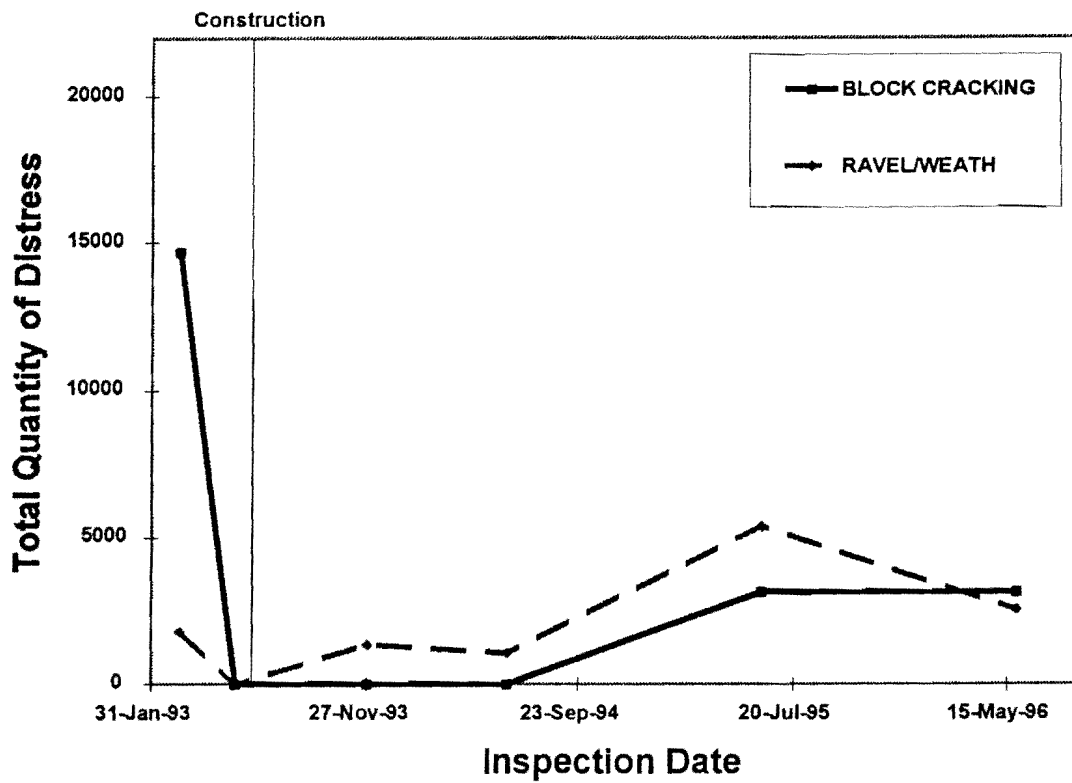


Figure 14. Effects of Latex Chip Seal on Block Cracking, and Weathering and Ravelling

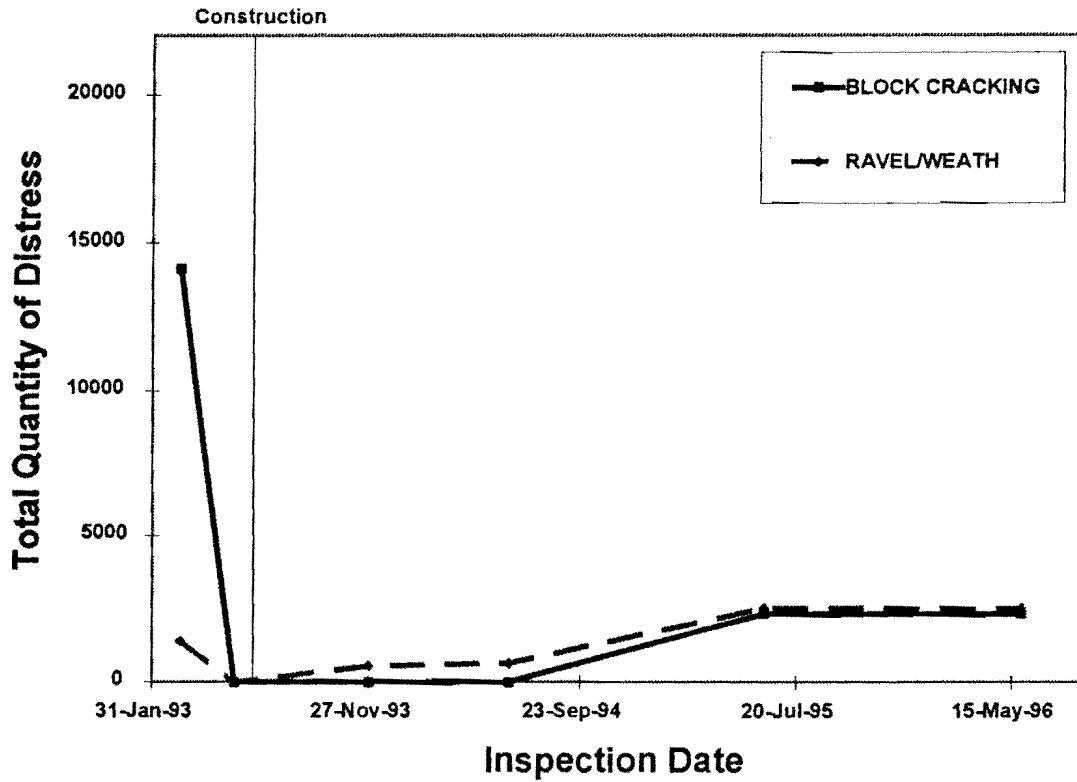


Figure 15. Effects of Conventional Chip Seal on Block Cracking, and Weathering and Ravelling

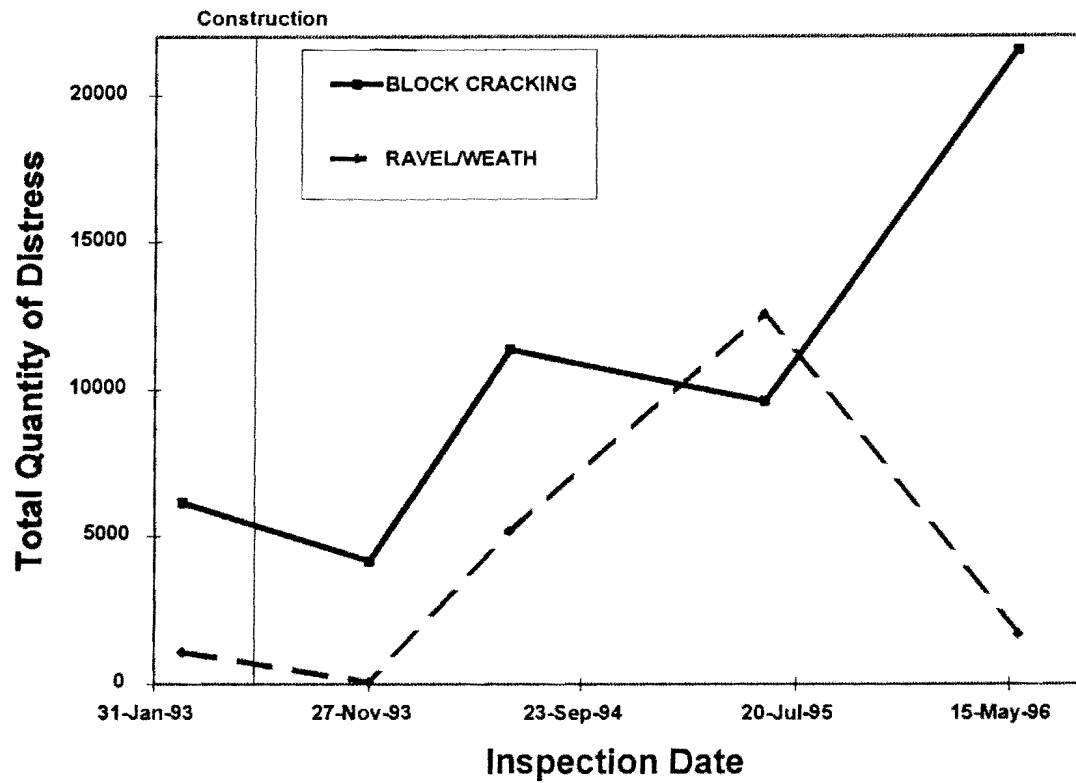


Figure 16. Effects of Fog Seal on Block Cracking, and Weathering and Ravelling

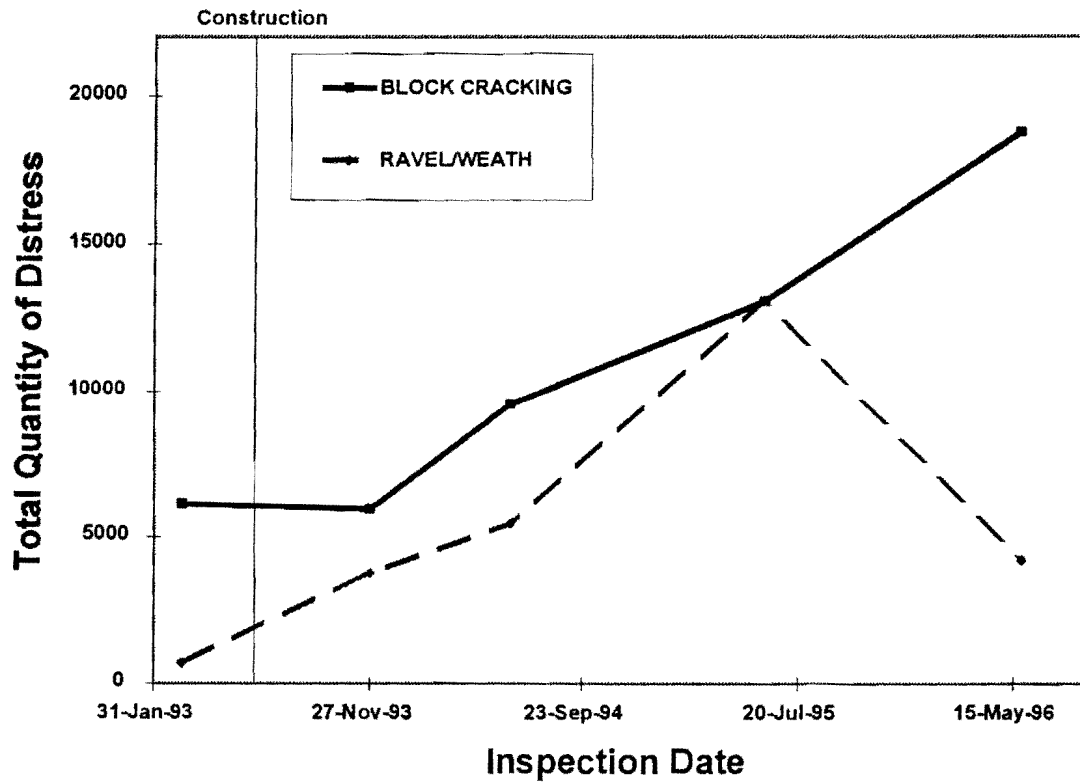


Figure 17. Effects of Control Section (Do Nothing) on Block Cracking, and Weathering and Ravelling

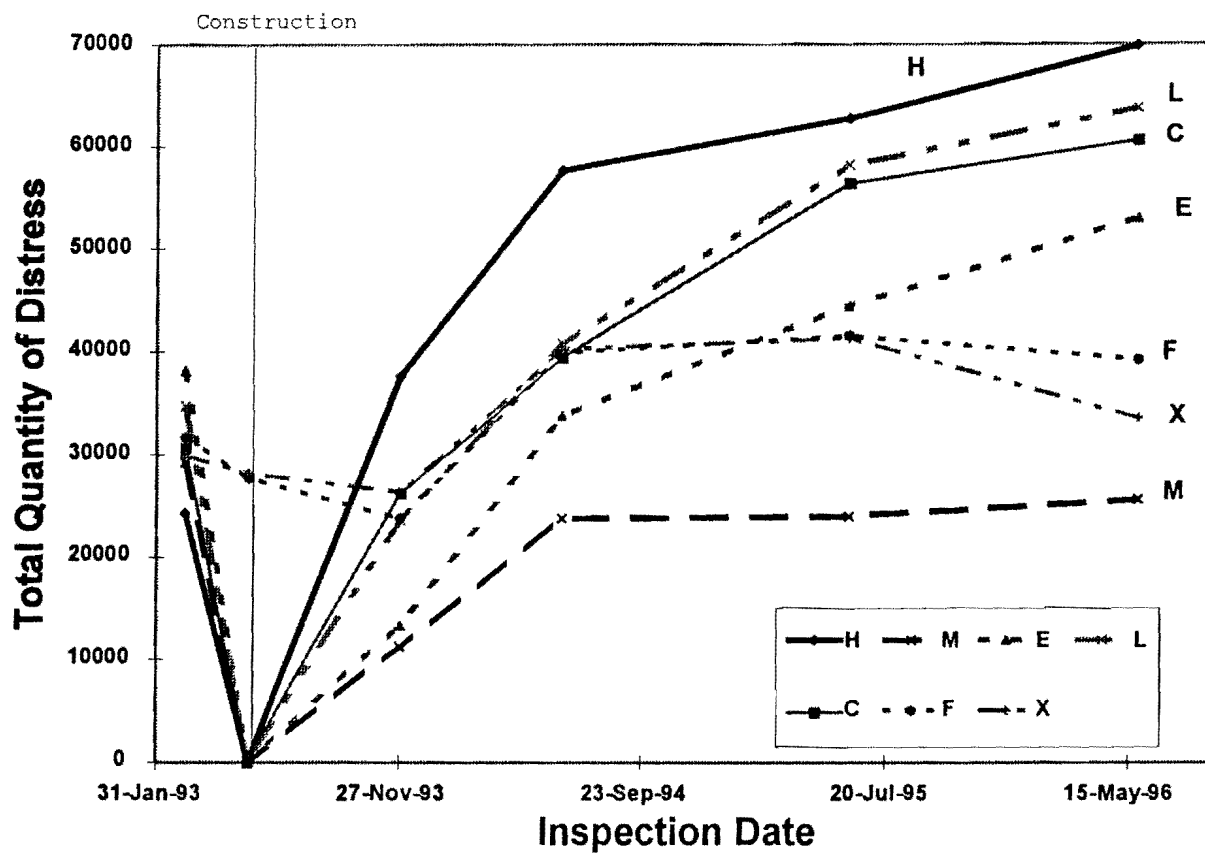


Figure 18. Effects of Treatments on Bleeding

REFERENCES

1. R. E. Smith, T. J. Freeman, and O. Pendleton, "H-101 Pavement Maintenance Effectiveness." Strategic Highway Research Program, National Research Council, 1993.
2. "Distress Identification Manual for the Long-Term Pavement Performance Project." Strategic Highway Research Program, National Research Council, SHRP-P-338, 1993.
3. "Data Base Structure Reference Manual." Strategic Highway Research Program, National Research Council, 1993.
4. T. J. Freeman, and E. Rmeili, "Development and Construction of the Texas Supplemental Maintenance Effectiveness Research Program (SMERP) Experiment." Research Report 1981-1F, TxDOT, May 1994.

APPENDIX - A

Results of Distress Data Collection

Site 1, 48A01, Paris District, SH 11, SE of Sherman

Site	No	Inspection Date	Alligator Cracking	Block Crack	Long in WP	Cr Long + Tran	Bleed	Ravel	Area	Comment
A01H	1	09-Mar-93	0	6500	0	0	3475	0	6500	Pre Construction
A01H	2	14-Jun-93	0	0	0	0	0	0	6500	Construction
A01H	3	02-Dec-93	0	0	0	11	3450	0	6500	Six Month
A01H	4	18-Jun-94	0	0	0	0	2993	0	6500	Twelve Month
A01H	5	01-May-95	0	0	0	15	3672	0.25	6500	Twenty-four Month
A01H	6	19-May-96	0	0	0	18	4001	0	6750	Thirty-six Month
A01M	1	09-Mar-93	0	5850	0	44	4145	0	6500	Pre Construction
A01M	2	15-Jun-93	0	0	0	0	0	0	6500	Construction
A01M	3	02-Dec-93	0	0	0	31	3753	0	6500	Six Month
A01M	4	18-Jun-94	0	0	0	123	4600	0	6500	Twelve Month
A01M	5	01-May-95	0	0	4	324	4174	0	6500	Twenty-four Month
A01M	6	19-May-96	0	0	0	427	4450	0	6500	Thirty-six Month
A01E	1	14-Jun-93	0	5681	2	32	5000	0	6500	Pre Construction
A01E	2	14-Jun-93	0	0	0	0	0	0	6500	Construction
A01E	3	02-Dec-93	0	0	0	5	3000	0	6500	Six Month
A01E	4	18-Jun-94	0	0	0	53	1528	0	6500	Twelve Month
A01E	5	01-May-95	0	0	89	280	1826	0	6500	Twenty-four Month
A01E	6	19-May-96	0	0	104	336	3200	0	6500	Thirty-six Month
A01L	1	14-Jun-93	0	6032	0	7	5000	0	6500	Pre Construction
A01L	2	14-Jun-93	0	0	0	0	0	0	6500	Construction
A01L	3	02-Dec-93	0	0	0	0	2250	0	6500	Six Month
A01L	4	18-Jun-94	0	0	0	0	1660	0	6500	Twelve Month
A01L	5	01-May-95	0	0	6	43	2837	0	6500	Twenty-four Month
A01L	6	19-May-96	0	0	18	34	4000	0	6500	Thirty-six Month
A01C	1	14-Jun-93	0	6500	0	0	5000	4	6500	Pre Construction
A01C	2	14-Jun-93	0	0	0	0	0	0	6500	Construction
A01C	3	02-Dec-93	0	0	0	6	2938	0	6500	Six Month
A01C	4	18-Jun-94	0	0	0	0	3000	0	6500	Twelve Month
A01C	5	01-May-95	0	0	0	0	3650	0	6500	Twenty-four Month
A01C	6	19-May-96	0	0	0	7	4250	0	6500	Thirty-six Month
A01F	1	14-Jun-93	0	2600	38	221	3500	0	6500	Pre Construction
A01F	3	02-Dec-93	0	0	0	320	5000	0	6500	Six Month
A01F	4	18-Jun-94	195	0	64	278	5000	0	6500	Twelve Month
A01F	5	Deleted								Twenty-four Month
A01F	6	Deleted								Thirty-six Month
A01X	1	14-Jun-93	0	936	0	247	6000	0	6000	Pre Construction
A01X	3	02-Dec-93	54	0	44	261	5000	0	6500	Six Month
A01X	4	18-Jun-94	0	0	51	311	5500	0	6500	Twelve Month
A01X	5	01-May-95	162	0	19	350	5518	0	6500	Twenty-four Month
A01X	6	19-May-96	128	0	35	374	4400	0	6500	Thirty-six Month

Site 2, 48B01, Paris District, SH 19, S of Sulphur Springs

<u>Site</u>	<u>No</u>	<u>Inspection Date</u>	<u>Alligator Cracking</u>	<u>Block Crack</u>	<u>Long Cr in WP</u>	<u>Long Cr + Tran</u>	<u>Bleed</u>	<u>Ravel</u>	<u>Area Comment</u>
B01H	1	10-Mar-93	0	0	0	21	1790	0	6500 Pre Construction
B01H	2	16-Jun-93	0	0	0	0	0	0	6500 Construction
B01H	3	03-Dec-93	0	0	0	0	3541	0	6750 Six Month
B01H	4	27-Jun-94	0	0	0	0	3045	0	6750 Twelve Month
B01H	5	01-Jul-95	0	0	0	0	4440	0	6750 Twenty-four Month
B01H	6	20-May-96	0	0	0	0	4000	0	6750 Thirty-six Month
B01M	1	10-Mar-93	0	0	0	0	850	0	6500 Pre Construction
B01M	2	17-Jun-93	0	0	0	0	0	0	6500 Construction
B01M	3	03-Dec-93	0	0	0	0	0	0	6500 Six Month
B01M	4	27-Jun-94	0	0	0	0	2000	0	6750 Twelve Month
B01M	5	01-Jul-95	0	0	0	0	3900	0	6750 Twenty-four Month
B01M	6	20-May-96	0	0	0	0	3100	0	7000 Thirty-six Month
B01E	1	10-Mar-93	0	0	0	0	1030	0	6500 Pre Construction
B01E	2	16-Jun-93	0	0	0	0	0	0	6500 Construction
B01E	3	03-Dec-93	0	0	0	0	1250	0	6750 Six Month
B01E	4	27-Jun-94	0	0	0	0	1636	0	7000 Twelve Month
B01E	5	01-Jul-95	0	0	0	0	3850	0	7000 Twenty-four Month
B01E	6	20-May-96	0	0	0	0	3600	0	7000 Thirty-six Month
B01L	1	10-Mar-93	0	0	0	0	2786	0	5500 Pre Construction
B01L	2	16-Jun-93	0	0	0	0	0	0	6000 Construction
B01L	3	03-Dec-93	0	0	0	0	2864	0	6500 Six Month
B01L	4	27-Jun-94	0	0	0	0	3356	0	6750 Twelve Month
B01L	5	01-Jul-95	0	0	0	0	4495	0	6750 Twenty-four Month
B01L	6	20-May-96	0	0	0	0	3842	0	6750 Thirty-six Month
B01C	1	10-Mar-93	0	0	0	0	1370	0	6500 Pre Construction
B01C	2	17-Jun-93	0	0	0	0	0	0	6750 Construction
B01C	3	03-Dec-93	0	0	0	0	2250	0	6750 Six Month
B01C	4	27-Jun-94	0	0	0	0	300	0	6750 Twelve Month
B01C	5	01-Jul-95	0	0	0	0	3000	0	6750 Twenty-four Month
B01C	6	20-May-96	0	0	0	0	2000	0	6750 Thirty-six Month
B01F	1	10-Mar-93	0	0	0	0	2747	0	6500 Pre Construction
B01F	3	03-Dec-93	0	0	0	0	2100	0	6500 Six Month
B01F	4	27-Jun-94	0	0	0	0	2705	0	6500 Twelve Month
B01F	5	01-Jul-95	0	0	0	0	2118	0	6500 Twenty-four Month
B01F	6	20-May-96	0	0	0	0	2086	0	7000 Thirty-six Month
B01X	1	10-Mar-93	0	0	0	0	650	0	6500 Pre Construction
B01X	3	03-Dec-93	0	0	0	0	3000	0	6500 Six Month
B01X	4	27-Jun-94	0	0	0	0	2776	0	6750 Twelve Month
B01X	5	01-Jul-95	0	0	0	0	2884	0	6750 Twenty-four Month
B01X	6	20-May-96	0	0	0	0	2928	0	6750 Thirty-six Month

Site 3, 48C04, Amarillo District, US 385, N of Hereford

Site	No	Inspection Date	Alligator Cracking	Block Crack	Long Cr in WP	Long Cr + Tran	Bleed	Ravel	Area	Comment
C04H	1	04-Mar-93	0	0	0	83	33	0	6500	Pre Construction
C04H	2	02-Jun-93	0	0	0	0	0	0	6750	Construction
C04H	3	21-Nov-93	0	0	0	25	0	0	7000	Six Month
C04H	4	17-Jun-94	0	0	3	27	300	200	7000	Twelve Month
C04H	5	19-Jun-95	0	0	0	33	310	700	7000	Twenty-four Month
C04H	6	29-May-96	0	0	0	132	2304	270	7000	Thirty-six Month
C04M	1	04-Mar-93	0	0	0	33	0	0	6500	Pre Construction
C04M	2	07-Jun-93	0	0	0	0	0	0	6750	Construction
C04M	3	21-Nov-93	0	0	0	126	0	0	7000	Six Month
C04M	4	17-Jun-94	4	0	5	155	1000	0	7000	Twelve Month
C04M	5	19-Jun-95	9	0	5	182	0	0	7000	Twenty-four Month
C04M	6	29-May-96	9	0	26	198	175	0	7000	Thirty-six Month
C04E	1	04-Mar-93	0	0	10	74	6	0	6500	Pre Construction
C04E	2	02-Jun-93	0	0	0	0	0	0	6750	Construction
C04E	3	21-Nov-93	0	0	0	22	0	0	7000	Six Month
C04E	4	17-Jun-94	0	0	0	48	3078	0	7000	Twelve Month
C04E	5	19-Jun-95	0	0	0	76	2885.5	0	7000	Twenty-four Month
C04E	6	29-May-96	0	0	0	97	3550	0	7000	Thirty-six Month
C04L	1	04-Mar-93	0	0	0	240	392	0	6500	Pre Construction
C04L	2	03-Jun-93	0	0	0	0	0	0	6750	Construction
C04L	3	21-Nov-93	0	0	0	23	48	0	7000	Six Month
C04L	4	17-Jun-94	0	0	0	31	1524	0	7000	Twelve Month
C04L	5	19-Jun-95	0	0	0	152	2833	0	7000	Twenty-four Month
C04L	6	29-May-96	0	0	0	299	3638	0	7000	Thirty-six Month
C04C	1	04-Mar-93	0	0	0	213	629	0	6500	Pre Construction
C04C	2	02-Jun-93	0	0	0	0	0	0	6750	Construction
C04C	3	21-Nov-93	0	0	0	48	0	0	7000	Six Month
C04C	4	17-Jun-94	0	0	0	105	2950	0	7000	Twelve Month
C04C	5	19-Jun-95	0	0	29	181	3316	0	7000	Twenty-four Month
C04C	6	29-May-96	0	0	0	431	3917	0	7000	Thirty-six Month
C04F	1	04-Mar-93	0	0	0	249	214	0	6000	Pre Construction
C04F	3	21-Nov-93	0	0	0	242	0	0	7000	Six Month
C04F	4	17-Jun-94	0	0	0	139	3000	0	6750	Twelve Month
C04F	5	19-Jun-95	0	0	3	261	3481	0	6750	Twenty-four Month
C04F	6	29-May-96	0	0	7	393	2350	0	6750	Thirty-six Month
C04X	1	04-Mar-93	0	0	0	440	15	0	6000	Pre Construction
C04X	3	21-Nov-93	0	0	0	342	6	0	7000	Six Month
C04X	4	17-Jun-94	0	0	0	333	852	0	6750	Twelve Month
C04X	5	19-Jun-95	0	0	0	504.5	2605	0	6750	Twenty-four Month
C04X	6	29-May-96	0	0	0	693	1427	0	6750	Thirty-six Month

Site 4, 48D04, Amarillo District, FM 1061, NE of Amarillo

<u>Site</u>	<u>No</u>	<u>Inspection Date</u>	<u>Alligator Cracking</u>	<u>Block Crack</u>	<u>Long in WP</u>	<u>Cr Long + Tran</u>	<u>Bleed</u>	<u>Ravel</u>	<u>Area Comment</u>
D04H	1	04-Mar-93	76	0	17	353	1000	0	6750 Pre Construction
D04H	2	04-Jun-93	0	0	0	0	0	0	6500 Construction
D04H	3	21-Nov-93	0	0	0	0	1367	0	6000 Six Month
D04H	4	15-Jun-94	0	0	0	1	3250	0	6250 Twelve Month
D04H	5	19-Jun-95	0	0	0	0	4050	0	6250 Twenty-four Month
D04H	6	28-May-96	0	0	0	18	3100	0	6250 Thirty-six Month
D04M	1	04-Mar-93	0	0	21	426	2610	0	6750 Pre Construction
D04M	2	07-Jun-93	0	0	0	0	0	0	6500 Construction
D04M	3	21-Nov-93	0	0	94	162	714	0	6500 Six Month
D04M	4	15-Jun-94	0	0	64	292	2036	0	6500 Twelve Month
D04M	5	19-Jun-95	0	0	58	269	3302	0	6500 Twenty-four Month
D04M	6	28-May-96	9	0	48	288	3229	0	6500 Thirty-six Month
D04E	1	04-Mar-93	0	0	15	424	2504	0	6750 Pre Construction
D04E	2	04-Jun-93	0	0	0	0	0	0	6500 Construction
D04E	3	21-Nov-93	0	0	0	0	0	0	6500 Six Month
D04E	4	15-Jun-94	0	0	0	11	1200	0	6500 Twelve Month
D04E	5	19-Jun-95	0	0	0	4	2850	0	6500 Twenty-four Month
D04E	6	28-May-96	0	0	32	132	2532	0	6500 Thirty-six Month
D04L	1	04-Mar-93	0	0	0	78	2801	0	6750 Pre Construction
D04L	2	04-Jun-93	0	0	0	0	0	0	6500 Construction
D04L	3	21-Nov-93	0	0	0	0	385	0	6500 Six Month
D04L	4	15-Jun-94	0	0	0	0	1620	0	6500 Twelve Month
D04L	5	19-Jun-95	0	0	0	0	3150	0	6500 Twenty-four Month
D04L	6	28-May-96	0	0	0	1	2950	0	6500 Thirty-six Month
D04C	1	04-Mar-93	0	0	21	278	2300	0	6750 Pre Construction
D04C	2	04-Jun-93	0	0	0	0	0	0	6500 Construction
D04C	3	21-Nov-93	0	0	0	0	0	0	6500 Six Month
D04C	4	15-Jun-94	0	0	0	3	800	0	6500 Twelve Month
D04C	5	19-Jun-95	0	0	0	0	2462	0	6500 Twenty-four Month
D04C	6	28-May-96	0	0	0	143	1100	0	6500 Thirty-six Month
D04F	1	04-Mar-93	0	0	0	4	4165	0	6500 Pre Construction
D04F	3	21-Nov-93	0	0	25	10	2850	0	6500 Six Month
D04F	4	15-Jun-94	0	0	8	25	4396	0	6500 Twelve Month
D04F	5	19-Jun-95	0	0	46	70	4255.3	0	6750 Twenty-four Month
D04F	6	28-May-96	0	0	3	49	3925	0	6750 Thirty-six Month
D04X	1	04-Mar-93	0	0	7	0	6500	0	6500 Pre Construction
D04X	3	21-Nov-93	0	0	21	0	3800	0	6500 Six Month
D04X	4	15-Jun-94	0	0	0	0	6050	0	6750 Twelve Month
D04X	5	19-Jun-95	0	0	0	0	5950	0	6750 Twenty-four Month
D04X	6	28-May-96	0	0	0	4	0	0	6750 Thirty-six Month

Site 5, 48E06, Odessa District, FM 181, N of Odessa

<u>Site</u>	<u>No</u>	<u>Inspection Date</u>	<u>Alligator Cracking</u>	<u>Block Crack</u>	<u>Long Cr in WP</u>	<u>Long Cr + Tran</u>	<u>Bleed</u>	<u>Ravel</u>	<u>Area</u>	<u>Comment</u>
E06H	1	03-Mar-93	0	0	0	0	3075	0	6500	Pre Construction
E06H	2	24-May-93	0	0	0	0	0	0	6750	Construction
E06H	3	22-Nov-93	0	0	0	0	2500	0	7000	Six Month
E06H	4	14-Jun-94	0	0	0	0	3773	0	7000	Twelve Month
E06H	5	18-Jun-95	0	0	0	0	5177	0	7000	Twenty-four Month
E06H	6	30-May-96	0	0	0	0	5250	0	7000	Thirty-six Month
E06M	1	03-Mar-93	0	0	0	0	2618	0	6500	Pre Construction
E06M	2	26-May-93	0	0	0	0	0	0	6750	Construction
E06M	3	22-Nov-93	0	0	0	0	0	0	7000	Six Month
E06M	4	14-Jun-94	0	0	0	0	0	0	7000	Twelve Month
E06M	5	18-Jun-95	0	0	0	0	0	0	7000	Twenty-four Month
E06M	6	30-May-96	0	0	0	0	0	0	7000	Thirty-six Month
E06E	1	03-Mar-93	0	0	0	0	4125	0	6750	Pre Construction
E06E	2	24-May-93	0	0	0	0	0	0	7000	Construction
E06E	3	22-Nov-93	0	0	0	0	0	0	7000	Six Month
E06E	4	14-Jun-94	0	0	0	0	0	0	7000	Twelve Month
E06E	5	18-Jun-95	0	0	0	0	992	0	7000	Twenty-four Month
E06E	6	30-May-96	0	0	0	0	1695	0	7000	Thirty-six Month
E06L	1	03-Mar-93	0	0	0	0	3038	0	6750	Pre Construction
E06L	2	24-May-93	0	0	0	0	0	0	7000	Construction
E06L	3	22-Nov-93	0	0	0	0	1	0	7000	Six Month
E06L	4	14-Jun-94	0	0	0	0	2040	0	7000	Twelve Month
E06L	5	18-Jun-95	0	0	0	0	3473	0	7000	Twenty-four Month
E06L	6	30-May-96	0	0	0	0	4225	0	7000	Thirty-six Month
E06C	1	03-Mar-93	0	0	0	0	3600	0	6750	Pre Construction
E06C	2	24-May-93	0	0	0	0	0	0	7000	Construction
E06C	3	22-Nov-93	0	0	0	0	0	0	7000	Six Month
E06C	4	14-Jun-94	0	0	0	0	2344	0	7000	Twelve Month
E06C	5	18-Jun-95	0	0	0	0	5000	0	7000	Twenty-four Month
E06C	6	30-May-96	0	0	0	0	5356	0	7000	Thirty-six Month
E06F	1	03-Mar-93	0	0	0	0	3370	0	6750	Pre Construction
E06F	3	22-Nov-93	0	0	0	0	3500	0	7000	Six Month
E06F	4	14-Jun-94	0	0	0	0	6500	0	7000	Twelve Month
E06F	5	18-Jun-95	0	0	0	0	5000	0	7000	Twenty-four Month
E06F	6	30-May-96	0	0	0	0	5500	0	7000	Thirty-six Month
E06X	1	03-Mar-93	0	0	0	0	4000	0	6750	Pre Construction
E06X	3	22-Nov-93	0	0	0	0	3000	0	7000	Six Month
E06X	4	14-Jun-94	0	0	0	0	5400	0	7000	Twelve Month
E06X	5	18-Jun-95	0	0	0	0	5150	0	7000	Twenty-four Month
E06X	6	30-May-96	0	0	0	0	6000	0	7000	Thirty-six Month

Site 6, 48F06, Odessa District, SH 349, N of Midland

<u>Site</u>	<u>No</u>	<u>Inspection Date</u>	<u>Alligator Cracking</u>	<u>Block Crack</u>	<u>Long in WP</u>	<u>Cr Long + Tran</u>	<u>Bleed</u>	<u>Ravel</u>	<u>Area Comment</u>
F06H	1	03-Mar-93	0	0	4	252	0	0	6250 Pre Construction
F06H	2	20-May-93	0	0	0	0	0	0	6500 Construction
F06H	3	22-Nov-93	0	0	0	54	1000	0	6500 Six Month
F06H	4	15-Jun-94	0	0	0	159	2230	0	6500 Twelve Month
F06H	5	18-Jun-95	0	0	0	224	2725	0	6500 Twenty-four Month
F06H	6	31-May-96	0	0	0	252	2600	0	6500 Thirty-six Month
F06M	1	03-Mar-93	18	0	0	282	0	0	6500 Pre Construction
F06M	2	21-May-93	0	0	0	0	0	0	6500 Construction
F06M	3	22-Nov-93	0	0	0	307	0	0	6500 Six Month
F06M	4	15-Jun-94	8	0	9	318	0	0	6500 Twelve Month
F06M	5	18-Jun-95	32	0	18	331	0	0	6500 Twenty-four Month
F06M	6	31-May-96	34	0	23	307	0	0	6500 Thirty-six Month
F06E	1	03-Mar-93	14	0	0	245	0	0	6750 Pre Construction
F06E	2	20-May-93	0	0	0	0	0	0	6500 Construction
F06E	3	22-Nov-93	0	0	0	225	0	0	6500 Six Month
F06E	4	15-Jun-94	0	0	0	299	0	0	6500 Twelve Month
F06E	5	18-Jun-95	0	0	2	302	54	7.5	6500 Twenty-four Month
F06E	6	31-May-96	0	0	4	319	30	0	6500 Thirty-six Month
F06L	1	03-Mar-93	0	0	54	366	0	0	6500 Pre Construction
F06L	2	20-May-93	0	0	0	0	0	0	6500 Construction
F06L	3	22-Nov-93	0	0	0	13	4	0	6500 Six Month
F06L	4	15-Jun-94	0	0	0	193	4	0	6500 Twelve Month
F06L	5	18-Jun-95	0	0	0	248	2906	0	6500 Twenty-four Month
F06L	6	31-May-96	0	0	0	306	816	0	6500 Thirty-six Month
F06C	1	03-Mar-93	0	0	0	308	0	0	6500 Pre Construction
F06C	2	21-May-93	0	0	0	0	0	0	6500 Construction
F06C	3	22-Nov-93	0	0	0	14	0	0	6500 Six Month
F06C	4	15-Jun-94	0	0	0	228	40	0	6500 Twelve Month
F06C	5	18-Jun-95	0	0	0	250	1475	0	6500 Twenty-four Month
F06C	6	31-May-96	0	0	7	264	1500	0	6500 Thirty-six Month
F06F	1	03-Mar-93	0	0	1	302	0	0	6500 Pre Construction
F06F	3	22-Nov-93	0	0	0	365	0	0	6500 Six Month
F06F	4	15-Jun-94	0	0	8	299	0	3600	6750 Twelve Month
F06F	5	18-Jun-95	14	0	12	326.5	0	3600	6750 Twenty-four Month
F06F	6	31-May-96	8	0	9	335	0	0	6750 Thirty-six Month
F06X	1	03-Mar-93	0	0	1	303	0	0	6500 Pre Construction
F06X	3	22-Nov-93	0	0	0	324	0	0	6500 Six Month
F06X	4	15-Jun-94	0	0	0	330	0	3908	6500 Twelve Month
F06X	5	18-Jun-95	4	0	3	341	0	3908	6500 Twenty-four Month
F06X	6	31-May-96	0	0	7	331	0	0	6500 Thirty-six Month

Site 7, 48G08, Abilene District, SH 36, SE of Abilene

<u>Site</u>	<u>No</u>	<u>Inspection Date</u>	<u>Alligator Cracking</u>	<u>Block Crack</u>	<u>Long in WP</u>	<u>Cr Long + Tran</u>	<u>Bleed</u>	<u>Ravel</u>	<u>Area Comment</u>
G08H	1	05-Mar-93	0	0	110	704	0	0	6750 Pre Construction
G08H	2	13-May-93	0	0	0	0	0	0	7000 Construction
G08H	3	19-Nov-93	0	0	0	59	1013	0	7000 Six Month
G08H	4	12-Jun-94	0	0	0	10	4600	0	7000 Twelve Month
G08H	5	17-Jun-95	0	0	0	70	3950	400	7000 Twenty-four Month
G08H	6	01-Jun-96	0	0	0	52	4350	0	7000 Thirty-six Month
G08M	1	05-Mar-93	7	0	12	547	0	98	6500 Pre Construction
G08M	2	14-May-93	0	0	0	0	0	0	6500 Construction
G08M	3	19-Nov-93	0	0	72	412	500	0	7000 Six Month
G08M	4	12-Jun-94	0	0	108	473	1400	0	7000 Twelve Month
G08M	5	17-Jun-95	14	0	21	735	0	0	7000 Twenty-four Month
G08M	6	01-Jun-96	0	0	90	608	1000	0	7000 Thirty-six Month
G08E	1	05-Mar-93	12	0	50	705	0	0	6500 Pre Construction
G08E	2	13-May-93	0	0	0	0	0	0	6500 Construction
G08E	3	19-Nov-93	0	0	0	157	0	0	7000 Six Month
G08E	4	12-Jun-94	0	0	0	107	3900	0	7000 Twelve Month
G08E	5	17-Jun-95	0	0	0	143	826	0	7000 Twenty-four Month
G08E	6	01-Jun-96	0	0	0	253	2943	0	7000 Thirty-six Month
G08L	1	05-Mar-93	0	0	21	608	0	0	6500 Pre Construction
G08L	2	13-May-93	0	0	0	0	0	0	7000 Construction
G08L	3	19-Nov-93	0	0	0	158	0	0	7000 Six Month
G08L	4	12-Jun-94	0	0	0	99	2600	0	7000 Twelve Month
G08L	5	17-Jun-95	0	0	0	122	3000	0	7000 Twenty-four Month
G08L	6	01-Jun-96	0	0	0	212	3856	0	7000 Thirty-six Month
G08C	1	05-Mar-93	0	0	37	704	0	0	6500 Pre Construction
G08C	2	14-May-93	0	0	0	0	0	0	6500 Construction
G08C	3	19-Nov-93	0	0	0	54	0	0	7000 Six Month
G08C	4	12-Jun-94	0	0	0	64	765	0	7000 Twelve Month
G08C	5	17-Jun-95	0	0	0	204	2100	3	7000 Twenty-four Month
G08C	6	01-Jun-96	0	0	0	257	3100	0	7000 Thirty-six Month
G08F	1	05-Mar-93	15	0	30	484	0	0	6500 Pre Construction
G08F	3	19-Nov-93	0	0	0	102	37	0	7000 Six Month
G08F	4	Deleted							Twelve Month
G08F	5	Deleted							Twenty-four Month
G08F	6	Deleted							Thirty-six Month
G08X	1	05-Mar-93	0	0	58	542	0	0	6500 Pre Construction
G08X	3	19-Nov-93	0	0	0	27	0	0	7000 Six Month
G08X	4	Deleted							Twelve Month
G08X	5	Deleted							Twenty-four Month
G08X	6	Deleted							Thirty-six Month

Site 8, 48H08, Abilene District, US 84, N of Snyder

<u>Site</u>	<u>No</u>	<u>Inspection Date</u>	<u>Alligator Cracking</u>	<u>Block Crack</u>	<u>Long Cr in WP</u>	<u>Long Cr + Tran</u>	<u>Bleed</u>	<u>Ravel</u>	<u>Area</u>	<u>Comment</u>
H08H	1	05-Mar-93	25	1950	24	284	5500	0	6250	Pre Construction
H08H	2	17-May-93	0	0	0	0	0	0	6500	Construction
H08H	3	20-Nov-93	0	0	0	0	2224	0	6500	Six Month
H08H	4	13-Jun-94	0	0	0	0	5550	0	6500	Twelve Month
H08H	5	17-Jun-95	0	0	0	0	5000	0	6500	Twenty-four Month
H08H	6	Deleted								Thirty-six Month
H08M	1	05-Mar-93	80	3250	98	126	5500	0	6500	Pre Construction
H08M	2	18-May-93	0	0	0	0	0	0	6500	Construction
H08M	3	20-Nov-93	0	0	28	75	0	0	6500	Six Month
H08M	4	13-Jun-94	0	1118	149	147	1766	0	6500	Twelve Month
H08M	5	17-Jun-95	28	0	245	235	2350	0	6500	Twenty-four Month
H08M	6	Deleted								Thirty-six Month
H08E	1	05-Mar-93	16	2600	18	364	6500	0	6500	Pre Construction
H08E	2	17-May-93	0	0	0	0	0	0	6500	Construction
H08E	3	20-Nov-93	0	0	0	42	1819	0	6500	Six Month
H08E	4	13-Jun-94	0	0	9	135	6364	0	6500	Twelve Month
H08E	5	17-Jun-95	0	0	14	195	6500	0	6500	Twenty-four Month
H08E	6	Deleted								Thirty-six Month
H08L	1	05-Mar-93	0	5655	0	35	5000	0	6500	Pre Construction
H08L	2	18-May-93	0	0	0	0	0	0	6500	Construction
H08L	3	20-Nov-93	0	0	12	41	3597	0	6500	Six Month
H08L	4	13-Jun-94	0	0	70	181	5700	0	6500	Twelve Month
H08L	5	17-Jun-95	8	3138	18	82	5800	0	6500	Twenty-four Month
H08L	6	Deleted								Thirty-six Month
H08C	1	05-Mar-93	0	4160	0	226	6000	0	6500	Pre Construction
H08C	2	17-May-93	0	0	0	0	0	0	6500	Construction
H08C	3	20-Nov-93	0	0	0	23	6500	0	6500	Six Month
H08C	4	13-Jun-94	0	0	0	130	6500	0	6500	Twelve Month
H08C	5	17-Jun-95	0	2340	0	127	6000	0	6500	Twenty-four Month
H08C	6	Deleted								Thirty-six Month
H08F	1	05-Mar-93	5	2912	25	178	6300	0	6500	Pre Construction
H08F	3	20-Nov-93	0	4147	0	44	6500	0	6500	Six Month
H08F	4	13-Jun-94	0	4381	0	26	6500	0	6500	Twelve Month
H08F	5	17-Jun-95	0	3614	9	139	6500	0	6500	Twenty-four Month
H08F	6	Deleted								Thirty-six Month
H08X	1	05-Mar-93	0	5200	0	120	5000	0	6500	Pre Construction
H08X	3	20-Nov-93	0	5590	0	15	6000	0	6500	Six Month
H08X	4	13-Jun-94	9	2600	136	104	6500	0	6500	Twelve Month
H08X	5	17-Jun-95	0	4862	48	91	6500	0	6500	Twenty-four Month
H08X	6	Deleted								Thirty-six Month

Site 9, 48I09, Waco District, FM 933, W of Waco

<u>Site</u>	<u>No</u>	<u>Inspection Date</u>	<u>Alligator Cracking</u>	<u>Block Crack</u>	<u>Long Cr in WP</u>	<u>Long Cr + Tran</u>	<u>Bleed</u>	<u>Ravel</u>	<u>Area Comment</u>
I09H	1	08-Mar-93	0	0	17	121	0	66	6250 Pre Construction
I09H	2	13-Jul-93	0	0	0	0	0	0	6500 Construction
I09H	3	01-Dec-93	0	0	0	0	2384	103	6500 Six Month
I09H	4	23-Jun-94	0	0	0	0	3208	161	6500 Twelve Month
I09H	5	01-May-95	0	0	0	0	3286	197	6500 Twenty-four Month
I09H	6	27-May-96	0	0	0	15	3556	102	6500 Thirty-six Month
I09M	1	08-Mar-93	5	0	12	144	0	0	6250 Pre Construction
I09M	2	14-Jul-93	0	0	0	0	0	0	6500 Construction
I09M	3	01-Dec-93	0	0	48	5	1470	0	6500 Six Month
I09M	4	23-Jun-94	0	0	11	205	800	0	6500 Twelve Month
I09M	5	01-May-95	0	0	32	284	0	0	6500 Twenty-four Month
I09M	6	27-May-96	22	0	58	353	1600	0	6500 Thirty-six Month
I09E	1	08-Mar-93	0	0	193	136	0	0	6250 Pre Construction
I09E	2	14-Jul-93	0	0	0	0	0	0	6500 Construction
I09E	3	01-Dec-93	0	0	0	0	2500	0	6500 Six Month
I09E	4	23-Jun-94	0	0	0	0	0	0	6500 Twelve Month
I09E	5	01-May-95	0	0	0	0	2750	0	6500 Twenty-four Month
I09E	6	27-May-96	0	0	0	2	3400	0	6500 Thirty-six Month
I09L	1	08-Mar-93	0	0	151	34	0	0	6250 Pre Construction
I09L	2	13-Jul-93	0	0	0	0	0	0	6500 Construction
I09L	3	01-Dec-93	0	0	30	0	1900	0	6500 Six Month
I09L	4	23-Jun-94	0	0	0	0	2500	0	6500 Twelve Month
I09L	5	01-May-95	0	0	0	0	3000	0	6500 Twenty-four Month
I09L	6	27-May-96	0	0	0	0	3300	0	6500 Thirty-six Month
I09C	1	08-Mar-93	0	0	28	98	0	0	6250 Pre Construction
I09C	2	13-Jul-93	0	0	0	0	0	0	6500 Construction
I09C	3	01-Dec-93	0	0	0	12	2500	53	6500 Six Month
I09C	4	23-Jun-94	0	0	0	0	1800	0	6500 Twelve Month
I09C	5	01-May-95	0	0	0	0	3000	130	6500 Twenty-four Month
I09C	6	27-May-96	0	0	0	0	3650	131	6500 Thirty-six Month
I09F	1	08-Mar-93	0	0	30	123	0	0	6250 Pre Construction
I09F	3	01-Dec-93	0	0	21	70	0	0	6500 Six Month
I09F	4	23-Jun-94	0	0	30	215	0	1500	6500 Twelve Month
I09F	5	01-May-95	0	0	28	142	0	2000	6500 Twenty-four Month
I09F	6	27-May-96	0	0	40	165	1750	1500	6500 Thirty-six Month
I09X	1	08-Mar-93	0	0	0	67	0	0	6500 Pre Construction
I09X	3	01-Dec-93	0	0	6	57	0	3500	6500 Six Month
I09X	4	23-Jun-94	0	0	6	84	0	1500	6500 Twelve Month
I09X	5	01-May-95	0	0	13	84	0	2000	6500 Twenty-four Month
I09X	6	27-May-96	0	0	10	63	1500	2000	6500 Thirty-six Month

Site 10, 48J10, Tyler District, SH 135, E of Arp

Site	No	Inspection Date	Alligator Cracking	Block Crack	Long Cr in WP	Long Cr + Tran	Bleed	Ravel	Area Comment
J10H	1	11-Mar-93	0	0	3	0	0	0	6250 Pre Construction
J10H	2	06-Jul-93	0	0	0	0	0	0	6500 Construction
J10H	3	07-Dec-93	0	0	0	0	450	39	6500 Six Month
J10H	4	25-Jun-94	0	0	0	0	1926	0	6500 Twelve Month
J10H	5	30-Jun-95	0	0	0	0	2573	500	6500 Twenty-four Month
J10H	6	21-May-96	0	0	0	0	1754	28	6500 Thirty-six Month
J10M	1	11-Mar-93	0	0	0	3	0	0	6250 Pre Construction
J10M	2	08-Jul-93	0	0	0	0	0	0	6500 Construction
J10M	3	07-Dec-93	0	0	0	0	0	0	6500 Six Month
J10M	4	25-Jun-94	0	0	0	0	0	0	6500 Twelve Month
J10M	5	30-Jun-95	0	0	0	0	200	0	6500 Twenty-four Month
J10M	6	21-May-96	0	0	0	2	0	0	6500 Thirty-six Month
J10E	1	11-Mar-93	0	0	0	3	0	606	6250 Pre Construction
J10E	2	07-Jul-93	0	0	0	0	0	0	6500 Construction
J10E	3	07-Dec-93	0	0	0	0	0	0	6500 Six Month
J10E	4	25-Jun-94	0	0	0	0	0	500	6500 Twelve Month
J10E	5	30-Jun-95	0	0	0	0	0	500	6500 Twenty-four Month
J10E	6	21-May-96	0	0	0	0	0	535	6500 Thirty-six Month
J10L	1	11-Mar-93	0	0	0	0	0	690	6500 Pre Construction
J10L	2	06-Jul-93	0	0	0	0	0	0	6500 Construction
J10L	3	07-Dec-93	0	0	0	0	0	0	6500 Six Month
J10L	4	25-Jun-94	0	0	0	0	0	112	6500 Twelve Month
J10L	5	30-Jun-95	0	0	0	0	0	1341	6500 Twenty-four Month
J10L	6	21-May-96	0	0	0	0	0	709	6500 Thirty-six Month
J10C	1	11-Mar-93	0	0	0	0	0	1051	6250 Pre Construction
J10C	2	07-Jul-93	0	0	0	0	0	0	6500 Construction
J10C	3	07-Dec-93	0	0	0	0	0	120	6500 Six Month
J10C	4	25-Jun-94	0	0	0	0	0	400	6500 Twelve Month
J10C	5	30-Jun-95	0	0	0	0	0	1500	6500 Twenty-four Month
J10C	6	21-May-96	0	0	0	0	0	1400	6500 Thirty-six Month
J10F	1	11-Mar-93	0	0	0	0	0	800	6500 Pre Construction
J10F	3	07-Dec-93	0	0	0	0	0	90	6500 Six Month
J10F	4	25-Jun-94	0	0	0	0	0	0	6500 Twelve Month
J10F	5	30-Jun-95	0	0	0	0	2000	0	6500 Twenty-four Month
J10F	6	21-May-96	0	0	0	0	0	0	6500 Thirty-six Month
J10X	1	11-Mar-93	0	0	0	0	0	0	6500 Pre Construction
J10X	3	07-Dec-93	0	0	0	0	0	68	6250 Six Month
J10X	4	25-Jun-94	0	0	0	0	511	0	6250 Twelve Month
J10X	5	30-Jun-95	0	0	0	0	2056	180	6250 Twenty-four Month
J10X	6	21-May-96	0	0	0	0	0	1260	6250 Thirty-six Month

Site 11, 48K13, Yoakum District, SH 35, SE of Victoria

<u>Site</u>	<u>No</u>	<u>Inspection Date</u>	<u>Alligator Cracking</u>	<u>Block Crack</u>	<u>Long Cr in WP</u>	<u>Long Cr + Tran</u>	<u>Bleed</u>	<u>Ravel</u>	<u>Area Comment</u>
K13H	1	12-Mar-93	0	0	459	239	0	0	6250 Pre Construction
K13H	2	06-Apr-93	0	0	0	0	0	0	6500 Construction
K13H	3	30-Nov-93	0	0	353	187	5000	0	7000 Six Month
K13H	4	06-Jun-94	0	0	0	96	5000	0	7000 Twelve Month
K13H	5	10-May-95	0	0	54	152	4371	0	7000 Twenty-four Month
K13H	6	23-May-96	0	0	0	44	5500	0	7000 Thirty-six Month
K13M	1	12-Mar-93	30	0	255	236	0	0	6250 Pre Construction
K13M	2	09-Apr-93	0	0	0	0	0	0	6500 Construction
K13M	3	30-Nov-93	0	0	91	216	0	0	7000 Six Month
K13M	4	06-Jun-94	0	0	196	236	0	0	7000 Twelve Month
K13M	5	10-May-95	0	0	351	244	0	0	7000 Twenty-four Month
K13M	6	23-May-96	0	0	500	379	0	0	7000 Thirty-six Month
K13E	1	12-Mar-93	23	0	431	244	0	0	6250 Pre Construction
K13E	2	09-Apr-93	0	0	0	0	0	0	6500 Construction
K13E	3	30-Nov-93	0	0	8	114	0	0	7000 Six Month
K13E	4	06-Jun-94	0	0	54	182	0	0	7000 Twelve Month
K13E	5	10-May-95	0	0	140	199	1686	0	7000 Twenty-four Month
K13E	6	23-May-96	0	0	153	213	2550	0	7000 Thirty-six Month
K13L	1	12-Mar-93	5	0	380	271	0	0	6250 Pre Construction
K13L	2	09-Apr-93	0	0	0	0	0	0	6500 Construction
K13L	3	30-Nov-93	0	0	0	75	0	98	7000 Six Month
K13L	4	06-Jun-94	0	0	8	122	445	150	7000 Twelve Month
K13L	5	10-May-95	0	0	15	167	2448	404	7000 Twenty-four Month
K13L	6	23-May-96	0	0	29	202	3153	278	7000 Thirty-six Month
K13C	1	12-Mar-93	343	0	137	273	0	0	6250 Pre Construction
K13C	2	06-Apr-93	0	0	0	0	0	0	6500 Construction
K13C	3	30-Nov-93	0	0	125	101	370	54	7000 Six Month
K13C	4	06-Jun-94	0	0	0	117	502	100	7000 Twelve Month
K13C	5	10-May-95	0	0	0	170	2378	100	7000 Twenty-four Month
K13C	6	23-May-96	0	0	5	212	3300	200	7000 Thirty-six Month
K13F	1	12-Mar-93	10	0	401	291	0	0	6250 Pre Construction
K13F	3	30-Nov-93	0	0	461	270	0	0	7000 Six Month
K13F	4	06-Jun-94	0	0	457	311	0	0	7000 Twelve Month
K13F	5	10-May-95	45	0	445	336	0	0	7000 Twenty-four Month
K13F	6	23-May-96	0	5600	100	67	0	0	7000 Thirty-six Month
K13X	1	12-Mar-93	0	0	256	239	0	0	6250 Pre Construction
K13X	3	30-Nov-93	0	0	274	230	0	0	6500 Six Month
K13X	4	06-Jun-94	0	0	268	247	0	0	6750 Twelve Month
K13X	5	10-May-95	0	0	292	273	0	0	6750 Twenty-four Month
K13X	6	23-May-96	0	1040	228	205	0	0	6750 Thirty-six Month

Site 12, 48L13, Yoakum District, SH 71, NE of La Grange

<u>Site</u>	<u>No</u>	<u>Inspection Date</u>	<u>Alligator Cracking</u>	<u>Block Crack</u>	<u>Long in WP</u>	<u>Cr Long + Tran</u>	<u>Bleed</u>	<u>Ravel</u>	<u>Area Comment</u>
L13H	1	12-Mar-93	0	0	17	60	1419	0	6500 Pre Construction
L13H	2	12-Apr-93	0	0	0	0	0	0	6500 Construction
L13H	3	30-Nov-93	0	0	0	0	3000	0	6500 Six Month
L13H	4	06-Jun-94	0	0	0	0	4025	0	6500 Twelve Month
L13H	5	12-May-95	0	0	0	0	3750	0	6500 Twenty-four Month
L13H	6	24-May-96	0	0	0	0	4600	0	6500 Thirty-six Month
L13M	1	12-Mar-93	30	0	5	100	1935	0	6500 Pre Construction
L13M	2	12-Apr-93	0	0	0	0	0	0	6500 Construction
L13M	3	30-Nov-93	0	0	0	0	0	0	6500 Six Month
L13M	4	06-Jun-94	0	0	0	0	1832	0	6750 Twelve Month
L13M	5	12-May-95	0	0	0	2	3104	0	6750 Twenty-four Month
L13M	6	24-May-96	0	0	0	41	2222	0	6750 Thirty-six Month
L13E	1	12-Mar-93	0	0	0	8	3380	0	6500 Pre Construction
L13E	2	15-Apr-93	0	0	0	0	0	0	6500 Construction
L13E	3	30-Nov-93	0	0	0	0	0	0	6500 Six Month
L13E	4	06-Jun-94	0	0	0	0	3000	0	6750 Twelve Month
L13E	5	12-May-95	0	0	0	0	3500	0	6750 Twenty-four Month
L13E	6	24-May-96	0	0	0	0	3400	0	6750 Thirty-six Month
L13L	1	12-Mar-93	0	0	0	0	1300	1100	6250 Pre Construction
L13L	2	00-Jan-00	0	0	0	0	0	0	6250 Construction
L13L	3	30-Nov-93	0	0	0	0	2500	1000	6500 Six Month
L13L	4	06-Jun-94	0	0	0	0	2886	700	6750 Twelve Month
L13L	5	12-May-95	0	0	0	5	2100	3225	6750 Twenty-four Month
L13L	6	24-May-96	0	0	0	12	3081	844	6750 Thirty-six Month
L13C	1	12-Mar-93	0	0	0	4	2502	0	6250 Pre Construction
L13C	2	15-Apr-93	0	0	0	0	0	0	6500 Construction
L13C	3	30-Nov-93	0	0	10	21	1634	0	6500 Six Month
L13C	4	06-Jun-94	0	0	0	0	2550	0	6500 Twelve Month
L13C	5	12-May-95	0	0	0	0	3055	0	6500 Twenty-four Month
L13C	6	24-May-96	0	0	0	0	2758	0	6500 Thirty-six Month
L13F	1	12-Mar-93	0	0	6	4	2235	0	6250 Pre Construction
L13F	3	30-Nov-93	0	0	0	0	0	0	6500 Six Month
L13F	4	06-Jun-94	0	0	0	0	1200	0	6750 Twelve Month
L13F	5	12-May-95	0	0	0	0	1929	0	6750 Twenty-four Month
L13F	6	24-May-96	0	0	0	4	2118	0	6750 Thirty-six Month
L13X	1	12-Mar-93	0	0	0	25	2800	0	6500 Pre Construction
L13X	3	30-Nov-93	0	0	0	16	3500	0	6500 Six Month
L13X	4	06-Jun-94	0	0	0	11	3600	0	6500 Twelve Month
L13X	5	12-May-95	0	0	0	6.5	3000	0	6750 Twenty-four Month
L13X	6	24-May-96	0	0	0	15	3500	0	6750 Thirty-six Month

Site 13, 48M15, San Antonio District, SH 484, NW of San Antonio

<u>Site</u>	<u>No</u>	<u>Inspection Date</u>	<u>Alligator Cracking</u>	<u>Block Crack</u>	<u>Long Cr in WP</u>	<u>Long Cr + Tran</u>	<u>Bleed</u>	<u>Ravel</u>	<u>Area</u>	<u>Comment</u>
M15H	1	02-Mar-93	0	0	0	0	250	0	6250	Pre Construction
M15H	2	27-Apr-93	0	0	0	0	0	0	6500	Construction
M15H	3	29-Nov-93	0	0	0	0	82	0	6500	Six Month
M15H	4	02-Jun-94	0	0	0	0	149	0	6500	Twelve Month
M15H	5	09-May-95	0	0	0	0	94	0	6500	Twenty-four Month
M15H	6	03-Jun-96	0	0	0	0	980	0	6500	Thirty-six Month
M15M	1	02-Mar-93	0	0	0	0	1670	0	6250	Pre Construction
M15M	2	04-May-93	0	0	0	0	0	0	6500	Construction
M15M	3	29-Nov-93	0	0	0	0	0	0	6500	Six Month
M15M	4	02-Jun-94	0	0	0	0	0	0	6750	Twelve Month
M15M	5	09-May-95	0	0	0	0	388	0	6750	Twenty-four Month
M15M	6	03-Jun-96	0	0	0	0	1023	0	6750	Thirty-six Month
M15E	1	02-Mar-93	0	0	0	0	1704	0	6000	Pre Construction
M15E	2	03-May-93	0	0	0	0	0	0	6000	Construction
M15E	3	29-Nov-93	0	0	0	0	1205	0	6500	Six Month
M15E	4	02-Jun-94	0	0	0	0	2175	0	6750	Twelve Month
M15E	5	09-May-95	0	0	0	0	1582	0	6750	Twenty-four Month
M15E	6	03-Jun-96	0	0	0	0	2231	0	6750	Thirty-six Month
M15L	1	02-Mar-93	0	0	5	18	1244	0	6250	Pre Construction
M15L	2	27-Apr-93	0	0	0	0	0	0	6500	Construction
M15L	3	29-Nov-93	0	0	0	0	1355	0	6500	Six Month
M15L	4	02-Jun-94	0	0	0	0	1837	0	6750	Twelve Month
M15L	5	09-May-95	0	0	0	0	2371	0	6750	Twenty-four Month
M15L	6	03-Jun-96	0	0	0	0	3152	0	6750	Thirty-six Month
M15C	1	02-Mar-93	0	0	0	0	582	0	6250	Pre Construction
M15C	2	03-May-93	0	0	0	0	0	0	6500	Construction
M15C	3	29-Nov-93	0	0	0	0	373	0	6500	Six Month
M15C	4	02-Jun-94	0	0	0	0	1113	0	6750	Twelve Month
M15C	5	09-May-95	0	0	0	0	598	0	6750	Twenty-four Month
M15C	6	03-Jun-96	0	0	0	15	1272	0	6750	Thirty-six Month
M15F	1	02-Mar-93	0	0	0	0	2205	0	6500	Pre Construction
M15F	3	29-Nov-93	0	0	0	0	2119	0	6500	Six Month
M15F	4	02-Jun-94	0	0	0	0	2750	0	6750	Twelve Month
M15F	5	09-May-95	0	0	0	0	3140	0	6750	Twenty-four Month
M15F	6	03-Jun-96	0	0	0	0	3000	0	7000	Thirty-six Month
M15X	1	02-Mar-93	0	0	0	0	0	0	6500	Pre Construction
M15X	3	29-Nov-93	0	0	0	0	0	0	6500	Six Month
M15X	4	02-Jun-94	0	0	0	0	192	0	6750	Twelve Month
M15X	5	09-May-95	0	0	0	0	160	0	6750	Twenty-four Month
M15X	6	03-Jun-96	0	0	0	0	619	0	6750	Thirty-six Month

Site 14, 48N15, San Antonio District, FM 484, N of San Antonio

<u>Site</u>	<u>No</u>	<u>Inspection Date</u>	<u>Alligator Cracking</u>	<u>Block Crack</u>	<u>Long in WP</u>	<u>Cr Long + Tran</u>	<u>Bleed</u>	<u>Ravel</u>	<u>Area Comment</u>
N15H	1	01-Mar-93	0	0	0	0	1161	25	6000 Pre Construction
N15H	2	22-Apr-93	0	0	0	0	0	0	6000 Construction
N15H	3	29-Nov-93	0	0	0	0	102	0	6000 Six Month
N15H	4	02-Jun-94	0	0	0	0	172	0	6000 Twelve Month
N15H	5	08-May-95	0	0	0	0	519	0	6000 Twenty-four Month
N15H	6	24-May-96	0	0	0	0	1957	0	6000 Thirty-six Month
N15M	1	01-Mar-93	0	0	0	0	659	450	6000 Pre Construction
N15M	2	23-Apr-93	0	0	0	0	0	0	6000 Construction
N15M	3	29-Nov-93	0	0	0	0	0	0	6000 Six Month
N15M	4	02-Jun-94	0	0	0	0	0	0	6000 Twelve Month
N15M	5	08-May-95	0	0	0	0	16	0	6000 Twenty-four Month
N15M	6	24-May-96	0	0	0	0	576	0	6000 Thirty-six Month
N15E	1	01-Mar-93	0	0	0	0	1375	360	6000 Pre Construction
N15E	2	22-Apr-93	0	0	0	0	0	0	6000 Construction
N15E	3	29-Nov-93	0	0	0	0	44	0	6000 Six Month
N15E	4	02-Jun-94	0	0	0	0	0	0	6000 Twelve Month
N15E	5	08-May-95	0	0	0	0	454	0	6000 Twenty-four Month
N15E	6	24-May-96	0	0	0	0	1179	0	6000 Thirty-six Month
N15L	1	01-Mar-93	0	0	0	0	2200	0	6000 Pre Construction
N15L	2	22-Apr-93	0	0	0	0	0	0	6000 Construction
N15L	3	29-Nov-93	0	0	0	0	1810	0	6000 Six Month
N15L	4	02-Jun-94	0	0	0	0	1725	0	6000 Twelve Month
N15L	5	08-May-95	0	0	0	0	2450	0	6000 Twenty-four Month
N15L	6	24-May-96	0	0	0	0	2750	520	6000 Thirty-six Month
N15C	1	01-Mar-93	0	0	0	0	1100	335	6500 Pre Construction
N15C	2	22-Apr-93	0	0	0	0	0	0	6000 Construction
N15C	3	29-Nov-93	0	0	0	0	112	0	6000 Six Month
N15C	4	02-Jun-94	0	0	0	0	368	0	6000 Twelve Month
N15C	5	08-May-95	0	0	0	0	542	52	6000 Twenty-four Month
N15C	6	24-May-96	0	0	0	0	2210	450	6000 Thirty-six Month
N15F	1	01-Mar-93	0	0	0	0	1520	293	6250 Pre Construction
N15F	3	29-Nov-93	0	0	0	0	1528	0	6000 Six Month
N15F	4	02-Jun-94	0	0	0	0	1684	90	6000 Twelve Month
N15F	5	08-May-95	0	0	0	0	2213	0	6000 Twenty-four Month
N15F	6	24-May-96	0	0	0	0	2675	200	6000 Thirty-six Month
N15X	1	01-Mar-93	0	0	0	0	2015	705	5875 Pre Construction
N15X	3	29-Nov-93	0	0	0	0	1714	0	6000 Six Month
N15X	4	02-Jun-94	0	0	0	0	1903	50	6000 Twelve Month
N15X	5	08-May-95	0	0	0	0	2243	0	6000 Twenty-four Month
N15X	6	24-May-96	0	0	0	0	2234	150	6000 Thirty-six Month

Site 15, 48O17, Bryan District, US 190, N of Milano

<u>Site</u>	<u>No</u>	<u>Inspection Date</u>	<u>Alligator Cracking</u>	<u>Block Crack</u>	<u>Long in WP</u>	<u>Cr Long + Tran</u>	<u>Bleed</u>	<u>Ravel</u>	<u>Area Comment</u>
O17H	1	08-Mar-93	1383	0	407	80	0	0	6500 Pre Construction
O17H	2	17-Apr-93	0	0	0	0	0	0	6500 Construction
O17H	3	28-Nov-93	0	0	0	0	1415	0	7000 Six Month
O17H	4	22-Jun-94	0	0	0	0	2476	0	7000 Twelve Month
O17H	5	21-Jul-95	0	0	0	0	3065	13	7000 Twenty-four Month
O17H	6	25-May-96	0	0	0	0	3247	0	7000 Thirty-six Month
O17M	1	08-Mar-93	1588	0	228	193	0	0	6500 Pre Construction
O17M	2	20-Apr-93	0	0	0	0	0	0	6500 Construction
O17M	3	28-Nov-93	83	0	365	0	0	0	7000 Six Month
O17M	4	22-Jun-94	653	0	397	90	0	0	7000 Twelve Month
O17M	5	21-Jul-95	1276	0	339	114	199	0	7000 Twenty-four Month
O17M	6	25-May-96	1633	0	320	106	0	0	7000 Thirty-six Month
O17E	1	08-Mar-93	1216	0	409	162	0	0	6500 Pre Construction
O17E	2	19-Apr-93	0	0	0	0	0	0	6500 Construction
O17E	3	28-Nov-93	0	0	0	0	963	0	7000 Six Month
O17E	4	22-Jun-94	0	0	0	0	2000	0	7000 Twelve Month
O17E	5	21-Jul-95	0	0	0	0	3475	0	7000 Twenty-four Month
O17E	6	25-May-96	0	0	0	0	3450	0	7000 Thirty-six Month
O17L	1	08-Mar-93	2255	0	173	179	0	0	6500 Pre Construction
O17L	2	20-Apr-93	0	0	0	0	0	0	7000 Construction
O17L	3	28-Nov-93	0	0	145	0	1292	0	7000 Six Month
O17L	4	22-Jun-94	0	0	0	0	3700	0	7000 Twelve Month
O17L	5	21-Jul-95	0	0	0	0	5404	0	7000 Twenty-four Month
O17L	6	25-May-96	0	0	0	10	4750	0	7000 Thirty-six Month
O17C	1	08-Mar-93	1149	0	630	193	0	0	6500 Pre Construction
O17C	2	17-Apr-93	0	0	0	0	0	0	7000 Construction
O17C	3	28-Nov-93	0	0	6	0	1000	0	7000 Six Month
O17C	4	22-Jun-94	0	0	0	2	3500	0	7000 Twelve Month
O17C	5	21-Jul-95	0	0	0	0	4100	0	7000 Twenty-four Month
O17C	6	25-May-96	0	0	0	2	3800	0	7000 Thirty-six Month
O17F	1	08-Mar-93	2255	0	485	35	0	0	6500 Pre Construction
O17F	3	28-Nov-93	2651	0	338	34	0	0	7000 Six Month
O17F	4	22-Jun-94	0	7000	0	0	0	0	7000 Twelve Month
O17F	5	21-Jul-95	0	6000	0	0	0	7000	7000 Twenty-four Month
O17F	6	25-May-96	0	7000	0	0	0	0	7000 Thirty-six Month
O17X	1	08-Mar-93	1608	0	500	29	0	0	6500 Pre Construction
O17X	3	28-Nov-93	2294	0	412	30	0	200	7000 Six Month
O17X	4	22-Jun-94	0	7000	0	0	0	0	7000 Twelve Month
O17X	5	21-Jul-95	0	6000	0	0	0	7000	7000 Twenty-four Month
O17X	6	25-May-96	0	7000	0	0	0	800	7000 Thirty-six Month

Site 16, 48P19, Atlanta District, SH 49, S of Mt. Pleasant

<u>Site</u>	<u>No</u>	<u>Inspection Date</u>	<u>Alligator Cracking</u>	<u>Block Crack</u>	<u>Long in WP</u>	<u>Cr Long + Tran</u>	<u>Bleed</u>	<u>Ravel</u>	<u>Area Comment</u>
P19H	1	10-Mar-93	0	0	0	0	3600	0	6500 Pre Construction
P19H	2	23-Jun-93	0	0	0	0	0	0	6500 Construction
P19H	3	06-Dec-93	0	0	0	0	3061	0	6500 Six Month
P19H	4	30-Jun-94	0	0	0	0	2400	0	6500 Twelve Month
P19H	5	01-Jul-95	0	0	0	0	3300	0	6500 Twenty-four Month
P19H	6	19-Jun-96	0	0	0	0	4082	0	6500 Thirty-six Month
P19M	1	10-Mar-93	0	0	0	0	2950	0	6500 Pre Construction
P19M	2	24-Jun-93	0	0	0	0	0	0	6000 Construction
P19M	3	06-Dec-93	0	0	0	0	1338	0	6250 Six Month
P19M	4	30-Jun-94	0	0	0	0	2000	0	6000 Twelve Month
P19M	5	01-Jul-95	0	0	0	0	2000	0	6000 Twenty-four Month
P19M	6	19-Jun-96	0	0	0	0	1522	0	6000 Thirty-six Month
P19E	1	10-Mar-93	0	0	0	0	3400	0	6375 Pre Construction
P19E	2	23-Jun-93	0	0	0	0	0	0	6000 Construction
P19E	3	06-Dec-93	0	0	0	0	65	8.5	6000 Six Month
P19E	4	30-Jun-94	0	0	0	0	1230	0	6000 Twelve Month
P19E	5	01-Jul-95	0	0	0	0	2308	1050	6000 Twenty-four Month
P19E	6	19-Jun-96	0	0	0	0	2575	0	6000 Thirty-six Month
P19L	1	10-Mar-93	0	0	0	7	4150	0	6500 Pre Construction
P19L	2	23-Jun-93	0	0	0	0	0	0	6500 Construction
P19L	3	06-Dec-93	0	0	0	0	1289	63	6500 Six Month
P19L	4	30-Jun-94	0	0	0	0	2378	0	6500 Twelve Month
P19L	5	01-Jul-95	0	0	0	0	2909	0	6500 Twenty-four Month
P19L	6	19-Jun-96	0	0	0	0	2672	0	6500 Thirty-six Month
P19C	1	10-Mar-93	138	0	36	195	3221	0	6500 Pre Construction
P19C	2	23-Jun-93	0	0	0	0	0	0	6500 Construction
P19C	3	06-Dec-93	0	0	0	0	387	100	6250 Six Month
P19C	4	30-Jun-94	0	0	0	0	1900	146	6250 Twelve Month
P19C	5	01-Jul-95	0	0	0	0	2713	590	6250 Twenty-four Month
P19C	6	19-Jun-96	0	0	0	0	2648	198	6250 Thirty-six Month
P19F	-	-	-	-	-	-	-	-	Never Established
P19X	-	-	-	-	-	-	-	-	Never Established

Site 17, 48Q19, Atlanta District, SH 315, W of Carthage

<u>Site</u>	<u>No</u>	<u>Inspection Date</u>	<u>Alligator Cracking</u>	<u>Block Crack</u>	<u>Long in WP</u>	<u>Cr Long + Tran</u>	<u>Bleed</u>	<u>Ravel</u>	<u>Area</u>	<u>Comment</u>
Q19H	1	11-Mar-93	715	0	40	49	3000	0	6500	Pre Construction
Q19H	2	28-Jun-93	0	0	0	0	0	0	6500	Construction
Q19H	3	06-Dec-93	0	0	0	0	2514	0	6250	Six Month
Q19H	4	24-Jun-94	0	0	0	0	3900	0	6500	Twelve Month
Q19H	5	Deleted								Twenty-four Month
Q19H	6	Deleted								Thirty-six Month
Q19M	1	11-Mar-93	646	0	0	0	3500	0	6500	Pre Construction
Q19M	2	29-Jun-93	0	0	0	0	0	0	6500	Construction
Q19M	3	06-Dec-93	210.5	0	0	0	3444	0	6500	Six Month
Q19M	4	24-Jun-94	461	0	0	0	4364	0	6500	Twelve Month
Q19M	5	Deleted								Twenty-four Month
Q19M	6	Deleted								Thirty-six Month
Q19E	1	11-Mar-93	84	0	45	5	2772	450	6500	Pre Construction
Q19E	2	28-Jun-93	0	0	0	0	0	0	6500	Construction
Q19E	3	06-Dec-93	0	0	0	0	1400	8	6500	Six Month
Q19E	4	24-Jun-94	0	0	0	0	3400	0	6750	Twelve Month
Q19E	5	Deleted								Twenty-four Month
Q19E	6	Deleted								Thirty-six Month
Q19L	1	11-Mar-93	5526	0	0	0	850	0	6500	Pre Construction
Q19L	2	28-Jun-93	0	0	0	0	0	0	6500	Construction
Q19L	3	06-Dec-93	327	0	0	4	1358	0	6500	Six Month
Q19L	4	24-Jun-94	1249	0	0	0	2081	0	6500	Twelve Month
Q19L	5	Deleted								Twenty-four Month
Q19L	6	Deleted								Thirty-six Month
Q19C	1	11-Mar-93	3995	0	0	0	725	0	6500	Pre Construction
Q19C	2	29-Jun-93	0	0	0	0	0	0	6500	Construction
Q19C	3	06-Dec-93	769	0	0	0	3024	125	6500	Six Month
Q19C	4	24-Jun-94	2414	0	0	0	4039	0	6500	Twelve Month
Q19C	5	Deleted								Twenty-four Month
Q19C	6	Deleted								Thirty-six Month
Q19F	-	-	-	-	-	-	-	-	-	Never Established
Q19X	-	-	-	-	-	-	-	-	-	Never Established

Site 18, 48R20, Beaumont District, FM 105, E of Silsbee

<u>Site</u>	<u>No</u>	<u>Inspection Date</u>	<u>Alligator Cracking</u>	<u>Block Crack</u>	<u>Long in WP</u>	<u>Cr Long + Tran</u>	<u>Bleed</u>	<u>Ravel</u>	<u>Area Comment</u>
R20H	1	14-Mar-93	61	0	17	24	0	0	6250 Pre Construction
R20H	2	10-Jul-93	0	0	0	0	0	0	6500 Construction
R20H	3	08-Dec-93	0	0	0	0	3000	0	6750 Six Month
R20H	4	07-Jun-94	0	0	0	0	2332	0	7000 Twelve Month
R20H	5	11-May-95	32	0	0	0	3000	0	7000 Twenty-four Month
R20H	6	23-May-96	30	0	0	0	3000	0	7000 Thirty-six Month
R20M	1	14-Mar-93	0	0	0	11	0	0	6250 Pre Construction
R20M	2	11-Jul-93	0	0	0	0	0	0	7000 Construction
R20M	3	08-Dec-93	0	0	0	0	0	0	7000 Six Month
R20M	4	07-Jun-94	0	0	0	0	0	0	7000 Twelve Month
R20M	5	11-May-95	0	0	0	52	0	0	7000 Twenty-four Month
R20M	6	23-May-96	14	0	3	176	0	0	7000 Thirty-six Month
R20E	1	14-Mar-93	61	0	35	88	0	0	6250 Pre Construction
R20E	2	11-Jul-93	0	0	0	0	0	0	6500 Construction
R20E	3	08-Dec-93	0	0	0	0	0	1740	7000 Six Month
R20E	4	07-Jun-94	0	0	0	0	0	230	7250 Twelve Month
R20E	5	11-May-95	18	0	2	18	335	3225	7250 Twenty-four Month
R20E	6	23-May-96	100	0	0	16	1272	1075	7250 Thirty-six Month
R20L	1	14-Mar-93	145	0	145	144	0	0	6250 Pre Construction
R20L	2	11-Jul-93	0	0	0	0	0	0	6500 Construction
R20L	3	08-Dec-93	0	0	0	0	2738	175	7000 Six Month
R20L	4	07-Jun-94	0	0	0	0	1103	55	7000 Twelve Month
R20L	5	11-May-95	0	0	0	0	3802	270	7000 Twenty-four Month
R20L	6	23-May-96	0	0	0	0	4569	0	7000 Thirty-six Month
R20C	1	14-Mar-93	0	0	109	68	0	0	6250 Pre Construction
R20C	2	10-Jul-93	0	0	0	0	0	0	6500 Construction
R20C	3	08-Dec-93	0	0	0	0	4613	84	6750 Six Month
R20C	4	07-Jun-94	0	0	0	0	3671	0	7000 Twelve Month
R20C	5	11-May-95	0	0	0	0	5713	150	7000 Twenty-four Month
R20C	6	23-May-96	6	0	0	0	5612	132	6750 Thirty-six Month
R20F	1	14-Mar-93	757	0	95	95	0	0	6250 Pre Construction
R20F	3	08-Dec-93	895	0	90	86	0	0	6500 Six Month
R20F	4	07-Jun-94	807	0	138	145	0	0	7000 Twelve Month
R20F	5	11-May-95	875	0	218	161	0	0	7000 Twenty-four Month
R20F	6	23-May-96	918	0	190	221	0	0	7000 Thirty-six Month
R20X	1	14-Mar-93	1689	0	32	168	0	0	6250 Pre Construction
R20X	3	08-Dec-93	1544	376	35	131.5	0	0	6500 Six Month
R20X	4	07-Jun-94	2292	0	37	102	0	0	6750 Twelve Month
R20X	5	11-May-95	2353	0	55	192.5	0	0	6750 Twenty-four Month
R20X	6	23-May-96	1157	0	5	31	0	0	6750 Thirty-six Month

Site 19, 48S23, Brownwood District, US 67, NE of Brownwood

Site	No	Inspection Date	Alligator Cracking	Block Crack	Long Cr in WP	Long Cr + Tran	Bleed	Ravel	Area Comment
S23H	1	06-Mar-93	30	0	0	315	0	0	6500 Pre Construction
S23H	2	10-May-93	0	0	0	0	0	0	6500 Construction
S23H	3	18-Nov-93	0	0	0	0	1482	0	6500 Six Month
S23H	4	11-Jun-94	0	0	0	0	3611	0	6500 Twelve Month
S23H	5	16-Jun-95	0	0	12	41	3299	0	6750 Twenty-four Month
S23H	6	02-Jun-96	38	0	5	16	4950	0	6750 Thirty-six Month
S23M	1	06-Mar-93	0	0	241	279	161	0	6500 Pre Construction
S23M	2	11-May-93	0	0	0	0	0	0	6500 Construction
S23M	3	18-Nov-93	0	0	0	29	0	0	6500 Six Month
S23M	4	11-Jun-94	0	0	211	251	0	0	6750 Twelve Month
S23M	5	16-Jun-95	0	0	197	435	0	0	6750 Twenty-four Month
S23M	6	02-Jun-96	0	0	378	427	0	0	6750 Thirty-six Month
S23E	1	06-Mar-93	21	0	72	482	3000	0	6500 Pre Construction
S23E	2	10-May-93	0	0	0	0	0	0	6500 Construction
S23E	3	18-Nov-93	0	0	0	0	865	0	6500 Six Month
S23E	4	11-Jun-94	0	0	0	0	3600	0	6750 Twelve Month
S23E	5	16-Jun-95	0	0	0	0	3141	0	6750 Twenty-four Month
S23E	6	02-Jun-96	0	0	3	33	3750	0	6750 Thirty-six Month
S23L	1	06-Mar-93	0	0	40	582	3000	0	6500 Pre Construction
S23L	2	11-May-93	0	0	0	0	0	0	6500 Construction
S23L	3	18-Nov-93	0	0	0	0	232	0	6500 Six Month
S23L	4	11-Jun-94	0	0	0	0	2900	50	6500 Twelve Month
S23L	5	16-Jun-95	0	0	2	8	756	141	6750 Twenty-four Month
S23L	6	02-Jun-96	0	0	10	25	2800	200	6750 Thirty-six Month
S23C	1	06-Mar-93	0	0	67	563	3000	0	6500 Pre Construction
S23C	2	10-May-93	0	0	0	0	0	0	6500 Construction
S23C	3	18-Nov-93	0	0	0	0	190	0	6500 Six Month
S23C	4	11-Jun-94	0	0	0	0	2510	0	6750 Twelve Month
S23C	5	16-Jun-95	0	0	11	4	1631	0	6750 Twenty-four Month
S23C	6	02-Jun-96	48	0	46	94	2900	0	6750 Thirty-six Month
S23F	1	06-Mar-93	0	0	42	411	3000	0	6500 Pre Construction
S23F	3	18-Nov-93	0	0	265	204	172	0	6500 Six Month
S23F	4	11-Jun-94	0	0	134	375	3000	0	6500 Twelve Month
S23F	5	16-Jun-95	0	0	254	554	2500	0	6750 Twenty-four Month
S23F	6	02-Jun-96	0	600	306	196	3000	0	6750 Thirty-six Month
S23X	1	06-Mar-93	0	0	33	603	0	0	6500 Pre Construction
S23X	3	18-Nov-93	0	0	458	228	0	0	6500 Six Month
S23X	4	11-Jun-94	0	0	447	225	3000	0	6250 Twelve Month
S23X	5	16-Jun-95	14	0	458	354	2000	0	6250 Twenty-four Month
S23X	6	02-Jun-96	0	486	449	198	2000	0	6250 Thirty-six Month

Site 20, 48T23, Brownwood District, US 377, N of Brady

<u>Site</u>	<u>Inspection No</u>	<u>Date</u>	<u>Alligator Cracking</u>	<u>Block Crack</u>	<u>Long Cr in WP</u>	<u>Long Cr in Tran</u>	<u>Bleed</u>	<u>Ravel</u>	<u>Area</u>	<u>Comment</u>
T23H	1	06-Mar-93	0	525	20	460	0	0	6250	Pre Construction
T23H	2	06-May-93	0	0	0	0	0	0	6500	Construction
T23H	3	24-Nov-93	0	0	0	0	0	0	6500	Six Month
T23H	4	10-Jun-94	0	0	0	0	2750	0	6000	Twelve Month
T23H	5	16-Jun-95	0	0	0	1	2294	0	6000	Twenty-four Month
T23H	6	03-Jun-96	0	0	0	28	1750	12	6000	Thirty-six Month
T23M	1	06-Mar-93	0	0	6	342	2645	0	6250	Pre Construction
T23M	2	08-May-93	0	0	0	0	0	0	6500	Construction
T23M	3	24-Nov-93	0	0	0	26	0	0	6500	Six Month
T23M	4	10-Jun-94	0	0	5	179	2000	0	6000	Twelve Month
T23M	5	16-Jun-95	85	0	79	301	0	0	6000	Twenty-four Month
T23M	6	03-Jun-96	130	0	159	257	0	0	6000	Thirty-six Month
T23E	1	06-Mar-93	0	0	34	300	3380	0	6250	Pre Construction
T23E	2	08-May-93	0	0	0	0	0	0	6000	Construction
T23E	3	24-Nov-93	0	0	0	0	217	0	6500	Six Month
T23E	4	10-Jun-94	0	0	0	0	716	0	6000	Twelve Month
T23E	5	16-Jun-95	0	0	0	0	2032	0	6000	Twenty-four Month
T23E	6	03-Jun-96	0	0	0	3	1763	0	6000	Thirty-six Month
T23L	1	06-Mar-93	0	2980	0	322	3000	0	6250	Pre Construction
T23L	2	06-May-93	0	0	0	0	0	0	6500	Construction
T23L	3	24-Nov-93	0	0	0	4	0	0	6500	Six Month
T23L	4	10-Jun-94	0	0	0	0	700	0	6000	Twelve Month
T23L	5	16-Jun-95	0	0	0	0	2363	0	6000	Twenty-four Month
T23L	6	03-Jun-96	0	0	0	59	2363	0	6000	Thirty-six Month
T23C	1	06-Mar-93	0	3450	0	259	700	0	6500	Pre Construction
T23C	2	08-May-93	0	0	0	0	0	0	6500	Construction
T23C	3	24-Nov-93	0	0	0	17	333	0	6500	Six Month
T23C	4	10-Jun-94	0	0	0	7	767	0	6000	Twelve Month
T23C	5	16-Jun-95	0	0	0	25	1636	0	6000	Twenty-four Month
T23C	6	03-Jun-96	0	0	0	108	1192	0	6000	Thirty-six Month
T23F	1	06-Mar-93	0	625	0	381	2500	0	6500	Pre Construction
T23F	3	24-Nov-93	0	0	3	270	0	0	6500	Six Month
T23F	4	10-Jun-94	0	0	0	198	3135	0	6000	Twelve Month
T23F	5	16-Jun-95	18	0	17	627	3340	0	6000	Twenty-four Month
T23F	6	03-Jun-96	0	4704	0	112	1323	0	6000	Thirty-six Month
T23X	1	06-Mar-93	0	0	15	419	3000	0	6500	Pre Construction
T23X	3	24-Nov-93	0	0	39	305	378	0	6500	Six Month
T23X	4	10-Jun-94	0	0	28	290	3957	0	6000	Twelve Month
T23X	5	16-Jun-95	0	2208	34	403	3260	0	6000	Twenty-four Month
T23X	6	03-Jun-96	0	5400	0	43	2500	0	6000	Thirty-six Month

APPENDIX - B

Graphical Results of Distress Data Collection

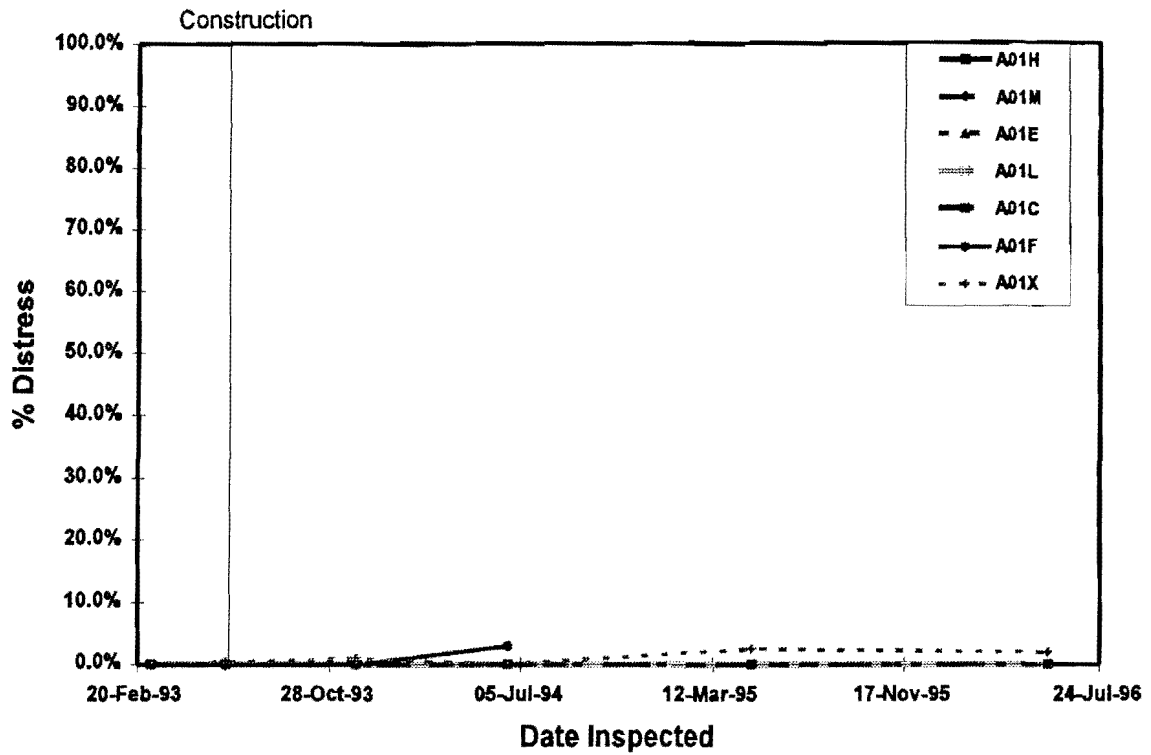


Figure B - 1. Alligator Cracking for Site A01

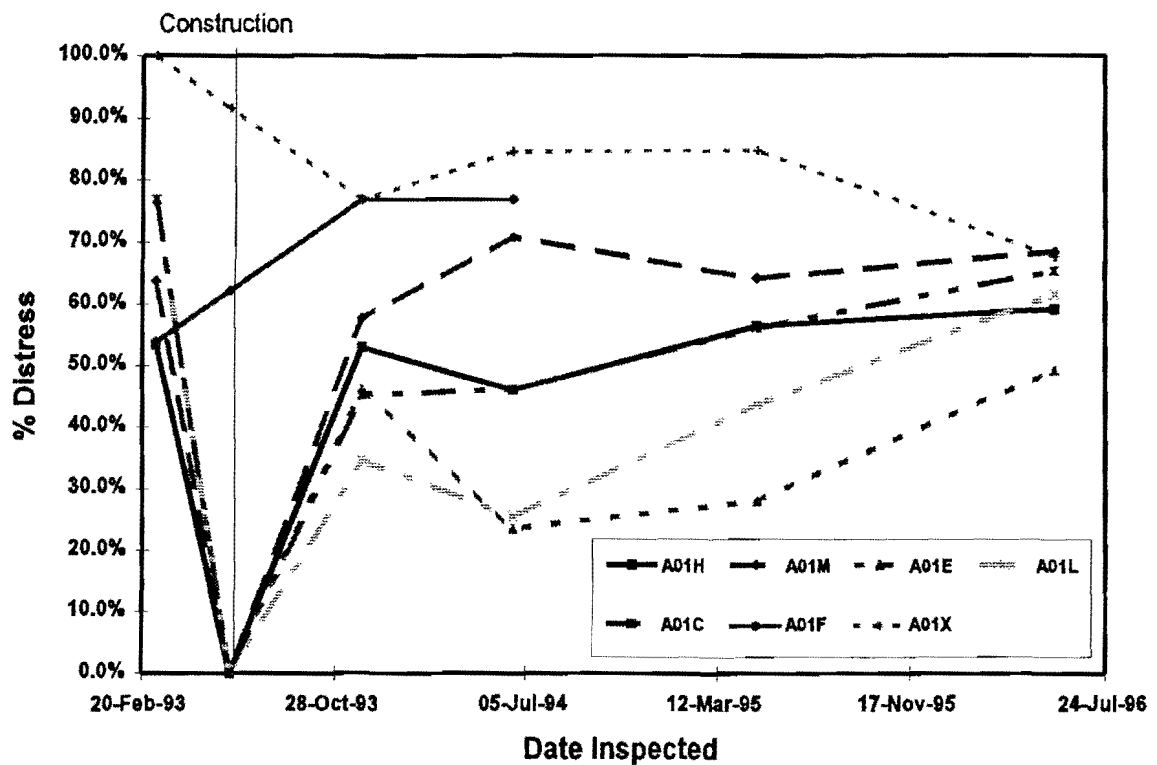


Figure B - 2. Bleeding for Site A01

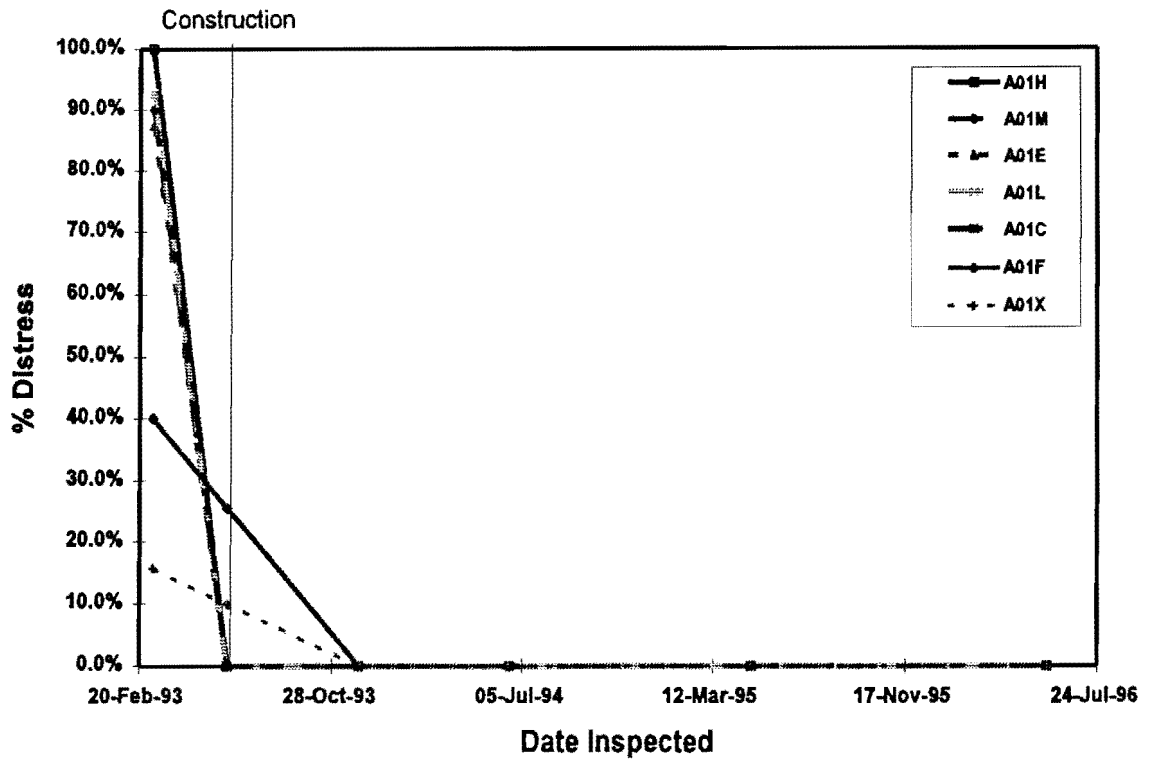


Figure B - 3. Block Cracking for Site A01

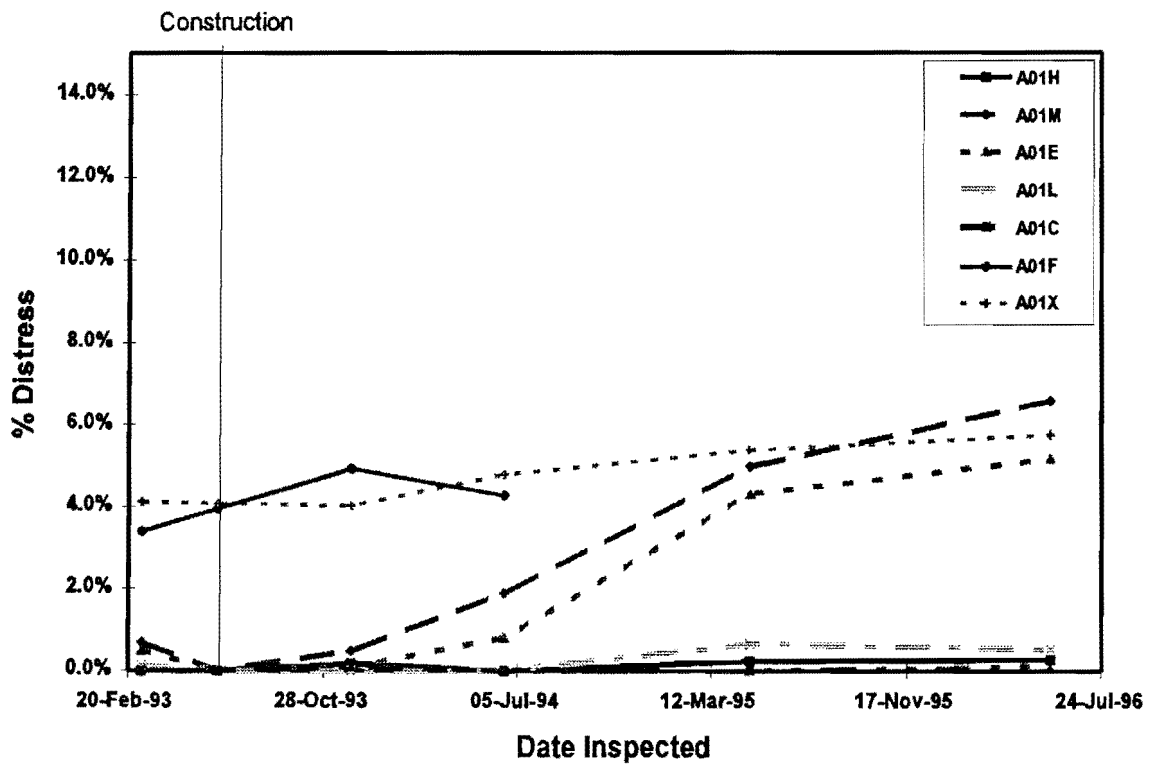


Figure B - 4. Transverse and Non Wheelpath Longitudinal Cracking for Site A01

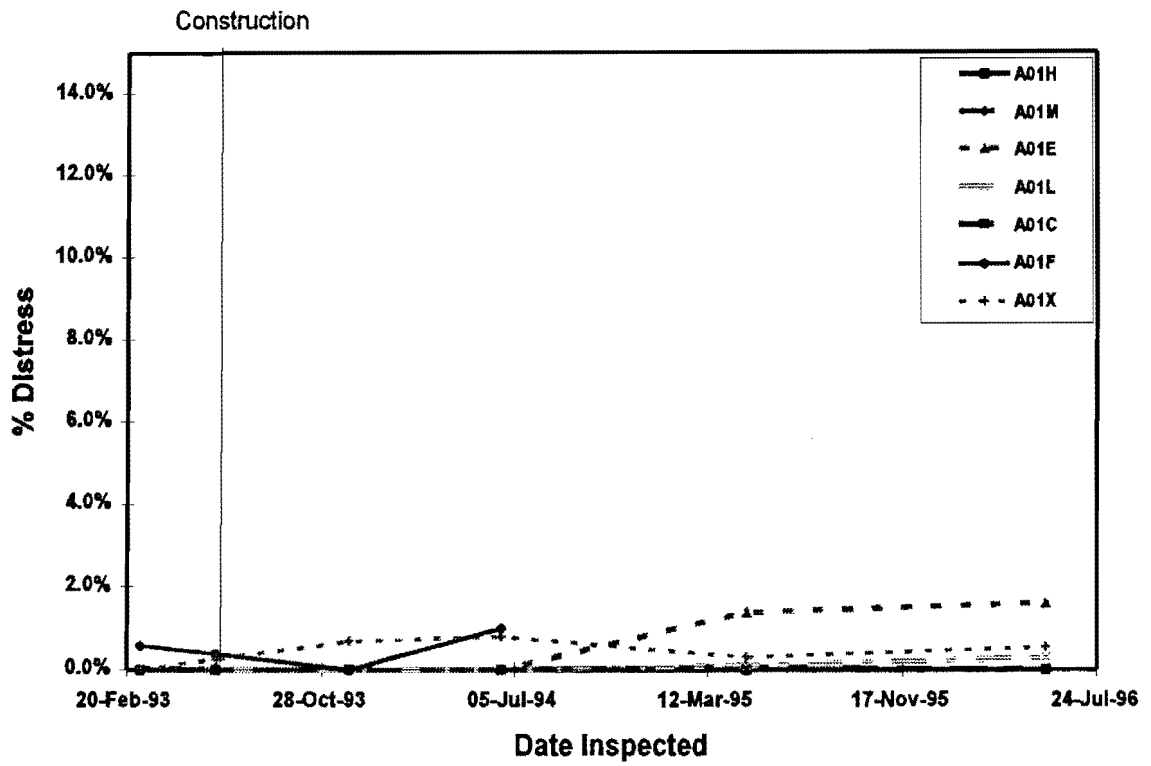


Figure B - 5. Longitudinal Cracking in the Wheelpath for Site A01

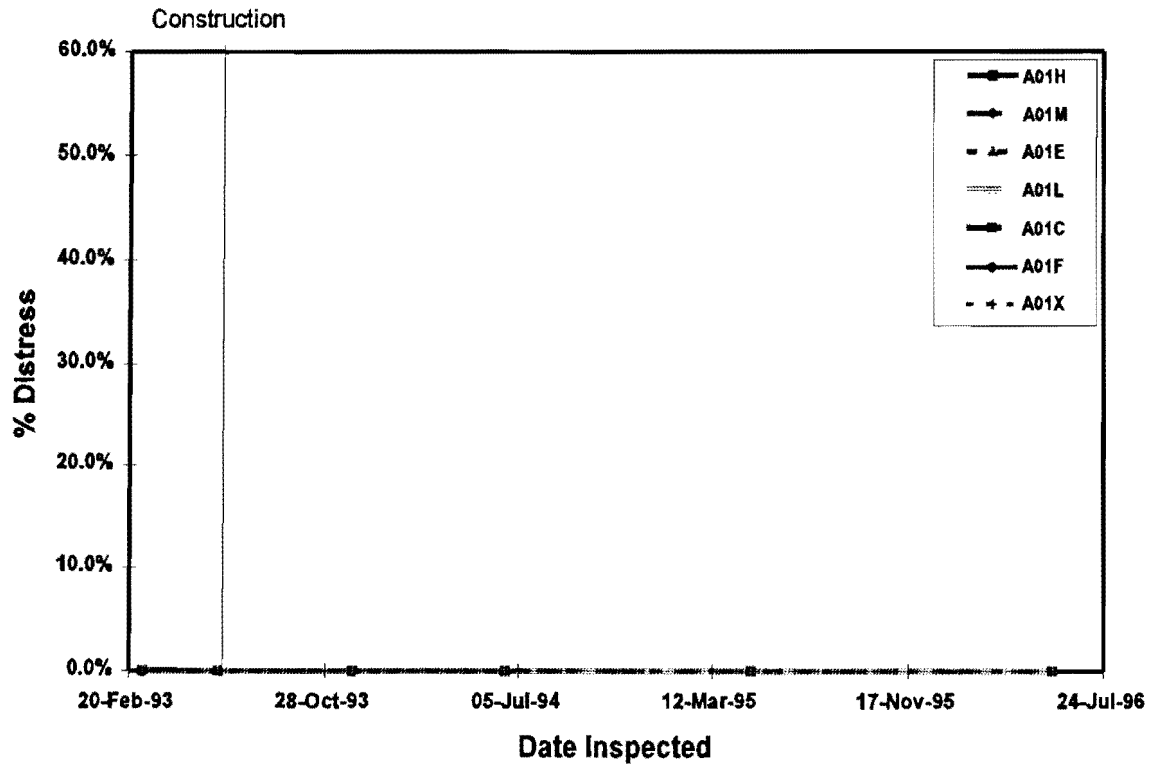


Figure B - 6. Ravelling for Site A01

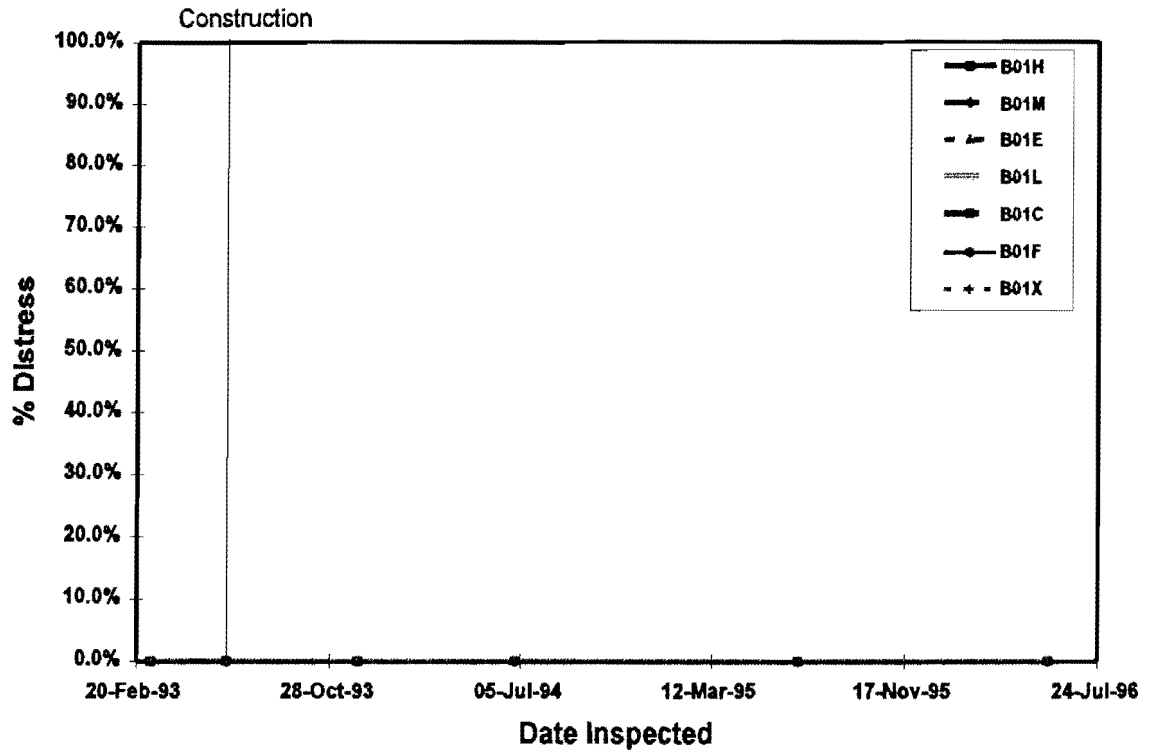


Figure B - 7. Alligator Cracking for Site B01

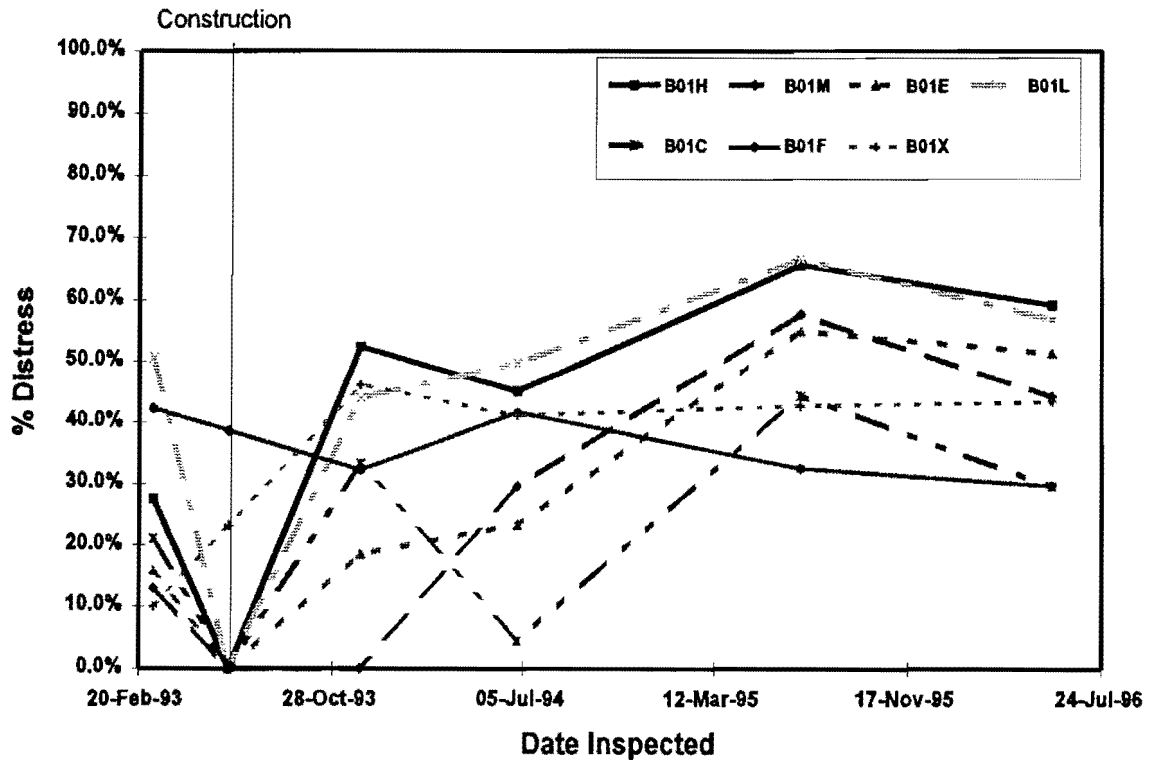


Figure B - 8. Bleeding for Site B01

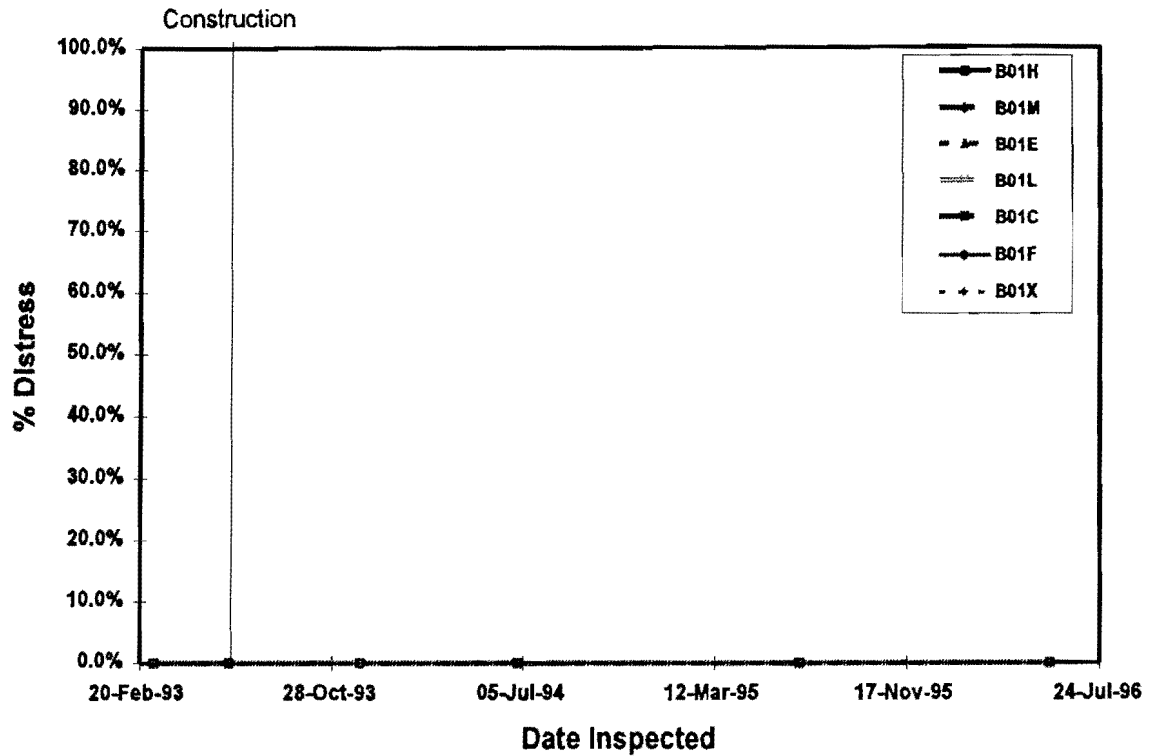


Figure B - 9. Block Cracking for Site B01

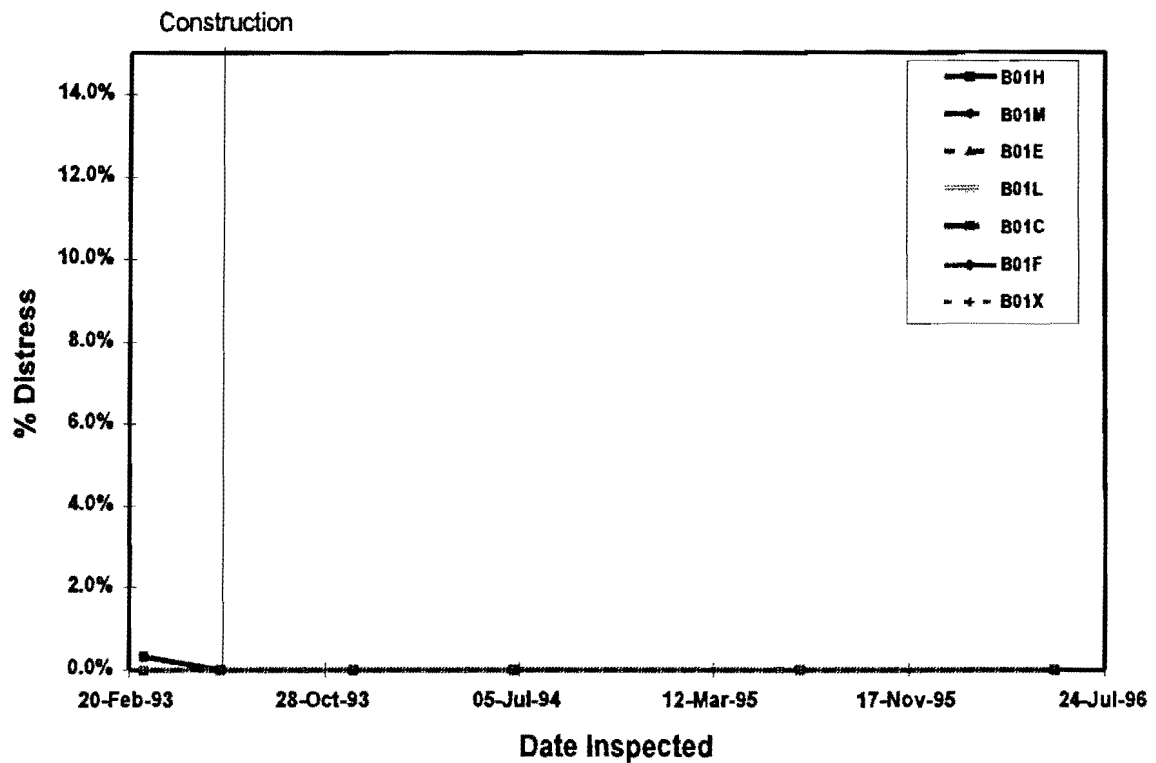


Figure B - 10. Transverse and Non Wheelpath Longitudinal Cracking for Site B01

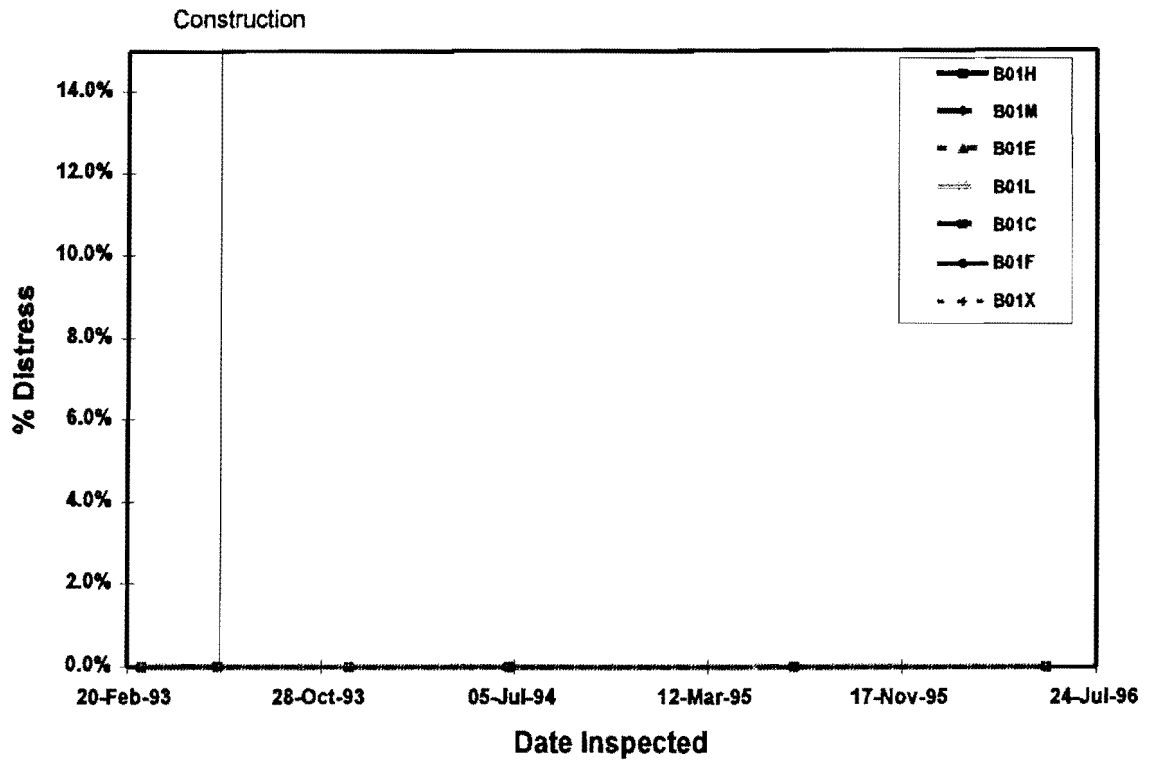


Figure B - 11. Longitudinal Cracking in the Wheelpath for Site B01

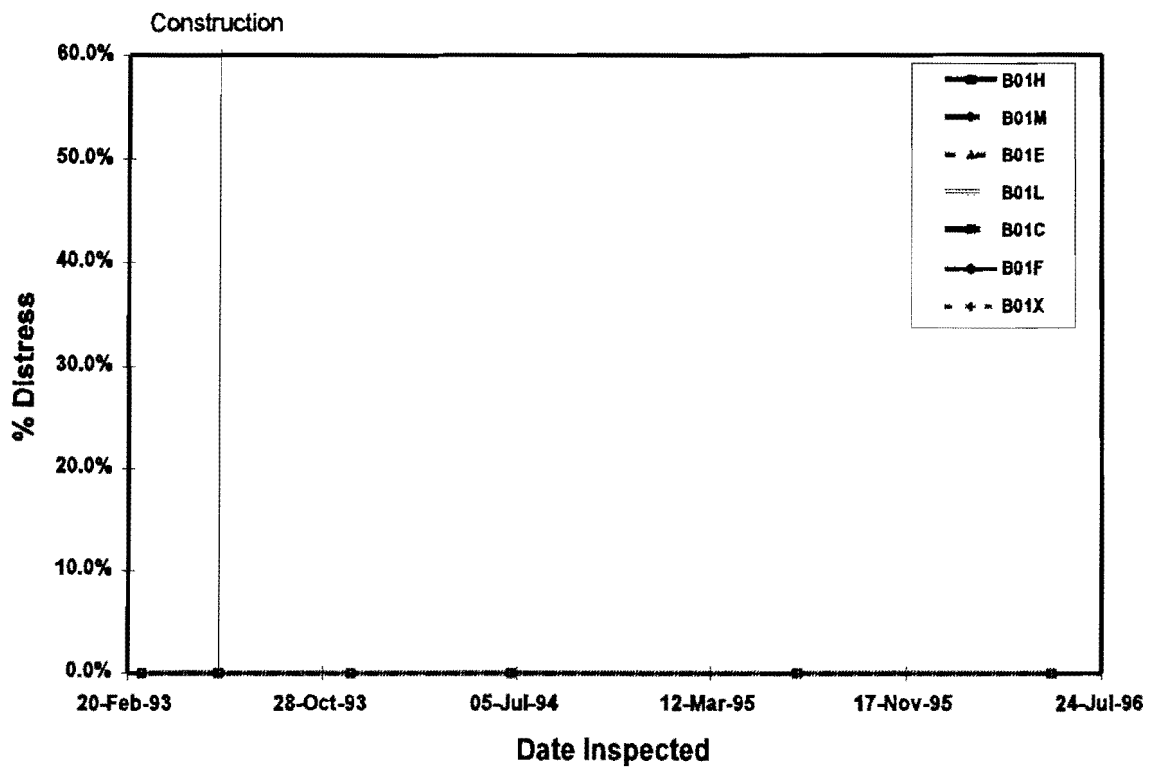


Figure B - 12. Ravelling for Site B01

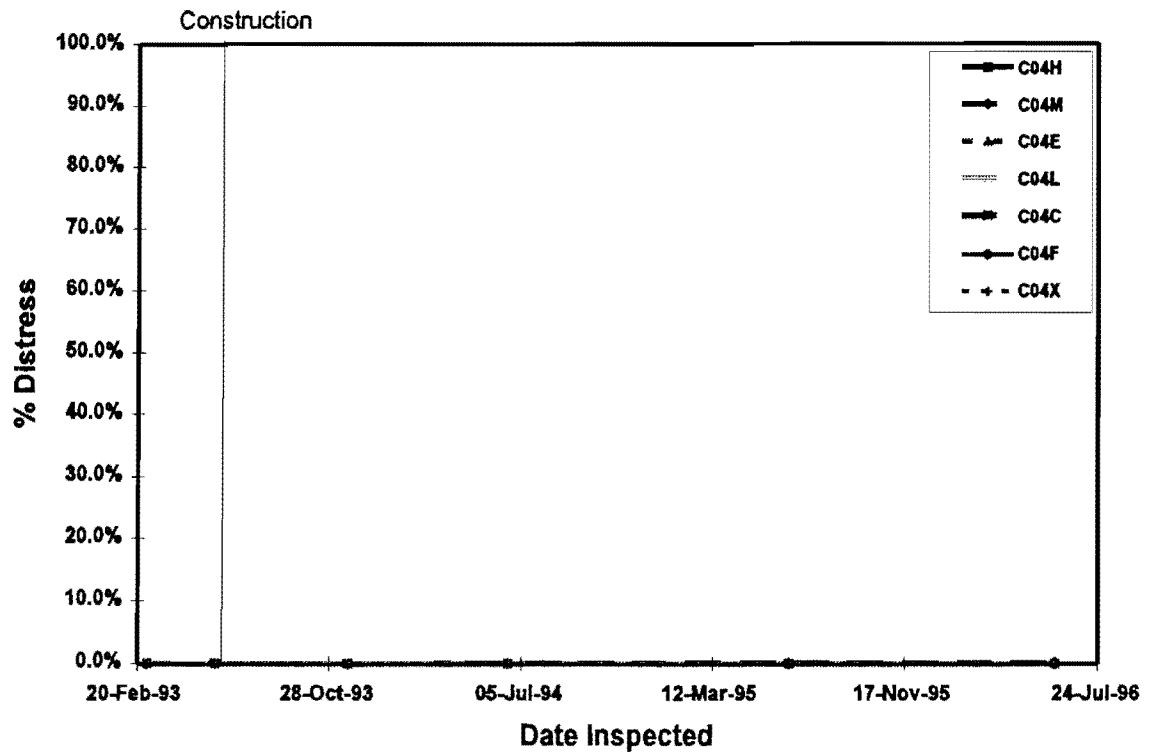


Figure B - 13. Alligator Cracking for Site C04

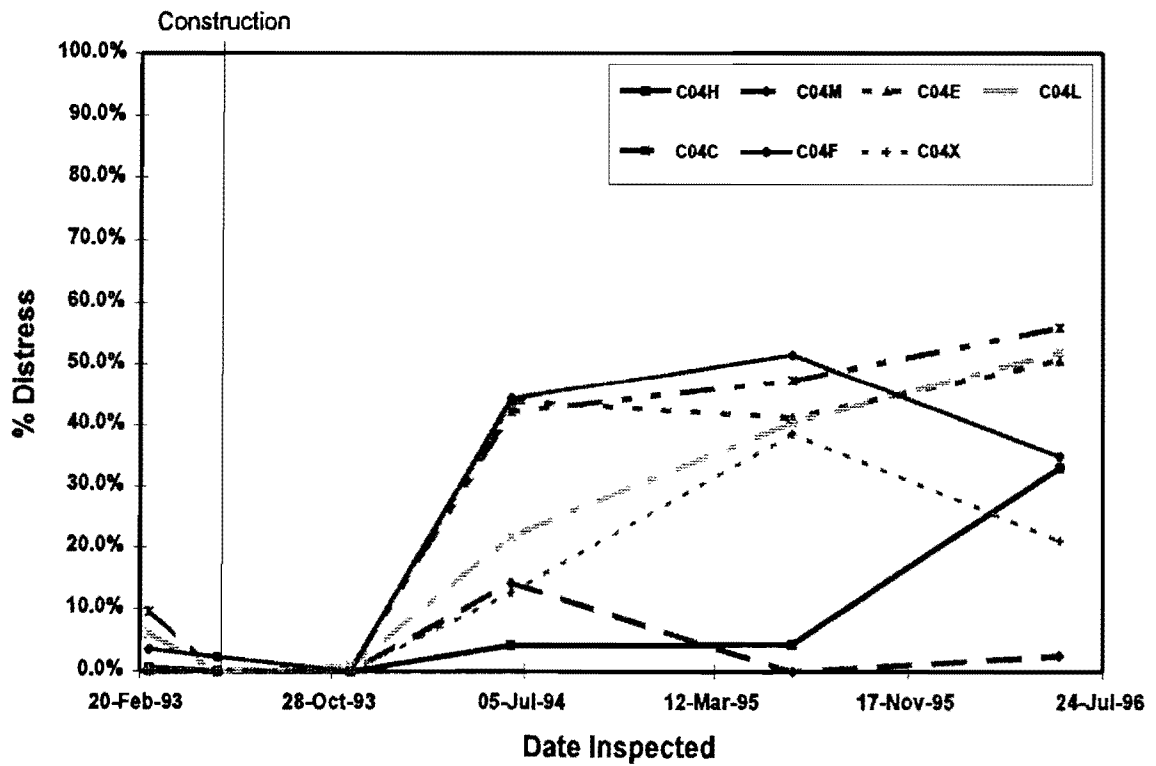


Figure B - 14. Bleeding for Site C04

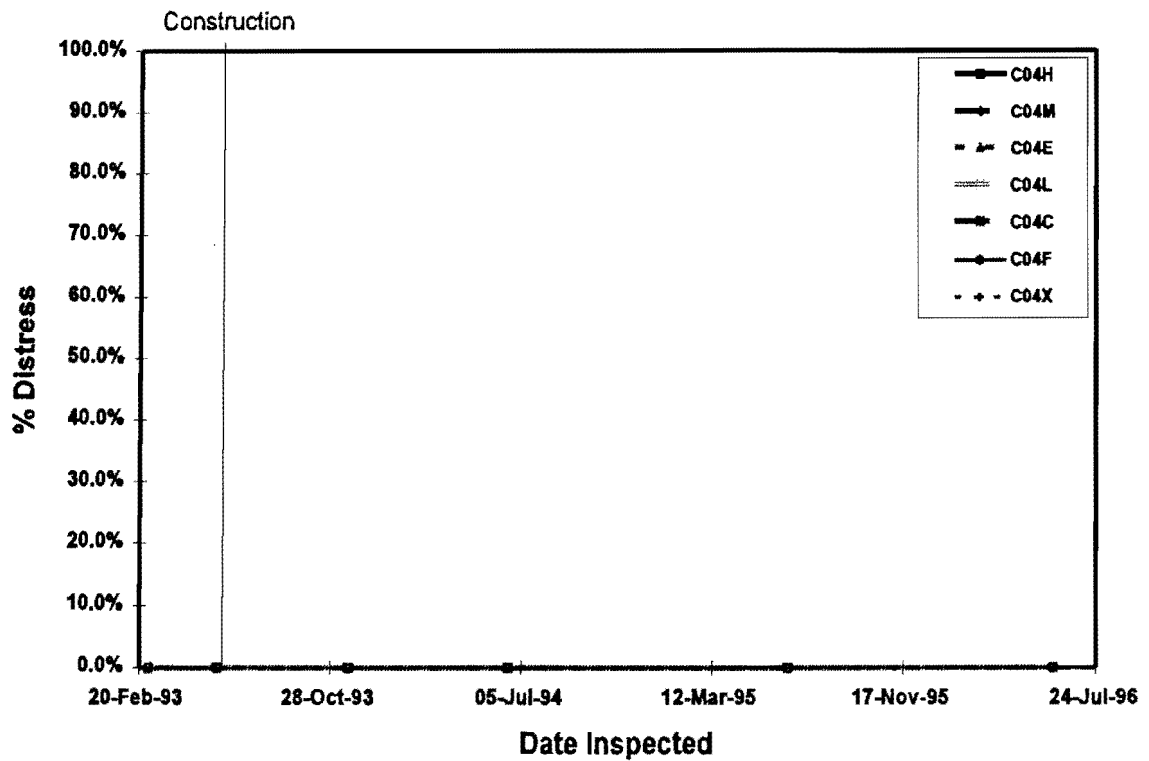


Figure B - 15. Block Cracking for Site C04

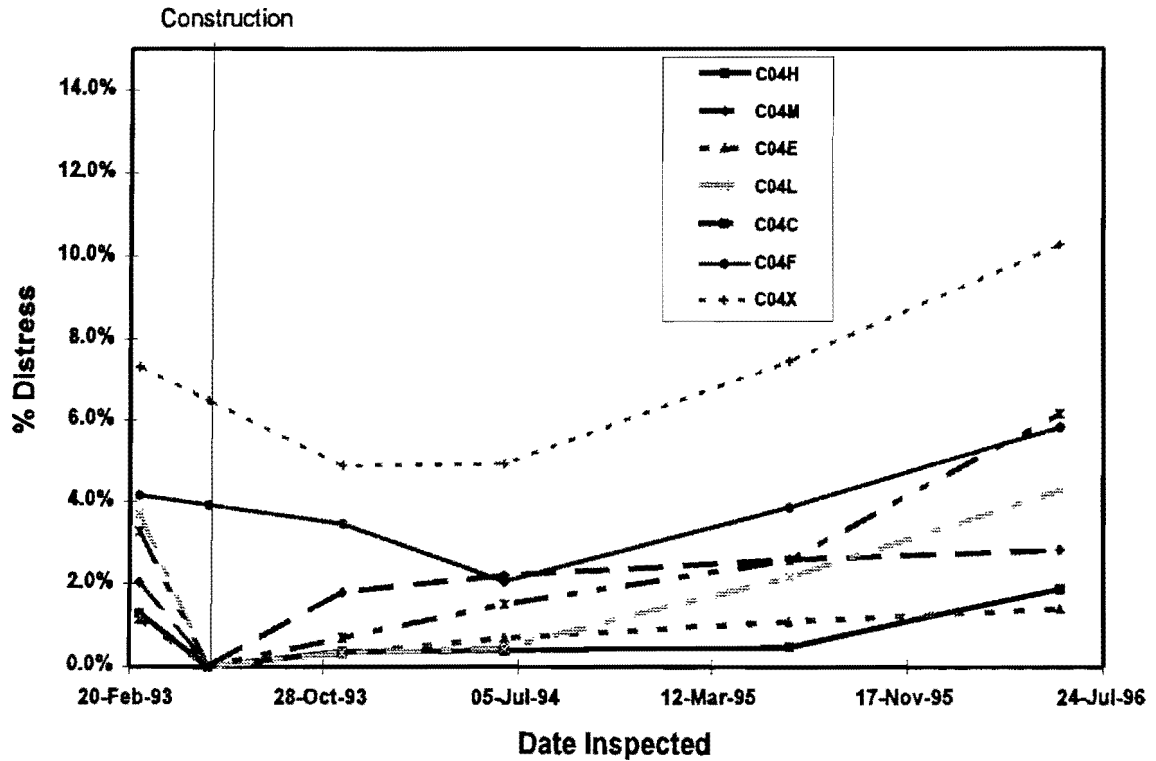


Figure B - 16. Transverse and Non Wheelpath Longitudinal Cracking for Site C04

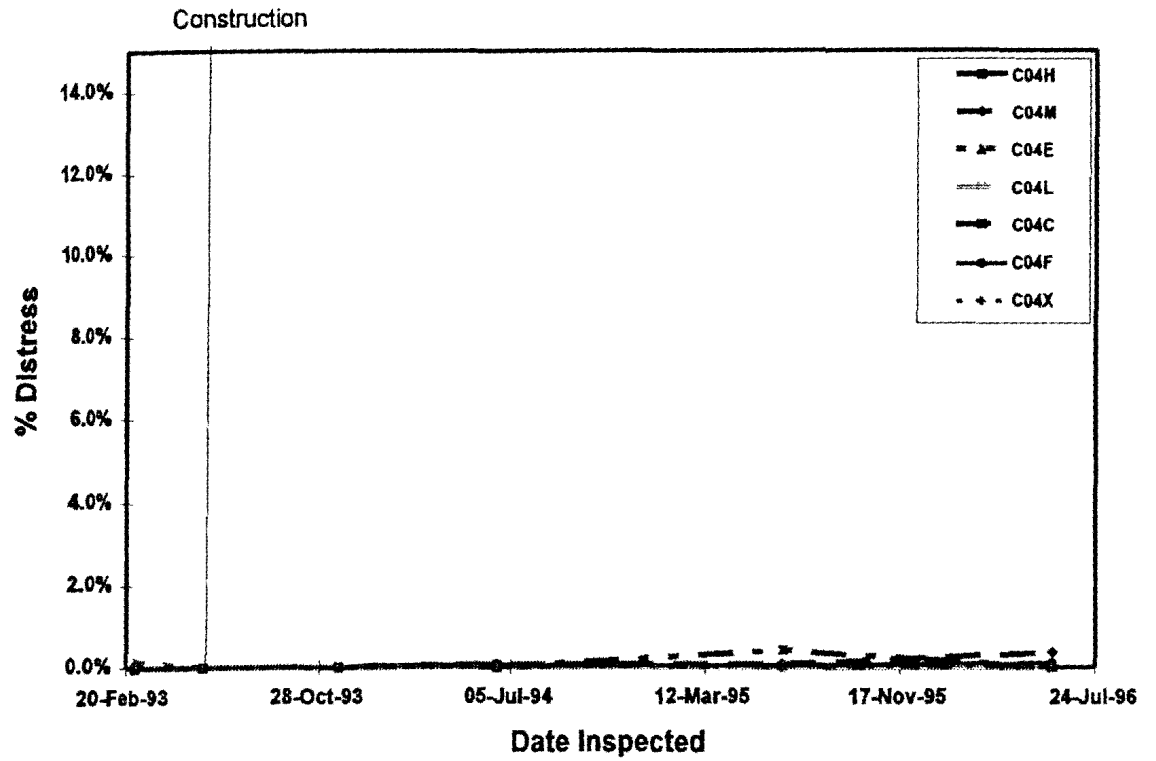


Figure B - 17. Longitudinal Cracking in the Wheelpath for Site C04

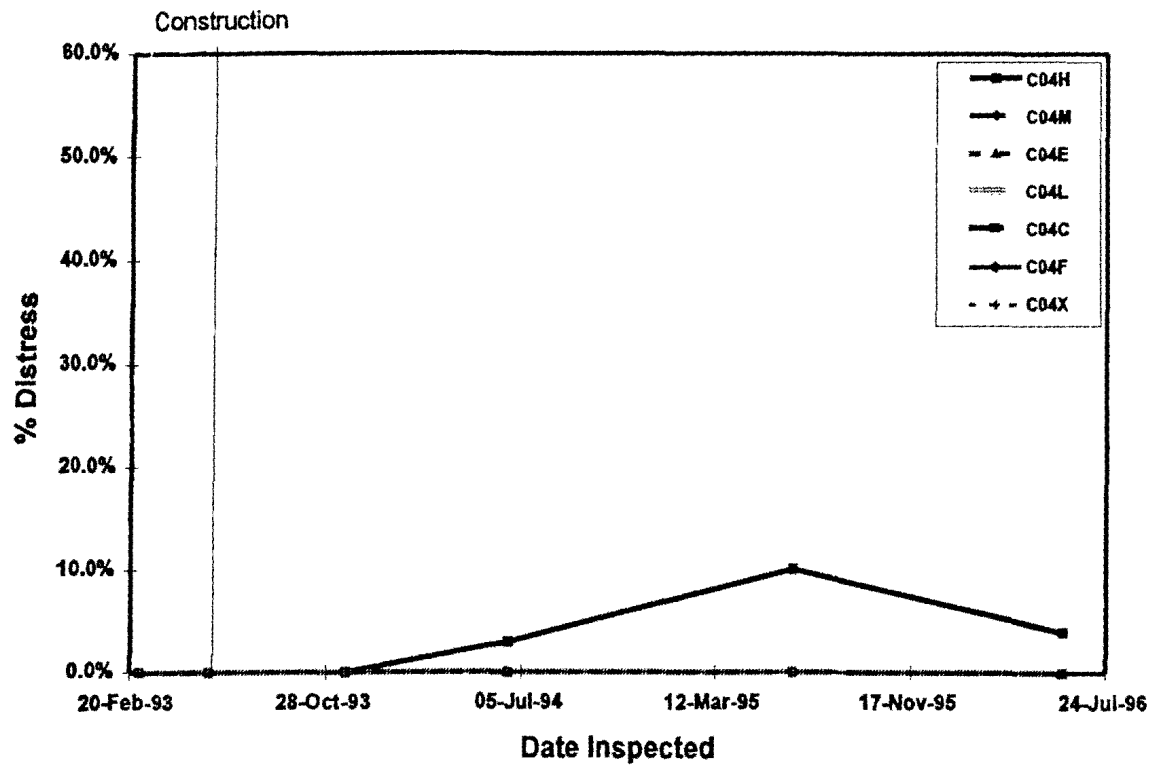


Figure B - 18. Ravelling for Site C04

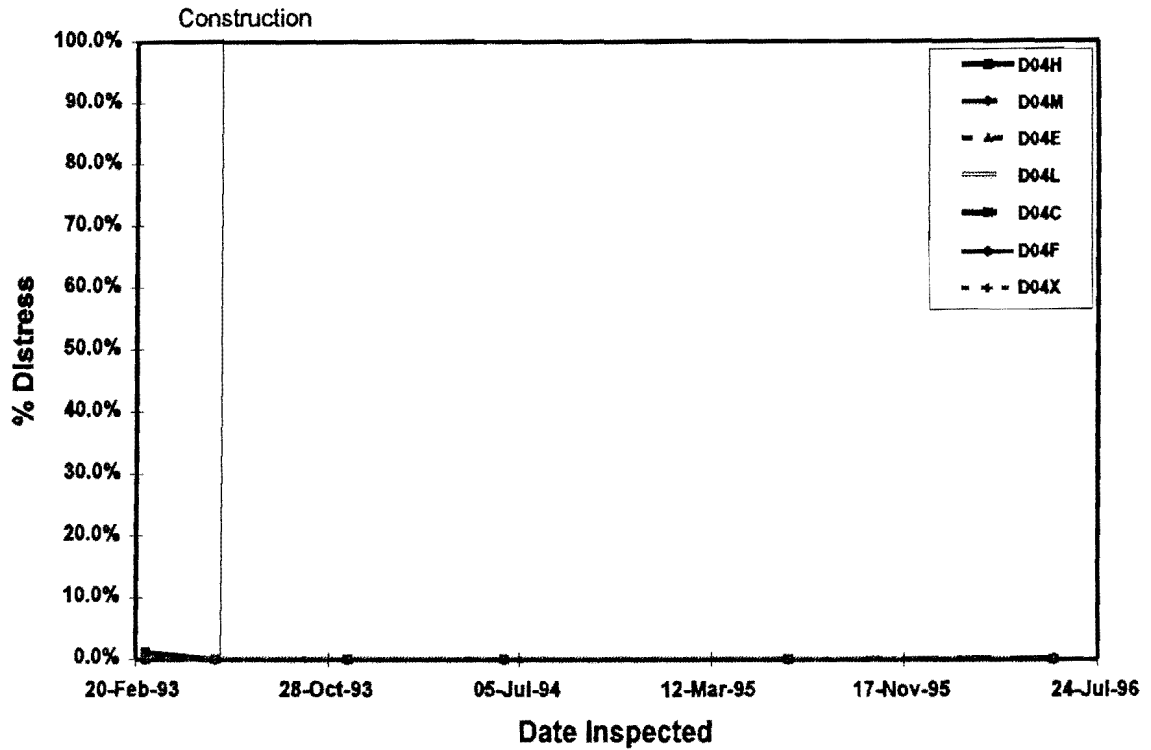


Figure B - 19. Alligator Cracking for Site D04

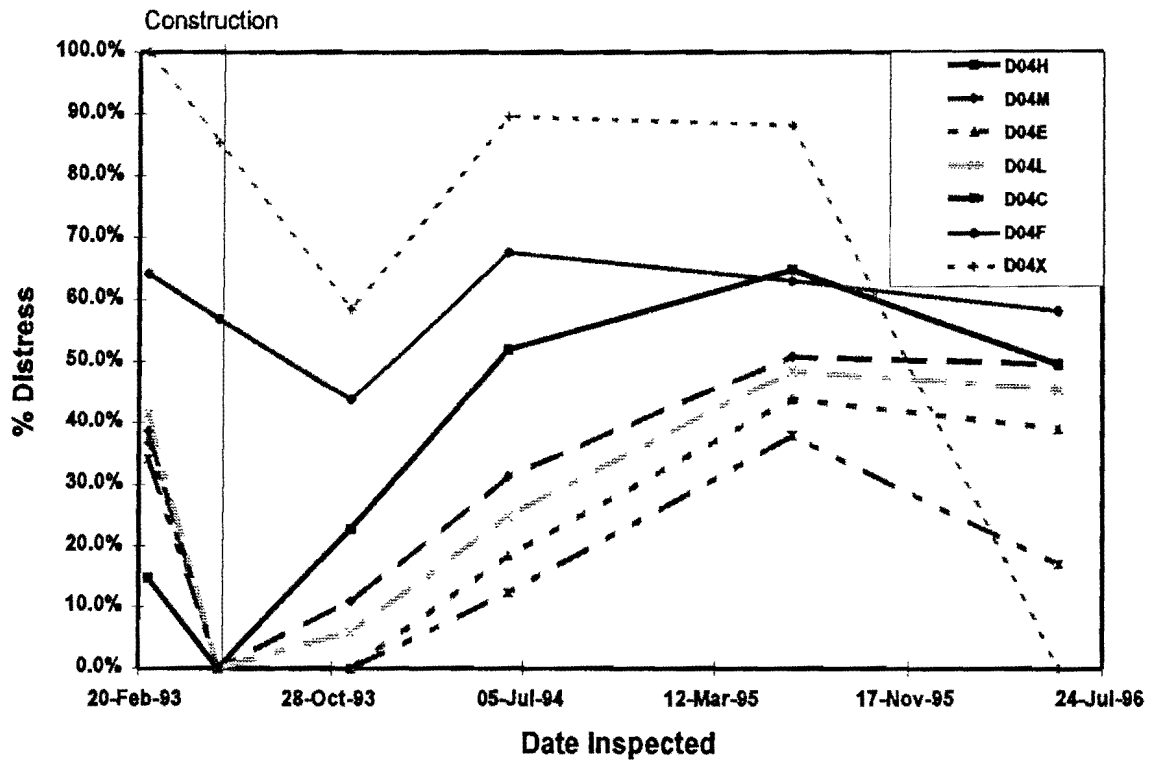


Figure B - 20. Bleeding for Site D04

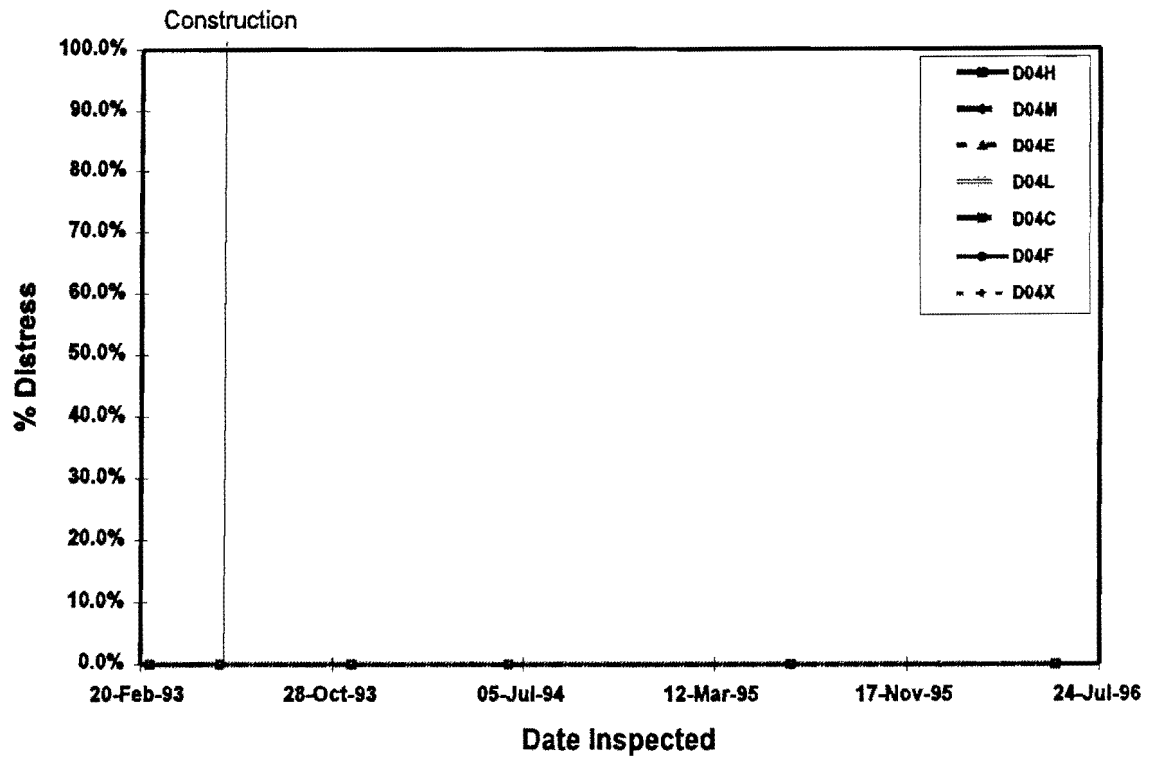


Figure B - 21. Block Cracking for Site D04

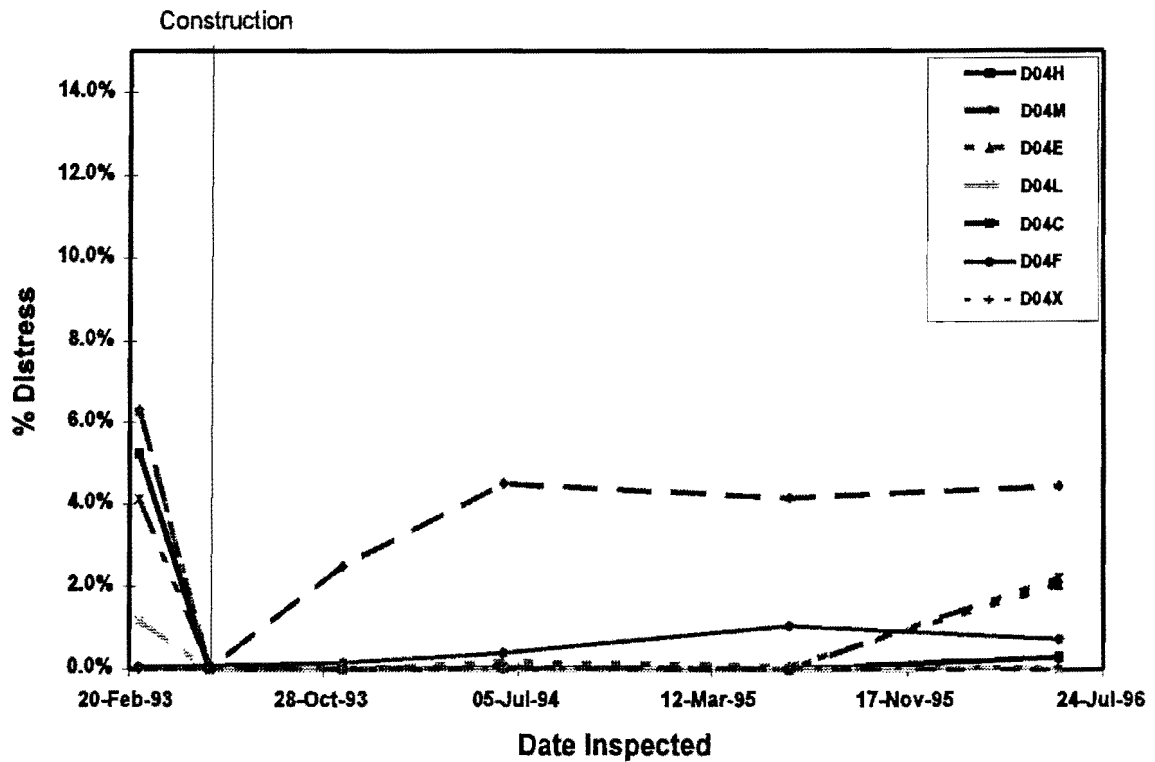


Figure B - 22. Transverse and Non Wheelpath Longitudinal Cracking for Site D04

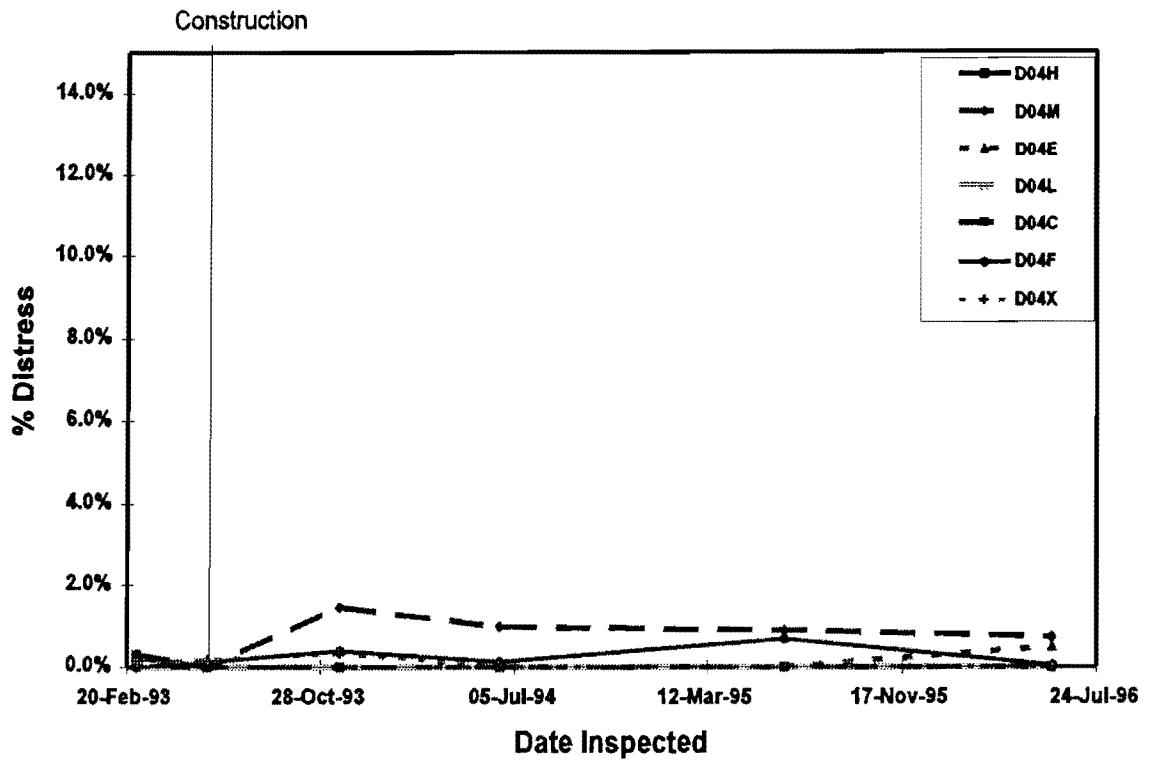


Figure B - 23. Longitudinal Cracking in the Wheelpath for Site D04

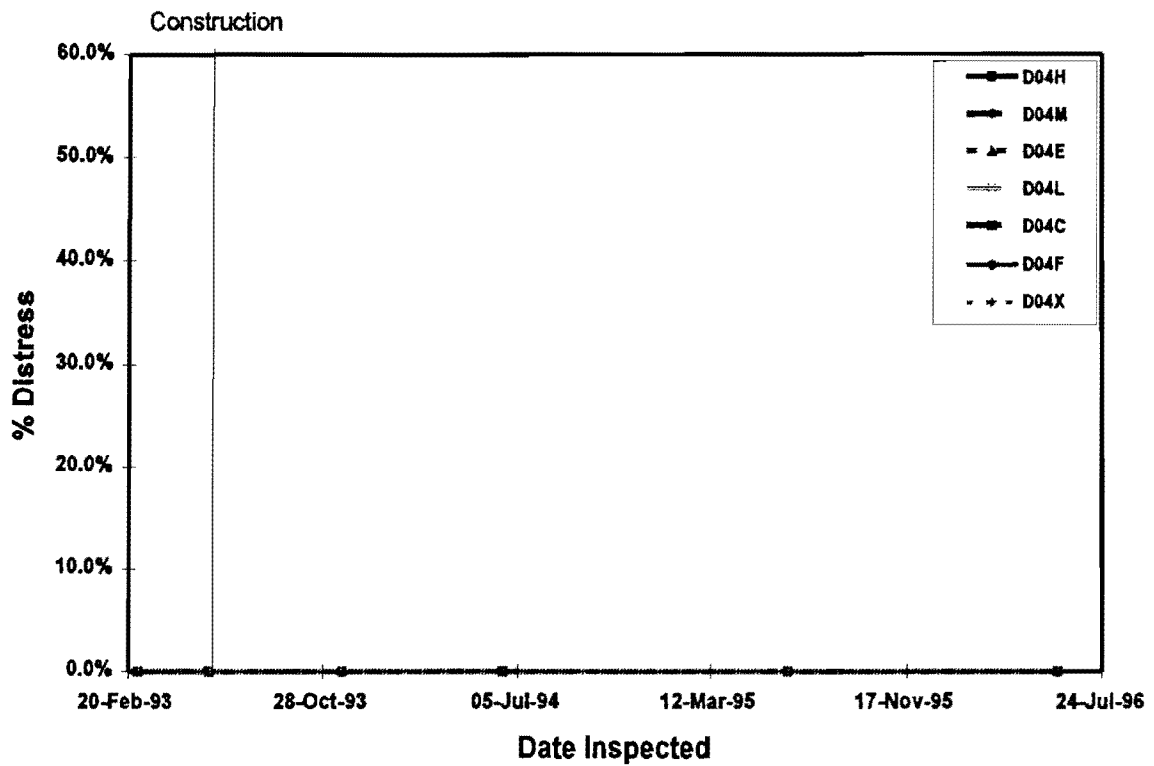


Figure B - 24. Ravelling for Site D04

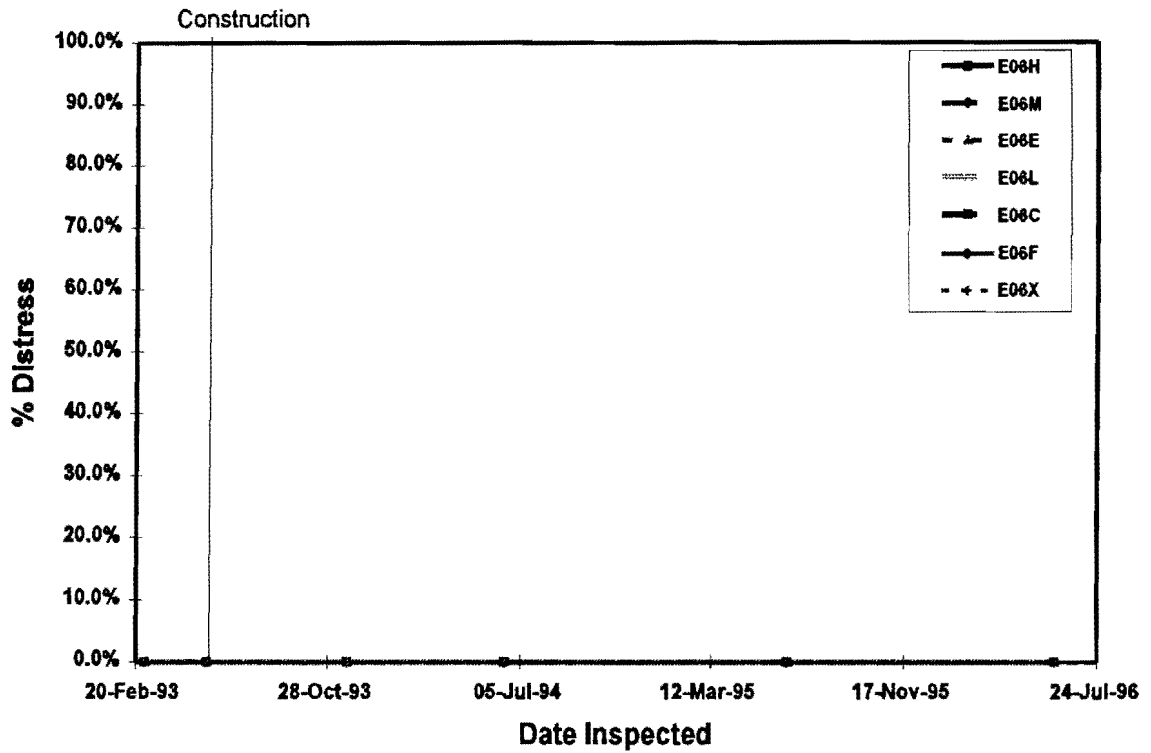


Figure B - 25. Alligator Cracking for Site E06

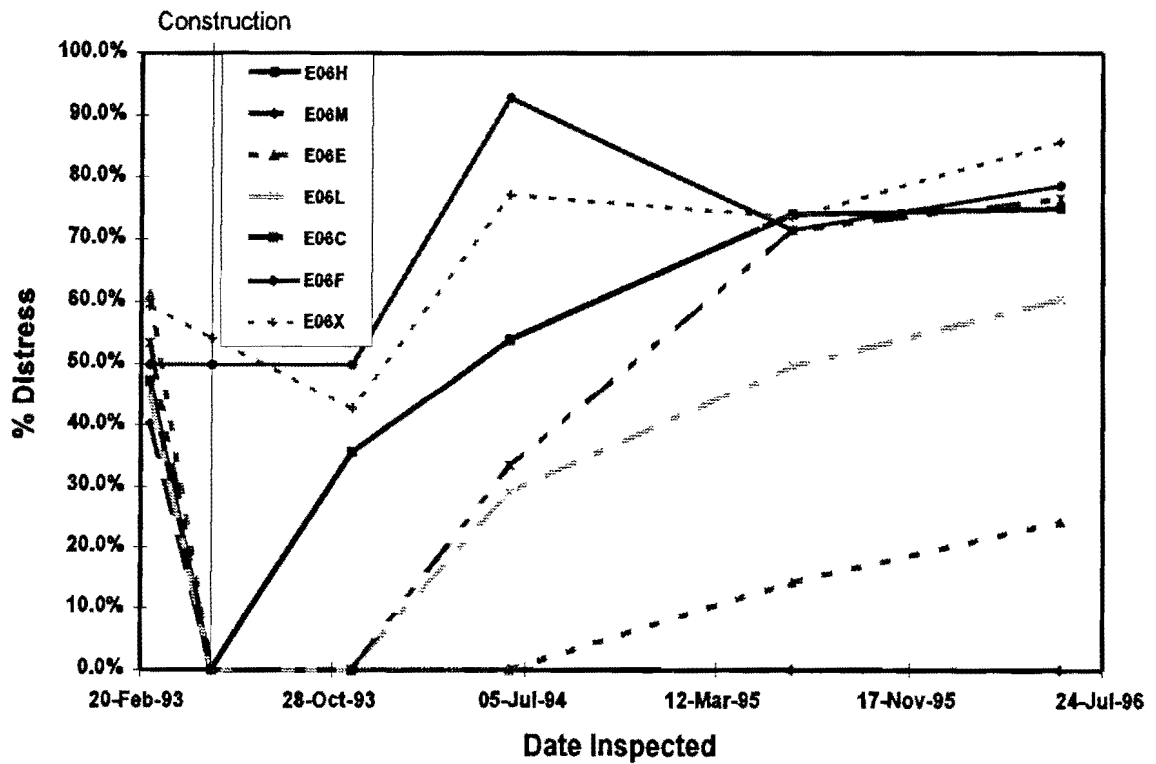


Figure B - 26. Bleeding for Site E06

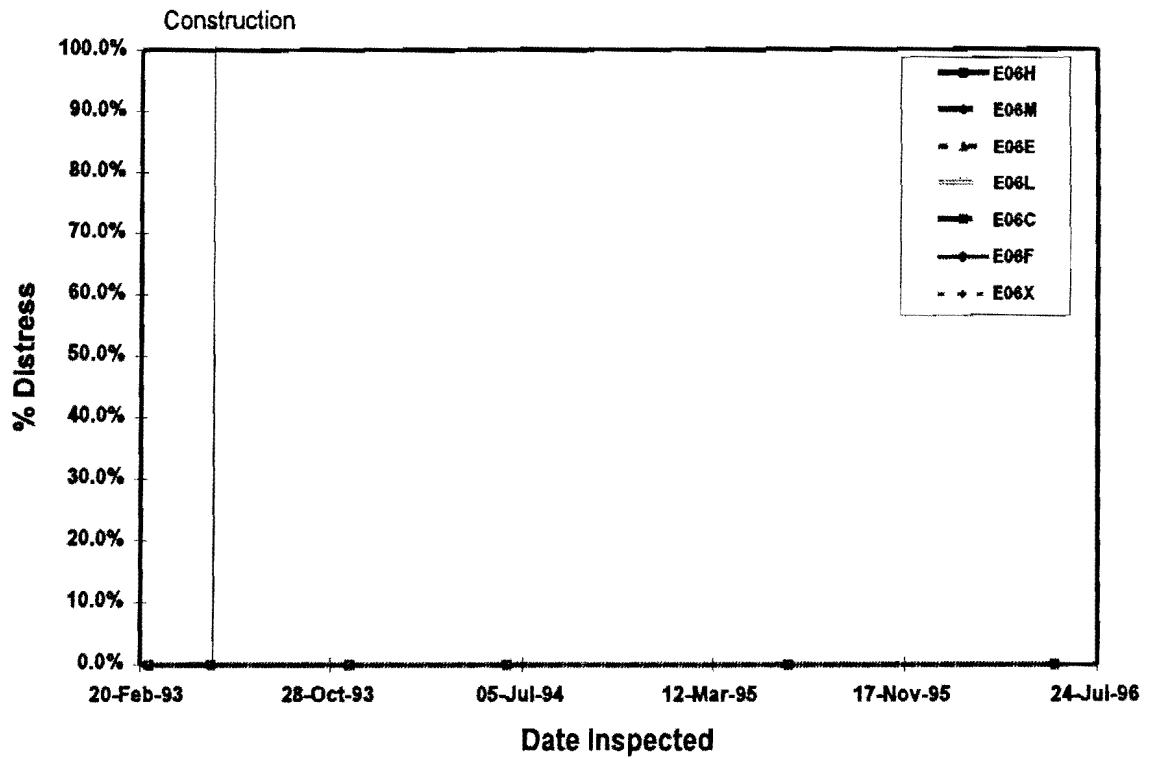


Figure B - 27. Block Cracking for Site E06

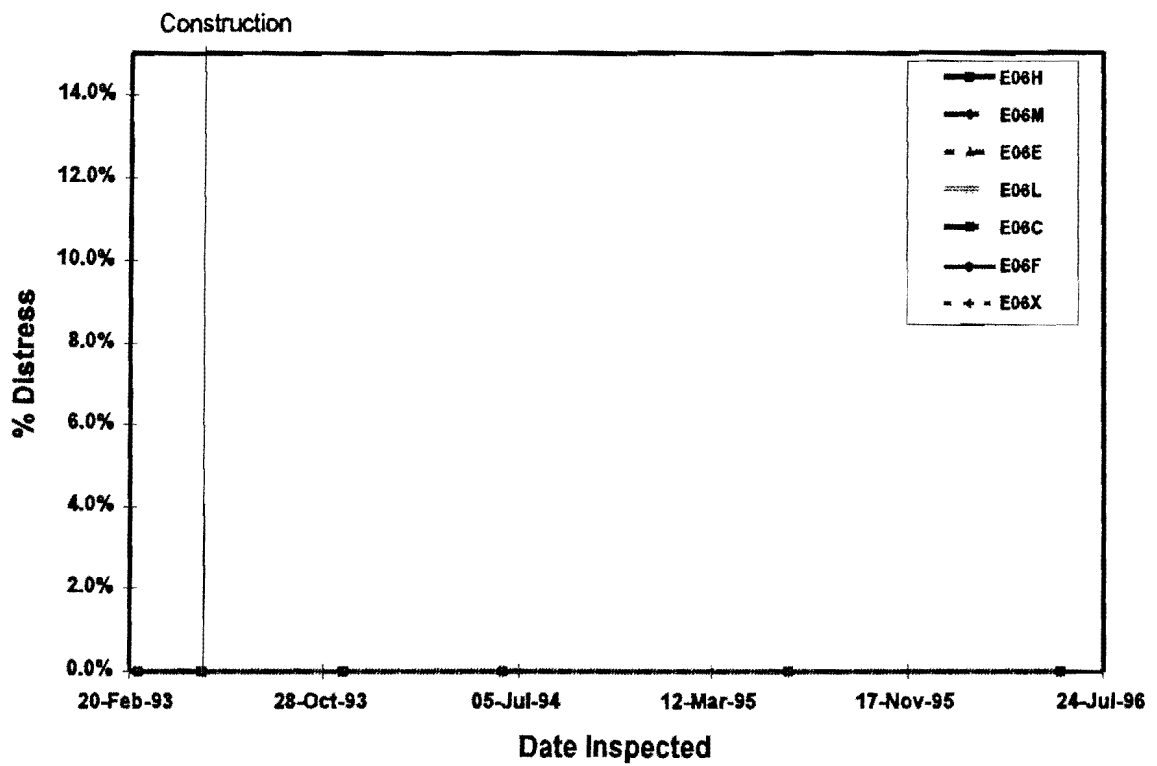


Figure B - 28. Transverse and Non Wheelpath Longitudinal Cracking for Site E06

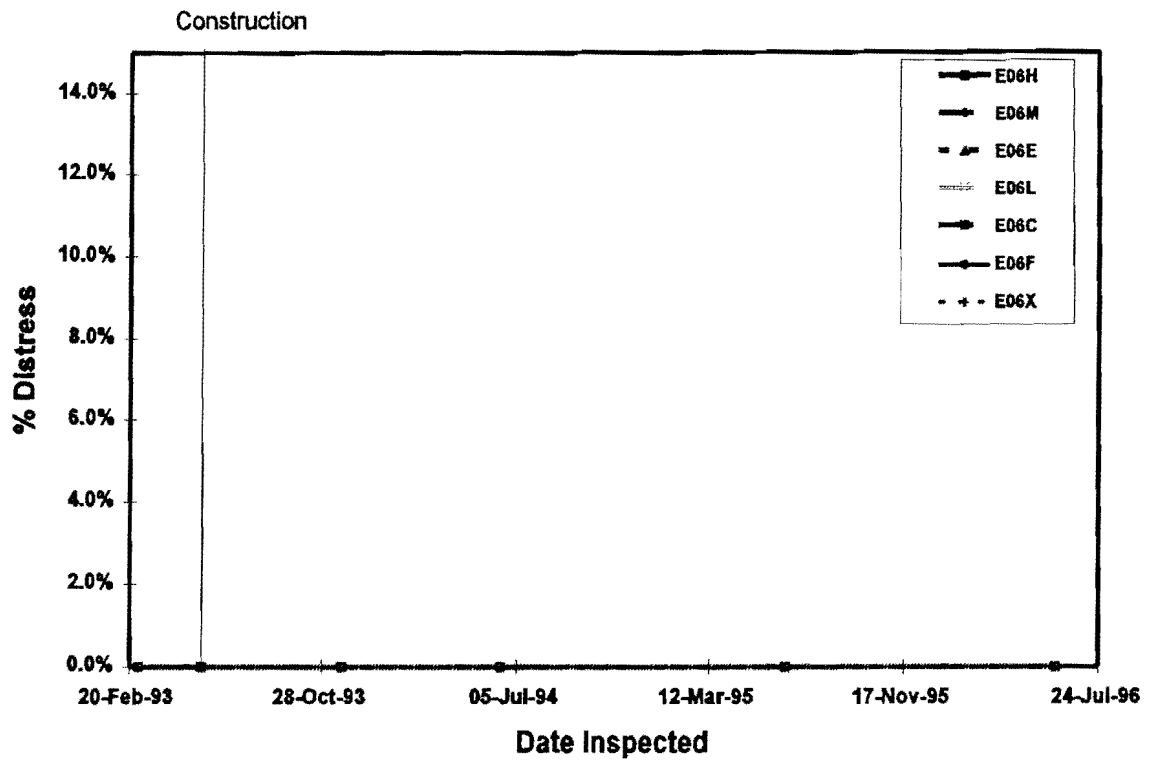


Figure B - 29. Longitudinal Cracking in the Wheelpath for Site E06

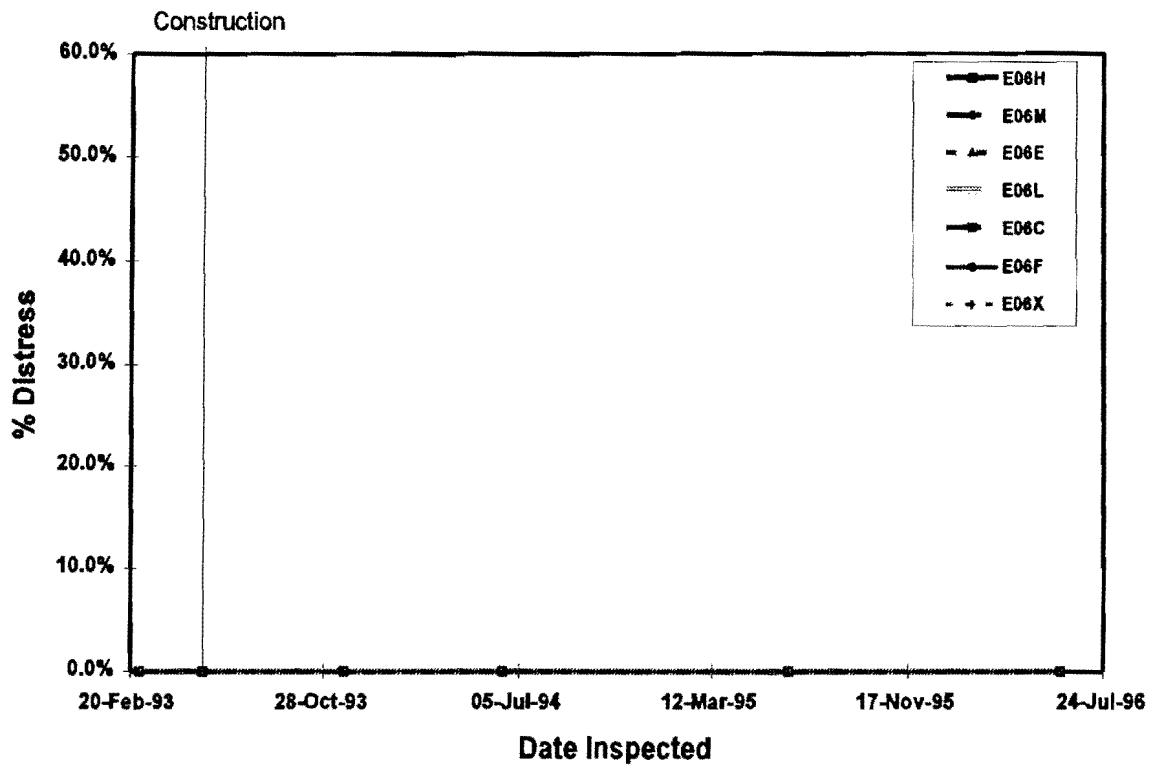


Figure B - 30. Ravelling for Site E06

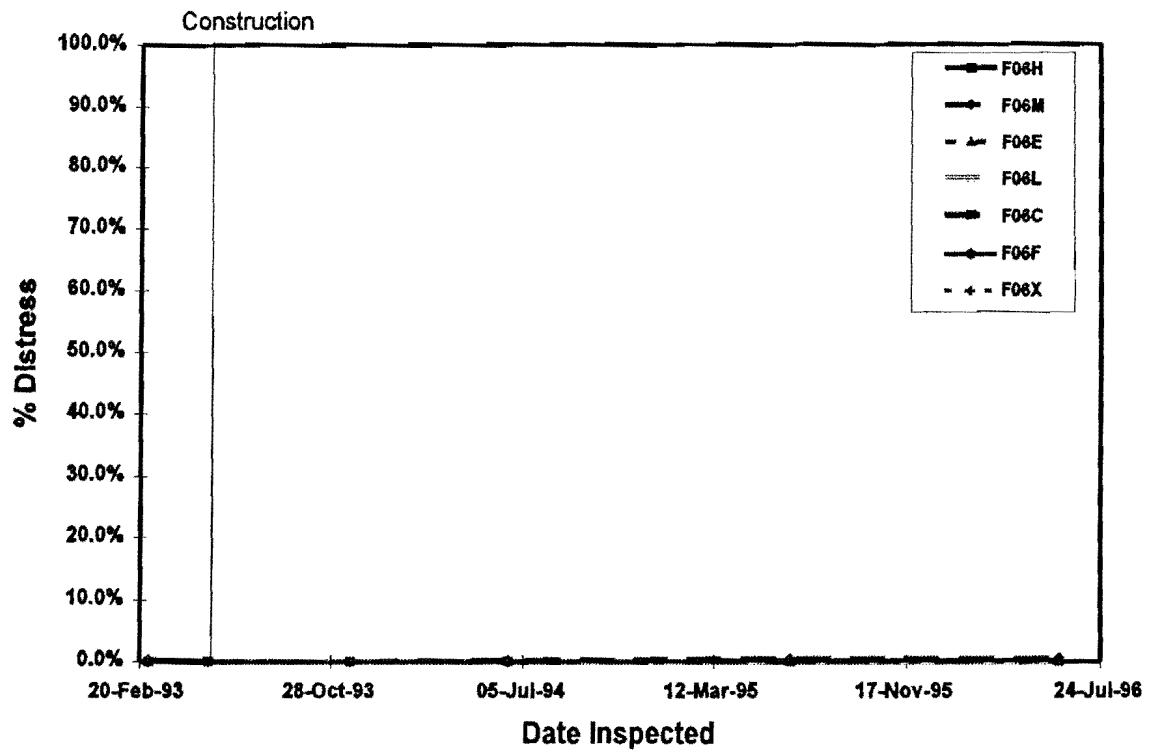


Figure B - 31. Alligator Cracking for Site F06

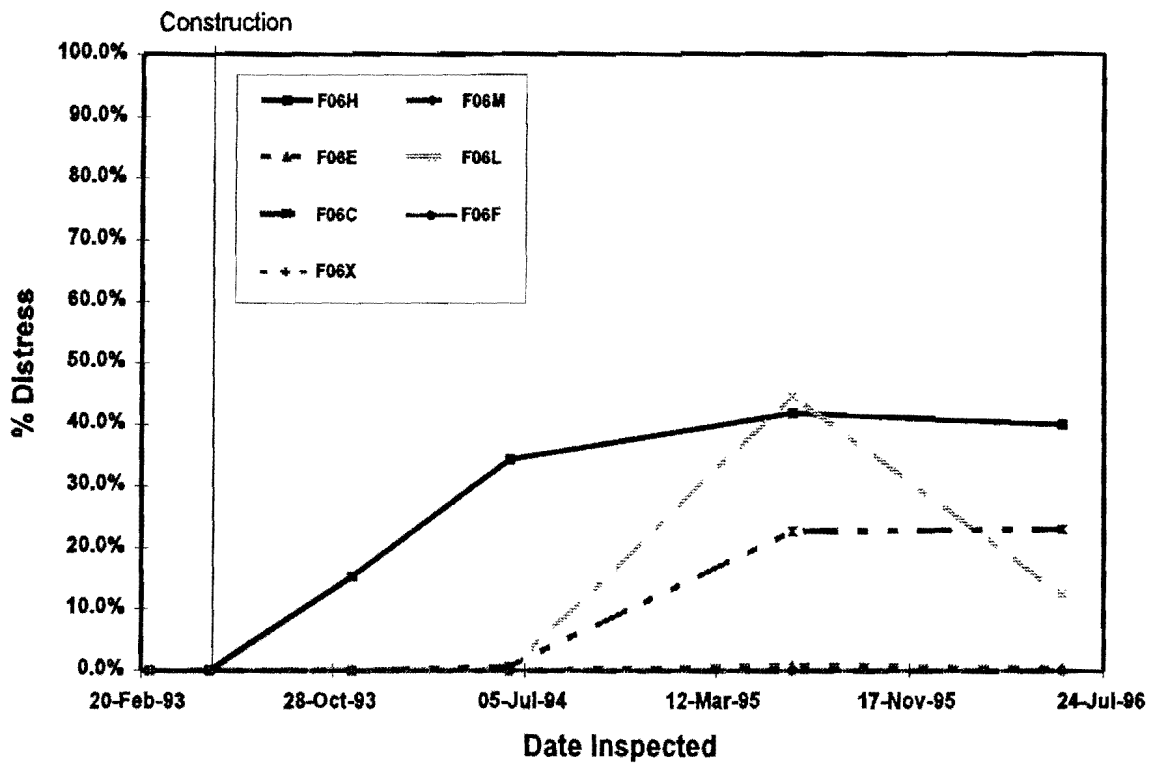


Figure B - 32. Bleeding for Site F06

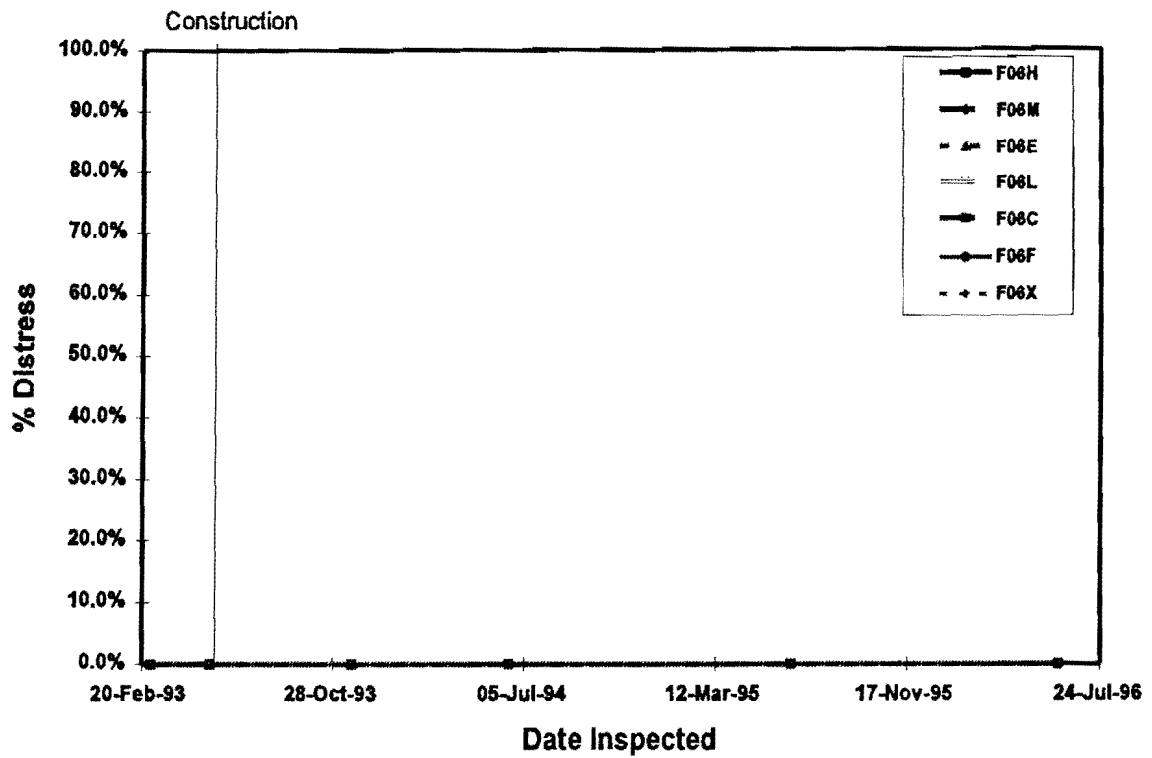


Figure B - 33. Block Cracking for Site F06

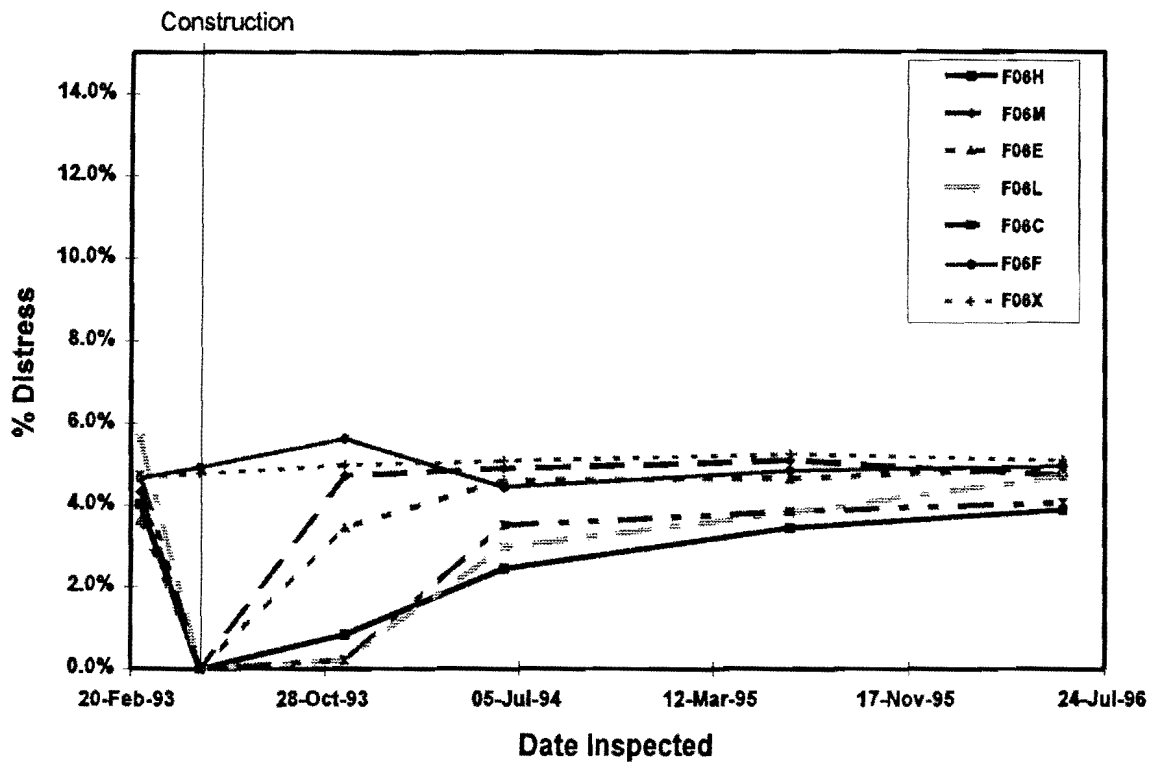


Figure B - 34. Transverse and Non Wheelpath Longitudinal Cracking for Site F06

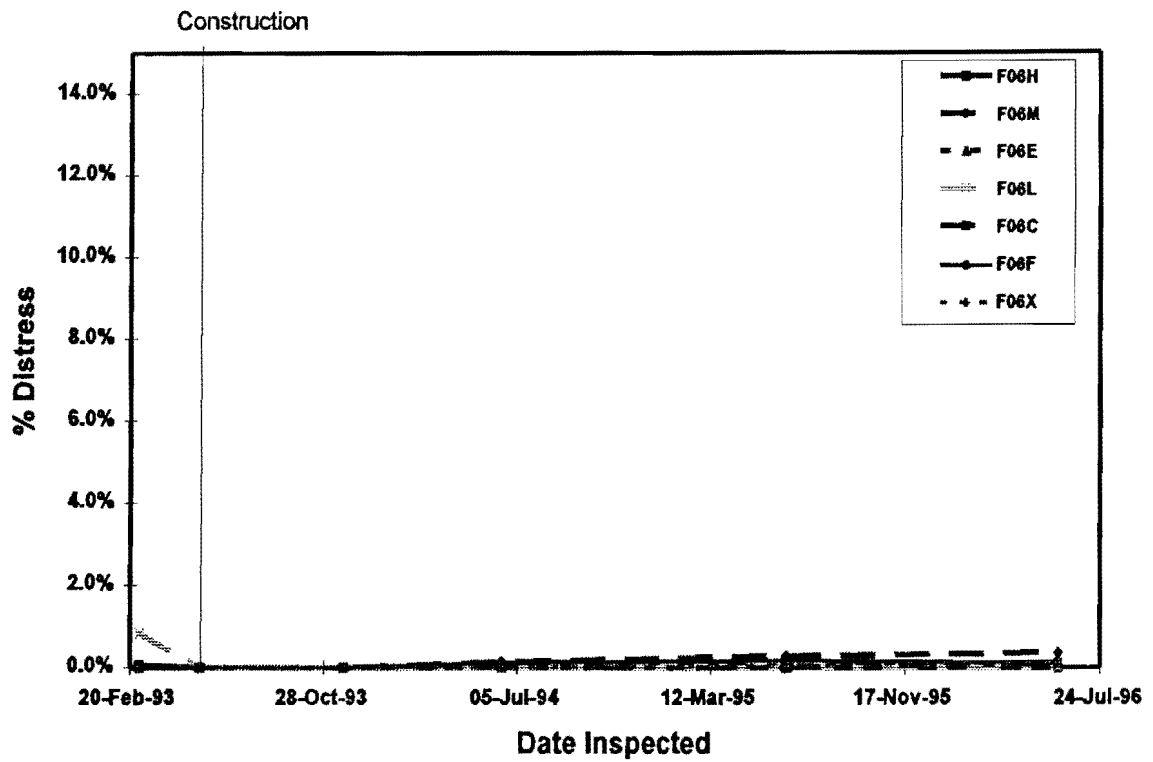


Figure B - 35. Longitudinal Cracking in the Wheelpath for Site F06

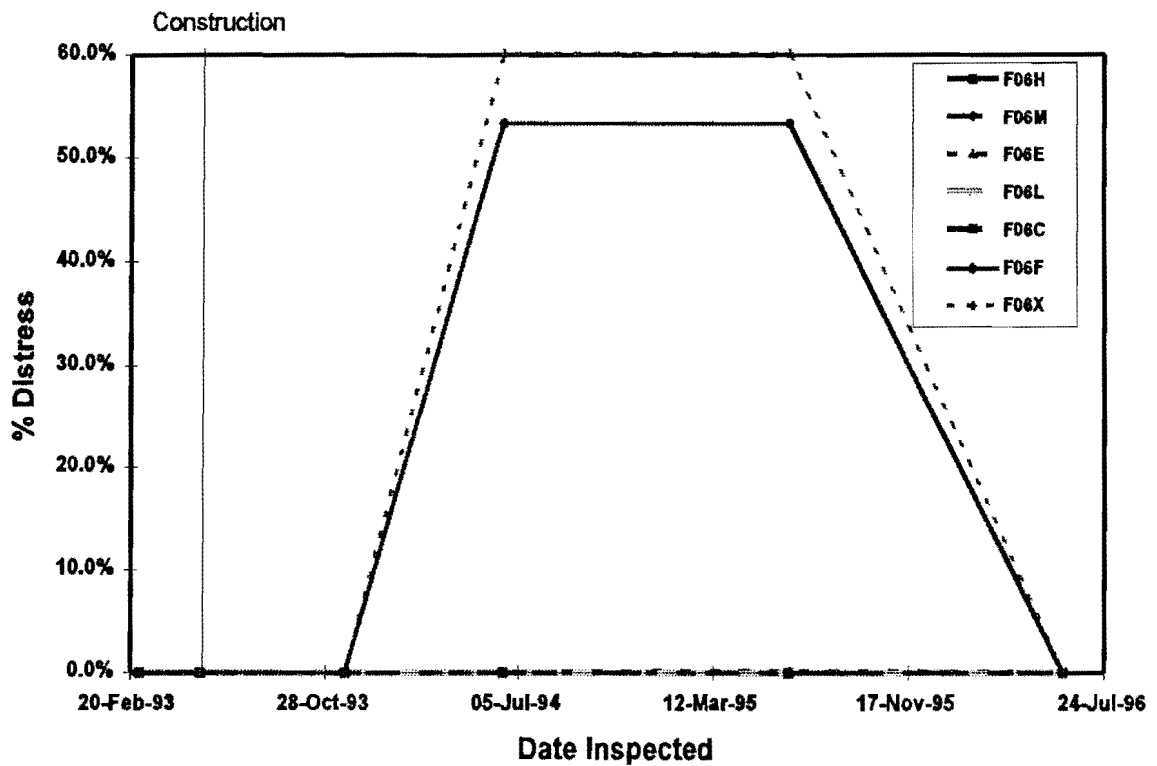


Figure B - 36. Ravelling for Site F06

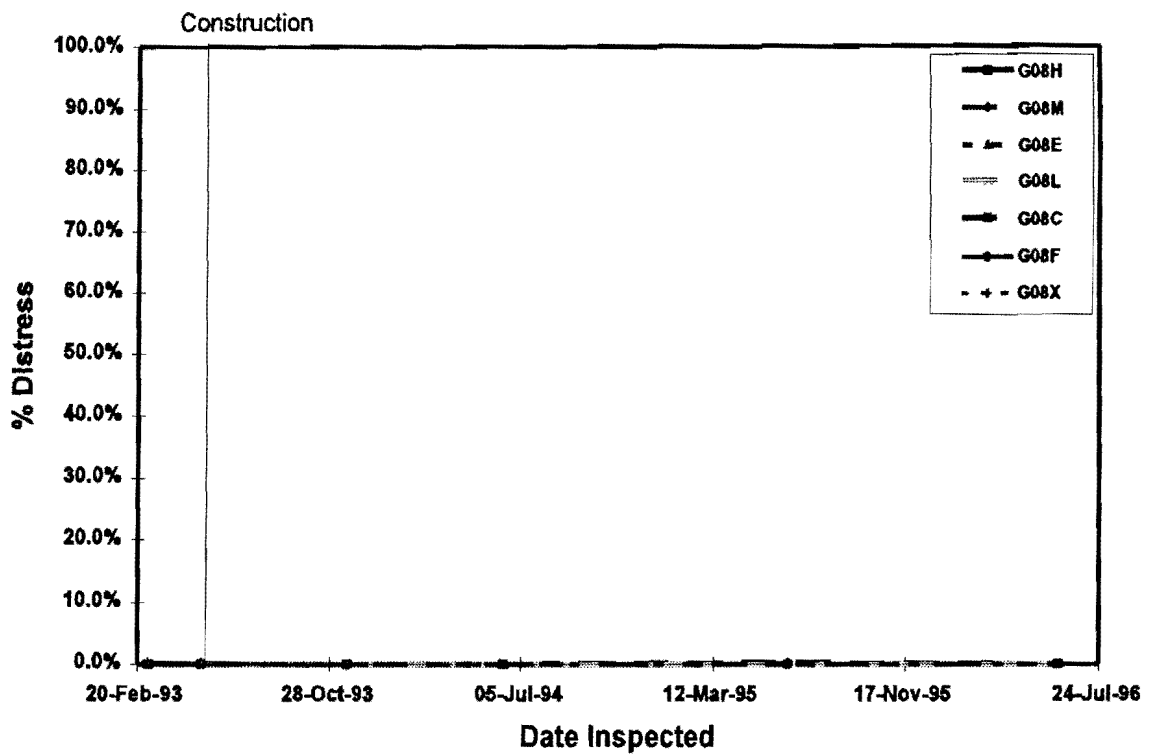


Figure B - 37. Alligator Cracking for Site G08

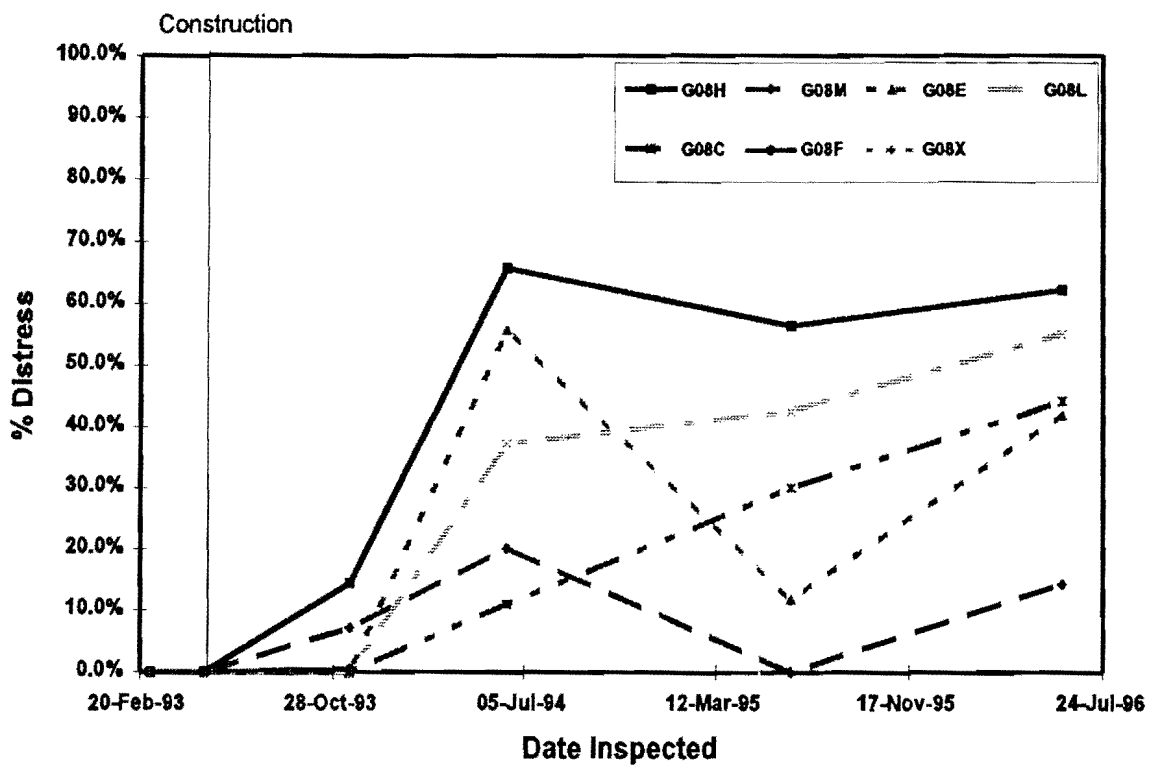


Figure B - 38. Bleeding for Site G08

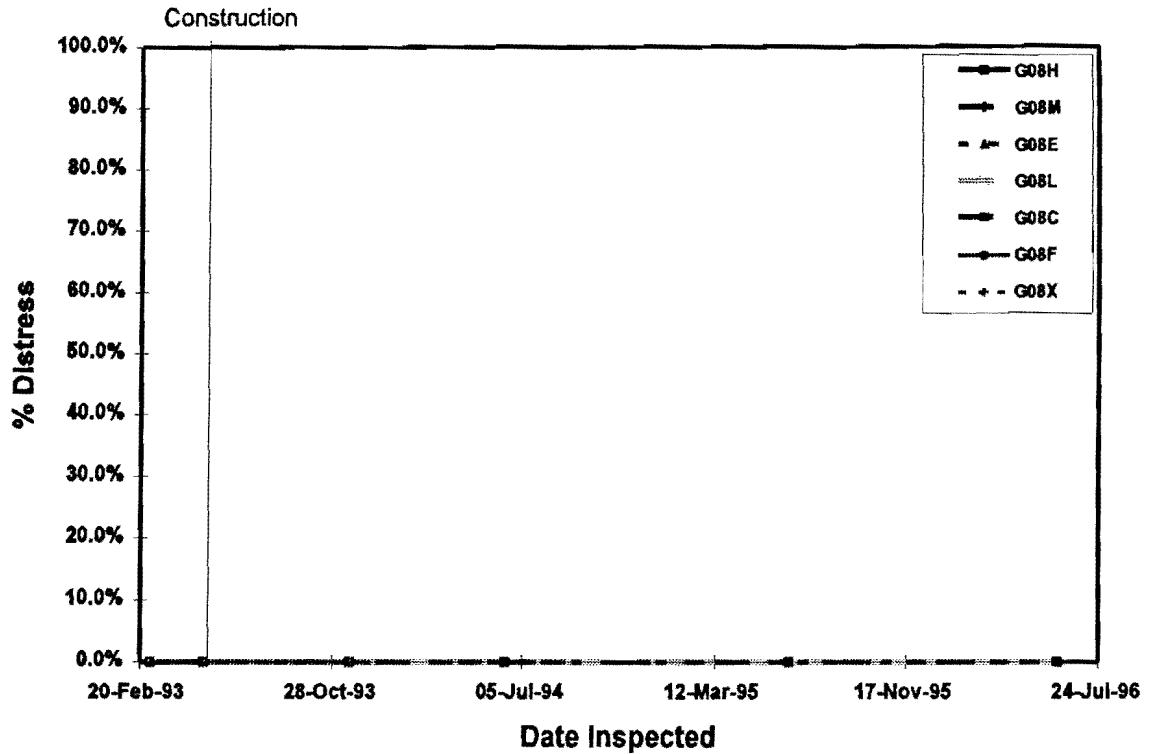


Figure B - 39. Block Cracking for Site G08

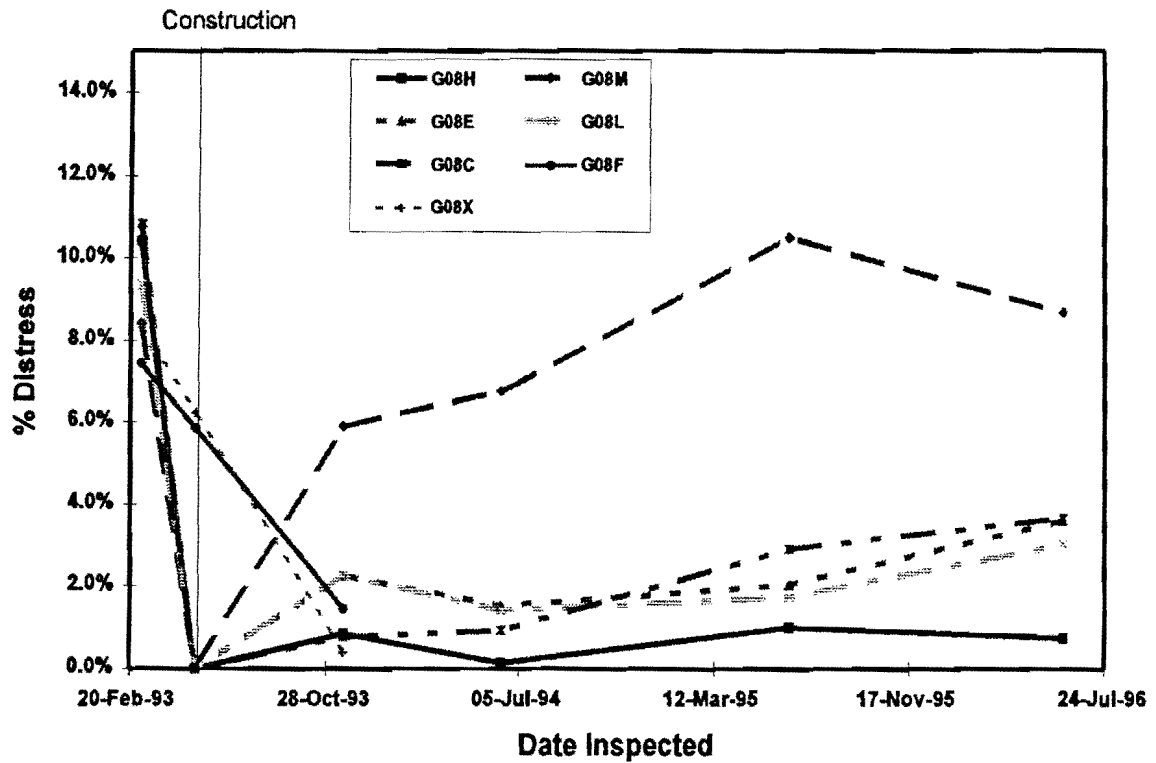


Figure B - 40. Transverse and Non Wheelpath Longitudinal Cracking for Site G08

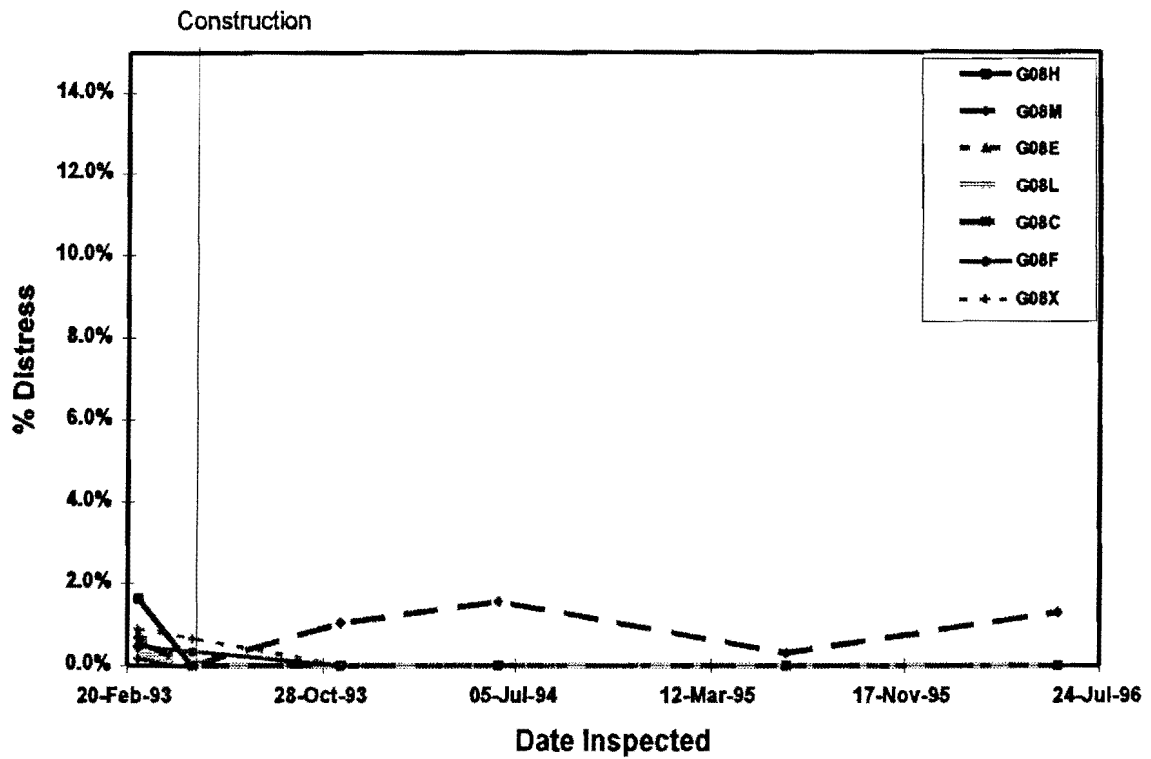


Figure B - 41. Longitudinal Cracking in the Wheelpath for Site G08

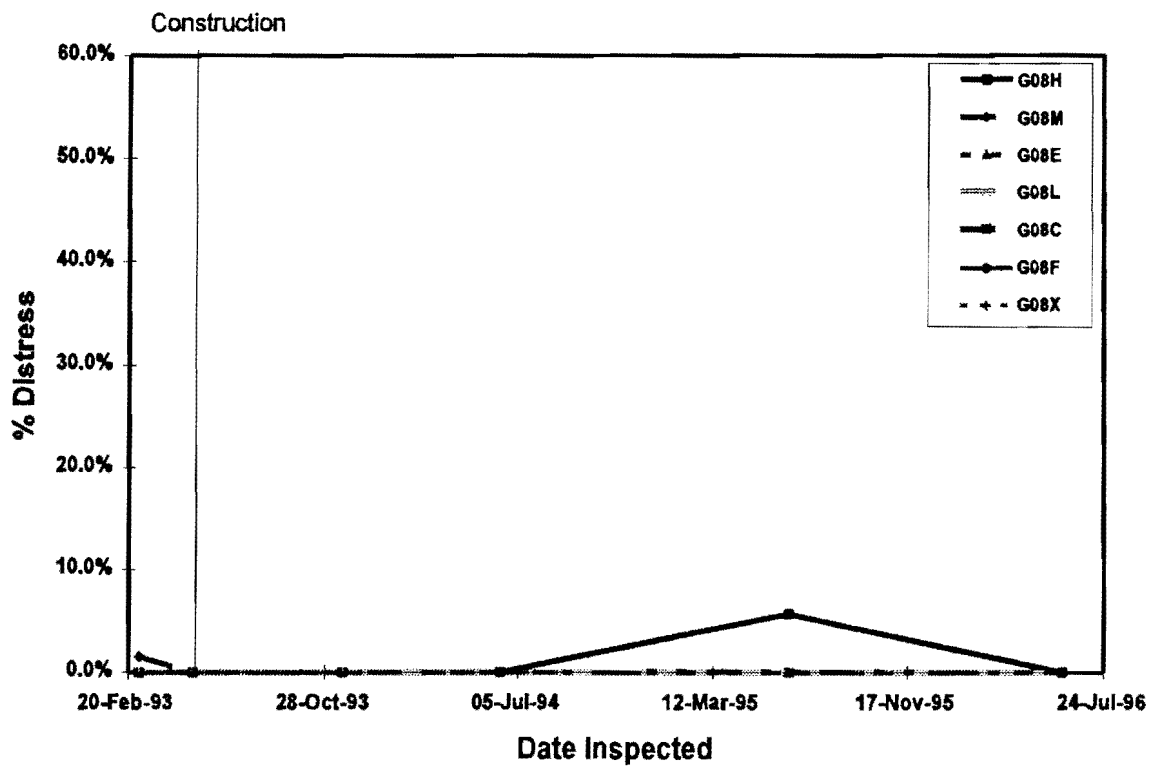


Figure B - 42. Ravelling for Site G08

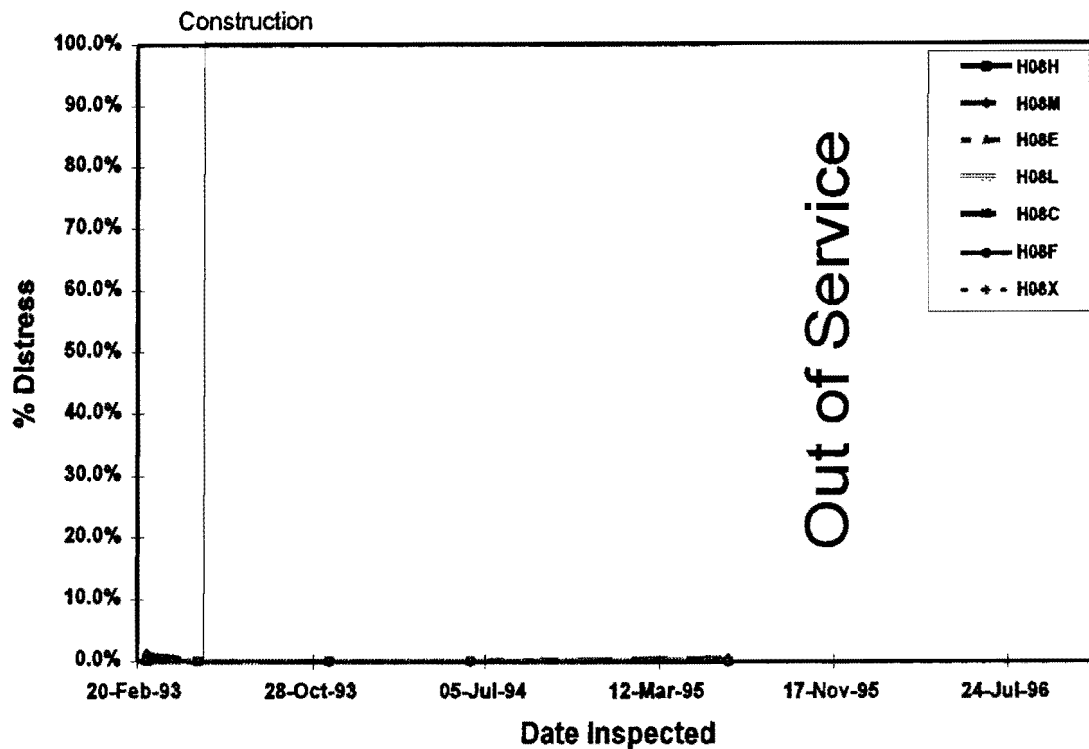


Figure B - 43. Alligator Cracking for Site H08

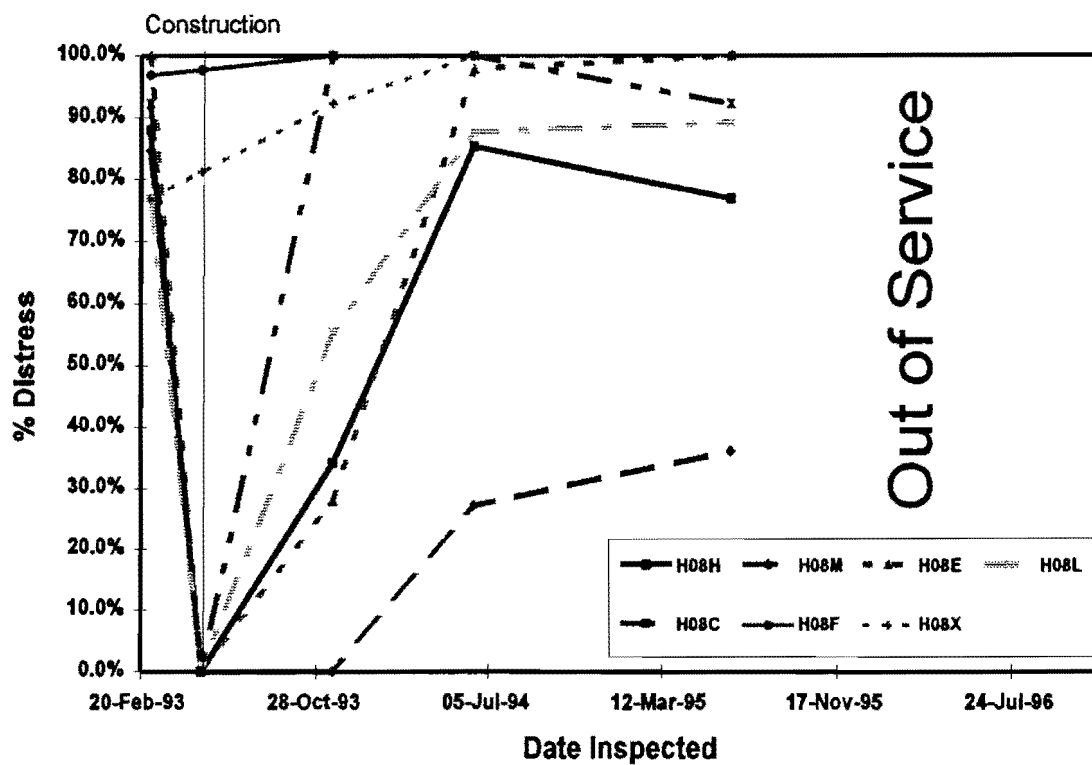


Figure B - 44. Bleeding for Site H08

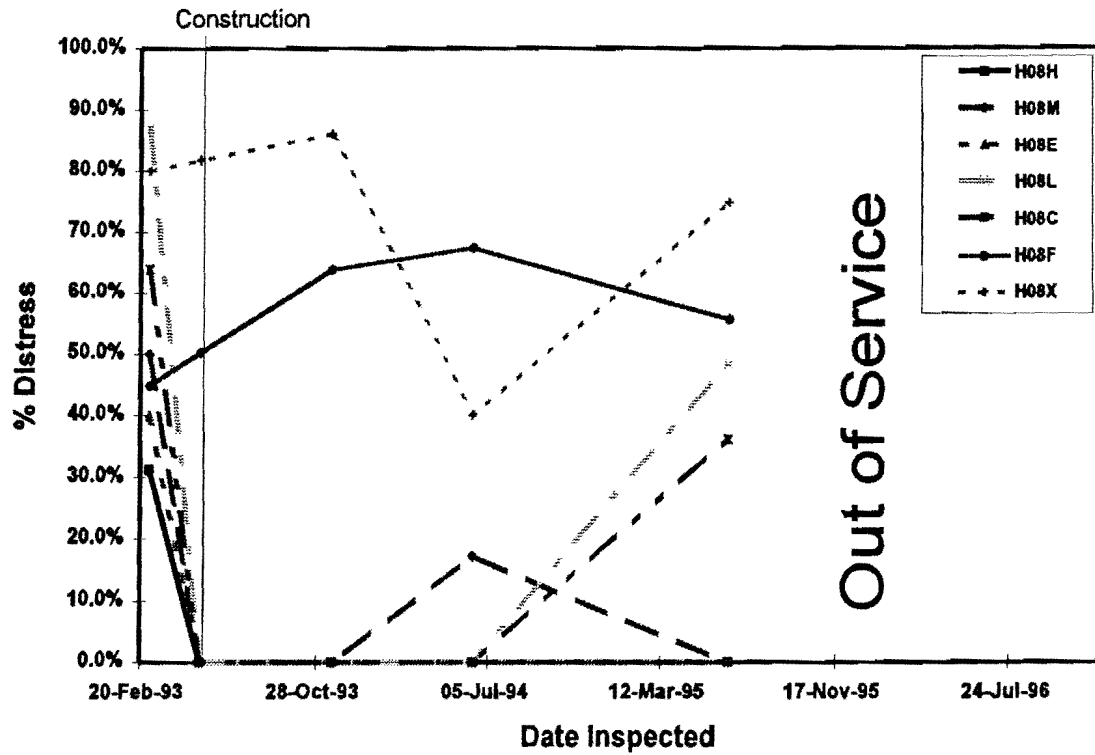


Figure B - 45. Block Cracking for Site H08

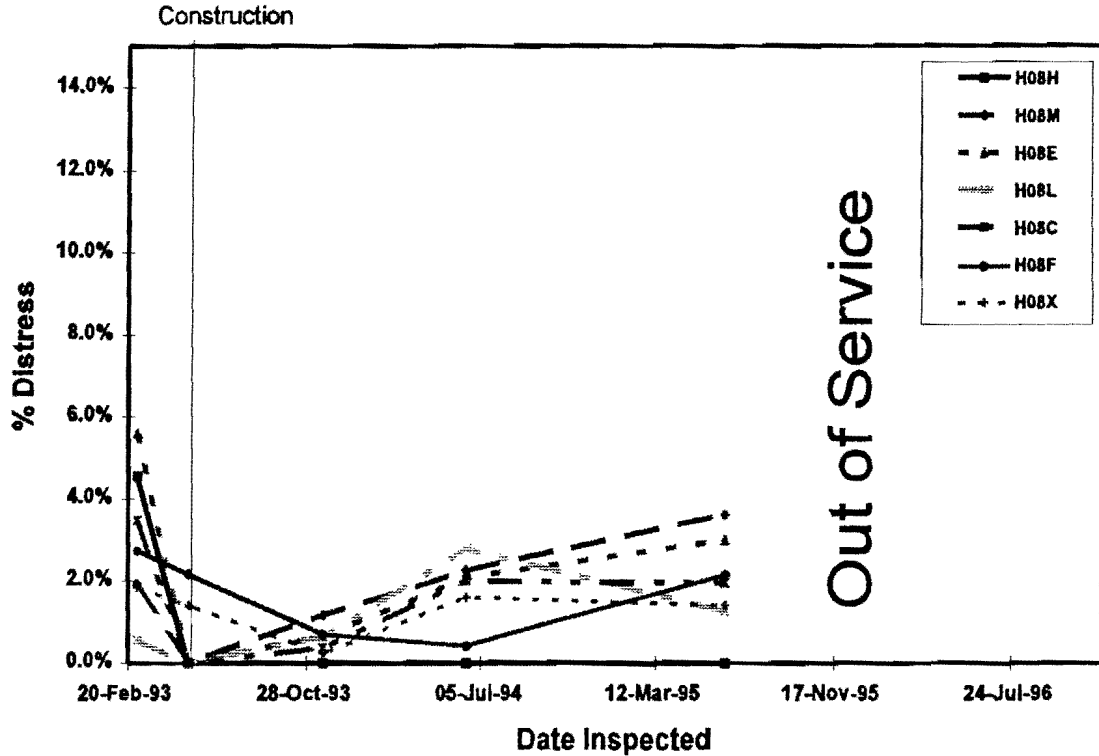


Figure B - 46. Transverse and Non Wheelpath Longitudinal Cracking for Site H08

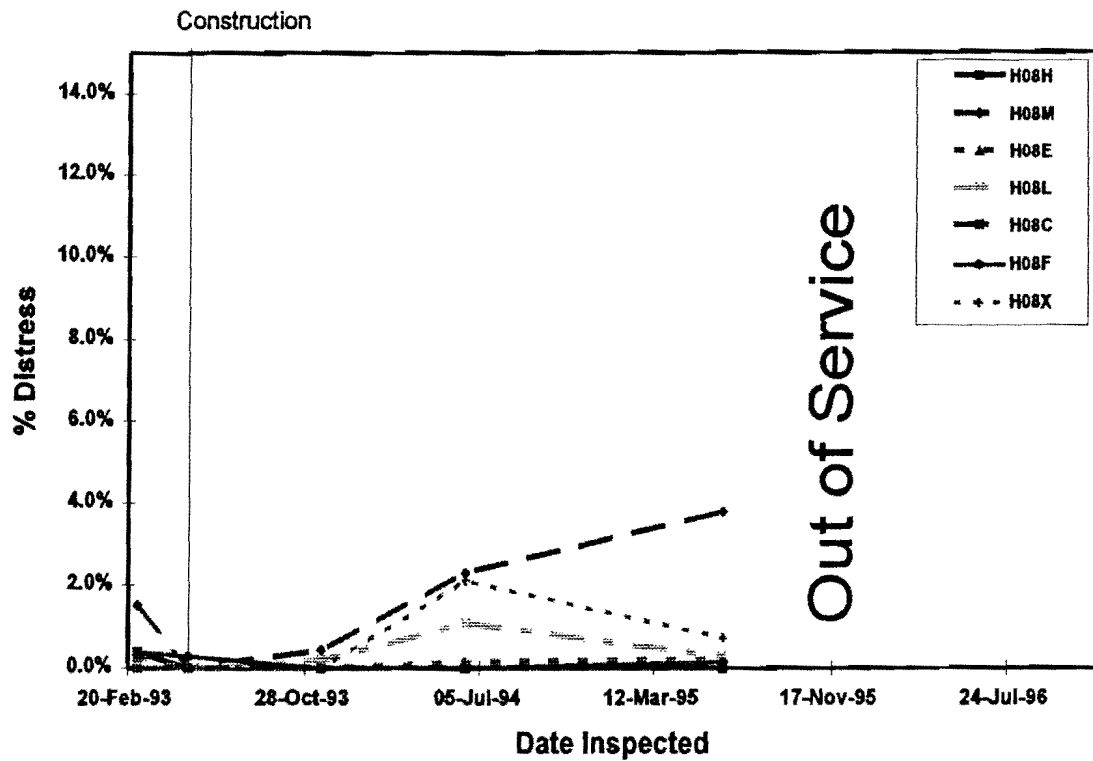


Figure B - 47. Longitudinal Cracking in the Wheelpath for Site H08

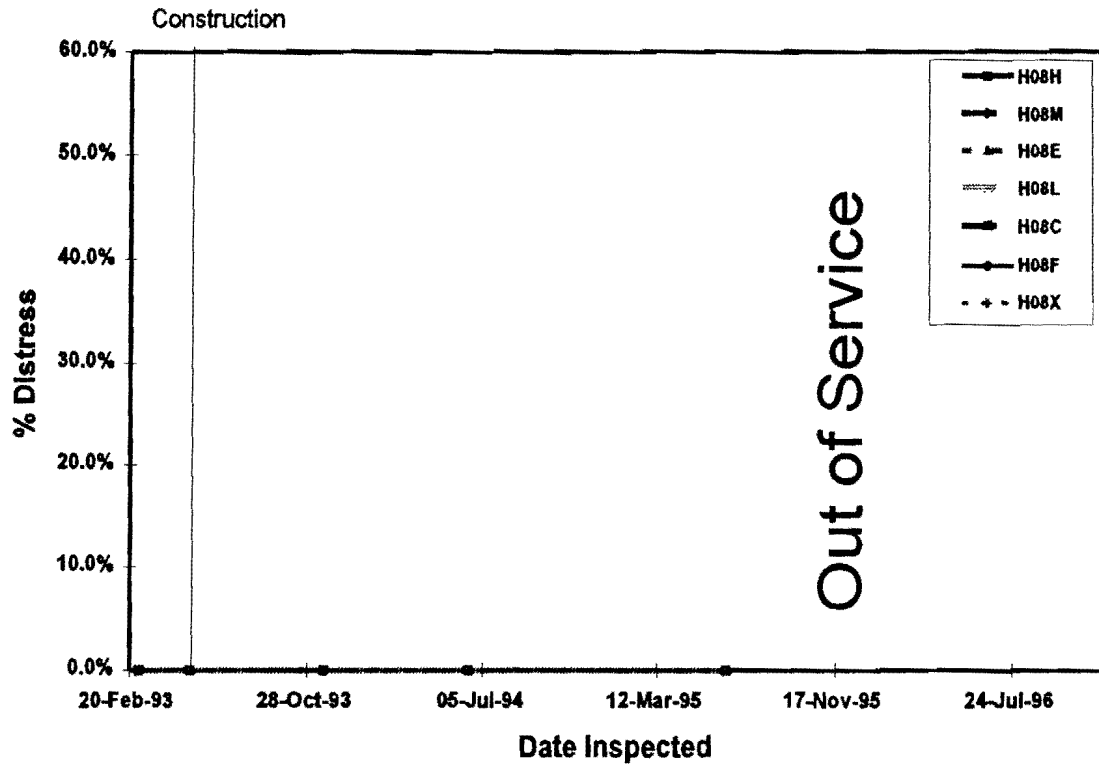


Figure B - 48. Ravelling for Site H08

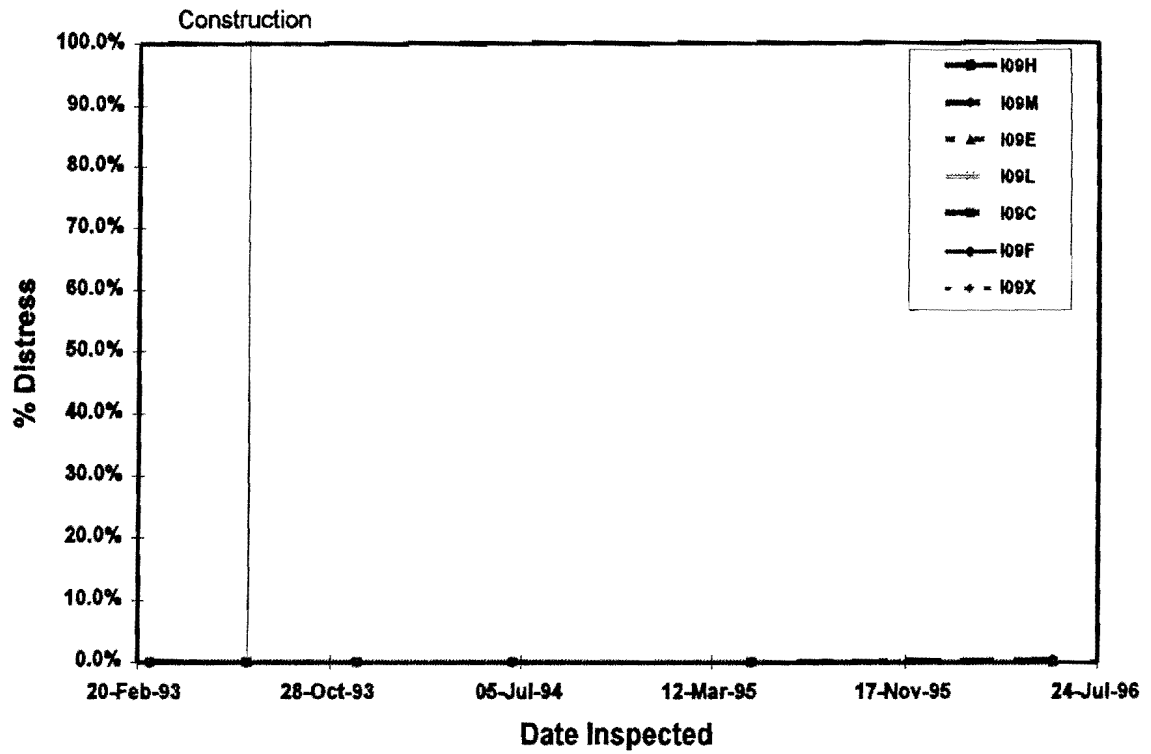


Figure B - 49. Alligator Cracking for Site I09

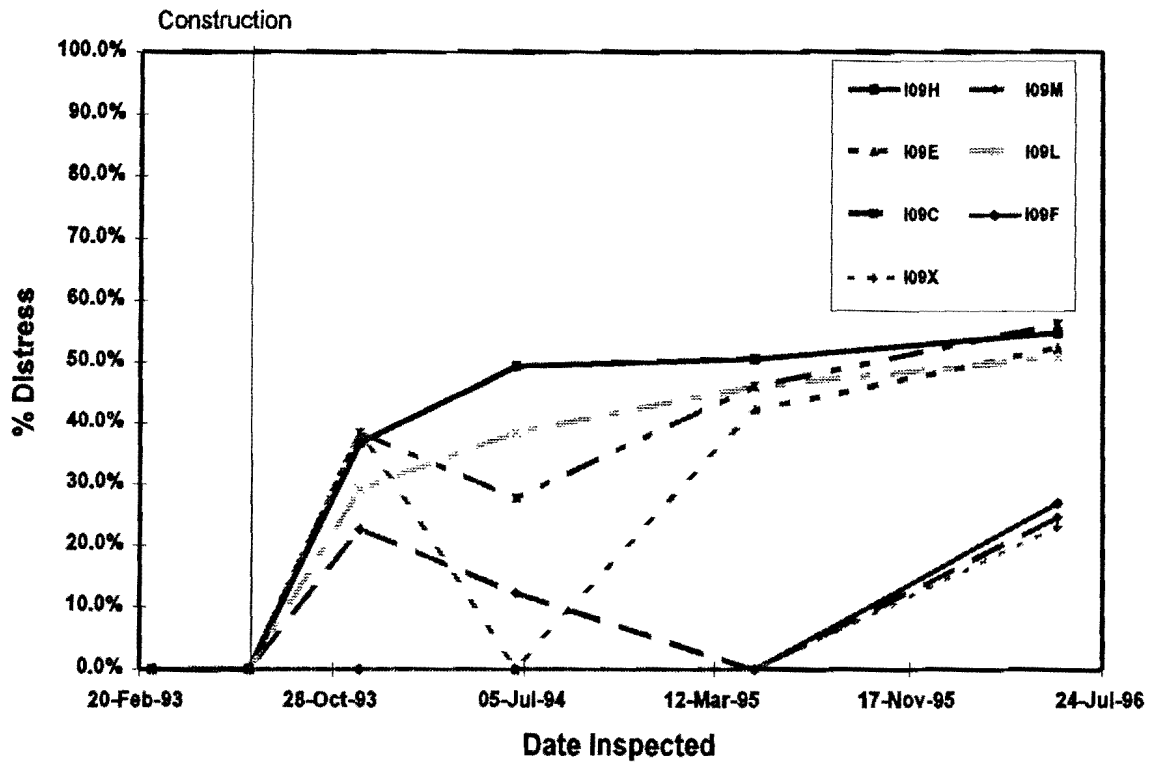


Figure B - 50. Bleeding for Site I09

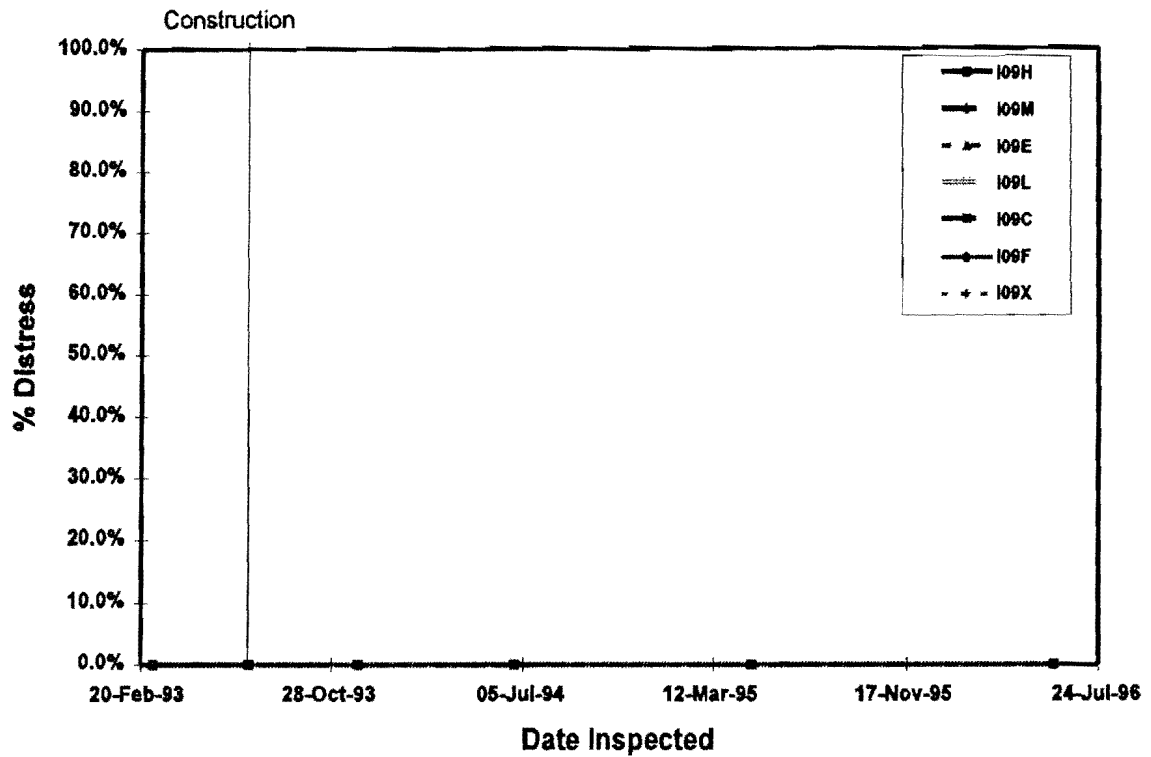


Figure B - 51. Block Cracking for Site I09

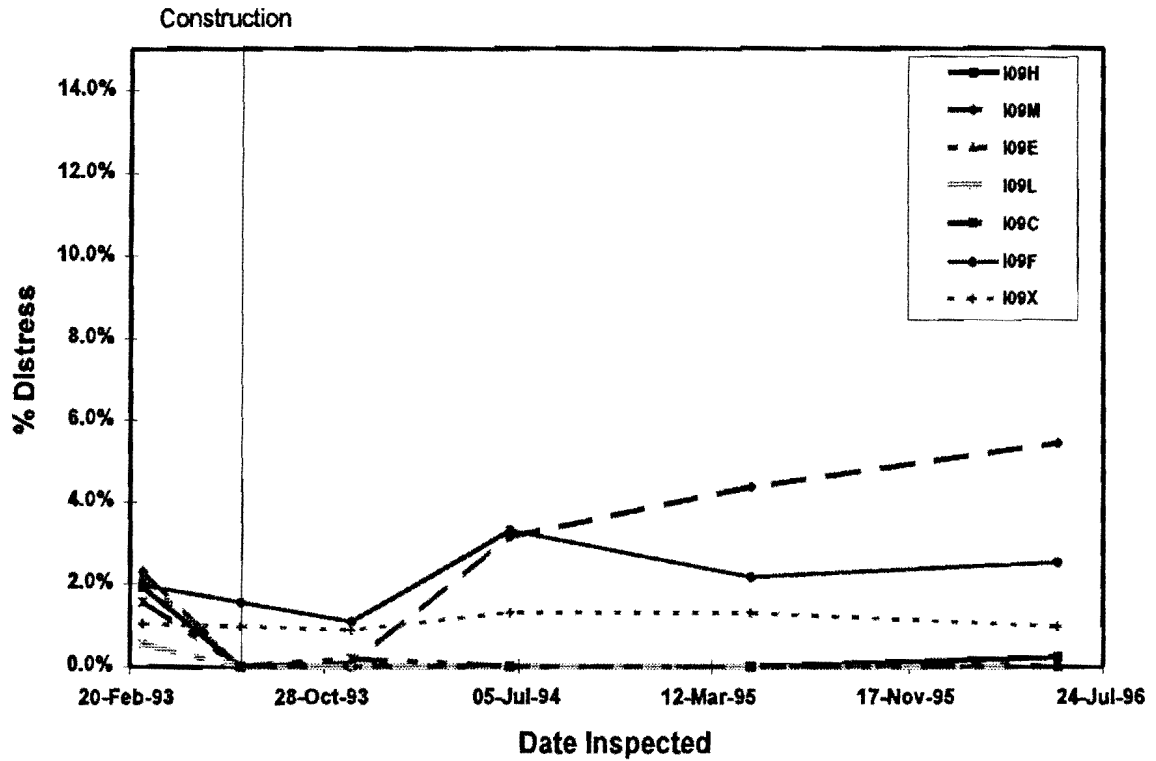


Figure B - 52. Transverse and Non Wheelpath Longitudinal Cracking for Site I09

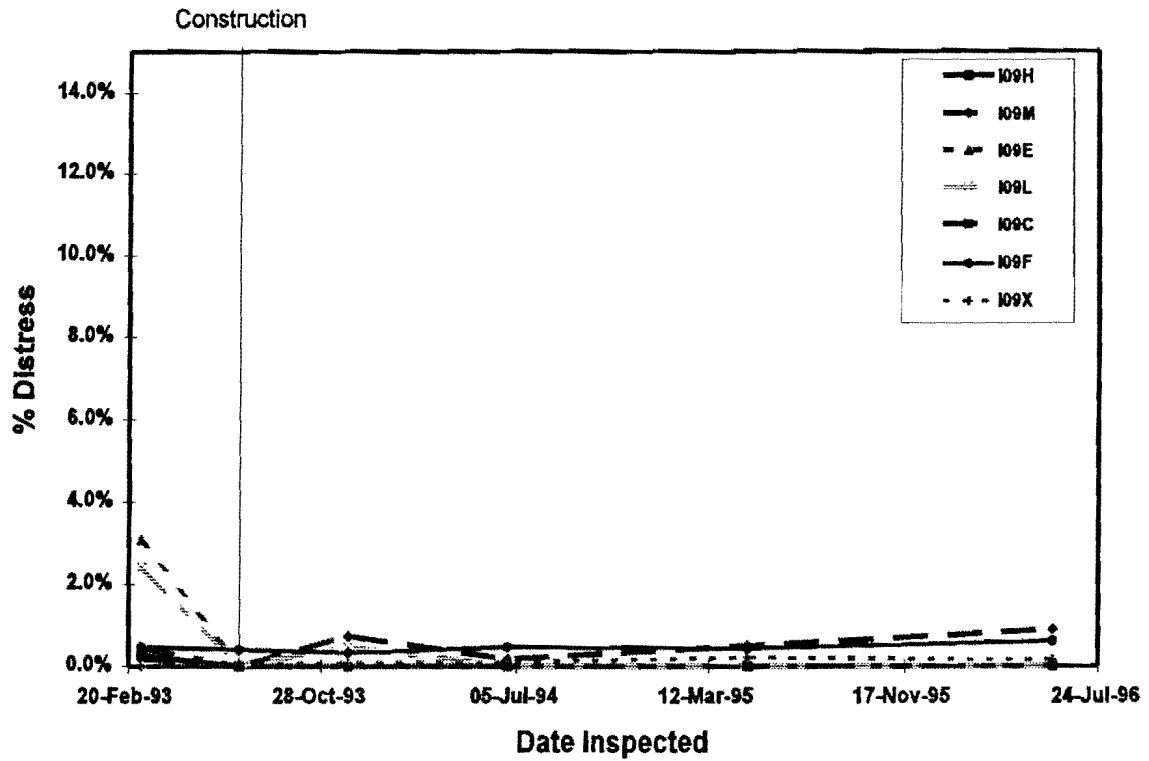


Figure B - 53. Longitudinal Cracking in the Wheelpath for Site I09

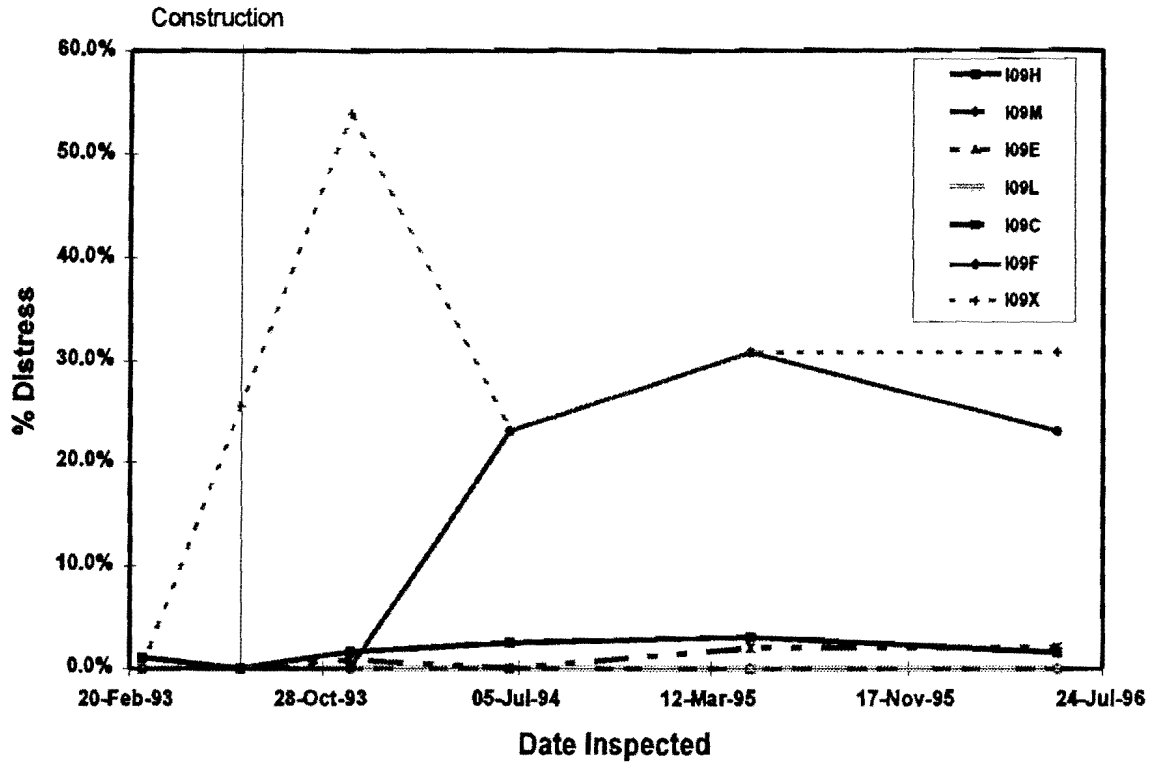


Figure B - 54. Ravelling for Site I09

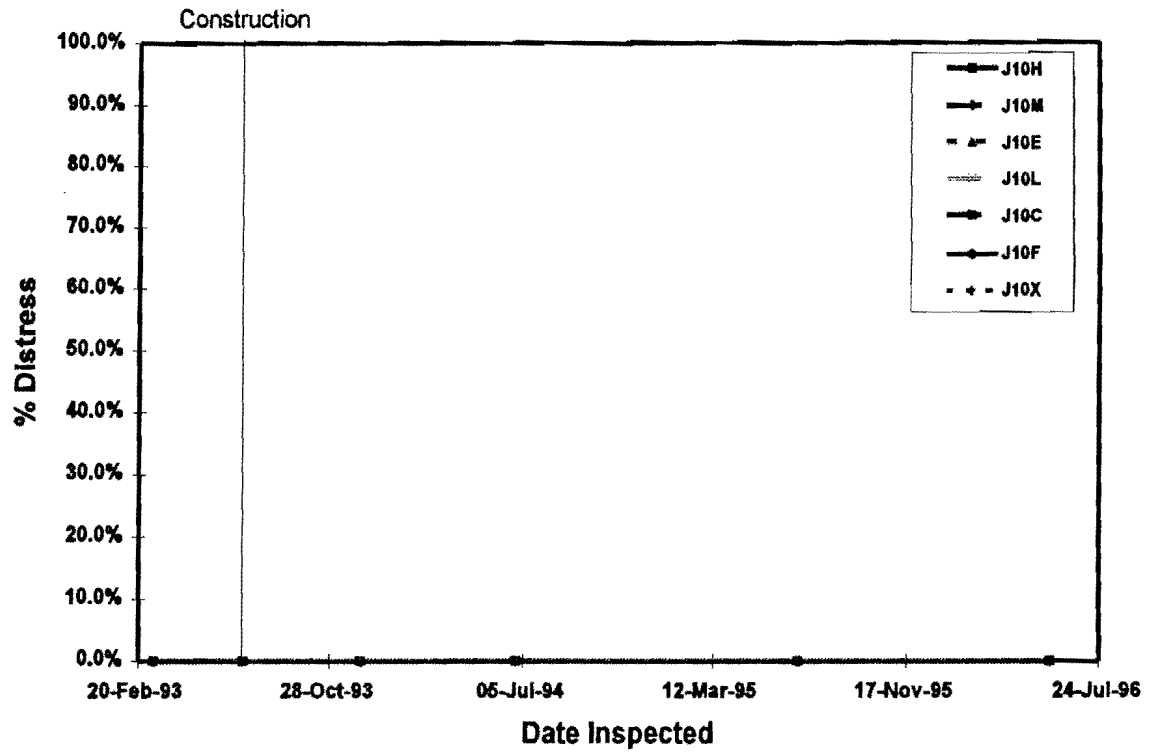


Figure B - 55. Alligator Cracking for Site J10

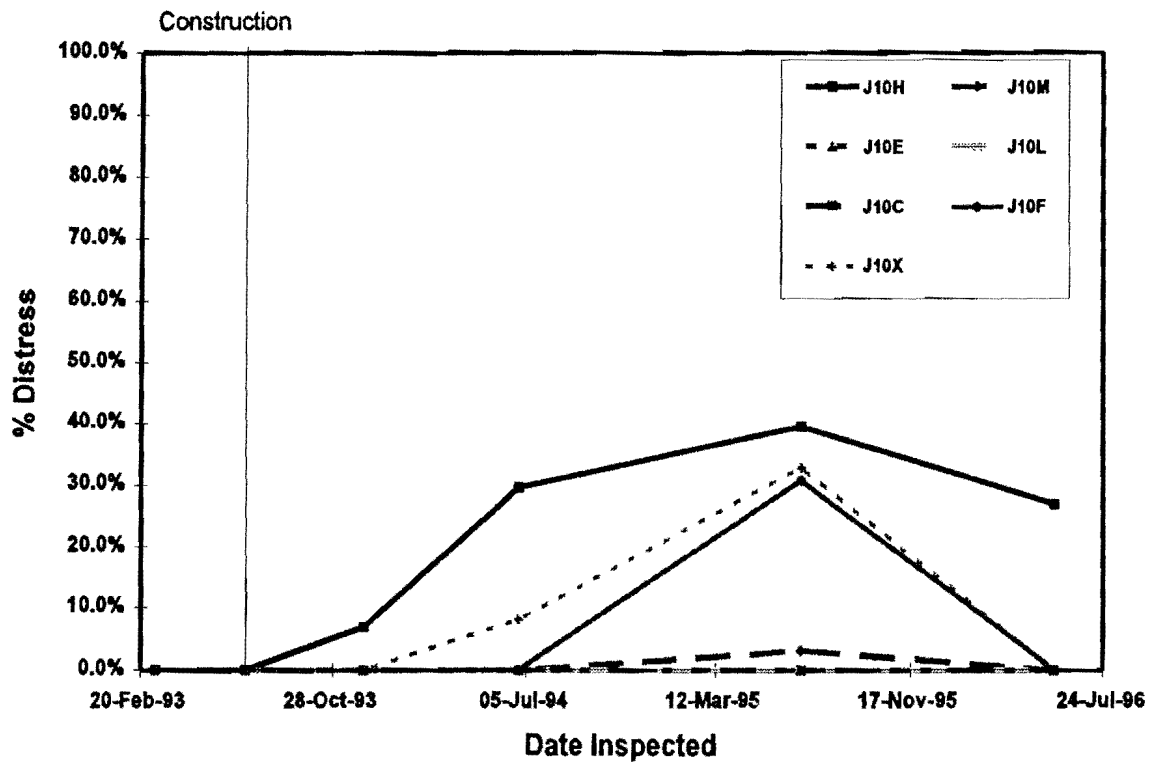


Figure B - 56. Bleeding for Site J10

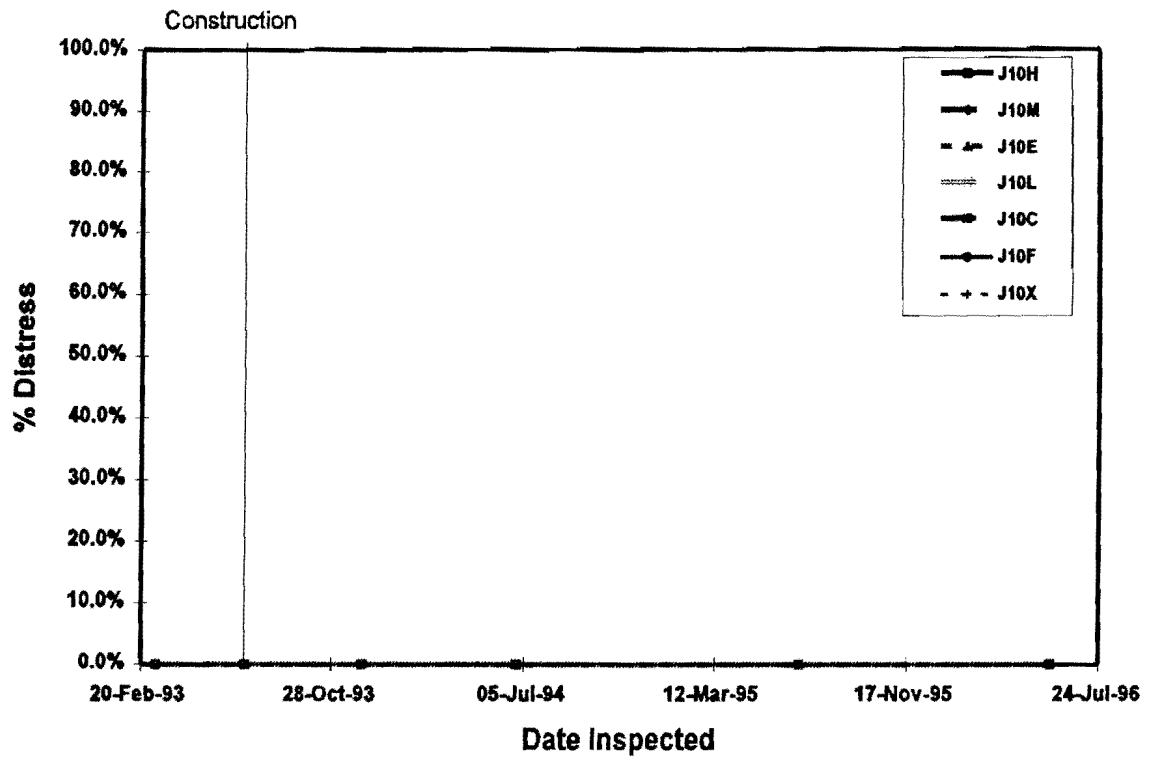


Figure B - 57. Block Cracking for Site J10

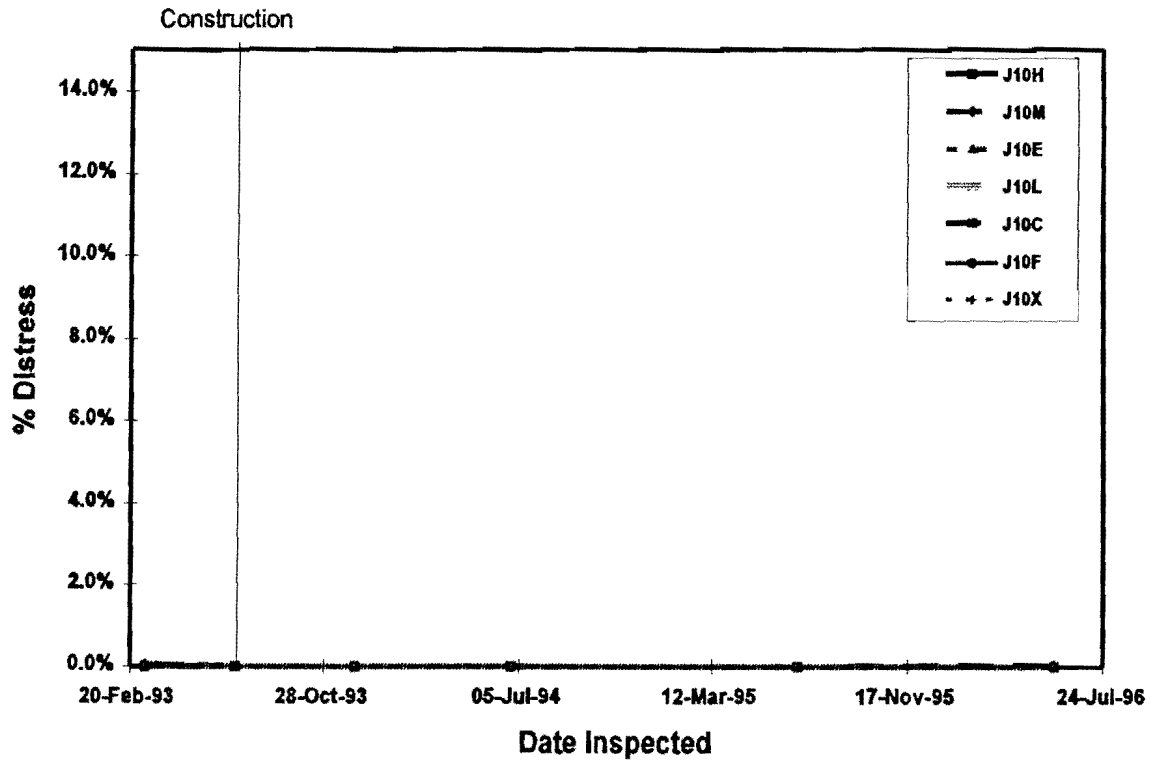


Figure B - 58. Transverse and Non Wheelpath Longitudinal Cracking for Site J10

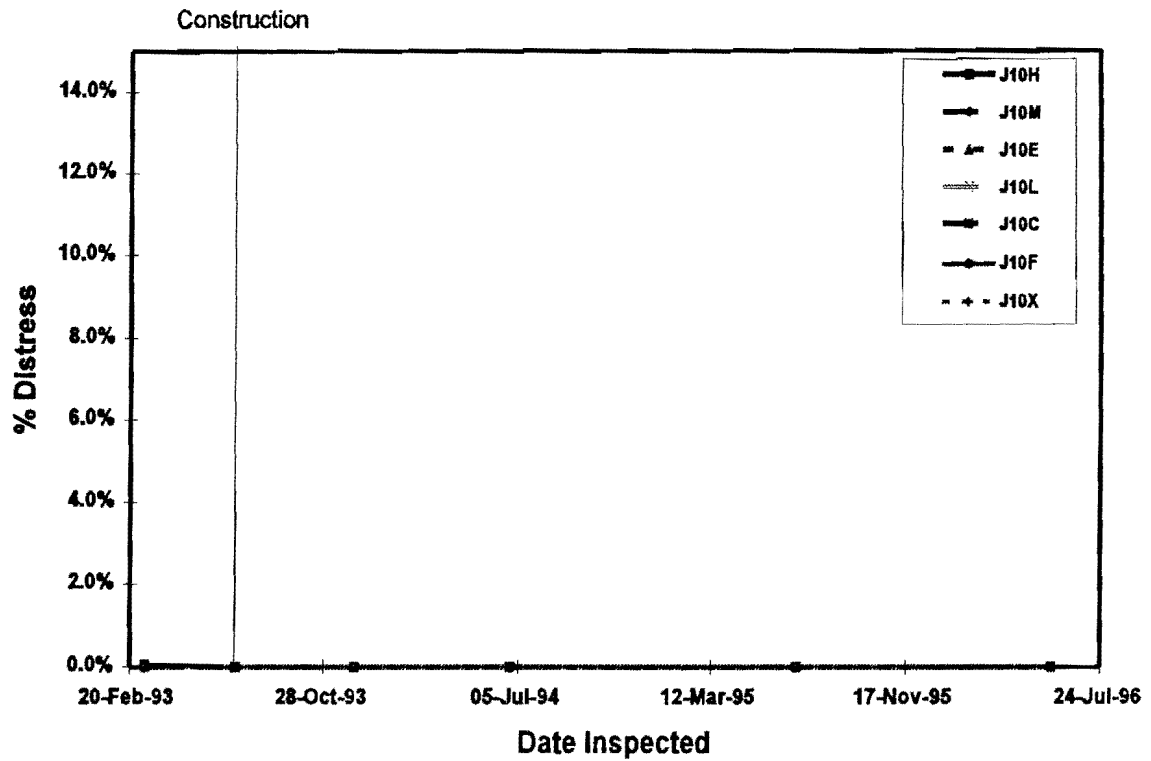


Figure B - 59. Longitudinal Cracking in the Wheelpath for Site J10

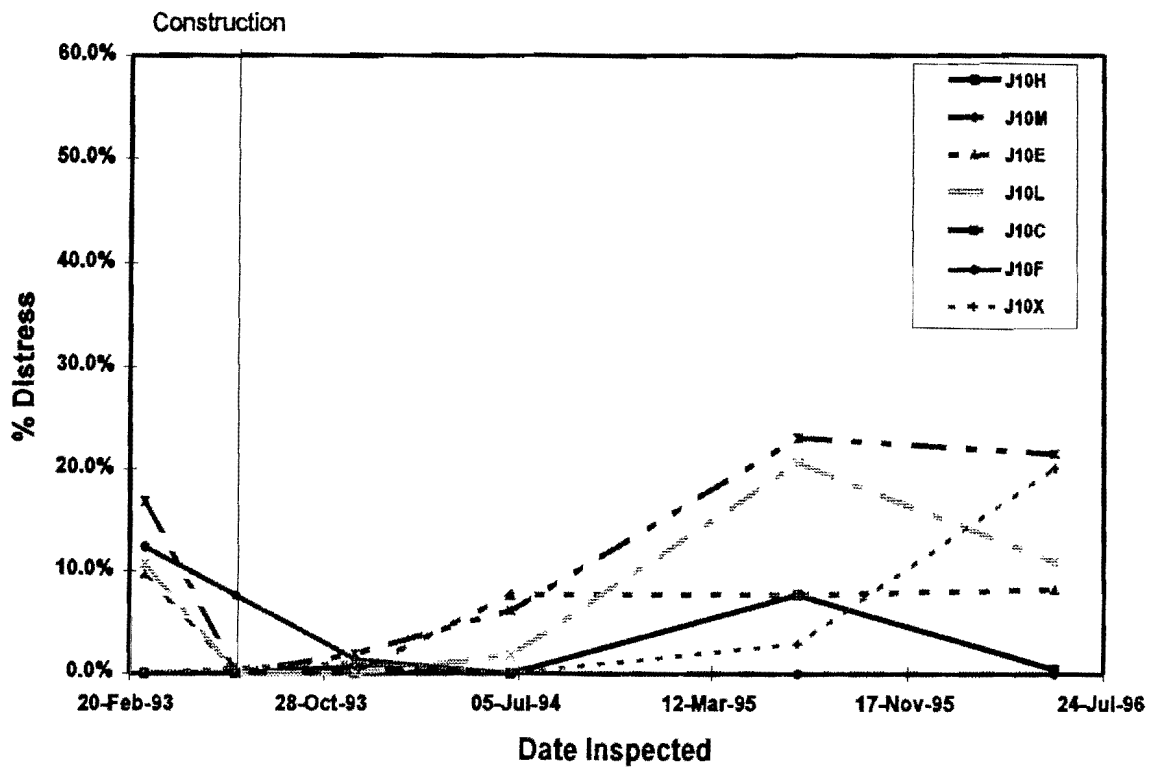


Figure B - 60. Ravelling for Site J10

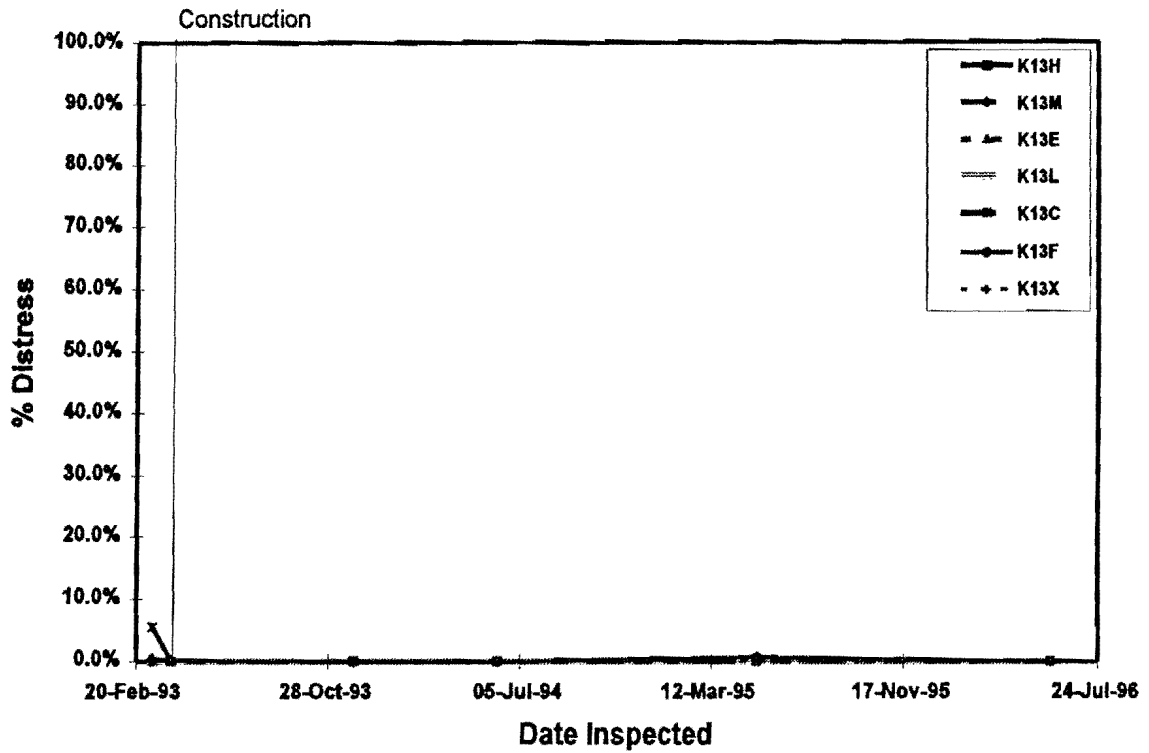


Figure B - 61. Alligator Cracking for Site K13

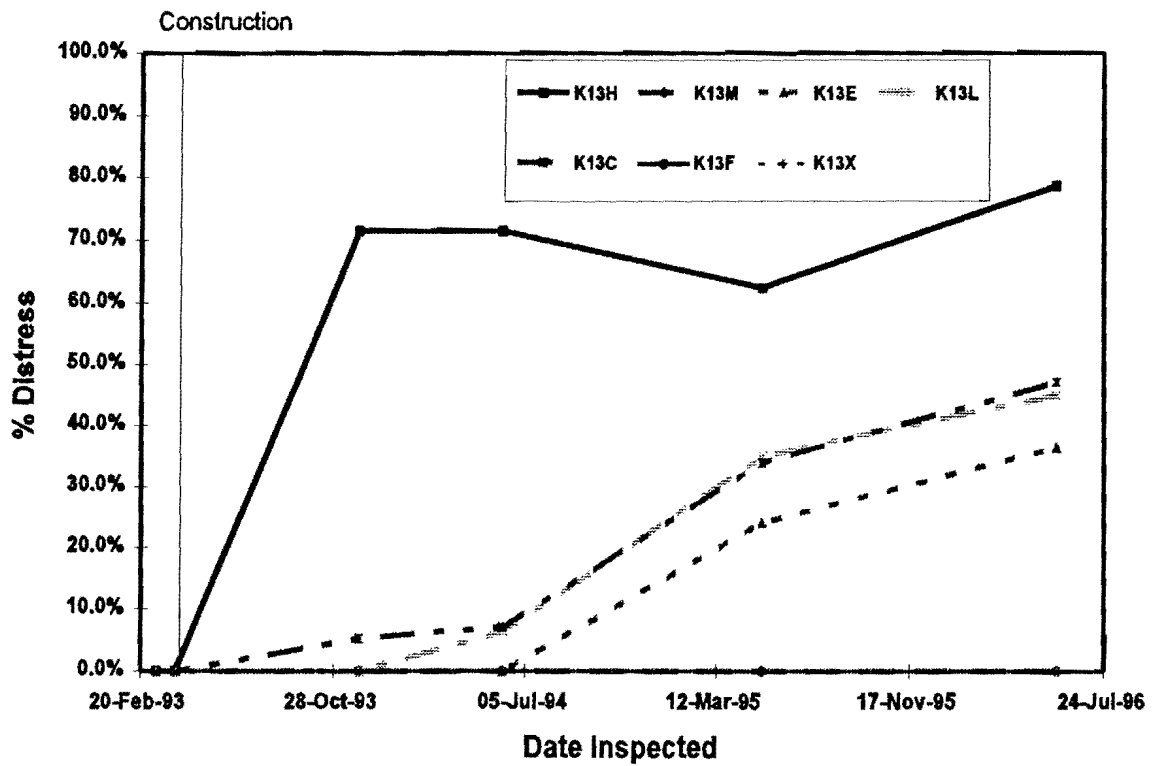


Figure B - 62. Bleeding for Site K13

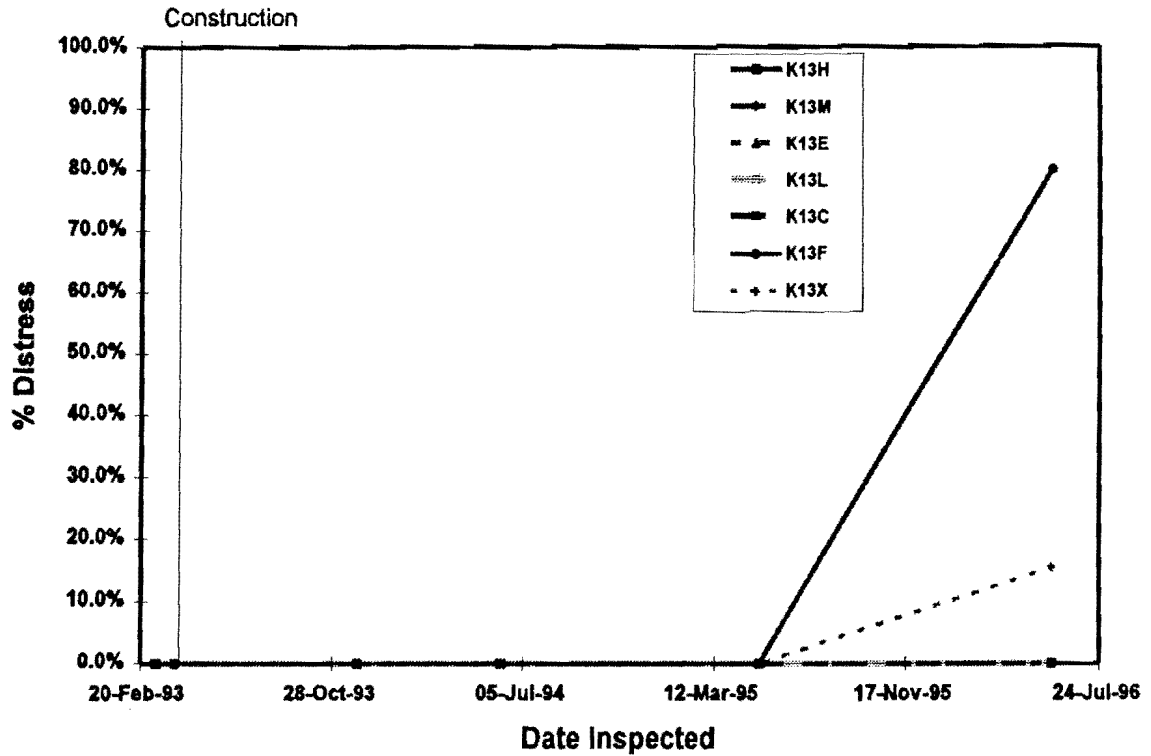


Figure B - 63. Block Cracking for Site K13

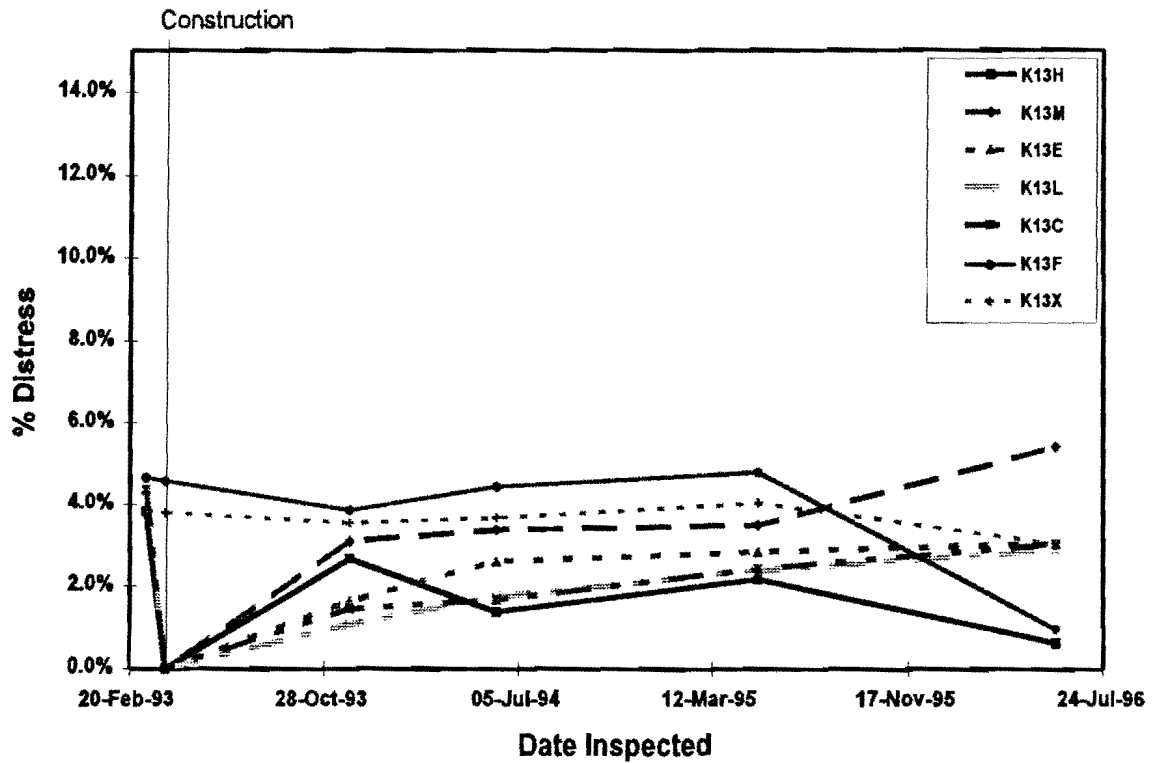


Figure B - 64. Transverse and Non Wheelpath Longitudinal Cracking for Site K13

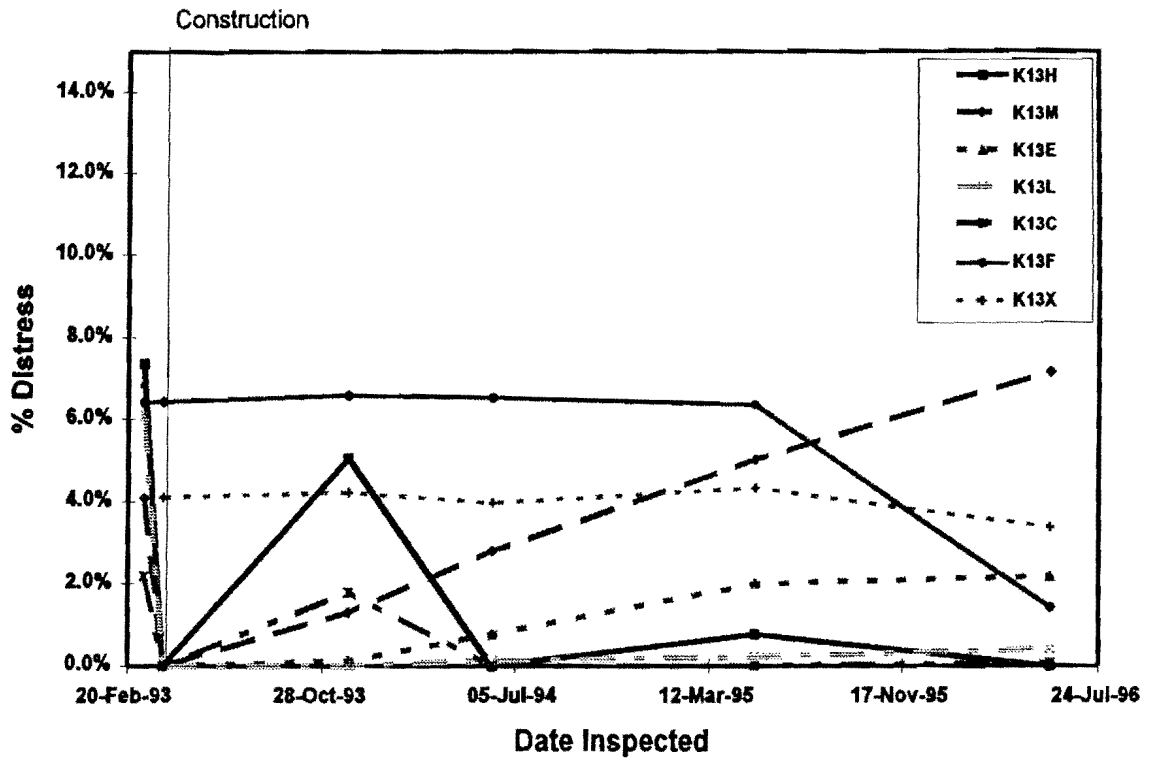


Figure B - 65. Longitudinal Cracking in the Wheelpath for Site K13

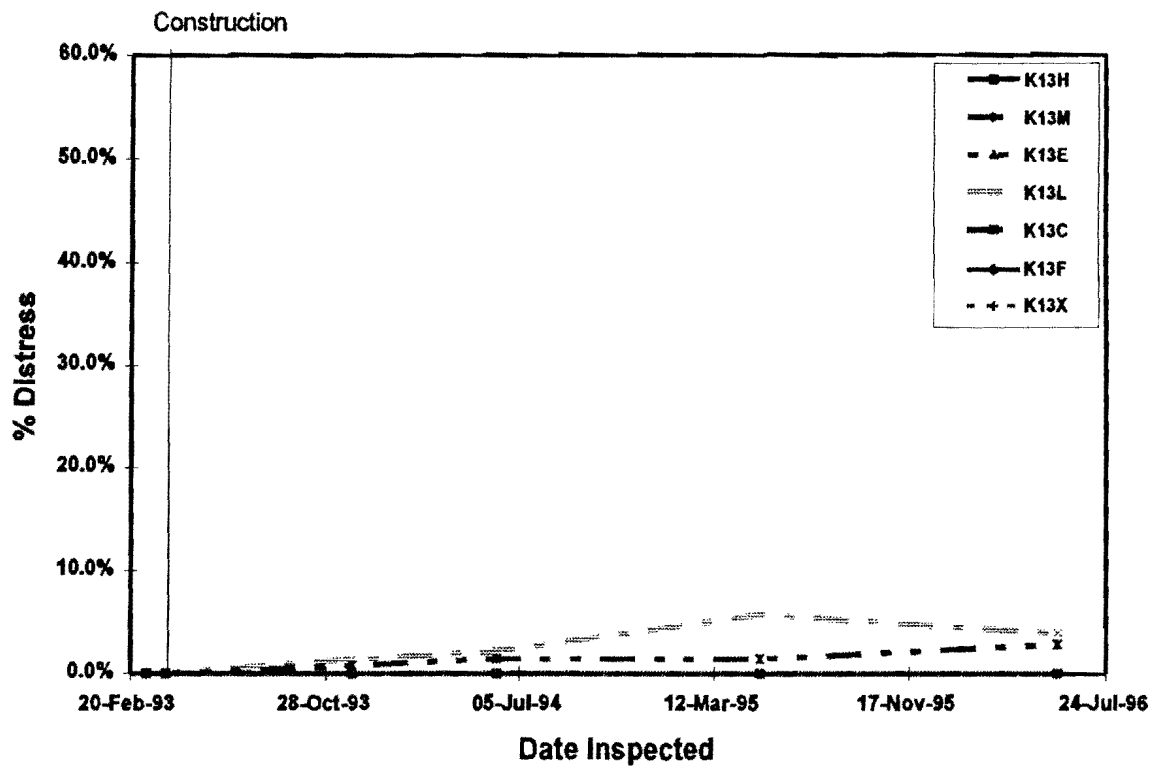


Figure B - 66. Ravelling for Site K13

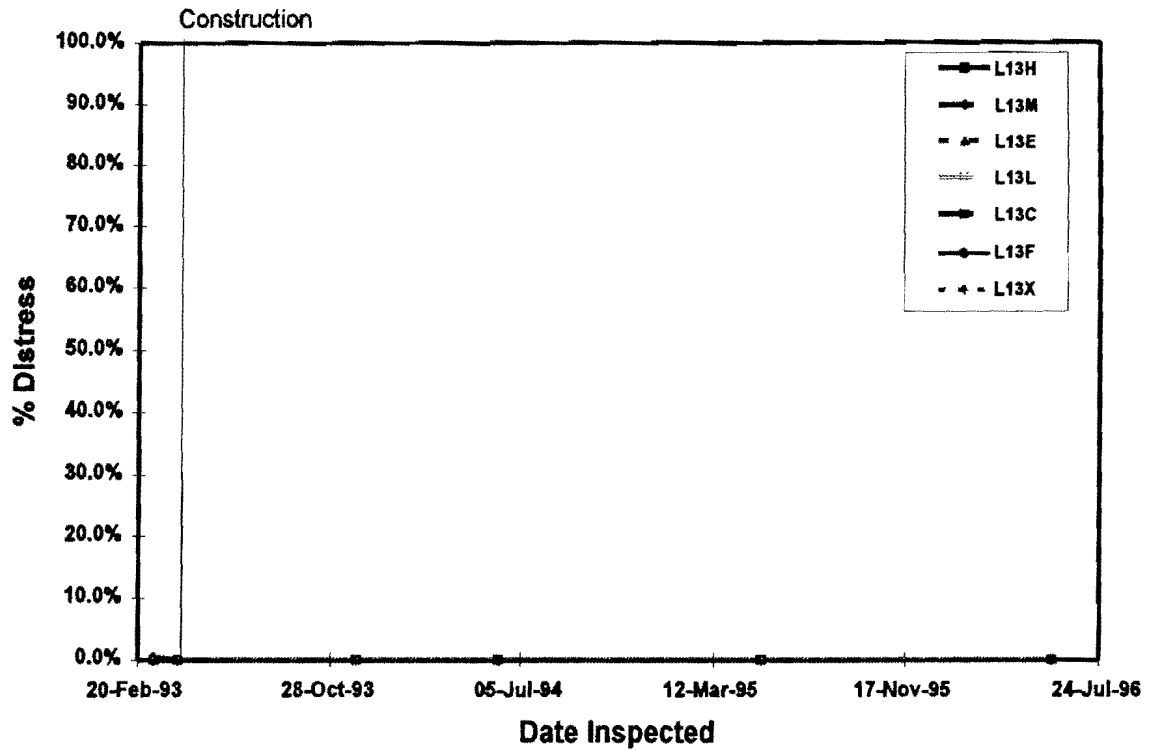


Figure B - 67. Alligator Cracking for Site L13

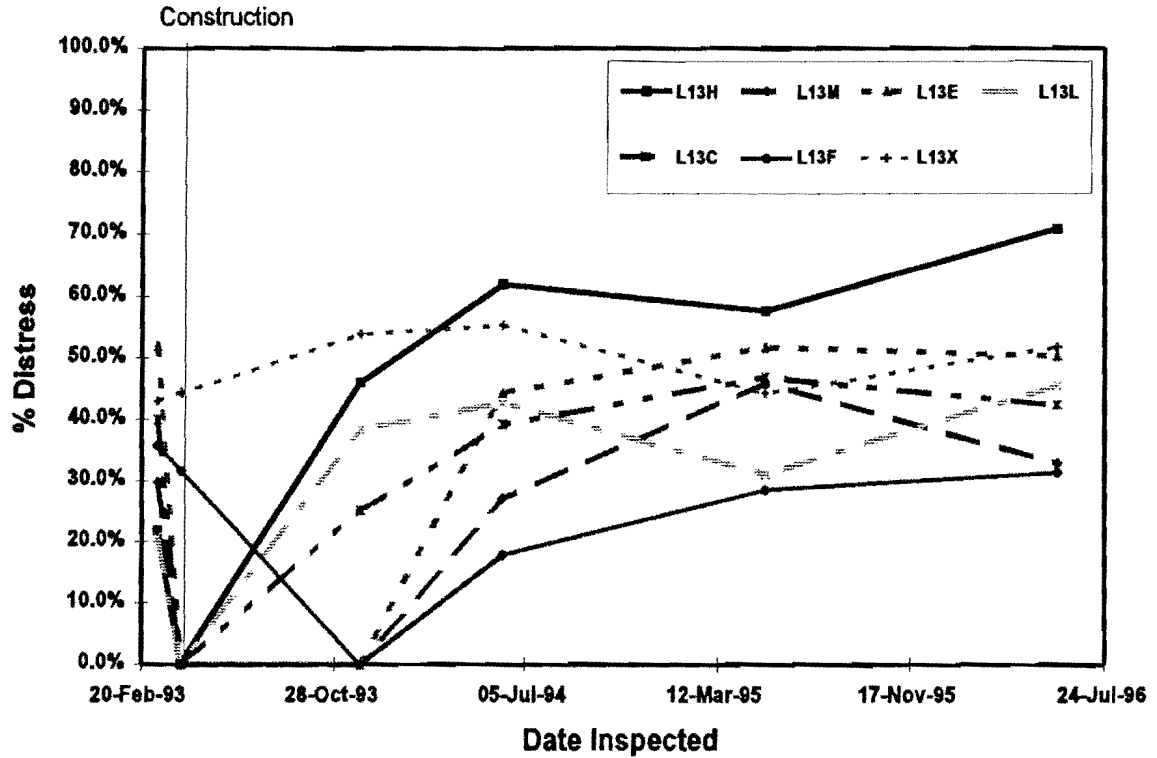


Figure B - 68. Bleeding for Site L13

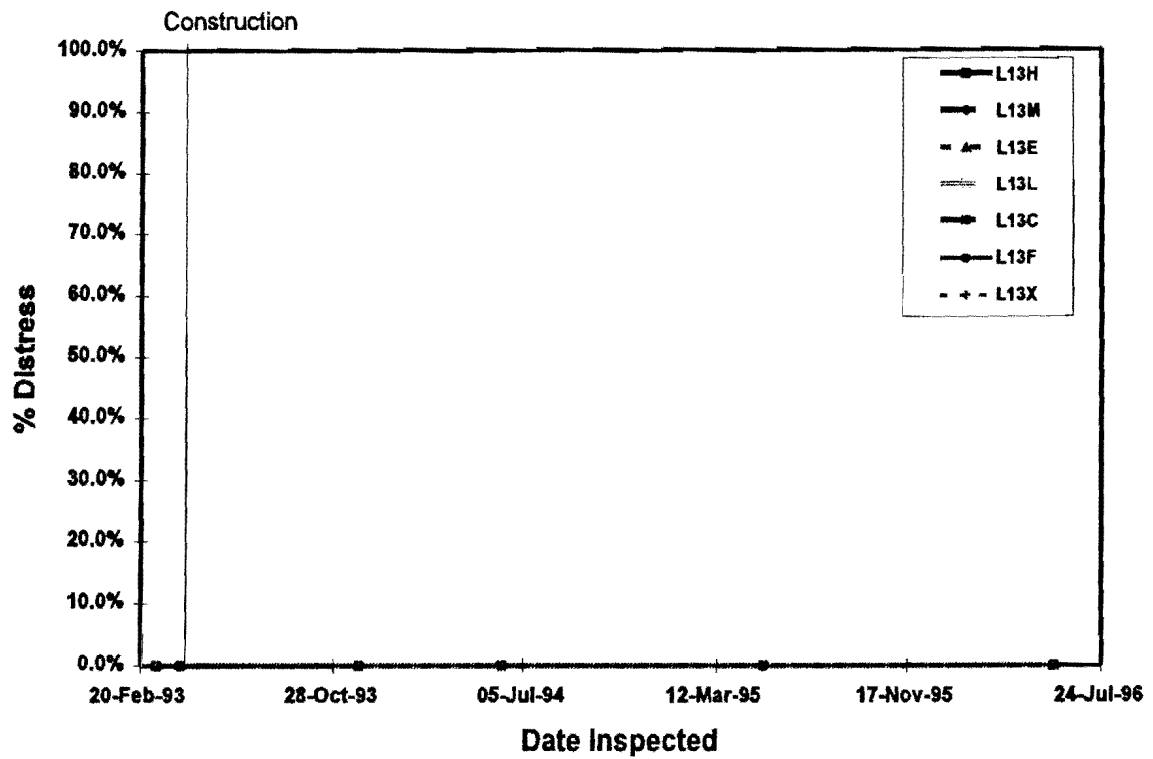


Figure B - 69. Block Cracking for Site L13

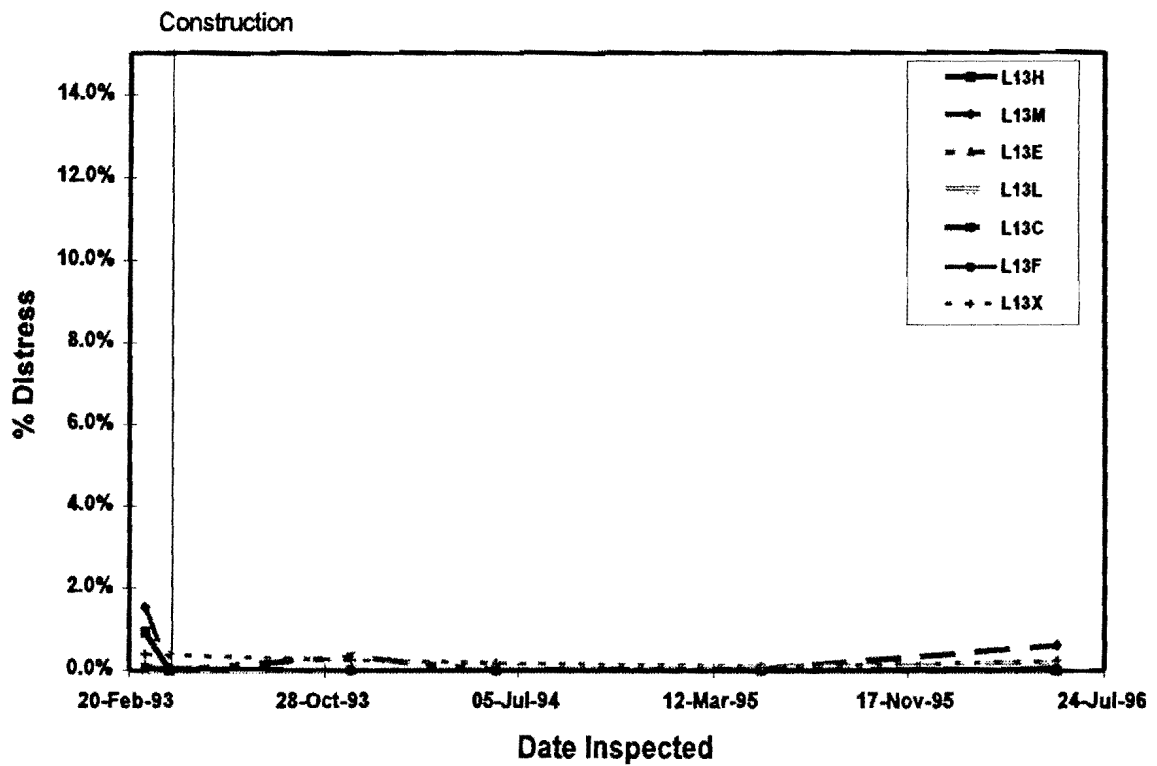


Figure B - 70. Transverse and Non Wheelpath Longitudinal Cracking for Site L13

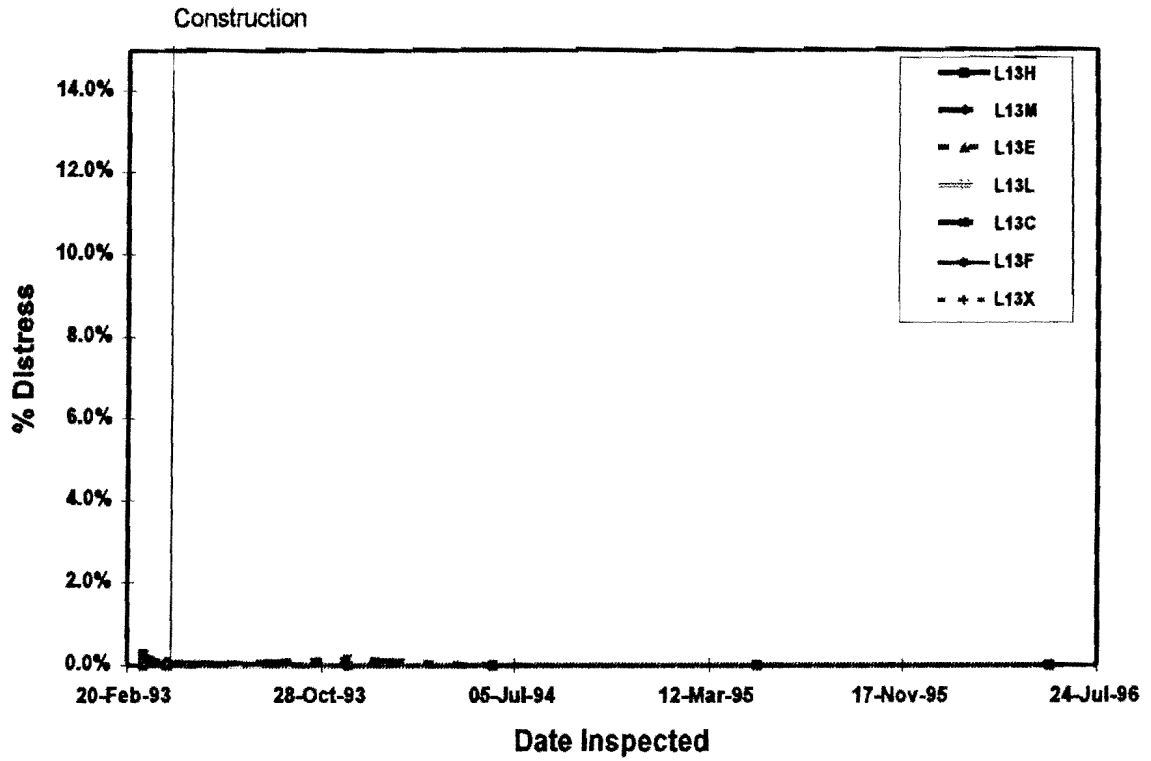


Figure B - 71. Longitudinal Cracking in the Wheelpath for Site L13

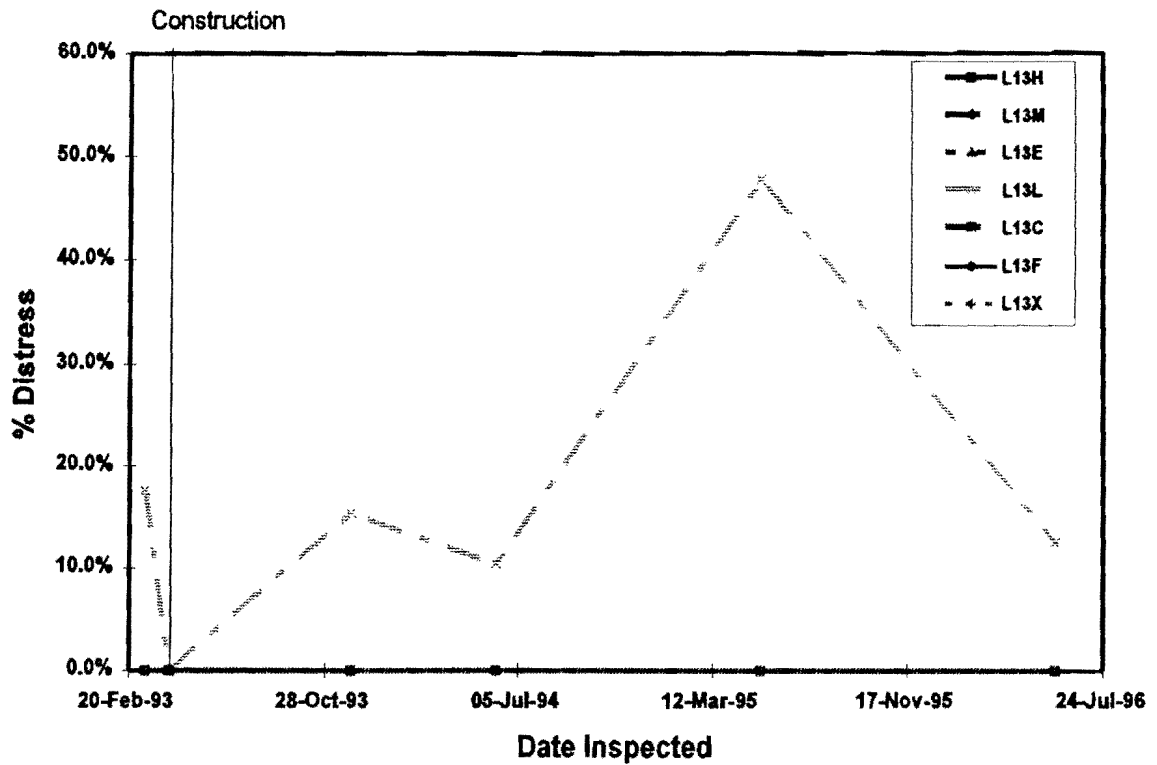


Figure B - 72. Ravelling for Site L13

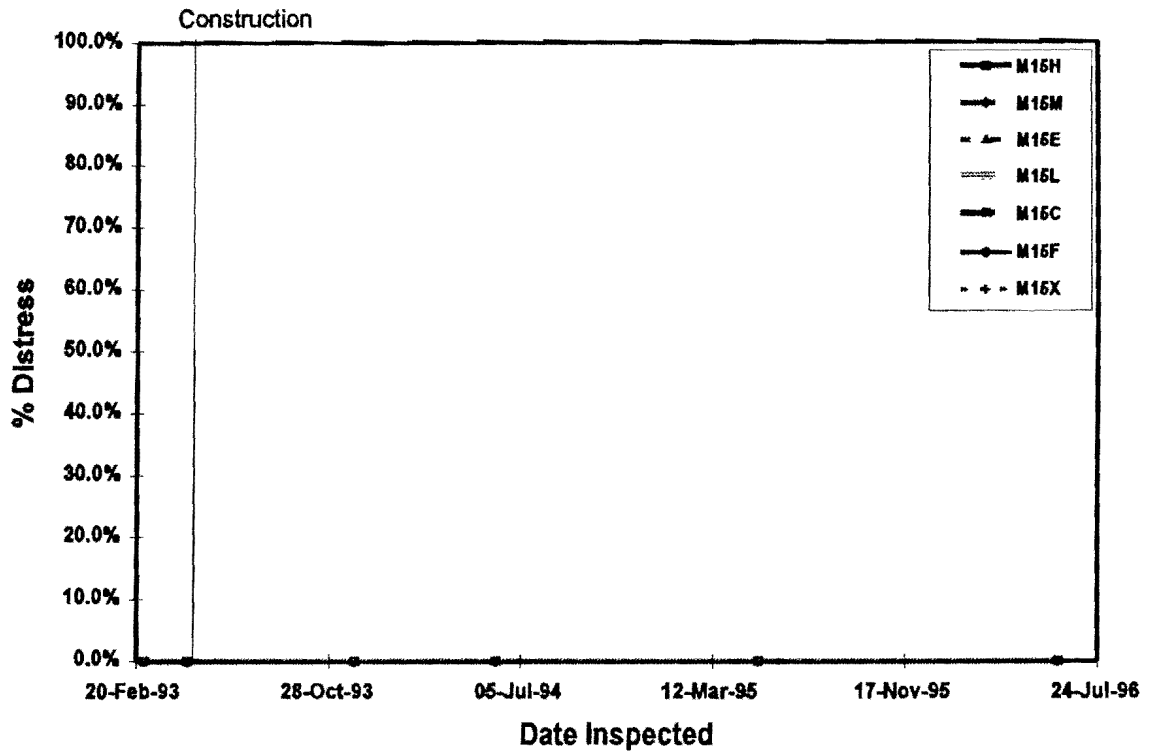


Figure B - 73. Alligator Cracking for Site M15

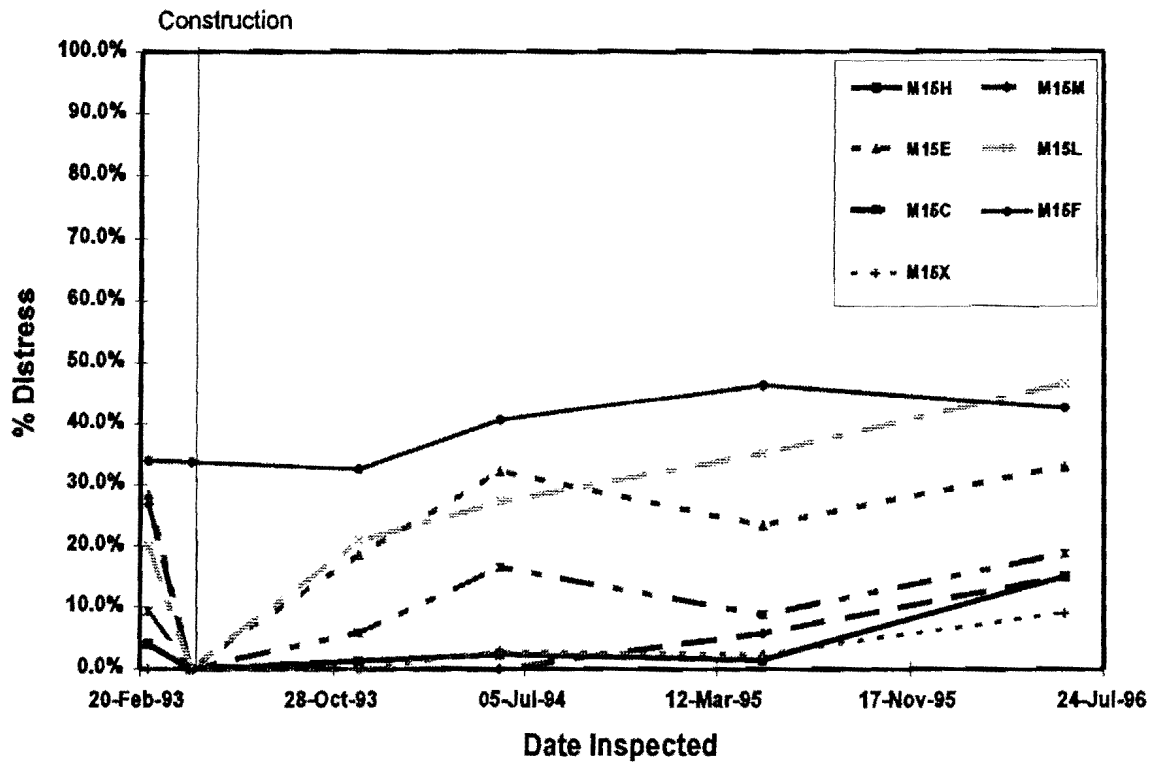


Figure B - 74. Bleeding for Site M15

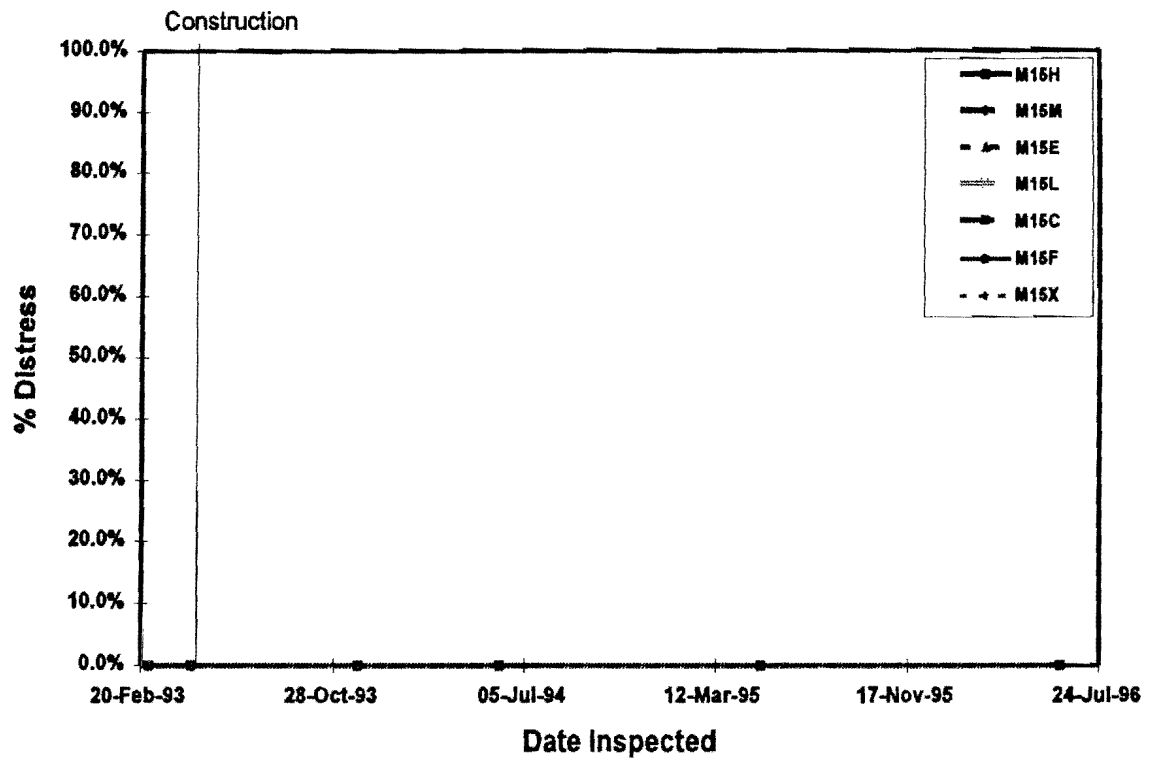


Figure B - 75. Block Cracking for Site M15

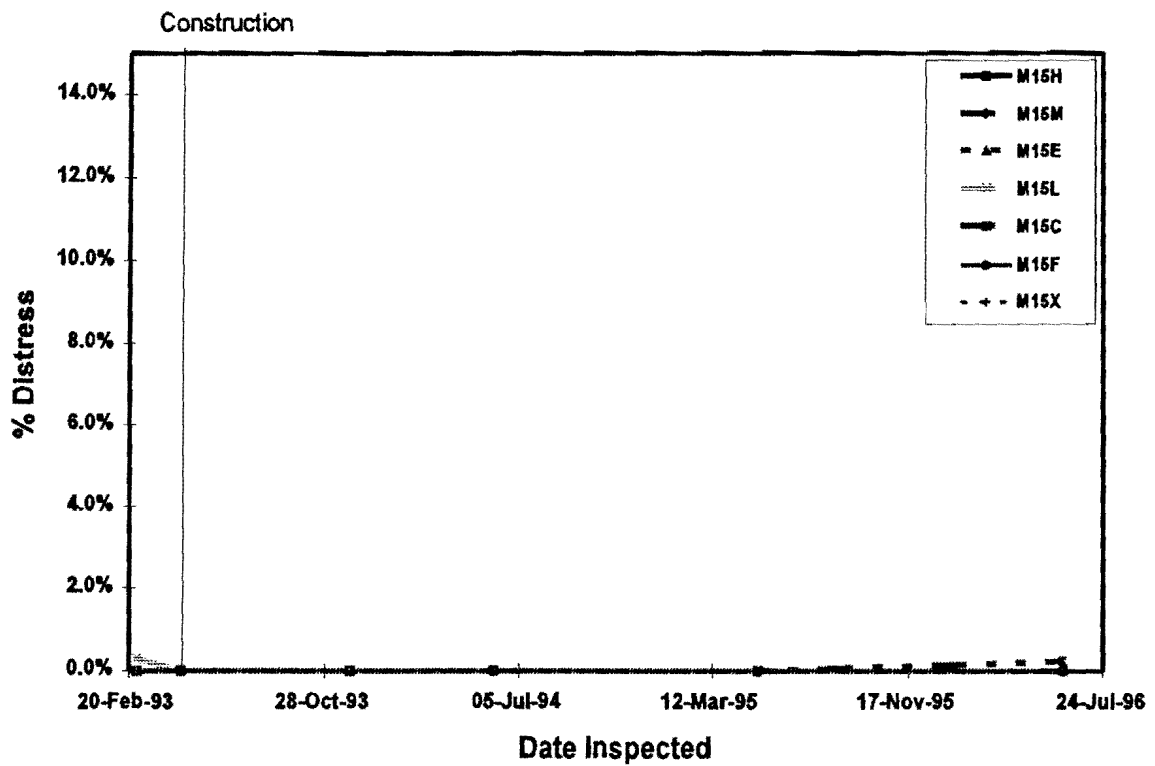


Figure B - 76. Transverse and Non Wheelpath Longitudinal Cracking for Site M15

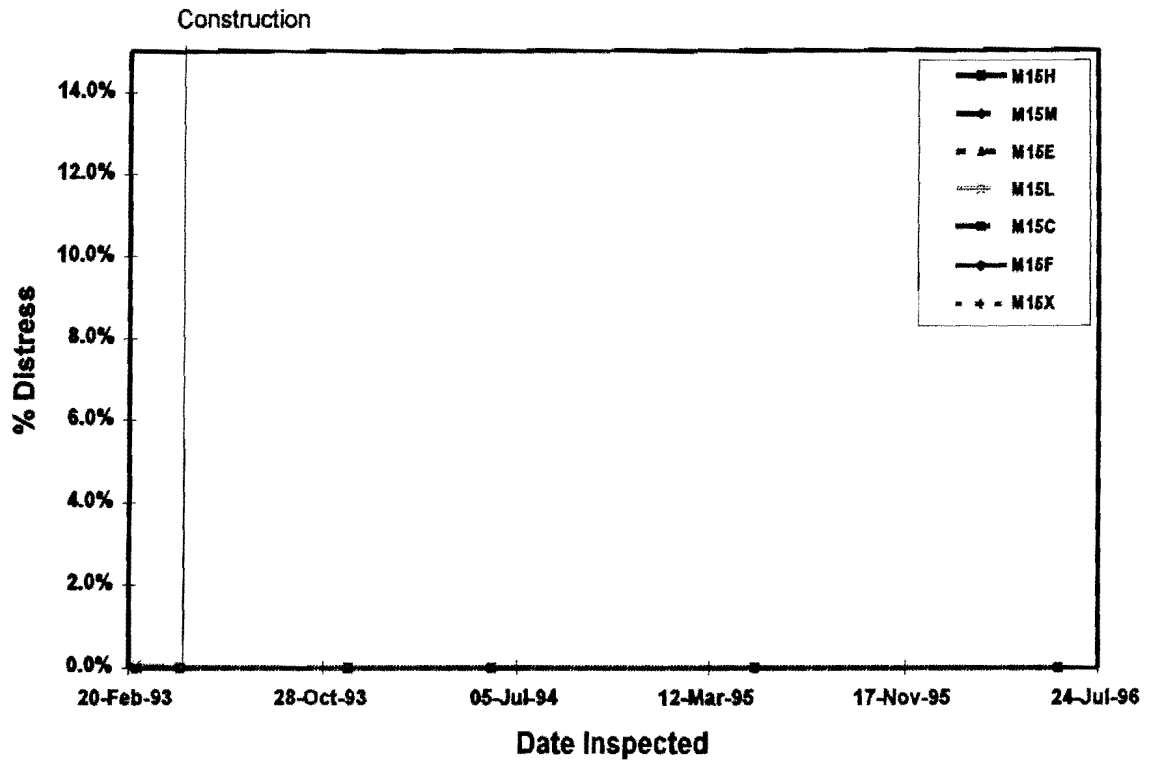


Figure B - 77. Longitudinal Cracking in the Wheelpath for Site M15

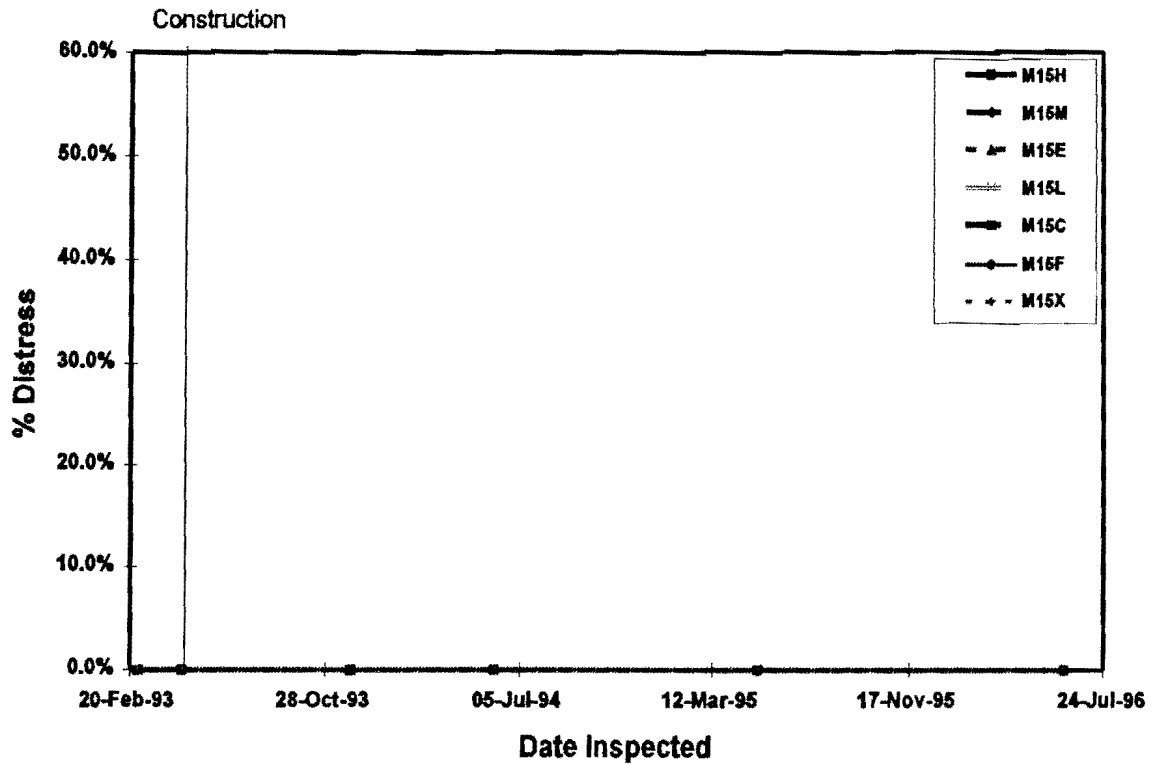


Figure B - 78. Ravelling for Site M15

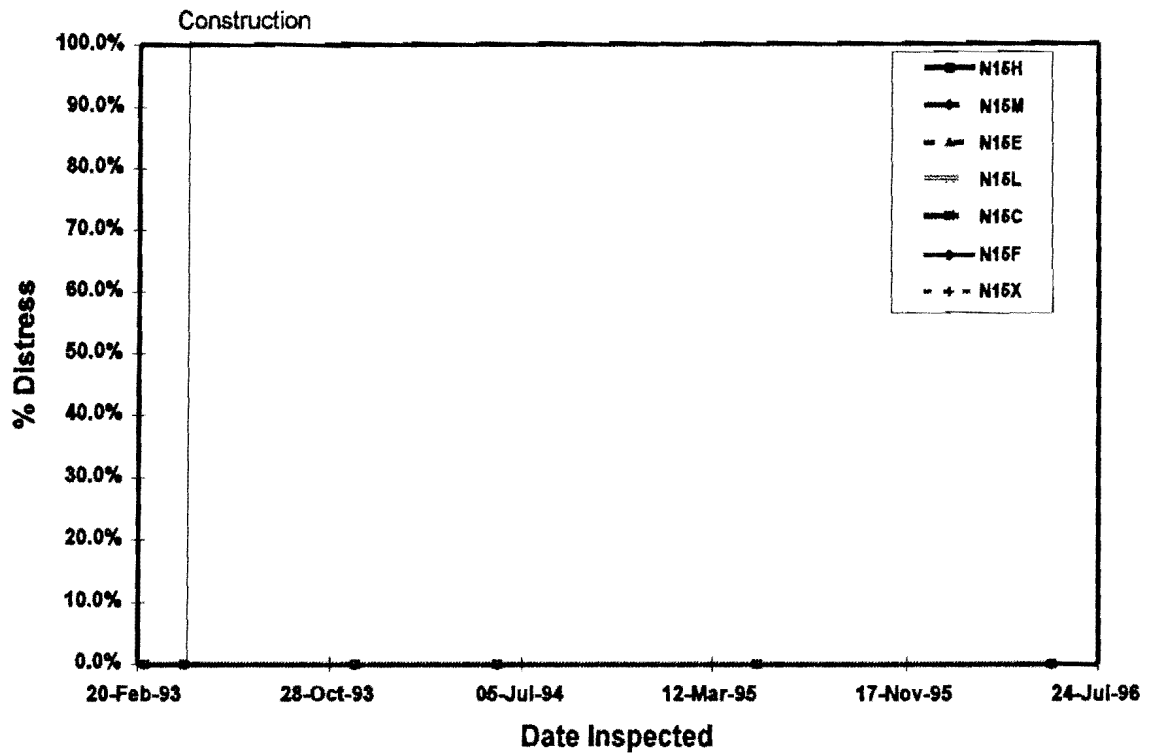


Figure B - 79. Alligator Cracking for Site N15

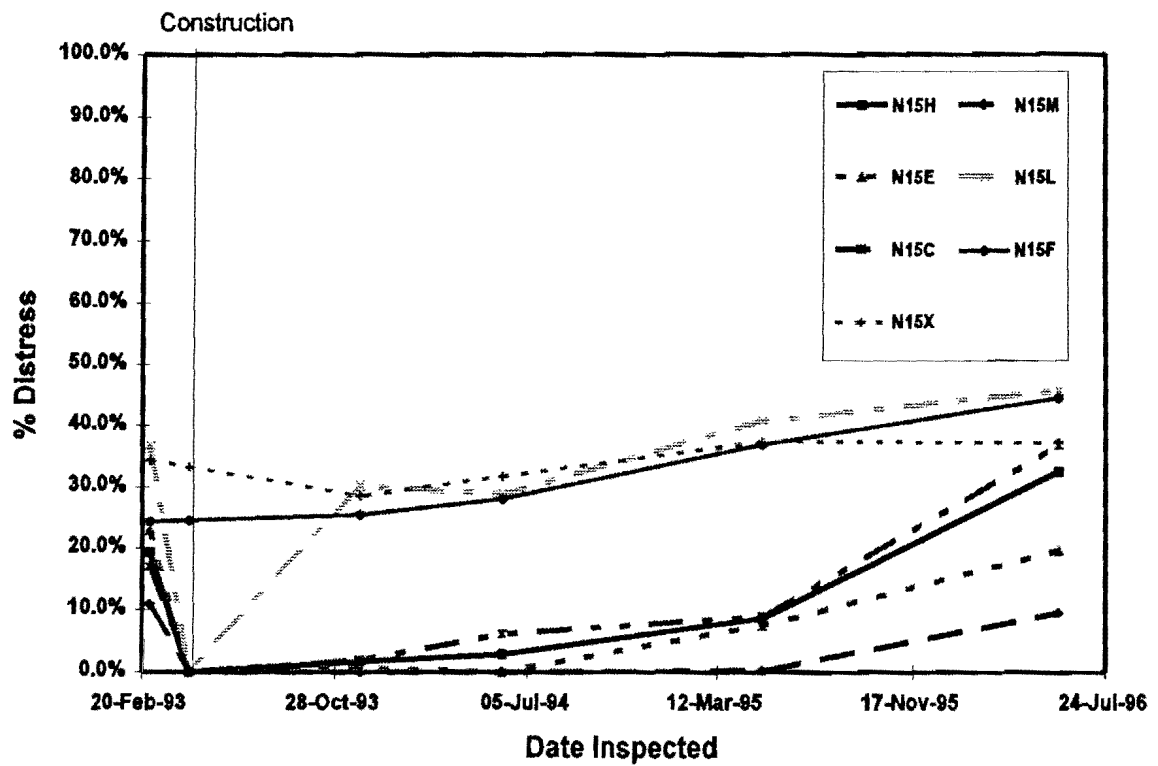


Figure B - 80. Bleeding for Site N15

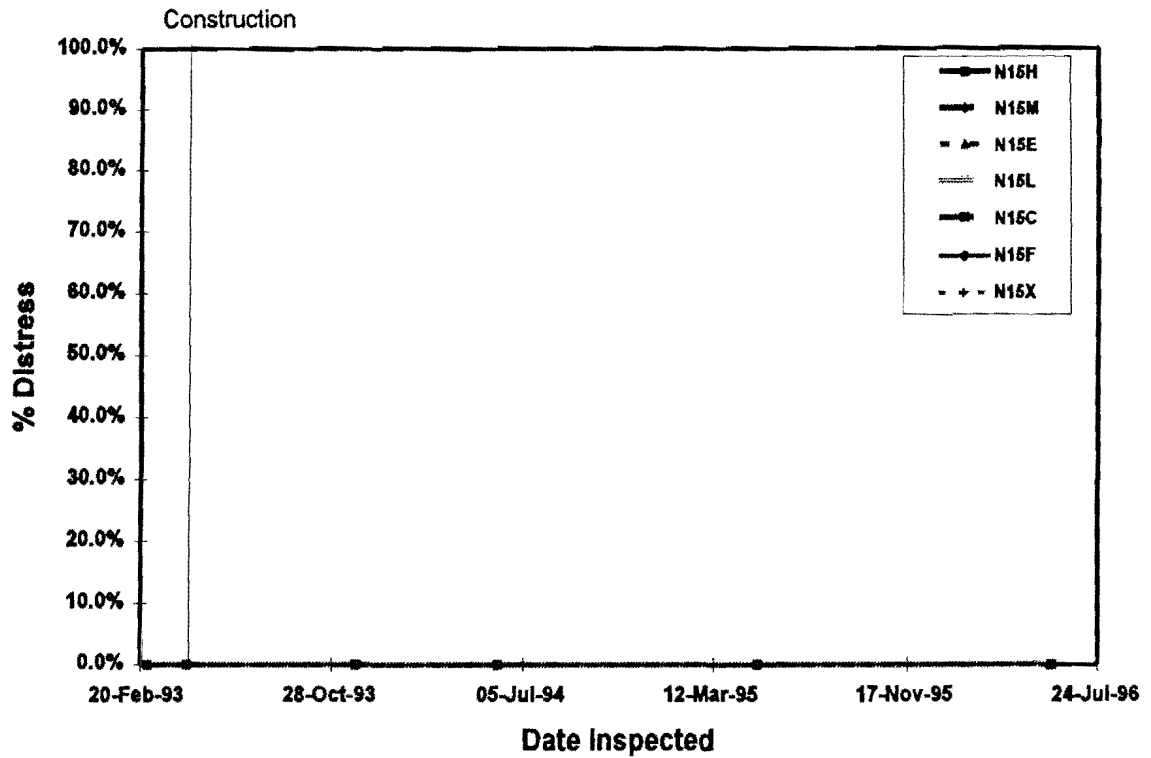


Figure B - 81. Block Cracking for Site N15

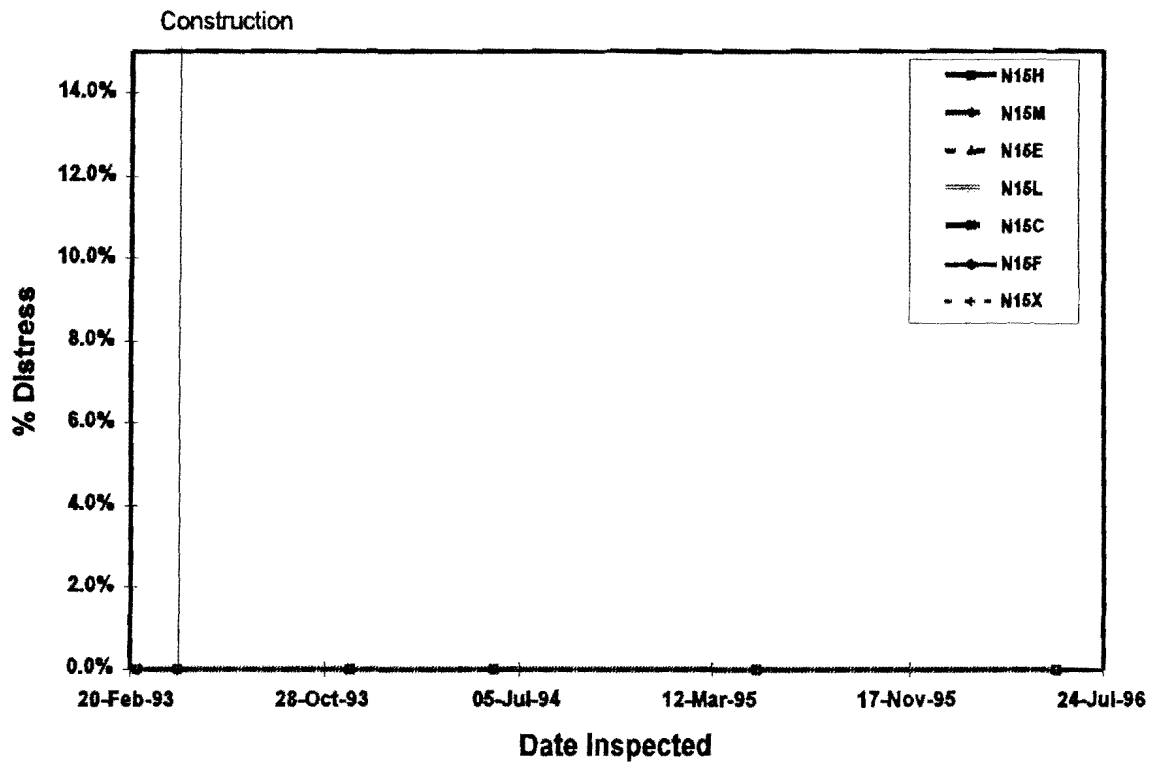


Figure B - 82. Transverse and Non Wheelpath Longitudinal Cracking for Site N15

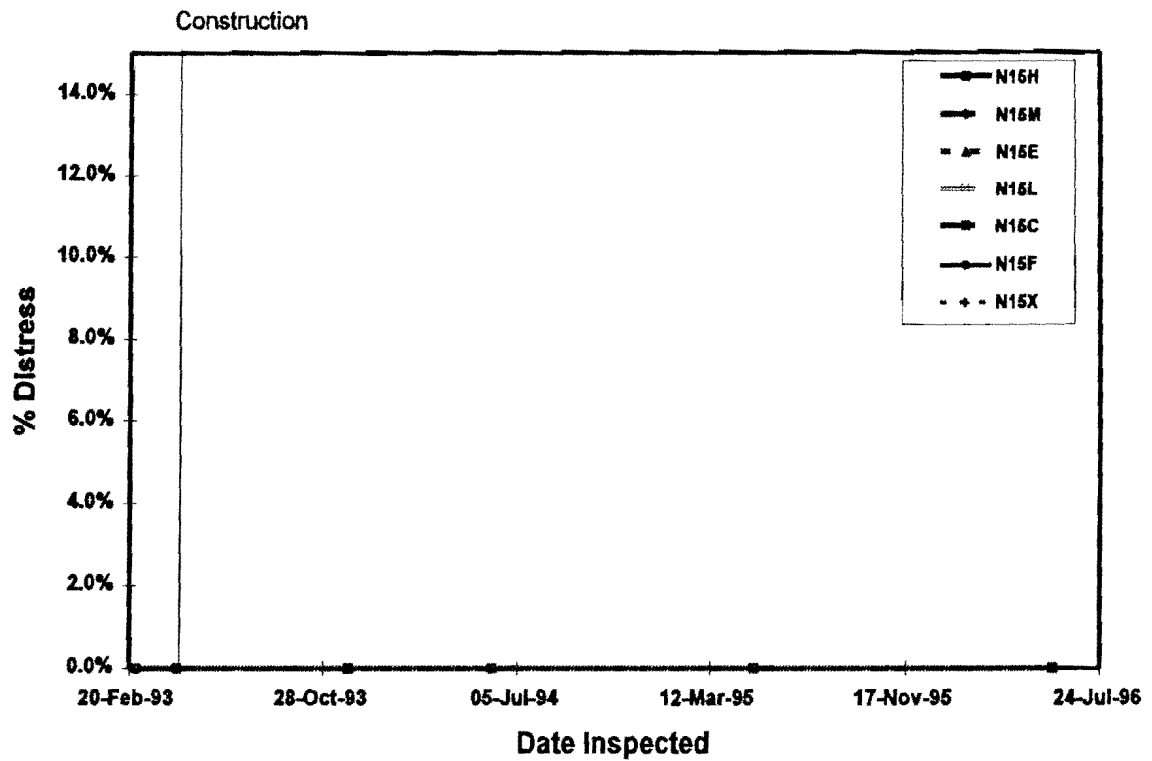


Figure B - 83. Longitudinal Cracking in the Wheelpath for Site N15

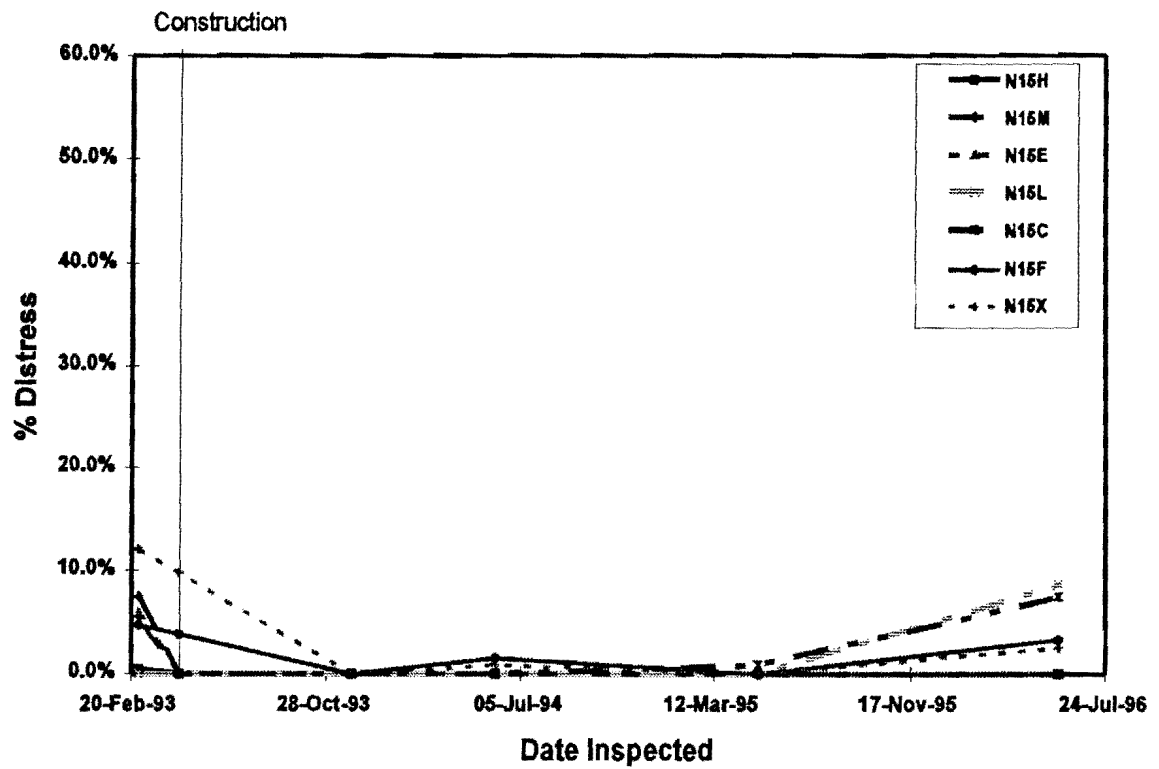


Figure B - 84. Ravelling for Site N15

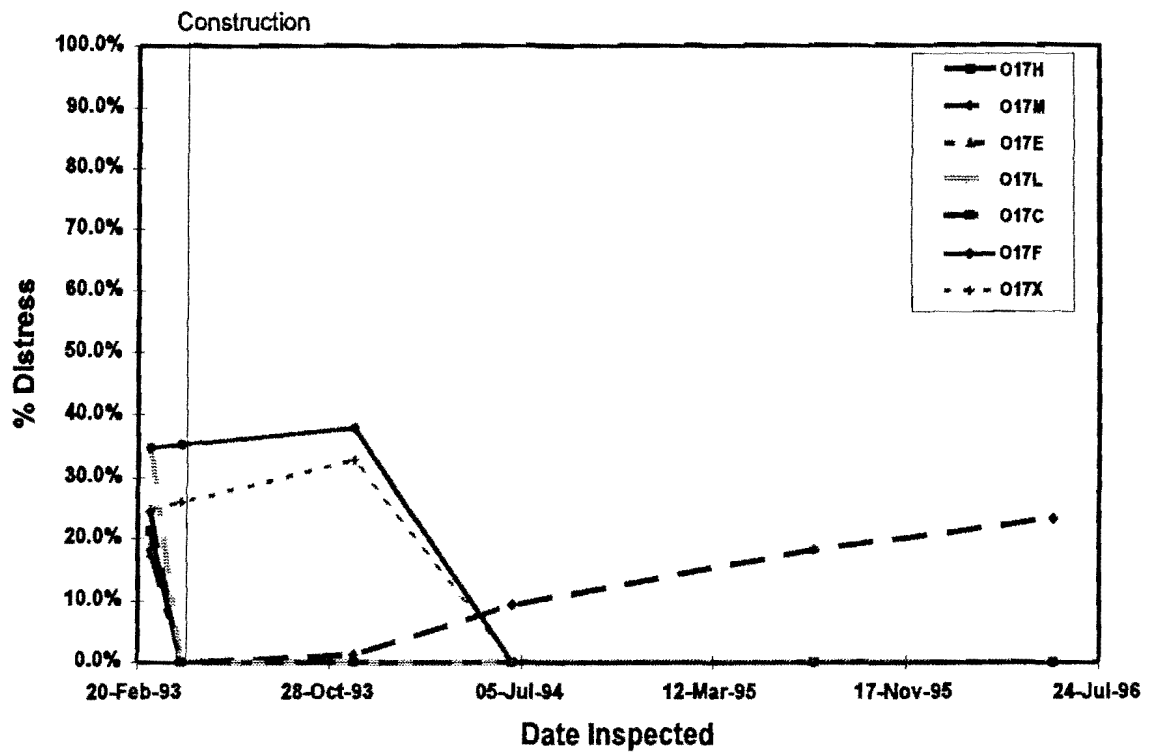


Figure B - 85. Alligator Cracking for Site O17

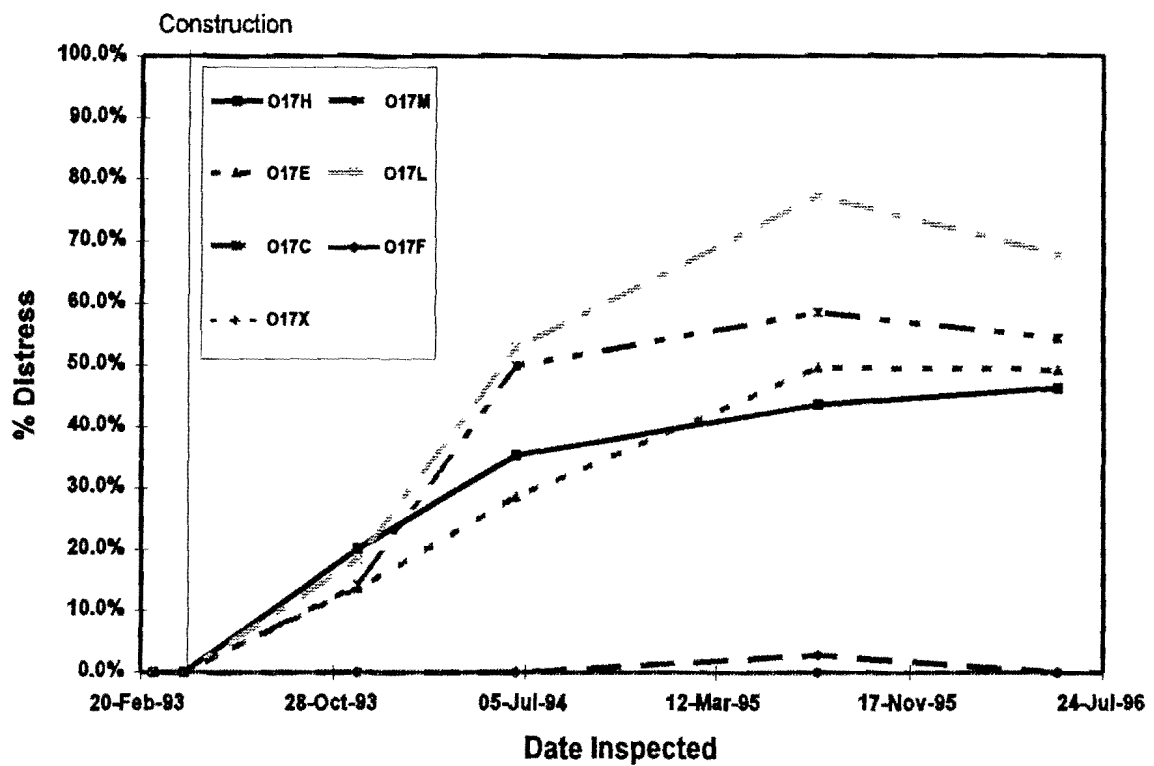


Figure B - 86. Bleeding for Site O17

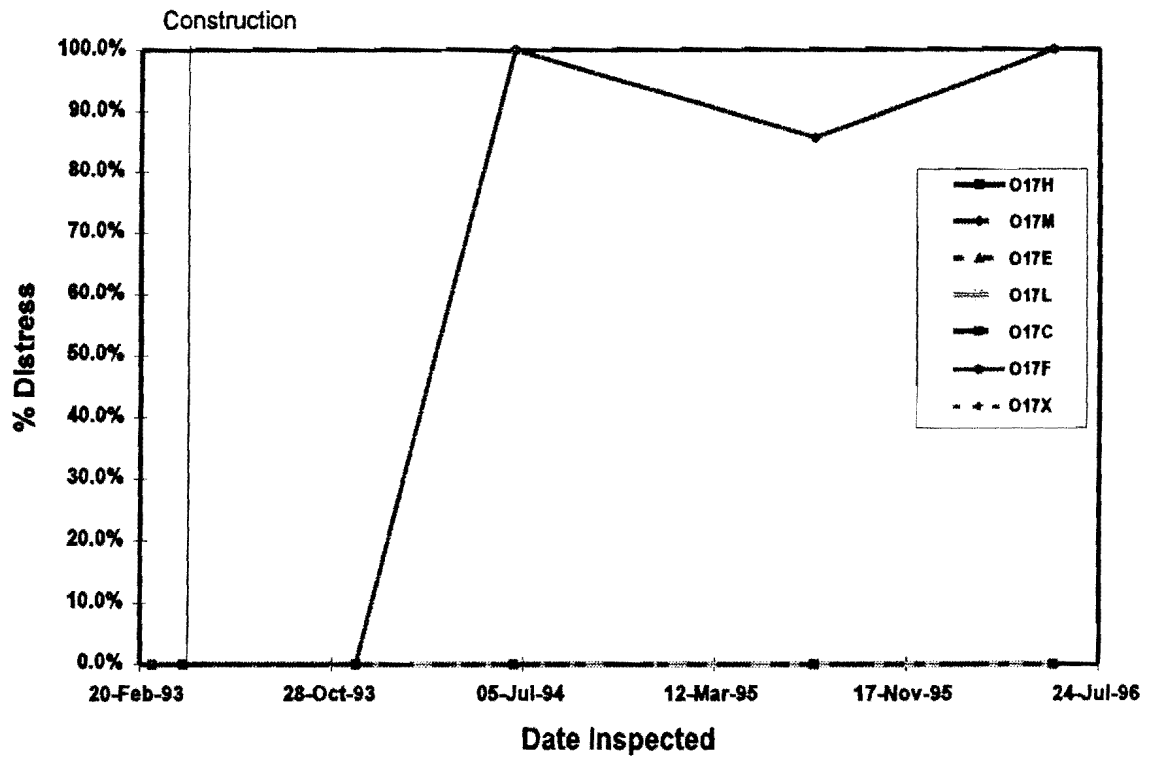


Figure B - 87. Block Cracking for Site O17

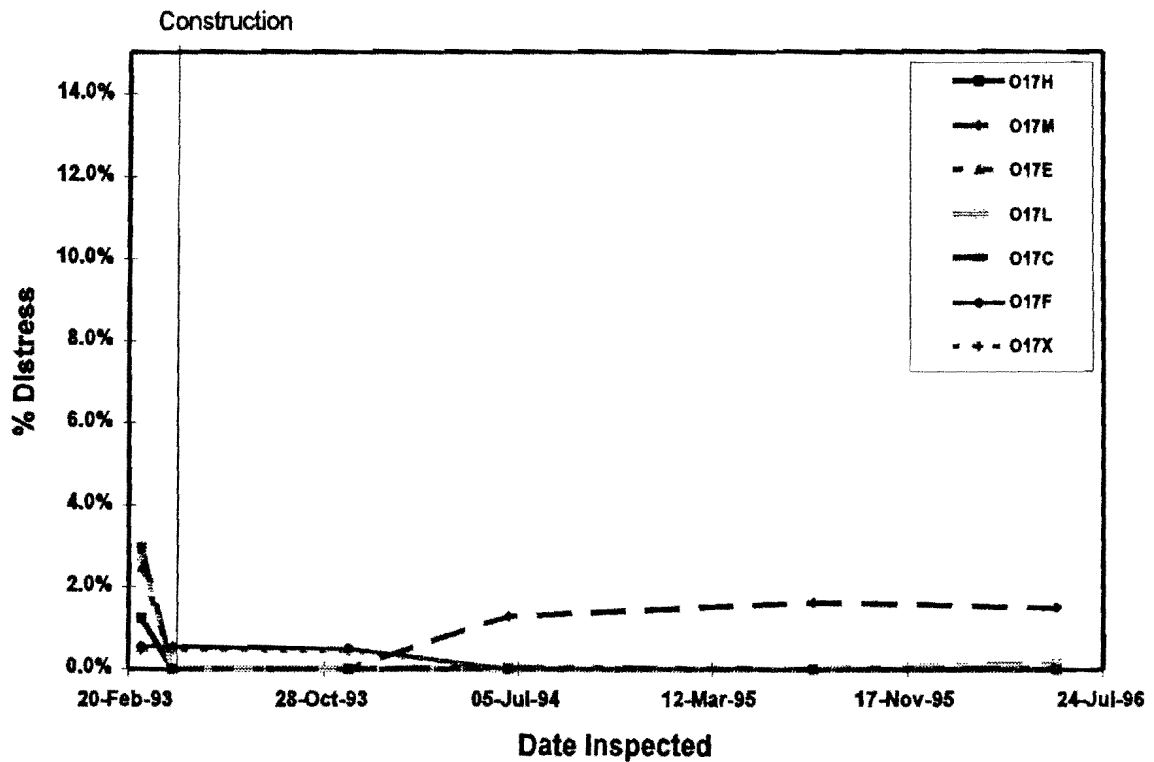


Figure B - 88. Transverse and Non Wheelpath Longitudinal Cracking for Site O17

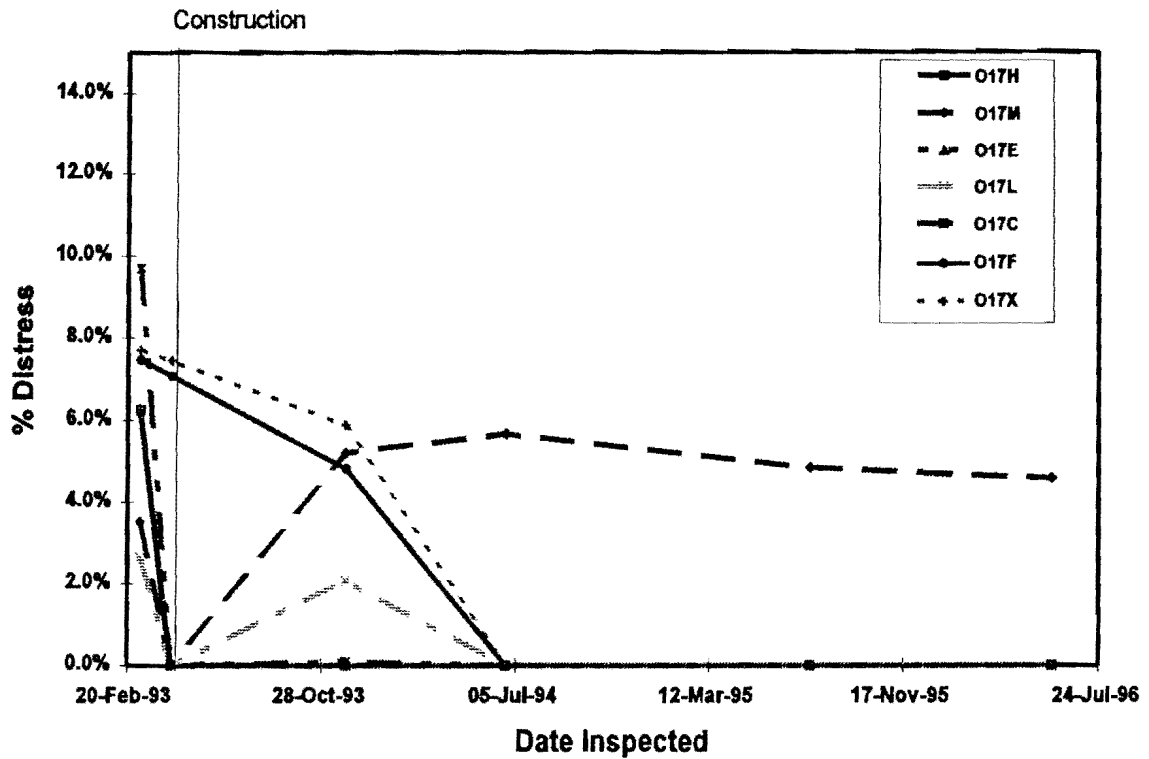


Figure B - 89. Longitudinal Cracking in the Wheelpath for Site O17

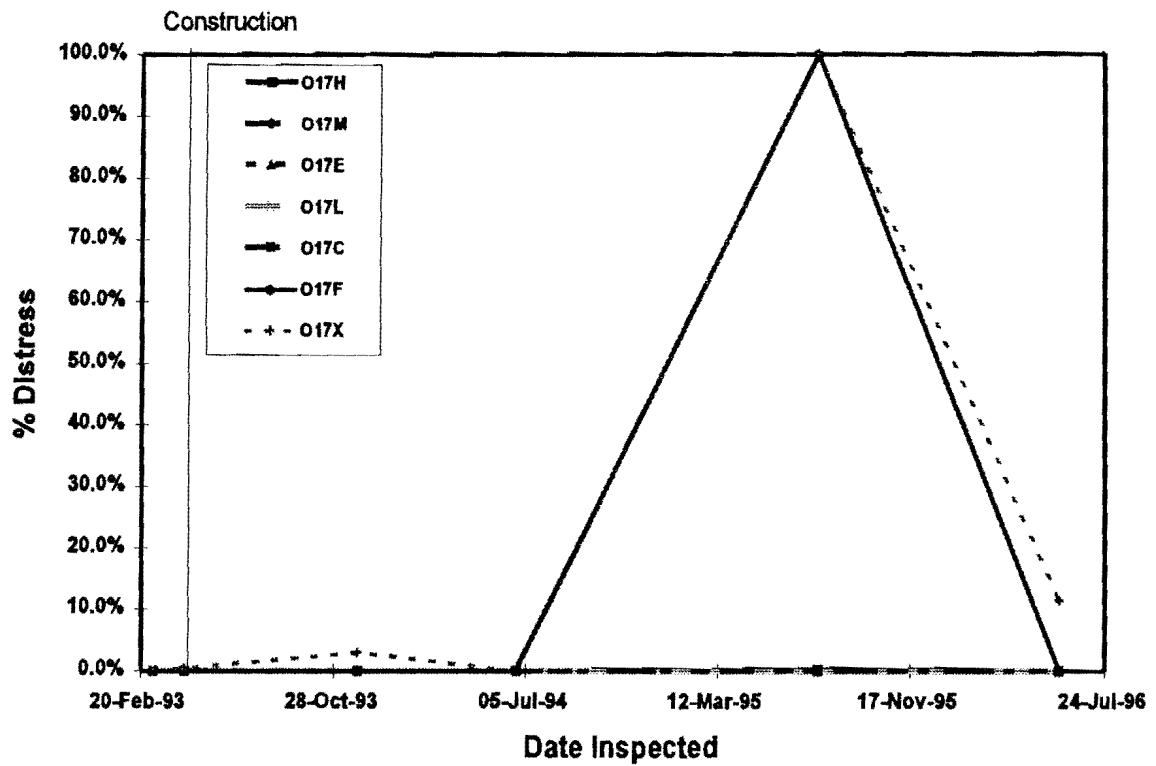


Figure B - 90. Ravelling for Site O17

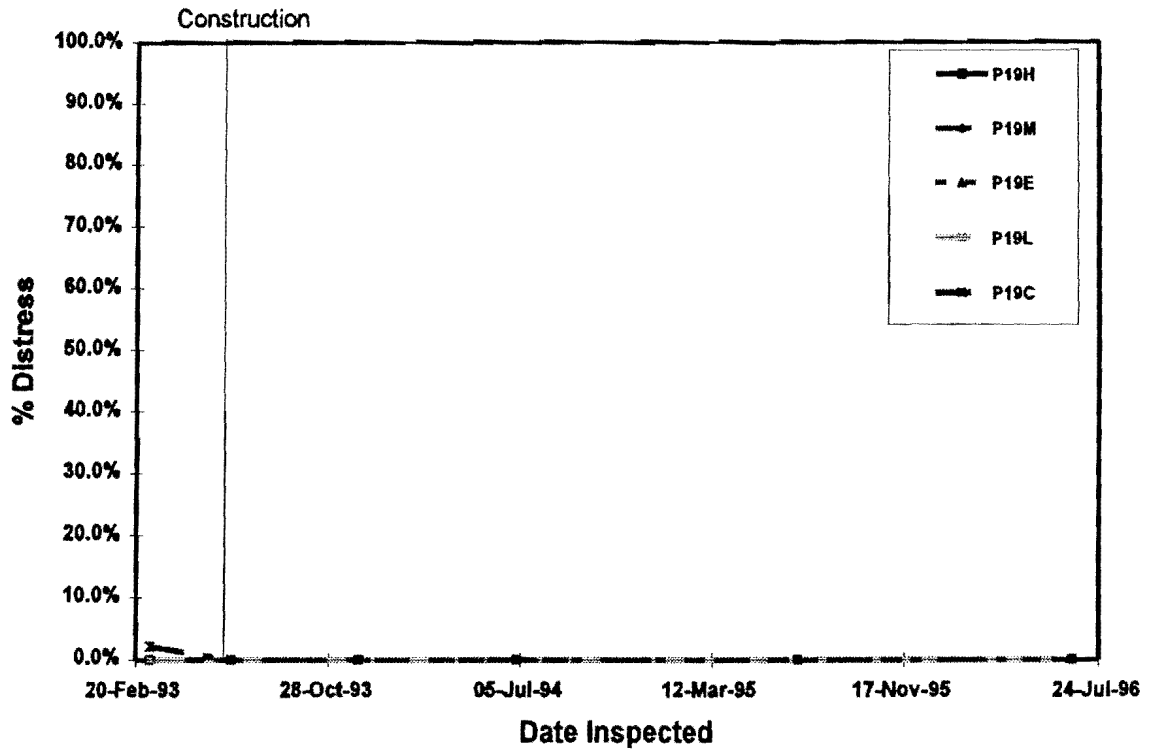


Figure B - 91. Alligator Cracking for Site P19

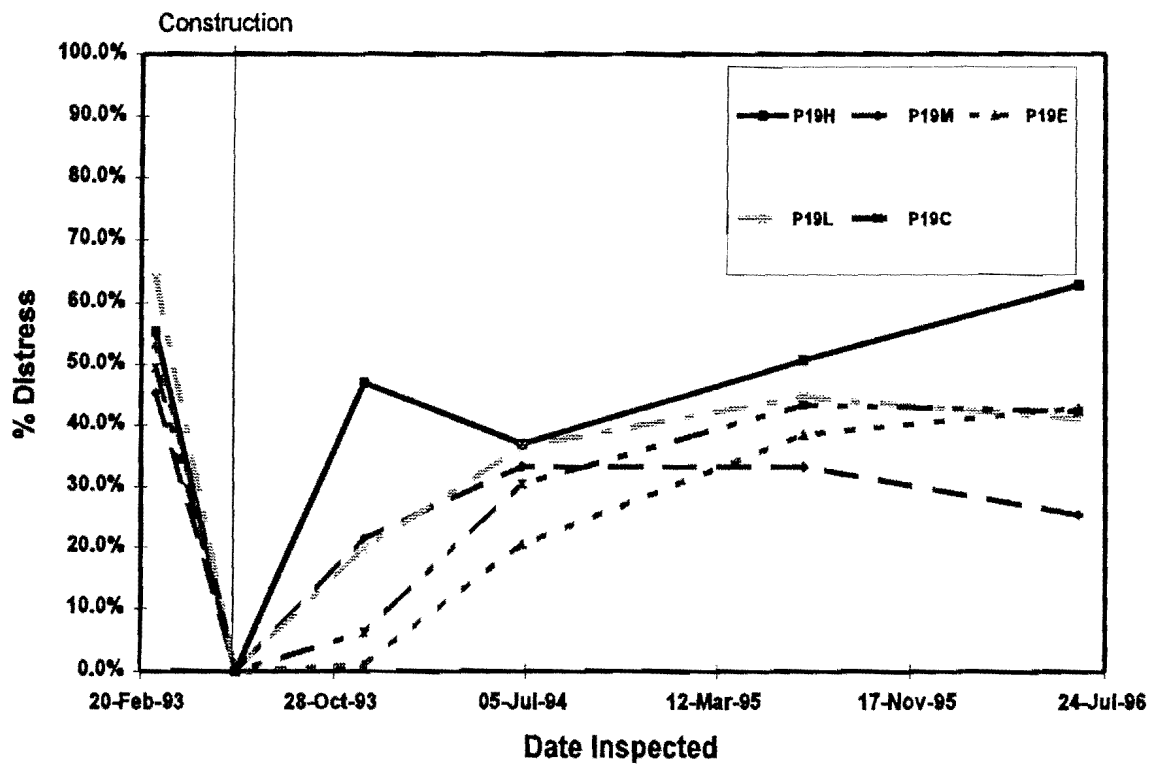


Figure B - 92. Bleeding for Site P19

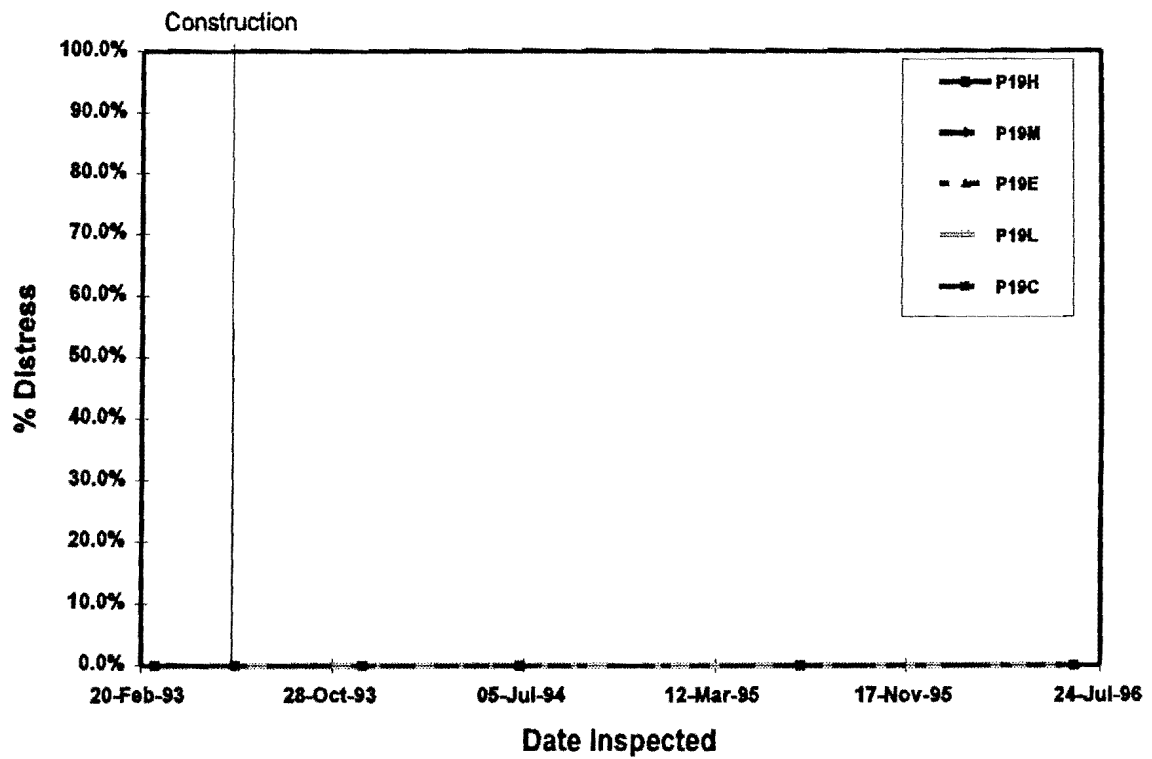


Figure B - 93. Block Cracking for Site P19

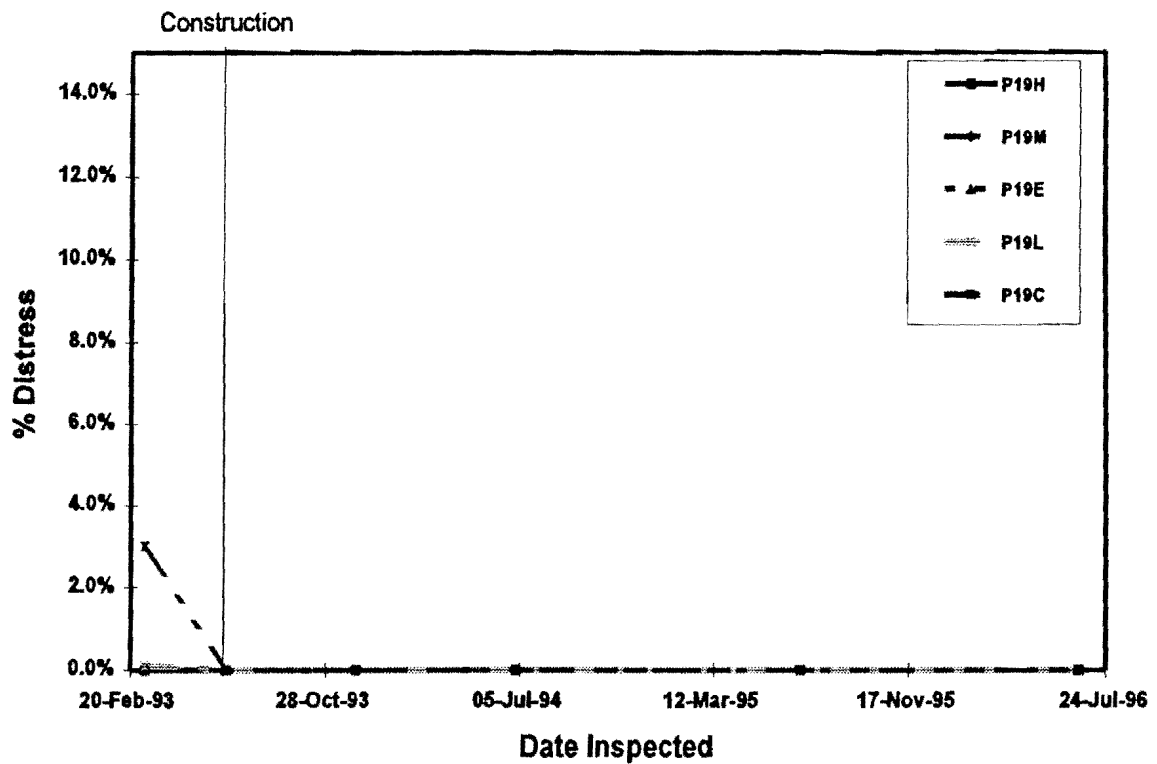


Figure B - 94. Transverse and Non Wheelpath Longitudinal Cracking for Site P19

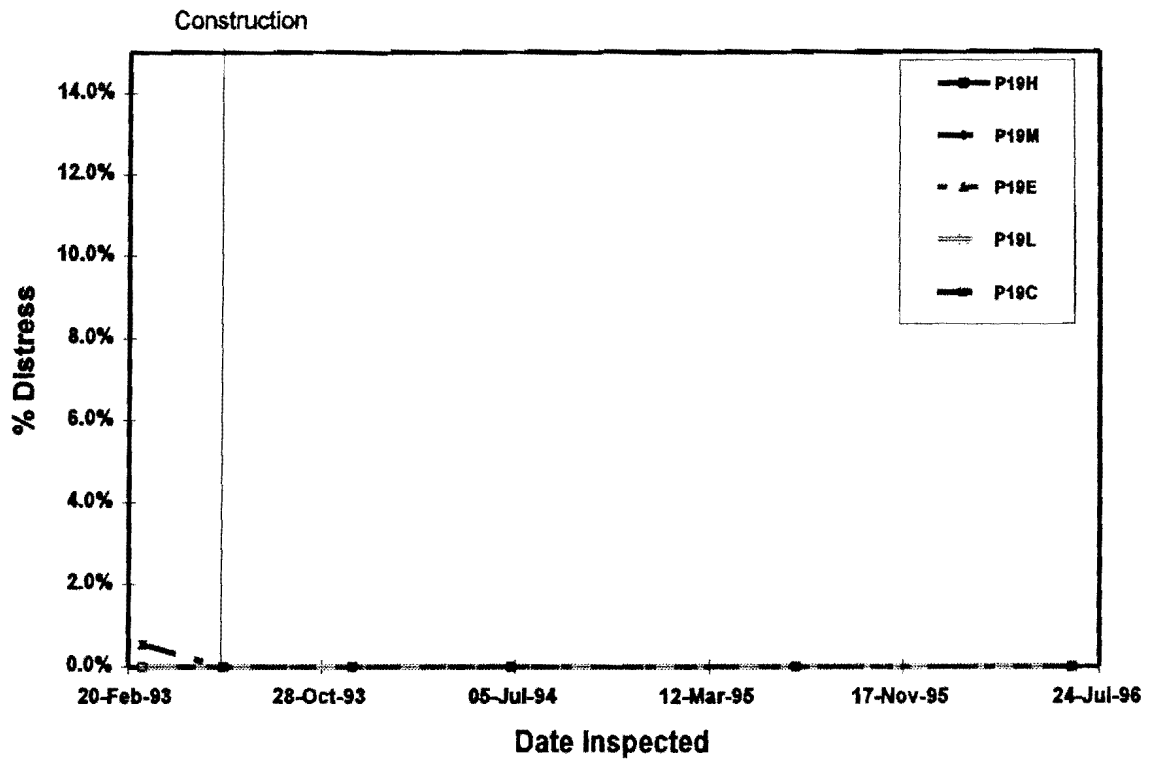


Figure B - 95. Longitudinal Cracking in the Wheelpath for Site P19

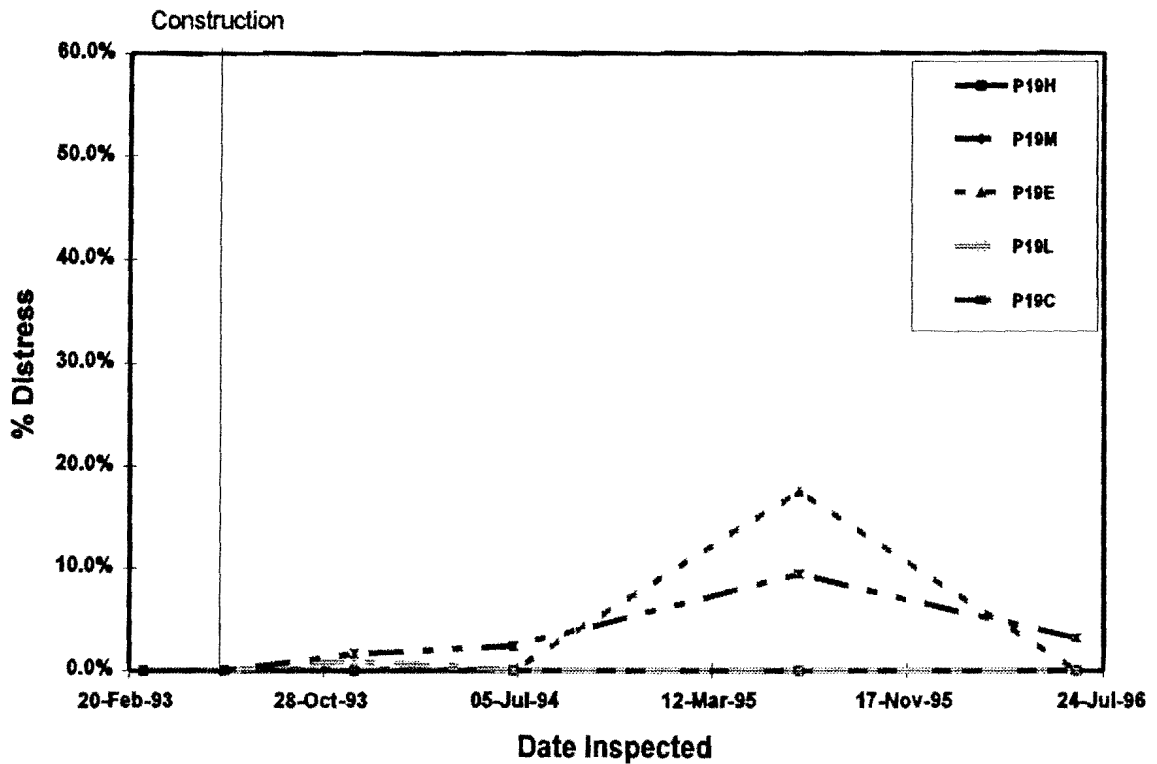


Figure B - 96. Ravelling for Site P19

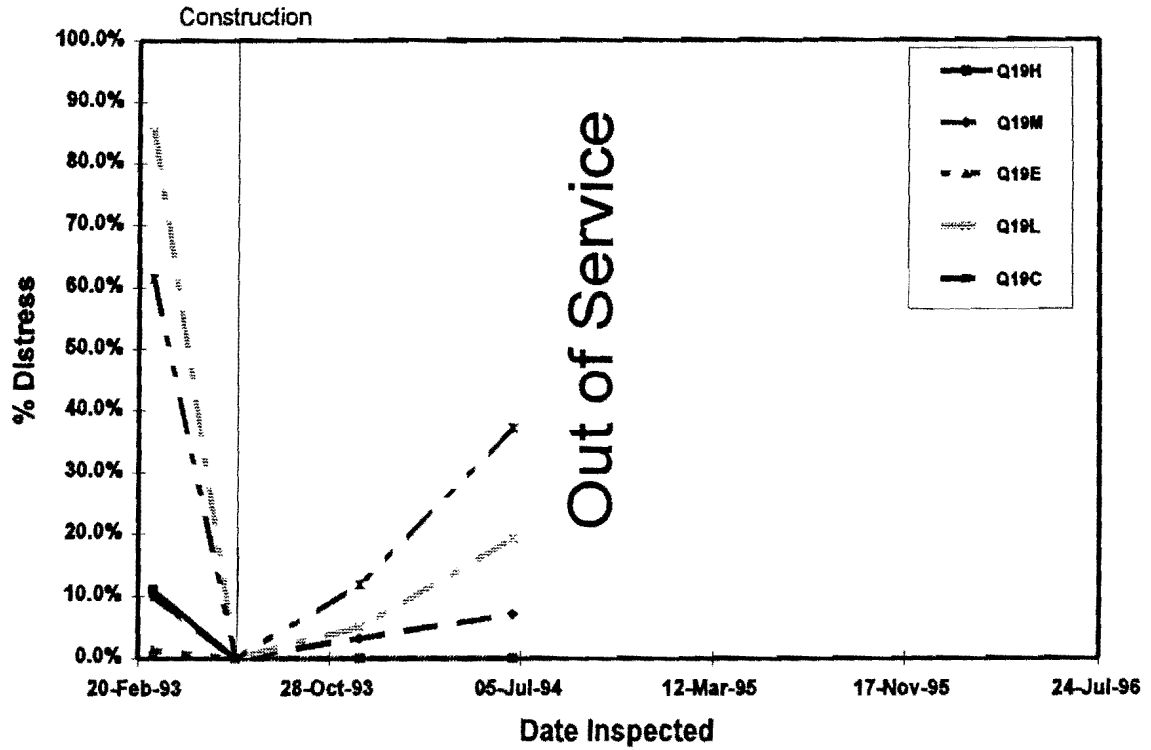


Figure B - 97. Alligator Cracking for Site Q19

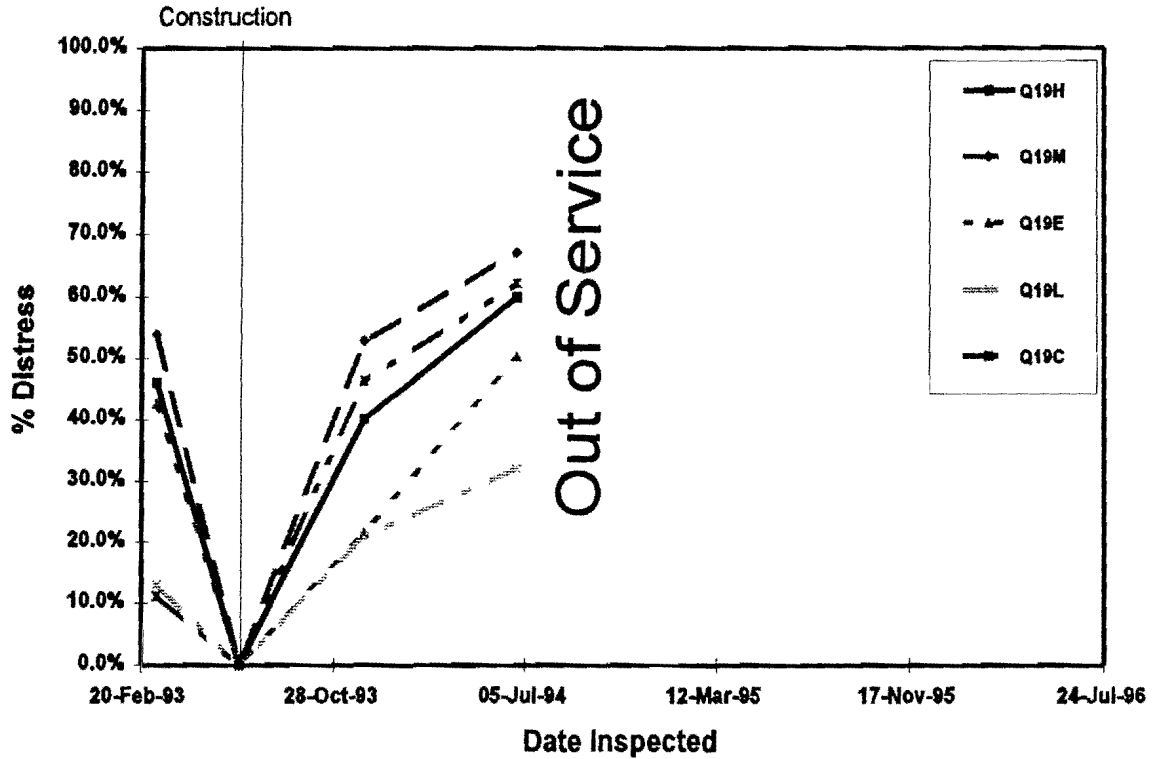


Figure B - 98. Bleeding for Site Q19

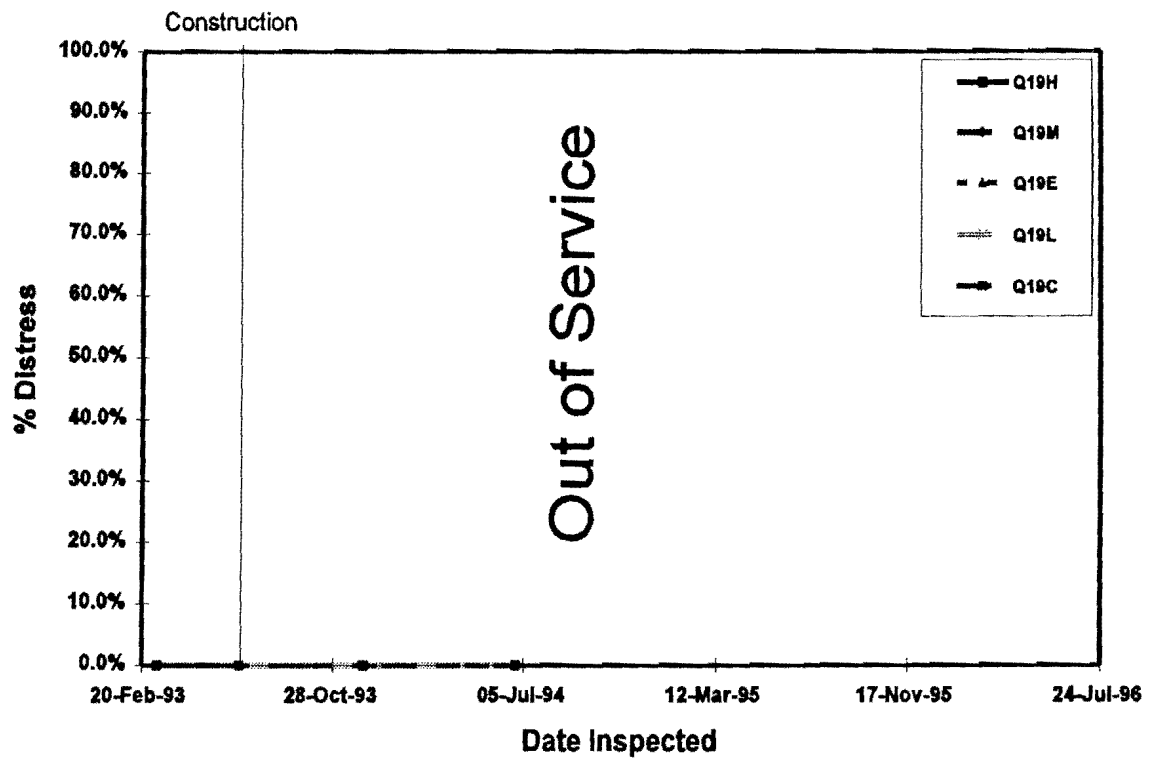


Figure B - 99. Block Cracking for Site Q19

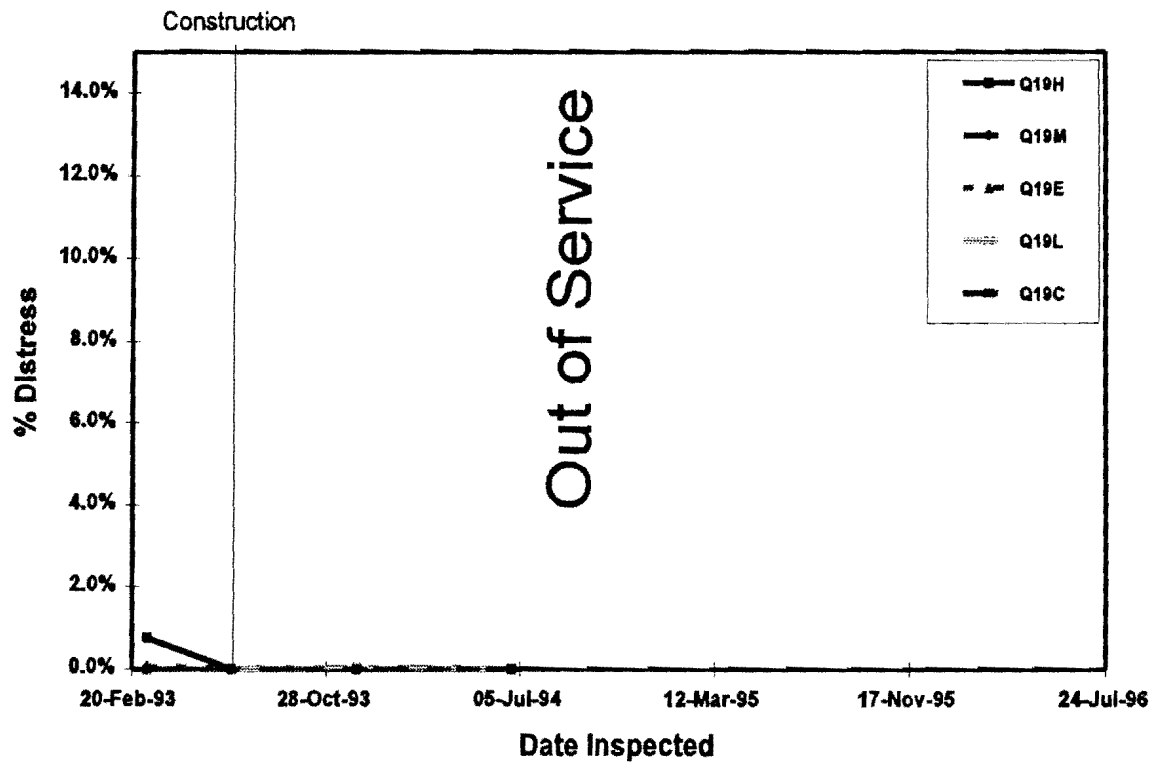


Figure B - 100. Transverse and Non Wheelpath Longitudinal Cracking for Site Q19

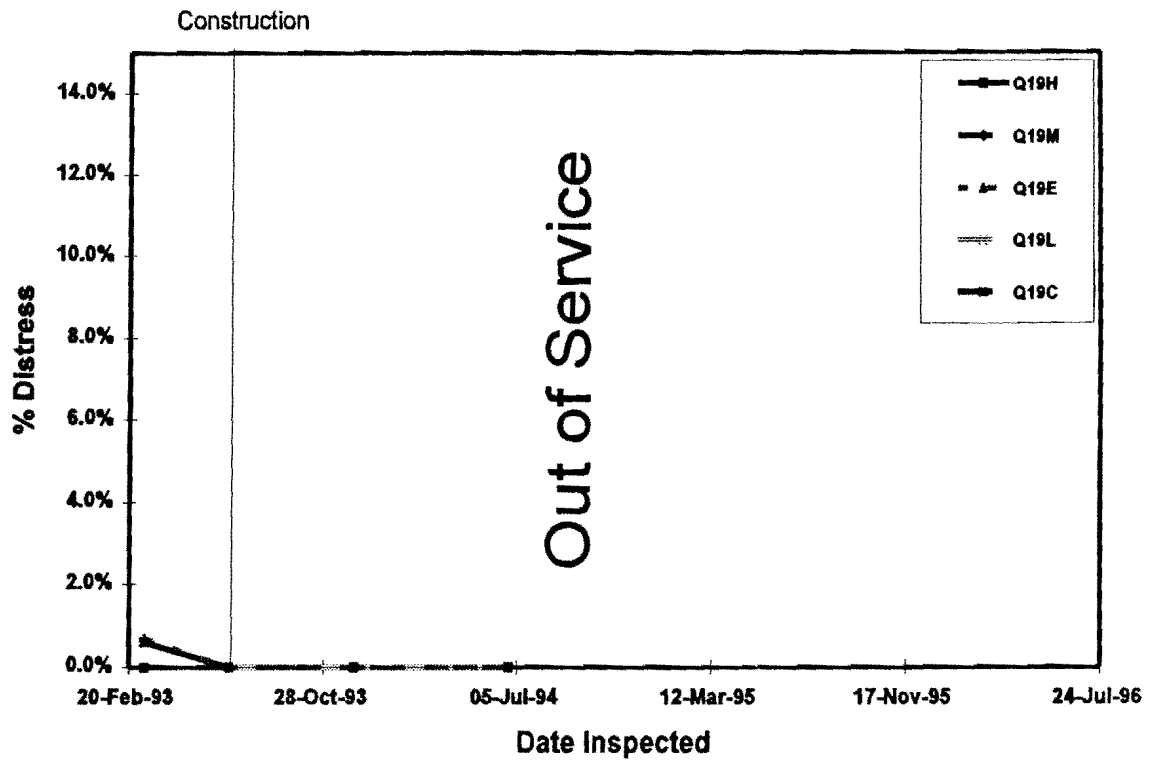


Figure B - 101. Longitudinal Cracking in the Wheelpath for Site Q19

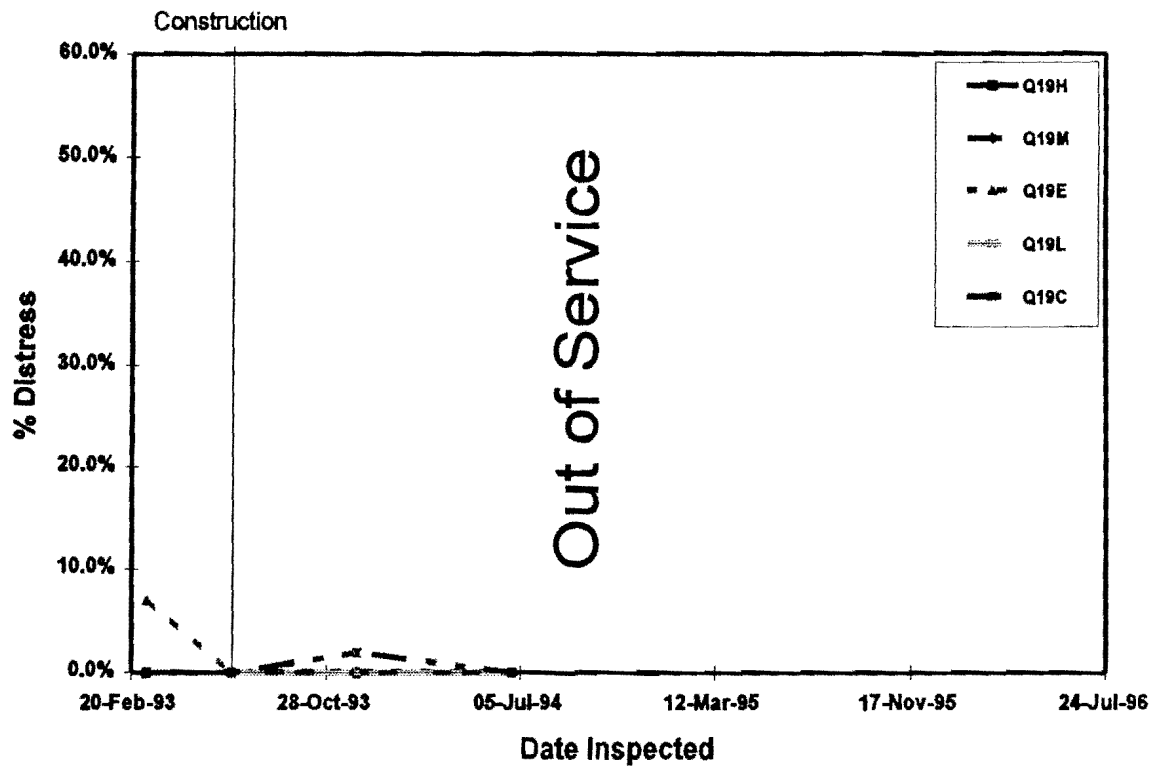


Figure B - 102. Ravelling for Site Q19

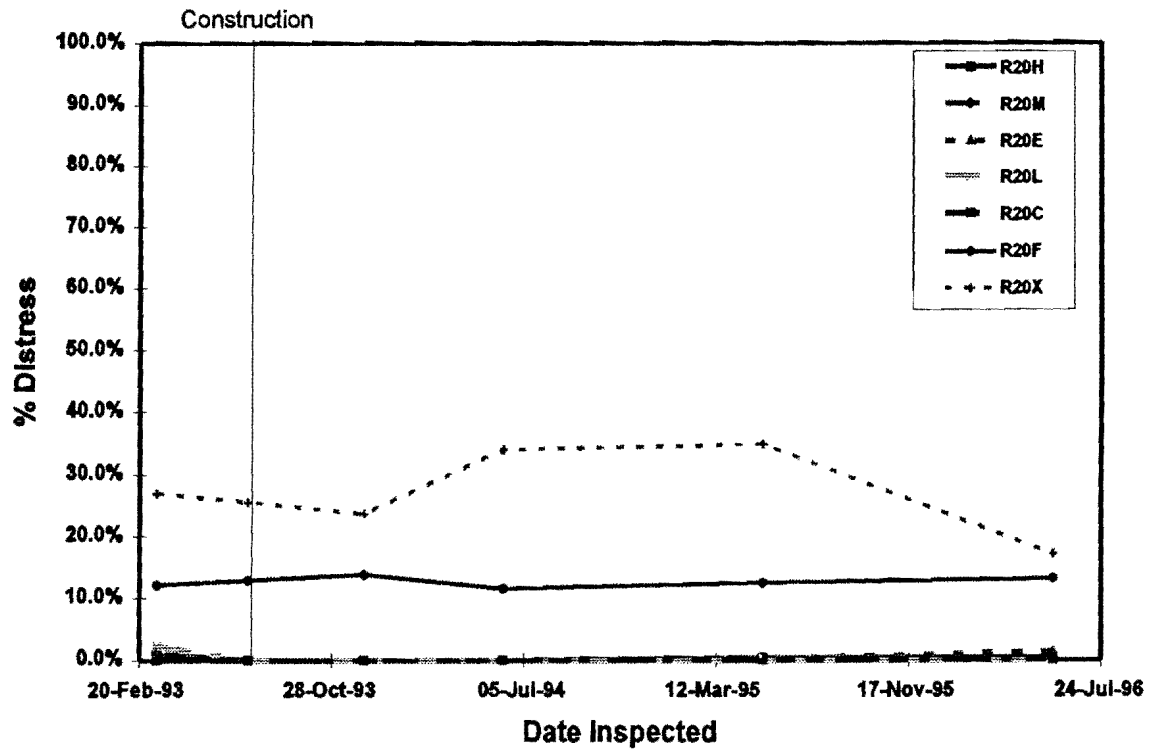


Figure B - 103. Alligator Cracking for Site R20

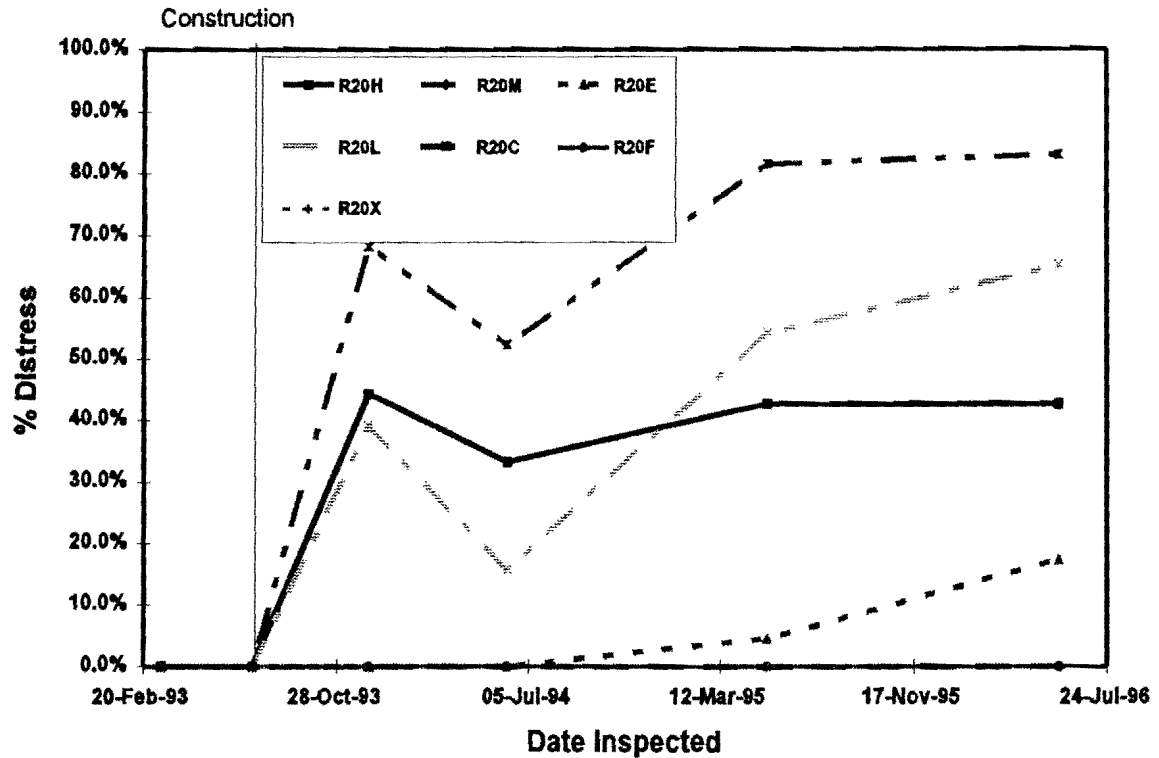


Figure B - 104. Bleeding for Site R20

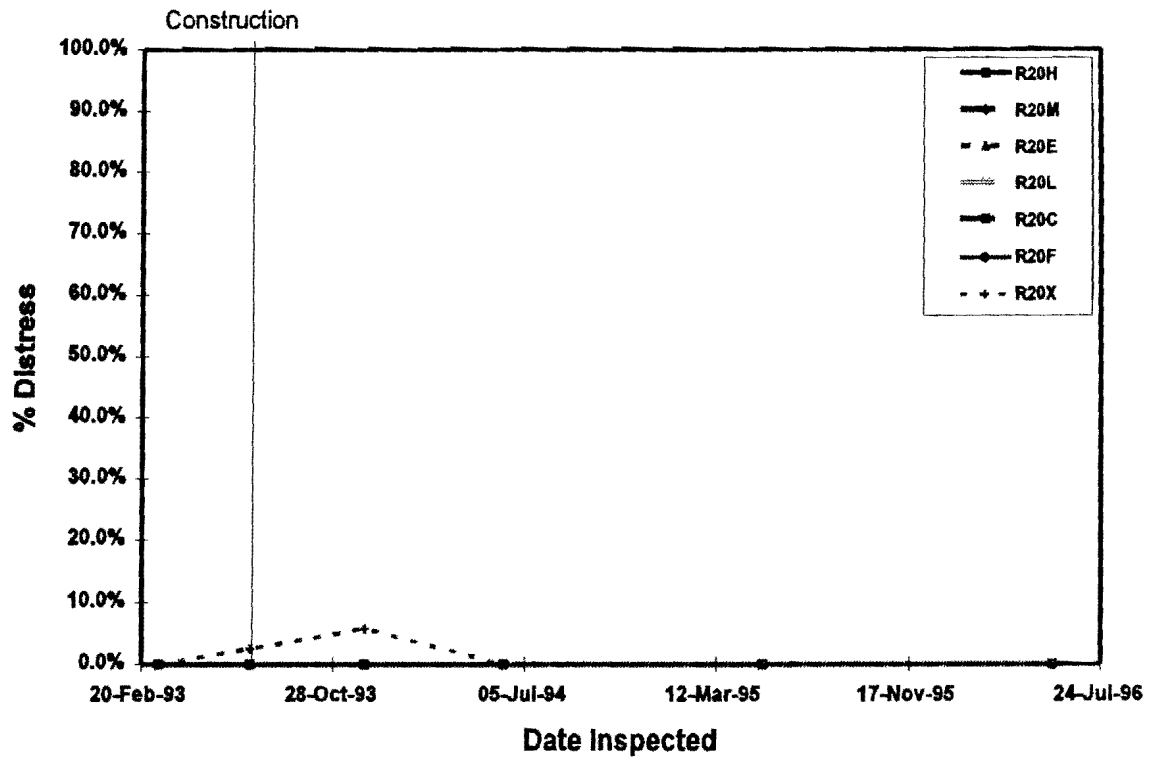


Figure B - 105. Block Cracking for Site R20

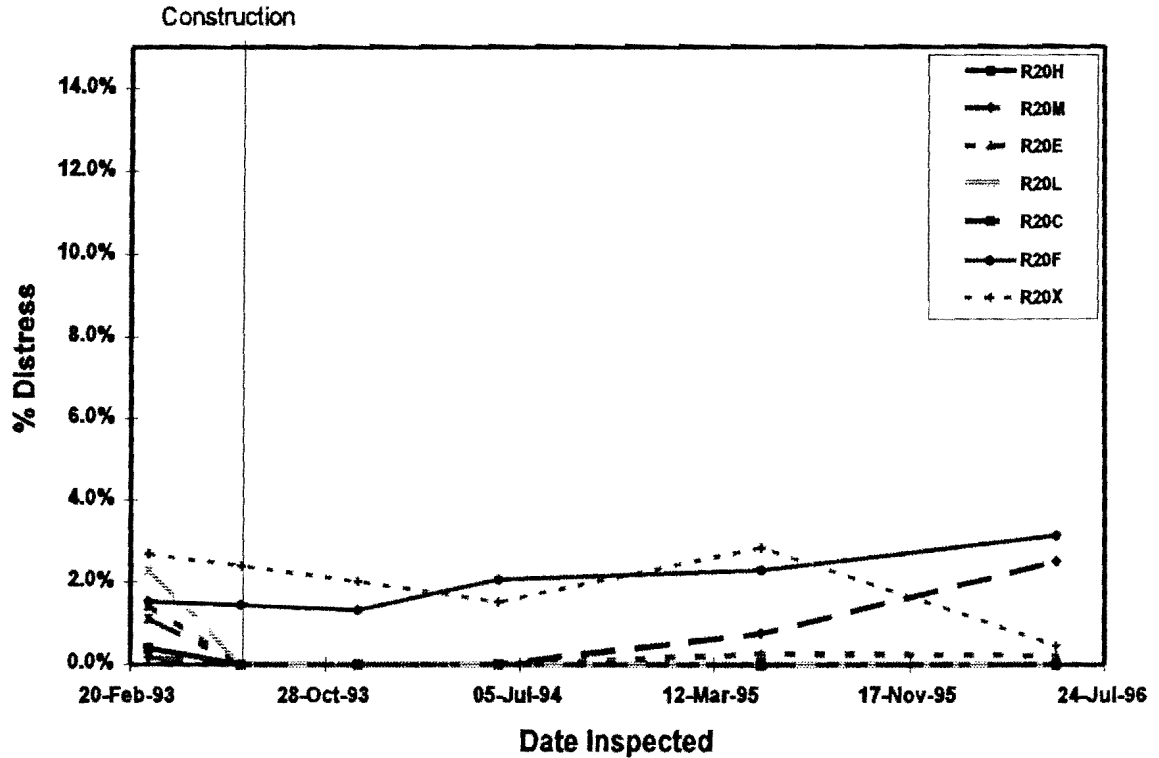


Figure B - 106. Transverse and Non Wheelpath Longitudinal Cracking for Site R20

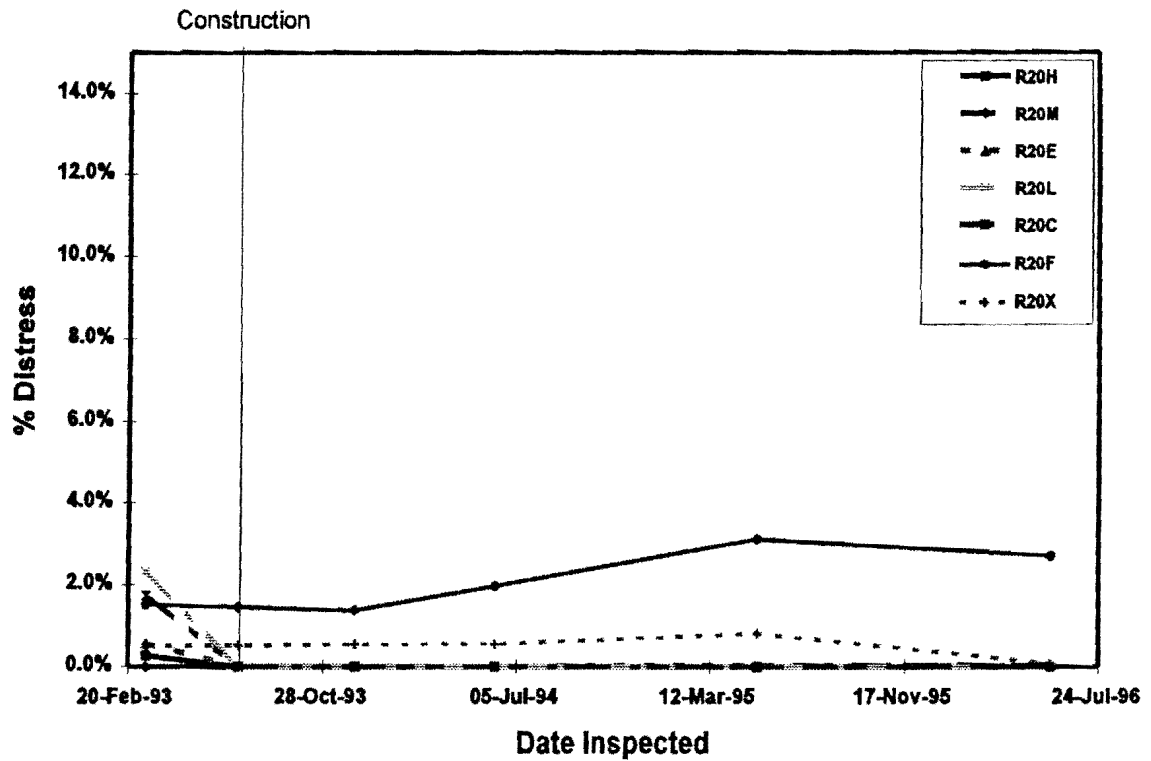


Figure B - 107. Longitudinal Cracking in the Wheelpath for Site R20

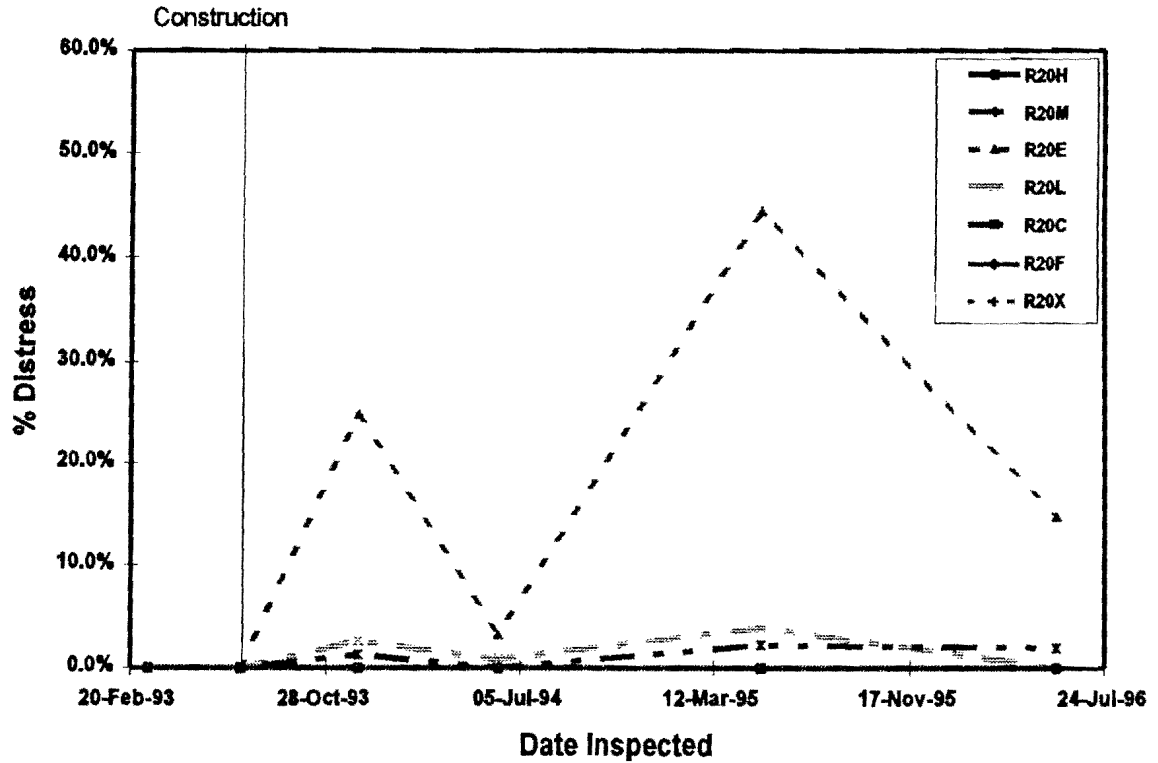


Figure B - 108. Ravelling for Site R20

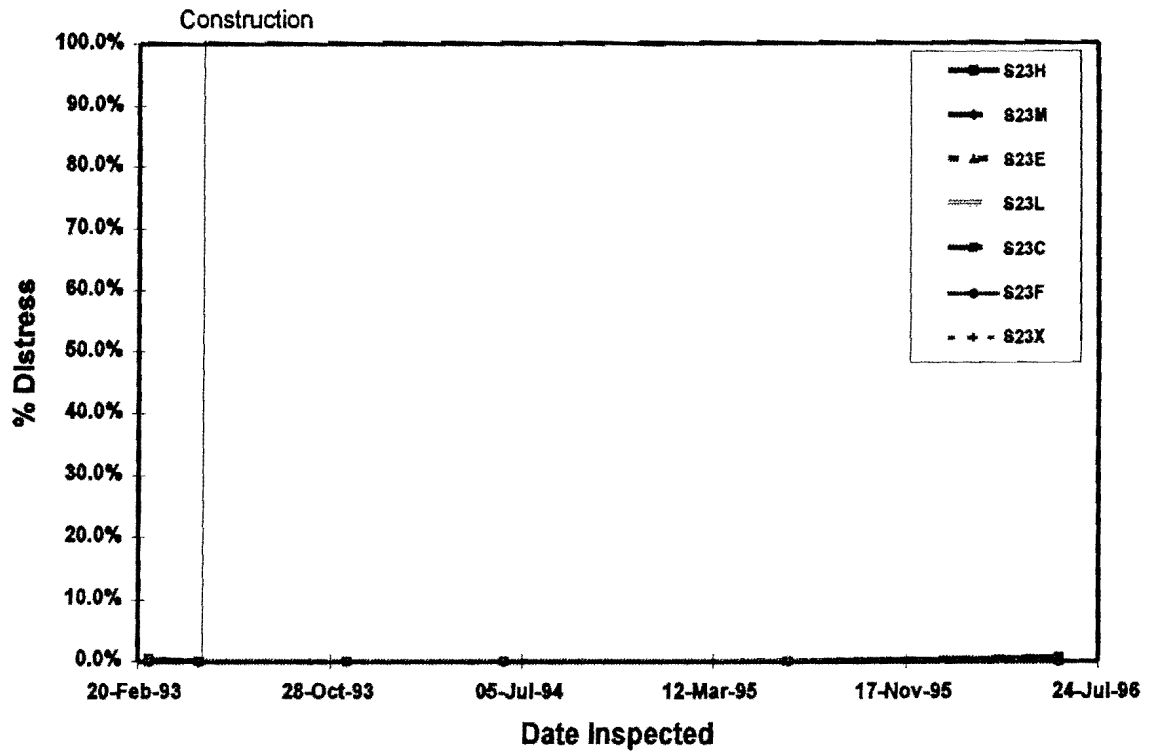


Figure B - 109. Alligator Cracking for Site S23

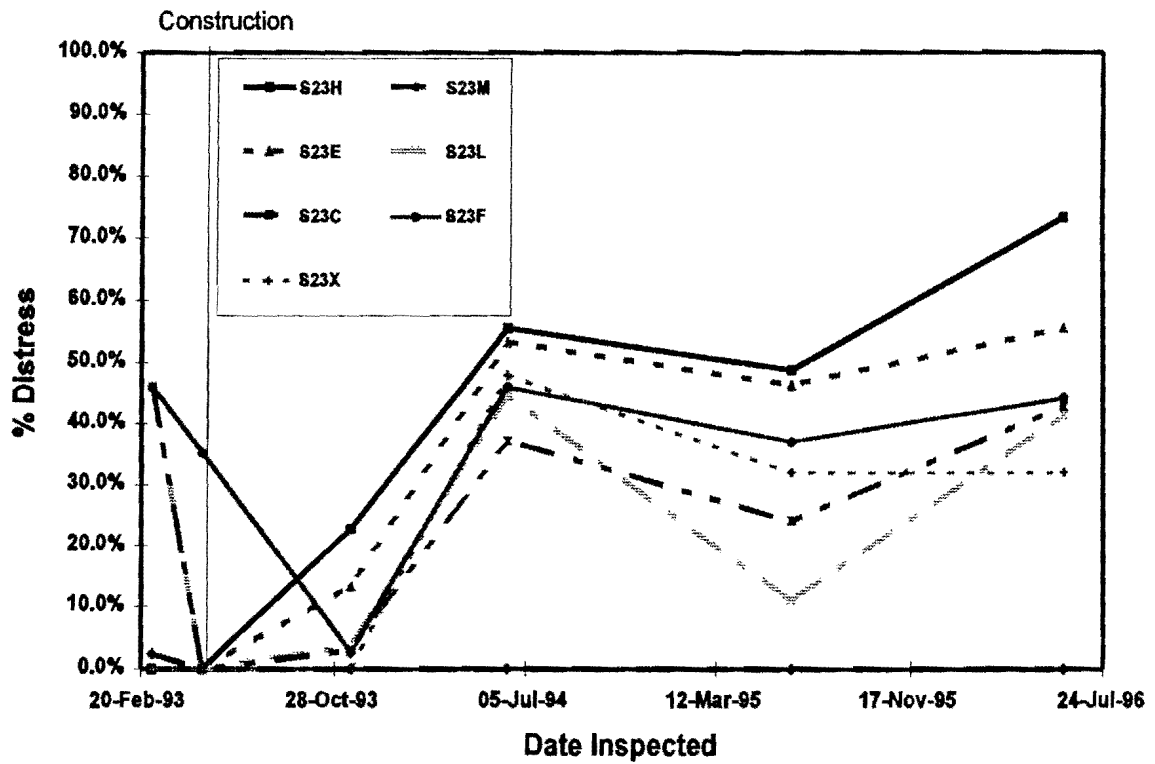


Figure B - 110. Bleeding for Site S23

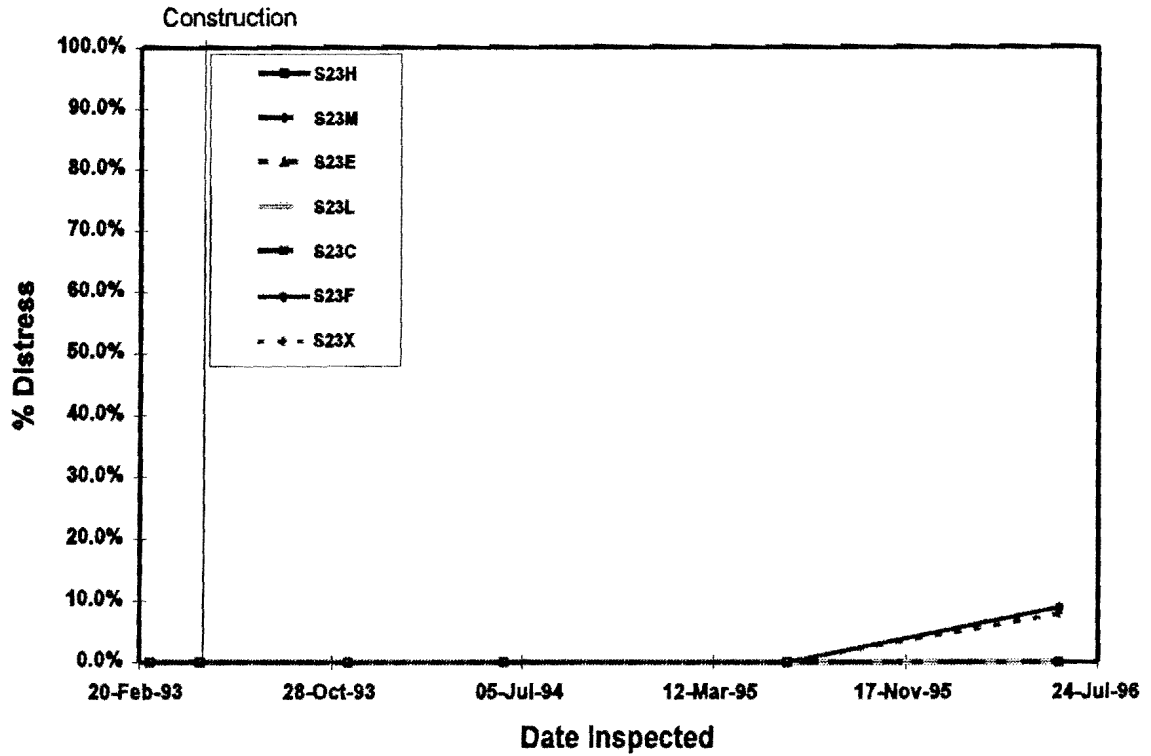


Figure B - 111. Block Cracking for Site S23

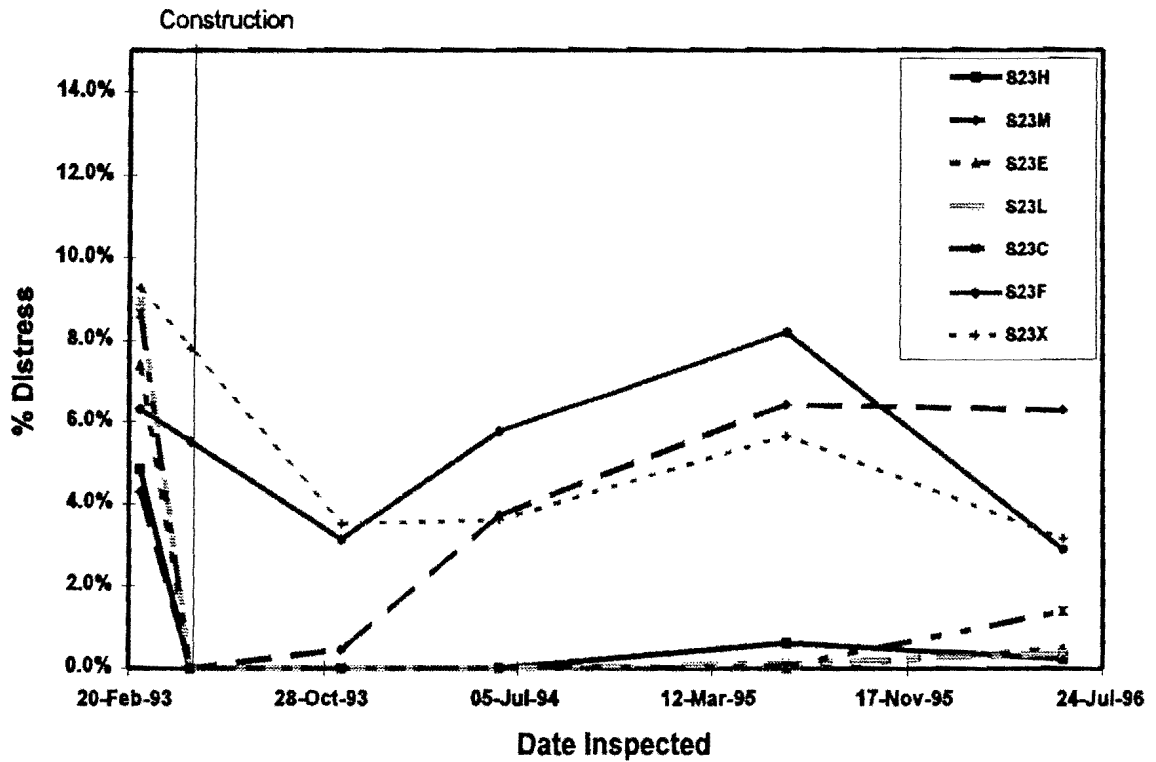


Figure B - 112. Transverse and Non Wheelpath Longitudinal Cracking for Site S23

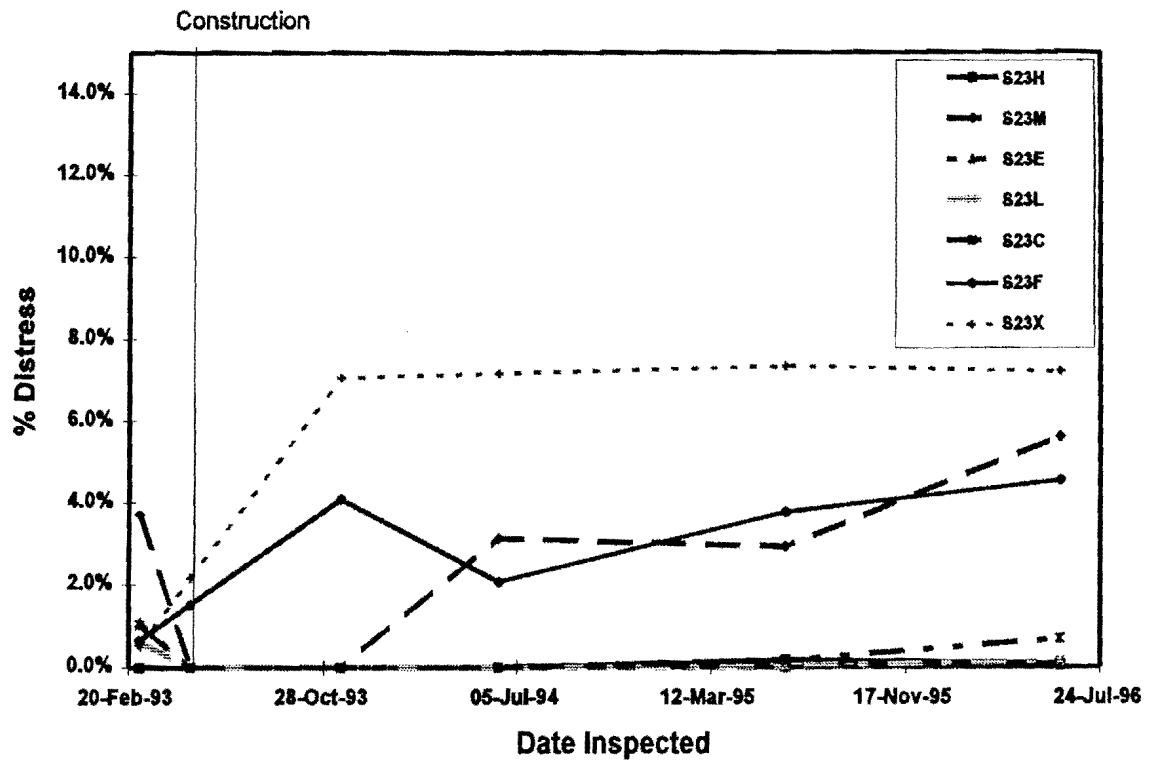


Figure B - 113. Longitudinal Cracking in the Wheelpath for Site S23

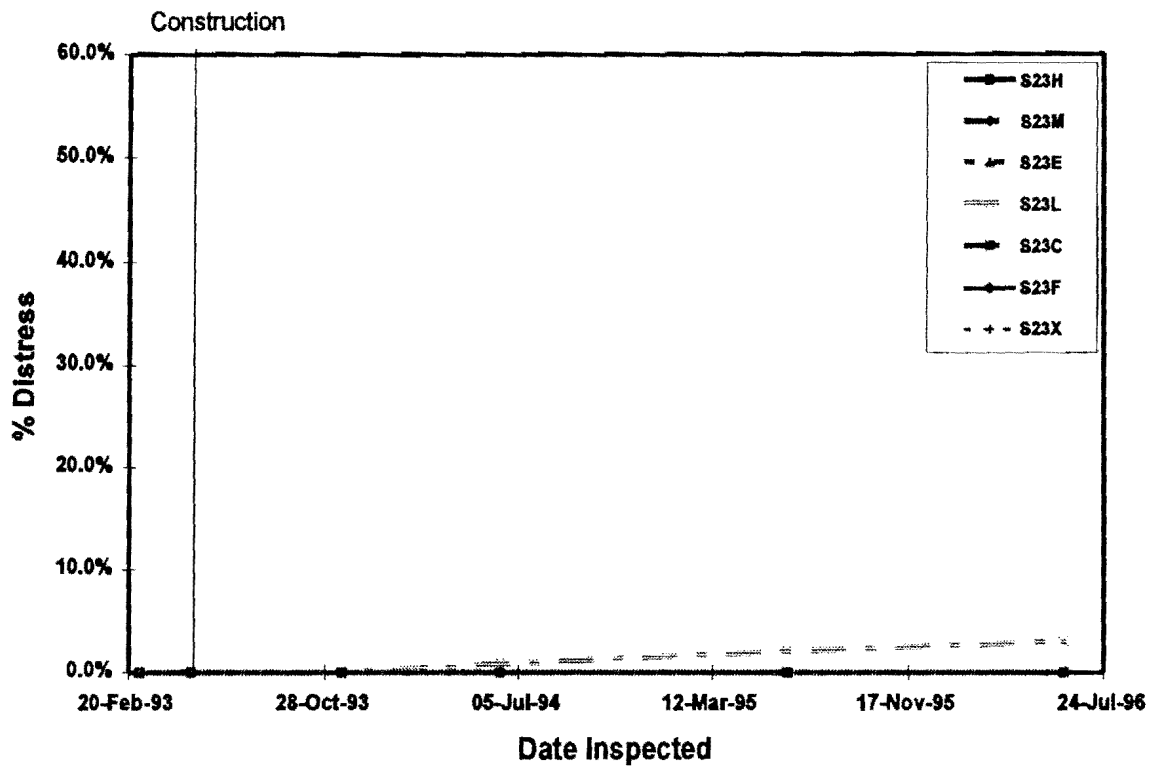


Figure B - 114. Ravelling for Site S23

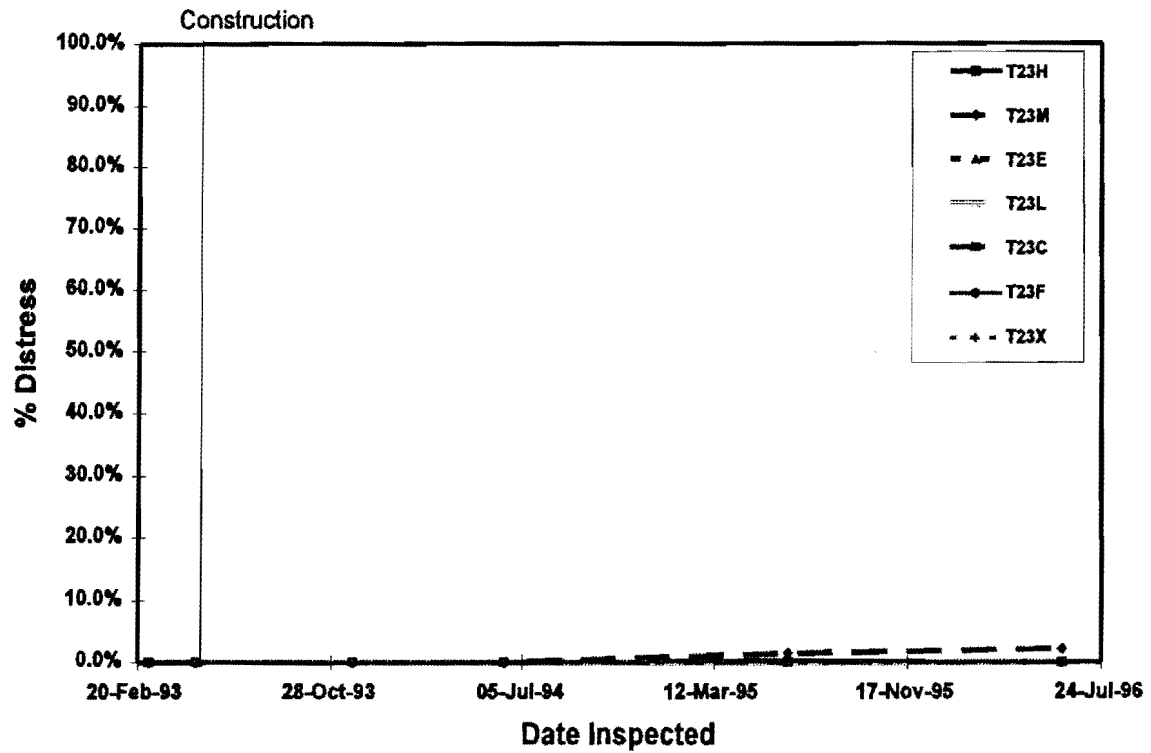


Figure B - 115. Alligator Cracking for Site T23

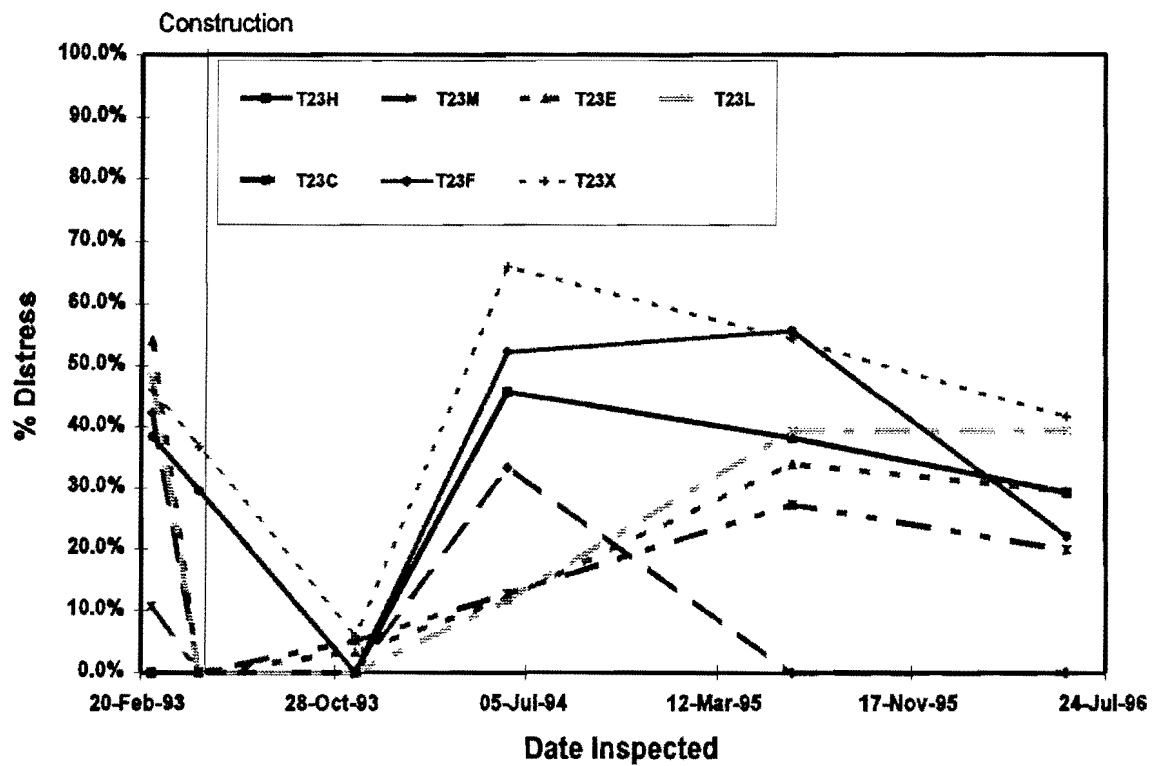


Figure B - 116. Bleeding for Site T23

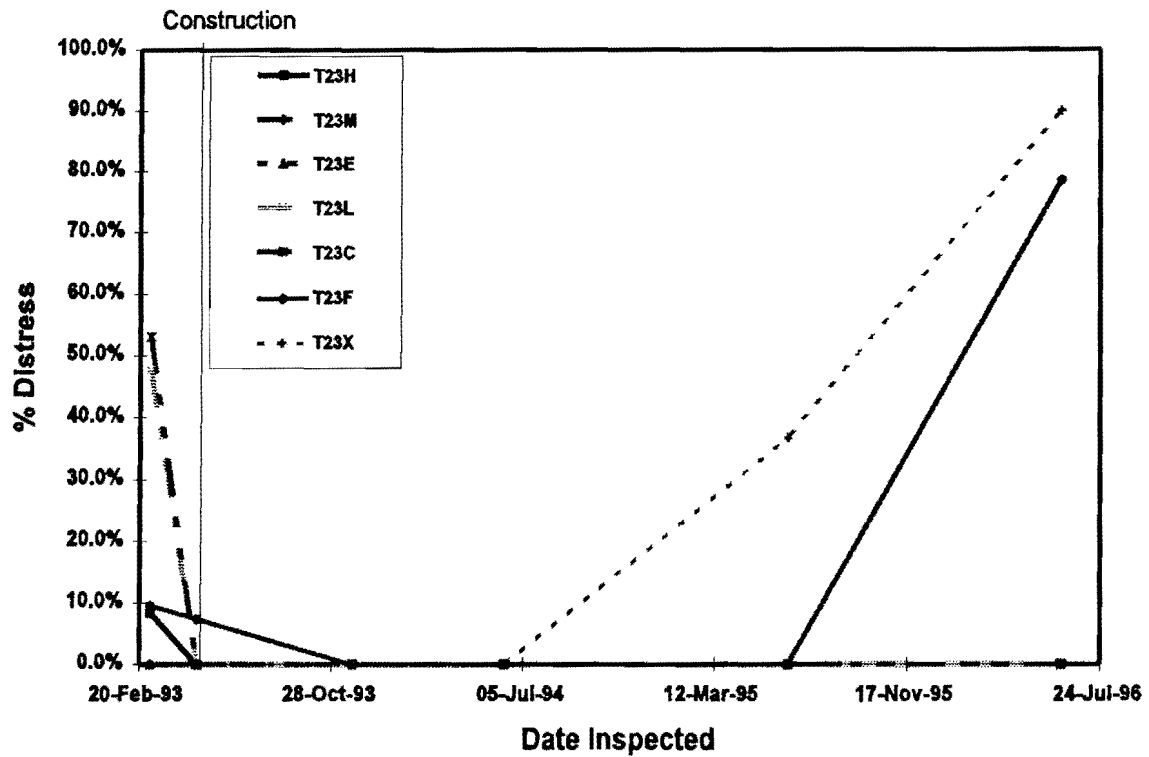


Figure B - 117. Block Cracking for Site T23

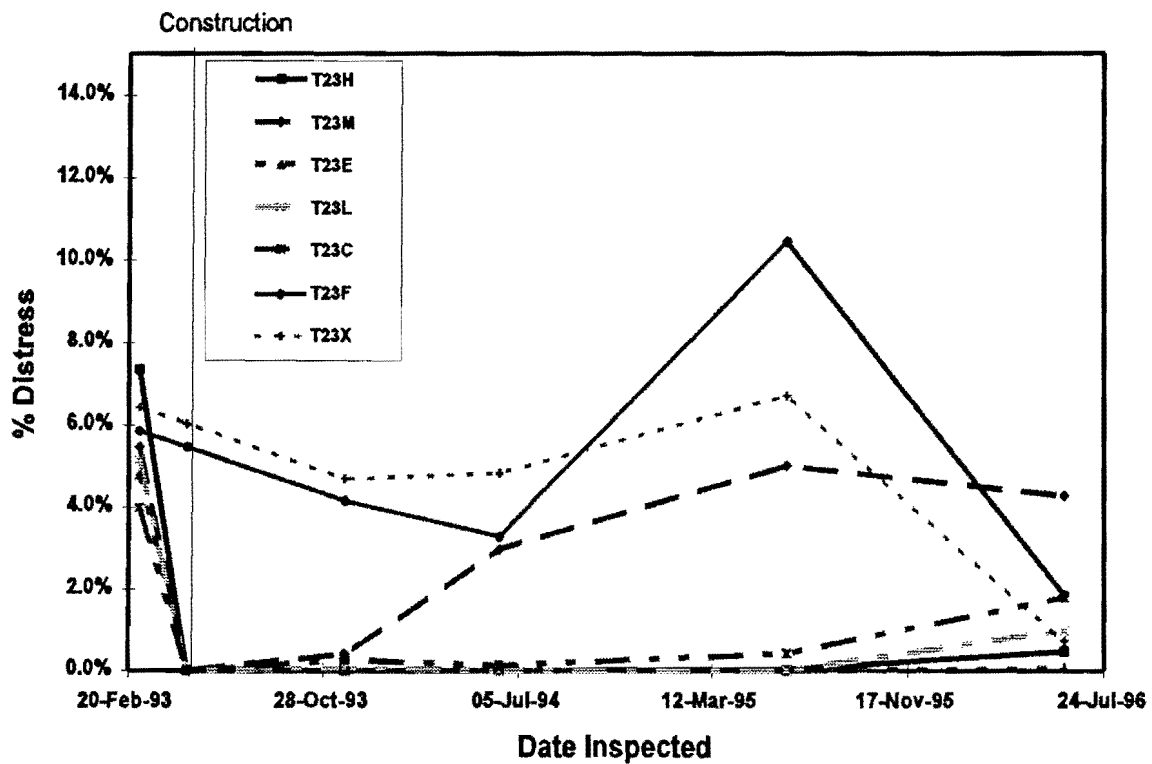


Figure B - 118. Transverse and Non Wheelpath Longitudinal Cracking for Site T23

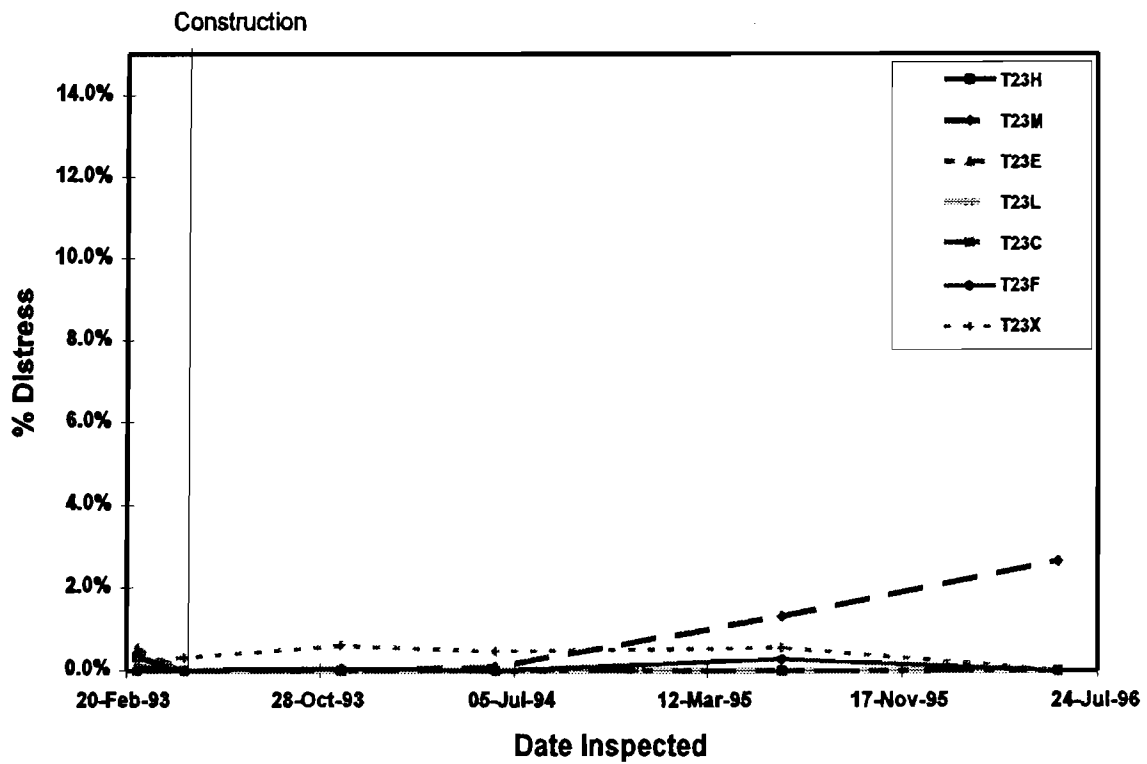


Figure B - 119. Longitudinal Cracking in the Wheelpath for Site T23

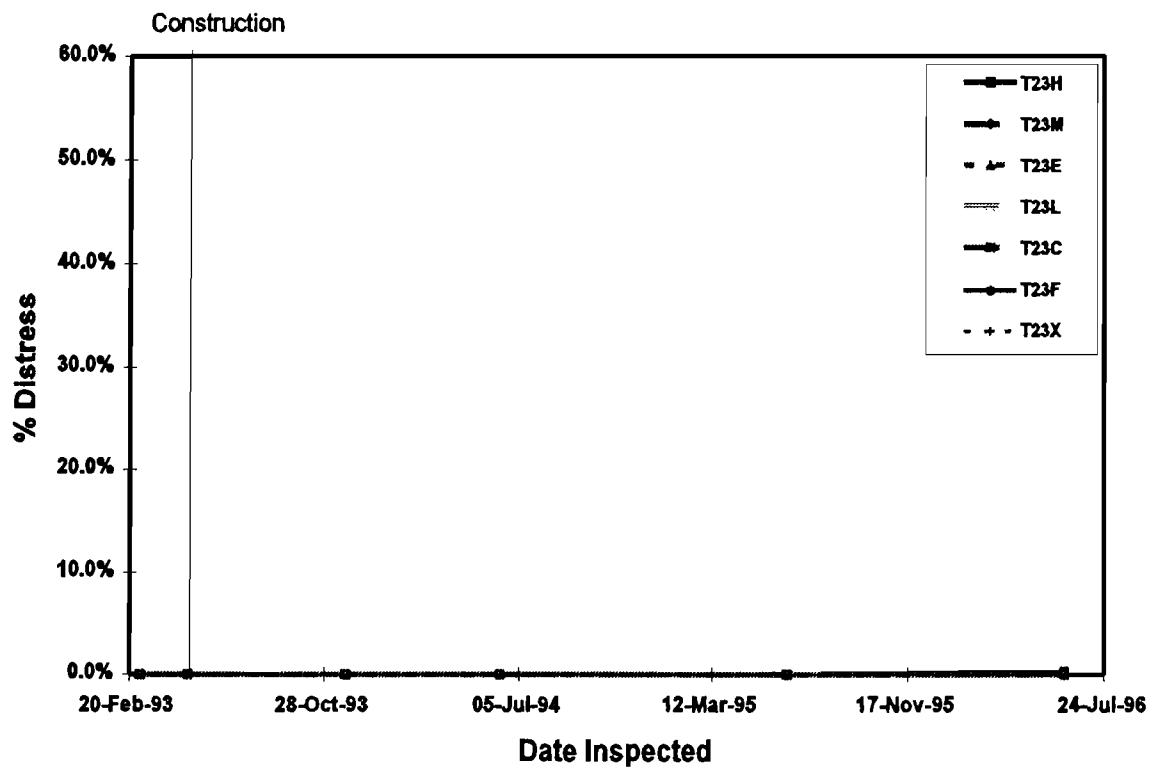


Figure B - 120. Ravelling for Site T23