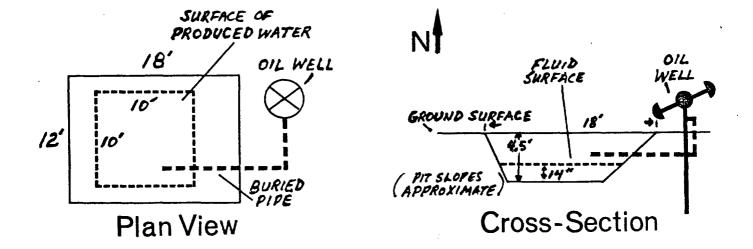
DIMENSIONS OF PRODUCED WATER DISPOSAL PIT

Duncan Oil Field
T29N, R16W, Sec. 6, 50' FSL, 50' FWL, San Juan County, N.M.



March 27, 1985

M_E_M_O_R_A_N_D_U_M

TO: Akhtar Zaman, Director

Minorals Department

FROM : Masud-Uz-Zaman, Director

Water Management Department

SUBJECT: Duncan Oil Field Well No. 6-11

We are in the process of conducting Duncan Oil Field's groundwater impact study for the Hogback area. Well No. 6-11 has been identified in the field. We would appreciate it if you could provide us a complete well record including electric logs for this well.

Maguel-Ily-Zaman

t. U. CUÁ 112 WINDOW ROCK, ARIZONA BELIEVED IN TRIP

(Other instructions on reverse side)

Form approved. Budget Bureau No. 42 R1425.

DEPARTMENT OF THE INTERIOR

| | DELARTMEN | . 0. 1112. | | | | D. LEASE DESIGNATION | AND BEHHAL NO. |
|--|-----------------------------|------------------|-------------------------|------------------|--|---------------------------------|----------------|
| | GEOLO | GICAL SURV | EY | | | . 14-20-0603-1 | 1000 |
| APPLICATIO | N FOR PERMIT | TO DRILL. | DEEPEN, OR P | LUG BA | CK | G. IF INDIAN, ALLOTTEE | OR TRIBE NAME |
| 1s. TIPE OF WORK | | | | | | Navajo | |
| | ILL 🛛 | DEEPEN | ☐ PLU | JG BACK | | 7. UNIT AGREEMENT NA | MK |
| b. TIPE OF WELL | | | | | | | |
| | VELL OTHER | | ZONE | MULTIPLE Zone | | S. FARM OR LEASE NAM | E |
| 2. NAME OF OPERATOR | | | | | | North Hogbac | ck 6 |
| Walter D | uncan | | • | | | 9. WELL NO. | |
| 3. ADDRESS OF OPERATOR | | | | | | 11 | |
| Box 234, | Farmington, NM | 87401 | | | | 10. FIELD AND POOL, OF | R WILDCAT |
| | Report location clearly and | | th any State requiremen | nts.") | | Slickrock Da | akota |
| At surface | 50' FSL - 50' | FWL | | | 1 | 11. SEC., T., R., M., OR B | |
| At proposed prod. zo: | nė | | | | i | AND SURVEY OR AR | - 4 |
| , | | | | | İ | Sec 6, T29N, | R16W |
| 14. DISTANCE IN MILES | AND DIRECTION FROM NEA | REST TOWN OR POS | T OFFICE* | | | 12, COUNTY OR PARISH | |
| 8 miles eas | t-southeast of | Shiprock, N | M | | 1 | San Juan | NM |
| 15. DISTANCE FROM PROP LOCATION TO NEARES | | | 16. NO. OF ACRES IN | LEASE | | F ACRES ASSIGNED | |
| PROPERTY OR LEASE (Also to pearest dr) | LINE, FT. | 501 | 640 | 1 | 10 18 | 2-1/2 | |
| 18. DISTANCE FROM PRO | POSED LOCATION® | | 19. PROPOSED DEPTH | | 20. ROTAR | Y OR CABLE TOOLS | |
| TO NEAREST WELL, I OR APPLIED FOR, ON TE | DRILLING. COMPLETED, | 60' | 690' | | Cab1 | e 0-20' Rot | ary 20-690' |
| 21. ELEVATIONS (Show wh | nether DF, RT, GR, etc.) | | | | | 22. APPROX. DATE WOL | |
| 4984' GR | | | | | | 9-20-75 | 5 |
| 23. |] | PROPOSED CASI | NG AND CEMENTING | PROGRAM | | | |
| SIZE OF HOLE | SIZE OF CASING | WEIGHT PER F | OOT SETTING D | EPTH | | QUANTITY OF CEMEN | T |
| | 7" | 20# | 20 | t | 5 sx | | |
| 6-1/4" | 4-1/2" | 9.5# | 675 | 1 | | 75 sx | |
| 1. Drive | 7" csg thru bou | ders to ap | pprox 20' | | And the state of t | RECENT | 1 |
| | 6-1/4" hole to | - | ta formation | approx 6 | 575' | U. S. GEOLOGICAL FARMINGTON. | SURVEY |
| J. 586 47 | 1/2" csg cement | eu w//3 SX | | | | 1 *** * * * | |

- 3. Set 4-1/2" csg cemented w/75 sx
- 4. Drill 3-7/8" hole to approx 690' w/air to test Dakota formation
- If commercial oil production is indicated 2-3/8" tbg will be run and the well completed naturally in the open hole.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive tone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout

| reventer program, if any. | | |
|--|-----------------|-------------------|
| BIGNED LA Stroke Jim La Jacobs | TITLE | Agent 9-8-75 |
| (This space for Federal or State office use) | | AFPROVAL DATE |
| APPROVED BY | TITLE | DATE DATE |
| CONDITIONS OF APPROVAL, IF ANY: | | DISTARTING IT |
| • | See Instruction | s On Reverse Side |

NEW MEXICO OIL CONSERVATION COMMISSION WELL LOCATION AND ACREAGE DEDICATION PLAT

Fam C+102 Supersedes 6-128 Effective 1-1-05

All distances must be from the outer houndaries of the Section

| 1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below. | |
|--|-------|
| Foot great from the South line and 50 feet from the West line. Ground Lyvel Elev. Producing Formation Foot Slickrock Dakota Proration Unit: 4984 Dakota Slickrock Dakota for below. | ing |
| Found Lyvel Elev. Producing Formation Pool Slickrock Dakota Proration Unit: 1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below. | ing |
| Cround Level Elev. Producing Formation Pool Delicated Acrossor Proration Unit: Proration Unit: 40 % 40 % Property Pr | ing |
| 1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below. | ing |
| 1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below. | ing |
| | |
| 2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to work | |
| interest and royalty). | oli- |
| 3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been constanted by communitization, unitization, force-pooling, etc? | |
| Yes No If answer is "yes," type of consolidation | |
| If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side this form if necessary.) | e of |
| No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization | |
| forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commsion. | iis- |
| CERTIFICATION | |
| . CEXTITICATION | |
| I hereby certify that the information | |
| tained herein is true and complete to | |
| best of my knowledge and belief. | |
| | |
| ixang to the state of the state | |
| Jim L. Jacobs | |
| Position | |
| Agent Company | |
| Walter Duncan | |
| Date | |
| SEC. 6 | |
| SEC. 6 | |
| I hereby certify that the well loca | • • • |
| shown on this plat was pictred from the | |
| notes of actual surveys made by ma | |
| under my supervision, and that the s | |
| is true and correct to the less et | |
| knowledge and whiele | |
| | |
| Sert. 2. 1976 | |
| Frederick F. Reed | |
| Hen feletir to sair il a numeer | |
| Proposed Location Proposed Location | (|
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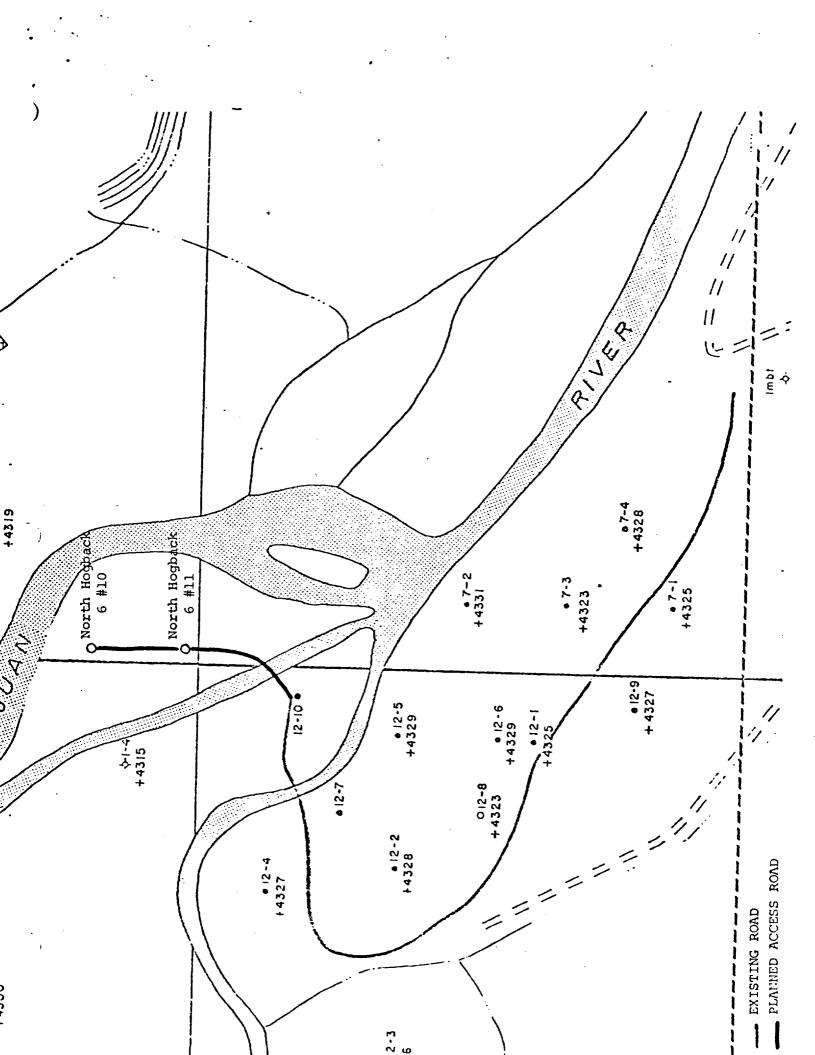
DEVELOPMENT PLAN

| | Walter Duncan |
|----|--|
| | North Hogback 6 #11 |
| 1. | Existing roads shown on attached plat. |
| 2. | Planned access from existing road approximately 600 ' to new location. |
| 3. | Location of well: 50' FSL - 50' FWL |
| | Sec 6, T29N, R16W |
| | San Juan County, NM |
| 4. | No additional well(s) planned on this lease at this time. |
| 5. | Existing oil tank will be used. |
| 6. | Water will be secured from San Juan River . |
| 7. | Waste materials_will be buried on location or in reserve pit. |
| 8. | No permanent camp is planned; trailer house will be used on location while drilling. |
| 9. | Do not plan to build airstrip. |

11. Pits will be filled, location cleaned up, and area not in use for

producing well will be reseeded using broadcast method of planting.

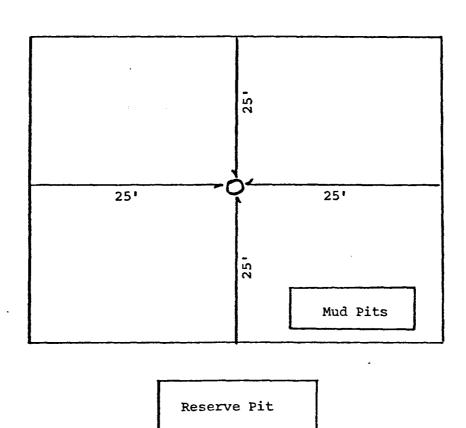
10. See attached plat for layout.



WALTER DUNCAN

North Hogback 6 #11

Proposed Location Layout

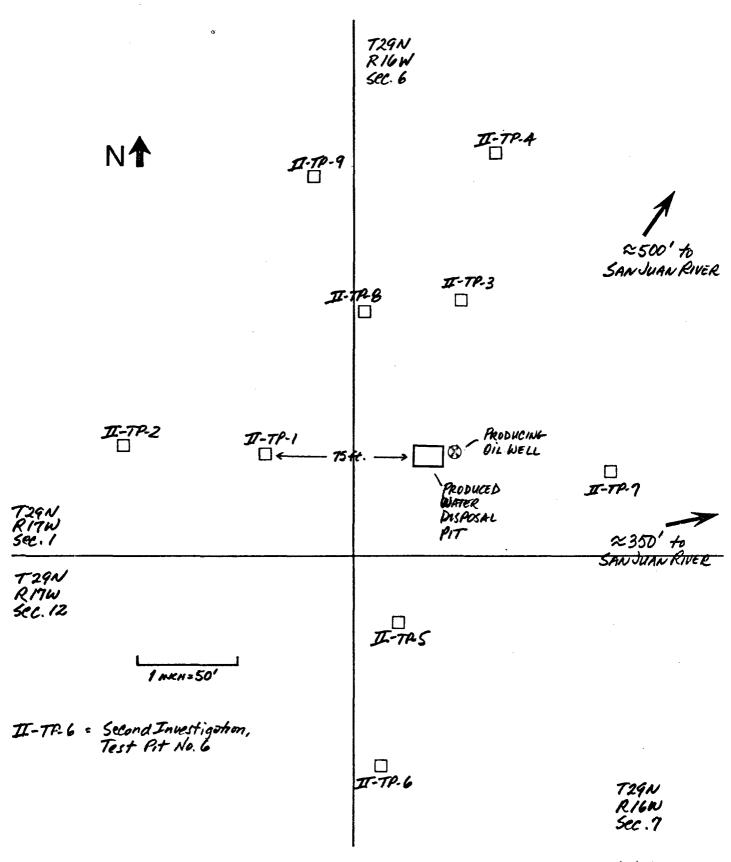


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SITE LOCATION MAP DUNCAN OIL FIELD HYDROLOGIC INVESTIGATION February 25, 1985

February 25, 1985 1 MKH = 50' 729N I-TP3 RIGW DTGW: 5 SEC. 6 \$500' to SANJUAN R. I-TP-2 SURFACE • I-TP-3 = First Investigation. DRAINAGE DTGW: 45' TEST PIT NO.3 CHANNEL . DTGW:5 = DEPTH TO GROUND WATER MEASURED AT 5' . OIL WELL LOCATION: TRAN, RIGN, SEC. 6 50' FSL, 50' FWL SMJUAN COUNTY, N.M. I-TP-1 DTGW: 4.5' LEASE NO. 14-20-0603-10008 ARROWS PRODUCING OIL WELL INDICATE POSSIBLE DIRECTION OF GROUND NATER FLOW. TZGN RITW SEC.I PRODUCED WATER DISPOSAL PIT 729N RITIN SEC. 12 =350'to SAN JUAN R. SURFACE DRAINAGE CHANNEL GROUND WATER I-TP-4 TEST PITS NEAR DTGW:4" NORTH HOGBACK 6 WELL NO. 11 729N RIGW SEC. 7

SITE LOCATION MAP DUNCAN OIL FIELD HYDROLOGIC INVESTIGATION March 18, 1985



LITHOLOGIC FEATURES OF TEST PITS * DUNCAN OIL FIELD STUDY AREA February 25, 1985 (dimensions are in length, width and depth, respectively)

| Test Pit No. | Description of Observed Soil Conditions and Ground Water |
|--------------|--|
| 1 | Medium-to-coarse-grained sands with gravel and cobbles present; dark black oily stained soil at 3.5 feet below surface; water entered pit at 4.5 feet below surface; after 30 minutes, pit bottom had filled with 6 inches of water; water was bluishand greenish-black with obvious oily film on top and strong hydrocarbon smell. |
| 2 | l foot of topsoil; 3 feet of gravelly medium-to-coarse-grained sand with trace of silt; soils saturated with black oily substance at 4 feet below surface; water entered pit at 4.5 feet below surface; after 20 minutes, water was brownish black and cloudy with noticeable oily sheen and strong hydrocarbon odor. |
| 3 | Sand and gravel observed to bottom of pit; dark gray to black staining of pit walls at 4 feet below surface; water entered pit at 5 feet below ground surface, initially from east side and within minutes also from south side; after 40 minutes, water was light brown and cloudy with obvious sandy sediment; thin oily sheen observed on top of water; discernable, but weak hydrocarbon odor noted. |
| 4 | 2.5 feet of topsoil, silty fine sand to sandy silt (soils observed to be much more siltier than those of Test Pits 1, 2 or 3); roots and fibers plentiful in soil; gravelly medium-to-coarse-grained sands with gravel, cobbles and boulders from 2.5 to 5 feet below ground surface; moisture observed on pit walls at 3 feet below ground surface; water entered pit at 4 feet below ground surface and filled bottom of pit to 9 inches; very slight oily film observed on top of water, but no hydrocarbon or other foreign odors noted. |

Lithologic Logs of Test Pits Duncan Oil Field Hydrologic Investigation, March 18, 1985 (based on field notes of Masud Zaman)

| | (based on field notes of Masud Zaman) |
|--------------|--|
| Test PIT #1 | Top Soil, Brown silty fine to coarse sand, gravel, boulders, roots, fibers, etc. |
| 1 - 3.65' | Gray-brown tan gravelly medium coarse SAND, occasional boulder and cobble, trace of silt |
| 3.65' - 6.0' | Dark-gray to black oily gravelly medium coarse SAND, occasional boulder, cobble |
| | Static Water Level 11:15 AM - thin oily layer on water surface: 5.0' |
| | 1:42 PM - Collected Purgeable water sample PIT #1: 4.1' |
| | Gary Eiceman collected water and soil samples |
| Test PIT #2 | Sandy gravel, boulders, cobbles and root fibers, etc. |
| 1 - 3.3' | Gray brown fine to coarse SAND, trace of silt |
| 3 - 6.0' | Gray brown medium coarse SAND with fine to medium gravel, black staining at 4.8' |
| | Static Water Level 11:35 AM - 5.0' |
| | a .a |

Gray Eiceman collected water and soil samples

Test PIT #3 $\overline{0-1.5}$ Top soil, silty sand, gravel, boulder, cobble, root fibers, etc.

- 1.5' 4.1' Gray brown fine to coarse SAND, some fine to medium gravel, occasional boulder
- 4.1' 6.5' Gray oily fine to coarse SAND, gravel, boulders, etc.

Water seeping into the pit from all directions at about 5.0' below the surface.

Static Water Level 12:21 PM - 5.1'

1:45 PM - 4.2'

1:40 PM - 4.4'

Gary Eiceman collected water and soil samples
Masud Zaman collected two perge samples and one soil sample

Test PIT #4

- 0 0.5' Top soil, brown silty SAND, gravel, boulder, cobbles, roots, etc.
- 0.5' 5' Gray-brown gravelly medium coarse SAND, occasional boulder, roots

Static Water Level 12:33 PM - 3.8'

1:46 PM - 3.3'

Gary Eiceman collected water and soil samples

Test PIT #5

- 0 1.5' Top soil, brown silty sand, gravel, boulder, cobble, roots and fibers
- 1.5' 6.0' Gray-brown fine to coarse SAND, some gravel, occasional boulder

Static Water Level 12:40 PM - 5.0'

1:43 PM - 4.1'

Gary Eiceman collected water and soil samples

Test PIT #6

- 0 0.5' Top soil, gray brown silty fine SAND, occasional boulders
- 0.5' 3.0' Gravely tan fine to coarse SAND, some boulders and cobbles
- 3.0' 6.0' Gray-brown medium coarse SAND, trace of silt, some gravel

Static Water Level 12:45 PM - 5.8'

1:43 PM - 4.0'

Gary Eiceman collected water and soil samples

Test PIT #7

0 - 1' Top soil, brown sandy SILT with some gravel and boulders, some
root/fibers

1 - 5.0' Gray-tan brown gravelly medium coarse SAND, some boulder and cobble

Static Water Level 12:56 PM - 3.10'

1:44 PM - 3.3'

Gary Eiceman collected water and soil samples

*PRODUCED WATER PIT
PERGE SAMPLES FROM PIT BY MASUD ZAMAN
Gary Eiceman also collected water samples

Test PIT #8

0 - 1' Top soil, brown tan sandy-silty CLAY roots (lot)

1 - 3.5' Gravelly brown medium coarse SAND, some boulder and cobbles

3.5' - 6.0' Dark oily medium coarse sand, some gravel, boulder

Static Water Level
1:20 PM - 4.8'

1:46 PM - 4.2'

Gary Eiceman collected water and soil samples

Test PIT #9

0 - 1.8' Gravelly brown silty fine to coarse SAND, boulder and cobbles, root fibers

4.10' Gray-brown medium coarse SAND, some fine to medium gravel

4.10' - 6.0' Black oily medium coarse SAND, some fine to medium gravel

Static Water Level 1:36 PM - 5.3'

1:48 PM - 4.8'

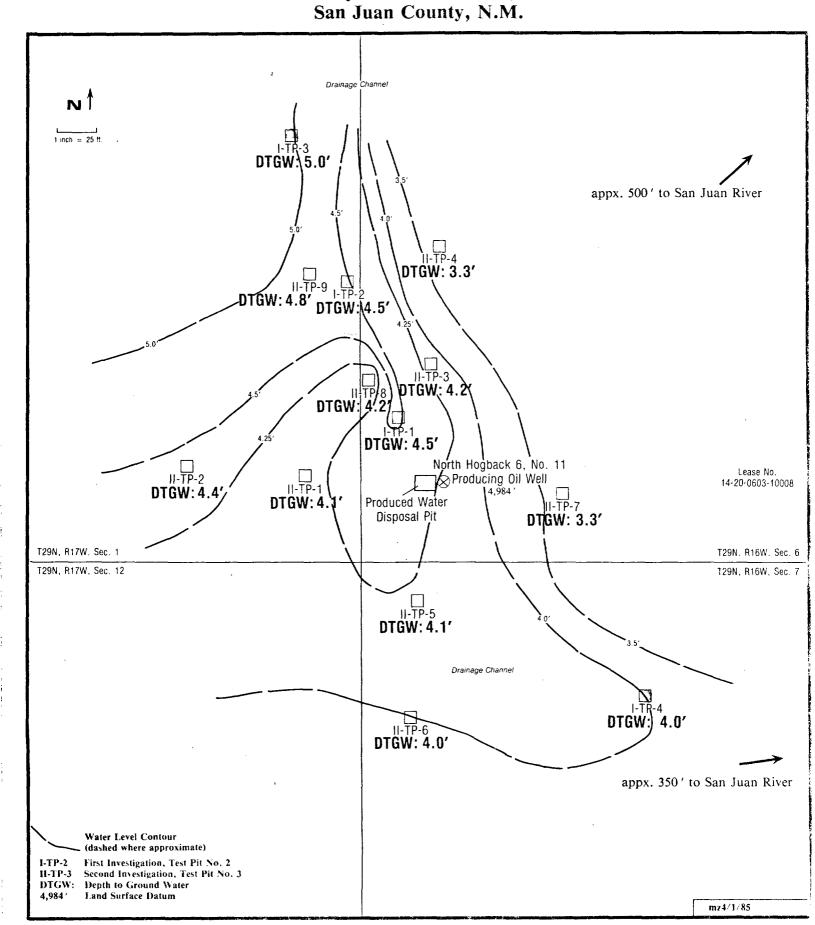
Gary Eiceman collected water and soil samples

ALL TEST PITS WERE DUG BY PORTABLE BACK-HOE FURNISHED BY NAVAJO DEPARTMENT OF OPERATIONS & MAINTENANCE

EXHIBIT

WATER LEVEL MAP DUNCAN OIL FIELD HYDROLOGIC INVESTIGATION February 25 and March 18, 1985

EVEL MAP
OIL FIELD
INVESTIGATION



| EXHIBIT | | | | | |
|---------|---|--|------------------|-------|---|
| | _ | | | | |
| | 1 | 11.00 | 1. Jan 2. Jan 2. | • | > |
| - | | 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1 | 1. 20 80 | | • |

HYDROLOGIC GRADIENT CALCULATIONS Duncan Oil Field Investigations (prepared by M. Zaman)

Calculation No. 1

Change in Water Table Level (dh)
Horizontal Length of Study Area (dl) = gradient constant

gradient constant x 5,280 feet/mile = hydrologic gradient (ft./mile) $\frac{1.5 \text{ feet}}{400 \text{ feet}}$ x 5,280 feet/mile = 19.80 feet/mile

Calculation No. 2

5,280 feet/mile
Horizontal Length of Study Area

n miles x dh (Change in Water Table Level) = Hydrologic Gradient

5,280 feet/mile
400 feet
13.2 miles x 1.5 feet = 19.8 ft./mile

| | - |
|---------|---|
| EXHIBIT | |

GROUND WATER SAMPLING DATA DUNCAN OIL FIELD STUDY AREA February 25, 1985

| Sample No. | Pit and Sample Identification | Fluid Sampled | Parameters Sampled | Time |
|------------|--|-------------------|---|------|
| 1 | Separator fluid from pipe emptying into disposal pit | produced water | purgeable aromatics, | 1130 |
| 2 | Fluid standing in unlined pit next to producing oil well | produced water | purgeable aromatics, general chemistry, metals, nitrates | 1215 |
| 3 | Test Pit No. 1 | ground water | purgeable aromatics, general chemistry, metals, nitrates | 1340 |
| 4 | Test Pit No. 2 | ground water | purgeable aromatics, general chemistry, metals, nitrates | 1355 |
| 5 | Test Pit No. 3 | ground water | purgeable aromatics | 1440 |
| 6 | Test Pit No. 4 | ground water | <pre>purgeable aromatics, general chemistry, metals, nitrates</pre> | 1430 |

In the table above, "general chemistry" refers to dissolved solids and major ions, and "purgeable aromatics" to the benzene family of hydrocarbons, namely benzene, toluene, ethylbenzene and xylene.

ANALYTIC RESULTS FOR WATER SAMPLING IN THE DUNCAN OIL FIELD Field Investigation Conducted by M. Zaman et al., February-March 1985 Township 29 North, Range 16 West, Section 6, 50 Feet FSL, 50 Feet FWL (all concentrations in milligrams per liter or parts per million)

February 25 Sample 1 Sample 2 Sample 3 Sample 4 Sample 5 Sample 6 I-TP-2 End of Pipe Prod'd H2O I-TP-1 I-TP-4 I-TP-3 Organics: .04 .005 Ethylbenzene .044 ND ND ND .104 .220 .021 Benzene .0088 detected .100 .341 .009 .004 Metaxylene .4 .170 ND .084 Orthoxylene .073 ND ND ND ND .003 Paraxylene .08 .071 .008 ND ND 3.8 .37 .50 .57 .55 Phenols (total) NR .135 .137 Toluene ND ND ND ND Unidentified .02 -022 .03 .322 ND ND Lab Detection .010 .050 .002 Limit .025 .001 .001 Compounds aliphatics, aliphatics, 3-carbon 22 peaks 7 peaks l peak 3-carbon substituted detected, 3-carbon substituted substituted benzenes but not quantified benzenes benzenes, 1- and 2-methylnaphthylene General Chemistry: 1,221. 1,201. 734.5 152. Alkalinity 1,501. NR Calcium 12. 10. 16. 88.1 176.3 NR 204.4 122.5 199.5 63. 12.1 Chloride NR 20. 56. 108. 216. Hardness(Tot.) 20. NR 1.9 2.4 9.7 4.8 9.7 Magnesium NR Nitrate(N-NO3) 1.92 1.95 10.9 120.0 2.5 NR 7.7 7.6 8.25 8.7 7.9 pH(@ 20 C. lab) NR 1.5 Potassium 2.7 1.5 2.3 .7 NR 36.8 Sodium 805. 791.2 696.9 319.7 NR Sulfate 570. 223. 367. 67. 15.8 NR 1,655.5 1,701.5 1,379.6 603.8 234.3 TDS NR Metals: Arsenic .142 .232 .241 .145 ND NR Barium 1.08 1.264 .539 .853 .055 NR Cadmium .004 .003 <.001 .003 .001 NR Chromium .03 .023 .036 .016 .009 NR .045 .045 .044 .148 .019 NR Lead <.002 <.002 <.002 <.002 <.002 Mercury NR .077 .081 .097 Selenium .1745 .013 NR

(continued)

.0099

Silver

.007

.005

<.001

<.001

NR

(continued)

ANALYTIC RESULTS FOR WATER SAMPLING IN THE DUNCAN OIL FIELD Field Investigation Conducted by M. Zaman et al., February-March 1985

March 18*

| | Sample 1 Produced Water | Sample 2 II-TP-l | Sample 3 II-TP-3 |
|---------------------|----------------------------|------------------------|---------------------|
| Organics: | | | |
| Ethylbenzene | .106 | ND | ND |
| Benzene | detected, <50 ppb | ND | . ND |
| Metaxylene | •39 | ND | .059 |
| Orthoxylene | .15 | ND | ND |
| Paraxylene | •08 | ND | ND |
| Toluene | .18 | ND | ND |
| Phenols (total) | NR | NR | NR |
| Lab Detection Limit | •050 | •050 | .005 |
| Compounds detected, | 6— to 8—carbon | 10- to 20-carbon | |
| but not quantitied | aliphatics | aliphatics | |
| | @ 10 ppb | @ 100 - 500 ppb | |

(Samples taken March 18, 1985 were not analyzed for general chemistry, metals or nitrates.)

| ND | Not detected |
|---------|--|
| NR | Sample not analyzed |
| I-TP-2 | Feb. 25 investigation, Test Pit No. 2 |
| II-TP-3 | March 18 investigation, Test Pit No. 3 |
| ppb | parts per billion |

| ntruni iu: 12pt of water Marage | LABURATURT | | | | | | |
|---|--|-------------|--|--|--|--|--|
| PO BN 308 | LAB NUMBER DRG - 165 - 17 (5 - 185) | | | | | | |
| емирониемт \$ 85-01 | 65 -B | | | | | | |
| | | | | | | | |
| ALL CONTAINERS WHICH THIS FORM ACCOMPANIES ARE C | OLLECTIVELY REFERRED TO AS "SAMPLE". | | | | | | |
| CERTIFICATE OF FIELD Sample Type: Water Soil Other | PERSONNEL | | | | | | |
| Water Supply and/or Code No. PIT #1 | | | | | | | |
| city & County DURGAN OIL FIELD, J | ANJUAN COUNTY, N.M. | | | | | | |
| City & County DIRSAN OIL FIELD, J Collected (date & time) 850225/100 pH=; Conductivity=umho/cm at | By (name) M. ZAMAN, D. Payr | se | | | | | |
| pH=; Conductivity=umho/cm at | °C; Chlorine Residual=0 | _ | | | | | |
| Dissolved Oxygen= mg/l; Alkalinity= Sampling Location, Methods & Remarks (i.e. odors | ; Flow Rate= | | | | | | |
| | | | | | | | |
| preserved in tyclohexane | | | | | | | |
| , 1 | 3 / M. | | | | | | |
| I certify that the statements in this block accuanalyses, observations and activities. Signed I certify that I witnessed these field analyses, with the statements in this block. Signed | • | | | | | | |
| Method of Shipment to Laboratory THIS FORM ACCOMPANIES septum vials with tefle specimen; duplicate; triple and amber glass jug(s) with teflon-lined cale and other container(s) (describe) Containers are marked as follows to indicate present the service of the | icate; blank(s) p(s) identified as identified as servation (circle): oom temperature (~20°C). 40 ml and stored at room temperature. | ' ' ' | | | | | |
| CERTIFICATE(S) OF SAI | MPLE RECEIPT | | | | | | |
| I (we) certify that this sample was transferred | | | | | | | |
| |)o | | | | | | |
| (date & time) and that the st | | | | | | | |
| Disposition of Sample | Seal(s) Intact: Yes□ No□ . | | | | | | |
| Signature(s) | | | | | | | |
| I (we) certify that this sample was transferred t | fromt | 0 | | | | | |
| at (location) | | | | | | | |
| (date & time) and that the statements in this block are correct. | | | | | | | |

Disposition of Sample______. Seal(s) Intact: Yes [

Signature(s)___

No 🔲

ANALYSES REQUESTED

LAB. No.: ORG- /65

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

| l | | | | | _1:1 | |
|-------------|--------------|-------------------------------------|---|---------------|-------------|------------------------------------|
| QUALITATIVE | QUANTITATIVE | PURGEABLE SCREENS | | QUAL ITAT IVE | QUANTITATIV | EXTRACTABLE SCREENS |
| | | ALIPHATIC HYDROCARBON SCREEN | | | | ALIPHATIC HYDROCARBONS |
| 1 | X | AROMATIC HYDROCARBON SCREEN | | | | CHLORINATED HYDROCARBON PESTICIDES |
| | | HALOGENATED HYDROCARBON SCREEN | | | | CHLOROPHENOXY ACID HERBICIDES |
| | | GAS CHROMATOGRAPH/MASS SPECTROMETER | T | | | HYDROCARBON FUEL SCREEN |
| | | | | | | ORGANOPHOSPHATE PESTICIDES |
| | | | T | | | POLYCHLORINATED BIPHENYLS (PCB's) |
| | | | | | | POLYNUCLEAR AROMATIC HYDROCARBONS |
| | | | T | | | TRIAZINE HERBICIDES |
| | | | | | | |
| | | SPECIFIC COMPOUNDS | + | • | | SPECIFIC COMPOUNDS |
| - | | | 十 | | | |
| | | | + | | | |
| | 1 | | + | | | |
| REN | IARKS | | | | | <u> </u> |

ANALYTICAL RESULTS

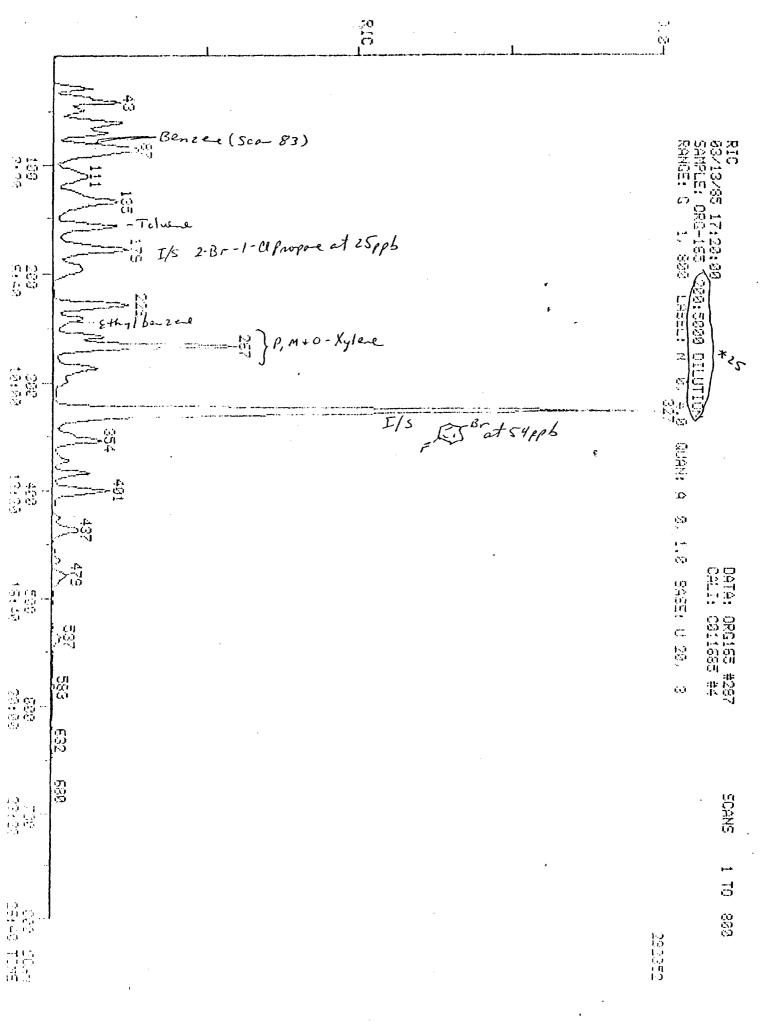
| COMPOUND | [PPB] | COMPOUND | [PPB] |
|------------------|-------|-------------------|-------|
| GC/Ms purgeables | | | |
| Benzene | 88 | | |
| Toluene | 135 | | |
| Ethylbe,,ze,e | 44 | | |
| p- Xylene | 80 | | |
| m-Xylene | 400 | | |
| 0-Xylene: | 84 | | , |
| , | | * DETECTION LIMIT | 25ppb |

REMARKS: Pliphatic Compounds & 3 Carbon substituted benzenes, were also detected but not quantitated.

| | | | | CER | TIFICATE | $_{ m OF}$ | ANALYTICAL | PERSONNEL |
|---------|---------|-----|----|------------|----------|------------|------------|-----------|
| Seal(s) | Intact: | Yes | ИО | Y . | Seal(s) | bro | oken by: | |

| I certify that I followed standard laboratory procedures on handling and analysis of this |
|---|
| sample unless otherwise noted and that the statements in this block and the analytical data |
| on this page accurately reflect the analytical results for this sample. / . |
| Date(s) of analysis: 3/13/85 . Analyst's signature: Measury |
| I certify that I have reviewed and concur with the analytical results for this sample and |

with the statements in this block. Reviewers signature:



N. M. SCIENTIFIC LABORATORY DIVISION GUANTITATION REPORT FILE: ORGIA5

DATA: DRG165.11 03/13/85 17:20:00

SAMPLE: ORG-155 200:5000 DILUTION

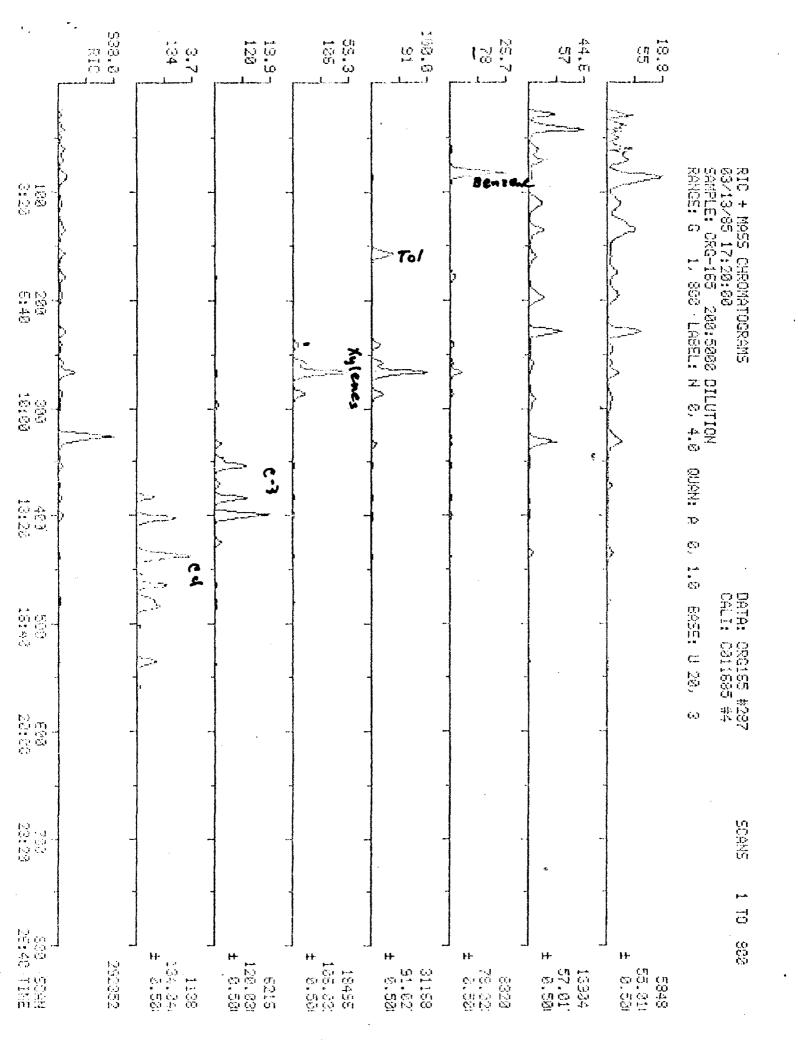
SUBMITTED BY: FID ANALYST: RFM

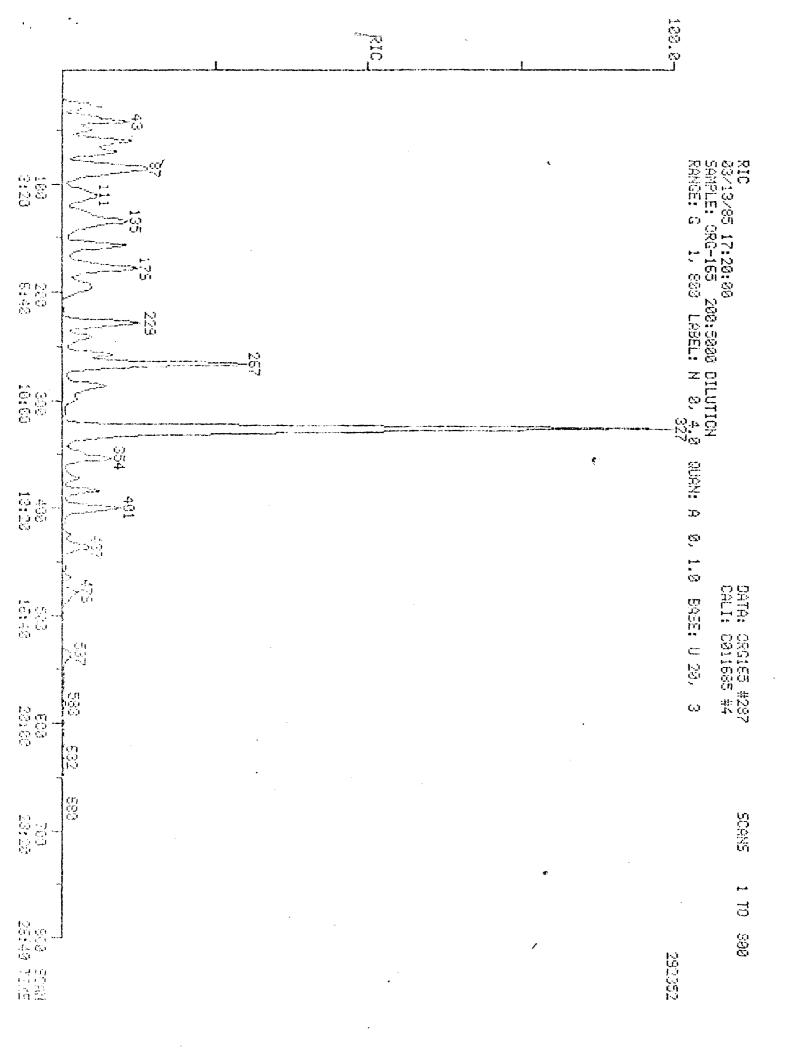
AMOUNT=AREA(HGHT) * REF. ANNT/(REF. AREA(HGHT)* RESP. FACT)
RESP. FAC. FROM LIBRARY ENTRY

NO NAME

- 1 175 (4-FLOUROBROMOBENZENE)
- 2 I/S (2-)3RUNG-1-CHLOROPROPANE)
- 3 BENZENE
- 4 1,2-DICHLORDETHANE
- 5 TOLUENE
- 6 1.2-DIBROMOETHANE
- 7 ETHYLBENZEMC
- B P-XYLENG
- 9 M-XYLENE
- 10 D-XYLENE

| | | | | | | | • | | Y |
|----|------------|-------|---------------|-----|--------|------|--------------|--------------|-----------------|
| NO | M/E | SCAN | TIME | REF | RRT | METH | AREA (HIGHT) | AMOUNT * | TUT * 25 |
| 1 | 174 | 327 | JO: 54 | 1 | 1,000 | A BB | 407586. | 54. 210 UG/L | 50. 18 Ds at 54 |
| 5 | 77 | 177 | 5: 5 8 | 1 | 0.547 | A BB | 188688. | 20.541 UO/L | 17.02 I/s at 23 |
| 3 | 7 8 | 93 | 2:46 | 1 | 0.254 | A BB | 45424. | 3. 518 UOZL | 3. 26 <i>88</i> |
| 4 | NOT | FOUND | | | | | | | |
| 5 | 91 | 157 | 5: 14 | 1 | 0.480 | A BV | 74949. | 5. 410 UC/I | 5. 01 /35 |
| 6 | NOT | FOUND | | | | | | | |
| 7 | 91 | 242 | 0:04 | 1 | 0.740 | A BB | 27640. | 1. 774 USZL | 1.64 44 |
| 8 | 91 | 250 | B: 3 6 | 1 | 0. 787 | A BV | 32469. | 3. 187 U07L | 2.95 80 |
| 9 | 91 | 267 | U: 54 | 1 | O. B17 | A VB | 167729. | 16, 036 UC/L | 14.85 400 |
| 10 | 91 | 287 | 9: 34 | 1 | 0.878 | A BB | 36103. | 3. 345 UG/L | 3.10 84 |





WATER CHEMICAL ANALYSIS

NAVAJO TRIBAL UTILITY AUTHORITY

| SAMPI | ENO. 6045 | OWNER C | | |
|--------|--------------------------------------|--------------------------|----------------------------------|-----------|
| SAMP | LE LOCATION DUNGAN FI | ELD PIT # DATE COLLE | oren 7-25-0 | |
| DATE | RECEIVED <u>とっとの。おう</u> | COLLECTED I | BY DON PAYE | <u> </u> |
| DATE (| OF FINAL ANALYSIS 3-29 HICIAN A3 MEO | ADDRESS | HES | |
| TEST | PARAMETER | METHOD | RESULTS | mg/l |
| -V | ALKALINITY CO3 18.03 HO315. | 73TITRAMETRIC | 1,501-0 make call | |
| V | CALCIUM .24 | TITRAMETRIC OR AA | | 75-200 |
| V | CHLORIDE 5.76 | TITRAMETRIC | 12.0 mg/2 Ca(03 204.4 mg/2 C1 | 250 |
| V | TOTAL HARDNESS | TITRAMETRIC | 20 0 made 0000 | 500 |
| V | MAGNESIUM ./6 | CALCULATED OR AA | 20.0 mg/k Co(03 | |
| | MANGANESE | SPECTROPHOTOMETRIC OR AA | | 0.05 |
| | IRON | SPECTROPHOTOMETRIC OR AA | | 0.3 |
| V | pH | ELECTRODE | 8,75@7CC | 6.5-8.5 |
| | PHOSPHATE | SPECTROPHOTOMETRIC | 0, C3 & 70C | 0.0-0.0 |
| | POTASSIUM ,07 | FLAME PHOTOMETER | 7 7 2 2010 15 | 1000-2000 |
| - | SODIUM 35.0 | FLAME PHOTOMETER | 7.7 mgle K | 1000-2000 |
| | SULFATE 11.57 | TITRAMETRIC furbidity | 805.0 mgk Na | 250 |
| V | TOTAL DISSOLVED SOLIDS | ELECTRODE | 570.0 Myle SON | 250 |
| | TURBIDITY | NEPHELOMETER | 1,655.5 mgte Call | 7300 |
| | FLUORIDE | ELECTRODE | | 1.4 |

SAMPLE LOCATION CALLER COLLECTED BY_____ DATE RECEIVED____ DATE OUT 3-29-85 _____ ADDRESS_____

| | VICIAN | METHOD | RESULTS | MCL |
|---------------|---------------|-----------------------------|--------------|--------------|
| ESIE | PARAMETER | | ,1430 | 0.05 |
| X | ARSENIC | ATOMIC ABSORPTION | | 1.0 |
| X | BARIUM | ATOMIC ABSORPTION | 1.08 | 0.01 |
| 1/ | CADMIUM | ATOMIC ABSORPTION | .004 | 0.05 |
| | CHROMIUM | ATOMIC ABSORPTION | .0300 | |
| | IRON | ATOMIC ABSORPTION | | N/A |
| | LEAD . ? | ATOMIC ABSORPTION | .0447 | 0.05 |
| -X | MANGANESE | ATOMIC ABSORPTION | | N/A |
| | | FLAMELESS ATOMIC ABSORPTION | 2.002 | 0.00 |
| | MERCURY | | .0765 | 0.01 |
| X_{-} | SELENIUM | ATOMIC ABSORPTION | .0069 | 0.05 |
| λ_{-} | SILVER | ATOMIC ABSORPTION | 10047 | 10.0 |
| | NITRATE (ASN) | CADMIUM REDUCTION | | 1.4 |
| | FLUORIDE | ELECTRODE | | RE\ |

FORM NO. 5460 @ M

_____ ADDRESS____

TECHNICIAN___

| ATOMIC ABSORPTION ATOMIC ABSORPTION ATOMIC ABSORPTION | | 0.05 1.0 0.01 |
|---|---|--|
| ATOMIC ABSORPTION | | |
| | | 0.01 |
| ATOMIC ARCORDINA | | 1 0.01 |
| ATOMIC ABSORPTION | | 0.05 |
| ATOMIC ABSORPTION | | N/A |
| ATOMIC ABSORPTION | | 0.05 |
| ATOMIC ABSORPTION | | N/A |
| FLAMELESS ATOMIC ABSORPTION | · | 0.002 |
| ATOMIC ABSORPTION | | 0.01 |
| ATOMIC ABSORPTION | | 0.05 |
| CADMIUM REDUCTION Probe | 1.92 male NO7-N | 10.0 |
| ELECTRODE | | 1.4 |
| | FLAMELESS ATOMIC ABSORPTION ATOMIC ABSORPTION ATOMIC ABSORPTION CADMIUM REDUCTION Probe | FLAMELESS ATOMIC ABSORPTION ATOMIC ABSORPTION ATOMIC ABSORPTION CADMIUM REDUCTION Probe 1.97 Ingle No 7 - N |

| REPORT TO: LABORATORY | | | | | | | |
|--|--|--|--|--|--|--|--|
| LAR NUMBER DRC 166 F | | | | | | | |
| LAB NUMBER DRG - 166 F 2/27/85 | | | | | | | |
| 100 R | | | | | | | |
| ALL CONTAINERS WHICH THIS FORM ACCOMPANIES ARE COLLECTIVELY REFERRED TO AS "SAMPLE". | | | | | | | |
| | | | | | | | |
| CERTIFICATE OF FIELD PERSONNEL Sample Type: Water Soil Other | | | | | | | |
| Water Supply and/or Code No. PIT #2 | | | | | | | |
| city & County DUNCAN DIL FIELD, SAN JUAN COUNTY, N. M. | | | | | | | |
| City & County DUNCAN Oil FIELD, SAN JUAN COUNTY, N. M. Collected (date & time) BS0225(1300) By (name) ZANGEL, M., Royne pH=; Conductivity=umho/cm at°C; Chlorine Residual= | | | | | | | |
| pH=; Conductivity=umho/cm at°C; Chlorine Residual= | | | | | | | |
| Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate= ; Flow Rate= | | | | | | | |
| preserved i cyclohexane | | | | | | | |
| I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Signed I certify that I witnessed these field analyses, observations and activities and concur with the statements in this block. Signed | | | | | | | |
| Method of Shipment to Laboratory THIS FORM ACCOMPANIES septum vials with teflon-lined discs identified as: specimen ; duplicate ; triplicate ; blank(s) , and amber glass jug(s) with teflon-lined cap(s) identified as , and other container(s) (describe) identified as . Containers are marked as follows to indicate preservation (circle): NP: No preservation; sample stored at room temperature (~20°C). P-ICE: Sample stored in an ice bath. P-Na ₂ 0 ₃ S ₂ : Sample preserved with 3 mg Na ₂ 0 ₃ S ₂ /40 ml and stored at room temperature. | | | | | | | |
| CERTIFICATE(S) OF SAMPLE RECEIPT | | | | | | | |
| I (we) certify that this sample was transferred fromto | | | | | | | |
| at (location)on | | | | | | | |
| (date & time) and that the statements in this block are correct. | | | | | | | |
| Disposition of Sample Seal(s) Intact: Yes 🗌 No 🗍 . | | | | | | | |
| Signature(s) | | | | | | | |
| I (we) certify that this sample was transferred fromto | | | | | | | |
| at (location)on | | | | | | | |
| (date & time) and that the statements in this block are correct. | | | | | | | |
| Disposition of Sample Seal(s) Intact: Yes \(\Bar{\cup} \) No \(\Bar{\cup} \) . | | | | | | | |
| Signature(s) | | | | | | | |

HNALYSES REQUESTED

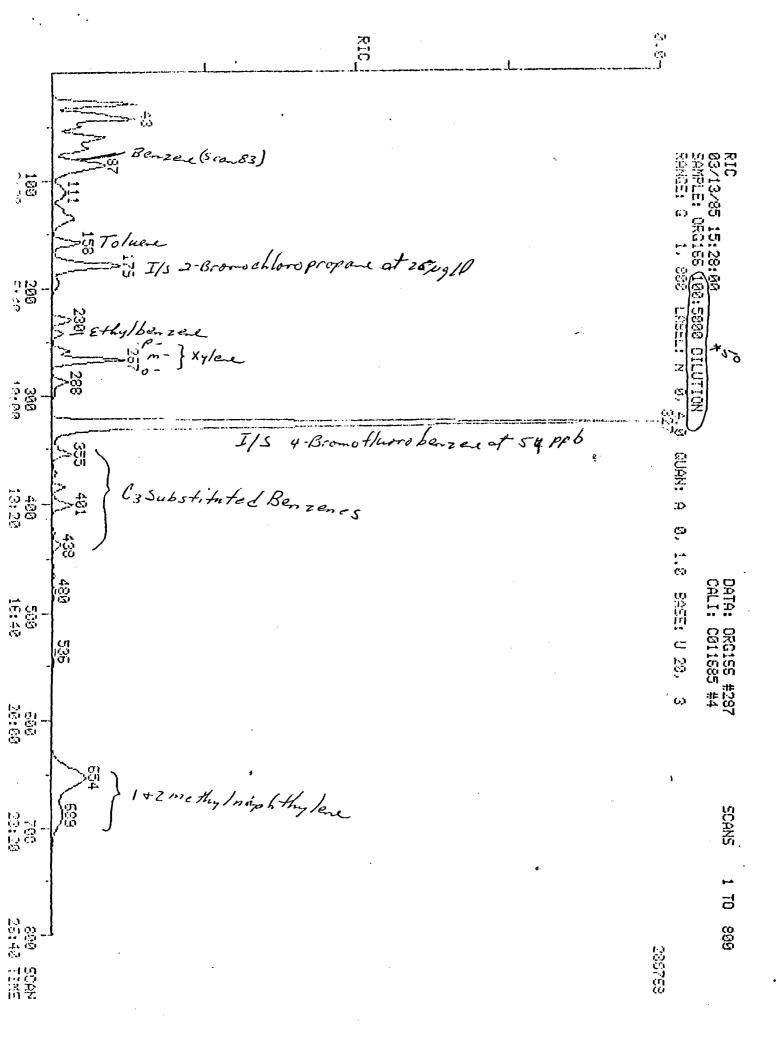
PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPONED. REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED. QUALITATIVE UANTITATIV **EXTRACTABLE** PURGEABLE SCREENS **SCREENS** ALIPHATIC HYDROCARBON SCREEN ALIPHATIC HYDROCARBONS . AROMATIC HYDROCARBON SCREEN CHLORINATED HYDROCARBON PESTICIDES HALOCENATED HYDROCARBON SCREEN CHLOROPHENOXY ACID HERBICIDES GAS CHROMATOGRAPH/MASS SPECTROMETER HYDROCARBON FUEL SCREEN ORGANOPHOSPHATE PESTICIDES POLYCHLORINATED BIPHENYLS (PCB's) POLYNUCLEAR AROMATIC HYDROCARBONS TRIAZINE HERBICIDES SPECIFIC COMPOUNDS SPECIFIC COMPOUNDS REMARKS: ANALYTICAL RESULTS COMPOUND COMPOUND [PPB] [PPB] GC/Ms Result Total p- Xylen 7/
m- Xylen 1341
o- Xylen 173 * DETECTION LIMIT 50ppb

REMARKS: Aliphatic compounds, 3 combon substituted benzenes and
1- and 2-methylnophthylen were also detected but not quantitated. CERTIFICATE OF ANALYTICAL PERSONNEL Seal(s) Intact: Yes NO x. Seal(s) broken by: date:
I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 3/13/15

Analyst's signature: 1 Meyer herry

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature:



M.M. SCIENTIFIC LABORATORY DIVISION QUANTITATION REPORT FILE: ORGIGA

DATA: URG165. 13

03/13/85 15: 20: 00

SAMPLE: ORG166 100: 5000 DILUTION

SUBMITTED DY: 1010

ANALYST: REM

ANOUNT=AREA (HGHT) * REF. AMNTZ (REF. AREA (HGHT) * RESP. FACT)

RESP. FAC. FROM LIDRARY ENTRY

NO . NAME

1 I/S (4-FLOUROBROMOBENZENE)

2 I/S (2-BROMO-1-CHLOROPROPANE)

3 BENZENE

4 1,2-DICHLORDETHANE

5 TOLUENE

6 1, 2-DIBROHOE HANE

7 ETHYLBENZENE

8 'P-XYLEMI-

9 M-XYLENE

10 O-XYLENI-

| 140 | MZE | SCAN | TIME | REF | HRT | METH | ARFA (HGHT) | AMOUNT | TUT *50 |
|-----|-----|-------|---------------|-----|--------|------|-----------------|--------------|-----------------|
| 1 | 174 | 327 | 10:54 | 1 | 1.000 | V BB | 39 7879. | 54, 210 UNAL | 57. 45 I/Sal 5 |
| 22 | 77 | 177 | 5: 58 | 1 | 0.547 | A BB | 131185 | 21,799,0071. | 23. 91 J/sat 29 |
| 3 | 78 | 83 | a: 46 | 1 | 0. 254 | A BB | 23994. | 1. 904 USZL | 2.09 104 |
| 4 | NOT | FOUND | | | | | | | • |
| 5 | 91 | 150 | 5:16 | 1 | 0.483 | V RB | 3 6797. | 2. 735 Uc/L | 3.00 137 |
| 6 | NOT | FOUND | | | | | | | • |
| 7 | 91 | 242 | 8: 0 4 | 1 | 0.740 | A BB | 12327. | 0.010 U0/L | 0.89 40 |
| B | 91 | 258 | 3: 36 | 1 | 0. 789 | A BV | 14214. | 1, 429 USZL | 1.57 71 |
| 9 | 91 | 267 | 8: 54 | 1 | 0.817 | A VB | 69713. | 6, 828 UOZL | 7.49 341 |
| 10 | 91 | 588 | 7:36 | 1 | 0. 881 | A BB | 15455. | 1.467 UGZL | 1.61 73 |
| | | | | | | | | | |

This is a set of compounds are look for in gasoline comtomination of water coses.

UWNER CUPT SAMPLE NO. 6046 SAMPLE LOCATION DUNCAN FIELD PITH ZDATE COLLECTED_ 2-25-85 DATE RECEIVED Z-26-85 DON PAYNE COLLECTED BY___ DATE OF FINAL ANALYSIS 3-29-85 FHS. ADDRESS. TECHNICIAN 13 RESULTS METHOD mg/l TEST **PARAMETER** ALKALINITY CO3 8.70/ HCO3 15 73TITRAMETRIC 1,221.0 mg/e Caros 10.0 mg/e (a (0775-200 ,20 TITRAMETRIC OR AA CALCIUM 3.45 TITRAMETRIC CHLORIDE 122.5 Male Cl. TITRAMETRIC 500 TOTAL HARDNESS 20.0 myle Cecos ,20 CALCULATED OR AA MAGNESIUM 9.8 2.4 mgk mg SPECTROPHOTOMETRIC OR AA 0.05 MANGANESE IRON SPECTROPHOTOMETRIC OR AA 0.3 ELECTRODE 8.7 @ ZOC 6.5-8.5 рН **SPECTROPHOTOMETRIC** PHOSPHATE 1000-2000 ,04 FLAME PHOTOMETER POTASSIUM 1.5 mgle K FLAME PHOTOMETER 791.2 make Na 1465 1 SODIUM 34.4 TITRAMETRIC tubidity 250 223.0 Myle 304 SULFATE 4.64 1,701.5 mg/c Ca(C690 **ELECTRODE** TOTAL DISSOLVED SOLIDS TURBIDITY **NEPHELOMETER** FLUORIDE ELECTRODE 1.4 3-21-85 DATE OUT ADDRESS_ TECHNICIAN. PARAMETER METHOD TEST MC **ARSENIC** ATOMIC ABSORPTION 0.05 **BARIUM** ATOMIC ABSORPTION 1.0 **CADMIUM** ATOMIC ABSORPTION 0.01 CHROMIUM ATOMIC ABSORPTION 0.05 IRON ATOMIC ABSORPTION N/A LEAD ATOMIC ABSORPTION 0.05 MANGANESE ATOMIC ABSORPTION N/A MERCURY FLAMELESS ATOMIC ABSORPTION 0.002 SELENIUM ATOMIC ABSORPTION 0.01 SILVER 0.05 ATOMIC ABSORPTION 1.95 mg le NO3-N NITRATE (AsN) CADMIUM REDUCTION 10.0 **FLUORIDE** ELECTRODE 1.4 FORM NO. 5460 (P) M **REV 8-83** DATE RECEIVED COLLECTED BY_ DATE OUT 3-29-85 ADDRESS_ TECHNICIAN 1-154 PARAMETER METHOD RESULTS ARSENIC MCE ATOMIC ABSORPTION - 23/5 BARIUM ATOMIC ABSORPTION 0.05 CADMIUM 2636 1.0 ATOMIC ABSORPTION 10026 **CHROMIUM** ATOMIC ABSORPTION 0.01 0327 IRON ATOMIC ABSORPTION 0.05 LEAD ATOMIC ABSORPTION N/A .0451 MANGANESE 0.05 ATOMIC ABSORPTION MERCURY FLAMELESS ATOMIC ABSORPTION N/A 4.002 SELENIUM ATOMIC ABSORPTION 0.002 11745 SILVER ATOMIC ABSORPTION 0.01 NITRATE (AsN) 0099 CADMIUM REDUCTION 0.05 FLUORIDE 10.0 ELECTRODE

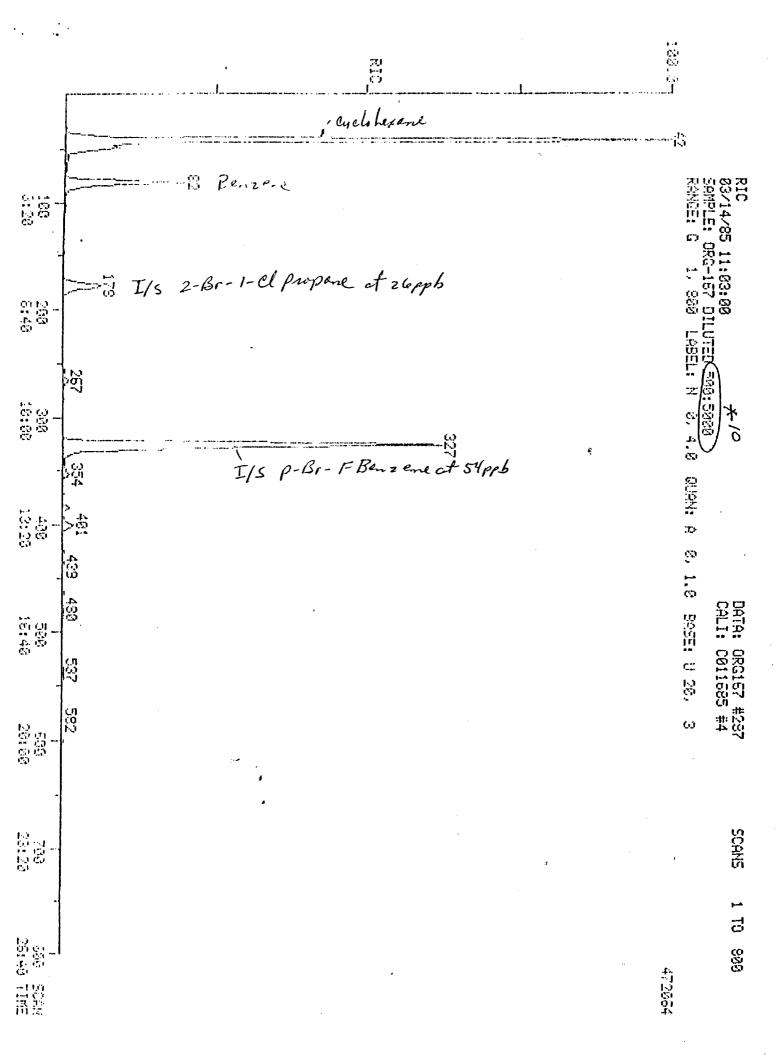
FORM NO. 5460 (P) M

REV 8-83

1.4

| REPORT TO: | LABORATORY |
|--|---|
| | LAB NUMBER ORG-167-H 2/27/85 - 0167-B Users Code No. CULLECTIVELY REFERRED TO AS "SAMPLE". |
| | 2/27/85 |
| " ENVIRONMENT | - 0167 -B |
| ALL CONTAINERS WHICH THIS FORM ACCOMPANIES AKE | USERS CODE NO. |
| | |
| Sample Type: Water Soil Other | LD PERSONNEL |
| Water Supply and/or Code No. PM#3 | |
| City & County Phylan B.L FIELD | |
| · · · · · · · · · · · · · · · · · · · | By (name) M. Zanav, D. Payne |
| Collected (date & time) <u>8502-25//30</u> pH=; Conductivity=umho/cm at | C; Chlorine Residual= 0 |
| Dissolved Oxygen= mg/1; Alkalinity= Sampling Location, Methods & Remarks (i.e. odo | |
| Sampling Location, Methods & Remarks (i.e. odo | rs etc.) |
| cyclohe | exame preservative |
| · · | ′ (|
| I certify that the statements in this block ac analyses, observations and activities. Signed I certify that I witnessed these field analyse with the statements in this block. Signed | s, observations and activities and concu |
| Method of Shipment to Laboratory THIS FORM ACCOMPANIES septum vials with te specimen; duplicate; tri and amber glass jug(s) with teflon-lined and other container(s) (describe) Containers are marked as follows to indicate p NP: No preservation; sample stored at P-ICE: Sample stored in an ice bath. P-Na ₂ O ₃ S ₂ : Sample preserved with 3 mg Na ₂ O ₃ S | plicate ; blank(s) cap(s) identified as identified as reservation (circle): room temperature (~20°C). |
| CERTIFICATE(S) OF | SAMPLE RECEIPT |
| I (we) certify that this sample was transferred | d fromto |
| | on)on |
| (date & time) and that the | |
| Disposition of Sample | . Seal(s) Intact: Yes□ No□ . |
| Signature(s) | |
| l (we) certify that this sample was transferred | d from to |
| | n)on |
| (date & time) and that the | |
| Disposition of Sample | |
| Signature(s) | |
| 3 19 10 10 10 10 10 10 10 | |

| | | | | | ATE T | AB. No.: ORG- /67 THE TYPE OF ANALYTICAL SCREEN SUSPECTED OR REQUIRED. | S | | |
|--|---|---|--------------------|------------------------------|--|--|----------------|--|--|
| ANAMES AND ANTITATIVE X QUANTITATIVE | GAS CHROMATOGRAPH/MASSPECIFIC COM | ON SCREEN N SCREEN RBON SCREEN ASS SPECTROMETER | | QUALITATIVE | QUANTITATIVE | EXTRACTABLE SCREENS ALIPHATIC HYDROCARBONS CHLORINATED HYDROCARBON PE CHLOROPHENOXY ACID HERBICI HYDROCARBON FUEL SCREEN ORGANOPHOSPHATE PESTICIDES POLYCHLORINATED BIPHENYLS POLYNUCLEAR AROMATIC HYDRO TRIAZINE HERBICIDES SPECIFIC COMPOUNDS | DES (PCB's) | | |
| | | NOLVETCOL | | | | T.C. | | | |
| ANALYTICAL COMPOUND [PPB] GC/MS Pargeables Cyclohexano (Prisonaline) Benzeni 226 p-Xylene 3 m-Xylene 9 | | | | · | | POUND [PPI | 33 | | |
| . 7 | REMARKS: Some 3 carbon Substituted benzenes were also described in not quartitated | | | | | | | | |
| I certi sample on this Date(s) I certi | Intact: Yes NO X Ify that I followed staunless otherwise noted page accurately reflected of analysis: 3//4/ | andard laboratory I and that the state of the analytical Analys and concur with | n at 1 t' | by: croce emen rest s si the | edure its i ilts gnat anal | date: es on handling and analysis of In this block and the analyti for this sample. Eure: **Market** Lytical results/for this samp | cal data | | |



W. M. SCIENTIFIC LABORATORY DIVISION RUNNTITATION REPORT . FILE: ORGIST

DATA: OR0167.11 03714785 11:00:00

SAMPLE: DRG-IGT DILUTED 500: 5000

SUBHITTED BY: 1-(1) ANALYST: RFM

AMOUNT=AREA(HGH) * REF. AMNT/(REF. AREA(HGHT)* RESP. FACT)

RESP. FAC. FROM LIBRARY ENTRY

NO NAME

- 1 I/S (4-1-LOPHOBROMOBENZENE)
- 2 I/S (2-HROMO-1-CHLOROPROPANE)
- 3 BEMZENE
- 4 1, 2-DICHLERUE THANE
- 5 TOLUENS
- 6 1, 2-DIPROMOETHANE
- 7 ETHYLBENZUME
- 8 P-XYLEMI
- 9 M-XYLENE
- 10 D-XYLENE

| | | | | | | | | | | 31 |
|-----|-----|-------|---------------|-----|--------|------|-------------|--------------|--------|-----|
| CH4 | M/E | SCAN | TIME | REF | RRT | METH | AREA (HOHT) | ANDUNT | ZTOT | *10 |
| 1 | 174 | 327 | 10:54 | 1 | 1,000 | A BB | 407671. | 54. 210 UO/L | 56. 06 | |
| 5 | 77 | 170 | 5: 56 | 1 | 0.544 | A BB | 119718. | 19, 416 UG/L | 20.08 | |
| 3 | 78 | 85 | 유: 44 | 1 | 0. 251 | A BB | 281330. | 21. 780 UG/L | 22, 53 | 220 |
| 4 | NOT | FOUND | | | | | | | | |
| 5 | NOT | FOUND | | | | | | | | |
| 6 | NOT | FOUND | | | | | | | | |
| 7 | 91 | 241 | G: 0 2 | 1 | 0.737 | A BB | 1134. | 0. 076 UCZL | 0.08 | |
| 83 | 91 | 250 | 8: 36 | 1 | 0. 789 | A BV | 3041. | 0. 278 UC/L | 0.31 | 3 |
| 9 | 91 | 237 | H: 54 | 1 | 0.817 | A VB | 7657. | 0. 723 UG/L | 0. 75 | G. |
| 10 | NOT | FOUND | | | | | | | | ŧ |

IVAVAJU INIDAL UTILITY AUTHUNITY

| ••• | 1047 | 117117100 71111 | OWNER COPY | | \iii |
|--------|-----------------------------|-----------------|----------------|-----------------|---------------------------------------|
| SAMPLE | ELOCATION DUNCAN | FIELD PH 3 | DATE COLLECTED | 2-25-85 | |
| DATE 0 | FORWER 7-76-85 | | COLLECTED BY_ | DON PAY | NE |
| DATE O | F FINAL ANALYSIS 3-29 | -&S· | ADDRESS | IHS | · · · · · · · · · · · · · · · · · · · |
| TECHN | ICIAN /13 | | | | |
| TEST | PARAMETER May | METHO | | RESULTS | mg/l |
| | ALKALINITY 02 16 3/11/6: 17 | Z TITRAMETRIC | / .; | 201.0 male cull | 03 |

| TEST ! | PARAMETE | Ames. | METHOD | RESULIS | ingn |
|--------|---------------------|-------|--------------------------|-------------------|------------------|
| V | ALKALINITY 03 15.34 | | 3TITRAMETRIC | 1,701.0 maje culo | 3 |
| | CALCIUM | .32 | TITBAMEIRIC OR AA | 16.0 Myle cally | 75-200 |
| | CHLORIDE | 5.62 | TITRAMETRIC | 199.5 mode CI | 250 |
| | TOTAL HARDNESS | | TITRAMETRIC | 56.0 myle call | 3 ⁵⁰⁰ |
| - | MAGNESIUM | .80 | CALCULATED OR AA | 9.7 moje (2003 | |
| | MANGANESE | | SPECTROPHOTOMETRIC OR AA | | 0.05 |
| | IRON | | SPECTROPHOTOMETRIC OR AA | | 0.3 |
| | pH | | ELECTRODE | 7.7 e 20c | 6.5-8.5 |
| | PHOSPHATE | | SPECTROPHOTOMETRIC | | |
| | POTASSIUM | .04 | FLAME PHOTOMETER | 1.5 mg/e K | 1000-2000 |
| Ť | SODIUM | 30.3 | FLAME PHOTOMETER | 696.9 male Na | |
| | SULFATE | 7.64 | TITRAMETRIC -perbidity | 367.0 mg/e Suy | 250 |
| | TOTAL DISSOLVED SO | DLIDS | ELECTRODE | 1,379.6 myle Call | 500 |
| | TURBIDITY | | NEPHELOMETER | | |
| | FLUORIDE | | ELECTRODE | | 1.4 |

DATE RECEIVED _____ COLLECTED BY_____ DATE OUT 3-39-85 _____ ADDRESS___

TECHNICIAN - 1/1

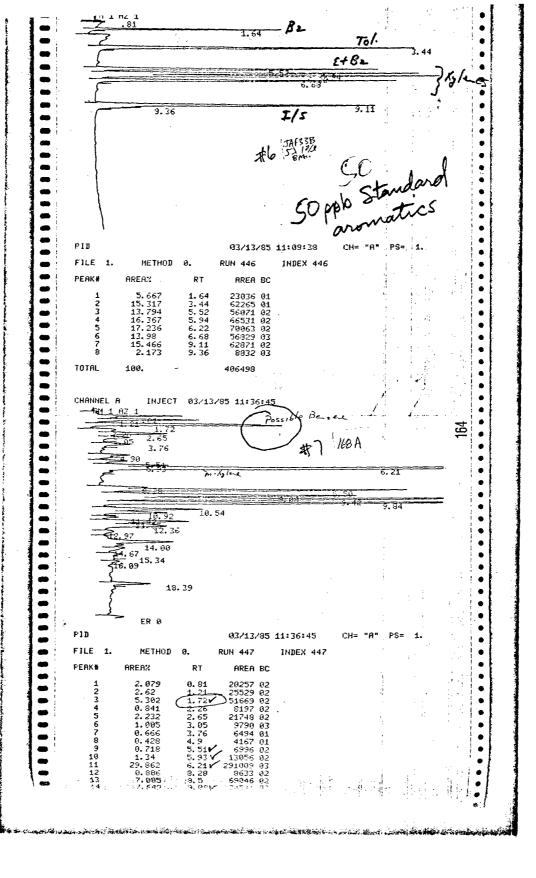
| EST | PARAMETER | i METHOD | RESULTS | MCL |
|-------|---------------|-----------------------------|---------|------|
| X | ARSENIC | ATOMIC ABSORPTION | . 2404 | 0.05 |
| X | BARIUM | ATOMIC ABSORPTION | .5385 | 1.0 |
| X | CADMIUM | ATOMIC ABSORPTION | | 0.01 |
| X | CHROMIUM | ATOMIC ABSORPTION | .034 | 0.05 |
| | IRON | ATOMIC ABSORPTION | | N/A |
| X | LEAD | ATOMIC ABSORPTION | 04.35 | 0.05 |
| | MANGANESE | ATOMIC ABSORPTION | | N/A |
| | MERCURY | FLAMELESS ATOMIC ABSORPTION | 2.002 | 0.00 |
| X | SELENIUM | ATOMIC ABSORPTION | .0810 | 0.0 |
| X | SILVER | ATOMIC ABSORPTION | .0052 | 0.0 |
| | NITRATE (AsN) | CADMIUM REDUCTION | | 10.0 |
| | FLUORIDE | ELECTRODE | | 1.4 |
| ON MF |). 5460 P M | | · | RE |

DATE OUT 3-31-85 ADDRESS THS

| TEST | METHOD | RESULTS COM | MCE. |
|---------------------|-----------------------------|-----------------|----------|
| ARSENIC | ATOMIC ABSORPTION | | 0.05 |
| BARIUM | ATOMIC ABSORPTION | | 1.0 |
| CADMIUM | ATOMIC ABSORPTION | _ | 0.01 |
| CHROMIUM | ATOMIC ABSORPTION | | 0.05 |
| IRON | ATOMIC ABSORPTION | | N/A |
| LEAD | ATOMIC ABSORPTION | | 0.05 |
| MANGANESE | ATOMIC ABSORPTION | | N/A |
| MERCURY | FLAMELESS ATOMIC ABSORPTION | | 0.002 |
| SELENIUM | ATOMIC ABSORPTION | | 0.01 |
| SHEVER | ATOMIC ABSORPTION | | 0.05 |
| NITRATE (ASN) | CADMIUM REDUCTION | 10.9 mg 6 NO3-N | 10.0 |
| FLUORIDE | ELECTRODE | | 1.4 |
| FORM NO. 5460 (P) M | | | REV 8.83 |

| REPORT TO: | MASAD ZAMA | אח | LABORATORY STATE LAB LAB NUMBER JRG - 168 - FT 2/27/85 | <u> </u> |
|--|--|------------------------------------|--|-----------|
| حبللت | NAV. BYATER | RESOURCES Div | LAR NUMBER 3 RG - 168 - F | |
| المراجع المراج | P.O. BOX 13 | 74 85-011 | 2/27/85 | |
| H ENVIRONMENT | WINDEN ROCK | AZ 865. | | |
| ALL CONTAIN | | | .D Users Code No. ECTIVELY REFERRED TO AS "SAMPLE". | |
| | | | | |
| Sample Type | : Water Soil | RTIFICATE OF FIELD PEI Other | COUNTEL | |
| Water Suppl | y and/or Code No. | PIT 144 | | |
| City & Coun | ty Duncan Oi | L FIELD, SAN | JHAN COUNTY | |
| Collected { | date & time) 850 | 225/200 By | (name) Zaman M, Pay | ne |
| pH=; | Conductivity= | umho/cm at | °C; Chlorine Residual= | |
| | | | ; Flow Rate= | |
| Sampling Lo | | | | |
| | yelo | hexane preservat | w | |
| | V | 1 | | |
| | | | ely reflect the results of my fie | 1 d |
| | bservations and act hat I witnessed the | | servations and activities and con- | CUY |
| | atements in this bl | | | • |
| Method of S | hipment to Laborato | ry | | |
| lenecimen | : dunlicate | : triplicat | lined discs identified as: te; blank(s) | |
| and am | ber glass jug(s) wi | th teflon-lined cap(s) | identified as identified as vation (circle): | , |
| Containers | are marked as follow | ws to indicate preserv | vation (circle): | • |
| NP: | No preservation; | sample stored at room an ice bath. | temperature (~20°C). | |
| P-Na ₂ O ₃ S ₂ : | Sample preserved | with 3 mg $Na_2O_3S_2/40$ m | and stored at room temperature. | |
| <u> </u> | | | | |
| I (we) cert | CER ify that this sampl | TIFICATE(S) OF SAMPLE | | to |
| ("") 00" | | | | on |
| (date & time | | | ements in this block are correct. | |
| | | | Seal(s) Intact: Yes \square No \square . | |
| | | • 3 | | • |
| | | | | L- |
| i (we) cert | | | | to |
| (date & time | | | ents in this block are correct. | on |
| | of Sample | | eal(s) Intact: Yes \(\Pi \) No \(\Pi \). | |
| DISPOSICION | יו שמוויונ | | caila) Turarre 162 mi 140 mi . | |

Signature(s)



NAVAJO TRIBAL UTILITY AUTHORITY

| | ENO. 6048 | OWNER CO | | | | | | |
|---|--------------------------------|--------------------------|------------------|--------------|--|--|--|--|
| SAMPL | E NO. | CAR DILL | 7-75-85 | | | | | |
| SAMPLE LOCATION DUNCEN FIELD P.+ 4 DATE COLLECTED Z-25-85 | | | | | | | | |
| DATE F | RECEIVED Z-ZL-8 | COLLECTED I | BY DON PAY | <u>ue</u> | | | | |
| DATE C | of final analysis $3-3$ | 9-85 ADDRESS_ | 7Hs | | | | | |
| TECHN | ICIAN B Mes. | | | | | | | |
| TEST | PARAMETER 0 | METHOD | RESULTS | mg/l | | | | |
| | _ ALKALINITY Ctz 2.23, HCO3 16 | 44TRAMETRIC | 734.5 mg/e (a(c) | } | | | | |
| | CALCIUM 1.76 | TITRAMETRIC OR AA | 88.1 mg/e (400) | 75-200 | | | | |
| | CHLORIDE 1.77 | TITRAMETRIC | 63.0 myle c1 | 250 | | | | |
| | TOTAL HARDNESS | TITRAMETRIC | 108.0 mg/2 Cal | O\$00 | | | | |
| | MAGNESIUM .40 | CALCULATED OR AA | 4.8 male may | | | | | |
| | MANGANESE | SPECTROPHOTOMETRIC OR AA | | 0.05 | | | | |
| | IRON | SPECTROPHOTOMETRIC OR AA | | 0.3 | | | | |
| <u> </u> | рн | ELECTRODE | 7.6 @ 20C | 6.5-8.5 | | | | |
| | PHOSPHATE | SPECTROPHOTOMETRIC | | | | | | |
| | POTASSIUM . DL | FLAME PHOTOMETER | 2.3 mg/e K | 1000-2000 | | | | |
| | - SODIUM /3.9 | FLAME PHOTOMETER | 319.7 mg/ Na | | | | | |
| | SULFATE (.39 | TITRAMETRIC - Purbility | 67.0 mgle 504 | 250 | | | | |
| سا | TOTAL DISSOLVED SOLIDS | ELECTRODE | 603.8 m/R Calo | 3 500 | | | | |
| | TURBIDITY | NEPHELOMETER | | | | | | |

ELECTRODE

DATE OUT 3-29-85

ADDRESS_

FLUORIDE

| EST | PARAMETER | МЕТНОВ | RESULTS | The AFM CIPE |
|-------|---------------|-----------------------------|---------|--------------|
| X | ARSENIC | ATOMIC ABSORPTION | ,1451 | 0.05 |
| X | BARIUM | ATOMIC ABSORPTION | 8533 | 1.0 |
| X | CADMIUM | ATOMIC ABSORPTION | 8600. | 0.01 |
| X | СНВОМІИМ | ATOMIC ABSORPTION | ,0157 | 0.05 |
| | IRON | ATOMIC ABSORPTION | | N/A |
| X | LEAD | ATOMIC ABSORPTION | .1475 | 0.05 |
| | MANGANESE | ATOMIC ABSORPTION | | N/A |
| + | MERCURY | FLAMELESS ATOMIC ABSORPTION | 4.002 | 0.002 |
| X | SELENIUM | ATOMIC ABSORPTION | .0968 | 0.01 |
| X | SILVER | ATOMIC ABSORPTION | 4.001 | 0.05 |
| | NITRATE (AsN) | CADMIUM REDUCTION | | 10.0 |
| | FLUORIDE | ELECTRODE | | 1.4 |
| BM NO | 5460 P M | | | REV 8-8 |

FORM NO. 5460 (P) M

1.4

DATE OUT 3-74-85

HS **ADDRESS**

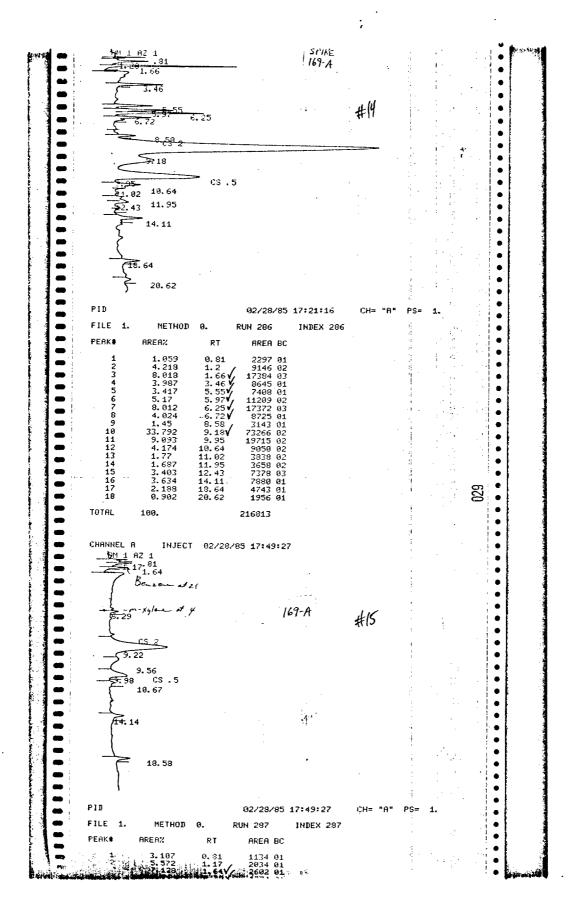
TECHNICIAN_ RESULTS METHOD PARAMETER 0.05 ATOMIC ABSORPTION ARSENIC 1.0 ATOMIC ABSORPTION BARIUM 0.01 ATOMIC ABSORPTION **CADMIUM** 0.05 ATOMIC ABSORPTION CHROMIUM N/A ATOMIC ABSORPTION IRON 0.05 ATOMIC ABSORPTION LEAD N/A ATOMIC ABSORPTION MANGANESE 0.002 FLAMELESS ATOMIC ABSORPTION MERCURY 0.01 ATOMIC ABSORPTION SELENIUM 0.05 ATOMIC ABSORPTION SILVER 10.0 120.0 male NO) - N Probe CADMIUM REDUCTION NITRATE (AsN) 1.4 ELECTRODE FLUORIDE REV 8-83

FORM NO. 5460 (P) M

| | LAB NUMBER ORG-169-17 2127/85 |
|---|--|
| ALL CONTAINERS WHICH THIS FORM ACCOMPANIES | 85-0169 -B Users Code No. Y REFERRED TO AS "SAMPLE". |
| CERTIFICATE OF | FIFI D PERSONNEL |
| Sample Type: Water Soil Other | |
| Water Supply and/or Code No. PIT #5 | |
| City & County Dunkan O'l FIELD, | SAN JUAN COUNTY, N.M. |
| Collected (date & time) 8502251200 | By (name) ZAMAN M. Payne |
| ph=unino/cin a | c; chiorine kesiduai- |
| Dissolved Oxygen= mg/1; Alkalinity= | ; Flow Rate= |
| Sampling Location, Methods & Remarks (i.e. | odors etc.) |
| Dissolved Oxygen= mg/1; Alkalinity= Sampling Location, Methods & Remarks (i.e. | reservatul i i |
| analyses, observations and activities. Sign | lyses, observations and activities and concur |
| Method of Shipment to Laboratory THIS FORM ACCOMPANIES septum vials with specimen; duplicate; and amber glass jug(s) with teflon-linand other container(s) (describe) Containers are marked as follows to indicate the servation; sample stored P-ICE: Sample stored in an ice bath. P-Na ₂ O ₃ S ₂ : Sample preserved with 3 mg Na ₂ | triplicate ; blank(s) , ned cap(s) identified as ; identified as ; te preservation (circle): |
| | |
| CERTIFICALE(S) I (we) certify that this sample was transfe | OF SAMPLE RECEIPT erred fromto |
| | cation) on |
| (date & time) and that | |
| Disposition of Sample | |
| Signature(s) | |
| | erred fromto. |
| | tion) on |
| (date & time) and that t | |
| Disposition of Sample | |
| Signature(s) | |

FUDÓUNTOKT

| | PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS | | | | | | |
|--------------|---|---|------------------|-------------|--------------|--|---|
| 1 | QUIR | | | | | SUSPECTED OR REQUIRE | |
| QUALITATIVE | | PURGEABLE SCREENS ALIPHATIC HYDROCARBON SCREEN AROMATIC HYDROCARBON SCREEN HALOGENATED HYDROCARBON SCREEN GAS CHROMATOGRAPH/MASS SPECTROMETER | | QUALITATIVE | QUANTITATIVE | EXTRACTAL SCREEN ALIPHATIC HYDROGAL CHLORINATED HYDROG CHLOROPHENOXY ACI HYDROCARBON FUEL ORGANOPHOSPHATE PER POLYCHLORINATED BE POLYNUCLEAR AROMA TRIAZINE HERBICLD | RBONS CARBON PESTICIDES D HERBICIDES SCREEN ESTICIDES LPHENYLS (PCB's) TIC HYDROCARBONS |
| | | SPECIFIC COMPOUNDS | | | | SPECIFIC COMP | POUNDS |
| | | | | | - | | |
| PEA | 1540 | | | 山 | | | |
| REU | MRKS | | | | | والمستوار والمستوار والمستوار والمالي والمستوار والمناور والمناور والمستواري والمستوار والمستوار والمستوارة | |
| | | A | NALYTICAL | RE | SUL | _TS | |
| | CON | 1POUND | [PPB] | T_{C} | OMI | POUND | [PPB] |
| | | enated prograties | Mondetected | | 7 | lugue | Thorne dilicted |
| 7 | len. | yene | 21 | | ette | of bennene | K NOD. |
| pn | eta | -Xyline | Lf. | | pri | in xylani- | N. D. (truce) |
| | | | | | 21/ | to xylene | N.D. |
| | | | | | | | |
| | | · · · · · · · · · · · · · · · · · · · | | | | | A war |
| F | FMA | RKS: S | + + 1/1 | | | ECTION LIMIT | (1) +42 × 1 + |
| 1 | 12.00 | coller kattle | rattagen in | de | 1 | co. Seven other | beels lote of |
| Gy | \widetilde{P}_{l} | D, | | کوری | <u> </u> | | T TENSIONAL ASSE |
| | | OI | Indicated on the | 1 - VIII - | | Widowy | |
| samp on t | CERTIFICATE OF ANALYTICAL PERSONNEL Seal(s) Intact: YesNO_X . Seal(s) broken by: date: I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample. Date(s) of analysis: 7.73.65 . Analyst's signature: 1.55.65 this sample and I certify that I have reviewed and concur with the analytical results for this sample and | | | | | | |
| with | i the | statements in this bl | ock Reviewers | efon | ature | ٠ . | |



•

WATER CHEMICAL ANALTOIS

NAVAJU I RIBAL UTILITY AUTHORITY

| | ENO. 6049 | Y | 46 | OWNER CO | PY | \ija/ |
|--------|-------------------|-----------|--------------------|-----------|-----------------|-------------------|
| | ENO. V | 10/2007 1 | PIELD PITS DA | | TED 2-25-85 | |
| SAMPL | E LOCATION | MONN P | TELD FITS DA | TE COLLEC | TED_C-C3 03 | |
| DATE R | ECEIVED | | | LLECTED B | Y DON PAYA | US |
| | F FINAL ANALYSIS | 3-29- | 85 AD | DRESS | IH5 | |
| TECHN | ICIAN 13 | mar- | | | | |
| TEST | PARAMET | ER 0 | METHOD | | RESULTS | mg/l |
| V | ALKALINITY (03 P | HLC3 2.4 | TITRAMETRIC | | 152,0 mg/e (OKO | 3 |
| | CALCIUM | 3.52 | TITRAMETRIC OR AA | | 1763 myle cad | J: 7 5-200 |
| | CHLORIDE | .34 | TITRAMETRIC / //4/ | 112.1 - | 12.1 mg/e c1 | 250 1/2 |
| ~ | TOTAL HARDNESS | | TITRAMETRIC | | 216.0 myle cal | C500 |
| L | MAGNESIUM | .80 | CALCULATED OR AA | 14 27 | 9.7 myle mg | # 3/2 × 1/1 |
| | MANGANESE | | SPECTROPHOTOMETRIC | OR AA | | 0.05 |
| | IRON | | SPECTROPHOTOMETRIC | OR AA | | 0.3 |
| - | рН | | ELECTRODE | | 7.90 ZCC | 6.5-8.5 |
| | PHOSPHATE | | SPECTROPHOTOMETRIC | | | |
| - | POTASSIUM | .02 | FLAME PHOTOMETER | | 0.70 mgk K. | 1000-2000 |
| - | SODIUM | 1.6 | FLAME PHOTOMETER | | 36.8 mule Na | y'n . 1, 12 ' |
| - | SULFATE | . 33 | TITRAMETRIC 116 | idity - | 15.8 Mg/2304 | 250 / |
| V | TOTAL DISSOLVED S | OLIDS | ELECTRODE | 7 | 234.3 mg/e (c) | 500 |
| | TURBIDITY | | NEPHELOMETER | | | |
| | FLUORIDE | | ELECTRODE | | | 1.4 |
| | | | | | | - |

PARAMETER METHOD RESULTS ARSENIC ATOMIC ABSORPTION 0.05 BARIUM ATOMIC ABSORPTION ,0545 1.0 CADMIUM ATOMIC ABSORPTION ,0012 0.01 CHROMIUM ATOMIC ABSORPTION 0.05 0091 IRON ATOMIC ABSORPTION N/A LEAD ATOMIC ABSORPTION .0193 0.05 MANGANESE ATOMIC ABSORPTION N/A

MERCURY FLAMELESS ATOMIC ABSORPTION 6.002 0.002 SELENIUM ATOMIC ABSORPTION ,0128 0.01 SILVER ATOMIC ABSORPTION 0.05 4.001 NITRATE (AsN) CADMIUM REDUCTION 10.0 FLUORIDE ELECTRODE 1.4

FORM NO. 5460 P M

REV 8-83

| TECHNICIAN | 13 | | | |
|------------|---------|-----------------------------|----------------------|--------------|
| | Merer | METHOD | RESULTS | MC MC |
| ARSENIC | | ATOMIC ABSORPTION | | 0.05 |
| BARIUM | | ATOMIC ABSORPTION | | 1.0 |
| CADMIU | М | ATOMIC ABSORPTION | | 0.01 |
| СНВОМІ | | ATOMIC ABSORPTION | | 0.05 |
| | OW | ATOMIC ABSORPTION | | N/A |
| · IRON | | ATOMIC ABSORPTION | | 0.05 |
| | | ATOMIC ABSORPTION | | N/A |
| MANGA | | FLAMELESS ATOMIC ABSORPTION | | 0.002 |
| MERCUF | | | | 0.01 |
| SELENIL | JM | ATOMIC ABSORPTION | | 0.05 |
| SHLVER | | ATOMIC ABSORPTION | 12 C 44 (0 410) - 41 | 10.0 |
| NITRATI | E (AsN) | CADMIUM REDUCTION | 2.5 pigle NO3-N | |
| FLUORII | DE | ELECTRODE | | 1.4 |

FORM NO. 5460 P M

REV B-8

| REPORT TO: LABORATORY | |
|---|------|
| LAB NUMBER ORG 170-185 85-0170 -B SLD Users Code No. | |
| ALL CONTAINERS WHICH THIS FORM ACCOMPANIES ARE COLLECTIVELY REFERRED TO AS "SAMPLE | |
| CERTIFICATE OF FIELD PERSONNEL | |
| Sample Type: Water Soil Other | |
| Water Supply and/or Code No. Pit #6 | |
| City & County DUNCAN OIL FIELD, SAN JUAN COUNTY, NOT | |
| Collected (date & time) (850225/1400) By (name) ZAMAN, M. | |
| City & County Duncay Oil FIELD, SAN JUAN COUNTY MY Collected (date & time) 850225 1400 By (name) ZAMAN, M. pH=; Conductivity=umho/cm at°C; Chlorine Residual= | |
| Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate= Sampling Location, Methods & Remarks (i.e. odors etc.) | |
| preserved w cyclohexane | |
| I certify that the statements in this block accurately reflect the results of my fanalyses, observations and activities. Signed I certify that I witnessed these field analyses, observations and activities and contains the statements in this block. Signed | 1 |
| Method of Shipment to Laboratory THIS FORM ACCOMPANIES septum vials with teflon-lined discs identified as: specimen ; duplicate ; triplicate ; blank(s) and amber glass jug(s) with teflon-lined cap(s) identified as and other container(s) (describe) identified as Containers are marked as follows to indicate preservation (circle): NP: No preservation; sample stored at room temperature (~20°C). P-ICE: Sample stored in an ice bath. P-Na ₂ 0 ₃ S ₂ : Sample préserved with 3 mg Na ₂ 0 ₃ S ₂ /40 ml and stored at room temperature | |
| CERTIFICATE(S) OF SAMPLE RECEIPT | |
| I (we) certify that this sample was transferred from | _ to |
| at (location) | _ on |
| (date & time) and that the statements in this block are correct | |
| Disposition of Sample Seal(s) Intact: Yes \(\sigma\) No \(\sigma\) | • |
| I (we) certify that this sample was transferred from | to |
| at (location) | |
| (date & time) and that the statements in this block are correct | |
| Disposition of Sample . Seal(s) Intact: Yes □ No □ | |

Signature(s)_

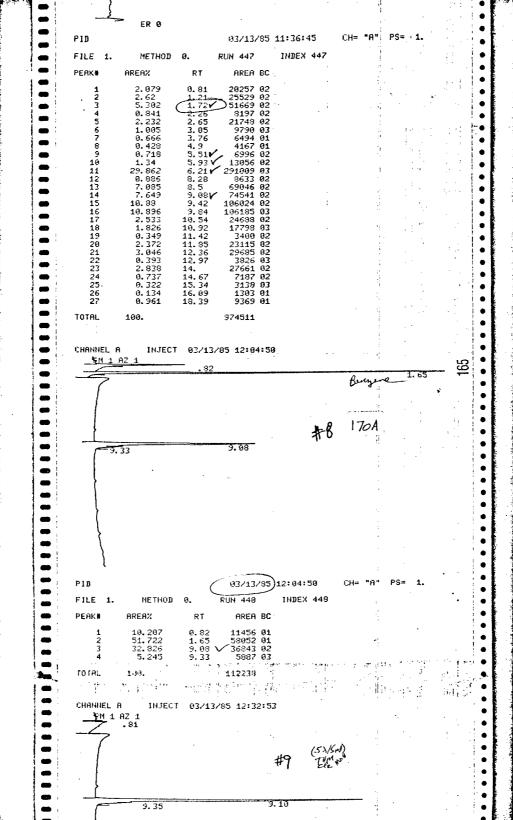
| PL | EASE | YSES REQUESTED CHECK THE APPROPRIATE | | | ATE | | |
|--|----------|---|-----------------|--|-------|------------------------------|---|
| | | PURGEABLE SCREENS ALIPHATIC HYDROCARBON SCREEN AROMATIC HYDROCARBON SCREEN HALOGENATED HYDROCARBON SCREEN GAS CHROMATOGRAPH/MASS SPECTROMETER | | | | | BONS ARBON PESTICIDES HERBICIDES CREEN STICIDES PHENYLS (PCB's) |
| | | SPECIFIC COMP | POUNDS | | | SPECIFIC COMP | |
| REM | ARKS | : | | | | | |
| | | | | | - | | |
| | · | A | NALYTICAL | RE | SUL | _TS | |
| | COI | 1POUND | [PPB] | | OMI | POUND | [PPB] |
| halogenited frigerbles vone detector lengence 100 | | | 1 1 | taluene Dividelce ethyl lenyone N.D.* para xylone N.D.* meta-xylone N.D.* orthoxylone N.D.* | | | N.D.X N.D.X N.D.X |
| R i- | EMA P | RKS: Simpleties I gallen jug lo | et takens. | -! | pre | Actor Limit | profile, but peak delecte |
| I ce | ertii | CI Intact: Yes NO X . Ty that I followed star Juless otherwise noted | dard laboratory | ı by <u>:</u> proc | edure | da es on handling and ana | |

on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 278/3/3/55 . Analyst's signature:

I certify that I have reviewed and concur with the analytical results for this sample and

with the statements in this block. Reviewers signature:



Signature(s)___

| REPORT TO: | Masud Zu Zaman | LABORATORY /19/8/3 |
|--|--|--|
| المسلم | P.O. Box 308, Window Rock | LAB NUMBER OP. 253 A, A |
| ALL CONTAIN | IVa vajo Nation (Arizona) 86515 IERS WILLH THIS FORM ACCOMPANIES ARE CO | J SLU Users Lode No. |
| Sample Type | CERTIFICATE OF FIELD Soil Other | PERSONNEL |
| Water Suppl | y and/or Code No | |
| City & Coun | ty Window Rock, Aring | 10na |
| Collected (| ty Window Rock, Aring date & time) 3/18/85 12.15px 1 | By (name) Zamin |
| pH=; | Conductivity=umho/cm at | °C; Chlorine Residual= |
| Dissolved O | xygen=mg/1; Alkalinity= | |
| Sampling Lo | xygen= mg/1; Alkalinity= cation, Methods & Remarks (i.e. odors Ouncan Wil Field | etc.) |
| | Nuncan ucu Tiera | , With Ho. |
| analyses, of I certify the structure of SI THIS FORM AND SPECIMEN AND AND AND AND AND AND AND AND AND AN | bservations and activities. Signed hat I witnessed these field analyses, atements in this block. Signed hipment to Laboratory CCOMPANIES & septum vials with tefle | on-lined discs identified as: icate; blank(s), p(s) identified as, identified as servation (circle): coom temperature (~20°C). |
| <u> </u> | CERTIFICATE(S) OF SAM | MPLE RECEIPT |
| I (we) cert | ify that this sample was transferred f | from to |
| | at (location) |) on |
| (date & time | e) and that the st | tatements in this block are correct. |
| Disposition | of Sample | Seal(s) Intact: Yes□ No□ . |
| Signature(s) |) | |
| I (we) certi | ify that this sample was transferred f | fromto |
| * | at (location) | |
| 1 | e)and that the sta | |
| | of Sample | |

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED. UALITATIVE QUALITATIVE QUANTITATIV PURGEABLE EXTRACTABLE **SCREENS** SCRFFNS ALTPHATIC HYDROCARBON SCREEN ALTPHATIC HYDROCARBONS AROMATIC HYDROCARBON SCREEN CHLORINATED HYDROCARBON PESTICIDES HALOGENATED HYDROCARBON SCREEN CHLOROPHENOXY ACTO HERBICIDES CAS CHROMATOGRAPH/MASS SPECTROMETER HYDROCARBON FUEL SCREEN ORGANOPHOSPHATE PESTICIDES POLYCHLORINATED BIPHENYLS (PCB's) POLYNUCLEAR AROMATIC HYDROCARBONS TRIAZINE HERBICIDES SPECIFIC COMPOUNDS SPECIFIC COMPOUNDS REMARKS: ANALYTICAL RESULTS COMPOUND [PPB] COMPOUND [BBB] 59.45 Numerous Czadly Substituted * DETECTION LIMIT Jug 11

REMARKS: No benzes or toluce detected

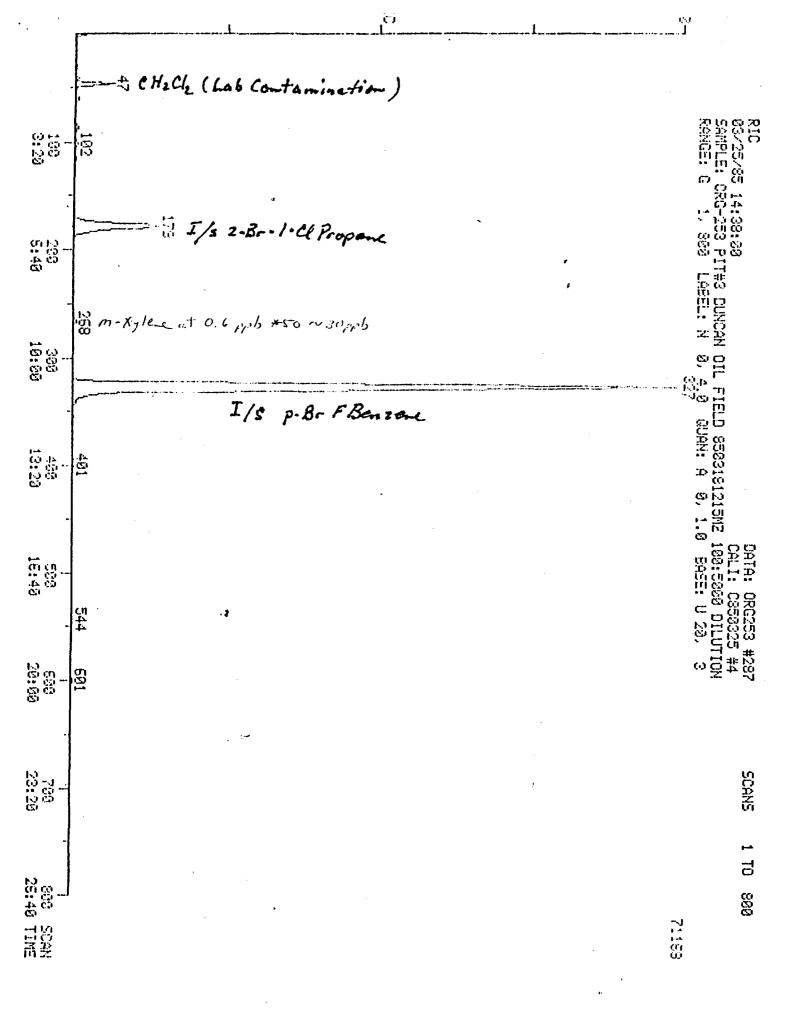
CERTIFICATE OF ANALYTICAL PERSONNEL

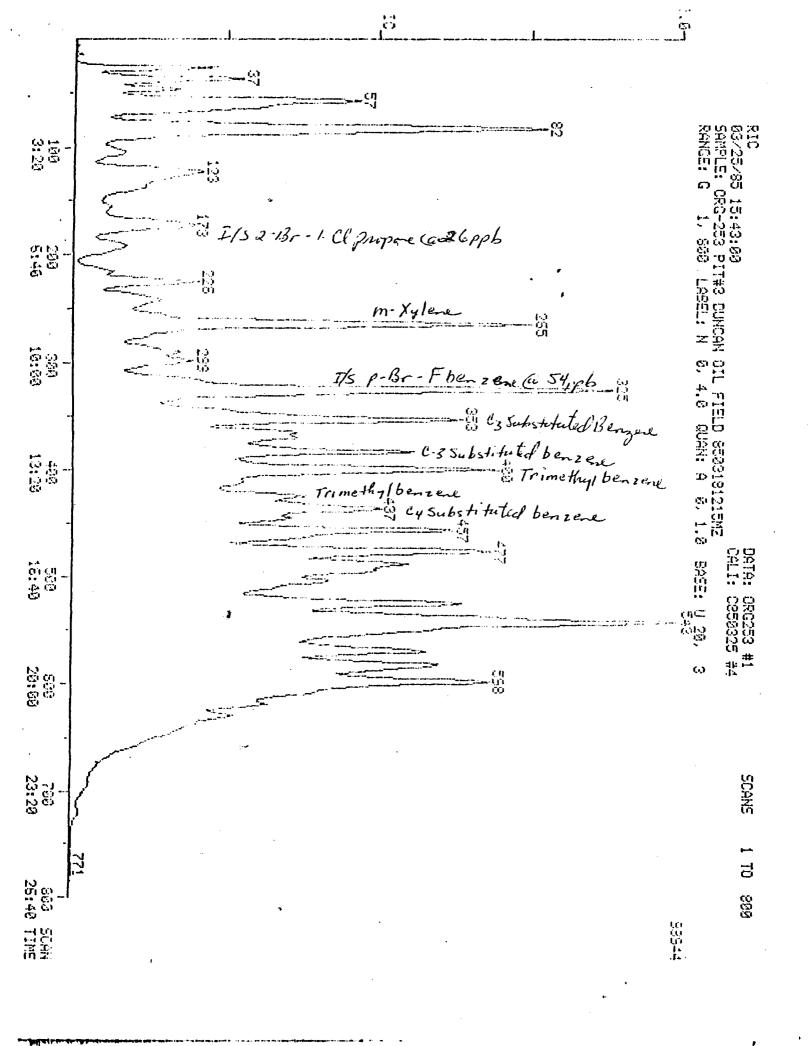
Seal(s) Intact: Yes NO X. Seal(s) broken by:

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 3/25-6/85 . Analyst's signature: / negative

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature:





N. M. SCIENTIFIC LABORATORY DIVISION QUANTITATION REPORT - FILE: ORG253

DATA: ORG253.TI 03/25/85 15:43:00

SAMPLE: ORG-250 PIT#3 DUNCÁN DIL FIELD 8503181215MZ

SUBMITTED BY: EID ANALYST: RM

AMOUNT≃AREA(HGHT) * REF. AMNT/(REF. AREA(HGHT)* RESP. FACT)

RESP. FAC. FROM LIBRARY ENTRY

| | ₹# T |
|----|-------------------------------|
| NO | NAME |
| 1 | I/S (4-FLOUROBROMOBENZENE) |
| 2 | IJS (2-BROMO-1-CHLOROPROPANE) |
| 3 | BENZENE |
| 4 | 1.2-DICHLOROETHANE |
| 5 | TOLUENE |
| 6 | 1.2-DIBROMOETHANE |
| 7 | ETHYLBENZENE |
| 8 | P-XYLENE |
| 9 | M-XYLENE |
| 10 | N-XVI ENG |

| NO | M/E | SCAN | TIME | REF | RRT | METH | | AREA(HGHT) | AMDUNT | XTOT . |
|-----|------|--------|-------------|-----|--------|------|---|------------|--------------|---------|
| 1 | 174 | 325 | 10:50 | 1 | 1.000 | A BB | | 97693. | 54. 210 UG/L | _ 36.85 |
| 5 | : 77 | 175 | 5: 50 | 1 | 0. 538 | A BB | • | 47707. | 32, 287 UG/L | . 21.95 |
| 3 | NOT | FOUND) | | | | | : | | | i |
| 4 | NOT | FOUND | | | | | | | | |
| 5 | NOT | FOUND | | | | | | | | |
| 6 | NOT | FOUND | | | | | | | | |
| 7 | 91 | 239 | 7:58 | 1 | 0. 735 | A BB | | 3365. | 0. 901 UG/L | 0.61 |
| 8 | NOT | FOUND | | | | | | | | |
| . 9 | 91 | 265 | 3:50 | 1 | 0.815 | A BB | , | 147865. | 58. 980 UG/L | 40.09 |
| 10 | 91 | 284 | 9: 28 | 1 | 0.874 | A BB | | 1922. | 0. 743 UG/L | 0.51 |

| , | | 3/./. |
|---|--|--|
| REPORT TO: | Masud Zu Zaman | LABORATORY 3/9/85 LAB NUMBER OR 254 A, C |
| الــ | Division of WaterResources | LAB NUMBER OR 254 A, B |
| | P.O. Bux 308 Window Rock | |
| H ENGHONMENT | Navajo Nation (Arizona) 86515 | CLD Haves Code No. |
| ALL CONTAIN | HERS WHICH THIS FORM ACCOMPANIES ARE CO | SLD Users Code No. OLLECTIVELY REFERRED TO AS "SAMPLE". |
| | CENTIFICATE OF CITIO | DEDCOMME |
| Sample Type | CERTIFICATE OF FIELD e: Water ☑ Soil ☐ Other | PERSONNEL |
| Water Suppl | ly and/or Code No | , |
| City & Coun | ity Window Kock Aring | |
| Collected (| (date & time) 3/18/85 1.10 plin 1 | By (name) Zaman |
| pH=; | Conductivity=umho/cm at | °C; Chlorine Residual= |
| Dissolved O |)xygen=mg/l; Alkalinity= | ; Flow Rate= |
| Sampling Lo | Oxygen= mg/1; Alkalinity= ocation, Methods & Remarks (i.e. odors) Suncal Ail Field. | broduced water pit |
| | Dimeal acci Tutto. | y |
| 1 | | |
| | hat the statements in this block accur | rately reflect the results of my field |
| lanalyses, o I certify t | bservations and activities. Signed hat I witnessed these field analyses, | observations and activities and concu |
| with the st | tatements in this block. Signed | |
| Method of S | hipment to LaboratoryCCOMPANIES Septum vials with teflo | w lined disea identified as |
| specimen | ; duplicate ; tripli | cate ; blank(s) |
| and am | ; duplicate ; tripli ber glass jug(s) with teflon-lined cap | (s) identified as |
| Containers | her container(s) (describe) are marked as follows to indicate pres | ervation (circle): |
| MP: | No preservation; sample stored at ro | om temperature (~20°C). |
| | Sample stored in an ice bath. | O ml and stored at room temperature |
| P-Na ₂ 0 ₃ S ₂ : | Sample preserved with 3 mg Ma2033274 | O ml and stored at room temperature. |
| | CERTIFICATE(S) OF SAM | PLE RECEIPT |
| I (we) cert | ify that this sample was transferred f | rom to |
| | at (location) | on |
| (date & time | e)and that the st | atements in this block are correct. |
| | of Sample | |
| Signature(s |) | |
| I (we) cert | ify that this sample was transferred f | |
| | at (location)_ | |
| (date & time | e) and that the sta | tements in this block are correct. |

Disposition of Sample______. Seal(s) Intact: Yes 🗆

Signature(s)___

No \square .

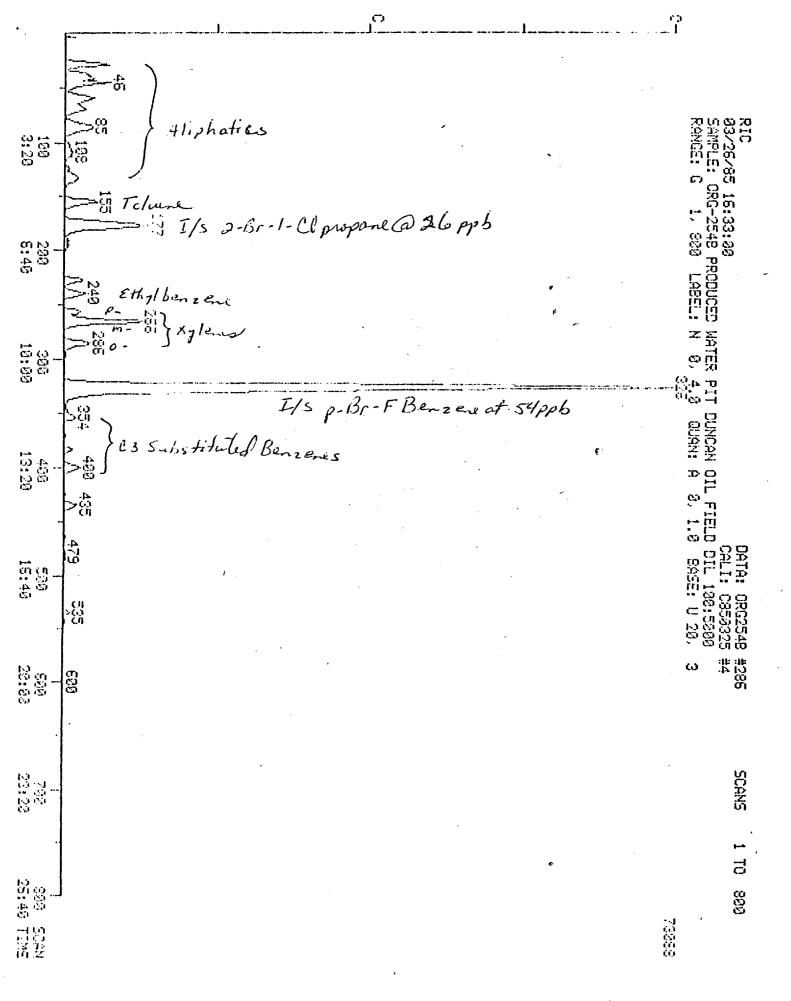
| l A | VAL. | YSES REQUESTED | | ***** | | AB. No.: ORG- | 254 | | |
|---|--|---|-------------------|-------------|--------------|---|-------------|--|--|
| P1. | EASE | CHECK THE APPROPRIATE | | | ATE 1 | THE TYPE OF ANALYTIC | CAL SCREENS | | |
| QUALITATIVE | QUANTITATIVE | PURGEA SCREE | | QUALITATIVE | QUANTITATIVE | EXTRACTA SCREEN | | | |
| | <u>Х</u> | ALIPHATIC HYDROCARBON SCREEN AROMATIC HYDROCARBON SCREEN HALOGENATED HYDROCARBON SCREEN CAS CHROMATOGRAPH/MASS SPECTROMETER | | | | ALIPHATIC HYDROCARBONS CHLORINATED HYDROCARBON PESTICIDE CHLOROPHENOXY ACID HERBICIDES HYDROCARBON FUEL SCREEN ORGANOPHOSPHATE PESTICIDES POLYCHLORINATED BIPHENYLS (PCB's) POLYNUCLEAR AROMATIC HYDROCARBONS TRIAZINE HERBICIDES | | | |
| | | SPECIFIC COM | POUNDS | | | SPECIFIC COM | POUNDS | | |
| | | | | | | | | | |
| KEN | ARKS | : | | | | | | | |
| | | F | NALYTICAL | RE: | SUL | .TS | | | |
| , | COM | 1POUND | [PPB] | c | OMF | POUND | [PPB] | | |
| Benzene less Than 50 ust (To I were , 180 Ethylbenzene 106 | | | | | | | | | |
| p-Xyler 80 m-Xyler 390 | | | | | | | | | |
| | <u>ئــــــــــــــــــــــــــــــــــــ</u> | y lene | 150 | - | | | | | |
| REMARKS: Some aliphatic compounds in the 6-8 contoning | | | | | | | | | |
| at about the 10 ppb range. | | | | | | | | | |
| | | | | | | | | | |
| | | C | ERTIFICATE OF ANA | LYTIC | AL P | ERSONNEL | | | |

Seal(s) Intact: Yes NO A. Seal(s) broken by:

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 3/25-6/95. Analyst's signature:

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature:



DATA: ORG2540.31 03/26/85 16:33:00

SAMPLE: ORG-254B PRODUCED WATER PIT DUNCAN DIL FIELD DIL 100:5000

SUBMITTED BY: EID ANALYST: RM

AMOUNT=AREA(HGHI) * REF. AMNT/(REF. AREA(HGHT)* RESP. FACT)
RESP. FAC. FROM LIBRARY ENTRY

NO NAME

- 1 I/S (4-FLOUROBRONOBENZENE)
- 2 I/S (2-BROMO-1-CHLOROPROPANE)
- 3 DENZENE
- 4 1,2-DICHLORUETHANE
- 5 TOLUENE
- 6 1,2-DIBROMUETHANE
- 7 ETHYLBENZENG
- 8 P-XYLENI-
- 9 M-XYLEMI:
- 10 O-XYLENE

| OM | M/E | SCAN | TUME | REF | RRT | метн | AREA (HOHT) | тилома | | %тот ⊁ 5 [©] |
|----|------|-------|-------|-----|--------|------|-------------|---------|-------|------------------------------|
| 1 | 174 | 326 | 10:52 | 1 | 1.000 | A BB | 100880. | 54, 210 | U071. | 5 3 . 17 |
| 5 | 77 | 177 | 5: 54 | 1 | 0.543 | A BB | 44646. | 29, 260 | UC/Ly | 28. 70 |
| 3 | NOT: | FOUND | | | | | | | | |
| 4 | NOT | FOUND | | | • | | | | | |
| 5 | 91 | 155 | 5:10 | 1 | 0.475 | A BB | 12727. | 3.712 | UGZL. | 3.64 180 |
| 6 | NOT | FOUND | | | | | | | | |
| 7 | 91 | 240 | ម: ០០ | 1 | 0. 736 | A BB | 8360. | 2. 170 | UGZŁ. | 2.13/06 |
| 8 | 91 | 257 | 8: 34 | 1 | 0. 788 | A BV | 4146. | 1. 644 | UGZI | 1.61 80 |
| 9 | 91 | 266 | 8: 52 | 1 | 0.816 | A VB | 20558. | 7. 941 | UGZL | 7.79 390 |
| 10 | 91 | 206 | 9:32 | 1 | 0. 877 | | 8063. | 3. 019 | UGZL. | 2.96 150 |

| 5 . | | | | • | |
|--|--|---|--|---------------------|-------------|
| PEDORT TO: | Masud UZ | Zaman | I ABORATORY | 3/18/85 OR 255 0 | |
| L | | Her Resources | | 2P-2550 | A C |
| | | | LAB NUMBER | on and. | 17 10 |
| ENVIRONMENT | P.O. Box 308 | vajoNatio~(AZ)86575 | _ | | |
| L | | | SLD users co | | |
| ALL CONTAIN | ERS WITCH 1115 FURN | 1 ACCOMPANIES ARE CO | ILLECTIVELY KEFEKKE | D TO AS "SAMPLE | • |
| Tuno | CE Soil | RTIFICATE OF FIELD | PERSONNEL | | |
| | | Other | | | |
| Water Supply | y and/or code No | Rock, Aring. | | | |
| City & count | ty Windon | 85 11, 45 lan B | | * | |
| Collected | date & time, ~//2/2 | 85 //14~WAD | y (name) | man | |
| | | umho/cm at | | | |
| Dissolved up Sampling Loc | cation, Methods & R | Alkalinity= Remarks (i.e. odors can Qil Lie | etc.) (Pik # 1 | ow Rate= | |
| | W 1 | mer year. | | | |
| analyses, ob I certify th | bservations and act hat I witnessed the | in this block accurativities. Signed ese field analyses, lock. Signed | observations and a | ctivities and co | |
| THIS FORM AC specimen amb amb oth Containers a | ; duplicate per glass jug(s) with the container(s) (deare marked as follow No. preservation: | th teflon-lined cap escribe) ws to indicate presonante stored at room ice bath. with 3 mg Na ₂ 0 ₃ S ₂ /40 | cate ; bl (s) identified as identified iden | lank(s)ed as | |
| | | TIFICATE(S) OF SAM | | | |
| I (we) certi | ify that this sample | e was transferred fi | rom | | to |
| | ; | at (location) | | | on |
| (date & time | :) | and that the sta | atements in this bl | lock are correct. | • |
| | | | | | |
| | | | | | |
| | | e was transferred fr | | | to |
| | | at (location)_ | | | |
| | | and that the stat | | | |
| | | | | | 4 |
| Signature(s) | | | , | | • |

| | | · ···································· | | | | | | | | |
|-------------|----------------|--|-----------------|--------------|---|--|------------|--|--|--|
| PL | EASE | YSES REQUESTED CHECK THE APPROPRIATE ED. WHENEVER POSSIBLE | | | ATE T | .AB. No.: ORG- THE TYPE OF ANALYTICA SUSPECTED OR REQUIRED | 1. SCREENS | | | |
| QUALITATIVE | A QUANTITATIVE | PURGEA: SCREE ALIPHATIC HYDROCARBON AROMATIC HYDROCARBON | QUALITATIVE | QUANTITATIVE | EXTRACTABLE SCREENS ALIPHATIC HYDROGARBONS CHLORINATED HYDROGARBON PESTICIDES | | | | | |
| <u> </u> | P | HALOGENATED HYDROCAR | | | | CHLOROPHENOXY ACLD | | | | |
| | X | GAS CHROMATOGRAPH/MA | SS SPECTROMETER | | | HYDROCARBON FUEL SCREEN | | | | |
| | | | | _ | | ORGANOPHOSPHATE PE | | | | |
| | | | | | | POLYCHLORINATED BI POLYNUCLEAR ARONAT | | | | |
| | | | | - | | TRIAZINE HERBICIDES | | | | |
| | | | | | | | | | | |
| | | SPECIFIC COME | POUNDS | | | SPECIFIC COMPOUNDS | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | - | | | | | | |
| REM | ARKS | : | | | | | | | | |
| | | | | | | | | | | |
| | . | H | NALYTICAL | RE | SUL | .TS | | | | |
| 1 | CON | 1POUND | [PPB] | | OMF | РОИИО | [PPB] | | | |
| Ar | 0 | tic pursuable | Work Datected | <u> </u> | · | | | | | |
| · | | | | - | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | ~ | | | | | | |
| | | | | | | | | | | |
| | | | | *] | DETE | CTION LIMIT | 50 ug/2 | | | |
| R | EMAI | RKS: Some alipha | tic Russable | A 11 | HLIV | detected in 11. | <i>У</i> | | | |
| | 600 | les in the | 100 to 57 | 3-1 01 | 16 | | | | | |

CERTIFICATE OF ANALYTICAL PERSONNEL

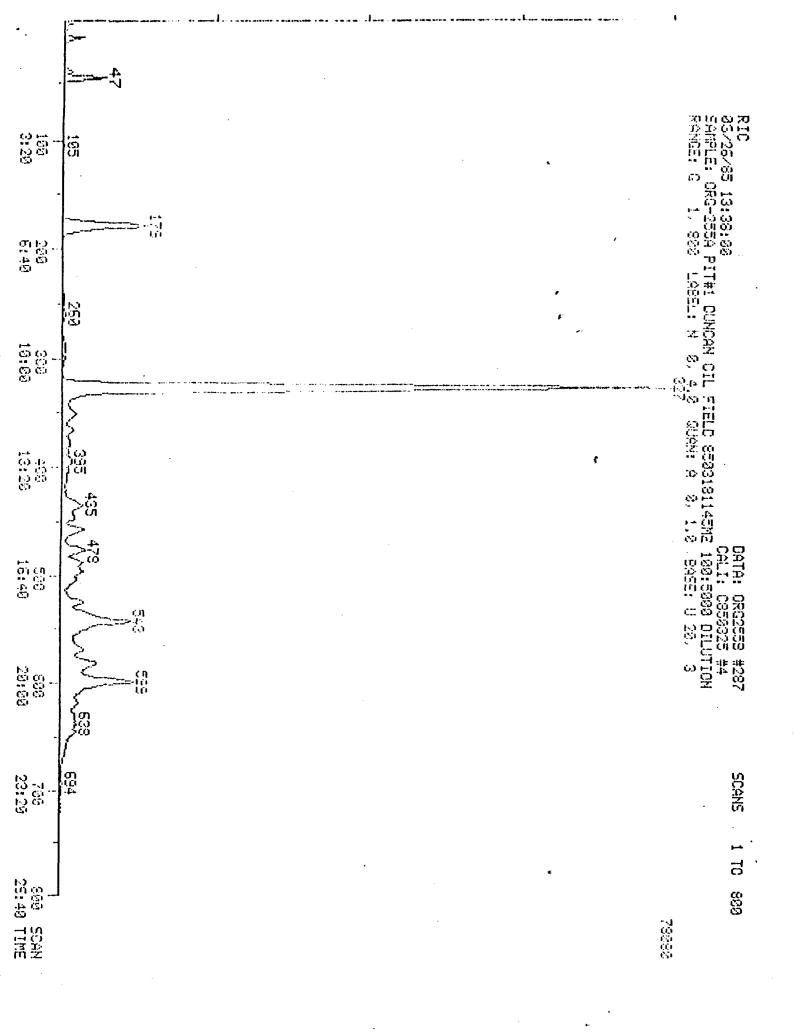
I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data

on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 3/25-6/15 . Analyst's signature: 177 and the sample and I certify that I have reviewed and concur with the analytical results for this sample and

Seal(s) Intact: Yes___NO_X. Seal(s) broken by:

with the statements in this block. Reviewers signature:



N.M. SCIENTIFIC LABORATORY DIVISION QUANTITATION REPORT FILE: ORG255B

DATA: DRG255B, 11 03/26/85 13:38:00

SAMPLE: ORG-255A PIT#1 DUNCAN DIL FIELD 8503181145MZ 100:5000 DILUTION

SUBMITTED BY: 1-10 ANALYST: RM

AMOUNT=AREA (HOHT) * REF. AMNT/(REF. AREA (HGHT) * RESP. FACT)

RESP. FAC. FROM LIBRARY ENTRY

NO NAME

- 1 I/S (4-FLOUROBROMOBENZENE)
- 2 175 (2-BRODO-1-CHLOROPROPANE)
- 3 BENZENE
- 4 1, 2-DICHLOROETHANG
- 5 TOLUENE
- 6 1, 2-DIBROHOETHANE
- 7 ETHYLBENZEME
- 8 PHAYLENE
- 9 M-XYLEIN
- 10 D-XYLENE

| NO | MIE | SCAN | TIME | REF | RRT | METH | AREA (HOHT) | THUOMA | "TOT |
|----|-----|-------|---------------|-----|-------|------|-------------|----------------|--------|
| 1 | 174 | 327 | 10:54 | 1 | 1.000 | V BB | 100236. | 54, 210 0071 | 63. 74 |
| 22 | 77 | 177 | 5: 5 8 | 1 | 0.547 | A BB | 46755. | 30, 837, 0071, | 36, 26 |
| 3 | NOT | FOUND | | | | | | | |

- 4 NOT FOUND
- 5 NOT FOUND
- 6 NOT FOUND
- 7 NOT FOUND
- 8 NOT FOUND
- 9 NOT FOUND
- 10 NOT FOUND