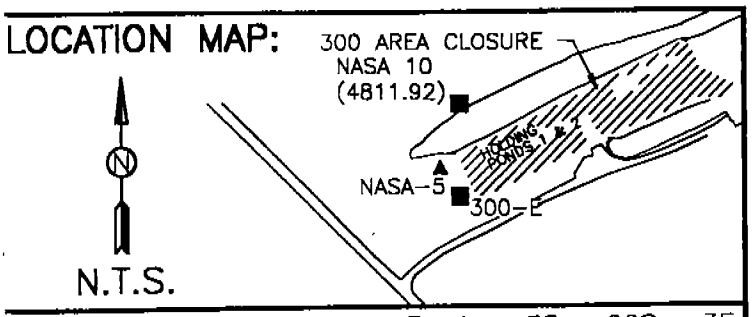
LITHOLOGIC LOG

LOCATION MAP:



___1/4 ___1/4 SE 1/4 NE 1/4 S 35 T 20S R 3E

SITE ID: NASA-WSTF LOCATION ID: 300-E
SITE COORDINATES (FT.):
N _____ E _____
GROUND ELEVATION (FT. MSL): _____
STATE: NEW MEXICO COUNTY: DONA ANA
DRILLING METHOD: MUD ROTARY/AIR FOAM ROTARY
DRILLING CONTR: LARJON DRILLING CO
DATE STARTED: 11-21-94 DATE COMPLETED: 2-12-95
FIELD REP.: RUSSELL, JACOBS
COMMENTS: 8 1/2" TRICONE W/MUD 0-100', 4 1/2" BUTTON/TRICONE W/FOAM 95-440', 5" STEEL CASING TO 100', TOTAL DEPTH=440'.

DEPTH	LITH	VISUAL %	DRILLING TIME SCALE: MIN.	SAMPLE TYPE AND INTERVAL	LITHOLOGIC DESCRIPTION
5, 10, 15, 20, 25, 30, 35, 40, 45, 50			TIMED BY DRILLER	CUTTINGS GRAB SAMPLE EVERY 5'.	0-95' ALLUVIUM (SANTA FE GROUP): CUTTING SAMPLES CONSIST OF MULTICOLORED CLASTS WITH CLAY-RICH INTERVALS COLORED LIGHT BROWN (5 YR 6/4) TO MODERATE BROWN (5 YR 4/4). CUTTINGS RANGE IN SIZE FROM MUCH LESS THAN 0.1 INCHES (CLAY AND SILT SIZE) TO 1.3 INCHES, AND AVERAGE 0.1 TO 0.2 INCHES. CUTTINGS ARE SUBANGULAR TO ANGULAR. THE ALLUVIUM IS AN UNCONSOLIDATED TO MODERATELY CONSOLIDATED, POORLY SORTED, PEBBLE TO BOULDER, POLYGENETIC CONGLOMERATE. INTERMITTENT CLAY AND CALICHE-RICH INTERVALS ARE NOTED IN THE LOG. CUTTING CLASTS REPRESENTING VARIOUS LITHOLOGIES OCCURRING IN THE ALLUVIUM ARE LIGHT GRAY (N7) TO GRAYISH-BLACK (N2) LIMESTONE, WHITE (N9) IRON-STAINED RHYOLITE, MODERATE REDDISH BROWN (10 R 4/6) TO DUSKY RED (5 R 3/4) AND GREENISH-GRAY (5 GY 6/1) SILTSTONE, WHITE (N9) TO LIGHT GRAY (N7) QUARTZ, GRAYISH PINK (5 R 8/2) TO MODERATE PINK (5 R 7/4) CALICHE, MEDIUM LIGHT GRAY (N6) TO LIGHT BROWNISH GRAY (5 YR 6/1) TUFF, BLACKISH RED (5 R 2/2) ANDESITE, DUSKY BROWN (5 YR 2/2) SANDSTONE AND MINOR AMOUNTS OF CHERT. @ 15'-30' SANDY GRAVEL, CLASTS GENERALLY 0.5 TO 1 INCH IN DIAMETER, SUBANGULAR TO SUBROUNDED, PREDOMINANTLY COMPRISE LIMESTONE (50 PERCENT), RHYOLITE 20 PERCENT, AND OTHER MISCELLANEOUS LITHOLOGIES (GRANITE, SILTSTONE, AND SANDSTONE). @ 40'-50' FINE GRAVEL, CLASTS GENERALLY LESS THAN 0.5 INCH IN DIAMETER, PREDOMINANTLY LIMESTONE, BLACK TO DARK GRAY, MICRITIC.

LITHOLOGIC LOG
(CONTINUED)

LOCATION ID: 300-E

DEPTH	LITH	VISUAL %	DRILLING TIME SCALE: MIN.	SAMPLE TYPE AND INTERVAL	LITHOLOGIC DESCRIPTION (LITH., GRAIN SIZE PROPORTIONS, WET COLOR, RNDG., SRTG., CONSOL., DIST. FEATURES)
55			TIMED BY DRILLER	CUTTINGS GRAB SAMPLE EVERY 5'.	@ 55'–60' FINE TO MEDIUM GRAVEL, CLAST SIZE HAS DECREASED AND RANGES FROM LESS THAN 0.1 INCH TO 0.3 INCH, SLIGHT INCREASE IN PERCENTAGE OF VOLCANICS TO APPROXIMATELY 50 PERCENT.
60					@ 60'–65' HARD CEMENTED FINE SAND TO FINE GRAVEL, MATRIX IS COMPOSED OF TAN TO BUFF CALICHE, SMALL SAND SIZE FRAGMENTS CONSIST OF LIMESTONE, JASPER, AND IGNEOUS ROCK FRAGMENTS.
65					
70					
75					
80					
85					
90					@ 90'–95' WELL CEMENTED, SANDY GRAVEL, CLASTS ALMOST ENTIRELY VOLCANICS, ANDESITE PREDOMINANT, SUBANGULAR, TO 1 INCH IN SIZE.
95					95'–115' ANDESITE: OLIVE GRAY, TO GRAY, MICROPORPHYRITIC WITH ABUNDANT MAFIC MINERALS, FE–OXIDE RIMS SURROUNDING THE PHENOCRYSTS, GROUNDMASS IS APHANITIC, FELDSPAR PHENOCRYSTS ARE MOSTLY SUBHEDRAL, SOME EXHIBIT RESORPTION RINGS, GRAINS LOCALLY ANHEDRAL, INFERRED OREJON ANDESITE.
100					
105					
110					
115					115'–120' RHYODACITE: OLIVE GRAY, QUARTZ PHENOCRYSTS, EXTENSIVE PROPYLITIC ALTERATION AT 120 – 125 FEET, FRACTURED, VERY OXIDIZED, PYROLUSITE STAINING, VERY FINE APHANITIC TEXTURE, NO VISIBLE PHENOCRYSTS.
120					120'–170' ANDESITE: BLUE, GREEN, APHANITIC, MICROPORPHYRITIC, VERY FEW VISIBLE PHENOCRYSTS, TRACE VERY FINE GRAINED PYRITE, MAFIC MINERALS ARE HIGHLY ALTERED.

LITHOLOGIC LOG
(CONTINUED)

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125			TIMED BY DRILLER	CUTTINGS GRAB SAMPLE EVERY 5'.	
130					
135					
140					@ 140'–160' INCREASED FRACTURING AND INCREASED OXIDATION.
145					
150					
155					
160					@ 160'–165' FRACTURED, INCREASED SULFIDES PRESENT, QUARTZ VEINLETS.
165					@ 165'–170' HIGHLY FRACTURED, ALTERED VOLCANICS, OXIDIZED WITH ABUNDANT QUARTZ VEINLETS.
170					170'–200' LIMESTONE: BLACK TO DARK GRAY, MICRITIC, NON-FOSSILIFEROUS, HIGHLY FRACTURED WITH ABUNDANT CALCITE FILLING FRACTURES.
175					
180					
185					
190					

LITHOLOGIC LOG
(CONTINUED)

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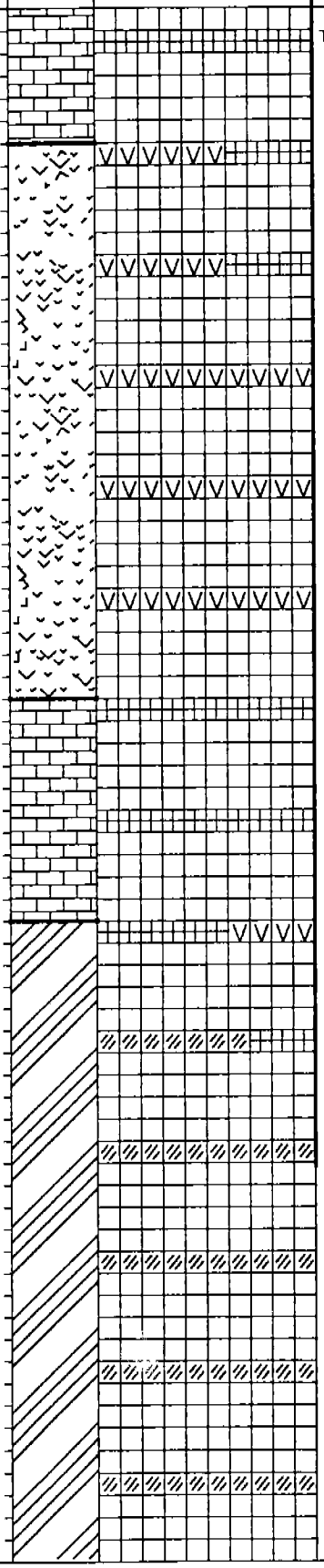
195			TIMED BY DRILLER	CUTTINGS GRAB SAMPLE EVERY 5'.	
200					200'–225' RHYOLITE: PINK–ORANGE, PORPHYRITIC, ABUNDANT QUARTZ, PHENOCRYSTS, ABUNDANT QUARTZ AND FELDSPAR, PHENOCRYSTS, SMALL FLECKS OF BIOTITE, PYROLUSITE STAINING COMMON, HEAVILY OXIDIZED ON FRACTURES.
205					
210					
215					
220					@ 220'–225' PINK TO TAN, PORPHYRITIC TO APHANITIC, PHENOCRYSTS COMPOSED OF QUARTZ AND FELDSPAR, TRACE MAFIC MINERALS, TRACE FINELY DISSEMINATED PYRITE, SOME ANGULAR LIMESTONE INCLUSIONS/XENOLITHS WITHIN THE RHYOLITE, APHANITIC GROUNDMASS.
225					225'–230' LIMESTONE/MARBLE: BLACK TO GRAY, MOTTLED, RECRYSTALLIZED IN PLACES, LIMESTONE HAS BEEN SUBJECT TO EFFECTS OF CONTACT METAMORPHISM.
230					
235					235'–300' SILTSTONE: GRAY, VERY FINE GRAINED, CALCAREOUS, FRIABLE, ARGILLACEOUS, TRACE PYRITE.
240					@ 240'–255' LOCALLY CLAYEY AND FRIABLE.
245					
250					
255					@ 255'–265' RELATIVELY ARENACEOUS, WITH UP TO 5 PERCENT MEDIUM–SIZED SAND GRAINS SUSPENDED WITHIN A SILTY ROCK MATRIX, 5 PERCENT CALCITE WITHIN MICROVEINLETS.
260					

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(CONTINUED)

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265			TIMED BY DRILLER	CUTTINGS GRAB SAMPLE EVERY 5'.	@ 265'–300' SLIGHTLY LAMINATED, VERY FINE GRAINED CALCITE FRACTURE FILLING FRACTURES, IRON OXIDES ON OPEN FRACTURES.
270					
275					
280					
285					
290					
295					
300					300'–320' MIXED LIMESTONE/SILTSTONE: SILTSTONE IS ORANGE TO GRAY, HIGHLY FRACTURED, CALCITE LINING FRACTURES COMMON, LIMESTONE IS MICRITIC, VERY SILTY.
305					
310					
315					
320					320'–345' SHALE: BLACK TO GRAY, FINE GRAINED, LAMINATED, CALCAREOUS, SOFT, ABUNDANT INTERBEDDED SILTSTONE CHIPS, TRACE PYRITE.
325					
330					

LITHOLOGIC LOG
(CONTINUED)

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335			TIMED BY DRILLER	CUTTINGS GRAB SAMPLE EVERY 5'.	
340					
345					345'–385' SILTSTONE: LIGHT GRAY TO DARK GRAY, VERY FINE GRAINED, LAMINATED, TRACE DISSEMINATED PYRITE, ABUNDANT INTERBEDDED SILTY LIMESTONE HORIZONS.
350					
355					
360					
365					
370					
375					@ 375'–385' INTERBEDDED LIMESTONE BECOMES LESS SILTY. CALCITE FRACTURE FILL TO 10 PERCENT.
380					
385					385'–390' SANDSTONE: QUARTZITIC, MOTTLED GRAY TO WHITE, VERY FINE GRAINED, WELL CEMENTED, PYRITIC.
390					390'–395' LIMESTONE: BLACK TO DARK GRAY, MICRITIC, BLOCKY, PYRITIC.
395					395'–405' SANDSTONE: MEDIUM TO LIGHT GRAY, QUARTZITIC FIRM, CEMENTED, VERY FINE GRAINED.
400					

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405			TIMED BY DRILLER	CUTTINGS GRAB SAMPLE EVERY 5'.	405'–420' LIMESTONE: BLACK, MICRITIC, FIRM, NON–FOSSILFEROUS, ABUNDANT SILTSTONE INTERBEDS WHICH ARE SOFT, GUMMY, AND ARGILLACEOUS.
410					
415					
420					420'–440' LIMESTONE: BLACK TO DARK GRAY, MICRITIC, FIRM, SLIGHTLY ARGILLACEOUS, PYRITIC, CALCITE LINED FRACTURES.
425					@ 425'–430' ABUNDANT LIGHT GRAY MUSTONE INTERBEDS.
430					
435					
440					TOTAL DEPTH (TD) 440 FEET.
445					
450					
455					
460					
465					
470					