

DRAFT F-5-2 2-21-79

Delamar ELEVATION

| 0 | WELL SK | ETCH | LOCATION OR COORDINATES T65/R63E-SC | cc 12d TOP | ND LI | ASING | 1 | 16 (16) | * |
|--------------------------------|------------|--------|--|---|------------------------|------------|---------|----------------------|---------------|
| | | 0 00 | | 50% | 0, 0. | | | | |
| | 0 | 0 | DRILLING SUMMARY | PACK | ERS_ | d | | 7.385 | |
| 100 | 0 | 0 | TOTAL DEPTH DRILLED 12/5° ROTARY CORE | | | ZERS _ < 1 | | 103" | |
| | MA | | DRILLING CONTRACTOR BEYLIK | | | GRAVEL PAC | | | |
| 600 | 9 | 3 | RIG (S) USED BUCKET ALGER O'TO 40' REVERSE ROTARY 40' TO 1215' | CEME | O. | (MIX) | 1 740 | EPTH (S) 2 - 810' | 1705 SA |
| | 0 | 0 | SIZE (S) AND TYPE (S) OF BITES 1856 ORAG, TRICONE & CLUSTER ORILLING FLUID POLYMER (12 SAG | PEL | ONITE LETS RRY _ | | 1, 1 | V _p : | |
| | 0 | | + NATER | | | | * 1 | Jan Die | A |
| 700 | 0 | 0, | FROM DISCHARGE PIAC | TRE | MIE _ | | | | |
| | | 740 | SURFACE CASING 0 70 40 22'00 CASCOMMENTS (PROBLEMS, SHUTDOWNS, ETC) | TIME | 1 - | red of | | - 131,1 | |
| 900 | | 810' | | <u> </u> | LUG | | FINISH | ELAPSED TIME | % OF TOTAL |
| | | 000 | DESIGN | DRILL | | 2/29/80 | 3/10/20 | 192.5hr 5 hrs | 79.7% |
| | | | BASIS DRILLER'S LOG | CASIN | | 3/10/80 | 3/11/40 | 24 has | 9.9% |
| 900 | | - 920 | GEOLOGIC LOG | PACKI | NG | 3/11/80 | 7/19 | 6 hrs | 5.8% |
| | | | COPIES ATTACHED YES NO SCREEN STEEL DESTRING | BENTO: PELL SLUF | ETS | | , , | | |
| 1000 | | - 980 | FROM 920 TO 980 FROM 1040' TO 1180° | DEVEL | | | | | |
| | | 1040 | FROM | _ | | | | | |
| | -== | | FROM TO | _ | | | | | |
| 1100 | | | FROM 0 TO 920 | _ | | | | | |
| | | | FROM 980' TO 1040' FROM 1180' TO 1195' | - MISCELL | . AN EC | ous - suc | 745 | | |
| 1260 | | 1190' | FROM | _ | A | ZZ" DIA | | | 266ED |
| 1215 | in a flag. | TDIZIS | CASING STEEL DES | 70 4. | 400 | BELOW | THE | GROWA | D |
| de persona providente de la gr | | | DIMENSIONS 10"10 | | | | | | |
| | | | 6107 6175 60 | | | | | | |

| - (6 | | rad | ra 🙉 | T E CE | ca ca C | , eeca. |
|-------|------|------|------|--------|---------|---------|
| G D | RILL | CUTI | INGS | LOG | | |

PROJECT NUMBER 79-290- 45

PROJECT NAME MX SITING INVESTIGATION

EQUIPMENT USED Reverse Rotary

COMPANY Beylik

OPERATOR J. Clyde

VALLEY NAME Delamar

LOCATION NUMBER T6S, R63E, Sect. 12d

LOGGED BY LB DATE 3-2-80

CHECKED BY JAG DATE 4-10-80

TOTAL WELL DEPTH 1214 feet

| | Je Wil | 1.5 | | | • 12. | | | |
|-----------------|------------|----------------------------------|-------------------------------|-----------------------|---|---|--------------------------|-----|
| DEPTH (FEET) | | | DESCRIPTION | OF CUTT | INGS OR SA | MPLE | | |
| 0 = | Si | ilt: Tan s | silt. | | | | | |
| | | • (1997) 1997 - 1997 1997) | Salahan Salahan Salahan | | in the State of State of | en de la companya de La companya de la co | | : . |
| 10- | <u>S</u> a | and and Silubangular, | t: Medium very fine- | colored, to medium | poorly so m-grained | rted, subro | ounded to an silt. | |
| 20 | | | | | | | | |
| | | | | | | 100 m 100 m | | |
| 30 — | Si | <u>ilt:</u> Tan s | silt with o | ccasional | gravel to | 1 inch. | | |
| | | | _ | | - · · · · · · · · · · · · · · · · · · · | | | - |
| 40 | to | ravel with subangula stan silt | Silt: Dark ar, fine-gr | c colored ained to | , moderate ½-inch gra | ely sorted, avel, with | subrounded less than | d _ |
| 50 | - Gi | ravel: Dan freshly bro | ck colored, oken by dri | moderate | ly sorted, ine-graine | subangula d to l-inc | r to angula h gravel. | ar |
| 60 == | _ _ | increa | asing percen | ntage of | larger gra | vel. | | |
| | | • | | | | | • . | |
| 70 | | 10% qı | cay silt pro | esent. | | | | |
| 80 — | G: | ravel: Dan | ck colored, Y-inch) gra | well sor | ted, subar | ngular, fin | e-grained | |
| 90 | | ravel: Da ine-grained | rk colored, d to 1/3-ind | moderate ch gravel | ly sorted, | , subangula | ir to angul | ar, |

| - | D CARTERIAL. | coic. | FIELD LOG OF WE | | 2 OF 13 TW-2 |
|-----------------|----------------------|---------------|-------------------|-------------|-----------------|
| PROJECT NUMBE | R 79-290- 45 | <u> </u> | VALLEY NAME | Delamar | |
| PROJECT NAME_ | MX SITING INVESTIGAT | ION | LOCATION NUMBER | T6S, R63E | , Sect. 12d |
| EQUIPMENT USE | Reverse Rotary | 1.0 | LOGGED BY LB | DATE | 3/2/80 |
| COMPANY | Beylik | | CHECKED BY JAG | DATE | 4/10/80 |
| OPERATOR | J. Clyde | 20 | TOTAL WELL DEPTH_ | 1214 fee | E Taylor To |
| | 1975 - 1978 | | | West was | Story |
| DEPTH (FEET) | DESC | RIPTION OF CU | UTTINGS OR SAMPL | E | |
| 100 — | Gravel: Medium | and dark col | ored, poorly sor | ted, subang | gular to |
| Ξ. | angular, fine- t | co coarse-gra | ined (to 2-inch) | gravel. | |
| \equiv | | | | | |
| 110- | | | | | |

than 35% tan silt.

present.

Silt:

160 -

170 -

180

190

200 -

Gravel and Silt: Medium colored, poorly sorted, subangular to angular, fine- to coarse-grained (to 3/4-inch) gravel and less

Gravel: Medium and dark colored, well sorted, angular, fine-grained to 12-in. gravel; organic matter (plant roots) present.

Gravel: Dark colored, well sorted, subangular, fine-grained

Gravel: Dark colored, moderately sorted, subrounded to angular,

fine-grained to 12-inch gravel; organic matter (plant roots)

Tan silt with less than 10% sand and gravel.

Silt and Gravel: Tan silt and dark colored, well sorted, subangular to angular, fine-grained gravel; organic matter

gravel; organic matter (plant roots) present.

increasing angularity.

grain size decreasing.

(plant roots) present.

| | DRILL CU | TINGS LOG | PAGE 3 OF | 10 |
|--|-----------------|---|--|--------|
| O | | 79-290- 45 | VALLEY NAME Delamar | |
| | | MX SITING INVESTIGATION | LOCATION NUMBER TGS, RG3E, Sect. | . 12 |
| | EQUIPMENT USED | Reverse Rotary | LOGGED BY DATE 3/3/8 | 30 |
| | COMPANY | Beylik | CHECKED BY JAG DATE 4/10/8 | 0 |
| 6-1 | OPERATOR | J. Clyde | TOTAL WELL DEPTH 1214 feet | 123 |
| | Alaysia | | | |
| | DEPTH (FEET) | DESCRIPTION | OF CUTTINGS OR SAMPLE | |
| | 200 — | Gravel: Dark colored, w | ell sorted, subangular to angular, fir , with less than 20% brown silt. | ne- |
| | | | | 7,1 |
| | 210 | | | |
| | 210 | Gravel: Dark colored, we grained gravel, with organic | ell sorted, subrounded to angular, fir | ne- |
| | = 1 | granied graver, with organ | anie matter (roots). | 1951 |
| 11 | 2.20 | | | 1 |
| | = - | Size increasing to | o 1/3 inch. | |
| | ∃ | | | |
| | 230 | | the 200 come diameter and and | M. |
| &) | IE | organic matter (roots) pr | ess than 20% very fine-grained sand; | |
| | | and the second | | |
| | 240 | 10.44 | | 2,30 |
| | | | _ | |
| | | | | |
| AND BROWN | 250 — | Cilta Proum cilt with lo | ss than 5% fine-grained to 4-inch | |
| | 3 | Silt: Brown silt with le gravel; organic matter (r | | , in 1 |
| | | | | |
| 7 | 260 | | | |
| 3 | | | ilt and dark colored, well sorted, ne-grained to 4-inch gravel. | - |
| | = | , | , , , , , , , , , , , , , , , , , , , | |
| | 270 | | | |
| | 3.1 | | | |
| 7 | | | ្រាស់ ។ ។ និង ស្មាល់ មាន | , |
| | 280 | _ | 575 along | |
| 7 | . = 1 | Silt: Brown silt with les | ss than 10% fine-grained gravel. | |
| Name Of the Owner, when the Owner, which the | | | | |
| 7 | 290 | | | |
| | 230 | | ll sorted, subangular to angular, fine | 2- |
| | | grained to 1/3-inch gravel | L. | |
| A CONTRACTOR OF THE PROPERTY O | 300 | | | |
| | 300 | * . | | |

| | | MATICULA | ar reje. | | PAGE | 4 UF 13 |
|---|-----------------|------------------------------|--|--|--------------------------------|---|
| | | TTINGS LOG | | FIELD LOG OF | WELL NUMBER_ | TW-2 |
| | PDOLECT NUMBER | 79-290- 45 | | VALLEY NAME | Delamar | - 1. · · |
| | PROJECT NAME | MX SITING INVEST | rigation | LOCATION NUMBER | T6S, R63 | E, Sect. 12d |
| | | Reverse R | | LOGGED BY TEB | | |
| | | Beylik | and the second s | CHECKED BY JA | G DATE | 4/10/80 |
| | OPERATOR | J. Clyde | * | TOTAL WELL DEPTH | 1214 feet | |
| | | | (1967) 1 | | | |
| | DEPTH (FEET) | | DESCRIPTION O | F CUTTINGS OR SAM | PLE | |
| | 300 | Gravel: Med | ium colored, p | poorly sorted, sub evel, with less th | pangular to a han 5% tan si | angular, |
| | 310 | | | | | |
| * | 3.3 | Silt: Tan s | ilt with less | than 10% fine-gra | ained to 1/3- | inch |
| | = | gravel. | | i việt Ling việt j | | |
| | 320 | Gravel and S subrounded, | ilt: Medium of | colored, poorly so to 1-3/4-inch grav | orted, rounde vel and brown | ed to |
| | 330 — | | を (4) (2) (2) (4) (4) | | | |
| | | Silt: Tan s | ilt with less | than 5% fine-gra | ined to 4-inc | on graver. |
| | | | Y | | | |
| | 340 | Gilt. Man G | ilt with less | than 5% fine-gra | ined to 5-ind | ch gravel. |
| | <u> </u> | Silt: Tan s | TIC WITH TOO | | | |
| | | | | | | |
| | 350 | Silt: Tan s | ilt. illt. | | | |
| | | Jirc. Tan 5 | | | | - |
| | 360 | | | | | |
| | 300 = | | | •• | | |
| | = | | • | | | |
| | 370 | Silt: Tan s | ilt, with less | s than 5% fine-gr | ained to \-i | nch gravel. |
| | = | , | | | | |
| | -00 |) 2 % | | | | aden all |
| | . 380 — | Silt and San rounded to s | d: Tan silt a ubangular, ve | and medium colore ry fine- to very | d, poorly so coarse-grain | ed sand. |
| | 390 — | : | | | | |
| | 230 | occas | ional gravel | to 1/3-inch prese | nt. | i Schweller und der Schweller |
| | | 1 | - | | | i i |

400 =

500 -

PAGE 6 OF 13 umme mareomal, me. DRILL CUTTINGS LOG FIELD LOG OF WELL NUMBER TW-2 VALLEY NAME Delamar PROJECT NUMBER 79-290- 45 LOCATION NUMBER __ T6S, R63E, Sect. 12d PROJECT NAME MX SITING INVESTIGATION LOGGED BY LB DATE 3-04-80 Reverse Rotary . EQUIPMENT USED ___ CHECKED BY JAG DATE 4-10-80 COMPANY Beylik TOTAL WELL DEPTH 1214 feet OPERATOR J. Clyde DESCRIPTION OF CUTTINGS OR SAMPLE DEPTH (FEET) Tan silt with less than 15% gravel to 4-inch. Silt: 500 -510 -520-5 40 -Tan silt with less than 10% gravel to 3/4-inch. Tan silt with less than 10% gravel to 1/2-inch. 5 50 -Gravel: Medium and dark colored, moderately sorted, sub-560 rounded to subangular, very fine-grained to 1-inch gravel, with less than 20% tan silt. 570 -Silt: Tan silt, occasional gravel to 1/3-inch. 580 -Silt and Sand: Tan silt and very fine-grained sand. 590 -

600 -

| DRILL | CUTTINGS LUG | FIELD LOG OF WE | LL NUMBER TW-2 |
|---|---|---------------------------------------|---------------------|
| AND LEGIT MUNIC | BER 79-290- 45 | VALLEY NAME | · · |
| | E MX SITING INVESTIGATION | | T6S, R63E, Sect. 12 |
| 11.1 | SED man Reverse Rotary town | | & JM DATE 3/05/80 |
| | Beylik | | G DATE 4/10/80 |
| - | J. Clyde | TOTAL WELL DEPTH_ | |
| OPERATOR | | | |
| DEPTH (FEET) | DESCRIPTION OF | CUTTINGS OR SAMPL | E |
| 600 — | Sand and Gravel: Dark color angular, very fine- to very fine-grained gravel. Silt and Sand: Tan silt and | coarse-grained sa | and, and very |
| | | | |
| 620 | Silt and Sand: Tan silt and subrounded to subangular, ve sand; occasional gravel to l | ery fine- to very | |
| 630 | Silt and Sand: Tan silt and | very fine-graine | d sand |
| 3 3 | Bire and Sand. Tan Sire and | Wery Time grazine | |
| - ∄ ∄ . | | | |
| 6 40 | | | - - Σ |
| 650 | | | |
| | | | • |
| 660 | rounded to subangular, very i | fine- to very coar | orly sorted, sub- |
| | occasional gravel to 12-inch. | · · · · · · · · · · · · · · · · · · · | |
| 670 | | | |
| = | - A | | |
| : = : | <u>;</u> | | |
| 680 | Silt and Gravel: Tan silt an angular, fine-grained to 4-in present. | | |
| 690 | Silt and Sand: Tan silt and fine grained sand; with less | | |
| 700 | | | |

Sand and Silt: Medium colored, moderately sorted, subangular to angular, very fine- to medium-grained sand, and tan colored

Clayey Silt with Sand: Tan clayey silt with less than 30%

medium colored, fine-grained sand.

Organic matter present.

750 -

760 -

770 -

780 -

790 -

800 --

silt.

| DRILL | | TTINGS LOG | FIELD LOG OF WE | LL NUMBER TW-2 |
|-------------------------------|----------------|--|--|-------------------------------|
| | | 79-290- 45 | VALLEY NAME | |
| PROJECT NAM | IDEN IF | MX SITING INVESTIGATION | | T6S, R63E, Sect. 120 |
| CULTONERT I | ICED. | Reverse Rotary | | JM DATE 3-06-80 |
| CONDINA CONDINA CONDINA |) S L D | Beylik | - | DATE <u>4-10-80</u> |
| ODCD4700 | | J. Clyde | TOTAL WELL DEPTH_ | 1214 feet |
| UPERATUR | | | | |
| DEPTH (FEET) | | DESCRIPTION OF | CUTTINGS OR SAMPL | .E |
| 800 — 810 — 820 — | | Sand: Medium colored, mode: fine- to coarse-grained sand gravel to 1-inch. Sand with Clayey Silt: Med fine- to medium-grained sand clayey silt. | ium colored, well | sorted, angular, |
| 830 — | | | | |
| 840 | - | Increasing clay. | emilye i Çerilek | |
| 850 | - | Sand with Clayey Silt: Med grained sand with less than Occasional coarse-grained s | 30% Can colored | sorted, fine- clayey silt. |
| 86 0 1 | | Gravel with Sand: Medium c subangular, fine to medium gravel with less than 25% m | edium- to coarse | -grained sand. |
| 870 | | Clayey Silt and Sand: Tan | colored, clayey | silt and medium |
| ,] | :. | colored, well sorted, fine- | grained sand. | San Albania |
| · | | . ± | 4 | • |
| 880 | | • | | |
| 890 | | | | |
| | | | anne specialistic i septim ser se de di a service consecutivi di | |

| | ITTINGS LOG | | FIELD LOG OF WELL N | UMBER TW-2 | | |
|---|---|---|--|---------------|--|--|
| PROJECT NUMBER | 79-290- 45 | | VALLEY NAMEDel | Lamar | | |
| PROJECT NAME | MX SITING INVESTIG | GATION | LOCATION NUMBER | | | |
| 4. * 1. * 1. * 1. * 1. * 1. * 1. * 1. * | Reverse Rotar | | LOGGED BY LB & JM | DATE3-07-8 | | |
| COMPANY | Beylik | | CHECKED BYJAG | DATE4-10-8 | | |
| 2.5 | J. Clyde | | TOTAL WELL DEPTH12 | | | |
| | art de la company | | | | | |
| DEPTH (FEET) | DE | SCRIPTION OF C | CUTTINGS OR SAMPLE | | | |
| 900 — | | m colored, sub | colored, clayey silt, angular, very fine- | | | |
| - E | Occas | sional coarse- | grained sand present. | | | |
| 920 | angular to suba less than 30% f 10% clayey silt | ngular fine-gr ine- to very o h Sand: Tan o | dark colored, poorly cained gravel up to be coarse-grained sand a colored clayey silt, | inch, with | | |
| = 1 | 400 very rane g | rained sand. | • | | | |
| = = | | • | • | | | |
| 950 — | | | | | | |
|]] | | · · · | | | | |
| | • | e i 💆 | | ·. | | |
| 960 | Sand with Silt: grained sand, wi | | ed, well sorted, fine 30% tan colored silt. | | | |
| 970 | | | | | | |
| 7.1 | | | | | | |
| | | t decreasing the present. | co 20%. Occasional g | ravel to 1/2- | | |
| 980 | | | ed, well sorted,suban with less than 10% t | | | |
| | | | | | | |

DRILL CUTTINGS LOG FIELD LOG OF WELL NUMBER TW-2 PROJECT NUMBER 79-290- 45 VALLEY NAME Delamar PROJECT NAME THE XX SITING INVESTIGATION FIRE LOCATION NUMBER TES, R63E, Sect. 12d EQUIPMENT USED HATH Reverse Rotary Form LOGGED BY ... UM, LB, DATE 3-08-80 CHECKED BY JAG DATE 4-10-80 COMPANY ITTER Beylik OPERATOR ____ J. Clyde TOTAL WELL DEPTH 1214 feet DEPTH DESCRIPTION OF CUTTINGS OR SAMPLE (FEET) 1000 -Sand: Medium colored, well sorted, subangular to angular, fine- to medium-grained sand, with less than 10% tan silt. 1010 Grain size increasing. 1020 Gravel: Dark colored, well sorted, angular, fine-grained gravel to 1/2-inch, with less than 10% sand; organic matter (roots) present. 1040 -Sand with Clayey Silt: Medium colored, moderately sorted, angular to subangular, fine-to medium- (predominantly fine) grained sand, with less than 35% tan colored clayey silt. 1050 -1060 -Sand with Clayey Silt: Medium colored, moderately sorted, angular to subangular, fine- to coarse-grained (predominantly fine- to medium-grained) sand, with less than 25% clayey silt. 1070 -Gravel with Sand: Medium colored, poorly sorted, angular to subangular, fine-grained to 1/3-in. gravel, with less than 35% fine- to coarse-grained (predominantly medium- to coarsegrained) sand. 1080 -Silt and Sand: Tan silt and medium colored, well sorted subangular, very fine-grained sand, with less than 5% very finegrained gravel. 1090 -Clayey Silt and Sand: Tan clayey silt and medium colored, poorly sorted, angular to subangular, fine-grained (occasionally medium- to coarse-grained) sand.

1100 -

DRILL CUTTINGS LOG FIELD LOG OF WELL NUMBER TW-2 VALLEY NAME ______ Delamar PROJECT NUMBER 79-290- 45 LOCATION NUMBER T6S, R63E, Sect. 12d PROJECT NAME MX SITING INVESTIGATION LOGGED BY LB, JM DATE 3-09-80 EQUIPMENT USED Reverse Rotary CHECKED BY JAG DATE 4-10-80 COMPANY Beylik J. Clyde TOTAL WELL DEPTH 1214 feet OPERATOR __ DEPTH DESCRIPTION OF CUTTINGS OR SAMPLE (FEET) Clayey Silt and Sand: Tan clayey silt and medium colored, 1100 poorly sorted, subangular to angular, fine- to coarse-grained (predominantly fine-grained) sand. 1110 Gravel: Dark colored, moderately sorted, angular to subangular, fine-grained to 1-inch gravel, with less than 10% coarse sand. 1120 -Gravel: Medium to dark colored, well sorted, subangular to angular, fine-grained gravel up to 1 inch, with less than 5% coarse sand. 1130 -Sand with Silt: Medium colored, moderately sorted, angular to subangular, fine- to coarse- (predominantly fine to medium) grained sand, with less than 30% silt. 1140-' 1150 -1160 Sand with Silt: Medium colored, moderately sorted, angular to subangular, fine- to medium-grained sand, with less than 30% tan colored silt and occasional coarse sand grains. 1170 -Sand and Gravel: Medium colored, poorly sorted, angular to subangular, fine- to coarse-grained (predominantly fine- to medium-grained) sand, and dark colored, angular to subangular, fine- to medium-grained gravel up to 1 inch. 1180 -Sand with Gravel: Medium to dark colored, moderately sorted, angular to subangular, fine- to coarse-grained sand, with less than 25% fine-grained gravel up to 1/3 inch. 1190 -Sand with Silt: Medium colored, well sorted, subangular, fine- to medium-grained sand, with less than 25% tan silt,

with occasional fine-grained gravel up to 4 inch.

1200 -

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wond Hational, inc.

FIELD LOG OF WELL NUMBER TW-2 DRILL CUTTINGS LOG Delama*r* VALLEY NAME ____ PROJECT NUMBER 79-290- 45 LOCATION NUMBER _____ T6s, R6 JE, Sect. 12d PROJECT NAME MX SITING INVESTIGATION CARROLL LOGGED BY LE HT LB DATE =3-10-80 EQUIPMENT USED To Reverse Rotary States CHECKED BY THIJAG MATE 14-10-80 Beylik____ COMPANY TOTAL WELL DEPTH 1214 feet J. Clyde OPERATOR _ DEPTH DESCRIPTION OF CUTTINGS OR SAMPLE (FEET) Sand with Silt: Medium colored, well sorted, subangular, fine-1200 to medium-grained sand, with less than 25% tan silt and occasional fine-grained gravel up to 4 inch. 1210-20 30 -40 -50 80 90 -

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hommo Mavionial, inc.