GW - 49

GENERAL CORRESPONDENCE

YEAR(S):

1987

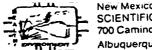
700 Camino de Salud NE Albuquerque, NM 87106	•	HEAVY METAL ANALYSIS FOR Telephone: (505)841-2500	RM
Date Received 8/0/87 No.	User Code YY mm dd hh mm 87 08 10 10 35	☐ 59400 ☐ 53400 ☐ 5330 ☐ 59300 ☐ 59500 ☐ COLLECTION SITE DESCRIPTI — EPN 6 - Bianco - Bloomhus	ION
COLLECTED BY: Convel/De	PARTE	Du Sace soil sample St co	nni
TO: '	107 E 15 198	1,20	
GROUND WATER & HAZAI NEW MEXICO EID/HED PO BOX 968 - RUNNELS	BUILDING	country. <u>Jan graci</u>	
ATTN: Comas	1 -0968	Township, Range, Section, Tract: (10N06E2	4342)
PHONE: <u>& 27-290J</u>	 	/ WELL CODE:	<u></u>
SAMPLING CONDITIONS:	Water Level:		<u></u>
☐ Bailed ☐ Pump ☐ Dipped ☐ Tap		Discharge: Sample Type:	202
pH(00400) Conductivity	(Uncorr.) Water with the same of the same	Temp.(00010) Conductivity at 2: (00094) C pml	
FIELD COMMENTS: Low	samples a 3	cu chly	
SAMPLE FIELD TREATMENT Check proper boxes:		LAB ANALYSIS REQUESTED:	
☐ WPN: Water ☐ Preserved W/HNO, Pre	WPF: Water served w/HNO ₃ tered	☑ ICAP Scan Mark box next to metal if AA is required.	
	NALYTICAL RESU		
ELEMENT ICAP VALUE Aluminum 9/00 Barium //0	AA VALUE	ELEMENT ICAP VALUE AA VA Silicon 270 Silver <5.	TOE
Beryllium <5. Boron <5.		Strontium 61.	
Cadmium	□ 対 270	Vanadium 10 Zinc 130 Arsenic	
Chromium 280 Cobalt 3. Copper 56.	⊠ 270	Selenium	
Iron 8600.			
Magnesium 2000 Manganese 96. Molybdenum <5. Nickel <5.			
LAB COMMENTS: God but	in in lab my my	9789 coli	da Ed
ICAP Ana	0 0	Reviewer:	<u> </u>
Analysis	Date: 8/31/97	Date Reviewed: 9/24/8	7



New Mexico Health and Chvironinent Department SCIENTIFIC LABORATORY DIVISION 700 Camino de Salud NE Albuquerque, NM 87106

HEAVY METAL ANALYSIS FORM Tohone: (505)841-2500

Date Received 8/12/87 No. ICP-554 Code	
COLLECTION DATE & TIME: YY mm dd hh	
COLLECTED BY:	
Corred/Dip	The unlessed SE ford
	15 1987
TO:	OWNER: EPNG
STEEL CHOICE	MIMIARDOUS WASTE Cetigen Sites
	NEGANIA NEGO MASAE
GROUND WATER & HAZARDOUS WASTE BU	
NEW MEXICO EID/HED	County: ten Juan
PO BOX 968 - RUNNELS BUILDING	
SANTA FE, NM 87504-0968	Township, Range, Section, Tract: (10N06E24342)
(a. 1. 1	[2]914/1/14/14]
ATTN: Comad	TOW/ 1777 - CORP.
PHONE: $f^27 - 2905$ STAT	ION/ WELL CODE:
- I AMIMUDE TON	
LATITUDE, LONG SAMPLING CONDITIONS:	GITODE:
Bailed Pump Water Level	: Discharge: Sample Type:
Dipped Tap	augued fromdie, ger
pH(00400) Conductivity(Uncorr.) Wat	
process, comments, and	(00094)
odmu	°C µmho
FIELD COMMENTS: Council down ? 1	4 - sampled
140+ ANO, Extred - Fotal	digest
7	·
SAMPLE FIELD TREATMENT	LAB ANALYSIS REQUESTED:
Check proper boxes:	
☐ WPN: Water ☐ WPF: Water	ICAP Scan
Preserved w/HNO Preserved w/HNO Preserved w/HNO	Mark box next to metal if AA
Non-Filtered Filtered	is required.
ANALYTICAL RI	ESULTS (MG/H) (MA/A)
ELEMENT ICAP VALUE AA VALUE	ELEMENT ICAP WALVE AA VALUE
Aluminum - A-240-12000	Silicon 3.7 160
Barium 37 313 170	Silver 40+45
Beryllium <0.145	Strontium -08 40
Boron 0.2 10	Tin
Cadmium +0-1<5	Vanadium 0.3 20
Calcium 70. 3600	Zinc 28 40
Chromium -0.8 40.	Arsenic
Cobalt 214 7.1	Selenium [
Copper 0.3 20	Mercury
Iron 250 13000	
Lead <0.K5	
Magnesium <u>-60: 3100</u>	
Manganese 48 92	<u> </u>
Molybdenum <0+ <5	<u></u>
Nickel <0.1 <5	
LAB COMMENTS: seal buleau in late on &	8/19/87 by My 84.5% colife
LAB COMMENTS: <u>Seal busher</u> in late on &	115/81 by 10/1 87.3 bould
lipsted on "dry weight" loss	~··
ICAP Analyst: JB	Reviewer: Ashy
Analysis Date: 8/31/87	Date Reviewed: 9/29/87



New Mexico Health and Environment Department of SCIENTIFIC LABORATORY DIVISION 700 Camino de Salud NE Albuquerque, NM 87106

HEAVY METAL ANALYSIS FORM

1 phone: (505)841-2500

Date	(1) (2) (1) Lab.	CP-555	User	☐ 59400 □ 59300		3400	<u> 53300</u>
Received			Code	☐ 59300		9500	DESCRIPTION
COLLECTION D	PATE & TIME:	yy mm dd	hh mm				
COLLECTED BY			1009	4			Polorufuel ?
COLUMNICATED BY	Coursell			arce	sample	1 0 07,	SE Corner,
	Cowod/A	13.19	Gut Oil Fre	more marey co	M Clsec	- porsu	
TO: C-00] \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	2	Manual Color	IR: (=)	PRIC	
10:	CO-et	illi.		11 11		beter	
		; <u> </u>	1107.15	1987	M Bay	beres	
CDOTHID &	መመው ይ ከአማአር	וון: מש פווסמי			፣ ፐብሮኔሞ	TON.	
י עמטטאט רעיזע שידע	NATER & HAZAF	nga'	un varioni	ביינים	stu.	/sen	River
PO BOY	68 - RUNNELS	BUTTDING	2795				7000
SANTA FI		-0968			in Range	Section Tr	act: (10N06E24342)
D.11(111 1 1	•					1/1/1/	•
ATTN:	Corred				<u> </u>	14.40	7-1-1-1
PHONE:	+27-2405		STATION	/ WELL CODE:	:111	1 1 1 1	. 1 1 1 1 1
				,	·		
-		LATITUDE,	LONGIT	UDE:	1.1.1	1111	1-1 1 1 1
SAMPLING CON	NDITIONS:						
☐ Bailed	(Water I	Level:	Discharge	_	Sampl	e Type:
☐ Dipped	d ☐ Tap Conductivity(Tingowa \	Matar		CO.	7200	ty at 25°C
pH(00400)	-onductivity (Uncorr.)	Macer	16mb. (00010)		094)	Lty at 25 t
		umho		°c	,,,,	034)	umho
ELET'D COMME	NTS: sample		2 07 114	und and	- 2 ta	n die	1-
1 Fact Hax	of dispost - +	tel	0	use poner		- agrae	<u> </u>
	- Caralina III		· · · · · · · · · · · · · · · · · · ·	······································			
SAMPLE FIELD	TREATMENT			LAB ANALYSI	S REQUE	STED:	
Check prope							
WPN: Wa		WPF: Wate		ICAP S			
Preserved v	w/HNO, Pres	served w/N	HNO3	Mark box		metal	if AA
Non-Filter	ed Filt	ered		is requir	ed.		
	٨٨	INIVEIC	AI DESI	JLTS (MG)	/+ } (,	4/2	
ELEMENT	ICAP VALUE	AA VAL		ELEMENT	ICAP V	(A) (A)	AA VALUE
		WW AWT	<u> </u>	Silicon	2,6	12.0	WW AWDOR
Aluminum MA	3.4 160			Silver		011 < 5	
Beryllium	≥0.1<5.		-	Strontium	2.7	130	
				Tin			
Cadmium	201 5,		 [Vanadium	0.3	10	
	170 8000	U		Zinc	0.8	40	
	0.2 10	VI -0.1	5.	Arsenic	0.0	<u>_</u>	Π
	015 7.	<u> </u>		Selenium			H
Copper	0,4 20		-	Mercury			H
Iron	300 14000		-	nereary			H
Lead	<0.+ <5	п					H
	80. 3800	U					H
Manganese	7.1 3 30						H
Molybdenum	<0-1<5						H
Nickel	0-2 10						H
· 	<u>-</u> <u>-</u>						
LAB COMMENT	s: Sed but	sen in la	- burnel	in 8/18/87		2	- 16.50
	Reported on "day	gut, " Boni					Digente
	ICAP Ana		JB		eviewe	r:	askly
	Analysis	Date: 8	8/31/87	, 	ate Rev	viewed:	9/39/87

	camino de Salud NE querque, NM 87106				Phone: (505)841-2	
Date Received		IN-556	User Code	☐ 59400 ☐ 59300	☐ 53400 ☐ 59500	☐ 53300 ☐
	DATE & TIME:	187 08 10	hh mm	COL	LECTION SITE PNG - Blanco	DESCRIPTION Bloom A 16
COLLECTED B	Comod/ By	-	1 1 10 -	2/1	auger semple	- south &
	Corrain Buy	7			well of SE cun	used prop
TO:	enal			_	ER: CPN chicui Rite	
NEW MEX	WATER & HAZA				E LOCATION:	Juan
		4-0968	3		hip, Range, Section, To	
ATTN: _PHONE:	<u>Cernsel</u> 827-2905		STATION	WELL CODE		
- SAMPLING CO	• פארדיידרתאב	LATITUDE	, LONGIT	DDE:		
☐ Baile ☐ Dippe	ed Pump ed Tap	Water 1		Discharge	ruge samul	le Type:
pH(00400)	Conductivity	(Uncorr.) umho	Water !	emp : (00010 م	Conductiv (00094)	ity at 25°C umho
FIELD COMME	ENTS: Queen		1 2 /1-	campled		Jamilo
SAMPLE FIEL Check prop	LD TREATMENT	<u> </u>		LAB ANALYS	S REQUESTED:	
☐ WPN: V Preserved Non-Filter	w/HNO, Pre	WPF: Wate served w/I tered		Mark box is requir	next to metal	if AA
		VALYTICA				
ELEMENT Aluminum Barium Beryllium	CAP VALUE	AA VAL		ELEMENT Silicon Silver Strontium	ICAP VALVE 58. <4.	AA VALUE
Boron Cadmium	7. < 4.			Tin Vanadium	4. 4.	
Calcium Chromium Cobalt	<u>8300</u> <u>∠4,</u> 3.6	Ø 0.3c	4:97A	Zinc Arsenic Selenium	20	B
Copper Iron	7. 7200			Mercury	4	
Lead Magnesium Manganese	<u> <4.</u> 1600 210	O				
Molybdenum Nickel						ā
LAB COMMEN	TS: Seal bush	en u lub	hu Wof	nc 3/18/8		-ESTED Storles
	ICAP Ana	^	В		Reviewer:	ashly
	Analysis	. Date:	8/31/87		Date Reviewed	= 2/11/2/8

Albuquerque, NM 87106	Telephone: (505)841-2500
• · · · ·	
	ser 59400 53400 53300
Received 812187 No. ICP-564 Co	ode 🛮 59300 🗎 59500 🗎
	th mm COLLECTION SITE DESCRIPTION
	4 16 EPNG- Bioned Bloomfrile
COLLECTED BY:	How Backgrower - 3" day
TO: Conval Dy	
J	0.000
To: "COLICA!	OWNER: FPNC
CO 10 000	Cetispus Deter
GROUND WATER & HAZARDOUS WASTE	BUREAU SITE LOCATION:
NEW MEXICO EID/HED	County: Man Man
PO BOX 968 - RUNNELS BUILDING	
SANTA FE, NM 87504-0968	Township, Range, Section, Tract: (10N06E24342)
	1-19W+/1/W+/14 1 1 1
ATTN: Concol	المسامية
	ATION/ WELL CODE:
LATITUDE, L	ONGITUDE: -
SAMPLING CONDITIONS:	
☐ Bailed ☐ Pump Water Lev	el: Discharge: Sample Type:
Dipped Tap	
pH(00400) Conductivity(Uncorr.) W	ater Temp. (00010) Conductivity at 25 C
ha	OC (00094)
FIELD COMMENTS: (www.stat a) E	
	16m+ HNO; + total disest
Lord Q13" A E of detail	(1942) 14 K 0 3 + 15 160 160 100
SAMPLE FIELD TREATMENT	LAB ANALYSIS REQUESTED:
Check proper boxes:	
☐ WPN: Water ☐ WPF: Water	V ICAP Scan
Preserved w/HNO, Preserved w/HNO	Mark box next to metal if AA
Preserved w/HNO Preserved w/HNO Filtered	is required.
ANIALVICAL	RESULTS (MG/L) (Mg/g)
	ELEMENT ICAP VALUE AA VALUE
ELEMENT ICAP VALUE AA VALUE 7200	Silicon 200
Barium 76	Silver <u><4.</u>
Beryllium <4.	Strontium 47.
Boron < 4.	Tin <4.
Cadmium <4.	Vanadium 7.
Calcium 3000	v Zinc 20
Chromium 4 974	Arsenic
Cobalt 3.6 Scr=5.0 LyAA	Selenium
Copper 10	Mercury
Iron 8000	
Lead <4. []	
1 Magnesium 2000	
Manganese 200	
Molybdenum <4.	
Nickel #	
	· Volt · tota
LAB COMMENTS: Seal broken in leh	by My 8/18/87 DIGEST 8/37/8
Reported on "as received" bosis.	0/0 Salid=47.9
ICAP Analyst:	Reviewer: Jan Ashly
Analysis Date: 8	3/87 Date Reviewed: 2/11/88
	<u> </u>

SCIENTIFIC LABORATORY DIVISION 700 Camino de Salud NE	HEAVY METAL ANALYSIS FORM
Albuquerque, NM 87106	Tale phone: (505)841-2500
• • • • • • • • • • • • • • • • • • • •	phone. (303)041-2300
Date Received 81/2187 No. ICP-565 Code	☐ 59400 ☐ 53400 ☐ 53300 ☐ 59300 ☐ 59500 ☐
COLLECTION DATE & TIME: yy mm dd hh m	
	0 C-PN13 - Blanes Bloomfeld
COLLECTED BY:	Sol and (2 H1) background
Corried Dep	F. pur line at diter
•	
TO: Corred	OWNER: C-PNC
- 10 G q	Cetizous Letels
GROUND WATER & HAZARDOUS WASTE BURE	EAU SITE LOCATION:
NEW MEXICO EID/HED	County: San fee.
PO BOX 968 - RUNNELS BUILDING	
SANTA FE, NM 87504-0968	Township, Range, Section, Tract: (10N06E24342)
•	12/9/a+/11/u+//4
ATTN: Corres	
	ON/ WELL CODE:
LATITUDE, LONG	TUDE:
SAMPLING CONDITIONS:	
☐ Bailed ☐ Pump Water Level:	Discharge: Sample Type:
Dipped Tap	2 Got aug a canno
pH(00400) Conductivity(Uncorr.) Water	Temp. (00010) Conductivity at 25°C
	(00094)
pmho	<u>C</u> µmho
FIELD COMMENTS: Jantes 2 Let an	in auce on - tack around server
F people live not a Citizens le	cfel "
SAMPLE FIELD TREATMENT	LAB ANALYSIS REQUESTED:
Check proper boxes:	
☐ WPN: Water ☐ WPF: Water	☑ ICAP Scan
Preserved w/HNO3 Preserved w/HNO3	Mark box next to metal if AA
Non-Filtered Filtered 3	is required.
ANALYTICAL DE	SILL TO MAKE / /
ANALYTICAL RES	
ELEMENT ICAP VALUE AA VALUE	ELEMENT ICAP VALUE AA VALUE
Aluminum 5500	Silicon 180
Barium 88.	Silver <4
Beryllium <4.	Strontium 69.
Boron <u>4.</u>	Tin <u>4</u> .
Cadmium <4.	Vanadium 7.
Calcium 7700	Zinc
Chromium 4 Et C 20 16/124	Arsenic

Chromium Cobalt Selenium 4.0 Copper 7. Mercury Iron 6600 < 4. Lead Magnesium 1500 Manganese 160 Molybdenum Nickel

LAB COMMENTS: Soal broken in leb by TW/ 3/18/82

Reported on as received " books

9/05/21/2-95.8%

ICAP Analyst:__

Analysis Date: 8/3/8/

Reviewer; Am Ashby

Date Reviewed: 2/11/88

700 Camino de Salud NE Albuquerque, NM 87106	HEAVY MEIAL ANALYSIS FURM
TOP 1060.	Telephone: (505)841-2500 ·-
Date Lab	User ☐ 59400 📈 53400 ☐ 53300
	Code 59300 59500
COLLECTION DATE & TIME: yy mm dd	hh mm COLLECTION SITE DESCRIPTION
87/2 08	1200 FI POSO NOTURAL GAS
COLLECTED BY:	Bianco Plant - Bloomfula
CONRAD / BICHARDS	til st Goldel from
n /1 _	such sede
TO: Connect RECEIVED FEE:	OWNER: G. Goekel
Superfunc & HAZARDOUS WASTE	- 9 1068
Juperfrance & HAZARDOUS WASTE	BUREAU SITE LOCATION:
NEW MEXICO EID/HED	County: San Juan
PO BOX 968 - RUNNELS BUILDING	
SANTA FE, NM 87504-0968	Township, Range, Section, Tract: (10N06E24342)
	12/9/24/1/14+ 1 + 1/14
ATTN: Conud	
PHONE: 250-827-2905 S	TATION/ WELL CODE:
- LATITUDE.	LONGITUDE: [3]6]4[3]3[6]1[0]7[5]7]-[3]6]
SAMPLING CONDITIONS:	
Bailed Pump Water Le	
Dipped Tap pH(00400) Conductivity(Uncorr.)	Water Temp.(00010) Conductivity at 25°C
ph(00400) conductivity (oncoil.)	(00094)
, umho	C µmho
FIELD COMMENTS: / HOT HOO! A	each + ICRP
SAMPLE FIELD TREATMENT	LAB ANALYSIS REQUESTED:
Check proper boxes:	LAD ARABISIS REQUESTED:
WPN: Water WPP: Water	ICAP Scan
Preserved w/HNO, Preserved w/HN	1 1 p
Non-Filtered Filtered	is required.
ANALYTICA	L RESULTS (MGE) Mg/g
ELEMENT ICAP VALUE AA VALUE	
Aluminum 4900.	Silicon <u>9</u>
Barium <u>30.</u>	Silver
Beryllium < 5	Strontium 330.
Boron	Tin
Cadmium 45.	Vanadium 5.
Calcium 2/700.	Zinc
Chromium <5. 🛭 3.4	Arsenic
Cobalt < 2.2	Selenium
Copper 45	Mercury
Iron 4900.	
Lead	
Magnesium 2000.	
Manganese 120.	
Molybdenum 45.	
Nickel <5.	
	():i+
LAB COMMENTS:	& Ugst
95.69 % solids reported on	"as received" basis.
ICAP Analyst:	Reviewer: July
Analysis Date: /	27/88 Date Reviewed: 2/1/88

Albu	querque, NM 8710	مان الم	1059	-m	Telep	hone: (50	05)841-2500	
Date Received	12 4 3	Lal	P-1065	User Code	☐ 59400 ☐ 59300		3400 9500	□ 53300
COLLECTION	DATE & T		yy mm dd	14 00	COLI			SCRIPTION
COLLECTED I	2V •		80 13 08	11/9/00			Notur	13 100m Prelet
COMMECTED 1	CONRAL	1/2	ICHARUS"		A/	sideo	7 detch	at
) Place	ン サン
TO:		RECE	IVED FEB	1 8 1988	OWNI	R: . Sch		
				1000		sec	ose-	
	3 5	HAZAI	DOUS WASI	E BUREA		LOCAT		
	XICO EID/				Cour	ity:	San Jua	.11
-			BUILDING	3				
SANTA I	FE, NM	87504	1-0968					:: (10N06E24342) + / 4/
ATIN:	Conre	L			٢	17 10-7	17 14,7	+ 1/14
	827 290			STATION	/ WELL CODE	:	1111	1 1 1 1 1
•	<u> </u>				•	· · · · · · · · · · · · · · · · · · ·		<u></u>
		_	LATITUDE	, LONGIT	TUDE: [316141	3131011	1017117	1-13/01
SAMPLING C			Water	· [over]	Discharge	•	l Cample	Type:
☐ Bail		qmuq as1	water .	rever.	Discharge	•	Sampre Soli	: Type:
			(Uncorr.)	Water	Temp. (00010) Cor	ductivi	ty at 25°C
. ,		-	•				094)	•
			umho	1	°c			umho
FIELD COMM	ents:		ct ANO	: Leas	2-4 + ICA	<u>e </u>		
SAMPLE FIE	LD TREAT	MENT		11	LAB ANALYSI	S REOU	ESTED:	
Check pro			•				 -	
	Water		WPF: Wat		X ICAP S			_
Preserved	w\HNO3	Pre	served w/	HNO ₃	Mark box		o metal	if AA
Non-Filte	red	F11	tered		is requir	ea.		
		A	NALYTIC	AL RES	ULTS (MG	#) My	5/9	
ELEMENT	ICAP VA		AA VAI	YDE	ELEMENT		VALÚE	AA VALUE
Aluminum	5600		-		Silicon Silver	40		
Barium Beryllium	<u>130</u> 46.		-		Strontium		.5.	
Boron	~ 5.				Tin	<u> 30</u>	5. 5.	
Cadmium	£5.		П	-	Vanadium			
Calcium	330				Zinc		0.	
Chromium .	<u>. ح.</u>		⊠5./_		Arsenic			
Cobalt		0			Selenium			□
Copper	270				Mercury			
Iron Lead	830	<i>50.</i>	Π			***************************************		H
Magnesium		2.	L!					H
Manganese		5.						
Molybdenu	m <u>45</u>							
Nickel	<u> </u>							
LAB COMME	YIIIC .							a) saist
74.14 %		den	osted en "	74 44 44	sed "bases	., .—		_ Wighth
		-40	VINER UN ()	~ / V	CHER VINOUS		V=	0.00
	IC	AP An	alyst:	112		Review	er:	- Willy
	An	alysi	s Date:	1/27	188	Date R	eviewed:	2/11/88()

	Attitio de Saido i			:15	/F3 L.F	A I INIT				i Oldivi
Albud Albud	uerque, NM 8710	~~) / /	Nj	1 7	Telep	hone:	(505)841-2	2500	· •
<i>t</i>		1	1061	`						
Date	٠	Lab		User		59400	,EI	53400		53300
Received /	219 187	No J	CP-1067	Code		59300		59500		
COLLECTION	DATE & T	IME:	vvlmmldd	i hh mm		COLL	ECTI	ON SITE	DESC	RIPTION
			87/2 08	14 20		F1	Pac	o Not	ural	Cali
COLLECTED B	Y:		<u> </u>		1			Plant		100m Freld
(ONRAD	12	ICHIARUS		1			Ditch		euse
		<u>-</u>		<u>.,</u>				I EPN4		mphouse
TO:	IECE I VEL	n FFR	1 8 1000		-		R: =		1000	
10.		טירט	T 0 1908			J		<u> </u>	"	
			DOTTE 133.CT			c Time		3 MT 037 -		
			DOUS WAS	re Burea	.U			ATION:	7	
	ICO EID/					Coun	rry:_	San i	liain	
			BUILDING	3						
SANTA F	E, NM	87504	-0968			_				ION06E24342)
	Coma	1/				[3	19/1	<u> +/ / //</u>	+	114
ATTN:										
PHONE:	827-	290	5	STATION	I/ WEI	L CODE:		1 1 1 1	1 1	1 1
d							•			
_			LATITUDE	, LONGIT	TUDE:	316141.	11716	11017	171-	131011
SAMPLING CO	NDITIONS	:			,					
□ Baile		מתני	Water :	Level:	Dis	charge:		Sam	ple I	'voe:
eddin 🗆		מב'						5	5/2	
pH(00400)			(Uncorr.)	Water	Temp	(00010)				at 25°C
pin(conco)			(,			. (,		00094)		
			umho	1		°c	\ \ \ \ \	.,		umho
FIELD COMME	7NTPC •		1/24	HOVO:	1/22 21	1 t T/V	11			
FIELD COMMI	m.ro		1801	<i>77.</i> CO; _		1 + 67	<i>"</i>		•	
			 			·				
ANOTE PIE	(D				Tan	A NAT WCT	c DRC	TTTC COURTS		
SAMPLE FIEL			•		LAB .	ANALYSI	S REC	QUESTED:		
Check prop	per boxes	s:						QUESTED:		
Check prop	per boxes Water	s:	WPF: Wat		X	ICAP S	can			
Check prop WPN: V Preserved	per boxes Water W/HNO,	Pre	served w/		X Ma	ICAP S	can next	QUESTED:		AA
Check prop	per boxes Water W/HNO,	Pre			X Ma	ICAP S	can next			AA
Check prop WPN: V Preserved	per boxes Water W/HNO,	Pre Fil	served w/ tered	HNO3	Ma is	ICAP S rk box requir	can next ed.	to meta	al if	AA
Check prop WPN: V Preserved Non-Filter	per boxes Water W/HNO3 red	Pre Fil	served w/ tered VALYTIC	AL RES	Ma Ma is	ICAP S rk box requir	can next ed.	to meta	al if	
Check prop WPN: V Preserved Non-Filter	per boxes Water W/HNO3 red	Pre Fil	served w/ tered	AL RES	Ma is ULTS	ICAP S rk box requir (MG	can next ed. L) ICA	to meta	al if	AA VALUE
Check prop WPN: V Preserved Non-Filter	per boxes Water W/HNO3 red	Pre Fil	served w/ tered VALYTIC	AL RES	Ma is ULTS ELE Sil	ICAP S rk box requir (ME) MENT icon	can next ed. L) ICA	to meta	al if	
Check prop WPN: V Preserved Non-Filter	per boxes Water W/HNO3 red	Pre Fil	served w/ tered VALYTIC	AL RES	Ma is ULTS ELE Sil Sil	ICAP S rk box requir (ME) MENT icon ver	can next ed. L) ICA	to meta	al if	
Check proposed WPN: WPN: WPN: WPN: WPN: WPN: WPN: WPN:	oer boxes Water W/HNO3 red ICAP VA	Pre Fil	served w/ tered VALYTIC	AL RES	Ma is ULTS ELE Sil Sil	ICAP S rk box requir (ME) MENT icon	can next ed.	to meta ug/g P VALUE	al if	
Check property of the preserved Non-Filter Aluminum Barium	icap va	Pre Fil	served w/ tered VALYTIC	AL RES	Ma is ULTS ELE Sil Sil	ICAP S rk box requir (MENT icon ver	can next ed.	to meta ug/g P VALUE 53. 54. 55.	al if	
Check proposed with the preserved Non-Filter Aluminum Barium Beryllium Boron	icap value 1500.	Pre Fil	served w/ tered VALYTIC	AL RES	Ma is ULTS ELF Sil Sil Str	ICAP S rk box requir (MENT icon ver	can next ed.	to meta ug/g P VALUE 53. 30. # 45.	al if	
Check proposed wpn: Verserved Non-Filter Aluminum Barium Beryllium Boron Cadmium	icap va Ser boxes W/HNO3 red ICAP VA S800 150. 25. 25.	Pre Fil	served w/ tered VALYTIC	AL RES	Ma is ULTS ELF Sil Sil Str Tir Var	ICAP S rk box requir S (ME) MENT icon ver contium hadium	can next ed.	ug/g- P VALUE 153. 25. 25. 10.	al if	
Check proposed wpn: WPN: WPN: WPN: WPN: WPN: WPN: WPN: WPN	icap va Secondary in the secondary is a secondary in the secondary in the secondary is a secondary in the s	Pre Fil	Served W/ tered NALYTIC AA VAI	AL RES	Ma is ULTS ELE Sil Sil Str Tir Var Zir	ICAP S rk box requir (ME) MENT icon ver contium hadium	can next ed.	to meta ug/g P VALUE 53. 30. # 45.	al if	
Check proposed with the preserved non-Filter ELEMENT Aluminum Barium Beryllium Boron Cadmium Calcium Chromium	icap va Secondary in the secondary is a secondary in the secondary in the secondary is a secondary in the s	Pre Fil	served w/ tered VALYTIC	AL RES	Ma is ULTS ELE Sil Sil Str Tir Var Zir Ars	ICAP S rk box requir (MENT icon ver contium hadium hc senic	can next ed.	ug/g- P VALUE 153. 25. 25. 10.	al if	
Check prot WPN: V Preserved Non-Filter ELEMENT Aluminum Barium Beryllium Boron Cadmium Calcium Chromium Cobalt	ICAP VA S800 150. 25. 25. 3500 5.0	Pre Fil	Served W/ tered NALYTIC AA VAI	AL RES	Ma is ULTS ELF Sil Sil Str Tir Var Zir Ars	ICAP S rk box requir (MENT icon ver contium hadium hc senic lenium	can next ed.	ug/g- P VALUE 153. 25. 25. 10.	al if	
Check prot WPN: V Preserved Non-Filter ELEMENT Aluminum Barium Beryllium Boron Cadmium Calcium Chromium Cobalt Copper	ICAP VA 5800 150. 25. 25. 25. 26. 27. 28. 28. 28. 28. 28. 28. 28. 28	Pre. Fil	Served W/ tered NALYTIC AA VAI	AL RES	Ma is ULTS ELF Sil Sil Str Tir Var Zir Ars	ICAP S rk box requir (MENT icon ver contium hadium hc senic	can next ed.	ug/g- P VALUE 153. 25. 25. 10.	al if	
Check prot WPN: V Preserved Non-Filter ELEMENT Aluminum Barium Beryllium Boron Cadmium Calcium Chromium Cobalt Copper Iron	ICAP VA S800 150. 25. 25. 25. 40. 820	Pre. Fil	Served W/ tered NALYTIC AA VAI	AL RES	Ma is ULTS ELF Sil Sil Str Tir Var Zir Ars	ICAP S rk box requir (MENT icon ver contium hadium hc senic lenium	can next ed.	ug/g- P VALUE 153. 25. 25. 10.	al if	
Check prot WPN: V Preserved Non-Filter ELEMENT Aluminum Barium Beryllium Boron Cadmium Calcium Chromium Cobalt Copper Iron Lead	ICAP VA 5800 150. 25. 25. 25. 25. 26. 26. 25. 25. 25. 26. 27. 28. 28. 28. 28. 28. 28. 28. 28	Pre Fil A!	Served W/ tered NALYTIC AA VAI	AL RES	Ma is ULTS ELF Sil Sil Str Tir Var Zir Ars	ICAP S rk box requir (MENT icon ver contium hadium hc senic lenium	can next ed.	ug/g- P VALUE 153. 25. 25. 10.	al if	
Check prod WPN: V Preserved Non-Filter ELEMENT Aluminum Barium Beryllium Boron Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium	ICAP VA	Pre Fil A!	Served W/ tered NALYTIC AA VAI	AL RES	Ma is ULTS ELF Sil Sil Str Tir Var Zir Ars	ICAP S rk box requir (MENT icon ver contium hadium hc senic lenium	can next ed.	ug/g- P VALUE 153. 25. 25. 10.	al if	
Check prod WPN: V Preserved Non-Filter ELEMENT Aluminum Barium Beryllium Boron Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese	ICAP VA S800 150. 25. 25. 25. 26. 3.500 5. 2100. 140	Pre Fil A!	Served W/ tered NALYTIC AA VAI	AL RES	Ma is ULTS ELF Sil Sil Str Tir Var Zir Ars	ICAP S rk box requir (MENT icon ver contium hadium hc senic lenium	can next ed.	ug/g- P VALUE 153. 25. 25. 10.	al if	
Check prot WPN: V Preserved Non-Filter ELEMENT Aluminum Barium Beryllium Boron Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Molybdenum	ICAP VA S800 150. 25. 25. 25. 2100. 140. 25.	Pre Fil A!	Served W/ tered NALYTIC AA VAI	AL RES	Ma is ULTS ELF Sil Sil Str Tir Var Zir Ars	ICAP S rk box requir (MENT icon ver contium hadium hc senic lenium	can next ed.	ug/g- P VALUE 153. 25. 25. 10.	al if	
Check prod WPN: V Preserved Non-Filter ELEMENT Aluminum Barium Beryllium Boron Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese	ICAP VA S800 150. 25. 25. 26. 27. 3500 40. 820 5. 140. 140. 150.	Pre Fil	Served W/ tered NALYTIC AA VAI	AL RES	Ma is ULTS ELF Sil Sil Str Tir Var Zir Ars	ICAP S rk box requir (MENT icon ver contium hadium hc senic lenium	can next ed.	ug/g- P VALUE 53. 30. 45.	al if	
Check prod WPN: V Preserved Non-Filter ELEMENT Aluminum Barium Beryllium Boron Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Molybdenum Nickel	ICAP VA S800 150. 25. 25. 25. 2100. 140. 25. 10.	Pre Fil	Served W/ tered NALYTIC AA VAI	AL RES	Ma is ULTS ELF Sil Sil Str Tir Var Zir Ars	ICAP S rk box requir (MENT icon ver contium adium ac senic lenium rcury	ican next ed.	ug/g- P VALUE 53. 30. 45.	al if	
Check prot WPN: V Preserved Non-Filter ELEMENT Aluminum Barium Beryllium Boron Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Molybdenum Nickel LAB COMMEN	ICAP VA S800 150. 25. 25. 25. 2100. 170. VTS: 0	Pre Fil	Served W/ tered NALYTIC AA VAI	AL RES	Ma is Ma is Sil Sil Str Var Zir Ars Sel Mer	ICAP S rk box requir (MENT icon ver contium adium ac senic lenium rcury	ican next ed.	ug/g- P VALUE 53. 30. 45.	al if	
Check prod WPN: V Preserved Non-Filter ELEMENT Aluminum Barium Beryllium Boron Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Molybdenum Nickel	ICAP VA S800 150. 25. 25. 25. 2100. 170. VTS: 0	Pre Fil	Served W/ tered NALYTIC AA VAI	AL RES	Ma is ULTS ELF Sil Sil Str Tir Var Zir Ars	ICAP S rk box requir (MENT icon ver contium adium ac senic lenium rcury	ican next ed.	ug/g- P VALUE 53. 30. 45.	al if	
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Check prot WPN: V Preserved Non-Filter ELEMENT Aluminum Barium Beryllium Boron Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Molybdenum Nickel LAB COMMEN	ICAP VA	Pre Fil Al	Served W/ tered NALYTIC AA VAI	AL RES	Ma is Ma is Sil Sil Str Var Zir Ars Sel Mer	ICAP S rk box requir (NEST MENT icon ver contium nadium nc senic lenium rcury	can next ed.	ug/g- P VALUE 53. 30. 45.	al if	
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Albuque	erque, NM 8710	6	0/058	iv		Telepl	hone: (50	5)841-250	0
Date	10.0.0	Lab		user		400		3400	<u>53300</u>
		No. L	CP-1064	Code		300		9500	ESCRIPTION
COLLECTION D	ATE & T	IME:	60 13 08 Mm dd	inh m		1=1	Pasa	Notur	ral GALI
COLLECTED BY	:	,				Bia	neo F	Plant -	BIOTOM PHIL
	ONRAL	1/21	CHARUS			-550	good	107- C	tes Donale
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TO:		REC	· r			OWNE	R:		· .
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NEW MEXI						Coun	ty:	San Ju	211
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SANTA FI	E, NM	87504-	-0968						ct: (10N06E24342)
1 mm 1 .	Conrad	2				13	19 12,41	1/ 14+	+ 1/14
ATTN: PHONE:				STATIC	N/ WELL	CODE:	111	1111	1111
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SAMPLING CON	ארדיידרו <i>א</i> כ	; •	LATITUDE	, LONGI	TUDE:	61413	131011	1017151	7]-[3]0]
☐ Baile		quu	Water 1	Level:	Disch	narge:		Sampl	e Type:
Dipped	d 🗍 I	'ap						1 501	اک آ
pH(00400)	Conducti	.vity(Uncorr.)	Water	Temp.(C	00010)			ty at 25°C
			umho		٠ . ٥	-	1 (00	094)	umho
FIELD COMME	NTS:			HNO;			TCAR		/
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SAMPLE FIELD Check prop			•		LAB AN	ALYSIS	REQUE	ESTED:	
WPN: W			WPF: Wat	Pr	 	CAP So	าลท		
Preserved			erved w/					metal	if AA
Non-Filter	ed	Filt	ered	3		equire			
		AN	IALYTIC	AL RE	SULTS	(MG	ICAP	4/9	
ELEMENT	ICAP VA	LUE	AA VAI	JJE	ELEME	NT	ICAP A	VALUE	AA VALUE
Aluminum	9500				Silic		10		
Barium	190.				Silve		45		
Beryllium	45	سياننسس			Stron	tium	52		
Boron	<u>< 5.</u>				Tin				
Cadmium	45 ,			i				n	
			U		Vanad	llum			
Calcium	4800		U		Zinc			10.	
Chromium	4800 5.		≥ 8.1		Zinc Arsen	nic			
Chromium Cobalt	4800 7.1) <u>. </u>	⊠ 8.1	· ·	Zinc Arser Seler	nic nium			
Chromium Cobalt Copper	4800 3.1 20.) <u>.</u>	⊠ <u>8.1</u>		Zinc Arsen	nic nium			
Chromium Cobalt Copper Iron	4800 5. 7.1 20.) <u>.</u>	8.1		Zinc Arser Seler	nic nium			
Chromium Cobalt Copper Iron Lead	4800 7.1 20. 11900 10.	7,	⊠ <u>8.1</u>		Zinc Arser Seler	nic nium			
Chromium Cobalt Copper Iron Lead Magnesium	7.1 20. 11900 10.	7,	⊠ <u>8.1</u>		Zinc Arser Seler	nic nium			
Chromium Cobalt Copper Iron Lead Magnesium Manganese	4800 7.1 20. 11900 10. 3200 670	2,	⊠ <u>8.1</u>		Zinc Arser Seler	nic nium			
Chromium Cobalt Copper Iron Lead Magnesium	7.1 20. 11900 10.	2,	⊠ <u>8.1</u>		Zinc Arser Seler	nic nium			
Chromium Cobalt Copper Iron Lead Magnesium Manganese Molybdenum Nickel	4800 7.1 20. 11900 10. 3200 670 45.	2,	⊠ <u>8.1</u>		Zinc Arser Seler	nic nium			
Chromium Cobalt Copper Iron Lead Magnesium Manganese Molybdenum Nickel	4800 7.1 20. 11 900 10. 3200 670 46.	2,			Zinc Arsen Selen Mercu	nic nium nry			
Chromium Cobalt Copper Iron Lead Magnesium Manganese Molybdenum Nickel	4800 7.1 20. 11 900 10. 3200 670 46.	2,	8.1		Zinc Arsen Selen Mercu	nic nium nry			
Chromium Cobalt Copper Iron Lead Magnesium Manganese Molybdenum Nickel	4800 5. 7.1 20. 11900 10. 3200 670 25. 10.	2,	Seported o		Zinc Arsen Selen Mercu	nic nium nry			Digest Jahly

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Alour Alour	querque, MM 8/ 100	IC	P 1057	7 W	**	Teleph	one: (50	5)841-250	0	
Date	17 0 0	La		User		400	, <u></u>	400	5330	00
	1219 1821	No =(/	1063	Code		300		500		
COLLECTION	DATE & TI	ME:	yy mm ad	l hh mm					ESCRIPT	
		٤	7 12 08	1530	_]		Paso	Notu,	101 CAL	
COLLECTED F	Y:		-		ł	Bia	neo F	Plant -	13100m.	1-1114
(CONRAC	/EIC	CHARUS		1	Cale	um D	eich Sa	mple	
						Bas	Maron	ind	4	
TO:		ם ה ח ה				OWNER	: 0			
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Med Mes			OUD HAD.	LI DOZUM	••			Can Ju		
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SANTA I	FE, NM	87504-	0968						ct: (10N06E2	
	Comas					[<	4 1241	1/14/	+ 1114	1
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		I	ATITUDE	, LONGI!	rude: 3	61413	131011	1017151	71-1310	1 1
SAMPLING CO	ONDITIONS						 			
□ Baile		ump	Water .	Level:	Disch	narge:		Sampl	e Type:	
agia N		ap				J		55,	11	
pH(00400)			ncorr.)	Water	Temp.(200101	Con		ty at 2	کی
P11(00400)	COMMUNICA	1101(0			, cmp. (,,,,		094)	.cy uc z	, , ,
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7777 D 00100			hwyo		HNO:	1,71,2,2,1		.7.22	1118	iho_
FIELD COMM	ENTS:		·	1774	AFICUS	.acaesa	7 - 20	9,5		
			 							
SAMPLE FIE			•	11	LAB AN	ALYSIS	REQUE	STED:		
Check pro				11						
	Water		WPF: Wat			CAP So				
Preserved	w/HNO,		erved w/	'HNO,				metal	if AA	
Non-Filte	red	Filte	ered	3 11	is r	equire	d.			
	•	AN	ALYTIC	AL RES	SULTS		\mathbf{E}) \mathcal{M}	2/9		
ELEMENT	ICAP VA	JE	AA VAI	JUE	ELEME	NT	ICAP (VALUE	AA V	ALUE
Aluminum	5200.				Silic		20			
Barium	130.				Silve	_	4.5			
Beryllium	<u> </u>				Stron		30			
_	30.				Tin					
Boron					Vanad					
Czdmium	<u>دح.</u>		Ц			TUM	9			
Calcium	3600	<u> </u>		`\	Zinc		2	<u> </u>		
Chromium	. ک		☑ <u>4.4</u>		Arser					
Cobalt	3.8				Seler	nium				
Copper	9.				Mercu	ıry				
Iron	6700					_			\sqcap	
Lead	9.		\sqcap						<u> </u>	
Magnesium	1900		<u> </u>				***************************************		H	
Manganese	120.	•							H	
Molybdenu				1			-		님	
							•		님	
Nickel	<u> </u>								U	
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LAB COMME		1 my	A	My 12		3			<u> </u>	gest
80.22%	soleds.	_rup	ortedow	"as M	seived!	" vasio				<u> </u>
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	ICA	P Anal	Lyst:			R	eviewe	::_ <u>\</u>	lish	UZ-
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Analysis Date: 1/27/88

Date Reviewed: 2/11/88



New Mexico Health and Environment Department SCIENTIFIC LABORATORY DIVISION 700 Camino de Salud NE Albuquerque, NM 87106 -- (50

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GENERAL WATER CHEMISTRY a NITROGEN ANALYSIS

RECEIVED 8 12	8/ NO	1/UC\$3627		o 59600 D o	THER:		
Collection DATE		SITE INFORM- ►	Sample location	NG-Bear	w/	Bloomfo	eld
Collection TIME		ATION	Collection site description	n, 1, 1, 1	Class		11
Collected by — Person/Agericy	210		sul 1	campline	<u> المراض</u>	es por	w 6
1	JA						
SEND GROUND FINAL NM ENVIR	WALER &	K HAZAHDOUS T IMPROVEME	WASTE BUREA ENT DIVISION (L		7	1999	
Crown Bui Santa Fe,	ildina. PO	Box 968		·][:			
Attn:			1111	OCT 1 3 1987	<u> </u>	······································	_ <
, <u></u>				ID WATER/HAZARDBUS WAST	Station/	-1:	<u> </u>
			CROOM	BUREAU	Owner		k4
SAMPLING CONDIT		<u> </u>		T	EPI		ions likely
Bailed □ Pu □ Dipped □ Ta		Water level		Discharge		Sample type	<i>(</i>)
pH (00400)		Conductivity (Unc		Water Temp. (00010)			25°C (00094)
			μmho		•C	<u> </u>	μπ
Field comments	ampl	led cle	sest pla	ne to wh	on a	soil 8	auges
Damples	take						
2017						······································	
SAMPLE FIELD TRE	EATMENT	— Check prop	er boxes		_	2	
No of samples	□NF	Whole sample (Non-filtered)		n field with	militas Q4	/L ádded	
submitted **	1	(Non-filtered)					
middle or south into the same			υ.43 μπ	embrane inter	-		
middle or south into the same	ded □ O		0.45 μπ	embrane inter		·	
	ded 🗆 O	ther-specify:					
NA: No acid ad	ded 🗆 O	ther-specify:	Units Date analyz			Un	
ANALYTICAL RESU	ded □ O	ther-specify:	Units Date analyz	ed F. NA Calcium (00915)		3 <u>4</u> m	g/l <u>9//8</u>
NA: No acid ad ANALYTICAL RESU	ded □ O	ther-specify:		ed E. NA Calcium (00915) Magnesium (00925)		7 mg	g/1 <u>9//8</u> g/1 <u>9//8</u>
NA: No acid add ANALYTICAL RESU NF, NA Conductivity (Correct 25°C (00095) Total non-filterable	JLTS from	ther-specify:	Units Date analyz	ed F. NA Calcium (00915)		7 mg 16.1 mg	g/1 <u>9//8</u> g/1 <u>9//8</u> g/1 <u>E/s/</u>
NA: No acid ad ANALYTICAL RESU NF, NA Conductivity (Correct 25°C (00095) Total non-filterable residue (suspended)	JLTS from	ther-specify:	Units Date analyz μπhο	Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440)	7 mm 7 mm 16.1 mm 1.17 mm	g/l 9//8 g/l 9//8 g/l 5/5/ g/l 5/5/
NA: No acid ad ANALYTICAL RESU NF, NA Conductivity (Correct 25°C (00095) Total non-filterable residue (suspended) (00530)	JLTS from	ther-specify:	Units Date analyz	Calcium (00915) Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940))	7 mm 16.1 mm 1.17 mm 96 mm	g/l 9//8 g/l 9//8 g/l 8/5/ g/l 8/5/ g/l 8/5/ g/l 9/2 g/l 9/2
NA: No acid ad ANALYTICAL RESU NF, NA Conductivity (Correct 25°C (00095) Total non-filterable residue (suspended) (00530)	JLTS from	ther-specify:	Units Date analyz μπhο	Calcium (00915) Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945))	7 mm 16.1 mm 1.17 mm 96 mm	g/l 9//8 g/l 9//8 g/l 8/3/ g/l 8/3/ g/l 8/3/
NA: No acid ad ANALYTICAL RESU NF, NA Conductivity (Correct 25°C (00095) Total non-filterable residue (suspended) (00530) Other	ded O	Other-specify:	Units Date analyz μπhο	Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945))	7 mm 7 mm 16.1 mm 1.17 mm 7.5 mm 7.5 mm	g/l 9//8 g/l 9//8 g/l 9//8 g/l 5/5/ g/l 5/5/ g/l 9/2 g/l 9/1 g/l 9//
NA: No acid ad ANALYTICAL RESU NF, NA Conductivity (Correct 25°C (00095) Total non-filterable residue (suspended) (00530) Other Other	ded □ O	Other-specify:	Units Date analyz μπhο	Calcium (00915) Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440 Chloride (00945) Sulfate (00945) Total filterable residu (dissolved) (70300))	7 mm 7 mm 16.1 mm 1.17 mm 7.5 mm 7.5 mm	g/l 9//8 g/l 9//8 g/l 8/5/ g/l 8/5/ g/l 8/2 g/l 9/2 g/l 9/1
NA: No acid ad ANALYTICAL RESU NF, NA Conductivity (Correct 25°C (00095) Total non-filterable residue (suspended) (00530) Other Cother Cother NF, A-H ₂ SO ₄	ded □ O	Other-specify:	Units Date analyz μπhο	Calcium (00915) Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440 Chloride (00940) Sulfate (00945) Total filterable residu (dissolved) (70300) Other:)	7 mm 7 mm 16.1 mm 1.17 mm 7.5 mm 7.5 mm	g/l 9//8 g/l 9//8 g/l 9//8 g/l 5/5/ g/l 5/5/ g/l 9/2 g/l 9/1 g/l 9//
NA: No acid ad ANALYTICAL RESU NF, NA Conductivity (Correct 25°C (00095) Total non-filterable residue (suspended) (00530) Other Cother NF, A-H ₂ SO ₄	ded □ O	Other-specify:	Units Date analyz μmho mg/l	Calcium (00915) Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440 Chloride (00945) Sulfate (00945) Total filterable residu (dissolved) (70300))	7 mm 7 mm 16.1 mm 1.17 mm 7.5 mm 7.5 mm	g/l 9//8 g/l 9//8 g/l 9//8 g/l 5/5/ g/l 5/5/ g/l 9/2 g/l 9/1 g/l 9//
NA: No acid ad ANALYTICAL RESU NF, NA Conductivity (Correct 25°C (00095) Total non-filterable residue (suspended) (00530) Other Cother NF, A-H ₂ SO ₄	ded □ O	Other-specify:	Units Date analyz μmhomg/img/i	Calcium (00915) Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440 Chloride (00940) Sulfate (00945) Total filterable residu (dissolved) (70300) Other:		7 mm 7 mm 16.1 mm 1.17 mm 7.5 mm 7.5 mm	g/l 9//8 g/l 9//8 g/l 9//8 g/l 5/5/ g/l 5/5/ g/l 9/2 g/l 9/1 g/l 9//
NA: No acid ad ANALYTICAL RESU NF, NA Conductivity (Correct 25°C (00095) Total non-filterable residue (suspended) (00530) Other Other NF, A-H ₂ SO ₄ Nitrate-N Nitrate- total (00630) Ammonia-N total (00630)	ded □ O ILTS from Ited)	Other-specify:	Units Date analyz μmho mg/l	Calcium (00915) Calcium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residu (dissolved) (70300) Other: F, A-H ₂ SO ₄ Nitrate-N + , Nitrate dissolved (00631))	7 mm 7 mm 16.1 mm 1.17 mm 51.8 mm	g/l 9//8 g/l 9//8 g/l 9//8 g/l 5/5/ g/l 5/5/ g/l 9/2 g/l 9/1 g/l 9//
NA: No acid ad ANALYTICAL RESU NF, NA Conductivity (Correct 25°C (00095) Total non-filterable residue (suspended) (00530) Other Other NF, A-H ₂ SO ₄ Nitrate-N Nitrate- total (00630) Ammonia-N total (00630)	ded □ O	Other-specify:	Units Date analyz μmho mg/l mg/l mg/l	Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residu (dissolved) (70300) Other: F, A-H ₂ SO ₄ Nitrate-N + , Nitrate dissolved (00631) Ammonia-N dissolved)	7 mg 7 mg 16.1 mg 1.17 mg 51.8 mg mm	g/l 9//8 g/l 9//8 g/l 9//8 g/l 5/5/ g/l 5/5/ g/l 9/2 g/l 9//7 a/l 9//7
NA: No acid ad ANALYTICAL RESU NF, NA Conductivity (Correct 25°C (00095) Total non-filterable residue (suspended) (00530) Other: Other: Other: NF, A-H ₂ SO ₄ Nitrate-total (00630) Ammonia-N total (00630) Inotal Kjeldahi-N	ded □ O ILTS from Ited)	Other-specify:	Units Date analyz μmhomg/img/i	Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residu (dissolved) (70300) Other: F, A-H ₂ SO ₄ Nitrate-N + , Nitrate dissolved (00631) Ammonia-N dissolved (00608))	7 mg 7 mg 16.1 mg 1.17 mg 51.8 mg mm	g/l 9//8 g/l 9//8 g/l 9//8 g/l 5/5/ g/l 5/5/ g/l 9/2 g/l 9/1 g/l 9//7
NA: No acid ad ANALYTICAL RESU NF, NA Conductivity (Correct 25°C (00095) Total non-filterable residue (suspended) (00530) Other Other Other NF, A-H ₂ SO ₄ NItrate-N Nitrate- total (00630) Ammonia-N total (00 Total Kjeldahl-N Chemical oxygen demand (00340)	ded O	Other-specify:	Units Date analyz μmho mg/l mg/l mg/l	Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residu (dissolved) (70300) Other: F, A-H ₂ SO ₄ Nitrate-N + , Nitrate dissolved (00631) Ammonia-N dissolved)	7 mg 7 mg 16.1 mg 96 mg 51.8 mg mm m	g/l 9//8 g/l 9//8 g/l 9//8 g/l 6/3/ g/l 6/3/ g/l 9/2 g/l 9/2 g/l 9/1 g/l 9//7
NA: No acid ad ANALYTICAL RESU NF, NA Conductivity (Correct 25°C (00095) Total non-filterable residue (suspended) (00530) Other Cother Co	ded O	Other-specify:	Units Date analyz	Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00940) Sulfate (00945) Total filterable residu (dissolved) (70300) Other: F, A-H ₂ SO ₄ Nitrate-N + , Nitrate dissolved (00631) Ammonia-N dissolved (00608))	7 mg 7 mg 16.1 mg 96 mg 51.8 mg mm m	g/l 9//8 g/l 9//8 g/l 9//8 g/l 5/5/ g/l 5/5/ g/l 9/2 g/l 9/1 g/l 9//7
NA: No acid ad ANALYTICAL RESU NF, NA Conductivity (Correct 25°C (00095) Total non-filterable residue (suspended) (00530) Other Other Cother Cother Cotal (00630) Ammonia-N total (000000) Total Kjeldahi-N Chemical oxygen demand (00340) Total organic carbor	ded O	Other-specify:	Units Date analyz _µmho mg/l mg/l mg/l mg/l	Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00945) Total filterable residu (dissolved) (70300) Other: F, A-H ₂ SO ₄ Nitrate-N +, Nitrate dissolved (00631) Ammonia-N dissolved (00608) Total Kjeldahl-N)	7 mg 7 mg 16.1 mg 96 mg 51.8 mg mm m	g/l 9//8 g/l 9//8 g/l 9//8 g/l 6/3/ g/l 6/3/ g/l 9/2 g/l 9/2 g/l 9/1 g/l 9//7
NA: No acid ad ANALYTICAL RESU NF, NA Conductivity (Correct 25°C (00095) Total non-filterable residue (suspended) (00530) Other Other Cother Cother Cotal (00630) Ammonia-N total (000000) Total Kjeldahi-N Chemical oxygen demand (00340) Total organic carbor	ded ODILTS from ted)	Other-specify:	Units Date analyz	Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00945) Total filterable residu (dissolved) (70300) Other: F, A-H ₂ SO ₄ Nitrate-N +, Nitrate dissolved (00631) Ammonia-N dissolved (00608) Total Kjeldahl-N	e - /	7 mm 16.1 mm 1.17 mm 75 mm 75 mm 75 mm 77 mm 78 mm	g/l 9//8 g/l 9//8 g/l 9//8 g/l 6/3/ g/l 6/3/ g/l 9/2 g/l 9/1 g/l 9//7 g/l 9//7 g/l 9//7 g/l 9//7
NA: No acid ad ANALYTICAL RESU NF, NA Conductivity (Correct 25°C (00095) Total non-filterable residue (suspended) (00530) Other Cother NF, A-H ₂ SO ₄ Nitrate-N Nitrate- total (00630) Ammonia-N total (00 Inotal Kjeldahi-N Chemical oxygen demand (00340) Chemical oxygen demand (00340) Other: Other:	ded O	Other-specify:	Units Date analyz	Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00945) Total filterable residu (dissolved) (70300) Other: F, A-H ₂ SO ₄ Nitrate-N +, Nitrate dissolved (00631) Ammonia-N dissolved (00608) Total Kjeldahl-N () Other:	e - /	7 mm 7 mm 16.1 mm 1.17 mm 75 mm 75 mm 75 mm 77 mm 78 mm	g/l 9//8 g/l 9//8 g/l 9//8 g/l 6/3/ g/l 6/3/ g/l 9/2 g/l 9//
NA: No acid ad ANALYTICAL RESU NF, NA Conductivity (Correct 25°C (00095) Total non-filterable residue (suspended) (00530) Other Cother NF, A-H ₂ SO ₄ Nitrate-N Nitrate- total (00630) Ammonia-N total (00 Inotal Kjeldahi-N Chemical oxygen demand (00340) Chemical oxygen demand (00340) Other: Other:	ded ODILTS from the Control of the C	SAMPLES	Units Date analyz μmho mg/l mg/l mg/l mg/l mg/l mg/l	Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00945) Total filterable residu (dissolved) (70300) Other: F, A-H ₂ SO ₄ Nitrate-N + , Nitrate dissolved (00631) Ammonia-N dissolved (00608) Total Kjeldahl-N () Other: Analyst	-N red Date	7	g/l 9//8 g/l 9//8 g/l 9//8 g/l 6/3/ g/l 6/3/ g/l 9/2 g/l 9/1 g/l 9//7 g/l 9//7 g/l 9//7 g/l 9//7
NA: No acid ad ANALYTICAL RESU NF, NA Conductivity (Correct 25°C (00095) Total non-filterable residue (suspended) (00530) Other Other Cother Cother Cotal (00630) Ammonia-N total (000000) Total Kjeldahi-N Chemical oxygen demand (00340) Total organic carbor	ded ODILTS from the Control of the C	SAMPLES	Units Date analyz μmho mg/l mg/l mg/l mg/l mg/l mg/l	Calcium (00915) Magnesium (00925) Sodium (00930) Potassium (00935) Bicarbonate (00440) Chloride (00945) Total filterable residu (dissolved) (70300) Other: F, A-H ₂ SO ₄ Nitrate-N +, Nitrate dissolved (00631) Ammonia-N dissolved (00608) Total Kjeldahl-N () Other:	-N red Date	7 mm 16.1 mm 1.17 mm 75 mm 75 mm 75 mm 77 mm 78 mm	g/l 9//8 g/l 9//8 g/l 9//8 g/l 6/3/ g/l 6/3/ g/l 9/2 g/l 9/1 g/l 9//7 g/l 9//7 g/l 9//7 g/l 9//7



New Mexico Health and Environment Department SCIENTIFIC LABORATORY DIVISION 700 Camino de Salud NE Albuquerque, NM 87106 — (\$\frac{1}{2}\$41-2555

GENERAL WATER CHEMISTRY MITROGEN ANALYSIS

DATE RECEIVED 8	1/2/87 18	10 WC-3663 COD	R E _ 59300	<u> </u>	HER:		
Collection DATE		SITE Sample	location E.P.	NG-Bear	w/	Gloomfre	d
Collection TIME		ATION	ion site of scription		- 0		
Ollected by — Person//	Agency (1)		240	en fifeli	_CON	st pour	76
(The second second		-7 <u>C</u> 7				
ENU NIA		& HAZARDOUS WAS NT IMPROVEMENT D					
	vn Building, PC		कि हैं।	ال مراجي المارية			
•	a Fe, NM 8750		المارية		***************************************		
Attn:		***************************************		3 2 7 1987			
					Station/ well code	triza Sch	4
AMPLING CO	NDITIONS		GREEND WA	TER/HAZARDOUS WASTE	Owner - A	16- Ced: 201	C Deter
Bailed	☐ Pump	Water level		Discharge		Sample type	
☐ Dipped	☐ Tap			M (0.00(0))		1120	
pH (00400)		Conductivity (Uncorrecte	umho	Water Temp. (00010)	°C	Conductivity at 25	umho
Field comments	132 mi 1	es class	1 10-	E ist	_		
1	1 Jan 1 6	as consi	+ file	S G. ZUM	م رب	sou va	1 2 2 7
same	es tall	' L					
AMPLE FIEL	D TREATMEN	T — Check proper box	xes	*			
No. of samples		Whale comple	E: Filtered in f	ield with	mi H₂SO₄/	Laddad	
submitted		(Non-filtered)	0.45 µmen	nbrane filter	1111 1725041	L added	
□ NA: No ad	id added 🖂 (Other-specify:		•			
ANALYTICAL	RESULTS from	n CAMDI EC					
NF, NA	11230213 11011		Date analyzed	F, NA		Units	Date analyzed
☐ Conductivity	(Corrected)			☐ Calcium (00915)		mg/l	
25°C (00095)	-	µmho		☐ Magnesium (00925)		mg/l	
☐ Total non-filte	rable			☐ Sodium (00930) ☐ Potassium (00935)		mg/l mg/l	
residue (susp		. 11		☐ Bicarbonate (00440)	mg/l	
(00530)		mg/l		☐ Chloride (00940)	,	mg/l	
☐ Other:	, 			□ Sulfate (00945)		mg/l	
Other:				□ Total filterable residu	е	_	
☐ Other:				(dissolved) (70300)		mg/l	
NF, A-H₂SO₄				Other:			
☐ Nitrate-N+,	Nitrate-N		. (F, A-H ₂ SO ₄			
total (00630)		mg/i		Nitrate-N+, Nitrate	-N	0 0 1	_ / _
☐ Ammonia-N		mg/	l	dissolved (00631)		0.04 mg/l	<u> 2/1_3</u>
☐ Total Kjeldah ()		mg/	l .	☐ Ammonia-N dissolv	ed		
☐ Chemical ox	ygen			- (00608) ☐ Total Kjeldahl-N		mg/l	
demand (003		mg/	l	- ()		mg/l	
☐ Total organic ()	carbon	mg/	1 <u> </u>	☐ Other:		<u> </u>	
☐ Other:				Analyst	Date F	Reported Revie	ewed by
Other:				-	8	20 87	
Tema	irks _ (, / /	75 -	. , ,			
	<u></u>	siteet	,) · · ·	CT- 5/1/2	<u> </u>	- 5 pr.	
	<u> </u>					******************************	

700 Camino de Salud NE Albuquerque, NM 87106	HEAVY METAL ANALYSIS FORM Telephone: (505)841-2500
Date Received \$1/2187 No. ICP-22 Code	
COLLECTION DATE & TIME: YY mm dd hh	mm COLLECTION SITE DESCRIPTION (1) [-PN6 Bience Blowfiel]
COLLECTED BY.	Cationy Deten SE of Encuse
TO: Cornad By	OWNER: EPNE Cutizons Deter
GROUND WATER & HAZARDOUS WASTE BUR NEW MEXICO EID/HED PO BOX 968 - RUNNELS BUILDING	County:
SANTA FE, NM 87504-0968 ATTN:	Township, Range, Section, Tract: (10N06E24342) [2 9 4+/ / 4+/ 4+
PHONE: <u>827-2907</u> STATI	ION/ WELL CODE: CATZMA 1011714
LATITUDE, LONG	SITUDE: -
SAMPLING CONDITIONS: Bailed Pump Water Level:	: Discharge: Sample Type:
K Dipped Tap	detele sample 1/20
pH(00400) Conductivity(Uncorr.) Wate	er Temp. (00010) Conductivity at 25 C (00094)
umho	°C µmho
	nest point & surface soil
sample of T	LIENEN
SAMPLE FIELD TREATMENT	LAB ANALYSIS REQUESTED:
Check proper boxes:	TO 701 P. COO.
☐ WPN: Water	Mark box next to metal if AA
Preserved w/HNO3 Preserved w/HNO3 Filtered	is required.
ANALYTICAL RE	
ELEMENT ICAP VALUE AA VALUE	ELEMENT ICAP VALUE AA VALUE Silicon 49
Aluminum 0.4 Barium <0.1	Silicon 49 Silver 40.1
Beryllium 40.1	Strontium 8.3
Boron 4.1	Tin 40.1
Cadmium <0.1 \[\sqrt{7} < 0.001 \]	Vanadium <0.1
Calcium 30.	
	Zinc 40.1
Chromium 40.	Zinc <
Cobalt <0.05	Zinc
Cobalt < 0.05 Copper < 0.1	Zinc
Cobalt <0.05 Copper <0.1 Iron 0.5	Zinc
Cobalt <0.05 Copper <0.1 Iron 0.5 Lead <0.1 Magnesium 6.8	Zinc 40.1 Arsenic Selenium Co.005 Mercury Co.005
Cobalt <0.05 Copper <0.1 Iron 0.5 Lead <0.1 Magnesium 6.8 Manganese <0.05	Zinc
Cobalt <0.05 Copper <0.1 Iron 0.5 Lead <0.1 Magnesium 6.9 Manganese <0.05 Molybdenum <0.1	Zinc 40.1 Arsenic Selenium Se
Cobalt <0.05 Copper <0.1 Iron 0.5 Lead <0.1 Magnesium 6.8 Manganese <0.05	Zinc

ICAP Analyst:_ Analysis Date:_

Reviewer:_ Date Reviewed: 12/2/87

Date Received 1/2/87 No ICP-560 Code COLLECTION DATE & TIME: yy mm dd hh r e7 US /// // // // COLLECTED BY: COLLECTED BY: GROUND WATER & HAZARDOUS WASTE BURN NEW MEXICO EID/HED PO BOX 968 - RUNNELS BUILDING	Toollection Site Description Collection Site Description Collection Site Description Chipens Deter St of center OWNER: Chipens River Colleges River EAU SITE LOCATION:
COLLECTION DATE & TIME: YY mm dd hh r e7 US II II II II II II II	COLLECTION SITE DESCRIPTION CHIPM Bloomfield-Blance Citizens Bitch S'E of Univers Proce OWNER: C-DNO Citizens Bitch SITE LOCATION:
COLLECTED BY: COLLEC	O EPA) 6 Bloomfield-Blence Citizens Ditel SE of winese OWNER: EN C Citizens Ditel STE IOCATION:
COLLECTED BY: Corved / Degr TO: Corved / Degr TO: GROUND WATER & HAZARDOUS WASTE BURN NEW MEXICO EID/HED	OWNER: CANO Cotypus Bites EAU SITE LOCATION:
GROUND WATER & HAZARDOUS WASTE BURN NEW MEXICO EID/HED	OWNER: GNO Cotispus Riches EAU SITE LOCATION:
GROUND WATER & HAZARDOUS WASTE BURN NEW MEXICO EID/HED	Cetizens Beter EAU SITE LOCATION:
NEW MEXICO EID/HED	
· · · · · · · · · · · · · · · · · · ·	Compters
PO BOX 968 - RUNNELS BUILDING	. County:
SANTA FE, NM 87504-0968	m with m m to transport to
•	Township, Range, Section, Tract: (10N06E24342)
ATTN: Corvad	Z1/ 10.(1.10/ 17.11)
PHONE: 37-2901 STATIO	ON/ WELL CODE: [CI/ITZWS] INI/ITC
LATITUDE, LONG	ITODE: _ _ _
SAMPLING CONDITIONS:	Discharge: Sample Type:
☐ Bailed ☐ Pump Water Level: ☐ Dipped ☐ Tap	Discharge: Sample Type:
pH(00400) Conductivity(Uncorr.) Wate:	
	(00094)
FIELD COMMENTS: (From defent cle	°C µmho
Comply Total	nest point to surse sol
(CTC)	NUN / LIERCH
SAMPLE FIELD TREATMENT	LAB ANALYSIS REQUESTED:
Check proper boxes:	
WPN: Water	ICAP Scan Mark box next to metal if AA
Non-Filtered Filtered	is required.
ANALYTICAL RE	
ELEMENT ICAP VALUE AA VALUE	ELEMENT ICAP VALUE AA VALUE
Aluminum <0.	Silicon 4/1
Barium 40.1	Silver <0.1
Beryllium <0.1	Strontium 0.3
Boron <u>⟨0. </u> Cadmium ⟨0.	Tin \(\alpha \cdot \) Vanadium \(\alpha \cdot \).
	Vanadium <u><0.1</u> Zinc <0.1
Calcium of	
	Arsenic
Chromium <u>40.1</u> <u>√0.005</u>	Arsenic Arsenic Arsenium Arsen
Chromium	Selenium $2 < 0.005$
Chromium	Selenium
Chromium	Selenium 2<0.005 Mercury 2<0.0005
Chromium	Selenium A < 0.005 Mercury A < 0.005
Chromium	Selenium A < 0.005 Mercury A < 0.005
Chromium	Selenium (20.005) Mercury (20.0005)

SCIENTIFIC LABORATORY DIVISION 700 Camino de Salud NE Albuquerque, NM 87106 — (5200841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 8	12187 12	BWC-3666	USER 59300	☐ 59600 ☐ OTHER	l:			
Collection DATE 10		SITE	Sample location Ef	1		Jones	Keld	
Collection TUME		INFORM- ► ATION	(2×122	m kutch		υ		
Collected by - Person/Ag	ency		Collection site description	und Cetizens	Cital	HU	a sem	, t
Cowad /	lieg_			······				······································
•	-]				~~~~~~~
			WASTE BUREAU					
INAL NME		IT IMPROVEME	NT DIVISION/HE	D कर महिम्सीपती				
Santa	. Fe. NM 8750	4-0968	10 15					
Attn: .	<u> </u>	nued		JG 27 1987 WILL				
			1111	L'Estimate	oni منتر	NIG	- CU112	وبادر
A MON INIO CO	ייייותו		<u> </u>	WATER MAZARDOUS WASTOWNE	L /		- Citing Back go	nul
AMPLING CON Bailed	DITIONS D Pump	Water level	<u>[</u>	Discharge		ample type		
	⊔ Pump □ Tap	***************************************				ample type	ال س	
pH (00400)		Conductivity (Unco		Water Temp. (00010)	<u> </u>	onductivity	at 25°C (00094	
			μmho		°C			μmho
Field comments	Leten	Samo	led who	no E prope	viz -	leno	cross	220
Cef,,	en De	icy		no E prope				
								
	TREATMENT	r — Check prope						
No. of samples submitted	□ NF	Whole sample (Non-filtered)	F: Filtered in 1	field with A: 2 ml h	H₂SO₄/L	added		
	d added C		,					
□ NA: No aci	 							
NE NA	ESULTS from	SAMPLES	Units Date analyzed	(IF NA			Units Date a	nalv-c-
NF, NA	'orrestad'		отпо рате апатухес					nalyzed
☐ Conductivity (C 25°C (00095)		·	μmho	☐ Calcium (00915) ☐ Magnesium (00925)			mg/l mg/l	
☐ Total non-filtera	ihie			☐ Sodium (00930)			mg/l	
residue (suspe				☐ Potassium (00935) ☐ Bicarbonate (00440)			mg/l mg/i	
(00530)			mg/l	☐ Chloride (00940) _			mg/i	
☐ Other: ☐ Other:	 -			□ Sulfate (00945) _			mg/l	
☐ Other:				Total filterable residue (dissolved) (70300)			mq/l	
NE AU CC				Other:				
NF, A-H ₂ SO ₄	Anna - N			(F, A-H ₂ SO ₄)				
□ Nitrate-N + , Ni total (00630)	trate-N		mg/l	ــــــــــــــــــــــــــــــــــــــ		ı	 .	
☐ Ammonia-N to			mg/l	Nitrate-N+, Nitrate-N dissolved (00631)	< c.	c:4	mg/1 _ ع	13
☐ Total Kjeldahl-I	N .			☐ Ammonia-N dissolved		•	•	
() Chemical oxyg				O0608) _ ☐ Total Kjeldahl-N			mg/l	
demand (0034	0)		_ mg/l	- ()		· · · · · · · · · · · · · · · · · · ·	mg/l	
☐ Total organic c	a:0011		_ mg/l	Other:				
☐ Other:				Analyst	Date Re	orted I	Reviewed by	
☐ Other:			-	-	1 0 1	0 82	09	
Laboratory remark	(S/	7		Pieza = = 11/4	<u> </u>		L.,	
	Se.A.	5 intar	<u> </u>	Pipin = 2/11/2	. 🞞	21 C		

Date Received SUPERING DESCRIPTION OF THE PROPERTY OF THE PRO

HEAVY METAL ANALYSIS FORM

Telephone: (505)841-2500

D-+-	T +		Tinar	□ 59400	D 52400	D 52200
Date		ab 10. <i>ICP-566</i>	User	_	□ 53400 □ 50500 □ 50500	<u> </u>
				59300	□ 59500	
COLLECTION	DATE & TIM	E: yy mm d			LECTION SITE	
		E7 OF 1	0 14 20			nei Bloowhel
COLLECTED	BY:	1/0			ukaround Ci	tosen beter
	Conra	A/ Beg			Cample	<i>J</i>
		0		·		
TO:			•		IER: EPNO	
				(Cetizons Bet	es
					J	
GROUND	WATER & HA	ZARDOUS WAS	TE BUREA	u si	TE LOCATION:	
NEW ME	XICO EID/HE	ED		Cou	inty: /Jan	luan
		ELS BUILDIN	G		-	
	FE, NM 87			Town	ship, Range, Section, T	Fract: (10N06E24342)
	,				219/x+/1/ 14+	
ב איידית ב	Conna	(•	,	
DHONE.	£7.7-	<u> 2900 - </u>	STATTON	/ WELL CODE	3: <u>[C / / 2 w/</u>	101/1/101/21
FHORE.			DIMITON	/ William Cobi	10 1C 1/ 1/ 13 PO!	101771010
-		LATITUDE	LONGTT	וווי-אחודי		1 1-1 1 1 1
SAMPLING C	- אחדיידמאכ		, Donorr	000.		
Bail.		n Water	Level:	Discharge	Samr	ole Type:
Dipp		- (DC 1 C 1 .	Cetizens.	Actes 1	źc'
pH(00400)	Conductivi	ty(Uncorr.)	Water	Temp. 100010	O) Conductiv	
P.1.(00400)					(00094)	720, 40 50 0
		pmho		°c	(00054)	umho
FIELD COMM	ENTS:	01 /- 12			There ex cror.	120
TAUM COINT	Cutyers	ist. Lung	1 1	7.640	- 0	
	224 (1)00)	15000	1-11	160	1-1)	
SAMPLE RIE	LD TREATMEN	עיוי יייין	/	TAR ANATVS	IS REQUESTED:	
	per boxes:		11	TAND INCIDENCE.	ro imagnini.	
WPN:	Water	WPF: Wat	er	ICAP :	Scan	
Preserved	W/HNO 1	Preserved w/			next to metal	l if aa
Non-Filte	70d 3	Filtered	3	is requi:		L IL NA
NOII-TITCE	1 1	LICELEG		IS LEGUL.	Lea.	
		ANALYTIC	AI RESI	HITS (MC	:/1)	
ELEMENT	ICAP VALU			ELEMENT	ICAP VALUE	AA VALUE
Aluminum		E AR VAL		Silicon	5./	AA VALUE
Barium				Silver	40.1	
	<0.1			Strontium		
Beryllium	<u> </u>			Tin		***************************************
Boron	40.1		,	Vanadium	<0.1	
Cadmium	20.1	_ <u> </u>		Zinc		
Calcium	34.	< 0.00 € 0.00 € E		Arsenic	<0.1	DY 14 000
Chromium	40.1		<u> </u>	Selenium		₹ <u><0.005</u>
Cobalt	40.0	<i>2</i>				₹ <0.005
Copper	40.1	_		Mercury		₹ <0.0005
Iron	<u> </u>	- F-<0.0	, 		Citis and appeared	<u></u>
Lead	₹0.1	10-20.0		- 1 977	שליי אין ויים ויים ויים ויים ויים ויים ויים וי	刀指———
Magnesium	7.7		<u> </u>		-11-11-11-1	
Manganese	40.05	<u> </u>			nce of our	111111111111111111111111111111111111111
Molybdenum		-			DEC 04 1987	1111
Nickel	< <i>D</i> .	L				
	1	-1	0 10		NATER/HAZARROUS WAS	<u> </u>
LAB COMMEN	TIS: Seal	ouben in la	m by 10	Y 8/18/27	bilatVii	
				· · · · ·		
	ICAP .	Analyst:	$\mathcal{A}^{\mathcal{B}}$		Reviewer:	ally
	J m n T re	sis Date:	1 4/19/	97	Date Reviewed	12/1/97
	ATOTA	SIS DALE.		\sim 1	DOLE VEATERED	· · · · / - / /) /

700 Camino de S Albuquerque, NN				METAL ANALY Jephone: (505)841-25	
Date Received 8/2	8) No. ICP-56	User Code	☐ 59400 ☐ 59300	☐ 53400 ☐ 59500	☐ 53300 ☐
COLLECTION DATE &	TIME: YY mm c		CO	LLECTION SITE D	
COLLECTED BY:	red Bep		<u> </u>		leter lamp
To: Con	red			NER: ENNO Litizans Deter	
NEW MEXICO E	& HAZARDOUS WAS ID/HED RUNNELS BUILDIN			TE LOCATION: unty: Law Je	Ou
SANTA FE, NM	87504-0968 Uod		Town	ship, Range, Section, Tri [2]6 [R4/]/ [4+/]	
ATTN:	77- 190 r	STATION	WELL COD	E: [[1/7] M	गगमतल
- SAMPLING CONDITION		E, LONGIT	DDE:		
☐ Bailed ☐ Dipped ☐	Pump Water Tap	Level:	Discharg		e Type:
pH(00400) Conduc	ctivity(Uncorr.)	Water :	remp: (0001	O) Conductivi (00094)	ty at 25°C
FIELD COMMENTS:	Jack Grown	nd Can	pe tan	en at the	umho umho
SAMPLE FIELD TRE			LAB ANALYS	IS REQUESTED:	
WPN: Water Preserved w/HNO Non-Filtered	☐ WPF: Wat	1 1	河 ICAP Mark box is requi	next to metal	if AA
	ANALYTIC		ILTS (MC	G/L)	
	<d.]< td=""><td>LUE</td><td>ELEMENT Silicon Silver</td><td>ICAP VALUE</td><td>AA VALUE</td></d.]<>	LUE	ELEMENT Silicon Silver	ICAP VALUE	AA VALUE
Boron	40.1 40.1 √0.1	<u></u>	Strontium Tin Vanadium	40.1	
Cobalt	40.1 \(\sigma < 0.00	05	Zinc Arsenic Selenium	<u> </u>	≥ <0.005 ≥ <0.005
	<u> </u>		Mercury	EC 04 1987	Ø <0.0005
Magnesium Manganese Molybdenum Nickel	(D.D5 40.]		خاک	WATER! WAZARDOUS WASTE BUREAU	
	eal broken in	lab by	N/ 8/4/8		IGEST
т	CAP Analyst:	OB	- ' '	Reviewer:	Pallre
	nalysis Date:	18/31/3	<u>~</u> 37	Date Reviewed:	12/2/87

GENERAL WATER CHEMISTRY 700 Camino de Salud NE and NITROGEN ANALYSIS Albuquerque, NM 87106 - (505) 841-2555 DATE RECEIVED 59600 \mathbf{Z} OTHER: 59300 Paso Natural 12 108 INFORMreld, NW ATION 306 RICHARD mass RECEIVED FEB 1 8 MG3 HAZARDOUS WASTE BUREAU SEND -NM ENVIRONMENT IMPROVEMENT DIVISION/HED FINAL Crown Building, PO Box 968 REPORT Santa Fe, NM 87504-0968 TO CONRAD Station/ alver well code SAMPLING CONDITIONS .□ Pump Discharge **S** Bailed Water level Sample type 12.46 water □ Dipped □ Tap pH (00400) Water Temp. (00010) Conductivity (Uncorrected) Conductivity at 25°C (00094) μmho 500 μmho Field comments SAMPLE FIELD TREATMENT — Check proper boxes Filtered in field with No. of samples Whole sample ☐ A: 2 ml H₂SO₄/L added hings □ F: □ NF: (Non-filtered) 0.45 µmembrane filter submitted □ NA: No acid added . □ Other-specify: **ANALYTICAL RESULTS from SAMPLES** レドバハ NF. NA Units Date analyzed | P, NA Units Date analyzed 264 122 ☐ Conductivity (Corrected) 25°C (00095) Calcium (00915) mg/l Magnesium (00925) 112 mg/l 551 1/28 전 Sodium (00930) ·ì mg/l □ Total non-filterable 10.7 Dotassium (00935) mg/l residue (suspended) 19 ✓ Bicarbonate (00440) mg/l (00530)6.1 1/25 Chloride (00940) mg/l ☐ Other: ZC 33 ≤ Sulfate (00945) mg/l ☐ Other: ☑ Total filterable residue ☐ Other: 312< (dissolved) (70300) ☐ Other: NF, A-H₂SO₄ F, A-H2 SO4 □ Nitrate-N + , Nitrate-N total (00630) mg/l □ Nitrate-N + Nitrate-N ☐ Ammonia-N total (00610) mg/l dissolved (00631) ☐ Total Kjeldahl-N ☐ Ammonia-N dissolved mg/l (00608) mg/l □ Chemical oxygen ☐ Total Kjeldahl-N demand (00340) mg/l mg/l □ Total organic carbon Other: mg/l ☐ Other: Analyst Date Reported Reviewed by ☐ Other: 3 Y 3 Laboratory remarks

2015 MILLIC FAROHAIOH I DIVISION

Albuquerque, NM 8/106	1064 W	Telephone: (505)84	1-2500
Date La	Üser	☐ 59400 🙀 53400	53300
Received 1219 187 No. IC		☐ 59300 ☐ 5950¢	
COLLECTION DATE & TIME:	yy mm dd hh m		TE DESCRIPTION
	12 08 130	El Faso No	3tural GAS
COLLECTED BY:		Bianco Plus	11 - 13 100m - 110
CONRAD / RI	CHARDS		
30 -	,	OWNER: Lew	71.21.20 . 2.10
TO:	EIVED FEB 1819	88 OHNER: <u>1988</u>	Lordel well
n L o			
₹ & HAZARD	OUS WASTE BURE	AU SITE LOCATION	:
NEW MEXICO EID/HED		County: San	Juan
PO BOX 968 - RUNNELS	BUILDING		
SANTA FE, NM 87504-	0968	Township, Range, Sectio	n, Tract: (10N06E24342)
0		[2]9[KH/]/[C	1+ 1/14
ATTN: Conrad			
PHONE: 2925	STATIO	n/ well code: 6/6/0/-10	000666
<u>-</u>	3MTMTDP IANCT	ויין בו בור בור ואו בו או בו ביו מתחות	-1 -1 11 - 1 2 1 - 1
SAMPLING CONDITIONS:	MILTUDE, LONGI	TUDE: [3161413131617101	1111 - 3101
Bailed Pump	Water Level:	Discharge: S	ample Type:
Dipped Tap		1 4	L'ATER
pH(00400) Conductivity(U	ncorr.) Water		tivity at 25°C
6.2 1500	/3	7 °c (00094	
FIELD COMMENTS:	umho	, C 1	umho
FIELD COMMENTS:			
SAMPLE FIELD TREATMENT		LAB ANALYSIS REQUESTE	D:
Check proper boxes:			·
	VPF: Water	X ICAP Scan	
	erved w/HNO3	Mark box next to me	tal if AA
Non-Filtered 5 Filter	ered !!	is required.	
AN	ALYTICAL RES	SULTS (MG/L)	
ELEMENT ICAP VALUE	AA VALUE	ELEMENT ICAP VALU	E AA VALUE
Aluminum <0.1		Silicon 0.2	
Barium <0.1		Silver <0.	
Beryllium <0.1		Strontium 3.6	
Boron 6,1		Tin <u>20.1</u>	
Cadmium <0,1	U	Vanadium <0.1	
Calcium 240. Chromium <0.1	ET -0.00	Zinc <u>0,8</u> Arsenic	
		Selenium	H
		Mercury	<u> </u>
Copper <u>0.7</u> Iron <u>8.9</u>		iidi dar j	H
Lead 40.1	Π		- H
Magnesium 48.			
Manganese 0.80			
Molybdenum ∠o.(_
Nickel			
TAR CONGRAMO			Digest
LAB COMMENTS:			W Nyew
	. ^		
ICAP Anal	yst: OB	Reviewer:	1- Rahly

Analysis Date: 1/1/88

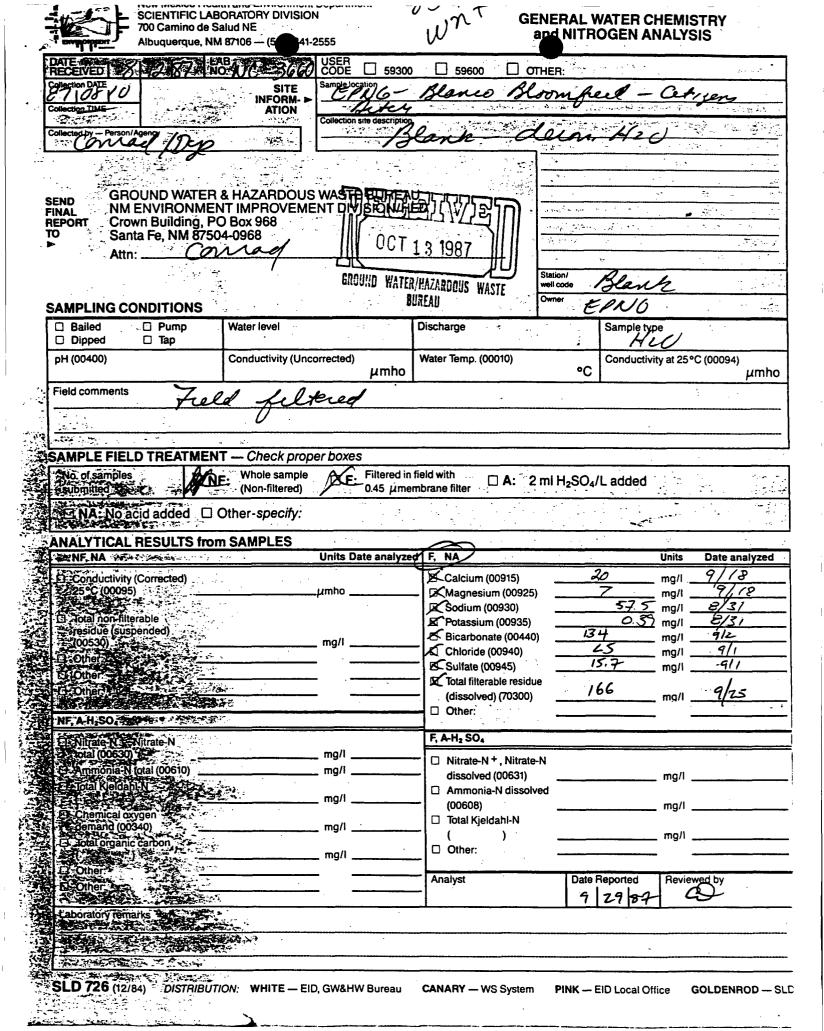
Date Reviewed: 2/1/88

	ue, NM 87106 — (505) 841-		₩ N × and	NITROGEN A	NALYSIS
ATE TO 1 1 9 8 Milection DATE	7 Howes	USER CODE \$ 59300 Sample location	□ 59600 □ OTA	X .	
7 /2 08 lection,TIME	SITE INFORM- ► ATION	Bloom	Paso Natura, Field, NM		
Is or Nected by — Person/Agency CONRAD/RICA	IARDS	Collection site description	Clers 1	Heron U/e	rep
CONTENS / RETEN			983		
	HAZARDOUS NMENT IMPROVEME ng, PO Box 968	WASTE BUREAU			
Adn:	<i>X</i> .0.0.		wolf	ion/ code	
AMPLING CONDITION	NS		O.H.	ner F _D	
□ Bailed □ Pump □ Dipped □ Tap	Water level		Discharge	Sample ty	pe tex
oH (00400) 6. 0	Conductivity (Und		Water Temp. (00010)	Conductiv	ity at 25°C (00094) /// µml
ield comments			Ľ.		11 July 11 11
				BUDGA	7005
AMPLE FIELD TREAT				-Uiy	HSTE
NA: No acid added		•	NEACH		
MALYTICAL RESULTS	S Irom Samples	Units Date analyzed		· · · · · · · · · · · · · · · · · · ·	Units Date analyze
Conductivity (Corrected) 25°C (00095)		_µmḥo	ダ Calcium (00915)	392 34	mg/l //22 mg/l //22
☐ Total non-filterable residue (suspended)		3	☑ Sodium (00930) ☑ Potassium (00935)	407	mg/l 1128 mg/l 2/3
(00530) Other:		_ mg/l	☑ Bicarbonate (00440) ☐ ☑ Chloride (00940) ☐ ☑ Sulfate (00945)	1647	mg/l // mg/l 2/ ^l ; mg/l //2<
☐ Other: ☐ Other:			Total filterable residue (dissolved) (70300)	2762	mg/l 1/14
NF, A-H ₂ SO ₄			Other:		
☐ Nitrate-N+, Nitrate-N	· · · · · · · · · · · · · · · · · · ·		F, A-H ₂ SO ₄		
total (00630) Ammonia-N total (00610)	mg/l mg/l	Nitrate-N + , Nitrate-N dissolved (00631)		mg/l
☐ Total Kjeldahl-N () ☐ Chemical oxygen		mg/l	☐ Ammonia-N dissolved (00608) ☐ Total Kjeldahl-N		mg/l
demand (00340) ☐ Total organic carbon		mg/l	Other:		mg/l
Other:		mg/l	Analyst	Date Reported	Reviewed by
Other:			-	2 5 80	8 65
Laboratory remarks	·		•	. •	• •

Albuq	uerque, NM 87106	1063	-(60	Telephone: (50	5)841-2500
Date Received	1219187 No.	TO I		— /—	3400 <u> </u>
	DATE & TIME:		hh mm		SITE DESCRIPTION Asodural Gass
COLLECTED B	Y: CONRAC / R				Plant Brown Pr
TO:	R	EOF Wara see	3 1 8 1988	OWNER:	lety / Hern wel
	<pre></pre>	RDOUS WASTE		SITE LOCAT	
SANTA F	E, NM 8750 Conneg	4 - 0968			Section, Tract: (10N06E2434 / U/+ + / 4
PHONE:	2405		TATION/ WELL	CODE:	
- SAMPLING CO	NDITIONS:	LATITUDE,	Longitude: 📴	61413131011	01715171-13101
☐ Baile ☐ Dippe	d N Pump	Water Lev	vel: Disch	narge:	Sample Type: WATER
pH(00400)	Conductivity	(Uncorr.)	-	/00	ductivity at 25°094)
FIELD COMME	1340,	umho dirta C	130 00	2	pmho
SAMPLE FIEL Check pron WPN: W Preserved Non-Filter	w/HNO, Pro	WPF: Water eserved w/HN ltered	O ₃ Mark	ALYSIS REQUE CAP Scan box next to equired.	STED: metal if AA
		NALYTICAL			
ELEMENT Aluminum Barium Beryllium Boron Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Molybdenum Nickel	40.1	AA VALUE	ELEME Silic Silve Stron Tin Vanad Zinc Arsen Selen Mercu	on 4.0 r tium 8.0 ium 4	O.I
LAB COMMEN	TS:				
	ICAP Ar	alyst:Of	}	Reviewe	=: Jin ally

Analysis Date: 12/087

Date Reviewed: 4/1/88

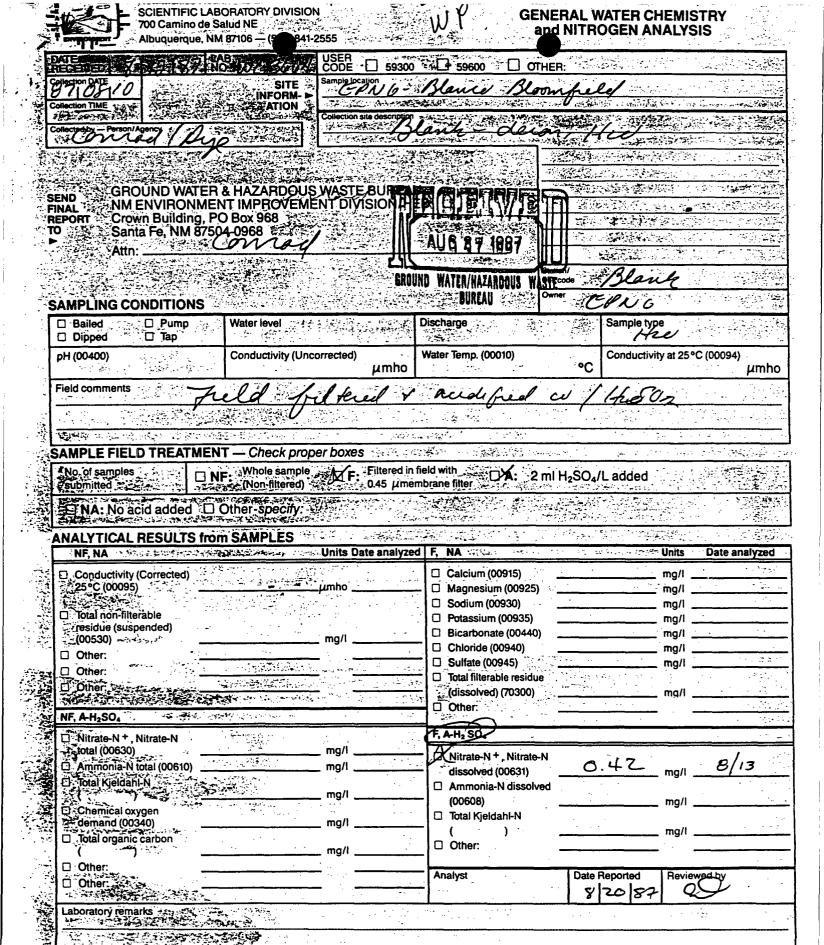


SCIENTIFIC LABORATORY DIVISION 700 Camino de Salud NE Albuquerque, NM 87106

HEAVY METAL ANALYSIS FORM

Tophone: (505)841-2500

Date Received 8	1/2 8/ No. 709 558 Cod	
COLLECTION DA	TE & TIME: vv mm dd hh	mm COLLECTION SITE DESCRIPTION
	1251 1 (-11	EPNG- Blanco Bloomhes
COLLECTED BY:	6000	deran. Hed - Hant
	Comas	Altered taced
		OWNER: EPW 6
10.	mad RECEIVED DEC	15 1987 Cetions Pater
	ME OF LATER DEC	10 1887
	ATER & HAZARDOUS WASTE BU	REAU SITE LOCATION: ,
	CO EID/HED	County: San Juan
	58 - RUNNELS BUILDING , NM 87504-0968	•
SANTA FE	, NM 8/504-0968	Township, Range, Section, Tract: (10N06E24342
ATTN:	Corrod	K1109 1 (1) 1901 (1) 1
PHONE:	Convol \$77-290 (STAT	ION/ WELL CODE:
-	LATITUDE, LON	GITUDE:
SAMPLING CONT		
☐ Bailed ☐ Dipped		Bearly
pH(00400) C	onductivity(Uncorr.) Wat	er Temp.(00010) Conductivity at 25 (00094)
	umho	OC µmho
FIELD COMMEN	rs: Tulo 1-la	1
	The state	
SAMPLE FIELD	TOR A TIME WITH	LAB ANALYSIS REQUESTED:
Check proper		THE HARIESTS ALGOLOTIES.
☐ WPN: Wat	ter WPF: Water	ICAP Scan
Preserved w	/HNO3 Preserved w/HNO3	Mark box next to metal if AA
Non-Filtered	d Filtered	is required.
	ANALYTICAL R	ESULTS (MG/L)
ELEMENT I	CAP VALUE AA VALUE	ELEMENT ICAP VALUE AA VALUE
Aluminum _	40,1	Silicon 7.3
Barium	40.1	Silver <u>40.1</u>
Beryllium E	<u> </u>	Strontium O./ Tin <0./
Cadmium	2.1 X < 0.00	Vanadium <0.1
	2.7	Zinc <0.1
Chromium	40.1.	Arsenic Y < 0.005
Cobalt	40.05	Selenium \$\times \cdot 0.005
Copper _	<u> </u>	Mercury 2 < 0.0005
Iron _	<u> </u>	
Lead Magnesium /	<0.1	
Manganese	<u> </u>	
Molybdenum	<0.1	H
Nickel _	<0.1	
LAB COMMENTS	: Geal burben in lab by	mg 3/18/87
-	ICAP Analyst: B	Reviewer: January
	Analysis Date: 8/19	27 Date Reviewed: 12/8/87



Albuquerque, NM 87106	ICP 1062		Te	lephone: (5	05)841-2500	·
Date		User	☐ 59400	<u> 7</u> 5	3400	53300
eceived 1219 187 N	10. ICP-1068	Code	<u>□</u> 59300		9500	
OLLECTION DATE & TIN	E: yy mm dd	i hh mm	CO	LLECTION	SITE DES	CRIPTION
	13 08			1 Paso	Notura	1 GAS
OLLECTED BY:	1		13	Bianco	Plant - 1	3100m Field
CONRAC	/ RICHARDS				stuld	
	DEOLO				Harry	
o: Corrag	/ nevery	/ED FE3	3 10RR OW	NER:		-
			- 1000 .			
		~~~~				
	AZARDOUS WAS	re Burea		TE LOCAT		
NEW MEXICO EID/HI		-	Co	unty:	San Jua	'n
PO BOX 968 - RUNI		.ar	_			
SANTA FE, NM 8	/504-0968		Town			(10N06E24342)
3 mm -				219/14/	1/ 14/	+ 1/14
ATTN: PHONE: 2905		CHAMTON	/ WELL COD	17 a l l l	1 1 1 1	
PHONE: 2905	<del></del>	STATION	/ WELL COL	E		
-	LATITUDE	LONGIT	UDE: [3]614	13121617	710171.017	1-12101 1
SAMPLING CONDITIONS:				<u></u>	1012131	1 (2121-1
☐ Bailed ☐ Pu	_ ,	Level:	Discharg	e:	Sample	
☐ Dipped ☐ Ta			<u> </u>		WAT	
H(00400)   Conductiv	ity(Uncorr.)	Water	Temp. (0001		nductivit	y at 25°C
1	_	Į.	· o _C	(00	0094)	_
	hwyo		<u> </u>			umho
FIELD COMMENTS:	700	LECTVII)	2	Clar	<i></i>	
	7 00,00	Cecerity)	ED COULT	Coan		
SAMPLE FIELD TREATME	NT .		LAB ANALYS	SIS REQU	ESTED:	
Check proper boxes:	•	11.		_		
□ WPN: Water	WPF: Wat		X ICAP	Scan		
Preserved w/HNO3	Preserved w/	HNO,	Mark box	next to	o metal i	f AA
Non-Filtered	Filtered		is requ	ired.	B	
71 4	ANALVIIC	AL DEC	UTC (NA	C/1)		
	ANALYTIC			G/L)		
ELEMENT ICAP VALU		<u> </u>	ELEMENT		VALUE	AA VALUI
Aluminum <0.1			Silicon	7.7		
Barium			Silver		40.1	
Beryllium 40.			Strontiu	_ <del></del>	<del></del>	
Boron <u>40.</u>			Tin		201	
Cadmium <0.1	_ 🛛		Vanadium		40.1	
Calcium <u>6.3</u>	·		Zinc		40.1	
Chronium <0.1	₹ 40.00	05	Arsenic			
Cobalt <a href="#">&lt;0.0</a>	5		Selenium			
Copper			Mercury			<u> </u>
Iron <0.1				_		
Lead <0.1						
Magnesium 2.2						
Manganese <0.0	5					
Molybdenum <0.1						
Nickel <0.1						
LAB COMMENTS:						
ICAP	Analyst:	NB		Reviewe	er: Uim	ashbot
		1.1.			7	1,1/4
Anal	ysis Date:	12/10/8	7_	Date Re	eviewed:	2/11/88
			•		_	

File Copy

## INFORMATION IN SUPPORT OF APPENDIX C OF DISCHARGE PLAN GW-49

Materials
Safety Data Sheets

JAN 27 1983
OIL CONSERVATION DIVISION SANTA FE

El Paso Natural Gas Co.
Blanco Plant
San Juan County, N. M.

## MATERIAL SAFETY DATA SHEET

#### CORPORATE RESEARCH & DEVELOPMENT

SCHENECTADY, N. Y. 12305

Phone: (518) 385-4085 DIAL COM: 8+235-4085



No. 53

CHLORINE

July 1979 Date

#### SECTION 1. MATERIAL IDENTIFICATION MATERIAL MANE: CHLORINE OTHER DESIGNATIONS: ClarCAS # 007 782 505 DESCRIPTION: A gas shipped in steel cylinders as a liquid under its own vapor pressure. MANUFACTURER: Available from many suppliers. SECTION 11. INGREDIENTS AND HAZARDS X HAZARD DATA > 99 8-hr TWA 1 ppm (C) Chlorine or 3 mg/m³ *Current OSHA ceiling limit. ACGIH TLV (1978) is 1 ppm with a STEL of 3 ppm for up to 15 minutes exposure. NIOSH (1976) proposed a ceiling limit of 0.5 ppm (15 minute sampling time). (Controversy going on whether OSHA standard should include ceiling limit or not.) SECTION III. PHYSICAL DATA Density at 0 C: Boiling point at 1 atm, deg C ----- -34 Gas at 1 atm, g/liter ---- 3.214 Vapor pressure at 20 C, mm Hg ----- 4800 Liquid at 3.65 atm, g/cc -- 1.47 Vapor density (Air=1) -----70.91 Water solubility at 20 C, 1 atm, g/l -- 7.3 Appearance & Odor: A greenish-yellow gas or clear, amber-colored liquid with a suffocating, pungent, irritating odor. The odor recognition threshold (100% of test panel, unfatigued) is reported at 0.314 ppm. The odor is easily noticed at 1.9-3.5 ppm and has been reported as intolerable at 2.6-41 ppm, depending on the observer. SECTION IV. FIRE AND EXPLOSION DATA LOWER UPPER Flash Point and Method | Autoignition Temp. | Flammability Limits In Air Non-flammable Use extinguishing media that is appropriate for the surrounding fire. Use water spray to cool intact, fire-exposed containers (one ton tanks and cylinders will release chlorine when a fusible metal safety plug melts at 158-165F.) If possible, have specially trained personnel remove intact cylinders from fire area.

#### SECTION V. REACTIVITY DATA

Chlorine is stable in steel containers at room temperature when dry. [Intense local heat (above 215°C) on steel walls can cause steel to ignite in chlorine.]

Chlorine will support the burning of most combustible materials, just as oxygen does. Flammable gases and vapors can form explosive mixtures with chlorine. Firefighters must use self-contained breathing equipment, eye protection, and full pro-

tective clothing when fighting fires in which chlorine is involved.

It is a powerful oxidizing agent which reacts violently with reducing agents and combustible materials. Materials such as acetylene, turpentine, other hydrocarbons, ammonia, hydrogen, ether, powdered metals, etc. must be kept away from chlorine. It reacts with H2S and H2O forming HCl; it combines with CO and SO2 to form phosgene and

sulfuryl chloride (toxic and corrosive materials).

Wet chlorine (150 ppm water) corrosively attacks most common metals. Handling chlorine requires special materials technology.

#### HEALTH HAZARD INFORMATION SECTION VI.

TLV 1 ppm or 3 mg/m 3  (C)

Chlorine believed to damage the body by local corrosive effects only; no systemic effects. 5-8 ppm in air will be severely irritating to eyes, mose, and respiratory tract of most individuals in a few minutes (10 ppm intolerable for avg. person). Higher level exposures produce coughing, dyspnea, burns of the skin, conjunctivitis, pulmonary edema (may be delayed) and death, depending on concentration and time of exposure (35-51 ppm, lethal in an hour; a few deep breaths fatal at 1000 ppm). Reduced respiratory capacity (especially among smokers) and dental erosion can result from chronic low level exposure. Any contact with liquid chlorine causes burns, blistering and tissue destruction.

PIRST AID: Call physician IMMEDIATELY for any person overexposed to chlorine! Eye Contact: Flush eyes with water for at least 15 minutes, holding eyelids open. If medical help is not readily available, continue flushing with water.

Skin Contact: (Treat for inhalation exposure first!) Remove contaminated clothing

under a safety shower. Wash exposed skin areas thoroughly with water.
Inhalation: Remove to fresh air. Restore breathing when required. Have trained person
administer oxygen until victim breathes easily on his own. Keep warm and at rest! In
mild cases, give milk to relieve throat irritation.

#### SPILL, LEAK, AND DISPOSAL PROCEDURES SECTION VII.

Establish written emergency plans and special training of personnel where chlorine is

Notify safety personnel. Provide ventilation. Exclude from area all except specially trained, assigned personnel with approved self-contained breathing equipment and appropriate protective clothing. Find and stop leak. (Large uncontrollable leaks require environmental consideration and possible evacuation of surrounding area.)

Move leaking container to isolated area. Position to release gas not liquid.

When possible draw off chlorine to process or to disposal system.

DISPOSAL: Bubble through a large volume of 15% aqueous NaCH or other alkali. Suitably dispose of resulting solution. Follow Federal, State and local regulations.

#### SPECIAL PROTECTION INFORMATION SECTION VIII.

Provide general and local exhaust ventilation to meet TLV requirements. Provide suitable venting for low lying areas. Use enclosed, isolated processing and handling whenever possible. Full face-piece respirators must be available for non-routine and canister gas mask below 5000 ppm in air and self-contained breathing emergency use: equipment for other conditions.

Workers should be provided with chemical safety goggles and impervious gloves. Full protective clothing must be used when needed to prevent exposure to chlorine, liquid or gas. Daily change of work clothes and showering after work shift are recommended. Eyewash stations and chemical safety showers must be available in areas of handling and

storage of chlorine.

#### SPECIAL PRECAUTIONS AND COMMENTS SECTION IX.

Store chlorine containers in well-ventilated areas of low fire potential, away from incompatible materials (see Sec. V) and away from sources of heat and ignition. Protect containers from weather and physical damage; follow standard safety procedures for containers of compressed, corrosive gases. Provide special training to workers handling chlorine. Regularly inspect (and test) piping and containment used for chlorine service. Liquid levels should be less than 85% of tank or cylinder capacity

Use proplacement and periodic medical exams: proclude from workplace exposure to

chlorine those with cardiac, pulmonary or chronic respiratory problems.

Special Ref: "Chlorine and Hydrogen Chloride", Chapter 5, National Academy of Science, Washington, BC (1976).

DATA SOURCE(S) CODE: 2-12, 17, 19, 24, 26

enterprise on the temporary of intermedian terror for purchases expansionly. Therefore, different contents or appropriately. Therefore, different contents of each intermedian. Connect to exceeds an overrenter implies no representations and insurance on to their exceeds on overrenter implies no representations and insurance on to the exceed of each different or experience. un General Harrie Com on to the occuracy or autobility of such information

APPROVALS: CRD Industrial Hygiene and Salety

MUDICAL RUVIEW: 12/79

### MATERIAL SAFETY DATA SHEET

6283-06-03-96-102

PRODUCT NAME

CAT FLOC T

DATE August 17, 1907



SUSSIDIARY OF MERCH & CO., INC.

CC	1.	7	N	M	
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MANUFACTURER'S NAME	Calgon Corporation	·	emergency Telephone no.	(412) 777-8000	
ADDRESS	P.O. Box 1346, Pittsbu	rgh, PA 18230			
CHEMICAL NAME AND SYNONYMS	Cationic homopolymer	FORMULA	Multi-component Liqu	ild	

#### SECTION II HAZARDOUS INGREDIENTS

	الم	,	1 %			]	TLV (Unite)	
PRINCIP	AL HAZARDOUS COMPONENT (5)	CAS #	BY WEIGHT	ORAL LD.	DERMAL LO	ACGIH	OSHA	OTHER
Chemical Name	This product would not be regard	ed to contain at	γ					
Common Nome	hazardous ingredients eccording	o OSHA Hezero		•	•			
Chemical Name	Communication Standard (29 C)	R 1910.1200).						
Common Name								
Chemical Name								
Common Name								
Chemical sme								
Common Name								
Chemical Name								
Common Name								

[•] See Section V - Effects of Overexposure - for toxicity data on the product

#### SECTION III PHYSICAL DATA

BOILING POINT (*F)	>212	SPECIFIC GRAVITY (H ₂ O=1)	1.033
VAPOR PRESSURE (mmHg.)	Similar to Water	PERCENT VOLATILE BY VOLUME (NJ	80
VAPOR DENSITY (AIR-1)	Similar to Weter	pH	3.0 - 4.0
UBILITY IN WATER	Complete	OTHER	4

APPEARANCE AND ODOR

Viscous eleer, colorless to pale-yellow liquid with mild chemical odor

n,
14.
of the polymer).
•
ry nd
ıď
<b>F</b>
r
•

A 40% solution of the polymer when instilled in rebbit eyes did not produce any occuler irritation during the 7-day observation period with the exception of one test eye in the no wesh group at 24 hours which showed slight conjunctival affects.

#### 6. SUBCHRONIC, CHRONIC, OTHER

A 13-week rat oral toxicity study was performed using dose levels of 5, 50 and 500 mg/kg (active ingredient). Animals in the 50 and 500 mg/kg groups showed slight weight gain and decreased food consumption. In the 500 mg/kg group, a deviation in the erythrocytes, total protein and globulin levels was observed. A twelve month study feeding 2 and 200 ppm of a higher molecular weight version of the polymer to rats and beagles in their drinking water showed no significant adverse effects. The polymer, when tested according to Ames assay, did not demonstrate genetic activity. The dose range employed for this test was 0.01 microliters per plate to 10 microliters per plate (with and without activation). A teratology study conducted on the product using rabbits showed no increase in malformations. The rabbits were dosed orally with the product during Day 6 through 18 of gestation. The dose levels used were 0.075, 2.5, and 25 mg/kg/day. A multi-genetic reproductive study conducted on the product showed that no increase in reproductive failure (throughout 2 generations) was observed at the dose levels tested (0.75, 2.5, and 25 mg/kg/day).

#### FIRST AID

A. EYE

Good First Aid should be followed in all cases of exposure. In case of eye contact, flush with plenty of water for at least 15 minutes. If irritation develops, call a physician.

B. SKIN

Not Applicable

C. INGESTION

Not Applicable

D. INHALATION

Not Applicable

NAZARDOUS DECOMPOSITIO	Quides et	zitragen			
	SECTION V	II SPILL OR LFAI	CPROCEDURES		
EPORTABLE QUANTITIES (I IL LES OF EPA HAZARDOUS UBSTANCES IN PRODUCT	1. <u>N/A</u>		EQU	TIFY EPA OF PRODUCT SPINAL TO OR EXCEEDING  N/A LBS.	.1.8
neps to be taken in case Material is released In Spilled	Dishon A	possible. Remove any r il and place in a sealed s	smaining material by abo	elations. Dike area to consorbing on vermiculity or o sel. Hose spill area well sir	ther
BASTE DISPOSAL METHOD	Dispose o		ste in accordance with lo	cal,	
:	SECTION	VIII HANDLIN	G/STORAGE		
PROTECTIVE GLOVES	Not Requ		TECTION Not Re	equired	
THER PROTECTIVE	Not Req	Jired			
RATORY PROTECTION	Not Req	uired			
MENTILATION	LOCAL EXHAUST	Not Required	OTHER	Nana	
Normal	MECHANICAL (General)	Not Required		None	•
EFORAGE & HANDLING	Wash thoroughly after he Keep container closed. Exercise caution in the st		l chemicel substances.		
OTHER PRECAUTIONS	Nune				
N/A = Not Applicable				7/16/87	100
Cap-4 of 4	PREPARED BY	Janet	Mostowy	7,	
1 P.02	120609621777	OT	CALCON WIND PGH.	1988 I4:27 FROM	- <b>0</b> 2-r

Unknown

Strong exidizers

UNSTABLE TO AVOID



CUPRIC SUIPARE

Material Safety Date Sheet

Science Products Division P.O. Box M. Paris, Kentucky 40361 Mallinckrodt Inc.

Effective Date: 08-05-85

Rebuct Inbetiviersion.

Synonyma: Gopper (II) Sulfata Pentahydrata (1:1:5); blue vitriol; Sulfutic acid copper (2+) salt (1:1), Pentahydrata

Formula CAS No.: 7758-99-8 (Mydrated) TSCA CAS No.: 7758-98-7 (Anhydrous)

Materdous Ingredients: Not applicable.

Molecular Weight: 249.68

Chemical Formula: CuSO4 5H20

PRECAUTIONARY HEASURES

CAUSES IRRITATION WARNING! HARDTUL IF SVALLOURD.

Avoid contact with eyes, skin and clothing. Wash thoroughly after handling,

PERGERICY/FIRST ATP

in or eyes with plenty of water svallowed, induce vomiting immediately by giving icking finger down threat. Never give anything by zeen. In case of contact, immediately flush ski r at least 15 minutes. for at least 15 mimutes. In all cases call a physician.

SEE SECTION S.

DOT Mazard Class: ORN-E

Prescal Date

Transparant blue tricilnic exystals or exystalline granules or power. Appearance:

Odorless.

24.32/100g H20 @ 30°C (86°F) Solubility:

boiling Point: > 400°C (752°F) decomposes

Melting Point: Loses water @ 110°C (230°F)

Specific Gravity: 2.28

Vapor Density (Air-1):No information

Vapor Pressure (mm Hg):No information found.

Evaporation Rate: (water=1): slowly efforescent.

Pire and Emboston Information Piro:

Pire Extinguishing Media:

Special Information:

SECTION S

Assectator Date

Stability:

Stable under ordinary ee

When heated to de oxide may form.

Hazardous Decomposition Products:

Will not occur. Hazardous Polymerization:

Incompatibilities:

evolve Cle

SECTION 4 Leak/Spill Disposel Information

Ventilate area of leak or spill. Clean-up personnel require protective eleching ( respiratory protection from dust.

Spills: Pick up and place in a suitable container for toclametion or disposal in a sethod that does not generate dust.

Disposal: Whatever carmet be seved for reclamstion may be disposed in an MCM approved hazardous vaste facility.

Engure compliance with local, state and federal regulations Reportable Quantity (RQ) (CVA/CERCIA) : 10 1bs.

Masith Bazard Information	The second of t	Derugational Central Massuces	September 1
A Pandame Aleast of Toleran		Attorne Exposure Listes:	Dilly Paragorible Especiare Links (FEL):
Inhelation:	May cause directation to the upper respiratory tract;	ないとのできるとはないので	lag (00)/m² ppe (Tita) ACCIN Threshold Limit Value (TIV): lag (04)/m² (Tita)
	shortness of breath. May also sause suppress statlar to the common cold; including chills and stuffness of the head.	<b>6</b>	ag Er
Ingestion:	Textol May sause burning pain in the mouth, esophagus, and stessals, Memerrhagic gestricts, nauses, voniting, abdoming pain, metalic tests, and diarrhes may occur. If vomiting does not occur immediately systemic copper poisoning may occur. Symptoms may include capillary		Local anhaust ventilation to generally privately because it am convent the aminimum of the transmission of it the general work area. Flower sefer to the ADN document, 'Industrial Ventilation, A Names' of Advanced Practices', more record edition, for the faction of the faction
	damage, headache cold avest, veak pulse, kidney end liver damage, central nerrous excitation followed by depression, jaundice, convulsions, paralysis and come. Death may occur from shock or renal failure.	Pesenal Respirators: (HIOSH Approved)	If is encoded, a dest/aist reopisation in goneral, we applied the worm, in general, we also the consult respirately respirate
Skin Contact:	ie freste	:	limitations. Alternatively, a supplied air full facepiece respirator or airlined bood may be wern
Eye Contact:	Dust may cause irritation. Contact may cause conjunctivitie, ulderation, or clouding of the cornes.	Skin Protection:	Wear protective glows and clean bedy-covering clothing.
Chronic Exposure:	Prolonged or repeated skin exposure may cause dermatitie, Prolonged or repeated exposure to dusts of copper sails may cause discloration of the skin or hair, ulceration and perforation of the nasal septum, runny nose, metallic taste, and atrophic changes and irritation of the mucous membranes.	Tye Frotection:	Use chemical actory peggles. Contact lances shat not be worn whom working with this meterial. Haintain any wash fountain and quiet-drough forill in work area.
Aggravation of Pre-existing Conditions:	Persons with pre-existing skin disorders or impaired liver, kidney, or pulmonary function or pre-existing Wilson's disease may be more susceptible to the effects of this material.	Storage and Special Information	SECTION 2
B. FIRST AID		Keep in a tightly closed contain Protect against physical desage	Keep in a tightly closed container, stored in a cool, dry, wentilated eres. Protect against physical damage. Isolate from incompetible substances.
Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.	Solutions are corrosive to mil	Solutions are corrosive to mild steel.
Ingestion:	If evallowed, induce vomiting immediately by giving two glasses of water, or milk if evallable and sticking finger down throat. Call a physician immediately. Never give enything by mouth to an unconscious person.	The information contained here be correct as of the date here sentation as to the comprehens expected that individuals race departed in determin	The information contained herein is previded in good faith and is believed to be correct as of the date hereof. Novever, Mallinckrodt, Imc. makes no representation as to the comprehensiveness or accuracy of the information. It is expected that individuals receiving the information vill energies their incomplement indexentation is determined to accomplement.
Skin Exposure:	Remove any contaminated clothing. Wash skin with plenty of water for at least 15 minutes. If irritation devalops, get medical attention.	purpose. Accordingly, Mallinci of any Mind resulting from the NO REPRESENTIONS, OR WALKANTI HERCHANTABLLITY, FITHESS FOR A	trodt, Inc. vill not be responsible for damages use of or reliance most suffermation. IES, ITHUE EXPLISES OR UNTLING, OF PARTICULAR PURPOSE OR OF ART OTHER
Eye Exposure:	Wash eyes with plenty of water for at least 15 minutes. lifting lower and upper eyalids occasionally. Get medical attention immediately.	NATURE ARE MADE HEREUNDER UITH HEREIN OR TO THE PRODUCT TO UNI	RESPECT TO THE INTORNATION SET FORTH ICH THE INTORNATION REFERS.

Mutation references cited.

Orel rat LDSO: 300 mg/kg.

(RTECS, 1982)

C. TOXICITY DATA



UNICHEM

Date Prepared 05/15/87

Supersedes Previous Sheet Dated Not Dated

I. PRODUCT IDENTIFICATION

Unichem International

707 N. Leech/P. D. Box 1499/Hobbs, New Mexico

EMERGENCY TELEPHONE NUMBER (505) 393-7751

Trade Name

ALPHA 512

Chemical Description

Proprietary Microbiocide Blend

#### II. HAZARDOUS INGREDIENTS

### Material

.. TLV (Units)

-- Potassium | Dimethyldithiocarbamate CAS# 128-03-0 | None Established Methanol CAS# 000-067-561 | 200 ppm (Skin) 8

None Established
200 ppm (Skin) 8 Hour TWA or 260 mg/m

***Neither this product nor its ingredients are listed in any of OSHA Standard, Section 1910.1200 sources as carcinogenic.

#### III. PHYSICAL DATA

Boiling Point, 760 mm Hg			-35°F
Specific Gravity (H ₂ 0=1)	1.0 g/ml	Solubility in Water	Complete

*Appearance and Odor

Brown Clear Liquid; Alcoholic - Sulfur Odor

## IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method) 59°F TCC

Special Fire Fighting Procedures Firefighters should wear self-contained breathing apparatus and full protective clothing. Firefighters should be made aware of the corrosive nature of this chemical.

Unusual fire and Explosion Hazards Methanol is a moderate explosion hazard and a ... dangerous fire hazard when exposed to heat, sparks, or flames and can react vigorously with exidizing agents.

Liability is expressly disclaimed for any loss or injury arising out of the use of this information or the use of any materials designated.

#### V. HEALTH HAZARD DATA

## Preshold Limit Value Not Determined

Effects of Overexposure Contact will cause burns to the skin and severe damage to the eyes. Inhalation of vapors or mists will irritate the entire respiratory tract. Ingestion will cause irritation and burning of the digestive tract.

Barmful or fatal if swallowed. Symptoms of overexposure to liquid or vapor include dizziness, visual impairment, hauses, and narcosis.

Emergency and First Aid ProcedureSzyes: Flush promptly with copious quantities of water for at least fifteen minutes. Seek medical attention. Skin: Flush area with water. Wash with soap and remove contaminated clothing. Inhalation: Remove to fresh air. Apply artifical respiration if nessary. Ingestion: Call a physician. Induce vomiting, if conscious. Give patient water or milk.

#### VI. REACTIVITY DATA

Stability | Stable X | Conditions to Avoid None

Incompatibility (Materials to Avoid) Stongly Acidic Materials, Oxidizers

Hazardous Decomposition of Products Oxides of Carbon, Nitrogen, and Sulfur Carbon Disulfide, Dimethylamine

Hazardous Polymerization

May Occur Will Not Occur Conditions to Avoid

None

## VII. SPILL OR LEAK PROCEDURES

Remove sources of ignition. Contain and absorb spill. This material is toxic to fish.

Waste Disposal Method dispose via a licensed waste disposal company. Follow local, - state, and federal regulations.

## ____ VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type) use air-supplied or self-contained breathing apparatus if exposure levels exceeds TLV for this product or its ingredients.

Ventilation Local Exhaust As needed to prevent Special None

Mechanical (General) Vapors above Other None

Protective Gloves

Rubber

Eye Protection

Safety Glasses, Goggles, and/or Face Shield

Other Protective Equipment Overalls, Rubber Boots, Eyewash Stations, Safety Showers

## IX. SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing store in cool, well-ventilated, low fire-risk area away from ignition sources and incompatable materials. Keep containers close when not in use.

Other Precautions avoid prolonged or repeated breathing of vapors or contact with skin.

Do not ingest.



Date Prepared 05/22/86

88240

Supersedes Previous Sheet Dated Mot Deced

#### I. PRODUCT IDENTIFICATION

Unichem International

707 N. Leech/P. O. Box 1499/Hobbs, New Mexico

EMERGENCY TELEPHONE NUMBER (505) 393-7751

Trade Name

ALPRA 570

Chemical Description

Proprietary Biocide Blend

#### HAZARDOUS INGREDIENTS II.

Material

TLV (Units)

Alkyl Dimethy! Benzylaumonium Chloride Alkyl Dimethyl Ethylammonium Bromide Tributyltin Neodecanoate

Not Established Not Established Not Established

Neither this product nor its ingredients are listed in any of OSHA Standard, Section 1910.1200 sources as carcinogenic.

#### PHYSICAL DATA III.

Boiling Point, 760 mm Hg	208°F	Freezing Point	32°F
Specific Gravity (H ₂ O=1)	0.998 g/ml	Solubility in Water	Complete

Appearance and Odor Light Straw Color, Slight Musty Odor; Liquid

IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method) None

Extinguishing Media Carbon Dioxide, Dry Chemical, Water Spray or Fog. Foam. Use a water spray to cool fire-exposed containers.

Special Fire Fighting Procedures Firefighers should wear self-contained breathing apparatus and full protective clothing. Firefighters should be made aware of the corrosive nature of this chemical.

Unusual Fire and Explosion Hazards

None

Dility is expressly disclaimed for any loss or injury arising out of the use of this information or the use of any materials designated.

## Product ALPHA 570



#### V. HEALTH HAZARD DATA

Threshold Limit Value Not Determined Acute Drei LD : 0.88 g/kg (Male rate) 1.08 g/kg (Famele Rats Acute Dermai LD : Greater than 2 g/kg for male and famele re-

Effects of Overexposure contact will cause burns to the skin and severe demage to the eyes. Inhalation of vapors or mists will irritate the entire respiratory tract. Ingestion will cause itritation and burning of the digestive tract.

Emergency and First Aid Procedures Eyes: Flush promptly with copious quantities of water for at least fifteen minutes. Seek medical attention. Skin: Flush area with water. Wash with soap and remove contaminated clothing. Inhelation: Remove to fresh air. Apply artifical respiration if necessary. Ingestion: Call a physician. Do not induce vomiting. Dilute with water or milk. See note to physician below. (Section IX - Other Precautions)

## VI. REACTIVITY DATA

		- 1			
Stability	Stable	X	Conditions	to Avoid	
0.001111,	Unstable				None

Incompatibility (Materials to Avoid) Highly Alkaline Materials, Oxidizers

Hazardous Decomposition of Products Oxides of Carbon and Nitrogen

Hazardous Polymerization | May Occur | Conditions to Avoid | Will Not Occur | None

## VII. SPILL OR LEAK PROCEDURES

eps to be Taken if Material is Released or Spilled Provide adequate ventilation. Remove sources of ignition. Contain and absorb spill. This product is toxic to rish. Keep out of lakes, streams, and ponds.

Waste Disposal Method Dispose via a licensed waste disposal company. Follow local, state, and federal regulations.

#### VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type) use sir-supplied or self-contained breathing apparatus if exposure levels exceed TLV for this product or its ingredients.

Ventilation	Local Exhaust As new	eded to prevent Listion of	Special	None
	Mechanical (General)	vapors above	Other	None
Protective Glo	VES Rubber	Eve Protect	ion Saf	ety Glasses, Goggles, and/or

Protective Gloves Rubber Eye Protection Santy Glasses, augusts, and/or Face Shield

Other Protective Equipment Overalls, Rubber Boots, Eyewash Stations, Safety Showers

#### IX. SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing Store in cool, well-ventilated, ow fire-risk area away from ignition sources and incompatible materials. Keep containers losed when not in use. Do not transfer or store in improperly marked containers.

Other Precautions Avoid prolonged or repeated breathing of vapors or contact with skin.

Do not ingest. TO PHYSICIAN: Probably mucosul damage may contraindictable the use of gastric levage. Measures against circulation smock, respiratory depression, and convulsion may be needed.



Date Prepared 6-8-88

Supersedes Previous Sheet.Dated

None

#### PRODUCT IDENTIFICATION I.

Unichem International

707 N. Leech/P. O. Box 1499/Hobbs, New Mexico EMERGENCY TELEPHONE NUMBER (505) 393-7751

Trade Name

ALPHA 581

Chemical Description

Proprietary Microbiocide Blend

#### II. HAZARDOUS INGREDIENTS

Material

TLV (Units)

2-(Thiocygnomethylthia)benzothiazole

CAS#21564-17-0

Mathylene bis(thiocyanate) CAS#6317-18-6

Aromatic Solvent

100 ppm

not established

not established

ALPHA 581 is toxic by inhalation and ingestion. ALPHA 581 is corrosive to eyes and skin and is a sensitizer. Neither this product or it's ingredients are listed in any of OSHA Standard Section 1910.1200 sources

as carcinogenic.

#### III. PHYSICAL DATA

Boiling Point, 760 mm Hg	>212°F	Freezing Point	10°F
Specific Gravity (H ₂ 0=1)	0.96 g/ml	Solubility in Water	dispersible

Appearance and Odor

Amber clear liquid; slight aromatic odor

#### IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method)

158°F (TCC)

Extinguishing **Me**dia

Carbon Dioxide, Dry Chemical, Water Spray or Fog, Foam. Use a mater spray to cool fire-exposed containers.

## Special Fire Fighting Procedures

Firefighters should wear self-contained breathing apparatus and full protective clothing. Firefighters should be made aware of the corrosive nature of this chemical.

Unusual Fire and Explosion Hazards

Liability is expressly disclaimed for any loss or injury arising out of the use of this information or the use of any materials designated:

# U

#### V. HEALTH HAZARD DATA

## Threshold Limit Value

NOT DETERMINED

TRECTS OF OVEREXPOSURE Contect will cause burns to the skin and severe damage to the eyes.
Inhalation of vapors or mists will irritate the entire respiratory tract. Ingestion will cause irritation and burning of the digestive tract. Sensitizer, Toxic by ingestion.

EMERGENCY and First Aid Procedures

EYES: Flush promptly with copious quantities of water for at least fifteen minutes. Seek medical attention. SKIN: Flush ares with water. Mash with scep and remove contaminated clothing. INHALATION: Remove to fresh air. Apply artificial respiration if necessary. INGESTION: Call a physician. Do not induce vomiting. Dilute with water or milk.

#### VI. REACTIVITY DATA

Stability Stable X Conditions to Avoid

None

Incompatibility (Materials to Avoid)

Oxidizers

Hazardous Decomposition of Products

Oxides of Cerbon and Nitrogen

Hazardous Polymerization

May Occur
Will Not Occur X

Conditions to Avoid

None

#### VII. SPILL OR LEAK PROCEDURES

eps to be Taken if Material is Released or Spilled Provide adequate ventilation. Remove sources of ignition. Contain and absorb spill. This product is toxic to fish. Keep out of lakes, stress, and ponds.

Waste Disposal Method

Dispose via a licensed waste disposal company. Follow local, state,

## VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type)

Use air-supplied or self-contained breathing appearatus if exposure levels exceed fly for this product or its ingredients.

Ventilation

Local Exhaust

As needed to prevent eccumulation of

Special

None

Mechanical (General)

vepore above

Other

Protective Gloves

Rubbez

Eye Protection

Sufety glasses, goggles, and/or face shield.

Other Protective Equipment Dveralls, rubber boots, eyewash stations, safety showers. Body-protective clothing is strongly recommended. Respiratory equipment.

#### IX. SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing Store in cool, well-ventilated, low fire-risk area away from ignition sources and incompatible materials. Keep containers closed when not in use. Bo not transfer or store in improperly marked containers.

Other Precautions

Avoid breathing of vapors or contact with skin. Do not ingest. To Physician: Probable success! demage may contraindicate the use of gastric lavege. Measures

agminst circulation shock, respiratory depression and convulsion may be needed.



Date Prepared 03/22/06 Supersedes Previous Sheet Dated 10/31/05

#### Ì. PRODUCT IDENTIFICATION

Unichem International

707 N. Leech/P. O. Box 1499/Hobbs, New Mexico EMERGENCY TELEPHONE NUMBER (505) 393-7751

88240

Trade Name UNICHEM 1300

Chemical Description

Proprietary Scale and Corrosion Inhibitor Bland

#### II. HAZARDOUS INGREDIENTS

#### Material

Potassium Hydroxide CAS# 1310-58-3 Proprietary Corrosion Inhibitor Proprietary Corrosion/Scale Inhibitors TLV (Units)

Z mg/m' . 10 mg/m2 Not Established

Neither this product nor its ingredients are listed in any of OSHA Standard, Section 1910.1200 sources as carcinogenic.

#### III. PHYSICAL DATA

			والمناولية والمناولية والمناولية والمناولة والمناولة والمناولة والمناولة والمناولة والمناولة والمناولة والمناولة
Boiling Point, 760 mm Hg	212°F	Freezing Point	0°F
Specific Gravity (H ₂ 0=1)	1.3 g/ml	Solubility in Water	Complete

Appearance and Odor

Amber, Clear Liquid; Slight Sweet Odor

#### IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method) None

Extinguishing Media Carbon Dioxide, Dry Chemical, Water Spray or Fog, Foam. Use a water apray to cool fire-exposed containers.

Special Fire Fighting Procedures Firefighers should wear self-contained breathing apparatus and full protective clothing. Firefighters should be made aware of the corrosive nature of this chemical.

Unusual Fire and Explosion Hazards

ability is expressly disclaimed for any loss or injury arising out of the use of this information or the use of any materials designated.

### Product untenen 1300

## V. HEALTH HAZARD DATA

## Preshold Limit Value Not Determined

Effects.of Overexposure contact will cause burns to the skin and savere damage to the eyes. Inhelation of vapors or mists will irritate the entire respiratory tract. Ingustion will cause irritation and burning of the digestive tract.

Emergency and First Aid Procedures Eyes: Flush promptly with copious quantities of water for at least fifteen minutes. Seek medical attention. Skinz flush area with water. Wash with soap and remove contaminated clothing. Inhelation: Remove to fresh air. Apply artifical respiration if necessary. Ingestion: Call a physician. Do not induce vomiting. Dilute with water or milk.

#### VI. REACTIVITY DATA

Stability	Scable	<u> </u>	Conditions	to Avoid	None

Incompatibility (Materials to Avoid) strongly acidic materials, exidizers.

Hazardous Decomposition of Products - Uxides of Carbon and Nitrogen

Hazardous Polymerization | May Occur | Conditions to Avoid | Will Not Occur | None

#### VII. SPILL OR LEAK PROCEDURES

eps to be Taken if Material is Released or Spilled Provide adequate ventilation.

Remove sources of ignition. Contain and absorb apill.

Waste Disposal Method Dispose via a licensed waste disposal company. Follow local, state, and federal regulations.

#### VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type) Use sir-supplied or self-contained breathing apparatus if exposure levels exceed TLV for this product or its ingredients.

Ventilation	Local Exhaust	is needed to prevent accumulation of	Special	None	
	Mechanical (Gener	vapors above	Other	None	
Protective Glo	VES Rubber	Eye Protect		fety Glasses, Goççles, ce Shield	end/or

Other Protective Equipment Overalls, Rubber Boots, Eyewash Stations, Safety Showers

#### IX. SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing store in cool, well-ventilated.

ow fire-risk area away from ignition sources and incompatible materials. Keep containers

closed when not in use. Do not transfer or store in improperly marked containers.

Other Precautions Avoid prolonged or repeated breathing of vapors or contact with skin. Do not ingest.

U



Date Prepared 05/22/06

Supersedes Previous Sheet Dated 02/26/85

I. PRODUCT IDENTIFICATION

Unichem International

707 N. Leech/P. O. Box 1499/Hobbs, New Mex1co 88240 EMERGENCY TELEPHONE NUMBER (505) 393-7751

Trade Name UNICHEM 1700

Chemical Description

Proprietary Scale Inhibitor and Dispersant

II. HAZARDOUS INGREDIENTS

Material

TLV (Units)

Proprietary Scale/Corrosion Inhibitor (Acid, Corrosive)

None Established

Neither this product nor its ingredients are listed in any of OSHA Standard, Section 1910.1200 sources as carcinogenic.

#### III. PHYSICAL DATA

Boiling Point, 760 mm Hg	212°F	Freezing Point	-10°F
Specific Gravity (H ₂ 0=1)	1.1 g/ml	Solubility in Water	Complete

Appearance and Odor

Water White Clear; Slight Odor

IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method) None

Extinguishing Media Carbon Dioxide, Dry Chemical, Water Spray or Fog, Foam. Use a water apray to cool fire-exposed containers.

Special Fire Fighting Procedures Firefighers should wear self-contained breathing apparatus and full protective clothing. Firefighters should be made aware of the corrosive nature of this chemical.

Unusual Fire and Explosion Hazards

None

Lability is expressly disclaimed for any loss or injury arising out of the use of this information or the use of any materials designated.

Product MMICHER 1700

## HEALTH HAZARD DATA

reshold Limit Value

Not Determined

Contact will cause burns to the skin and severe damage to the Effects of Overexposure eyes. Inhelation of vapors or mists will irritate the entire respiratory tract. Ingestion will cause irritation and burning of the digestive tract.

Eyes: Flush promptly with copious quantities of Emergency and First Aid Procedures water for at least fifteen minutes. Seek medical attention. Skin: Flush area with mater. Wash with soap and remove contaminated clothing. Inhalation: Remove to fresh air. Apply artifical respiration if necessary. Ingestion: Call a physician. Do not induce vomiting. Dilute with water or milk.

#### REACTIVITY DATA VI.

Conditions to Avoid Stable Stability Vostable

None

Incompatibility (Materials to Avoid)

Highly Alkaline Materials, Oxidizers

Hazardous Decomposition of Products

Oxides of Carbon and Nitrogen

Hazardous Polymerization

May Occur Will Not Occur Conditions to Avoid

None

#### SPILL OR LEAK PROCEDURES VII.

Steps to be Taken if Material is Released or Spilled Provide edequate ventilation. Remove sources of ignition. Contain and absorb spill-

Waste Disposal Method

Dispose via a licensed waste disposal company. Follow local,

state, and federal regulations.

#### SPECIAL PROTECTION INFORMATION VIII.

Respiratory Protection (Specify Type) Use sir-supplied or self-contained breathing apparatus if exposure levels exceed TLV for this product or its ingredients.

**Ventilation** 

Local Exhaust

As needed to prevent accumulation of

None Special

None

Mechanical (General)

vapora above j TLV

Safety Glasses, Goggles, and/or

Protective Gloves

Rubber

Eye Protection

Face Shield

Other Protective Equipment

Overalls, Rubber Boots, Eyewash Stations, Safety Showers

Other

#### SPECIAL PRECAUTIONS IX.

Precautions to be Taken in Handling and Storing Store in cool, well-ventilated, low fire-risk area away from ignition sources and incompatible materials. Keep containers closed when not in use. Do not transfer or store in improperly marked containers.

Other Precautions Avoid prolonged or repeated breathing of vapors or contact with skin. Do not ingest.



Date Prepared 03/22/06
Supersedes Previous Sheet Dated 03/03/81

#### I. PRODUCT IDENTIFICATION

Unichem International

707 N. Leech/P. O. Box 1499/Hobbs, New Mexico

EMERGENCY TELEPHONE NUMBER (505) 393-7751

Trade Name

BUTCHEN 1000

(also known as Unichem Biosphere Dispersant)

Chemical Description

Properitory Dispersent

## II. HAZARDOUS INGREDIENTS

Material

TLV (Units)

88240

Isopropyl . Alcohol

400 ppm

Weither this product nor its ingredients are listed in any of OSHA Standard, Section 1910.1200 sources as carcinogenic.

## III. PHYSICAL DATA

المراجع			مردون والمراز المراوات والمراوات المراوات المراوات المراوات المراوات المراوات المراوات المراوات المراوات المراوات
Boiling Point, 760 mm Hg	180°F (IPA)	Freezing Point	-20*F
Specific Gravity (H ₂ 0=1)	0.852	Solubility in Water	Soluble

Appearance and Odor Ten to Brown Liquid; Slight Ammonia Odor

## IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method) 6

60°F TCC

EXTINGUISHING Media Carbon Dioxide, Dry Chemical, Water Spray or Fog, Foam. Use a water apray to cool fire-exposed containers.

Special Fire Fighting Procedures firefighers should wear self-contained breathing apparatus and full protective clothing.

Unusual Fire and Explosion Hazards Vapors may flow along surfaces to distant ignition sources and flashback. Dangerous fire hazard when exposed to heat, sparks, flames, or oxidizing agents.

- ability is expressly disclaimed for any loss or injury arising out of the use of this information or the use of any materials designated.

### Product ASMICHEN 1000 .

# Ü

#### V. HEALTH HAZARD DATA

Preshold Limit Value

Not Determined

Effects of Overexposure Prolonged skin contact will cause dryness and irritation.

Ingestion may cause exthereis. Inhelation of mist may cause respiratory irritation. Eye contact will cause irritation.

Emergency and First Aid Procedures Eyea: Flush promptly with copious quantities of water for at least fifteen minutes. Seek medical attention. Skin: Flush area with water. Wesh with soap and remove contaminated cipthing. Inhelation: Remove to fresh mir. Apply artifical respiration if necessary. Ingestion: Call a physician. Do not induce vomiting.

#### VI. REACTIVITY DATA

Stability Stable X Conditions to Avoid

None

Incompatibility (Materials to Avoid)

Oxidizera

Hazardous Decomposition of Products

Oxides of Carbon and Nitrogen

Hazardous Polymerization

May Occur
Will Hot Occur X

Conditions to Avoid

## VII. SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled Provide edequate ventilation.
Remove sources of ignition. Contain and absorb spill.

Waste Disposal Method Dispose via a licensed weste disposal company. Follow local, state, and federal regulations.

#### VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type) Use air-supplied or self-contained breathing apparatus if exposure levels exceed TLV for this product or its ingredients.

Ventilation Local Exhaust As needed to preven Special None
Sechenical (General) vapors above TLV

None

Protective Gloves

Rubber

Eye Protection

Safety Glasses, Goggles, and/or Face Shield

Other Protective Equipment

Overalls, Rubber Boots, Eyemash Stations, Safety Showers

#### IX. SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing Store in cool, well-ventilated, ow fire-risk area eway from ignition sources and incompatible materials. Reep containers closed when not in use. Do not transfer or store in improperly marked containers.

Other Precautions Avoid prolonged or repeated breathing of vapors or contact with skin.

Do not ingest.



Date Prepared 03/22/06

Supersedes Previous Sheet Dated Mot Deted

#### I. PRODUCT IDENTIFICATION

707 N. Leech/P. O. Box 1499/Hobbs, New Mexico Unichem International 88240 EMERGENCY TELEPHONE NUMBER (505) 393-7751

Trade Name DE-DILING SURFACTANT (DDS)

Chemical Description Proprietary Surfectant in an Aqueous Solution

## II. HAZARDOUS INGREDIENTS

Material

TLV (Units)

Isopropanol CAS# 67-63-0

4UU ppm

Neither this product nor its ingredients are listed in any of OSHA Standard, Section 1910.1200 sources as earcinogenic.

## III. PHYSICAL DATA

Boiling Point, 760 mm Hg	180°F (Initial)	Freezing Point	17°F
Specific Gravity (H ₂ 0=1)	0.97 g/ml	Solubility in Water	Complete

Appearance and Odor Light Yellow Clear Liquid; Slight Alcoholic Odor

#### FIRE AND EXPLOSION HAZARD DATA IV.

Flash Point (Test Method) 94°F TCC

Extinguishing Media Carbon Dioxide, Dry Chemical, Water Spray or Fog, Foam. Use a water spray to cool fire-exposed containers.

Special Fire Fighting Procedures Firefighers should wear self-contained breathing apparatus and full protective clothing.

Unusual Fire and Explosion Hazards

None

Limbility is expressly disclaimed for any loss or injury arising out of the use of this information or the use of any materials designated.



#### V. HEALTH HAZARD DATA

## Threshold Limit Value Not Determined

Effects of Overexposure Prolonged akin contact will cause drynase and irritation.

Ingestion may cause cathereis. Inhalation of mist may cause respiratory irritation. Eye contact will cause irritation.

Emergency and First Aid Procedures Eyes: Flush promptly with copious quantities of water for at least fifteen minutes. Seek medical attention. Skin: flush ares with water. Wash with soap and remove contaminated clothing. Inhalation: Remove to fresh air. Apply artifical respiration if necessary. Ingustion: Call a physician. Do not induce vomiting.

#### VI. REACTIVITY DATA

Stability | Scable X | Conditions to Avoid | N

None

Incompatibility (Materials to Avoid)

Oxidizers, Alkelis

Hazardous Decomposition of Products Oxides of Carbon, Nitrogen, Sulfur, and Ammonia.

Contact with strong caustics may liberate smine fumes.

Hazardous Polymerization

May Occur
Will Not Occur x

Conditions to Avoid

None

## VII. SPILL OR LEAK PROCEDURES

Remove sources of ignition. Contain and absorb spill.

Waste Disposal Method state, and federal regulations.

Dispose via a licensed waste disposal company. Follow local,

## VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type) Use air-supplied or self-contained breathing apparatus if exposure levels exceed TLV for this product or its ingradients.

Ventilation Local Exhaust As needed to prevent Special None

Mechanical (General) Vapors above Other None

Protective Gloves

Rubber

Eye Protection

Safety Glasses, Goggles, and/or

Other Protective Equipment Overalls, Rubber Boots, Eyewash Stations, Safety Showers

### IX. SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing Store in cool, well-ventilated, fire-risk area away from ignition sources and incompatible materials. Keep containers sed when not in use. Do not transfer or store in improperly marked containers.

Other Precautions Avoid prolonged or repeated breathing of vapors or contact with skin. Do not ingest.

MAZARO RATIDO

# MATERIAL SAFETY DATA

IITH Dry
Chlorinator Granular

EMERGENCY PHONE (203) 356-2345

in Corporation, 120 Long Ridge Road remford, Conn. 06904

SECTION I - IDENTIFICATION

Calcium Hypochlorite #5	% (HTH)	•	
Eypochlorite	PORMULA	Ca(OCI)3	Chlorina tor Granular
Sesention White free flowing granu	lar solid with	chlorinous odor	9778-84-3

Calcium Hypochlorit		(HTH)					
CARGIUM MYPOGRAPTO		MULA		7.44	HAME ET	125	
Hypochlorite		(	2=(OCI)3		Chlorina to		er
SALE RIPTION				GAS #			
White free flowing gr	ranular ec	lid with ch	lorinous odd	7	778-84-3		
		NORMAL					
Do not get in eyes, of Protect against physical combustible material	icel dem	age. Store	in a cool,	dry, well w	illy. Avoid entileted (	l breathi	ng dust. Ly from
Corrobive action on material	S (Moude, Pr	ands, Rubber, Br					
PROTECTIVE EQUIPMENT			VENTILATIO	M REQUIREM	DITE		
Goggles Good Rubber, neoprene one Coveralls and imp		ocots		exhaust ture to dust			where
:	SECTION	III — HAZA	RDOUS ING	REDIENTS			
BASIC MATERIAL	APPROX.	eeha Pel	LD 00	Le m	SIGNIF	ICANT EFF	ters
SECT	70N IV -	FIRE AND	EXPLOSION				
METHOD Applicable		Class 3 03			Lammagle Explosive Thire		UPPER
GYTHERAMINE MATERA	Not con	dustible bu	I MAY Whit			15 OF OCE	anic

	SECTION IV - FIRE AND EXPLOSION HAZARD DATA							
PLASH POINT METHOD	Not Applicable	Class 3 oxidiser	PLAMMAGLE LOWER UPPER EXPLOSIVE LINETE					
EXTINGUISHIN Matte		Not combustible but may ignite of Plood with water to keep fire-ex	combustible materials or organic					
SPECIAL PINE	MAZAMO & PIRE PIO DITO ADDETE TUS 1 DIEDIOIY.	where this material is involved in	SHA approved self-contained fire. Fires can erupt and					

THRESHOLD L	Mit value None established.
SYMPTOMS OF	over exposure Corresion of all tissue contacted.
RIM	EMERGENCY FIRST-AID PROCEDURES Flush with water for 15 minutes, call a physician.
2722	Flush with water for 15 minutes, call a physician.
INGESTION	conscious and vomitume, piace lace down with need lower than hips: Get immediate medical attention.
INHALATION	Remove victim to fresh air, call a physician.

# CHEMICAL NAME Chlorington Granulas

SECTION VI - TOXICOLOGY (Product)

GUTTO ORAL LD M SHEED MENTERAL 850 mg/kg (ret) Not known to be carcinogenic Merative dominant lethal COUTTE DEPOLAL LD DE EYE IRRITATION COLTOSIVE mutagen test chidden) galg [c PRIMARY SKIN IRRITATION Correctve ute inhalation le 🗃 d0 mg/liter and >2 mg/liter of inspired air for 1 hour (rat) PRINCEPAL RELITER OF AL Oral SPPRETE OF AGUTS ENFORMAG Corresion of all tissus contacted EPPRETE OF CHROME EXPOSURE None known other than those secondary to acute effects

SECTION VII - SPILL OR LEAKAGE PROCEDURES (Control Procedures)

Remove all sources of ignition. Wear NIOSH/MSHA respirator approved for dust and chloride. Follow OSHA regulations for respirator use. (See 29 CFR 1910.134). Wear goggles, coveralls and rubber, neoprene or PVC gloves and boots. Clean up in a manner to minimize contamination with organic material. Do not return material to original container. Place in a fresh container and isolate outside or in a well ventilated area. Do not seal the container. Flush any residual material with large quantities of water. Wash all contaminated clothing before reuse. In the event of a large spill use the emergency telephone number shown on the front of this sheet.

#### WASTE DESPOSAL METHOD

Dispose of contaminated product and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate federal, state and local regulatory agencies to ascertain proper disposal procedures.

SECTION VIII - REACTIVITY DATA

STABLE UNITABLE XAT "C 350"P NAMADOUS NAY OCCUR WILL NOT OCCUR X

CONCINONS TO AVOID

When heated to 350°F it decomposes rapidly with evolution of oxygen and heat.

Solvents, acids, pool chemicals (isocyanurates), organic materials. Do not mix with anything but water.

HAZARDOUS DECOMPOSITION PRODUCTS

Chlorine

DECOMPOSES ASSECTION IX - PHYSICAL DATA

MELTINE POINT 1779C	YAFOR PREMURE		VOLATILES
BOILING POINT	SOLUBILITY IN WAT	TR 21% @ 21°C	EVAPORATION RATE
SPECIFIC GRAVITYIN, 9 =1)	PM 1% 80 5	oin 10.5-11.5	VAPOR SENSITYLAN - 1)
Density, Loose 0.8 g/ml (5	() lbk/cu, (1)		

INFORMATION FURNISHED BY:

C. J. Michaels

DATE .

July 22, 1980 (Rev. No. 2 Sept. 23, 1982)

Department of Environmental Hygiene and Toxicology

Olin CORPORATION

120 Long Ridge Road, Stamford, Connecticut 06904

EMERGENCY PHONE (203) 356 - 2345



Date Prepared 05/22/86 Supersedes Previous Sheet Dated Not Dated

#### 1. PRODUCT IDENTIFICATION

Unichem International 707 N. Leech/P. O. Box 1499/Hobbs, New Mexico 88240 EMERGENCY TELEPHONE NUMBER (505) 393-7751

Trade Name

BOILERHIB 530

Chemical Description

Proprietary Boiler Water Scale and Corrosion Inhibitor

#### 11. HAZARDOUS INGREDIENTS

Material

TLV (Units)

Proprietary Chelant Potassium Hydroxide CAS# 131U-58-5 (Corrosive) 5 mg/m2 2 mg/m³

Neither this product nor its ingredients are listed in any of OSHA Standard, Section 1910.1200 sources as carcinogenic.

#### III. PHYSICAL DATA

Boiling Point, 760 mm Hg	212°F	Freezing Point	10°F
Specific Gravity (H ₂ 0=1)	1.3 g/ml	Solubility in Water	Complete

Appearance and Odor

Light Brown Liquid; No Significant Odor

FIRE AND EXPLOSION HAZARD DATA IV.

Flash Point (Test Method) None

Extinguishing Media Carbon Dioxide, Dry Chemical, Water Spray or Fog, Fosm. Use a water spray to cool fire-exposed containers.

Special Fire Fighting Procedures Firefighers should wear self-contained breathing apparatus and full protective clothing. Firefighters should be made aware of the corresive nature of this chemical.

Unusual Fire and Explosion Hazards

None

Lability is expressly disclaimed for any loss or injury arising out of the use of this information or the use of any materials designated.

# d

#### V. HEALTH HAZARD DATA

#### reshold Limit Value Not Determined

Effects of Overexposure Contact will cause burns to the skin and severe design to the eyes. Inhelation of vapors or mists will irritate the entire respiratory tract. Ingestion will cause irritation and burning of the digestive tract.

Emergency and First Aid Procedures Eyes: Flush promptly with copious quantities of water for at least fifteen minutes. Seek medical attention. Skin: Flush area with water. Wash with soap and remove contaminated clothing. Inhalation: Remove to fresh air. Apply artifical respiration if necessary. Ingestion: Call a physician. Do not induce vomiting. Dilute with water or milk.

#### VI. REACTIVITY DATA

Stability Stable X Conditions
Unstable

Conditions to Avoid

None

Incompatibility (Materials to Avoid) Strongly scidic materials, exidizers.

Hazardous Decomposition of Products Oxides of Carbon and Mitrogen

Hazardous Polymerization

May Occur
Will Hot Occur x

Conditions to Avoid

None

## VII. SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled Provide adequate ventilation.
Remove sources of ignition. Contain and absorb spill.

Waste Disposal Method Dispose via a licensed waste disposal company. Follow local, state, and federal regulations.

### VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type) Use sir-supplied or welf-contained breathing apparatus if exposure levels exceed TLV for this product or its ingredients.

Ventilation

Local Exhaust

As needed to prevent accumulation of

Special

None

Mechanical (General)

vapors above

Other

None

Protective Gloves

Rubber

Eye Protection Sarety Glass

Safety Glasses, Goggles, and/or

Other Protective Equipment Oversils, Rubber Boots, Eyemsh Stations, Safety Showers

#### IX. SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing Store in cool, well-ventilated, ow fire-risk area away from ignition sources and incompatible materials. Keep containers closed when not in use. Do not transfer or store in improperly marked containers.

Other Precautions Avoid prolonged or repeated breathing of vapors or contact with skin.

Do not ingest.



Date Prepared 03/22/86
Supersedes Previous Sheet Dated Not Dated

#### I. PRODUCT IDENTIFICATION

Unichem International

707 N. Leech/P. O. Box 1499/Hobbs, New Mexico EMERGENCY TELEPHONE NUMBER (505) 393-7751

88240

Trade Name

BOILERNIE 430

Chemical Description

Proprietary Neutralizing Amine

#### II. HAZARDOUS INGREDIENTS

Material

TLV (Units)

Proprietary Neutralizing Amine

10 ppm

Neither this product nor its ingredients are listed in any of OSHA Standard, Section 1910-1200 sources as carcinogenic.

## III. PHYSICAL DATA

Boiling Point, 760 mm Hg	212°F	Freezing Point	16°F
Specific Gravity (H ₂ 0=1)	0.948	Solubility in Water	Soluble

Appearance and Odor

Water White Clear Liquid; Amine Odor

## IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method) 140°F TCC

Extinguishing Mcdia Carbon Dioxide, Dry Chemical, Water Spray or Fog, Foam. Use a water spray to cool fire-exposed containers.

Special Fire Fighting Procedures Firefighers should wear self-contained breathing apparatus and full protective clothing. Firefighters should be made aware of the corrosive nature of this chemical.

Unusual Fire and Explosion Hazards

None

mability is expressly disclaimed for any loss or injury arising out of the use of this information or the use of any materials designated.

## Product Boilernis Ase

## V. HEALTH HAZARD DATA

Tereshold Limit Value

Not Determined

Effects of Overexposure — Contact will cause burns to the skin and severe demage to the eyes. Inhelation of vapors or mists will irritate the entire respiratory tract. Ingestion will cause irritation and burning of the digestive tract.

Emergency and first Aid Procedures Eyes: Flush promptly with copious quantities of water for at least fifteen minutes. Seek medical attention. Skin: Flush area with water. Wash with soap and remove conteminated clothing. Inhalation: Remove to fresh air. Apply artifical respiration if necessary. Ingestion: Call a physician. Do not induce vomiting. Dilute with mater or milk.

## VI. REACTIVITY DATA

Stability Stable X Unstable

Conditions to Avoid None

Incompatibility (Materials to Avoid) strongly scidic materials, exidizers.

Hazardous Decomposition of Products

Oxides of Carbon and Nitrogen

Hazardous Polymerization

May Occur Will Not Occur Conditions to Avoid

None

#### VII. SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled Provide adequate ventilation.
Remove sources of ignition. Contain and absorb spill.

Waste Disposal Method state, and federal regulations.

Dispose via a licensed waste disposal company. Follow local,

VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type) Use air-supplied or self-contained breathing apparatus if exposure levels exceed TLV for this product or its ingredients.

Ventilation

Local Exhaust

As needed to prevent accumulation of

Special

None

Mechanical (General)

vapors above TLV

Other

None

Protective Gloves

Rubber

Eye Protection

Safety Glasses, Goggles, and/or Face Shield

Other Protective Equipment

Overalls, Rubber Boots, Eyewash Stations, Safety Showers

## IX. SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing Store in cool, well-ventilated, ow fire-risk area away from ignition sources and incompatible materials. Keep containers losed when not in use. Do not transfer or store in improperly marked containers.

Other Precautions Avoid prolonged or repeated breathing of vapora or contact with skin. Do not ingest.

Ü



Date Prepared 03/22/86 Supersedes Previous Sheet Dated Not Dated

#### I. PRODUCT IDENTIFICATION

Unichem International

707 N. Leech/P. O. Box 1499/Hobbs, New Mex1co EMERGENCY TELEPHONE NUMBER (505) 393-7751

88240

Trade Name BOILERNIE 341

Chemical Description Proprietary Boiler Water Oxygen Scavenger

#### HAZARDOUS INGREDIENTS II.

Material

TLV (Units)

Proprietary Oxygen Scavenger

1 ppm (ACGIH)

Neither this product not its ingredients are listed in any of OSHA Standard, Section 1910.1200 sources as carcinogenic.

#### PHYSICAL DATA III.

Boiling Point, 760 mm Hg	212°F	Freezing Point	13°F .
Specific Gravity (H ₂ 0=1)	1-2 g/ml	Solubility in Water	Complete

Appearance and Odor

Water White Clear Liquid; Slight Musty Odor

FIRE AND EXPLOSION HAZARD IV. DATA

Flash Point (Test Method) None

Extinguishing Media Carbon Dioxide, Dry Chemical, Water Spray or Fog, Form. Use a water apray to cool fire-exposed containers.

Special Fire Fighting Procedures Firefighers should wear self-contained breatning apparatus and full protective clothing. Firefighters should be made sware of the corrosive nature of this chemical.

Unusual Fire and Explosion Hazards

None

Liability is expressly disclaimed for any loss or injury arising out of the use of this information or the use of any materials designated.

## Page 2 of 2

#### ٧. HEALTH HAZARD DATA

reshold Limit Value

Not Determined

Effects of Overexposure contact will cause burns to the skin and severe damage to the eyes. Innelation of wapors or mists will irritate the entire respiratory tract. Inquestion mill cause icritation and burning of the digestive tract.

Emergency and First Ald Procedures Eyes: Flush promptly with copious quantities of water for at least fifteen minutes. Seek medical attention. Skin: flush area with water. wash with soap and remove contaminated clothing. Inhalation: Remove to Fresh air. Apply artifical respiration of necessary. Ingestion: Call a physician. Do not induce vomiting. Dilute sit- water or wilk.

#### REACTIVITY DATA VI.

Stable Stability Unstable

Conditions to Avoid

Incompatibility (Materials to Avoid)

Highly Alkaline Materials, Oxidizers

Hazardous Decomposition of Products Oxides of Carbon and Sulfur

Hazardous Polymerization

May Occur Will Not Occur Conditions to Avoid

None

SPILL OR LEAK PROCEDURES VII.

Teps to be Taken if Material is Released or Spilled Provide Adequate ventilatio Remove sources of ignition. Contain and absorb spill.

Wasta Disposal Method state, and federal regulations.

Dispose via a licensed waste disposal company. Follow local.

SPECIAL PROTECTION INFORMATION VIII.

Respiratory Protection (Specify Type) use air-supplied or self-contained breathing apparatus if exposure levels exceed TLV for this product or its ingradients.

Ventilation

As needed to prevent Local Exhaust accomplation of

Special

None

Mechanical (General)

Rubbec

ASDGES SPOAS

Other

None

Protective Gloves

Eye Protection Sefety Glasses, Gaggles, and/or Free Shield

Other Protective Equipment Overalls, Rubber Boots, Eyemash Stations, Safety Showers

#### SPECIAL PRECAUTIONS IX.

Precautions to be Taken in Handling and Storing store in cool. well-ventilated, fire-risk area away from ignition sources and incompatible materials. Keep containers sed when not in use. Do not transfer or store in improperly marked containers.

Avoid prolonged or repeated breathing of vapors or contact with skin. Other Precautions Do not ingest.



Date Prepared 03/22/06

Supersedes Previous Sheet Dated Mot Doted

#### I. PRODUCT IDENTIFICATION

Unichem International

707 N. Leech/P. O. Box 1499/Hobbs, New Mexico EMERGENCY TELEPHONE NUMBER (505) 393-7751

88240

Trade Name

BOILERHIB 340

Chemical Description

Proprietary Boiler Water Oxygen Scavenger

#### HAZARDOUS INGREDIENTS II.

Material

TLV (Units)

Proprietary Uxygen Scavenger

1 ppm (ACGIH)

Neither this product nor its ingredients are listed in any of OSHA Standard, Section 1910.1200 sources as carcinogenic.

#### III. PHYSICAL DATA

		سيور بيون بالمناقدة كالأكراب والمساول	
Boiling Point, 760 mm Hg	212°F	Freezing Point	13°F
Specific Gravity (H ₂ 0=1)	1.2 g/ml	Solubility in Water	Complete

Appearance and Odor

Water White Clear Liquid; Slight Musty Odor

IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method)

Extinguishing Media Carbon Dioxide, Dry Chemical, Water Spray or Fog. Foam. Use a water apray to cool fire-exposed containers.

None

Special Fire Fighting Procedures Firefighers should wear self-contained breathing apparatus and full protective clothing. Firefighters should be made aware of the corrosive nature of this chemical.

Unusual Fire and Explosion Hazards

None

Liability is expressly disclaimed for any loss or injury arising out of use of this information or the use of any materials designated.

### Product Bosternie 340



#### V. HEALTH HAZARD DATA

Teshold Limit Value Not Determined

Effects of Overexposure contact will cause burns to the skin and severe damage to the eyes. Innalation of wapors or mists will irritate the entire respiratory tract. Ingestion will cause irritation and burning of the digestive tract.

Emergency and First Ald Procedures Eyem: flush promptly with copious quantities of water for at least fifteen minutes. Seek medical attention. Skin: flush area with water. Wash with soap and remove contaminated clothing. Inhelation: Remove to fresh air. Apply artifical respiration if necessary. Ingestion: Call a physician. Do not induce vomiting. Dilute with water or wilk.

#### VI. REACTIVITY DATA

Stability | Stable | Conditions to Avoid

None

Incompatibility (Materials to Avoid)

Highly Alkaline Materials, Oxidizers

Hazardous Decomposition of Products - Oxides of Carbon and Sulfur

Hazardous Polymerization

May Occur
Will Noc Occur x

Conditions to Avoid

None

#### VII. SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled Provide adequate ventilation Remove sources of ignition. Contain and absorb spill.

Waste Disposal Method state, and federal regulations.

Dispose via a licensed waste disposal company. Follow local,

#### VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type) Use air-supplied or self-contained breatning apparatus if exposure levels exceed TLV for this product or its ingredients.

Ventilation Local Exhaust As needed to prevent Special None

Hechanical (General) vapors above Other None

السللي

Protective Gloves Rubber

Eye Protection Serety Glasses, Gaggles, and/or

Other Protective Equipment Overalls, Rubber Boots, Eyessen Stations, Safety Showers

#### IX. SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing Store in cool, well-ventilated, law fire-risk area away from ignition sources and incompatible materials. Keep containers of when not in use. On not transfer or store in improperly marked containers.

Other Precautions Avoid prolonged or repeated breathing of vapors or contact with skin. Do not ingest.

## CORPORATE RESEARCH & DEVELOPMENT SCHENECTADY, N. Y.



No. 3

SODIUM HYDROXIDE

Revision A

#### Date September 1977 SECTION I. MATERIAL IDENTIFICATION MATERIAL MAME: SODIUM HYDROXIDE OTHER DESIGNATIONS: Caustic Soda, Soda Lye, NaOH, GE Material D4B4, ASTM D456. DESCRIPTION: This material is an anhydrous solid (flake, pellet, etc.) CAS# 001 310 732 MANUFACTURER: Available from many suppliers. SECTION II. INGREDIENTS AND HAZARDS ¥ HAZARD DATA Typical content: Ceiling Limit Sodium Hydroxide (NaOH) 96 2 mg/m3 Impurities: Sodium Carbonate (Na2CO3) 0.5 - 2.5Sodium Chloride (NaCl) 0.01 - 2.10.02-0.1 Sodium Sulfate (Na2SO4) 0.1 Potassium, Calcium and Magnesium 0.03 Silicon Dioxide (SiO2) 0.01 Other metals (total) SECTION III. PHYSICAL DATA Boiling point, 1 atm, deg C --- 1388 Vapor pressure, mm Hg € 1000 C ---- 42 Specific gravity (20/4 C) ---- 2.13 **€ 1200** C ——— 232 Volatiles ----- non-volatile Viscosity at 350 C, cps ----- 4.0 at room Water solubility, 2, @ 0 C ---- 29.6 @ 100 C ---- 77.5 temperature Melting point, deg C ----- 318 Appearance & odor: White or off-white, hygroscopic solid; no odor. SECTION IV. FIRE AND EXPLOSION DATA LOWER UPPER Flash Point and Method Autoignition Temp. Flammability Limits In Air None - not combustible N/A N/A N/A Although it is not combustible, it can be hazardous if present in a fire area. The following should be known for fire fighting: (1) It can melt and flow when heated (m.p. 318 C). (2) Not or molten material can react violently with water (splattering), (3) Can react with certain metals, such as aluminum, to generate flammable hydrogen gas. (See also Reactivity Data, Section V)

#### SECTION V. REACTIVITY DATA

It is a stable material under normal conditions of storage. No self-polymerization. hazardous decomposition products. Slowly it can pick up moisture from the air and react with carbon dioxide from the air to form sodium carbonate.

Sodium hydroxide can react violently with strong acids and with many organic chemicals, expecially with nitrocarbons and chlorocarbons. (Will react with trichloroethylene to form spontaneously flammable dichloroacetylene.) It generates much heat when it dis-

Avoid contact with leather and wool and with aluminum, tin, zinc, and alloys which contain these metals.

No.	3

#### SECTION VI. HEALTH HAZARD INFORMATION

TLV (Ceiling Value) 2 mg/m3

Sodium hydroxide is a strong alkali and is dangerous when improperly handled. It can be destructive to all human tissue it contacts, producing severe burns. Eye contact can produce severe or permanent injury. Dust or mist inhalation can injure the entire respiratory tract.

FIRST AID

Eye contact - Wash eyes immediately with plenty of running water for no less than 15 minutes, including under the eyelids and all surfaces. Speed in rinsing out the eyes with water after contact is extremely important if permanent injury is to be avoided. Contact physician as moon as possible.

Ingestion - Immediately dilute chemical by drinking large amounts of water or milk, then neutralize with dilute vinegar or fruit juice. Vomiting may occur spontaneously, but do not induce it. Contact a physician promptly.

Inhalation - Remove from exposure to mist or dust and get prompt medical help.

Skin contact - Wash contact area promptly with large quantities of water. (Dilute acetic acid, vinegar, can be used to neutralize.) Remove contaminated clothing under the shower. Prolong washing in serious cases until medical help arrives - even for an hour or longer. Physician should see all cases other than minor exposures to small areas of skin

#### SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

When solid sodium hydroxide is spilled in a dry condition, it can be promptly shoveled up for recovery or disposal. (CAUTION! Avoid dusting. Avoid contact with the skin.) Control the disposal of the waste solid. (Delay in clean up may allow absorption of moisture from the atmosphere and may increase the difficulties of clean up.) Flush contaminated surfaces with water and neutralize with dilute acid, preferably acetic acid, to remove final traces. (Sodium bicarbonate may also be used to partially neutralize.) Finally, rinse with water.

Disposal of waste is greatly dependent on local conditions and requirements. Pre-emergency plans should be made to meet legal and technical requirements. Waste caustic should never be deliberately discharged directly into sewers or surface waters. (First, convert to neutral salts and dilute well with water.)

#### SECTION VIII. SPECIAL PROTECTION INFORMATION

Provide adequate ventilation to meet TLV requirements, especially where dusting or misting conditions can exist. Use filter-type respirator for mist and dust protection where needed.

Use chemical safety goggles! A plastic face shield can also be used.

Use rubber gloves, rubber apron or protective clothing, rubber boots where needed to prevent contact with sodium hydroxide, especially when solutions are prepared.

Eye wash fountains and safety showers must be immediately available!

#### SECTION IX. SPECIAL PRECAUTIONS AND COMMENTS

Workers should not be permitted to handle this material without proper training or to work with it without protective equipment.

Store in well-sealed containers. Avoid handling conditions that may lead to spills and leaks, or to formation of mist or dust.

Wherever this material is stored, unloaded, handled or used abundant water (preferably running water) should be available for emergency use.

Drains for storage or use areas for this material should have retention basins for pH adjustment and dilution of spills and flushings before discharge.

This material is classified as a CORROSIVE by the Department of Transportation.

The pellet form is probably the safest solid form for APPROVALS: MIS, CRD handling and dispensing.

Audigments as to the sumshing of ortor matron horous for purchaser's purposes are sourcestry purchaser's negativeletry. Therefor a officially reasonable stare has been taken in the progression of such information, General Electric Company at tends into sourcestre, measure or expressionistrions and assumes the temperaturality as to the discussion or the measurement of such as purchaser is administrative or the necessary of the n

Industrial Hygiene Office and Safety

MEDICAL REVIEW:



Date Preparedo5-22-86

Supersedes Previous Sheet .Dated 11-12-05

I. PRODUCT IDENTIFICATION

Unichem International

707 N. Leech/P. O. Box 1499/Hobbs, New Mexico 88240

EMERGENCY TELEPHONE NUMBER (505) 393-7751

Trade Name

DEICHEH 3310

-Formerly-known as HIB 440

Chemical Description

Proprietery Corrosion Inhibitor

## II. HAZARDOUS INGREDIENTS

Material

TLV (Units)

1800ropenot (CAS#67-63-0)

400 ppm

Neither this product nor its ingredients are listed in any of OSHA Standard, Section 1910.1200 sources as carcinogenic.

III. PHYSICAL DATA

Boiling Point, 760 mm Hg	212°F initial	Freezing Point	<b>9</b> ºf				
Specific Gravity (H ₂ J=1)	0.95 g/ml	Solubility in Water	Soluble				

Appearance and Odor

Amber to Brown liquid; No Oder

IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method)

BIF TCC

Extinguishing Media Carbon Dioxide, Dry Chemical, Mater Spray or Fog, Foam. Use a water spray to coal fire-exposed containers.

Special Fire Fighting Procedures

Firefighters should wear self-contained breathing

apparatus and full protective clothing.

UNUSUAL FIRE and Explosion Hazards Vepors may flow along surfaces to distant ignition sources and fleebook. Dengarous fire hazard when exposed to heat, sparks, flames, or exidizing agents.

Liability is expressly disclaimed for any loss or injury arising out of the use of this information or the use of any materials designated:

4	

Page 2 of 2

Product : MIDEN 3310

HEALTH HAZARD DATA

Threshold Limit Value

Not Determined

prolonged skin contact will cause dryness and irritation. Effects of Overexposure Inhalation of mist may couse respiratory irritation. Eye contact ingestion may cause catherais. will couse irritation.

Emergency and First Aid Procedures EYES: Flush promptly with copious quantities of mater for at least fifteen minutes. Seek medical attention. SKIN: flush area with mater. Magh with soap and remove conteminated clothing. INHALATION: Remove to fresh air. Apply artifical respiration if necessary. INCESTION: Call a physician. Do not induce vomiting. Dilute wit water or wilk,

#### VI. REACTIVITY DATA

Conditions to Avoid Stable Stability None Unstable

Incompatibility (Materials to Avoid)

Oxidizera

Hazardous Decomposition of Products

Dxides of Carbon and Nitrogen

Hazardous Polymerization

May Occur Will Mot Occur X Conditions to Avoid

None

#### VII. SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled Provide adequate ventilation. Remove sources of ignition. Contain and absorb spill.

Waste Disposal Method

federal regulations.

Dispose via a licensed waste disposal company. Follow local, state and

#### SPECIAL PROTECTION INFORMATION VIII.

Respiratory Protection (Specify Type) Use sir-supplied or self-contained breathing apparatus if exposure levels exceed TLV for this product or its ingredients.

Local Exhaust As needed to prevent None Ventilation Special accumulation of Mechanical (General) vapors above None Other

Protective Gloves

Eve Protection Rubber

Safety glasses, goggles, and/or face shield

Other Protective Equipment Overalls, rubber boots, eyemash stations, safety showers

#### SPECIAL PRECAUTIONS IX.

Precautions to be Taken in Handling and Storing Store in cool, well-ventileted. low fire-risk area away from ignition sources and incompatible materials. Keep containers closed when mot in use. Do not transfer or store in improperly marked containers.

Other Precautions Avoid prolonged or repeated breathing of vapors or contact with skin.

Do not ingest.



Date Prepared 5-22-86

Supersedes Previous Sheet Dated Undated

I. PRODUCT IDENTIFICATION

Unichem International

707 N. Leech/P. O. Box 1499/Hobbs, New Mexico EMERGENCY TELEPHONE NUMBER (505) 393-7751

88240

Trade Name

*** BOILERHIB 435

Chemical Description

Proprietary Neutralising Amine

II. HAZARDOUS INGREDIENTS

Material

Proprietary Neutralizing Amine

TLV (Units)

10 ppm

Meither this product nor its ingredients are listed in any of OSHA Standard, Section 1910.1200 sources as carcinogenic.

III. PHYSICAL DATA

Boiling Point, 760 mm Hg 212°F Freezing Point -38°F Specific Gravity (H₂0=1) |0.960 Solubility in Water | soluble

Appearance and Odor Brown Liquid, Ammonia Odor

IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point (Test Method) >200°F TCC

Extinguishing Redia Carbon Dioxide, Dry Chemical, Water Spray or Fog. Foam. Use a water spray to cool fire-exposed containers.

Special Fire Fighting Procedures . Firefighers should wear self-contained breathing apparatus and full protective clothing. Firefighters should be made sware of the corrosive nature of this chemical.

Unusual Fire and Explosion Hazards ... Hone

Liability is expressly disclaimed for any loss or injury arising out of the use of this information or the use of any materials designated.

Page 2 of 2 Product BOILERHIB 433

#### HEALTH HAZARD DATA ٧.

## Threshold Limit Value Not Determined

Effects of Overexposure Contact will cause burns to the skin and severe damage to the eyes. Inhalation of vapors or mists will irritate the entire respiratory tract. Ingestion will cause irritation and burning of the digestive tract.

Emergency and First Aid Procedures Byes: Plush promptly with copious quantities of water for at least fifteen minutes. Seek medical attention. Skin: Flush area with water. Wash with somp and remove contaminated clothing. Inhalation: Remove to fresh air. Apply artifical respiration if necessary. Ingestion: Call a physician. Do not induce vomiting. Dilute with water or milk.

#### REACTIVITY DATA VI.

Stable Conditions to Avoid Stability Hone Unstable

Incompatibility (Materials to Avoid) Strongly acidic materials, oxidizers.

Hazardous Decomposition of Products Oxides of Carbon and Nitrogen

Hazardous Polymerization

May Occur Will Not Occur Conditions to Avoid

None

#### VII. SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled Provide adequate ventilation. Remove sources of ignition. Contain and absorb spill.

Waste Disposal Method state, and federal regulations. Dispose via a licensed waste disposal company. Follow local.

#### ·VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type) use air-supplied or self-contained breathing apparatus if exposure levels exceed TLV for this product or its ingredients.

As needed to prevent Hone **Ventilation** Local Exhaust Special accumulation of Vapors above None echanical (General) Other TLY

Protective 6loves Rubber Eye Protection Safety Glasses, Goggles, and/or Pace Shield

Other Protective Equipment Overalls, Rubber Boots, Syevash Stations, Safety Showers

#### IX. SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing store in cool, well-ventilated, " -ire-risk area eway from ignition sources and incompatible materials. Keep containers closed when not in use. Do not transfer or store in improperly marked containers.

Other Precautions Avoid prolonged or repeated breathing of vapors or contact with skin. Do not ingest.

#### CORPORATE RESEARCH & DEVELOPMENT

SCHENECTADY, N. Y. 12305

Phone: (518) 385-4085 DIAL COMM 8*235-4085

(910) 309-4003 DIAL COM: 6-233-408



NO. 9
SULFURIC ACID,
CONCENTRATED
REVISION B

Date October 1980

OTHER DESIGNATIONS: 011 of Vitriol, Hydrogen Sulfate, H ₂ SO ₄ , GE Material D4A2, CAS #007 664 939  DESCRIPTION: Material consists of about 93-98% H ₂ SO ₄ with water and traces of impurities.  SECTION II. INGREDIENTS AND HAZARDS  **MATERIAL SOURCE SULFACE SUL					Date		
OTHER DESIGNATIONS: Oil of Vitriol, Hydrogen Sulfate, H ₂ SO ₄ , GE Material D4A2, CAS #007 604 939  DESCRIPTION: Material consists of about 93-98% H ₂ SO ₄ with water and traces of impurities.  MANUFACTURER: Available from many suppliers.  SECTION 11. INGREDIENTS AND HAZARDS  **  **  **  **  **  **  **  **  **	SECTION I. MATERIAL I	DENTIFICATION					
DESCRIPTION: Material consists of about 93-98% H ₂ SO ₄ with water and traces of impurities.  SECTION II. INGREDIENTS AND HAZARDS  **MATERIAL REPORT AND HAZARDS  **Material is obtained by the reaction of SO ₃ and water.  Can contain low impurity levels, such as 0.02% max of iron as Fe. Properties vary with H ₂ SO ₄ content.  **Current OSHA standard and ACGIH (1980) TLV. NIOSH has a 10-hr-TWA, 40 hr work week, of 1 mg/m³.  **SECTION III. PHYSICAL DATA  **Boiling point, 1 atm, deg C	OTHER DESIGNATIONS: 011 6	of Vitriol, Hydrogen	Sulfate, H ₂ So	04, GE Ma	terial	D4A2,	
MANUFACTURER: Available from many suppliers.  SECTION II. INGREDIENTS AND HAZARDS  #Mydrogen Sulfate (H2SO4)  Water  #Material is obtained by the reaction of SO3 and water. Can contain low impurity levels, such as 0.02% max of iron as Fe. Properties vary with H2SO4 content.  *Current OSHA standard and ACGIH (1980) TLV. NIOSH has a 10-hr-TWA, 40 hr work week, of 1 mg/m³.  EECTION III. PHYSICAL DATA  #Mole gravity (60/60 F)	CAS #UU/ 664 939 DESCRIPTION: Material consists of about 93-98% H ₂ SO ₄ with water and traces of						
Water Water (H2SO4)  Water Water Sulfate (H2SO4)  Water Sulfate	impurities	5.	- ·				
Material is obtained by the reaction of SO ₃ and water.  Can contain low impurity levels, such as 0.02% max of iron as Fe. Properties vary with H ₂ SO ₄ content.  Current OSHA standard and ACCIH (1980) TIV. NIOSH has a 10-hr-TWA, 40 hr work week, of 1 mg/m³.  EECTION III. PHYSICAL DATA  Soiling point, 1 atm, deg C	SECTION 11. INGREDIEN	TS AND HAZARDS		x	14	AZARD (	DATA
*Material is obtained by the reaction of \$0_3\$ and water. Can contain low impurity levels, such as 0.02% max of iron as Fe. Properties vary with B2S04 content. **Current OSHA standard and ACGIH (1980) TLV. NIOSH has a 10-hr-TWA, 40 hr work week, of 1 mg/m³.  **SECTION III. PHYSICAL DATA**  **Boiling point, 1 atm, deg C	Hydrogen Sulfate (H ₂ SO ₄ ) Water						
SECTION III. PHYSICAL DATA    93.19%   H2504   98.33%   H2504   100%   H2504	Can contain low impurit	y levels, such as 0.	.02% max of		TCLo (Toxi	3 mg/m c Mouth	³ , 24 wk
Boiling point, 1 atm, deg C	†Current OSHA standard and	ACGIH (1980) TLV.					g/kg
Boiling point, 1 atm, deg C	SECTION III. PHYSICAL						
Specific gravity (60/60 F) 1.8354 1.84 1.84  Deg. Baume	n-did-a and-t 1 )						
Deg. Baume							)
Wolatiles, % at 340 C			1.0.	·	1.0		
Water solubility: Completely miscible.  Appearance & Odor: Clear, colorless, hygroscopic oily liquid with no odor SECTION IV, FIRE AND EXPLOSION DATA  Flash Point and Method   Autoignition Temp.   Flammability Limits In Air None - nonflammable   N/A   N/A   N/A   N/A    Even though sulfuric acid is nonflammable, it is hazardous when present in a fire area.  Small fires may be smothered with suitable dry chemical. Cool exterior of storage tanks of H2SO4 with water to avoid rupture if exposed to fire. Do not add water or other liquid to the acid! The acid, especially when diluted with water, can react with metals to liberate flammable hydrogen gas.  Sulfuric acid mists and vapors from a fire area are corrosive. (See Sect. V.)  Firefighters to wear self-contained breathing equipment and full protective clothing.  SECTION V. REACTIVITY DATA  Sulfuric acid is stable under normal conditions of use and storage. It does not undergo hazardous polymerization.  It is a strong mineral acid reacting with bases and metals. The concentrated acid is a strong oxidizing agent and can cause ignition of combustible materials on contact. The concentrated aid is also a dehydrating agent, picking up moisture readily from the air or other materials.	Volatiles, % at 340 C	ca 100	) cal	100	ca	100	
Water solubility: Completely miscible.  Appearance & Odor: Clear colorloss bygroscopic oily liquid with no odor.  SECTION IV. FIRE AND EXPLOSION DATA  Flash Point and Method   Autoignition Temp.   Flammability Limits In Air   N/A   N/	Melting point, deg C	ca -34	ca :	3	10.	4	
SECTION IV. FIRE AND EXPLOSION DATA  Flash Point and Method   Autoignition Temp.   Flammability Limits In Air   None - nonflammable   N/A							
SECTION IV. FIRE AND EXPLOSION DATA  Flash Point and Method   Autoignition Temp.   Flammability Limits In Air   None - nonflammable   N/A   N/A   N/A   N/A    Even though sulfuric acid is nonflammable, it is hazardous when present in a fire area. Small fires may be smothered with suitable dry chemical. Cool exterior of storage tanks of H2SO4 with water to avoid rupture if exposed to fire. Do not add water or other liquid to the acid! The acid, especially when diluted with water, can react with metals to liberate flammable hydrogen gas.  Sulfuric acid mists and vapors from a fire area are corrosive. (See Sect. V.)  Firefighters to wear self-contained breathing equipment and full protective clothing.  SECTION V. REACTIVITY DATA  Sulfuric acid is stable under normal conditions of use and storage. It does not undergo hazardous polymerization.  It is a strong mineral acid reacting with bases and metals. The concentrated acid is a strong oxidizing agent and can cause ignition of combustible materials on contact. The concentrated aid is also a dehydrating agent, picking up moisture readily from the air or other materials.							
Flash Point and Method Autoignition Temp. Flammability Limits In Air None - nonflammable N/A N/A N/A N/A  Even though sulfuric acid is nonflammable, it is hazardous when present in a fire area. Small fires may be smothered with suitable dry chemical. Cool exterior of storage tanks of H2SO4 with water to avoid rupture if exposed to fire. Do not add water or other liquid to the acid! The acid, especially when diluted with water, can react with metals to liberate flammable hydrogen gas.  Sulfuric acid mists and vapors from a fire area are corrosive. (See Sect. V.)  Firefighters to wear self-contained breathing equipment and full protective clothing.  SECTION V. REACTIVITY DATA  Sulfuric acid is stable under normal conditions of use and storage. It does not undergo hazardous polymerization.  It is a strong mineral acid reacting with bases and metals. The concentrated acid is a strong oxidizing agent and can cause ignition of combustible materials on contact. The concentrated aid is also a dehydrating agent, picking up moisture readily from the air or other materials.			obic vila jidi	nd with	no odo		UBOED
None - nonflammable  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/			Flammability	Limits	In Air		UPPER
Even though sulfuric acid is nonflammable, it is hazardous when present in a fire area. Small fires may be smothered with suitable dry chemical. Cool exterior of storage tanks of H ₂ SO ₄ with water to avoid rupture if exposed to fire. Do not add water or other liquid to the acid! The acid, especially when diluted with water, can react with metals to liberate flammable hydrogen gas.  Sulfuric acid mists and vapors from a fire area are corrosive. (See Sect. V.)  Firefighters to wear self-contained breathing equipment and full protective clothing.  SECTION V. REACTIVITY DATA  Sulfuric acid is stable under normal conditions of use and storage. It does not undergo hazardous polymerization.  It is a strong mineral acid reacting with bases and metals. The concentrated acid is a strong oxidizing agent and can cause ignition of combustible materials on contact. The concentrated aid is also a dehydrating agent, picking up moisture readily from the air or other materials.	None - nonflammable			LIMILO .	411		N/A
Sulfuric acid mists and vapors from a fire area are corrosive. (See Sect. V.)  Firefighters to wear self-contained breathing equipment and full protective clothing.  SECTION V. REACTIVITY DATA  Sulfuric acid is stable under normal conditions of use and storage. It does not undergo hazardous polymerization.  It is a strong mineral acid reacting with bases and metals. The concentrated acid is a strong oxidizing agent and can cause ignition of combustible materials on contact. The concentrated aid is also a dehydrating agent, picking up moisture readily from the air or other materials.	Small fires may be smoth tanks of H ₂ SO ₄ with wate other liquid to the acid	ered with suitable or r to avoid rupture i ! The acid, especia	iry chemical. If exposed to ally when dilu	Cool ex fire. D	terior o not	of stor	rage er or
SECTION V. REACTIVITY DATA  Sulfuric acid is stable under normal conditions of use and storage. It does not undergo hazardous polymerization.  It is a strong mineral acid reacting with bases and metals. The concentrated acid is a strong oxidizing agent and can cause ignition of combustible materials on contact. The concentrated aid is also a dehydrating agent, picking up moisture readily from the air or other materials.				lve. (Se	e Sect	. v.)	
Sulfuric acid is stable under normal conditions of use and storage. It does not undergo hazardous polymerization.  It is a strong mineral acid reacting with bases and metals. The concentrated acid is a strong oxidizing agent and can cause ignition of combustible materials on contact. The concentrated aid is also a dehydrating agent, picking up moisture readily from the air or other materials.							ning.
hazardous polymerization.  It is a strong mineral acid reacting with bases and metals. The concentrated acid is a strong oxidizing agent and can cause ignition of combustible materials on contact. The concentrated aid is also a dehydrating agent, picking up moisture readily from the air or other materials.	SECTION V. REACTIVITY	DATA					
	hazardous polymerization It is a strong mineral aci strong oxidizing agent a The concentrated aid is	d reacting with base and can cause ignition also a dehydrating a	es and metals.	. The co	ncentr	ated aci	id is a
Reacts exothermically with water. (Acid should always be added slowly to water.			nould always b	e added	slowly	to wate	er.

Sulfur oxides can result from decomposition and from oxidizing reactions of sulfuric acid.

Water added to acid can cause boiling and uncontrolled splashing of the acid.)

#### SECTION VI. HEALTH HAZARD INFORMATION

TLV 1 mg/m³

Concentrated sulfuric acid is a strong mineral acid, an oxidizing agent, and a dehydrating agent that is rapidly damaging to all human tissue with which it comes in contact. Ingestion may cause severe injury or death. Eye contact gives severe or permanent injury. Inhalation of mists can damage both the upper respiratory tract and the lungs. FIRST AID:

Eye Contact: Immediately flush eyes with plenty of running water for at least 15 minutes (including under the eyelids). Speed in diluting and rinsing out acid with water is extremely important if permananet eye damage is to be avoided. Obtain medical help as soon as possible.

Skin Contact: Immediately flush affected areas with water, removing contaminated clothing under the safety shower. Continue washing with water and get medical attention.

Inhalation: Remove to fresh air. Restore breathing. Call a physician immediately.

Ingestion: Dilute acid immediately with large amounts of milk or water, then give milk of magnesia to neutralize. Do not induce vomiting; if it occurs spontaneously, continue to administer fluid. Obtain medical attention as soon as possible.

Maintain observation of patient for possible delayed onset of pulmonary edema.

#### SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

Prevent contact with the acid. Provide adequate ventilation to control workplace concentrations. Minor leaks or spills can be diluted with plenty of water and neutralized with soda ash or lime. If water is not available, cover contaminated area with sand, ashes, or gravel and neutralize with soda ash or lime.

Major spills must be handled by a predetermined plan. Contact supplier for assistance in this planning and to meet local requirements and disposing of large amounts.

DISPOSAL: Follow Federal, State, and Local regulations.

#### SECTION VIII. SPECIAL PROTECTION INFORMATION

Provide general ventilation to meet current TLV requirements in the workplace. Where mists are up to 50 mg/m³, a high efficiency particulate respirator with full facepiece is warranted; a Type C supplied air respirator with full facepiece operated in pressure demand mode is used to 100 mg/m³. Avoid eye contact by use of chemical safety goggles or face shield where splashing may occur. Imperious protective clothing, such as rubber gloves, aprons, boots, and suits are recommended to avoid body contact with this acid. Eyewash fountain and safety showers with deluge type heads should be readily available where this material is handled or stored.

Comprehensive preplacement and annual medical examinations with emphasis on dental erosion, cardiopulmonary system, and mucous membrane irritation and cough.

#### SECTION IX. SPECIAL PRECAUTIONS AND COMMENTS

Sulfuric acid in carboys or drums should be stored in clean ventilated storage areas having acid resistant floors with good drainage. Keep out of direct sunlight, do not store above 32 C. Storage facilities to be separate from metallic powders, chromates, chlorates, nitrates, carbides, oxidizables, etc. Soda ash, sand or lime should be kept in general storage or work areas for emergency use. Protect containers against physical damage. Glass bottlesneed extra protection. Sulfuric acid is highly corrosive to most metals especially below 77% H₂SO₂. Avoid breathing mist or vapors. Avoid contact with skin or eyes. Do not ingest. Do not add water to concentrated acid. Do not smoke. Use nonsparking tools and vapor-proof type electrical fixtures.

ከልፕል	SOURCE(S)	CODE: 2-12	10	20 27	24	21	37_30
DAIA	SUURLEGS	ししいにょうニモン	14	70 74	76	3.1	3/- 19

Judgments as to the suitability of information herein for purchaser's purposes are necessarily purchaser's responsibility. Therefore, although reasonable care has been taken in the preparation of such information, General Electric Company extends no warranties, makes no representations and assumes no responsibility as to the accuracy or suitability of such information for application to purchaser's inferided purposes of for consequences of its use.

APPROVALS:	MIS CRD	J.M. Vies

Industrial Hygiene and Safety

MEDICAL REVIEW: Oct. 26, 1980



Supersedes Previous Sheet Dated Not Doted

## I. PRODUCT IDENTIFICATION

Unichem International

707 N. Leech/P. O. Box 1499/Hobbs, New Mexico

88240

EMERGENCY TELEPHONE NUMBER (505) 393-7751

Trade Name

KETONE BN

Chemical Description

Proprietary Corresion Inhibitor Slend

#### II. HAZARDOUS INGREDIENTS

Material

TLY (Units)

Sodium Mitrite (Oxidizer)

None Established

Neither this product nor its ingredients are listed in any of OSHA Standard, Section 1910.1200 sources as carcinogenic.

III, PHYSICAL DATA						
Boiling Point, 760 mm Hg	212*5	Freezing Point	225	₹.		
Specific Gravity (H20=1)	1.16 g/ml	Solubility in Water	Complete			
A	<u> </u>					

Appearance and Odor Light Yellow to Water White Clear Liquid; Slight Odor

## IV. FIRE AND EXPLOSION HAZARD DATA

-Flash Point (Test Method) .. None

EXTINGUISHING Media Carbon Dioxide, Dry Chemical, Water Spray or Fog, Foam. Use a water apray to cool fire-exposed containers.

Special Fire Fighting Procedures Firefighers should wear self-contained breathing apparatus and full protective clothing.

Unusual Fire and Explosion Hazards

Hone

Liability is expressly disclaimed for any loss or injury arising out of the use of this information or the use of any materials designated.

ME SMOTSH

## V. HEALTH HAZARD DATA

## Threshold Limit Value Not Determined

Effects of Overexposure Prolonged skin contact will cause dryness and irritation.
Ingestion may cause catherais. Inhelation of mist may cause respiratory irritation. Eye contact will cause irritation.

Emergency and First Ald Procedures Eyes: Flush promptly with copious quantities of water for at least fifteen minutes. Seek medical attention. Skins flush area with water. Wash with many and remove contaminated clothing. Inhalation: Remove to fresh mir. Apply artifical respiration if necessary. Ingestion: Cell a physician. Do not induce vomiting. Dilute with water or milk.

## VI. REACTIVITY DATA

Stability Stable X Conditions to Avoid
None

Incompatibility (Materials to Avoid)

Acids, Reducing Agents

Hazardous Decomposition of Products

Oxides of Carbon and Nitrogen

Hazardous Polymerization

May Occur Will Not Occur Conditions to Avoid

None

## VII. SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled Provide adequate ventilation. Remove sources of ignition. Contain and absorb spill.

Waste Disposal Method Dispose via a licensed waste disposal company. Follow local, state, and federal regulations.

## VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify Type) Use six-supplied or self-contained breathing apparatus if exposure levels exceed TLV for this product or its ingredients.

Ventilation Local Exhaust As needed to prevent Special Mone

Mechanical (General) Vapors above Other None

Protective Gloves Rubber Eye Protec

Eye Protection Serety Glasses, Goggles, and/or Face Shield

Other Protective Equipment Overalls, Rubber Boots, Eyewash Stations, Safety Showers

## IX. SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing Store in cool, well-ventilated, low fire-risk area away from ignition sources and incompatible materials. Keep containers closed when not in use. Do not transfer or store in improperly marked containers.

Other Precautions Avoid prolonged or repeated breathing of vapors or contact with skin. Do not ingest.

PAJE 1

#### MIBIL METERIAL SEPERA PERS SULLETIN

MOBIL CIL CO: PERATION ENVIRONMENTAL AFFAIRS AND TODICOLITY IEPT.

150 EAST 42ND STREET MEM YORK, N.Y. 10017 (USA)

PAROUTT IN ENTIFICATION MOSIL TIE 797 DIL

SUPPLIER:

MOBIL CIL CORP.

CHEMICAL NAMES AND SYNDRYMS:

PET. HYDROCAPEDYS AND ADDITIVES

USE DR DESCRIPTION:

STEAM TURBINE DIL

HEALTH EMERGENCY TELEPHONE: (212) 283-4411

TRANSPORT EMERGENCY TELEPHONE: (500)424-9300(CHEMTREC)

DIMER DESIGNATION:

(TRN 600114)

TYPICAL CHEMICAL AND PHYSICAL PROPERTIES

APPEARANCE:

COGR:

AT 1DC F. SUS VISCOSITY: 100.3

AT 40 C. CS 30.0

ASTM G.5 LIQUID

VISCOSITY:

SUZ .4 CIS TA

AT 100 C. CS

NA

MILD

RELATIVE DENSITY: 15/4 C

SOLUTILITY IN WATER:

5.3 PH:

C. >5°

MELTING PLINT: F(C)

POUR POINT: F(C)

*: :

20(-7)

: DILING PEINT: F(C) >(13(314)

FLASH POINT: F(C) (METHOD) 410(210) (ASTM D-22)

NEGLIGIBLE

ATECH EFFERSULEFUM HE SOC

N=+OT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES 

> MT PCT TLY(THA):

MG/M3

(APPROX)

HAZARDOUS INSCEDIENTS:

NONE

NCN-HAZARDOUS INGREDIENTS:

REFINED MINEPAL DILS

> 95

ADDITIVES AND/GR OTHER INGREDS.

NOTE: TLVS GROWN FOR GUIDANCE ONLY. FOLLOW APPLICABLE REGULATIONS.

INFORMATION GIVEN HEFEIN IS OFFERED IN GOOD FAITH AS ACCURATE, BUT WITHOUT SUAFANTEE. CONDITIONS OF USE AND SUITABILITY OF THE PRODUCT FOR PARTICULAR USES APE BEYOND OUR CONTPOL; ALL PISKS OF USE OF THE PRODUCT ARE THEREFORE ASSUMED BY THE USER AND HE EXPRESSLY DISCLAIM ALL PAREANIJES DE EMENY KIND AND NATURE, INCLUDING MARPANTIES DE MIPCHANICALUIT AND FILMESS FOR A PARTICULAR EVEROSS IN AISPECT TO THE USE DE SUITEILITY DE JHE PERPUCI. NOTHING IS INTENDED AS A PECCYMENDATION FOR USES WHICH INFRINGE VALLE PATENTS OR AS EXTENDING LICENSE UNDER VALLE PATENTS. APPROPRIATE WARNINGS AND SAFE MANDLING Procedures should be provided to mandlers and users.

elected bath ..... Fire and explosion Haited Data .......

PLASH POINT: FEC) (METHOD) FLAMMABLE LIMITS: LEL UEL 7.0

EXTINGUISHING MEDIA:

CARPON DICTIDE, FOAM, DRY CHEMICAL AND WATER FOG.

SPECIAL FIRE FIGHTING PROCEDURES:
FIREFIGHTERS MUST USE SELF-CONTAINED PREATHING APPARATUS.

UNUSUAL FIRE AND EXPLOSION PAIARDS:

THRESMOLD LINIT VALUE: (IF ESTABLISHED)

EFFECTS OF CVEREXPOSURE:
SLIGHT SKIN IRRITATION.

FLUSH WITH WATER.

SKIN CONTACT:

WASH CONTACT AREAS WITH SDAP AND WATER.

INHALATION:

NOT EXPECTED TO BE A PPOBLEM.

INGESTION:

NOT EXPECTED TO BE A PROBLEM WHEN INGESTED. IF UNCOMFORTABLE SEEK MEDICAL ASSISTANCE.

INCOMPATIBILITY: (MATERIALS TO AVOID)
STRONG DEIDIZERS
HAZARDOUS DECOMPOSITION PRODUCTS:
CAREON PONORIDE.

MAZARDOUS POLYMEPIZATION:
WILL NOT DECUR

CONDITIONS TO AVDIDE

ENVIRONMENTAL IMPACT:

REPORT SPILLS AS REGUIRED TO APPROPRIATE AUTHORITIES. U. S. COAST GUARD RESULATIONS REQUIRE IMMEDIATE REPORTING OF SPILLS THAT COULD REACH ANY WATERWAY INCLUDING INTERMITTENT DRY CREEKS. REPORT SPILL TO COAST GUARD TOLL FREE NUMBER 800-424-8863.

PROCEDURES IF MATERIAL IS RELEASED OR SPILLED:

SHOULD BY FIRE RETAPORNT TREATED SANDUST, DIATOMACEDUS EARTH, ETC. SHOULD BY THE RETAPORN AND ACCORDANCE WITH CURRENT APPLICABLE LAWS AND PEGULATIONS, AND PRODUCT CHARACTERISTICS AT TIME OF DISPOSAL.

WASTE MANAGEMENT:

DISPOSE OF WASTE BY SUPERVISED INCINERATION IN COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS.

NO SPECIAL EQUIPMENT REQUIRED.

SKIN PROTECTION:

NO SPECIAL EQUIPMENT REQUIRED. HOWEVER, GOOD PERSONAL HYGIENE PRACTICES SHOULD ALMAYS BE FOLLOWED.

FESPIRATORY PROTECTION:

NC SPECIAL REQUIREMENTS UNDER ORDINARY CONDITIONS OF USE AND WITH ADEQUATE VENTILATION.

VENTILATION:

NO SPECIAL REQUIREMENTS UNDER DRDINARY CONDITIONS OF USE AND WITH ADEQUATE VENTILATION.

CTHER:

HANDLING: NO SPECIAL PRECAUTIONS REQUIRED.

4/17/54

TOXICOLOGICAL DATA

#### ACUTE

DRAL TOXICITY: CRATS) NONTOXICCESTIMATED) --- BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

DERMAL TOXICITY: (RABBITS) WENTEXICESTIMETED) --- BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

INHALATION TEXICITY: (RATS) SPORT ACTOR STEIP TO SUCITARING OF MISTS AND/OR VAPORS APE UNLIKELY TO BE ENCOUNTERED THROUGH ANY CUSTOMARY OR REASONABLY FCRESEEABLE HANDLING, USE, OR MISUSE OF THIS PRODUCT. EYE IRPITATION: (RABBITS)

EXPECTED TO BE WON-IRRITATING. --- EASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPGNENTS.

SKIN IRRITATION: (RASSITS) MAY CAUSE SLIGHT IRRITATION ON PROLONGED OR REPEATED CONTACT. --- BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

SUBACUTE AND MUTAGENICITY (SUMMARY)

CHRONIC OR SPECIALIZED (SUMMARY)

DTHER DATA

FILE CODES: (FILL NC: MIL253001 ) MHC: C+ 0+ NA 0+ 1+ PPEC: USB4-071 APPROVE ENVIRONMENTAL AFFAIRS AND TOXICOLOGY DEPT. MANAGER OF PRODUCT SAFETY INFORMATION, PHONE: 609-737-5596 REVISED:

# SHELL TURBO Oils



Premium-quality turbine and general-purpose rust-and oxidation-inhibited circulating oils.

SHELL TURBO® Oils provide excellent labrication of precision turbines in industrial and marine service. These oils are also suitable for general plant labrication and in circulating, hydraulic and gear systems requiring rust- and oxidationishibited oils without extreme pressure or anti-wear properties.

SHELL TURBO Oils have achieved a long record of reliable performance because of these features:

• Good water separation and low foaming properties—Particularly important to minimize rusting and prevent cavitation in critical areas such as sleeve bearings.

 Noncorrosive. Protect equipment against rust—SHELL TURBO Oils inhibit corrosion of bearing housings and governor mechanisms, help increase machine life. These oils help prevent rust, even when salt water is present.

• Resist exidation over a long service life—SHELL TURBO Oils resist thickening and sludging, minimize deposits that could cause malfunction of governor mechanisms and reduce efficiency of oil coolers.

#### Where to buy SHELL TURBO Oils

Your Shell Jobber is the person to see for supplies of SHELL TURBO Oils. He's listed in the Yellow Pages under "Oils—Lubricating." Call him today. He'll be glad to give you information about other premium-quality Shell hibricants, too.

Shell Oil Company
Manager, Commercial Communications
One Shell Plaza
Houston, Texas 77002

*SHELL TURBO is a trademark and is used as such in this writing.

Typical properties of SHELL TURBO Oils:

	ASTM Test			SHELL	Tuni	o Oil Gr	ades			
	Method	32	46	68	78 ¹	100	150	<b>22</b> 0	320	460
Gravity, *API	D 1298	31	30	29	30	29	27	28	-27	26
Color	D1500	1.0	1.0	1.0	0.5	1.0	2.0	4.0	5.0	6.0
Pour point, 'F	D 97	15	0	0	10	0	0	10	10	10
Flash point, C.O.C., F	D 92	400	425	460	460	480	475	480	520	530
Viscosity, eSt at 40°C	D 445	30.1	44.0	63.0	75.0	97.0	147	210	<b>30</b> 5	420
Viscosity, cSt at 100°C	D 445	5.05	6.5	8.2	9.2	10.7	14	18	23	28
Viscosity index	D 2270	92	95	95	95	94	93	93	93	93
Neutralization No., TAN-C	D 974	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
Cu corrosion, 3 hr. at 212°F	D 130	1	1	1	1	1	1	1	1	1
Rust test	D 665B	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Interfacial tension, 77°F, dynes/cm	D 971	20	20	20	_	23	25	_	_	_
Emulsion test, minutes	D 1401	6	9	10	17	10	15	17	17	30
Turbine oil stability test, hours	D 943	2,000+	2,000+	2,000+	_	2,000+	_	_	_	_
Turbine oil stability test, MIL TOST, sludge, mg		14	15	18	20	20	_	_	_	_

¹Approved under MIL-L-17331G and Amendment 1.





MAR 22 196:

SAN JUAN SAFET

Shell ....

STOOL GEV 1-63

MSDS NUMBER \$ 65,000-2

PAGE 1

SECTION I NAME	24 HOUR EMERGENCY ASSISTAN
PRODUCT   Shell Bill Gas Engine Oil 40	SHELL 713-473-8461 CHEMTREC 800-424-8300
CHEMICAL LUBRICATING OIL	MAZARD RATING
CHENICAL EYGIOCAIDOR	O I I
SHELL CODE   67209   CAS NUMBER   MIXEURE	2 3 2 A

SECTION II	NGREDIEN	VT\$
COMPOSITION	1 %	TORICITY BATA
Shell Ell2 Gas Engine Gil 40	1200	Not Determined
Petroleum EyGrocarbons .	96	Oral LD, rat >5g/kg.
Polyalkenyl Succinimide	2	Dermal LD:0, rabbit >2g/kg:
Detergent Inhibitor containing Ba.	2	•
S, Ca	₹.	
Organic Zinc Dithiophosphate	<0.5	
		€.
		"Values are estimates based up:
	j	tests using similar oils.

SECTION III HEALTH INFORMATION

Lubricating oils are generally considered to be of a low order of acute toxicity to humans and experimental animals.

Exposure to vapors or mist of this product may cause pulmonary irritation, dizziness and nausea. Prolonged or repeated contact may cause various skin disorders such as dermatitis, folliculitis or oil acne.

The petroleum hydrocarbons in this product are a complex mixture of paraffinic, naphthenic and aromatic hydrocarbons. As in other petroleum cils, the aromatics contain polycyclic compounds of various concentrations and structures. Some of these polycyclics may be those which have been shown to induce cancer in animals under laboratory conditions. Epidemiologic studies on other petroleum products containing polycyclic aromatics suggested the possibility of skin cancer induction in man after prolonged and repeated contact. Inhalation of mists arising from oils containing these materials may also present a cancer hazard.

This specific product has not been tested in long-term, chronic exposure tests. Therefore, the presence of polycyclic arcmatic hydrocarbons requires that handling procedures and safety precautions in this MSDS be followed to minimize employees' exposure...

OCCUPATIONAL EXPOSURE LIMITS

SECTION IV

ACGIH-TLV/TWA = 5 mg/m3; ACGIH-TLV/STEL = 10 mg/m3

アナス・アン・ディー・アン・ディング 大力 アン・ディング ア・ディー・ディー

Cil Kist, Riberal:

MISDS NUMBER \$ 65,000-2 PAGE 2 OF 4

EMERGENCY AND FIRST AID PROCEDURES CTION V

Fissh with water for 15 minutes while holding eyelids open. CONTACT: Set medical attention.

Remove contaminated clothing and wipe excess off. Wash with R CORTACT: soap and water or a waterless hand cleaner followed by soap and water. Do not reuse clothing until thoroughly cleaned.

If irritation persists, get medical attention.

EXLATION:

Remove victim to fresh air and provide oxygen if breathing

is difficult. Get medical attention.

If GESTION: Do not induce vomiting. In general, no treatment is necessary unless large quantities of product are ingested.

However, get medical advice. .

OTE TO THE PHYSICIAN: In general, emesis induction is unnecessary th' high viscosity, low volatility products, i.e. most cils and greases.

SECTION VI	PHYSICAL DATA	
TOUS POINT N. A.	MELTING POINT N. A.	PRESSURE   K. A.
SPECIFIC D. 90	% VOLATILE BY N. A.	VAPOR DENSITY #. A (AR-1)
S UBILITY IN Insoluble	EVAPORATION RATE N. A. BUTYL ACETATE 1)	N.A. = Not Available

ADGO CHA BONANA

LI;ht brown cil. - Slight odor.

SECTION VII	FIRE-AND EXPLO	DSION HAZARDS		
- FOIRT AND METHOD USED		FLAMMARLE LIMITS & VOLUME IN AIR	L LOWER	UPPER
45 · F PKCC	•	!	_ K. &	×. à.
LTINGUISHING MEDIA	•			
		CC: Do not use a di		of
Annual Constitution and the	fine and ren h	e reitrited on surface	of Water.	

of not enter confined fire space without proper protective equipment idelucing a MIOSE approved self-contained breathing apparatus. Cool fire-exposed containers with water.

•••••

WAL FIRE AND EXPLOSION MATAROS

• 1
CAR
لسينا
Shell

Shell	\$1-50 100-35	i				PAGE 3 OF
BECTION	VIII		REACTIVITY	1		
STABLITY	UNSTABLE	X STABLE	HAZARDOUS POLY	MERIZATION	MAY OCCUR	Z WILL NOT OCC
ENDITIONS	AND MATERIALS TO	\$4010				
yootg p	eat, open i	grames, oxiq	lizing mater	ials and	mist formation	ņ.
	•		•	•		•
<b>=</b>				•		
						~
MAZARDOUS S	ECOMPOSITION PRO	DUCTS		•	•	
			s, phosphori		s and unidenti	fied organic
					•	
				·		
SECTION	IX		MPLOYEE PROTI	ECTION		
RESPIRATOR.	PROTECTION	<del></del>	WIT EO TEE TOOL			
			-	-	sure limits (S	•
					. In arcord	
			nere-supply: and particl		irator or an a	ir-purifying
PROTECTIVE (					<b>X</b> .	•
					pired to minim	
Contact	. Wear sai	ety glasses	or goggles	to avoid	eye contact.	
		•				
AMOITICOAL	PADTECTIVE MEASUR	ES	•••	-		
				•		•
•	•		•			
	·					
05051011	~		201112	77.67.01		
SECTION SPILL OR LEA		ENVIP	RONMENTAL PRO	DIECTION	<del></del>	· · · · · · · · · · · · · · · · · · ·
Kay bur	n although	not readily	ignitable.	Use cau	itions judgmen	t when
cleanin	g up large	spills.		. •	•	
Large s	pills: Vea	r respirato	r and protec	tive clo	thing as appr	opriate.
					_	Remove
			storage/sal		sels. Soak worther suitable	•
	of properi					me ref 7#7!
			n abscrbent	material	and dispose	of properly.
		_	•			
WASTE DISPO	5 ⁴ 4		<del></del>			
Place.i	n an approp	riate dispo	eal facility	···incomī	lience with 1	ocal

This product is an woil" under the Clean Water Act. - KEEP OUT OF

MATERIAL SAFETY DATA SHEET MISDS NUMBER > E5.000-2 Page 4 of 4 print mey. so-ger SPECIAL PRECAUTIONS ECTION XI Wash with soap and water before eating, frinking, izize skiz contact. king or using toilet facilities. Launder contaminated clothing before iuse. Properly dispose of contaminated leather articles, including shoes, et cannot be decontaminated. TRANSPORTATION REQUIREMENTS CTION XII NON-FLAMMABLE OXIDIZING MATERIAL COMBUSTIELE LIQUID FLANMAABLE LIQUID GAS EPARTMENT NOT HAZARDOUS BY Z D.C.T. REGULATIONS FLAMMABLE SOLID POISON CLASS A CORROSIVE MATERIAL SPORTATION ZASSIFICATION FLAMMABLE GAS POISONCLASS B BRITATING MATERIAL OTHER-Specify below T. PROPER SHIPPING NAME PEQUIREMENTS 型门 of Lading Commodity Description: Petroleum Lubricating Oil SUPPLEMENTARY HEALTH/REGULATORY INFORMATION SECTION XIII 国点 - Clean Water Act (CWA) This product is classified as an oil under Section 311 of the Clean Water Spills entering (a) surface waters or (b) any watercourses or sewers ed :ering/leading to surface waters that cause a sheen <u>KUST</u> be reported to ±ĥe National Response Center, 800-424-8802. - Rescurce Conservation and Recovery Act (RCRA) produced, this material is a product and not a waste. If discarded or intended to be distarded as is, it exhibits the characteristic of EP icity as defined in RCRA (40 CFR 261.24) based upon its barium content.

information contained herein is based on data considered However no werranty is expressed or implied regardge therect. ..

M's EPA hazardous waste number is DOCS.

couracy of these cate or the results to be obtained from y assumes no responsibility to jayury to vender of third as proximately sales by the alimenal if responsible seleny. dure: pro mos adhered to in amounted in the data sheet. smally, vengor, assumes, no ressumsmility for gajury to 📲 ar thire persons proximinally saused by abnormal use of aterial even if reasonable miery procedures are followed.

es al s

mute vendee assumes the m

BE SAFE

READ OUR PRODUCT SAFETY INFORMATION > .... AND

... PASS IT ON PRODUCT LIMBLITY LAW MECLINES IT

SHELL OIL COMPANY PRODUCT SAFETY AND COMPLIANCE -P.O. BOX 4320 / 31 1555 15 16 16 15 15 -MOUSTONITEXAS 77210 . . . . . . . . 1713).241-4819 💢 👝 👵 🗸 🚉

CATE PREPARED



roduct Name Or Number (as it appears				Emergency Tel	
Tribol 890 (Light, Medium, Heavy)				213-679-0271	
Address (Number, Street, City, State, and		00250		Manufacturer's D-U-N-8 No.	
4801 West 14/th St.,	Hawthorne, California		<u> </u>	07-964-5248	
Not Restricted	mapping reason, mazgid Gillas, mazgid in	D 140. (40 Orn 175.)	V1)	•	
Aditional Hazard Classes (es applicable	)	<u> </u>			
Not Restricted	,				
hemical Family			ormula		
Synthetic Hydrocarbon plus Additives			Mixture		
ection II — Hazardous ingr	adients/Identity Information	l			
ezerdous Components		OSHA PEL	ACGIH TLY	Other Recomm	
TO THE BEST OF OUR					
THIS PRODUCT CONTAIN	MO MO WARADD		\ <u>\</u>		
OUS INCREDIENTS. AS	ALA SELECTION I				***************************************
BY 29 CFR 1910.1200				-	
DI 27 OFR 1910,1200	•			<u> </u>	
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				•	
:					
					<del></del>
Section III Physical/Chem	ical Characteristics				
	<del></del>	Specific Gravity	/H=0 = 1)		
elling Point		Sheering Authorit	11.50 - 11	-0-	
-	Not Determined	Sherine Author	Тур. @ 6	0°F	0.97
-		opecine dutail	Тур. @ 6	0 ⁰ F	0.97
apor Pressure (mm Hg.)	Not Determined		Тур. 6 6	O ^O F	0.97
apor Pressure (mm Hg.)			Typ. 6 6	0 ⁰ F	
apor Pressure (mm Hg.) apor Density (AiR = 1)	Nil		Тур. 6 6	0 ⁰ F	0.97 Nil
apor Pressure (mm Hg.)  Suppor Density (AIR = 1)  Appearance and Odor	Nil Nil		Тур. 6 6	0 ⁰ F	
apor Pressure (mm Hg.) apor Density (AIR = 1) appearance and Odor Clear Amber Liquid =	Nil Nil Petroleum Odor		Тур. 6 6	0°F	
apor Pressure (mm Hg.) apor Density (AIR = 1) appearance and Odor Clear Amber Liquid =	Nil Nil Petroleum Odor		Тур. 6 6	0°F	
apor Pressure (mm Hg.)  apor Density (AIR = 1)  ppearance and Odor <u>Clear Amber Liquid —</u> Section IV — Fire and Exploitant Point (Method Used)	Nil Nil Petroleum Odor sion Hazard Data	Evaporation Ra Flammable Lim	Typ. 6 6 te (Butyl Acetate = 1)	0°F	
apor Pressure (mm Hg.)  apor Density (AIR = 1)  ppearance and Odor  Clear Amber Liquid ~  Section IV — Fire and Exploitant Point (Method Used)  > 445°F ASTM D-9	Nil Nil Petroleum Odor sion Hazard Data	Evaporation Ra	Typ. 6 6 te (Butyl Acetate = 1)		Nil
apor Pressure (mm Hg.)  apor Density (AIR = 1)  ppearance and Odor  Clear Amber Liquid ~  Section IV — Fire and Exploitant Point (Method Used)  > 445°F ASTM D-9	Nil Nil Petroleum Odor sion Hazard Data	Evaporation Ra Flammable Lim	Typ. 6 6 te (Butyl Acetate = 1)		Nil
Section IV — Fire and Exploration Point (Method Used)  > 445°F ASTM D-9  Extinguishing Media	Nil Nil Petroleum Odor sion Hazard Data	Evaporation Ra Flammable Lim	Typ. 6 6 te (Butyl Acetate = 1)		Nil
Appor Pressure (mm Hg.)  Appor Density (AIR = 1)  Appearance and Odor  Clear Amber Liquid ~  Section IV — Fire and Exploit  Tesh Point (Method Used)  > 445°F ASTM D-9  Extingulahing Media  CO2, Foam, Dry Chemi  Receist Fire Fighting Procedures	Nil Nil Petroleum Odor sion Hazard Data	Evaporation Ra  Flammable Lim Not Determ	Typ. 6 6  te (Butyl Acetate = 1)  its mined	LEL	Ni 1
apor Pressure (mm Hg.)  apor Density (AIR = 1)  appearance and Odor  Clear Amber Liquid ~  section IV — Fire and Exploitant Point (Method Used)  > 445°F ASTM D-9  axinguishing Media  CO2, Foam, Dry Chemi  pecial Fire Fighting Procedures	Nil Nil Petroleum Odor sion Hazard Data  22	Evaporation Ra  Flammable Lim Not Determ	Typ. 6 6  te (Butyl Acetate = 1)  its mined	LEL	Ni 1
Appor Pressure (mm Hg.)  Appor Density (AIR = 1)  Appearance and Odor  Clear Amber Liquid ~  Section IV — Fire and Exploit  Tesh Point (Method Used)  > 445°F ASTM D-9  Extingulahing Media  CO2, Foam, Dry Chemi  Receist Fire Fighting Procedures	Nil Nil Petroleum Odor sion Hazard Data  22	Evaporation Ra  Flammable Lim Not Determ	Typ. 6 6  te (Butyl Acetate = 1)  its mined	LEL	Ni 1
apor Pressure (mm Hg.)  apor Density (AIR = 1)  appearance and Odor  Clear Amber Liquid —  Bection IV — Fire and Exploit  lash Point (Method Used)  > 445°F — ASTM D-9  Extinguishing Madia  CO ₂ , Foam, Dry Chemi  pecial Fire Fighting Procedures  A self-contained bre	Nil Nil Petroleum Odor sion Hazard Data  22 .cal eathing apparatus is re	Evaporation Ra  Flammable Lim Not Determ	Typ. 6 6  te (Butyl Acetate = 1)  its mined	LEL	Ni 1

bility	Stable			Hazardous Polymerizatio	n	Will Not Occur	
mpatibility (Mare							
Oxid12	ing Agents						·
	g may produ	ce oxide:	of carbon				
	iealth Hazard				·		
rte(a) of Entry:		Mation? XX		Skin?		Ingestion?	
Hith Hazards (Acu					,,— <u>—</u>	<del></del>	
nazanes (acu Repeat	ed and prol	onged co	ntact may c	ause a mild skin	irritatio	on & transient e	/ @
irrite							
rcinegenicity:	NTI	P? No		IARC Monographs?	No	OSHA Regulated?	No
ns and Symptom	s of Exposure		,				
Mild e	skin irritat	ion					
dical Conditions narally Aggravate	d by Exposure	Non	e known				
IIIIII AAA							
ergency and Fire	t Aid Procedures						
Eyes -	- Flush with	h water f	or 15 minut	68			
	- Wash with				<del></del>		
Inges	tion - DO No	OT induce	vomiting -	call a physician	n	· · · · · · · · · · · · · · · · · · ·	
ection VII -	Precautions f	or Sale Ha	ndling and Us	•	•	•	
	n Case Material is Re						
Dike		412466 4. Ch					
	spill - tra:	nsfer to	an impervio	ous container			
***************************************			an impervio	ous container			
Use o	il absorben	t for res	an impervio		eal for11	ity ner applicab	le
Use of Sate Disposel Met Recla	il absorben	t for res	an imperviousidue cansport to	a licensed dispo			le
Use of sate Disposel Met Recla regul	il absorben im, inciner ations. Av	t for res	an imperviousidue cansport to				le
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Vse of Section VIII -	il absorben ined im, inciner ations. Av axen in Handling ar t handle or not in use. heating to Control Mes	t for res	an impervious  sidue  cansport to  filling of 1  ear heat, sp  sition.	a licensed dispo	where po	ossible.  ontainer closed	le
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#### MOBIL DIL CORPORATION MATERIAL SAFETY DATA BULLETIN

REVISED: 13/26/82 ************** I. PRODUCT IDENTIFICATION *************** MDBIL PEGASUS 490

MEALTH EMERGENCY TELEPHONE: SUPPLIER: MOBIL DIL CORP. (212) 883-4411 CHERICAL NAMES AND SYNONYMS: TRANSPORT ENERGENCY TELEPHONE: PET. MYDROCAREDNS AND ADDITIVES (800) 424-9300 (CHEMTREC)

USE OR DESCRIPTION: GAS ENGINE DIL

Accessors II. TYPICAL CHEMICAL AND PHYSICAL PROPERTIES **********

APPEARANCE: ASTM 4.0 LIQUID DOOR: MILD VISCOSITY AT 100 F. SUS: 670.0 AT 40 C. CS: 128.0 VISCOSITY AT 213 F. SUS: 72.0 AT 100 C. CS: 13.6 DDDR: MILD 🐧 APPEARANCE: ASTN 4.0 LIQUID PH: NA FLASH POINT F(C): >480(249) (ASTM D-92) MELTING POINT F(C): NA PDUR POINT F(C): 10(-12)

BDILING PDINT F(C): > 600(316)

RELATIVE DENSITY, 15/4 C: 0.879

SOLUBILITY IN WATER: NEGLIGIBLE VAPOR PRESSURE-NM MG 200: < .1

NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES FOR FURTHER INFORMATION, CONTACT YOUR LOCAL MARKETING OFFICE.

WT PCT EXPOSURE LIMITS SOURCES (APPROX) MG/M3 PPM (AND NOTES)

TARDOUS INGREDIENTS: PACH

OTHER INGREDIENTS: >95 REFINED MINERAL DILS ADDITIVES AND/OR OTHER INGREDS. < 5

KEY TO SOURCES: A=ACGIH-TLV, A==SUGGESTED-TLV, M=MDBIL, D=DSHA MOTE: LIMITS SHOWN FOR GUIDANCE ONLY. FOLLOW APPLICABLE REGULATIONS.

******************** IV. HEALTH HAZARD DATA ************** --- INCLUDES AGGRAVATED MEDICAL CONDITIONS, IF ESTABLISHED ---EFFECTS OF OVEREXPOSURE: NGT EXPECTED TO BE A PROBLEM.

*********** V. EMERGENCY AND FIRST AID PROCEDUPES ********** --- FOR PRIMARY ROUTES OF ENTRY ---

EYE CONTACT: FLUSH WITH WATER.

SKIN CONTACT: WASH CONTACT AREAS WITH SDAP AND WATER.

INHALATION: NOT EXPECTED TO BE A PROBLEM.

INGESTION: NOT EXPECTED TO BE A PROBLEM. HOWEVER, IF GREATER THAN 1/2 LITER (PINT) INGESTED, IMMEDIATELY GIVE 1 TO 2 GLASSES OF WATER AND CALL A PHYSICIAN, HOSPITAL EMERGENCY ROOM DR PDISON COMTROL CENTER FOR ASSISTANCE. DO NOT INDUCE VOMITING OF GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

Mobil

PLASH POINT P(C): > 480(249) (ASTM D-P2)

REMINABLE LIMITS. LEL: .6 UEL: 7.0

ENTINGUISHING MEDIA: CARBON DIOXIDE, POAM, DRY CHEMICAL AND MATER PDG.

SPECIAL FIRE FIGHTING PROCEDURES: FOR FIRES IN ENCLOSED AREAS,

FIREFIGHTERS BUST US: SELF-CONTAINED BREATHING APPARATUS.

UNUSUAL FIRE AND EXPLOSION MAZARDS: NONE

MEPA MAZARD ID: MEALTH: C, FLAMMABILITY: 1, REACTIVITY: 0

STABILITY (THERNAL, LIGHT, ETC.): STABLE
CONDITIONS TO AVOID: EXTREME MEAT
INCOMPATIBILITY (MATERIALS TO AVOID): STRONG DXIDIZERS
MAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONDXIDE.
MAZARDOUS POLYMERIZATION: WILL NOT DCCUR

environmental impact: Report spills as required to appropriate authorities. U. S. Coast Guard Regulations require immediate reporting of spills that could reach any maternay including intermittent dry creeks. Report spill to coast Guard Toll Free Rumber 800-424-8802.

PROCEDURES IF MATERIAL IS RELEASED OR SPILLED: ADSORB ON FIRE RETARDANT TREATEC SAWDUST, DIATOMACEDUS EARTH, ETC. SHOVEL UP AND DISPOSE OF AT AN APPROPRIATE WASTE DISPOSAL FACILITY IN ACCORDANCE WITH CURRENT APPLICABLE LAWS AND REGULATIONS, AND PRODUCT CHARACTERISTICS AT TIME OF DISPOSAL.

CONTROLLED BURNER FOR FUEL VALUE OR DISPOSAL BY SUPERVISED INCINERATION. SUCH BURNING MAY BE LIMITED PURSUANT TO THE RESDURCE CONSERVATION AND RECOVERY ACT. IN ADDITION, THE PRODUCT IS SUITABLE FOR PROCESSING BY AN APPROVED RECYCLING FACILITY OR CAN BE DISPOSED OF AT ANY GOVERNMENT APPROVED WASTE DISPOSAL FACILITY. USE OF THESE METHODS IS SUBJECT TO USER COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS AND CONSIDERATION OF PRODUCT CHARACTERISTICS AT TIME OF DISPOSAL.

SKIN PROTECTION: NO SPECIAL EQUIPMENT REQUIRED. HOWEVER, GODD PERSONAL MYGIENE PRACTICES SHOULD ALWAYS BE FOLLOWED.

RESPIRATORY PROTECTION: NO SPECIAL REQUIREMENTS UNDER DROIMARY CONDITIONS OF USE AND WITH ADEQUATE VENTILATION.

VENTILATION: NO SPECIAL REQUIREMENTS UNDER ORDINARY CONDITIONS OF USE AND WITH ADEQUATE VENTILATION.

--- ACUTE---

- PAL TOXICITY (RATS): LD50: > 5 G/KG O/10 RATS DIED AT THIS DOSAGE LEVEL. SLIGHTLY TOXIC(ESTIMATED) --- BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.
- DERPAL TOXICITY (RABBITS): LDSG: > 2 G/KG D/10 RABBITS DIED AT THIS DOSAGE LEVEL. SLIGHTLY TOXIC (ESTIMATED) --- BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.
- INHALATION TOXICITY (RATS): NOT APPLICABLE --- HARMFUL CONCENTRATIONS OF MISTS AND/OR VAPORS ARE UNLIKELY TO BE ENCOUNTERED THROUGH ANY CUSTGRARY OR REASONABLY FORESEEABLE MANDLING, USE, OR MISUSE OF THIS PRODUCT.
- ETE IRRITATION (RABBITS): EXPECTED TO BE NON-IRRITATING. ETE IRRITATION SCORES: C AT 24 MDURS, O AT 48 MOURS, O AT 72 MOURS--- BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPGNENTS.
- SKIN IRRITATION (RABBITS): EXPECTED TO BE NON-IRRITATING. PRIMARY IRRITATION SCORE: 0/8---BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

THE BASE OILS IN THIS PRODUCT ARE SEVERELY SOLVENT REFINED AND/DR
SEVERELY HYDROTREATED. TWO YEAR MOUSE SKIN PAINTING STUDIES OF
SIMILAR DILS SHOWED NO EVIDENCE OF CARCINDGENIC EFFECTS. SEVERELY
SOLVENT REFINED AND SEVERELY HYDROTREATED MINERAL BASE DILS HAVE
BEEN TESTED AT MOBIL ENVIRONMENTAL AND HEALTH SCIENCES LABORATORY
BY DERMAL APPLICATION TO RATS 5 DAYS/WEEK FOR 90 DAYS AT DOSES
SIGNIFICANTLY HIGHER THAN THOSE EXPECTED DURING NORMAL INDUSTRIAL
EXPOSURE. EXTENSIVE EVALUATIONS INCLUDING MICROSCOPIC EXAMINATION
OF INTERNAL ORGANS AND CLINICAL CHEMISTRY OF BODY FLUIDS, SHOWED NO
ADVERSE EFFECTS.

***************** XII. REGULATORY INFORMATION ***********

TSCA INVENTORY STATUS: ALL COMPONENTS REGISTERED.

D. D. T. SMIPPING NAME: NOT APPLICABLE D. D. T. HAZARD CLASS: NOT APPLICABLE

US DSHA HAZARD COMMUNICATION STANDARD: PRODUCT ASSESSED IN ACCORDANCE WITH DSHA CFR 1910-1200 AND DETERMINED NOT TO BE HAZARDOUS.

RCRA INFORMATION: THE UNUSED PRODUCT, IN OUR OPINION, IS NOT SPECIFICALLY LISTED BY THE EPA AS A MAZARDOUS WASTE (40 CFR, PART 2610); DOES NOT EXHIBIT THE MAZARDOUS CHARACTERISTICS OF IGNITABILITY, CORROSIVITY, OR REACTIVITY, AND IS NOT FORMULATED WITH THE METALS CITED IN THE EP TOXICITY TEST. HOWEVER, USED PRODUCT MAY BE REGULATED.

THE FOLLOWING PRODUCT INGREDIENTS ARE CITED ON THE LISTS BELOW:

CHEMICAL NAME
ZINC (ELEMENTAL ANALYSIS) (0.018 7440-66-6 15
PCT)

--- KEY TO LIST CITATIONS ---

1 = 0SHA I, 2 = ACGIH, 3 = IARC, 4 = NTP, 5 = NCI,

6 = EPA CARC, 7 = NFPA 49, 8 = NFPA 325M, 9 = DOT MMT, 10 = CA RTK, B = IL RTK, 12 = MA RTK, 13 = MN RTK, 14 = NJ RTK, 15 = NI 293,

T6 = FL RTK, 17 = PA RTK.

--- NTP, IARC, AND OSHA INCLUDE CARCINDGENIC LISTINGS ---

IMPORMATION GIVEN WEREIN IS OFFERED IN GOOD PAITH AS ACCURATE, BUT WITHOUT GUARANTEE. CONDITIONS OF USE AND SUITABILITY OF THE PRODUCT FOR ARTICULAR USES ARE DEVOND OUR CONTROL; ALL RISKS OF USE OF THE PRODUCT RE THEREFORE ASSUMED BY THE USER AND ME EXPRESSLY DISCLAIM ALL MASBAMILES OF EXERY BIND AND MAILURE, INCLUDING MARRENILES OF MERCHANIABILITY AND ELIMESS EDB A PARTICULAR PURPOSE IN RESPECT TO THE USE OB SUITABILITY OF USES WHICH INFRINGE VALID PATENTS OR AS EXTENDING RECOMMENDATION FOR USES WHICH INFRINGE VALID PATENTS OR AS EXTENDING LICENSE UNDER VALID PATENTS. APPROPRIATE MARNINGS AND SAFE MANDLING PROCEDURES SHOULD BE PROVIDED TO MANDLERS AND USERS.

PREPARED BY: MOBIL DIL CORPORATION

A CONTRACT OF

ENVIRONMENTAL AFFAIRS AND TOXICOLOGY DEPARTMENT, PRINCETON, MJ FOR FURTHER INFORMATION, CONTACT:

3225 GALLOWS ROAD, FAIRFAX, VA 22037 (703) 849-3265

POR MOBIL USE ONLY: (FILL NO: RN612DA201) MHC: 1+ 1+ NA D+ D+ PPEC: US32-095 APPROVE REVISED: 10/26/82

# CORPORATE RESEARCH & DEVELOPMENT

SCHENECTADY, N. Y. 12305



No. ____1257

VARSOL 1

Date May 1982

			PALE	, ,	
SECTION I. MATERIAL	DENTIFICATION				
MATERIAL NAME: VARSOL 1					
DESCRIPTION: Petroleum se	olvent or mineral spirits.				
OTHER DESIGNATIONS: GE M	terial D588, ASTM D235, ASTM D48	4, Type 1			
MANUFACTURER: Exxon Co.					
P.O. Box 2	180				
Houston, T	exas Tel: (713) 656-3424				
				<del></del>	
SECTION II. INGREDIEN		**	147	AZARD	DATA
Mixture of petroleum hydro	ocarbons	100	8-hr 1	WA 100	pp™*
Typical Composition:	Vol \				
Aromatics (Cg and high	<del></del>				
Olefins	1		Rat, (	Oral	
Saturates	81		נסיי א	>5 g/kg	·
Sulfur content 1 ppm	<b>01</b>		- 30		
	dard Solvent. Animal studies		Rabbit	t, Derma	<b>a</b> l
	research has shown that male		LD.	>2 g/kg	3
	vapors at 100 ppm had		50		
kidney damage. Addition conducted to validate	onal studies are being				
determine if a revised	TLV should be recommended.				
SECTION III. PHYSICAL	DATA				
Boiling range, l atm, deg	C 155-205 Specifit grav:	ity, 15.6	/15.6C	C	0.79
Vapor pressure, 25C, months		•			0.1
Vapor density (Air=1)	<del>_</del>				00
Solubility in water	•				140
•					
Appearance & odor: Water	-white liquid; mineral spirits odd	or (no lo	ng-last	ting odd	or I
after evaporation).	•	•	•		
-					Į.
SECTION IV. FIRE AND				LOWER	UPPER
Flash Point and Method	Autoignition Temp. Flammability		n Air		
ca 42C (108F) TCC	254C (ASTM D2155) 8 by Volum	ne <b>@</b> 25C		0.9	6.0
Extinguishing Media: Dry	chemical, carbon dioxide, foam,	ater spr	ay or f	og.	
	to keep fire-exposed containers				rupture
	Class II Combustible Liquid. It is				
heated or sprayed in air		•			i
Firefighters should wear	self-contained breathing apparatus	for fig	hting f	ires in	
enclosed areas.	2 22	•	•		1
SECTION V. REACTIVITY	DATA				
This is a stable material	in closed containers at room temp	erature	under r	ormal s	torage
	. It does not polymerize.			<del></del>	
	oxidizing agents such as chlorine,	conc. o	cygen,	calcium	, 1
hypochlorite, nitric aci					1
	ion may produce carbon monoxide a	ind partic	ally o	idized	I
l hudrametana	<del></del>	-	_		

#### SECTION VI. MEALTH HAZARD INFORMATION

TLV 100 ppm (See Sect II)

Varsol, like all petroleum distillates, is a central nervous system depressent. Symptoms of overexposure to high vapor conc. range from headache and disziness to possible convulsions and unconsciousness.

Bye contact with the liquid may cause conjunctivitis. Prolonged or repeated skin contact causes a defatting effect, resulting in irritation, drying, cracking and dermatitis. FIRST AID:

Bye Contact: Flush thoroughly with running water for 15 min. including under eyelids. Get medical help if irritation persists.

Skin Contact: Bemove contaminated clothing. Wash affected area with soap and water.

Get medical help if large area contacted or if irritation persists.

Inhalation: Remove to fresh air. Restore and/or support breathing as required.

(Administer oxygen if breathing difficult). Contact physician for further treatment, observation and support.

Ingestion: Do not induce vomiting. Contact physician immediately. Aspiration hazard Give a few ounces of USP mineral oil to drink.

#### SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

Notify safety personnel of leaks or spills. Remove sources of heat or ignition.

Provide explosion-proof ventilation. Clean-up personnel need protection against inhalation and skin contact. Contain spill and recover free liquid if possible. Use absorbent (sand, earth, sawdust, etc) to clean up residue. Do not discharge into sewers or surface waters. (Notify authorities if product enters, or may enter, sewer or waterway.)

DISPOSAL: Waste material may be burned in an approved incinerator.

Follow Federal, State, and Local regulations.

#### SECTION VIII. SPECIAL PROTECTION INFORMATION

Provide adequate general and local exhaust ventilation to meet TLV requirements. Local exhaust hoods should have at least 60 fpm face velocity. Use explosion-proof electrical equipment and services. Have air-supplied or self-contained respiratory apparatus available for monroutine or emergency use or when working in a confined or enclosed area. (Canister respirator may be suitable for short time usage.)

Wear impermeable gloves and additional protective clothing to prevent prolonged or repeated skin contact. Use safety goggles and/or faceshield for eye protection where splashing is possible. An eyewash station is desirable where splashing is probable. A safety shower may be desirable where large amounts are used.

Launder contaminated clothing before reuse. thoroughly dry contaminated shoes before reuse.

#### SECTION IX. SPECIAL PRECAUTIONS AND COMMENTS

Store in closed containers in a cool, well-ventilated area away from sources of heat, flame, ignition and strong oxidizing agents. Protect containers from physical damage. Keep containers closed when not in use. Use safety cans for small amounts. Handling and storage conditions must be suitable for OSHA Class II Combustible liquid. Bond and ground containers for transfers to avoid static sparks.

Avoid inhalation of vapors. Avoid prolonged or repeated contact with skin. Prevent eye contact with liquid. Prohibit smoking or flame in use areas. Ventilate area where used. Electrical services to meet code.

DOT Classification: COMBUSTIBLE LIQUID

DATA SOURCE(S) CODE: 1,2, MSDS #334

dudgments as to the suitability of information herein for purchaser's purposes are assessed by purchaser is emparability. Therefore, othough researchic care has been taken to the grapmention of each information, General Electric Company autends no warranties, makes no expressibilities and assumes no expensibility as to the occuracy or militability of such information for application to purchaser's industrial purposes or for assessments of its use. APPROVALS: MIS J. M. Nulland Industrial Hygiene and Safety 5-12-dz

MEDICAL REVIEW: 19 May 1982

# DISCOVERY CHEMICALS, INC. MATERIAL SAFETY DATA SHEET Emergency Phone 504 389-9945

#### PRODUCT IDENTIFICATION:

TRADE NAME:

Activated Alumina

CHEMICAL FAMILY:

Aluminum Oxide

CHEMICAL FORMULA:

A1,0,

CAS NO.:

1344-28-1

#### SUMMARY OF HAZARDS:

Mild irritant to the eyes and respiratory system.

#### CHEMICAL AND PHYSICAL PROPERTIES:

APPEARANCE/ODOR:

White crystalline/no odor.

MELTING POINT:

>3000°F

SOLUBILITY IN WATER: Insoluble.

#### FIRE AND EXPLOSION HAZARDS:

FLASH POINT (METHOD): Nonflammable.

EXTINGUISHING MEDIA:

None required.

HAZARDOUS THERMAL DECOMPOSITION PRODUCTS:

None

SPECIAL FIRE FIGHTING PROCEDURES:

None

UNUSUAL FIRE AND EXPLOSION HAZARDS:

None

#### REACTIVITY DATA:

STABILITY:

Stable.

CONDITIONS TO AVOID:

None

MATERIALS TO AVOID:

None

HAZARDOUS POLYMERIZATION: Will not occur.

3502 RIVERVIEW - Mailing Address - P. O. BOX 977 - PORT ALLEN, LA. 70767-0977 - Phone (504) 389-9945

SECTION 1.

Product Identification:

TRADE NAME:

CHEMICAL FAMILY:

CHEMICAL FORMULA:

CAS NO.:

MANUFACTURER:

**EMERGENCY PHONE NUMBER:** 

Activated Alumina

Aluminum Oxide

Al₂O₃

1344-28-1

Discovery Chemicals, Inc. 504-389-9945

SECTION 11.	Ingredients:	Exposure Limits
Al ₂ 0.	9.00 ~ 95.00%	ACGIH - TLV
Na ₂ 0	0.30 - 2.0%	10 mg/m Total Dust
S,O,	0.02 - 0.04%	5 mg/m Respirable dust
H.	5.00 - 7.00%	

SECTION 111.

Physical Data:

APPEARANCE/ODOR:

White crystalline powder, spheres or

granules/no odor.

MELTING POINT:

SOLUBILITY IN WATER:

>3000°F

insoluble.

SECTION IV. Fire and Explosion Hazards:

FLASH POINT (METHOD):

Nonflammable

EXTINGUISHING MEDIA:

None required

HAZARDOUS THERMAL DECOMPOSITION PRODUCTS: None

SPECIAL FIRE FIGHTING PROCEDURES:

None

UNUSUAL FIRE & EXPLOSION HAZARDS:

None

SECTION V.

Reactivity Data:

STABILITY:

Stable

CONDITIONS TO AVOID:

None

MATERIALS TO AVOID:

None

HAZARDOUS POLYMERIZATION:

Will not occur

BECTION VI.

Health Hazards:

INHALATION:

If exposed to excessive amounts,

remove to fresh air.

EYE CONTACT:

Begin immediate eye irrigation with

cool water for at least 15 minutes with the eyelids held open by gently separating them with the fingers.

SKIN CONTACT:

INGESTION:

No hazard under normal circumstances.

No hazard under normal circumstances.

SECTION VII.

Safe Handling & Use

SPILLS OR LEAKS:

Shovel material into container for

disposal.

**DISPOSAL METHODS:** 

This product is not by EPA's definition a hazardous substance. It may be disposed of in a landfill in compliance with any applicable local,

state and federal regulation.

STORAGE REQUIREMENTS:

Store in a dry place away from moisture.

Sile Copy

# INFORMATION IN SUPPORT OF SECTION 3.1.14 OF DISCHARGE PLAN GW-49

# Compressor "D" Building Well



El Paso Natural Gas Co. Blanco Plant San Juan County, N.M. PRELIMINARY ASSESSMENT

OBSERVED SUBSURFACE SEEPAGE

AND CONTAMINATION

EPNG BLANCO D COMPRESSOR STATION

FOUNDATION EXCAVATION

NEAR BLANCO, NEW MEXICO

FOR
ELPASO NATURAL GAS COMPANY
EL PASO, TEXAS

PREPARED BY

MCBRIDE-RATCLIFF AND ASSOCIATES, INC.
HOUSTON, TEXAS

-. Q



January 7, 1988 MRA File No. 88-003

Mr. John Bridges
El Paso Natural Gas Company
P. O. Box 1492
El Paso, Texas 79978

RE: Preliminary Assessment
Observed Subsurface Seepage and Contamination
EPNG Blanco D Compressor Station Foundation Excavation
Near Blanco, New Mexico

Dear Mr. Bridges:

#### Introduction

We are pleased to provide this preliminary assessment of the subsurface seepage and contamination observed in the Blanco D Compressor Station foundation excavation.

We conducted the geotechnical investigation for the D Compressor Plant in September and October 1987; the results of the investigation were described in our report dated November 18, 1987. As shown on Figure 1, nine test borings were drilled in the D Plant area. The test borings ranged in depth from 17 to 37 ft and were logged in the field by one of our staff geologists. The logs of the test borings are presented in Appendix A. Free water was observed at various depths during test drilling and after 24 hours as shown in the following:

Summary of Free Water
Observations

Boring Number & Depth (ft)	Date Drilled	Depth to Free Water While Drilling (ft)	Water
CB-1 - 22.5	9/14/87	None	14.4
CB-2 - 21.5	9/14/87	None	14.4
CB-3 - 17.5	9/15/87	None	Dry
CB-4 - 20.0	9/15/87	None	Wet & caved
CB-5 - 26.5	9/15/87	17.0	at 18 ft 20.1
CB-6 - 27.0	9/15/87	23.0	17.8
CB-9 - 37	10/3/87	26.0	Dry & caved
CB-10 - 34	10/3/87	None	at 14.0 ft 26.4
CB-11 - 30	10/3/87	17.0	Caved & dry at 18 ft (1hr)

During December 10 through December 18, 1987 our geologist observed the excavation for the mat foundation for the D Compressor Plant. Our geologist logged the subsurface conditions exposed in the foundation excavation, excavated a backhoe test pit at the MCC Building Area, and drilled and logged five Nx core borings in the D plant foundation excavation area. The locations of the backhoe test pit and core borings are shown on Figure 1. The logs of the five Nx core borings and the MCC test pit are shown in Appendix A.

#### Observed Contamination

On December 12, 1987 our geologist noted a seepage zone along a portion of the west edge of the D Plant excavation and in a

portion of the excavation area. The seepage at the west edge of the foundation area occured at about El. 90.6 ft. The seepage contained contamination with an oily appearance; samples were obtained and subjected to analytical testing by EPNG. approximate limits of the excavation and seepage are indicated on Figure 1. The seepage zone was approximately 50 ft in length and about 5 to 15 ft in width. The sandstone materials encountered at about El. 94.0 in the foundation area were removed to expose the surface of the claystone and the seepage zone. materials were excavated to competent claystone. The surface elevations of the competent claystone beneath the seepage zone are shown on Figure 2.

A test pit was excavated in the area immediately adjacent to the seepage exposed at the west edge of the excavation to observe the underlying materials. The test pit extended from El 94 down to Elevation 87.1 and was approximately 8 by 3.5 ft in plan dimensions. The materials exposed in the excavation were logged by our field geologist; the log of the seepage test pit is shown in Appendix A. The seepage occured at the contact between a sandstone layer and the underlying claystone.

We obtained approximate measurements of seepage quantities into the test excavation for a period of 3 days. Seepage quantities decreased rapidly from the initial levels, and the approximate percentage of contaminants was also visibly decreasing. The seepage observations are described below.

<u>Date</u>	Approximate Seepage Rate
12/15 - 12/16	2.54 ft ³ /hr
12/16 - 12/17	1.4 ft ³ /hr
12/17 - 12/18	.89 ft ³ /hr

#### Remedial Actions

As soon as potential contamination was reported to El Paso personnel, remedial actions were initiated. The actions included sampling of contamination and analytical testing and, on December 14, 1987, the removal of an existing laboratory tank from the location shown on Figure 1. This tank was punctured at one end and is believed to be the source of the observed contamination. The tank excavation extended to about Elevation 96; the excavation was backfilled with clean soil after tank removal. The seepage zone was also excavated and removed from the "D" plant foundation area. The excavation will be backfilled with lean concrete up to foundation level.

We assisted in developing plans for a collector/interceptor drain to be installed at the location of the observed seepage at the west side of the foundation excavation. This collector/interceptor will be located adjacent to the building excavation area and an existing 12 inch blow down line. We understand that the blowdown line trench extends down to about Elevation 93 in the vicinity of the observed seepage. Because the blowdown line is above the seepage zone it is unlikely that seepage has flowed along the blowdown line.

#### Hydrogeological Conditions

The site is situated within the west-central portion of the San Juan Basin which extends across the Colorado-New Mexico Border east of the Four Corners area.

During the Tertiary period this basin was filled by Paleocene and Eocene sediments of continental origin derived from the Southern Rocky Mountains. The formations that outcrop within the basin are of Eocene age; these sediments were laid down as channel fill and stream floodplain deposits. The Eocene sequence begins with the Wasatch formation and the formations of the Nacimiento Group.

The plant site is situated on an outcrop of the Nacimiento Group which consists of two distinct stratums. The upper stratum includes thick beds of sandy and silty clays, claystones and shales with sand, sandstone and siltstone interbeds. The lower substratum consists of a slightly weathered to unweathered sandstone.

The test borings drilled in September and October of 1987 encountered free water at widely varying elevations. that the free water reflects isolated seepage rather than a true groundwater level. The zones of isolated seepage were further indicated during foundation excavation for the "D" Plant when isolated contaminated seepage was observed at one location. seepage zone shown on Figure 1 is located at the contact between a sandstone lens and an underlying claystone. The sandstond lens varies in thickness, lateral extent and elevation. As a result the contact with the underlying claystone also varies elevation in the excavation area. Based on the excavation (Figure 2) performed to remove the seepage zone it appears that the limits of the seepage do not extend much beyond the east of the "D" plant excavation. The low point of the seepage zone seems to be at El. 90.6 of the west edge of the "D" plant and we believe that contaminated seepage has flowed to the east from the tank which has recently been removed.

#### Remedial Investigation

Completed remedial actions include source removal, removal of the seepage area and affected materials from the "D" Plant excavation, monitoring and collection of seepage from the contaminated zone and a future installation of a interceptor/drain-collector at the zone of observed seepage.

During the "D" plant foundation excavation, contamination was noted in a zone (Figure 1) that is believed to have moved in a

west to east direction across a portion of the excavation site. Entry of contaminants into the excavation was not noted at any point other than along the west wall at the seepage test excavation. The vertical extent of contamination is confined by overlying hard sandstones and underlying claystones as indicated by previous test borings, Nx core borings and the test pit excavated at the seepage point.

We suggest that additional subsurface exploration (test pits) be conducted to the east and west of the observed seepage area to determine if additional shallow and confined areas of contamination migration exist and their limits. If additional contamination is encountered remedial measures can be designed to provide containment-recovery, probably using shallow interceptor and drainage trenches. The intercepted contaminated materials can then be recovered and disposed of at approved facilities. Suggested locations for the test pits are shown on Figure 1, the test pits locations should be adjusted in the field to determine the limits of the seepage/contamination.

We are looking forward to providing additional information and assisting you in the remedial investigation.

Yours very truly,
McBRIDE-RATCLIFF AND ASSOCIATES, INC.

Arthur J. Stephens, P.E.

Vice President

AJS/ssm/Bridges12/29

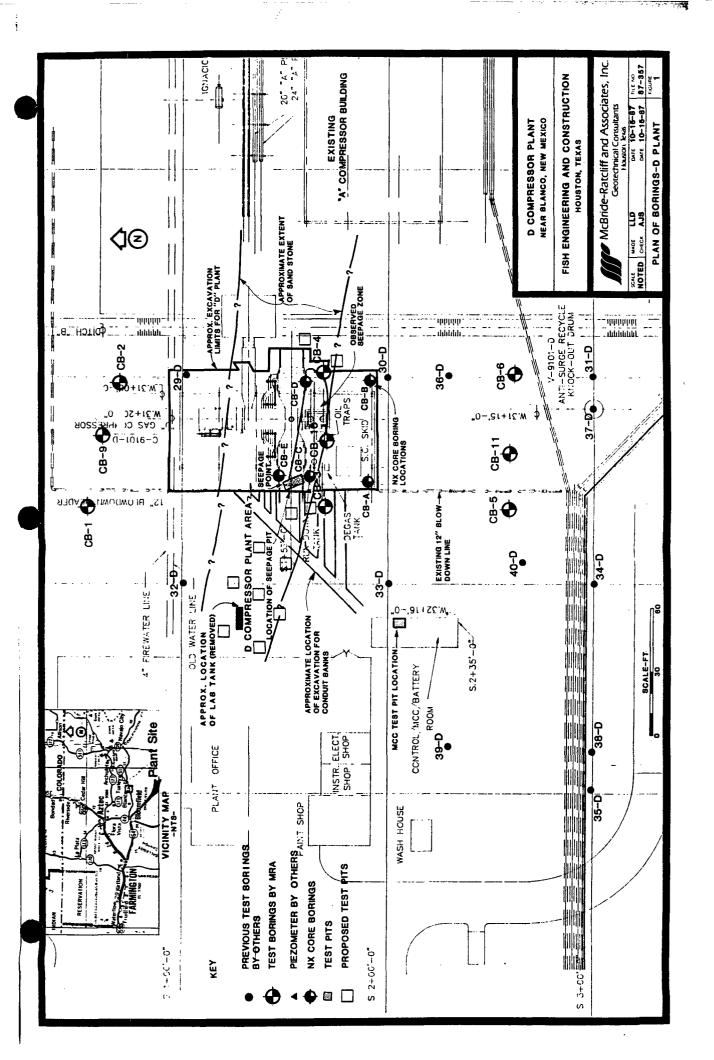
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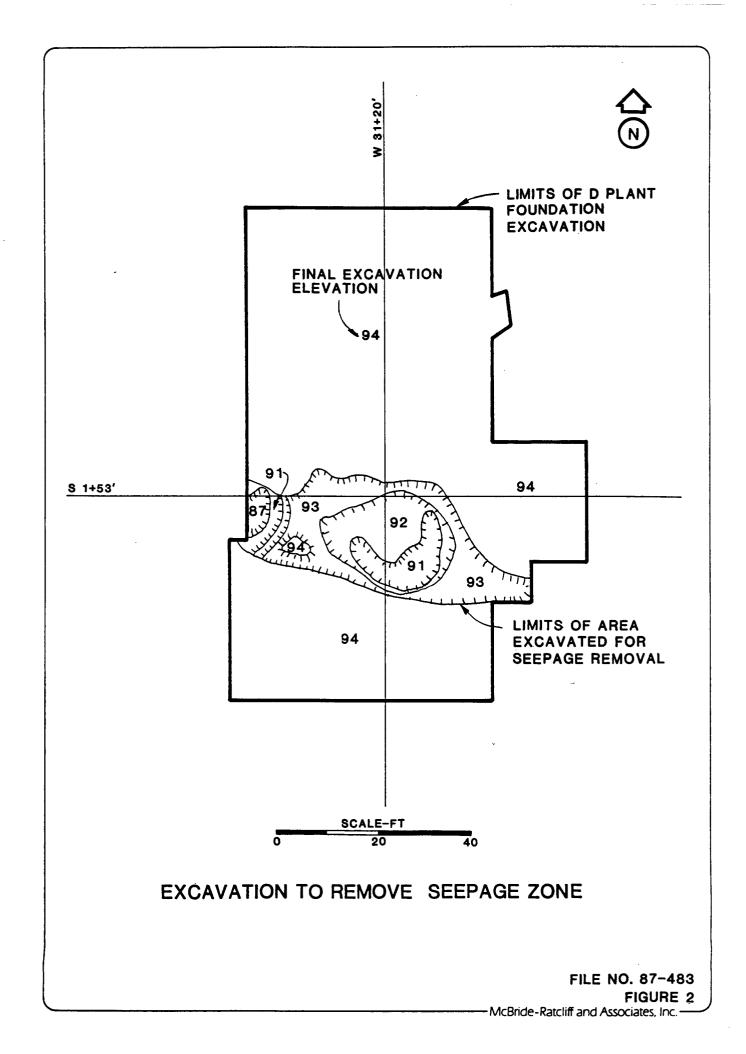
Attachments: Figure 1 - Boring Location Plan

Figure 2 - Excavation of Seepage Area

Appendix A - Test Boring, Core Boring,

and Test Pit Logs





APPENDIX A

PROJECT: Gas Compression Plant

Farmington, New Mexico

BORING NO. __CB-1

FILE NO. 87-357 DATE 9-14-87

CLIENT:

Fish Engineering & Constructors, Inc.

Houston, Texas

ł			Но	ust	on,	Texas						
	FIE	D	DATA		LAB	ORATO	ORY	DA	TA			DRY AUGERED 0 TO 22.5 FEET
		S	a) c			£.		ATI	ERB	E RG	0,	WASH BORED TO FEET FREE WATER ENCOUNTERED YES NO
SOIL SYMBOL	DEPTH (feet)	SAMPLES	Penetration Resistance (N) or TSF	Moisture Content	v Density, PCF	Compressive Strength TSF	Failure Strain · %	Liquid	Plastic	Plasticity Index	Minus No. 200 Sieve	AT FT. DEPTH.  WATER AT 14.4 FT. AFTER 24 hours
	'	\ /	a a	ž	۵	ပိ	7.	46	PL	PI	ž	DESCRIPTION OF STRATUM
			1.0	15 12	111 99			35	20	15	61 62	Medium tan SANDY CLAY (CL)  w/gypsum seams, sand pockets & seams
	- 5				116							Gray SILTY CLAYSTONE w/sandstone seams
	- 10 - - 15 -			12								-tan & gray @ 13'
7(4)	- 20 -			11	123 126							
		╀┼		8	126							Tan SANDSTONE hardness 3 slightly weathered
	- 25 -		•									hardness 3, slightly weathered  Bottom @ 22.5', Refusal

[•] SLICKENSIDED FAILURE
() CONFINING PRESSURE, PSI
G.S. GRAIN SIZE

PENETRATION RESISTANCE

STANDARD PENETRATION RESISTANCE (SPT)
POCKET PENETROMETER OR TORVANE
ESTIMATED UNCONFINED COMPRESSIVE
STRENGTH, TONS PER SQ. FOOT

(N) -TSF -

PROJECT:

Gas Compression Plant

Farmington, New Mexico

BORING NO. <u>CB</u>-FILE NO. <u>87-357</u> DATE <u>9-14-87</u> CB-2

CLIENT:

Fish Engineering & Constructors, Inc.

Houston, Texas

	,			ust	.011,	rexas	·					
	FIEL	.D I	DATA		LAB	ORAT	YAC	DA	TA		,	DRY AUGERED 0 TO 21.5FEET
			)ce			£		ATI	ERB	E RG	, ,	WASH BORED TO FEET
SOIL SYMBOL	DEPTH (feet)	SAMPLES	Penetration Resistance (N) or TSF	Moisture Content	Drv Density, PCF	Compressive Strength TSF	Failure Strain - %	r Liquid	Plastic	Plasticity Index	Minus No. 200 Sieve	AT FT. DEPTH.  WATER AT 14.4 FT. AFTER 24 hours  DESCRIPTION OF STRATUM
		I		23				64	25	39	75	Very stiff brown CLAY (CH)
		X	N=12									. 631
	- 5 -		4.5	15	110	3.09	14				50	Brown & gray SANDY CLAY (CL) w/gypsum seams
				15 15 14	119 135	3.93	6.9	41	23	18	92 66	
	-10 -	Î	50/5"	11							94	Gray & tan CLAYSTONE
				14								
	_15 _			14								
E					128 132							
	_ 20 _			7	125							-tan sandstone @ 21' slightly calcareous
												Bottom @ 21.5', Refusal
	_ 25 -											
	<del>-</del> -											
												,
╟┵		LL.		i		1						DENISTRATION DECISTANCE

* SLICKENSIDED FAILURE
() CONFINING PRESSURE, PSI
G.S. GRAIN SIZE

PENETRATION RESISTANCE

STANDARD PENETRATION RESISTANCE (SPT)
POCKET PENETROMETER OR TORVANE
ESTIMATED UNCONFINED COMPRESSIVE
STRENGTH, TONS PER SQ. FOOT (N) -TSF -

PROJECT: Gas Compression Plant

Farmington, New Mexico

BORING NO. _ CB-3

FILE NO. 87-357 DATE 9-15-87

CLIENT:

Fish Engineering & Constructors, Inc.

Houston, Texas

I			но	ust	on,	Texas						
	FIE	D	DATA		LAB	ORAT	ORY	Τ			 1	DRY AUGERED 0 TO 17.5 FEET WASH BORED TO FEET
<u>ا</u> ا		S	ance			ıgth		ATI	TERB IMIT	·s	100	FREE WATER ENCOUNTERED YES NO
SOIL SYMBOL	DEPTH (feet)	SAMPLES	Penetration Resistance (N) or TSF	Moisture Content	Dry Density, PCF	Compressive Strength TSF	Failure Strain - %	Liquid	Plastic	Plasticity Index	Minus No. 200 Sieve	AT FT. DEPTH.  DRY  WAXEER AT 16.0 FT. AFTER 24 hours
	`	$\coprod$		_	1,			LL	PL	PI	2	DESCRIPTION OF STRATUM
			0.5	13	110	1.34	51	31	22	9	33	Soft tan CLAYEY SAND (SC)
	- 5 -	H		1				2			-	Hard tan CLAY (CH)
		M	N=38	15			53	26	27		93	
		M	N=48	18			53	26	27		91	
	-10 -	H	50/5"	10							92	The Califold Control of Avernovin
		11	3073								92	Tan & light gray CLAYSTONE hardness 3, w/gypsum seams
E		╁	:	8	129	10.6	4.4					
E	- 15 -											·
E		╢			126							
	,	Щ.		°	126		_					
i		$\  \ $										Bottom @ 17.5', Refusal
	- 20 -	1										
		$\  \ $										
		1										
	- 25 -	]										
		$\  \cdot \ $										
		11										
		$\  \cdot \ $										
		11										
		1										
		<u> </u>										
		Ш										

* SLICKENSIDED FAILURE
() CONFINING PRESSURE, PSI
G.S. GRAIN SIZE

PENETRATION RESISTANCE

STANDARD PENETRATION RESISTANCE (SPT)
POCKET PENETROMETER OR TORVANE
ESTIMATED UNCONFINED COMPRESSIVE
STRENGTH, TONS PER SQ. FOOT (N) -TSF -

PROJECT:

Gas Compression Plant

Farmington, New Mexico

BORING NO. <u>CB</u>-FILE NO. <u>87-357</u> DATE <u>9-15-87</u> CB-4

CLIENT:

Fish Engineering & Constructors, Inc.

Houston, Texas

			Но	ust	on,	Texas	}					
	FIEL	.D	DATA		LAB	ORAT	ORY	T			Γ	DRY AUGERED 0 TO 20 FEET WASH BORED TO FEET
SOIL SYMBOL	DEPTH (feet)	SAMPLES	Penetration Resistance (N) or TSF	Moisture Content	Drv Density, PCF	Compressive Strength TSF	Failure Strain - %	Liquid	Plastic	Plasticity Index	8 No. 200 Sieve -	FREE WATER ENCOUNTERED YES NO  AT FT. DEPTH.  WATER AT ** FT. AFTER 24 hours  **wet & caved @ 18'
		$\setminus$	ă	2	0	٥	ш.	LL	PL	Pi	Σ	DESCRIPTION OF STRATUM
			2.0	15	106						45	Stiff tan SILTY CLAY (CL) w/sandstone seams
	- 5 -			9				27	21	6		Tan SANDSTONE highly weathered
		X	N=47 N=30	8 17				54	25	29	97	Hard light gray CLAY (CH)
	-10 - -15 -	X	50/5"						26			Gray & tan CLAYSTONE
	- 20 -	X	50/2"	10	105		36.2	2.1				Light gray & tan SILTSTONE hardness 3
	- 25 -											Bottom @ 20', Refusal

* SLICKENSIDED FAILURE
() CONFINING PRESSURE, PSI
G.S. GRAIN SIZE

PENETRATION RESISTANCE

STANDARD PENETRATION RESISTANCE (SPT)
POCKET PENETROMETER OR TORVANE
ESTIMATED UNCONFINED COMPRESSIVE
STRENGTH, TONS PER SQ. FOOT (N) -TSF -

PROJECT:

Gas Compression Plant

Farmington, New Mexico

BORING NO. <u>CB-5</u> FILE NO. <u>87-357</u>

CLIENT:

Fish Engineering & Constructors, Inc.

Houston, Texas

DATE 9-15-87

					,	Texas						
	FIEL	-D	DATA	_	LAB	ORAT	ORY	DA	TA		· · ·	DRY AUGERED 0 TO 26.5 FEET WASH BORED TO FEET
SOIL SYMBOL	DEPTH (feet)	SAMPLES	Penetration Resistance (N) or TSF	Moisture Content	Dry Density, PCF	Compressive Strength TSF	Failure Strain %	Liquid	Plastic Plastic	Plasticity Index	No. 200 Sieve - %	FREE WATER ENCOUNTERED YES NO AT 17.0 FT. DEPTH.
SC			Penetr	Moiste	0 > 0	Comp	Failur			-	Minus	WATER AT 20.1 FT. AFTER 24 hours
7.7		\/		_				LL	PL	PI	_	DESCRIPTION OF STRATUM
			3.5	16	94			41	17	24	42	Tan CLAYEY SAND (SC) w/clay pockets
	<b>P</b>		2.25	19	105	1.69	14	45	18	27	75	Very stiff tan SANDY CLAY (CL) w/gypsum seams
	- 5 -	M	N=18	15		*						Firm gray CLAYEY SAND (SC)
		X	N=51	14				46	25	21	87	Hard tan SILTY CLAY (CL) w/gypsum seams
	-10 -	X	50/4"	13								Tan slightly SANDY CLAYSTONE -w/sandstone seams @ 12.5'
	-15 - -20 -	X	50/4"	36	81	1.24		93	33			-6" soft claybed @ 17'
												-brown @ 24'
	- 25 -			8	104							Light gray SANDSTONE hardness 3, gypsum seams
	- 30 -					*	СНЕ	MI	CAL	TES	STS	Bottom @ 26.5', Refusal

McBride-Ratcliff and Associates, Inc.

PENETRATION RESISTANCE

(N) - STANDARD PENETRATION RESISTANCE (SPT)
TSF - POCKET PENETROMETER OR TORVANE
ESTIMATED UNCONFINED COMPRESSIVE
STRENGTH, TONS PER SQ. FOOT

^{*} SLICKENSIDED FAILURE
() CONFINING PRESSURE, PSI
G.S. GRAIN SIZE

PROJECT:

Gas Compression Plant

Farmington, New Mexico

CB-6 **BORING NO.** _

CLIENT:

Fish Engineering & Constructors, Inc.

Houston, Texas

FILE NO	87-357
DATE9	-15-87

1			nc	ust	on,	lexas						
	FIE	D	DATA		LAB	ORATO	ORY	Τ_			ı	DRY AUGERED 0 TO 27 FEET WASH BORED TO FEET
ے ا		S	a)C			ŧ.		ATI	IMIT	E RG S	8	FREE WATER ENCOUNTERED YES NO
SOIL SYMBOL	DEPTH (feet)	SAMPLES	Penetration Resistance (N) or TSF	Moisture Content	Density, PCF	Compressive Strength TSF	Failure Strain - %	Liquid	Plastic	Plasticity Index	3. 200 Sieve	AT 23 FT. DEPTH.
SOI			enetra	Aoistur	Orv De	Compre	ailure			Plasti	Minus No.	WATER AT 17.8 FT. AFTER 24 hours
Ĺ.,		ackslash		-				LL	PL	PI	2	DESCRIPTION OF STRATUM
			0.5	17	104							Soft gray CLAY (CH) w/sand filled fissures & pockets
	_		1.5	22	93	*		42	24	18	67	Soft tan SANDY CLAY (CL) w/ferrous nodules & gypsum seams
	- 5	M	N=21	22								Very stiff tan CLAY (CH) w/gypsum seams
		M	74/9"	15				51	25	26	92	-hard @ 7'
E		П										Hard tan CLAYSTONE
E	- 10 -	X	72/9"	10				55	25	30	86	w/gypsum seams
		$\  \cdot \ $										-
E		1		l								
E	- 15 -	X	50/3"	8							55	
		$\prod$										w/slickensides
	- 20 -	M	50/4"	24				90	37	53	89	
E												
E		$\mathbf{H}$		20		į						-soft @ 23'-25', saturated
LÚT:	- 25 -	╢			101							
				8	131							Light gray SANDSTONE hardness 3
	<b> </b>	$\prod$										Bottom @ 27', Refusal
	- 30 -	11										. ,
	<del>                                     </del>	$\  \ $										
		$\  \ $				Ì						
I												* Consolidation Test
		$\ $										oonoorraacron rest
		1										

^{*} SLICKENSIDED FAILURE
() CONFINING PRESSURE, PSI
G.S. GRAIN SIZE

(N) -TSF -

PENETRATION RESISTANCE STANDARD PENETRATION RESISTANCE (SPT) POCKET PENETROMETER OR TORVANE ESTIMATED UNCONFINED COMPRESSIVE STRENGTH, TONS PER SQ. FOOT

PROJECT:

Gas Compression Plant

Farmington, New Mexico

CLIENT:

Fish Engineering & Constructors, Inc.

Houston, Texas

BORING NO. <u>CB-9</u>
FILE NO. <u>87-357</u>
DATE <u>10-3-87</u>

												1
<u> </u>	FIE	ם ו	DATA		LAB	ORATO	DRY	DA	TA			DRY AUGERED 0 TO 19 FEET WASH BORED 19 TO 37 FEET
۲		S	nce			th.			ERB		0,	FREE WATER ENCOUNTERED YES NO
SOIL SYMBOL	DEPTH (feet)	SAMPLES	Penetration Resistanc (N) or TSF	Moisture Content	Dry Density, PCF	Compressive Strength TSF	Failure Strain - %	Liquid	Plastic	Plasticity Index	Minus No. 200 Sieve	AT 26.0 FT.DEPTH.  WATER AT Dry FT.AFTER 24 hours  **Caved @ 14'
		$\mathcal{W}$		ļ				LL	PL	PΙ	_	DESCRIPTION OF STRATUM
			1.25									Stiff tan SANDY CLAY (CL) w/gypsum & claystone seams -hard @ 3'
	- 5		4.25 50/8"									
	- 10 -		50/4"									Light gray SANDY CLAYSTONE hardness 2 massive bedded w/gypsum crystals
	15	X	N=84									
	<u> </u>	I X	50/5"									•
	- 20 -	IXX	R=85% RQD= 25%			·						Light gray & tan SILTY SHALE hardness 3, thin bedded w/sandstone seams
	- 25-	I I	R=33% RQD= 30%									Gray CLAYSTONE
	- 30-											hardness 2, thin bedded -6" lignite bed @ 29' -sandstone seams @ 31'
· 到	- 35-	<b>1</b>	R=75% RQD= 65%	_								Light gray SANDSTONE
												hardness 5 w/gypsum seams
												Bottom @ 37'
	- 40-					1		4	1			PENETRATION RESISTANCE

* SLICKENSIDED FAILURE
() CONFINING PRESSURE, PSI
G.S. GRAIN SIZE

PENETRATION RESISTANCE (N) -TSF -

STANDARD PENETRATION RESISTANCE (SPT)
POCKET PENETROMETER OR TORVANE
ESTIMATED UNCONFINED COMPRESSIVE
STRENGTH, TONS PER SQ. FOOT

PROJECT:

Gas Compression Plant

Farmington, New Mexico

BORING NO. __

CLIENT:

Fish Engineering & Constructors, Inc.

Houston, Texas

FILE NO. 87-357 DATE 10-2-87

	FIE	_D	DATA		LAB	ORATO	ORY	DA	TA			DRY AUGERED 0 TO 9 FEET
								ATI	ERB	ERG	%	WASH BORED 9 TO 34 FEET
SOIL SYMBOL	DEPTH (feet)	SAMPLES	Penetration Resistance (N) or TSF	Moisture Content %	Drv Density, PCF	Compressive Strength TSF	Failure Strain - %	Liquid	Plastic	Plasticity Index	Minus No. 200 Sieve -	FREE WATER ENCOUNTERED YES NO  AT FT. DEPTH.  WATER AT 26.4 FT. AFTER 24 hours
7.7		ackslash		_			ļ	LL	PL	PΙ	_	DESCRIPTION OF STRATUM
			3.0								_	Very stiff tan SANDY CLAY (CL) w/clayey sand interbeds
		M	50/6''									Hard tan SILTY CLAY (CL)
	- 5	H	·				<u> </u>					w/siltstone & sand stone interbeds Tan SANDSTONE
			50/4"									hardness 2, moderately weathered
	- 10 -		R=30% RQD=0 R=100% RQD=	,								Light gray CLAYSTONE hardness 2 w/sandstone seams -tan @ 11.5'
	- 15 -		35%									Tan & light gray SILTSTONE hardness 3 w/gypsum crystals, micaeous
			R=90%									-1" sandstone bed @ 18'
<b>}</b>	- 20 -	333	RQD= 15%									Black LIGNITE hardness 2, massive bedded
		1000	R=100% RQD= 5%	7								Gray CLAY (CH) w/lignite seams
	- 25 -											Dark gray CLAYSTONE hardness 3 w/sandstone & lignite seams
	– 30 ^J -	2000	R=100; RQD= 85%	7								Light gray & white SANDSTONE hardness 5, massive bedded w/gypsum seams
	- 35 - - 40 -											Bottom @ 34'
	- 40 -											PENETRATION RESISTANCE

* SLICKENSIDED FAILURE
() CONFINING PRESSURE, PSI
G.S. GRAIN SIZE

PENETRATION RESISTANCE

STANDARD PENETRATION RESISTANCE (SPT)
POCKET PENETROMETER OR TORVANE
ESTIMATED UNCONFINED COMPRESSIVE
STRENGTH, TONS PER SQ. FOOT (N) -TSF -

PROJECT:

Gas Compression Plant

Farmington, New Mexico

CB-11 BORING NO. ____CE FILE NO. __87-357

DATE __10-3-87

CLIENT:

Fish Engineering & Constructors, Inc.

Houston, Texas

			Ho	ust	on,	Texas						
	FIE	LD I	DATA		LAB	ORATO	DRY	DA	TA			DRY AUGERED 0 TO 30 FEET
٦٢		S	auce			d1b		ATI	ERB	E RG		WASH BORED TO FEET FREE WATER ENCOUNTERED YES NO
SOIL SYMBOL	DEPTH (feet)	SAMPLES	Penetration Resistanc (N) or TSF	Moisture Content	Dry Density, PCF	Compressive Strength TSF	Failure Strain %	Liquid	Plastic	Plasticity Index	Minus No. 200 Sieve	AT 17.0 FT. DEPTH.  WATER AT ** FT. AFTER 1 hour  **Caved & dry @ 18'
	'	\ /	g -	Σ	Õ	ŭ	L.	LL	PL	PI	Σ	DESCRIPTION OF STRATUM
	_ 5	П	50/9'' 50/6''									Hard tan SANDY CLAY (CL) w/gypsum crystals & sand partings
	- 10 -	X	N=70			-						Tan CLAYSTONE w/gypsum crystals
	_ 15 -	X V	50/4"									w/gypsum & sandstone seams w/sandstone seams
	- 20 -		N=47 N=50									Dark gray CLAY (CH) w/slickensides & gypsum crystals
	- 25 - - 30 -		50/5" R=100% RQD= 100%									Tan & light gray SANDSTONE hardness 5, massive bedded, slightly weathered gypsum seams
												Bottom @ 30'

* SLICKENSIDED FAILURE
() CONFINING PRESSURE, PSI
G.S. GRAIN SIZE

PENETRATION RESISTANCE

STANDARD PENETRATION RESISTANCE (SPT)
POCKET PENETROMETER OR TORVANE
ESTIMATED UNCONFINED COMPRESSIVE
STRENGTH, TONS PER SQ. FOOT TSF -

Blanco "D" Plant Foundation Excavation

PROJECT:

BORING NO. __CB-A Farmington, New Mexico FILE NO. <u>87-483</u> DATE 12-14-87 CLIENT: Fish Engineering & Constructors, Inc. Houston, Texas Elev. 93.93' FIELD DATA LABORATORY DATA DRY AUGERED TO **FEET** TO WASH BORED FEET ATTERBERG % LIMITS Penetration Resistance (N) or TSF Strength SOIL SYMBOL SAMPLES Sieve FREE WATER ENCOUNTERED YES NO Density, PCF DEPTH Moisture Conten Liquid Failure Strain AT FT. DEPTH. Compressive TSF Plasticity WATER AT FT. AFTER ٥ LL PL ΡI **DESCRIPTION OF STRATUM** Gray CLAYSTONE 4.5+ w/gypsum seams 1 FRACTURED 2 NX Core Data - 0.5 to 5.5 ft. Recovery = 67%RQD = 35%Time = 35 minutes 3 Coring with = Air Bit Type = Carbide Tip 4 5 Bottom @ 5.5' 6 PENETRATION RESISTANCE STANDARD PENETRATION RESISTANCE (SPT)
POCKET PENETROMETER OR TORVANE
ESTIMATED UNCONFINED COMPRESSIVE
STRENGTH, TONS PER SQ. FOOT SLICKENSIDED FAILURE CONFINING PRESSURE, PSI (N) -

McBride-Ratcliff and Associates, Inc.

G.S. GRAIN SIZE

Blanco "D" Plant Foundation Excavation PROJECT: BORING NO. _ CB-B Farmington, New Mexico FILE NO. 87-483 DATE ___12-14-87 CLIENT: Fish Engineering & Constructors, Inc. Houston, Texas Elev. 93.93' FIELD DATA LABORATORY DATA DRY AUGERED TO FEET FEET WASH BORED TO ATTERBERG LIMITS Strength FREE WATER ENCOUNTERED YES NO SOIL SYMBOI DEPTH (feet) Dry Density, PCF Moisture Content SAMPL Strain Liquid 200 Compressive S TSF FT. DEPTH. Penetration F Plasticity Š WATER AT FT. AFTER PI LL PL **DESCRIPTION OF STRATUM** Gray CLAYSTONE w/gypsum seams 1 2 FRACTURED NX Core Data - 0.5 to 5.5 ft. Recovery = 100% RDQ = 50%3 Time = 40 minutes Coring with = Air Bit Type = Carbide Tip 4 5 Bottom @ 5.5' 6 PENETRATION RESISTANCE SLICKENSIDED FAILURE (N) -

() CONFINING PRESSURE, PSI G.S. GRAIN SIZE (N) - STANDARD PENETRATION RESISTANCE (SPT)
TSF - POCKET PENETROMETER OR TORVANE
ESTIMATED UNCONFINED COMPRESSIVE
STRENGTH, TONS PER SQ. FOOT

Blanco "D" Plant Foundation Excavation PROJECT: BORING NO. <u>CB-C</u> FILE NO. <u>87-483</u> Farmington, New Mexico DATE ___12-14-87 CLIENT: Fish Engineering & Constructors, Inc. Houston, Texas Elev. 93.93' FIELD DATA LABORATORY DATA DRY AUGERED TO FEET WASH BORED TO FEET ATTERBERG & Penetration Resistance (N) or TSF Compressive Strength TSF SAMPLES SOIL SYMBOL FREE WATER ENCOUNTERED YES NO Sieve DEPTH (feet) Moisture Content Density, PCF 200 Liquid Failure Strain FT. DEPTH. Plasticity ģ WATER AT FT. AFTER PL PI **DESCRIPTION OF STRATUM** Gray CLAYSTONE 1 Lost air circulation in fractured zone. NX Core Data - 0.5 to 5.5 ft. 2 Recovery = 66% RDQ = 50%Time = 36 minutes Coring with = Air 3 Bit Type = Carbide Tip 4 5 Bottom @ 5.5' 6 PENETRATION RESISTANCE STANDARD PENETRATION RESISTANCE (SPT) SLICKENSIDED FAILURE POCKET PENETROMETER OR TORVANE CONFINING PRESSURE, PSI ESTIMATED UNCONFINED COMPRESSIVE G.S. GRAIN SIZE STRENGTH, TONS PER SQ. FOOT

PROJECT:

Blanco "D" Plant Foundation Excavation BORING NO. <u>CB-D</u> FILE NO. <u>87-483</u> Farmington, New Mexico DATE 12-14-87 CLIENT: Fish Engineering & Constructors, Inc. Houston, Texas Elev. 93.93 ft. FIELD DATA LABORATORY DATA DRY AUGERED TO FEET WASH BORED TO FEET ATTERBERG LIMITS Penetration Resistance (N) or TSF Compressive Strength TSF SYMBOL SAMPLES FREE WATER ENCOUNTERED YES NO Sieve DEPTH (feet) Plasticity Index Moisture Content Density, PCF 200 Failure Strain Liquid AT FT. DEPTH. SOIL ģ WATER AT FT. AFTER 2 PI LL PL **DESCRIPTION OF STRATUM** Gray & tan SANDSTONE Gray & tan SANDY CLAYSTONE 2 Gray CLAYSTONE weathered & fractured 3 -less weathered & harder @ 3.5 ft. NX Core Data - 0.5 to 5.5 ft. 4 Recovery = 80% RDQ = 60%Time = 46 minutes Coring with = Air 5 Bit Type = Carbide Tip Bottom @ 5.5' 6 PENETRATION RESISTANCE STANDARD PENETRATION RESISTANCE (SPT)
POCKET PENETROMETER OR TORVANE
ESTIMATED UNCONFINED COMPRESSIVE
STRENGTH, TONS PER SQ. FOOT SLICKENSIDED FAILURE (N) -() CONFINING PRESSURE, PSI G.S. GRAIN SIZE

PROJECT: Blanco "D" Plant Foundation Excavation BORING NO. <u>CB-I</u> FILE NO. <u>87-483</u> CB-E Farmington, New Mexico DATE _12-14-87 CLIENT: Fish Engineering & Constructors, Inc. Houston, Texas Elev. 93.93 ft. LABORATORY DATA FIELD DATA DRY AUGERED TO FEET TO **FEET** WASH BORED ATTERBERG LIMITS i Resistance ir TSF Strength FREE WATER ENCOUNTERED YES SOIL SYMBOR Sieve NO Index SAMPLE Moisture Content DEPTH (feet) 200 Failure Strain Liquid FT. DEPTH. Dry Density, Compressive TSF Penetration F Plasticity Š WATER AT FT. AFTER LL PL PΙ **DESCRIPTION OF STRATUM** Tan SANDSTONE 1 NX Core Data - 0.5 to 5.5 ft. 2 Recovery = 100% RDQ = 90%Time = 42 minutes Coring with = Air 3 Bit Type = Carbide Tip 5 Light gray CLAYSTONE Bottom @ 5.5' 6 PENETRATION RESISTANCE SLICKENSIDED FAILURE STANDARD PENETRATION RESISTANCE (SPT) (N) -CONFINING PRESSURE, PSI TSF -POCKET PENETROMETER OR TORVANE ESTIMATED UNCONFINED COMPRESSIVE G.S. GRAIN SIZE STRENGTH, TONS PER SQ. FOOT

Blanco "D" Plant - Seepage Pit PROJECT: BORING NOSeepage Pit Farmington, New Mexico FILE NO. <u>87-483</u> DATE 12-14-87 CLIENT: Fish Engineering & Constructors, Inc. Houston, Texas Elev. 93.93 ft. FIELD DATA LABORATORY DATA DRY AUGERED TO FEET TO WASH BORED **FEET** ATTERBERG LIMITS Penetration Resistance (N) or TSF Compressive Strength TSF SAMPLES FREE WATER ENCOUNTERED YES NO SOIL SYMBOI Sieve Plasticity Index DEPTH (feet) Moisture Content Liquid Failure Strain ΑT FT. DEPTH. Density, Š FT. AFTER WATER AT ٥ LL PL P١ DESCRIPTION OF STRATUM Light tan SANDSTONE 2 3 Seepage at elev. 90.6 ft. 4 Gray CLAYSTONE 5 6 7 Bottom @ 7' Backhoe test pit PENETRATION RESISTANCE SLICKENSIDED FAILURE (N) -STANDARD PENETRATION RESISTANCE (SPT) CONFINING PRESSURE, PSI POCKET PENETROMETER OR TORVANE TSF -ESTIMATED UNCONFINED COMPRESSIVE STRENGTH, TONS PER SQ. FOOT G.S. GRAIN SIZE

MCC PROJECT: Blanco "D" Plant - MCC Area BORING NO. Test Pit Farmington, New Mexico FILE NO. _ 87-483 DATE 12-18-87 CLIENT: Fish Engineering & Constuctors, Inc. Houston, Texas Elev. 99.92 ft. FIELD DATA LABORATORY DATA DRY AUGERED TO FEET FEET TO WASH BORED ATTERBERG LIMITS Penetration Resistance (N) or TSF Strength SAMPLES FREE WATER ENCOUNTERED YES SUIL SYMBOI NO DEPTH (feet) Dry Density, PCF Moisture Content Failure Strain 200 Compressive S TSF FT. DEPTH. Plasticity ŝ WATER AT FT. AFTER PL PI **DESCRIPTION OF STRATUM** Tan SANDY CLAY (CL) stiff, moist Light gray SANDY CLAY (CL) stiff, wet 2.5 Gray & tan CLAYSTONE 7 Bottom @ 7' Excavated with backhoe PENETRATION RESISTANCE SLICKENSIDED FAILURE STANDARD PENETRATION RESISTANCE (SPT) CONFINING PRESSURE, PSI POCKET PENETROMETER OR TORVANE ESTIMATED UNCONFINED COMPRESSIVE STRENGTH, TONS PER SQ. FOOT G.S. GRAIN SIZE

### SYMBOLS AND TERMS USED ON BORING LOGS

	MAJOR DIVISION		GRAPH	LETTER	TVDICAL DESCRIPTIONS	SAMPLE TYPES
	-LON DIVISION	1.3	JOBMYZ	SYMBOL	TYPICAL DESCRIPTIONS  WELL GRADED GRAVELS, GRAVEL SAND MIXTURES, LITTLE OR	INDICATES DEPTH OF DRIVEN SAMPLE (SHELBY AND D/M TYPE)
	GRAVEL AND Gravelly SOILS	CLEAR GRAVELS (LITTLE OR NO FINES)	25 숙진 25 숙진		FOORLY GRADED GRAVELS GRAVEL	MDICATES DEPTH OF STANDARD PENETRATION TEST
COARSE GRAINED SOILS			LA PAL	GP	SANG MIXTURES, LITTLE GR NO FINES	MUICATES DEPTH OF STANDARD PENETHATION TEST
		GRAVELS WITH FINES		GM	SILTY GRAVELS GRAVEL SAND- SILT WIXTURES	INDICATES DEPTH OF CME CORE SAMPLE
	TION RETAINED ON NO 4 SIEVE	OF FINES		GC	CLAYEV GRAVELS GRAVEL SANG- CLAY MIXTURES	ш
	SAND AND	CLÉAN SAND (LITTLE OR NO FINES)		SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES	INDICATES DEPTH OF NX CORE SAMPLE
MORE THAN SOL OF MATERIAL IS	SANDY SOILS	OR NO PINES!		\$2	POORLY GRADED SANOS, GRAVELLY SANDS, LITTLE OR NO PINES	KEY TO SAMPLES
TOO ENTY SIZE	MORE THAN SON OF COARSE FRAC TION PASSING NO. 4 STEVE	SANDS WITH FINES (APPRECIABLE AMOUNT		SAA	SILTY SANDS, SAND-SILT MIXTURES	(SHOWN IN SAMPLES COLUMN)
	NO. 4 SIEVE	OF FINES)		sc	CLAYEY SANDS, SAND-DILT MIXTURES	LIQUID LIMIT
		10.11		ML	IMORGANIC SILTS AND VERY FINS SAMOS, ROCK FLOUR SILTY OR CLAYEY FINE SAMOS OR CLAYEY SILTS WITH SLIGHT MASTICITY	3 50
FINE GRAINEG	SILTS AND GLATS	LIQUID LIMIT		CL	INORGANIC CLAYS OF LOW TO WEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS.	
3011.5				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
				Min	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS	Cr Cr
MORE THAN 50% OF MATERIAL IS MALLER THAN NO. 700 SIEVE SIZE	SILTS AND CLATS	LIQUID LIMIT GREATER THAN 50		СН	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS	0 MM & OH
				ОН	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY ORGANIC SILTS	CLML ML a OL
	HIGHLY ORGANIC S	oics		PT	PEAT HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS	PLASTICITY CHART
UNC	TERIALS			LY DEPOSITED EARTH AND/OR OTHER FIED MATERIALS		

NOTE: DUAL SYMBOLS ARE USED TO INDICATE SURDERLINE SOIL CLASSIFICATIONS

SOIL CLASSIFICATION CHART

#### UNIFIED SOIL CLASSIFICATION SYSTEM

#### RELATIVE DENSITY OF COHESIONLESS SOILS

COARSE GRAINED SOILS (major portion retained on No. 200 sieve): includes (1) clean gravels and sands, and (2) silty or clayey gravels and sands. Conditions rated according to standard penetration test (SPT) as performed in the fleid.

Descriptive Term	Blows Per Foo
Very Loose	0 - 4
Loose	5 - 10
Firm	11 - 30
Dense	31 - 50
Very Dense	over 50

^{*140} pound weight having a free fall of 30 inches.

#### CONSISTENCY OF COHESIVE SOILS

FINE GRAINED SOILS (major portion passing No. 200 sieve): Includes (1) inorganic and organic sitts and clays, (2) gravelly, sandy, or sitty clays, and (3) clayey silts. Consistency is rated according to shearing strength as indicated by penetrometer readings or by unconfined compression tests.

Descriptive Term	Unconfined Compressive Strength Ton/Sq. Ft.
Very Soft	Less than 0.25
Soft	0.25 to 0.50
Medium	0.50 to 1.00
Stiff	1.00 to 2.00
Very Stiff	2.00 to 4.00
Hard	4.00 and higher

NOTE: Slickensided and fissured clays may have lower unconfined compressive strengths than shown above, because of weakness or cracks in the soil. The consistency ratings of such soils are based on penetrometer readings.

#### TERMS CHARACTERIZING SOIL STRUCTURE

Slickensided — having inclined planes of weakness that are slick and glossy in appearance.

Fiseured — containing shrinkage cracks, frequently filled with fine sand or silt; usually more or less vertical.

Laminated — composed of thin layers of varying color and texture.

Interbedded — composed of alternate layers of different soil types.

Calcareous — containing appreciable quantities of calcium carbonate.

Well graded — having wide range in grain sizes and substantial amounts of all intermediate particle sizes.

Poorly graded — predominantly of one grain size, or having a range of sizes with some intermediate size missing.