Volume 4

## **INDIANTOWN COGENERATION PROJECT**

# **Site Certification Application**

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10.5 Monitoring Programs

Only Section 10.5 of this report was scanned

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- Soil Boring Logs
- Geophysical Logs
- Undisturbed Sample Analysis
- Sieve Analysis



			BOR	IN	G J		G		PROJE		TTY	WAL COCENED	ATTON	JOB NO.	- 1	ET NO.	HOLE NO.
SIT	E							COORD I NA		IAN	110	OWN COGENER	ATION	20524		OF 2	B-101
			Car Du									N 5931; E 7830		ſ	Vert		DEAK 1 NO
BEG			MPLETED	- 1						DRIL	L M	AKE AND MODEL	1	OVERBURDEN	ROC	K (FT.)	TOTAL DEPTH
_	1-90		-31-90 (FT./X					ssociates		INC	lee.	CME 45	4 in	50.5	<u> </u>	0.0	50.5
COR		0.0/(		ָר (י	0	UXES	3AMP1 18		r LAS	ING	GR	31.8 \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	/EL. GROUI 5/28.3 WS	NU WAIER	DEPTH	/EL. TOP	OF ROCK
SAM			R WEIGHT b/30in	/FÅL	L	CASI	NG LE	FT IN HO		A./I	LENG	TH LOGGED BY:			1	<del>-</del> .	<u>.</u> .
Ш		,			STAN	DAR	<u> </u>	nor	ie –	<del>-</del>	Τ.	<u> </u>		Scott Newho	ouse	<del></del>	
줐	CORE	M M M	AX NY	PE	NET	RATI STS	ON		I	GRAPHICS	2					NOTES	ON
, o	1 2		출시 <u> </u>	E	0			ELEV.	DEPTH	<del>E</del>	٣	DESCRIPTION	AND CL	_assifica	TION	WATER	LEVELS,
SAMP. TYPE	SAMP.	SAMPLE CORE R	SAMPLE BLOWS "N" % CORE RECOUERY	ڀ	2nd	3rd	4th		ō	GRA	SAMPLE					CHARAC	RETURN, TER OF
SS	1.5	<u>w</u> ,	- 6	1	2	4	4	31.8			5	Gray & gray/black,	very loose,	, medium		DRILLI	NG, ETC.
<u>55</u>	1.5		5	6	3	3		30.3	-			SAND, trace ro				<u> </u>	
									-		2	Black, loose line Si (SM)	AND WITH B	iii, trace roots			
22	1.5		7	3	3	4		3	7		3	Grades dark brown-	no roots				
22	1.5		8	3	4	4	<del> </del>	27.3			4	Gray/brown, loose,	medium SA	ND, with silt		-	
SS	1.5		13	3	2	11	ļ	_				(SP-SM)					
			15		1	*			-			Becomes black, med	dium to den	se, medium to		1	
22	1.5		19	7	7	12			-		٥						
<u>5</u> 5	1.5	<u> </u>	30	10	15	15					H						
<u>55</u>	1.5	1.0	20	10	   11		<u> </u>		10-							Ĺ <u>.</u>	
	1.5	1.0	20		``				-							Begin drill mud	ing with
22	1.5	0.5	13	5	7	6					9						
22	1.5	1.0	10	4	4	6					10				İ		
					ļ				-15		Ц						
					İ				_								
								14.8			$\dashv$	Light brown, loose,	tine SAND	, trace silt			Ì
									-			(SP)					
22	1.3	0.8	7	3	3	4			20-		П				]		
7															1		
									-						ĺ		
									-								
22	1.5	0.0	6	5	4	2		6.8			12						
								0.8	25		$\dashv$	Gray to light gray, d	ense, silty, i	medium to			
								Į	1			fragments (SM to SP)	my censence	u, trace mich			
									]			,			}		ĺ
SS	1.5	1.5	49	22	26	23					13						
							_		30-		-						
T									-		$\exists$						
							İ		-			Becomes light gray,	with shell for	agments,			
						_			1			trace silt and blac (SP)	r bebbeuu8				
22	L	1.0	38	12	16	22					14					Alot of shell dough-in	
SS : D =	SPL: DENN:	IT SP	POON; ST	= SH	IELBY	TUBE OTH	; SI	TE				Car Dumpe	r			IOLE NO. B-1	01
					, -		-"]						-			77-1	V.1

			BOR	IN	G I	00	}		PROJEC INDI		TO	WN COGENERATION 20524		HEET NO. 2 OF 2	HOLE NO. B-101
SAMP DIAM.	SAMP. ADU.	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOUERY	1st 6" d	STAN TES TES	DARI RATI STS 8	4th 6" 20	ELEV.	DEPTH	GRAPHICS	SAMPLE NO.	DESCRIPTION AND CLASSIFICA	TION	WATER CHARA	ON: LEVELS, RETURN, CTER OF ING, ETC.
55	1.5	1.0	42	10	19	23			40 —		15	Less shell from 38 (trace shell fragments)			
SS	1.5		50	14	21	29			45		16				
SS	1.5		44	19	25	19		-18.7	50-		17	End of boring Observation well set	<b>\</b>		
															,
SS	= SP	LIT S	POON; SI; P = P	T = S	HELBY	TUBI	-, ,	ITE				Car Dumper		HOLE NO.	101

														1				
			BOI	RIN	IG ]	LO	G		PROJE		i'r/	OWN COGENER	A TOTAL	JOB NO	1		HOLE NO.	
SIT	F						_	COORDINA		/IAI	(1)	WN COGENER	ATION	20524		1 OF 4 ROM HORIZI	B-102	
	-		Waste	Pon	d			COOKDINA	ILJ		P	N 6997; E 9074				tical	BEAKING	
BEG	UN	CC	MPLETE			1		1		DRIL		IAKE AND MODEL	SIZE	OVERBURDEN			TOTAL DEP	TH
8-	1-90	1	8-2-90		Arda	aman	& A	Associates	;			CME 45	4 in	145.5		0.0	145.5	• • •
COR				<b>%)</b>				ESEL. TO	CAS	ING	GR	OUND EL. DEPTH	EL. GROU	ND WATER	DEPT	H/EL. TOP	OF ROCK	_
		0.0/			0		34	I			<u> </u>	34.5 \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	9/32.3 WS	· 				
SAP	IPLE H		R WEIGH b/30in		LL	CASI	NG LE			IA./I	.EN(	TH LOGGED BY:		C44 NT 1				
111	T			_	STA	L IDAB		non	···	1	Τ-			Scott Newl	nouse	_,		
֡֞֞֟֝֟֝֟֝֟֝֟֝֟֝֞֟֝֓֟֝֞֟֝֓֓֓֟֟֝֓֓֓֟֝֓֓֓֓֟֝֓֡֡֝֡֡֡֝֟֝֡֡֡֡֝	SAMP. ADU.		BLOWS "N" % CORE	P	STAN ENET	RATI	LON		_	ရွ	皇							
<u>ا</u> م	∣₹ાં		T. 6	<u> </u>	_	STS	- <b>6</b>	ELEV.	DEPTH	BRAPHICS		DESCRIPTION	AND C	LASSIFIC	ATION	NOTES	ON: LEVELS,	ĺ
چَر	ξZ	김씨	<b>ES</b>	8	1	8			Ü	₫	[달					WATER :	RETURN,	
Š	בואו	[顚8	<u>"Ч</u>		B'ud	B TE	t t	34.5		6	SAMPLE					DRILLI	TER OF NG, ETC.	
SS	1.3	<b> "</b>	8	1	14	14	<b>├</b> `	34.3			Ť	Gray/brown, loose,	medium to	line SAND,				_
22	1.5	1.0	11	3	1	<u> </u>		33.0				trace silt and roo (SP-SM)			_			1
33	1.5	1.0	''	3	3	6		}	2	<b>∤</b> ∷	2	Light gray, medium (SP-SM)	i, medium i	SAND, trace i	alt	7		ı
55	1.5	2:0	20	+7	8	12	$\vdash$				3	Grades light brown	with depth			Large root	in spoon	1
					1_	<u> </u>		30.5				Dark brown to blac	k, medium	to extremely		tio T	es hard pan	
22	1.5	2.0	79	20	29	\$0/1-			5-	-	4	dense, silty, fine fragments	SAND, to	ice large root			/ <b>/</b>	
SS	1.5	1.0	36	23	19	17					3	(SM)						ļ
										-  -								
SS	1.5	1.0	16	9	79	7					6	Less silt from 7.5 (v	vith silt)					-
55	1.5	1.0	11	4	<del>  5</del> -	6	_	25.5		$\prod_{i=1}^{n}$	_	Brown, medium, me	dium to te	e VAND teac		_		Ì
									10-			eilt (SP)		o orato, uso	•			1
22	1.5	1.0	13	4	17	6					8	(=.)						
55	1.5	1.0	12	4	3	<del>  ,</del>					٦	Becomes light gray/	heave with	s silt lesses				1
												Devoises light gray	DIOWE, WIG	i biit icines				
22	1.3	0.5	14	4	6	8			-		10	Becomes finer, no le	Indee					
4	ļ			$\vdash$	<del> </del>	-			15		Ц	200011121 11121, 110 10	,1100					
-					ŀ				-									
l									_									
-	1								-									
SS	1.5	0.8	32	- 8	15	17					П							
		"	""	"	**	''			20 –		**					}		
7				1	1				_		$\dashv$					]		
									-									
					-				-									
55	1.5	0.0	71	11	10	11					12							l
				``				j	25 –		**				İ			
	1				†···			8.0			ᆌ							1
								•··· <del>·</del> +			$\dashv$	Gray, medium, fine i	o medium	SAND, with		Driller notes	soft at	
									-			(SM)	ace cuty			26.5		
53 53	1.5	1.5	12	<del> </del>	5	,					13				į			
					1				30-									
					T				-		ᅦ							ĺ
									-									
							l	İ	4							D-20	. ,	
SS	1.5	1.0	29	<b>Z4</b>	22	,				$\  \cdot \ $	Æ					Driller notes at 33	narder	
J				<u>.</u>	<u> </u>			TE					. <b>.</b>					
) =	= SPL DENN	I SON :	POON; \$1	· = S ITCHE	HELBY	TUBE OTH		115				Waste Pond	l			HOLE NO. $\mathbf{B-1}$	02	
		•			-		1						-				- I	

			BOR	IN	G I		G		PROJEC		то		ET NO. H	OLE NO. B-102
SAND . TYPE	SAMP. ADV. LEN CORE	SAMPLE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	1st 6" T	NETI	IDARI RATI STS	4th 6" 2"	ELEV.	DEPTH	GRAPHICS	SAMPLE NO.	DESCRIPTION AND CLASSIFICATION	NOTES O WATER L WATER R CHARACT DRILLIN	EVELS, ETURN, ER OF
								-3.5	-					1 2
22	1.5	1.0	43	12	16	27			40		13	Gray, dense, tine SAND, with black peppering, trace shell fragments (SP)		
									40-					
33	1.5	1.0	40	13	18	22			45-		16		:	
									-					
SS	1.5	1.0	36	10	14	22			50-		17			į
				•••										
22	1.5	1.0	43	20	21	22			55		18			
55	1.5	0.7	33	10	11	22			60-		19	·		
									-					
22	1.3	1.2	34	15	16	18			65		20			
									-			Less shell with depth		
SS	1.3	1.5	27	10	13	14		<del></del>	70-		21			
55	1.3	1.5	16	3	5	11		-37.5 _	_		22	Gray, very slift, silly CLAY, trace shell fragments (CL)		
SS	SPL	IT S	POON; ST ; P = PI	≠ SI	<u> </u> Helby	TUBE		_40.5 ITE				Waste Pond	HOLE NO. B-10	12

				BOR	IN	G I		G		PROJEC IND		TC	WN COGENERATION	JOB NO. 20524		ET NO. OF 4	HOLE NO. B-102
SAMP DINE	SAMP. ADV.	LEN CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	1st 6" d	NETI	IDAR RATI STS 6		ELEV.	DEPTH	GRAPHICS	SAMPLE NO.	DESCRIPTION AND CLAS	SIFICATI	ОИ	WATER	ON: LEVELS, RETURN, TER OF NG, ETC.
									-43.5	-			Gray, medium, silty, fine to mediu SAND, trace clay and shell (SM)	·			
55	ļ,	1.5			wor	18						23	Gray, very soft, sandy CLAY, with shell fragments (CL)	i silt and			
SS	H,	1.5	2.0	14	3	6-	8		-46.0	80-		24	Gray, medium, clayey, line SAND	, with sill			
Н	Ļ								-				and shell (SC)				
									<del>-48.5</del> _			-	Gray, medium, silty, fine to medium with silt and shell fragments, sli	n SAND,			
22	1	1.3	1.5	22	22	12	10			85-		25	cemented (SM)	giiuy			
						_			-53.5	-							
55		1.5	1.0	11		6	5					26	Gray, medium SHELL FRAGMEN SAND, with silt	TS & fine			
			1.0	•••			,			90-	Min Min Min	20					
22		<del>1:5</del>	<del>2.0</del>	36	12	12	24		-57.5	95 –		77	Gray, dense, clayey, fine SAND, w sheli fragments (SC)	ith silt and		Sample de disturbed v drilling thr	vhile
Н	-								-63.5								
22		1.3	1.5	37	16	18	19			100-		28	Gray, dense, fine SAND, with sill, and black peppering (SM)	race clay			
				-						-					į		
22	Ľ	1.3	1.0	38	18	21	17			105 —		29	no clay from 104				
										-							
22		1.5	1.0	27	15	14	13			110 –		30	less shell from 109				
SS		1.5	1.5	23	wor	9	14					31	Becomes clayey (SC)		1	go to 10 ft s	amples
				POON; ST ; P = PI				-,	ITE	k			Waste Pond			IOLE NO.  B-1	02

	BORING LOG									PROJEC		TO	WAL COCENED ATION	JOB NO. 20524		ET NO OF		HÖLE NO B-10	
91	T	1.	• 1							ועאו	LAIN	_	WN COGENERATION	20324	4	Ur 	4	D-10	
SAUP. TYPE	SAMP. ADU.	CEN CORE	CORE REC.	SAMPLE BLOWS "N" X CORE RECOVERY	1=t 6" "	TAN NETI TE:	TATI	4th 6" 2	ELEV.	рертн	GRAPHICS	SAMPLE NO.	DESCRIPTION AND CLAS	SSIFICATI(	DN	WAT	ER ER RAC	ON: LEVELS RETURN TER OF NG, ET	۱, =
SS	1.	5	2.0	37	8	13	24			120		32	More clay from 124, grading to say	ndy CLAY					
33	1.	.5	1.5	13	wor	7	6		-95.5 _	- 130 	LI' . H	33	Gray, medium to dense, silty, medi coarse SAND, with clay, trace i slightly cemented (SM)	ium to shell,					
55		.5		41	15	19	22			140		34							
33		· ·		*1	13	17	44		-111.0	145 —		**	End of boring @ 145.3 Observation well set						
SS	= S = DE	PL I NN I	T S	POON; S	T = S ITCHE	HELB'	TUB = OT	-, ,	ITE				Waste Pond			HOLE	ю. В-1	02	

			BOR	TN			$\overline{}$		PROJE	CT					JOB NO	. SH	EET NO.	HOLE NO.
			DON	ш	L D	יטכ	G		IND	IAN	ITC	OWN COGEN	VER.A	MOITA	20524		1 OF 3	B-104
SITI	•	_						COORDINA	ATES		_						ROM HORIZ	BEARING
BEG	IM		OVERED S									V 5955; E 892			**1		tical	
	,n 0-90		-31-90	- 1			R- A	Associates		DKIL	L F	IAKE AND MODEI CME 45	-	SIZE 4 in	OVERBURDEN 75.5	RO	O.O	TOTAL DEPT
								ESEL. TO		ING	GR		PTH/		VIND DATED	DERT	H/EL. TOP	75.5
		0.0/			0		22					32.9	2.0	/30.9	UND WATER	72.	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	OI KOUK
SAM			R WEIGHT	/FAL	.L	CASI	NG LE	FT IN HO	LE: DI	A./L	ENC	TH LOGGED B	Y:		<del></del>		· · ·	
			b/30in				_	nor	ie						Scott New	house		
Д·	эш	ပ္ပါ	SAMPLE BLOWS "N" % CORE RECOVERY	Di	STAN	IDAR	מסו			S	6		•	•				
ĮΨ	CORE	RE		Ë	TE	<u>STS</u>		ELEV.	Ŧ	GRAPHICS	Š			A115			NOTES	
<u>.</u>	a z	يراك	E305	<b>6</b>	, o	<b>.</b>	0	ELEV.	DEPTH	ģ	ايّا	DESCRIP	TON	HND	CLASSIFIC	AITON		LEVELS, RETURN,
SAMP. TYPE	SAMP.	FO	o 등	#	Sud	3rd	4th			Į Ž	SAMPLE						CHARAC	TER OF
<u>22</u>	1.5	Ğ, ¯	- 6	<del> </del>	(1)	3	4	32.9		1.1	18	Gray and blac	k. loos	se, silty.	fine SAND, wi	th	DRILLI	NG, ETC.
								]				silt, trace r	oots (	(SM)	,			
22	1.5		13	4	6	7		7	ζ.		2	Grades to blac medium, n			ery loose to			
SS	1.5		8	6	<del>  4</del> -	4	<u> </u>				3	involoni, ii	0 1000	•			1	
						]	i				[ ]							
22	1.5		6	3	3	3	<del> </del>		5-	H	4							
SS	1.5		_		<u> </u>	L.					Ш							
33	1.5		2	2	1	1			_		5							
33	1.5		-3	2	12	3	-				6							
																	i	
22	1.3		13	4	6	7			10-		$\Box$	•						
SS	1.3	1.5	14	7	8	6	ļ		10-		8						i	
								20.9	-									
22	1.5	1.0	7	2	3	4					ע	Light brown to trace silt	gray/	brown, I	oose, fine SAN.	D,	1	
33	1.5	0.0	6	-	3	3					10	(SP)						
						_			-									
									15									
						İ			-									
								1	-			Becomes gray/	brown				i	
									-									
SS	1.5				1						П							
					<u> </u>				20-		4							
								10.9	-									
								10.9			$\dashv$	Gray, loose, sil	ly, fin	e SAND	, trace clay			
									-			(2M1)						
SS	1.5		2	wor	1	1					12						(24-27) sam	upled in
33		·, ,,			<u> </u>	_			25 –		╝						one drive	
J	1.3	2.0	8	1	3	,		6.4										
								4.0			$\dashv$	Gray, loose, sa: (ML)	ndy SI	LT, with	shell fragment	1		
								4.9		╨╢	+	Gray, loose, sil	ly, fin	e SAND	and SHELL			
SS	1.5	1.5	7	1	2	5		-	-		13	FRAGMEN	TS, ce	mented				
									30-									
											$\neg$							
								0.9			+	Gray to gray/br	own, v	very deni	e, fine SAND.			İ
									4			With silt, tra	ce she	ll fragme	nts and black			ļ
<b>SS</b>	1.5	1.5	79	19	32	47					14	(SM)						
SS	SPI	TT \$1	POON; ST		HEI BY	TIDE	. S	I ŤĒ							<del> </del>		HOLE NO.	
			P = PI					•			C	overed St	tora	ige		İ	B-1	04

	-		BOR	IN	G I	00	<b>3</b>		PROJEC IND		TC	JOB NO. S WN COGENERATION 20524	HEET NO. HOLE NO. 2 OF 3 B-104
SAMP. TYPE	SAMP. ADV. LEN CORE	SAMPLE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	1st 6" 1	TAN NETE: TE:	DARI RATI STS O D D	4th 6" 2	ELEV.	ОЕРТН	GRAPHICS	SAMPLE NO.	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
SS	1.4	1.0	83	21	33	50/5			-		15		
		1.0		2.					40-				
SS	1.5		54	10	20	34			45 –		16	Less silt (trace silt) (SP)	
SS	1.5	1.2	61	15	24	37			50 -		17		
55	1.3	1.0	60	19	30	30			55		18		
SS	1.5	1.0	51	20	29	22			60-		פו	Becomes light gray with more shell	
55	1.5	1.2	108	34	52	56			- 65 –		<b>2</b> 0	Grades medium, no silt or shell	
22	1.5	2.0	8	wor	3	3	5	-35.1	-		21	Green/gray, medium, sandy CLAY, with sill, trace shell (CL)	
SS		-			4				70 -		-9-9	Grades to slightly varved silty CLAY	
SS	1.3 = SPL DENN	.IT S	POON; S1; P = P1	= S TCHE	HELBY	3 TUBI = 01		ITE			<sup>22</sup>	overed Storage	HOLE NO. B-104

			BC	R	IN	G I	.00	G-		PROJEC IND		то		ET NO. HOLE NO. B-104	_
SAMP DIAM.	SAMP. ADU. LEN CORE	SAMPLE REC.	SAMPLE BLOWS "N"	RECOUERY	1st 6" d	STAN NETE:	DARI RATI STS	4th 6" 2	ELEV.	DEPTH	т —	SAMPLE NO.	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC	•
									-42.6				Green/gray, medium, silty CLAY, slightly varved (CL)  End of boring @ 75.5 Grouted upon completion		
0 =	SPL DENN	I SON	POON;	ST PI1	= SH TCHER	ELBY	TUBE OTH		. 15			C	overed Storage	B-104	

			BOR	IN	CI	$\overline{\Delta}$	~	·	PROJE			l l	HEET NO.	HOLE NO.
			DOM	TT 4	<u> </u>		<u>J</u>			IAN	TC		1 OF 3	B-107
SITE		C	nalina T	٠,,,,,				COORDINA	ATES		X		FROM HORIZ rtical	BEARING
BEGL	in a		ooling T					<u> </u>		DRII			CK (FT.)	TOTAL DEPTH
	 0-90		-30-90				& A	ssociate				CME 45 4 in 75.5	0.0	75.5
COR			(FT./%	)   [00	RE B	OXES		ESEL. TO	P CAS	ING	GRO	DUND EL. DEPTH/EL. GROUND WATER DEPT 34 8 ¥ 2.0/32.8 MS	TH/EL. TOP	OF ROCK
		0.0/0			0	[	22					24.0		<b>=</b>
SAMI			R WEIGHT, b/30in	/FAL	L	CASI	NG LE	FT IN HO <b>noi</b>		IA./L	.ENG	TH LOGGED BY:  Scott Newhouse		
ш				•	STAN	I IDARI		1101		_		Scott Newhouse	<del></del>	
SAMP DIAM.		E C	SAMPLE BLOWS "N" % CORE RECOUERY	PĒ	NETI	RATI STS	ON		_	S	Š		NOTES	ON•
L.	ျမ	m y	투하였				50	ELEV.	DEPTH	GRAPHICS	1 .	DESCRIPTION AND CLASSIFICATION	WATER	LEVELS,
羟	FI	표 교	S C S	<b>at</b> (					5	E	SAMPLE			RETURN, TER OF
22 Ω <u>«</u>	1.5	S C	<u> </u>	11	Pu <sub>2</sub>	Bre	th th	34.8		L.,	36		DRILLI	NG, ETC.
33	1.5			•	_	<b>-</b>		33.3	ļ .		1	Gray & brown, loose, medium SAND, with silt, trace roots (SM)		
<u>5</u> 5	1.5		11	4	7	4			7	<del>     </del>	2	Dark brown to black, medium to very dense, fine to medium SAND, with silt	-	
SS	1.5		22	4	ļ <del>,</del> .	15	_		ļ		3	(SP-SM)		
	•			•	ľ	•							Ì	
22	1.5	1:0	49	16	22	27		<del> </del>	5-		4	Becomes silty with cemented lenses		
SS	1.5	1.0	43	17	17	26				<u> </u>	3			
	•			•	• ′				,				1	
22	1.5	1.5	54	20	26	29				-	6	No cementation		
22	1.5	1:0	34	15	18	16	_		<u> </u>		7			
									10-	-			ĺ	
22	1.5	1.0	27	10	12	15				-	8	Grades to light brown, less silt with depth (SP)		
22	1.5	1.0	20	8-	9-	111	_				9	<b>(</b> )		ł
									}	-				-
22	1.5	1.0	19	6	9	10					10	Becomes gray/brown, fine		}
H			<b> </b>					<del> </del>	15		Н			
	1					1			.	-				
Ш						ļ			.					
Ш														
SS	1.5	1.0	15	7	8	7			$\vdash$		п	Lense of clayey SAND at 19 (SC)		
		<u> </u>			<u> </u>	ļ			20-		Ц		1	
Ш														
Ш												Becomes light brown		
Ш									-					
22	1.5	1.0	12	3	3	7					12			
H	<u> </u>	<del> </del>					_	ļ	25 -		Ц			
						ļ		7.8	·	1				
											П	Gray, very loose, silty, fine SAND (SM)	1	
									-					
22	1.5	1.0	4	2	2	2			30	11. 1	13			
H	-	+		-	-	<del> </del>	ļ	<del>                                     </del>	30	-	$\vdash$			
									] -					
55	1.5	1.0	8	WAS	3	3		ļ		$\coprod$				
		1	l	wor				175	<u> </u>		14			
SS D =	= \$PL	.IT S MO211	POON; ST ; P = PI	= S TCHF	HELBY R: O	TUBI	E;  S HER	116			C	cooling Towers	HOLE NO.	107

			BOR	IN	G I		G		PROJEC		TC	OWN COGENERATION	JOB NO. 20524		ET NO. OF 3	HOLE NO. B-107	
SAMP. TYPE	SAMP. ADU.	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOVERY	1st 6" d	NET	NDAR RATI STS	4th 6" 200	ELEV.	DEPTH	GRAPHICS	SAMPLE NO.			)N	NOTES WATER WATER CHARAC	<u> </u>	,
		ın.		8	10	()		-3.2	•		0,	With large shell fragments, trace cl	ay				<u></u>
33	1.4	1.0	83	13	31	52		4.7_	ļ <u> </u>		15	Gray, very dense SHELL FRAGM fine SAND, slightly cemented					
									40-			Gray, dense to very dense fine SAI silt, black peppering (SP)	ND, trace				
<b>3</b> 3	1.5		42	19	23	19			45 –		16			÷			
SS	1.5		65	19	30	35			50-		17						
55									-			The stabilities of the stabiliti					
33	1.5		43	<del>-</del>	21	22			55 –		18	Trace shell fragments, more fragme depth	nts with				
22	1.5		28	12	12	16			60-		עו	Becomes medium					
22	1.5	1.0	76	20	44	32			65 —		20	Becomes very dense					
22	1.5		75	24	31	44			-		21						
									70-		$\dashv$						
55	1.5		19	5	-8	11		-37.2	_		22	Gray, very stiff, sifty CLAY, with m sand lenses (CL)	edium	_			
SS D =	SPL DENN	IT SF ISON;	POON; ST : P = PI	= SI	ELBY	TUBE = OTH		ITE			C	ooling Towers		нс	B-1	07	}

BORING LOG	PROJEC		то	WN COGENERATION	JOB NO. 20524		OF 3	IOLE NO. B-107
SAMP. TYPE AND DIAM. SAMP. ABU. SAMP. ABU. SAMP. REC. SORE REC. SAMP. REC. SAMP. REC. SAMP. REC. SAMP. REC. ALENALANA  1	DEPTH	GRAPHICS	SAMPLE NO.	DESCRIPTION AND CLAS	SIFICATIO	)N	NOTES C WATER L WATER R CHARACT DRILLIN	EVELS, ETURN.
40.7				Gray CLAY, with sand lenses (CL)		7		
				End of boring @ 75.5 Grouted upon completion				
SS = SPLIT SPOON; ST = SHELBY TUBE; D = DENNISON; P = PITCHER; O = OTHER			C	Cooling Towers		]	B-10	07

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			BOR	IN	G I		G-		PROJE		TTC	OWN COGENERA	ATION	JOB NO. 20524	. s	HEET NO.	HOLE NO. B-108
SIT	<u></u>		<u> </u>					COORDINA		In	110	WIN COOLNER	ATION		ANGLE	FROM HORIZ	
			Power E									N 6175; E 9604				ertical	
BEGI	jn :4-90		MPLETED -25-90		LLER		g. A	Associates		DRIL	LM	IAKE AND MODEL  CMIE 45	SIZE 4 in	OVERBURDEN 75.0	RO	OCK (FT.)	TOTAL DEPTI
		- 1	- <u>43-90</u> Y (FT./%					ESEL. TO		ING	GRI				DEP	O.O TH/EL. TOP	75.0
		0.0/			0		22					_33.6	EL. GROUP 0/29.6 WS			/	
		1401	R WEIGHT b/30in	/FAL	L	CASII	NG LE	FT IN HOI		A./l	ENG	STH LOGGED BY:		Scott Newl	ouse		
毙	SAMP. ADV. LEN CORE	<u> </u>	SAMPLE BLOWS "N" % CORE RECOVERY	PE	NET	IDARI RATI	D 20N			S	Š						•
Lio.	₹ 0	m	유 교 교 교		<u> </u>	STS	÷ o	ELEV.	DEPTH	GRAPHICS		DESCRIPTION	AND CL	_ASSIFIC	TION	14	LEVELS,
吳	E Z	<b>토</b>		at (	1		1		8	Ř	SAMPLE					WATER	RETURN, TER OF
22 Q⊄	1.5	S O	<u>m</u> , <u>r</u>	1	7 0 3	3rd	#	33.6		6	ဖြ	Gray/black loose	madium to	tine SANIT			NG, ETC.
	•	:		•							•	Gray/black, loose, i trace silt and roo (SP)	nieutum to i	ille Sand,			
22	1.5		17	5	7	10		31.1	-		2	, ,				İ	
<u>22</u>	1.3		15	8	7	8					3	Light gray/black, m (SP-SM)	edium, ailty	y, line SAND		Driller not	tes hard pan
								7	<u> </u>			Grades dark brown					•
<b>5</b> 5	1.5	1.0	14	3	,	9			5 –		4						
33	1.5	1.0	18	8	8	10					5	More silt, with silt le More silt with depth	enses				
SS	1.3	1.5	11	5	6	5				$\ \cdot\ $	6	Grades to SM, trace		peat			
22	-7-5	1.0	18	y	<u></u>	8							•				
33	1:3	1.0	10	•	10	$ $			10-		'	Less silt (SM)				1	
22	1.5	1.0	y	2	4	5			•		8	Becomes light brown	n				
22	1.5	1.0	11	3	-5	6					9						
22	1.5	1.0	,	3	<u> </u>	4			_								
	1	•••	'	,	3						10						
П									15		П						
									_								
55	1.5	1.0	15	5	7	8											
				,					20 –			Less silt (SM/SP)					
												, ,					
									-								j
									-								
22	1.5	1.0	20	0	9	11			25 –		12						
H						$\vdash$					$\dashv$						
									_								İ
								5.6			$\dashv$	Dark gray, loose, sill	v. tine SAI	ND. Irace		Driller notes	a soft @
22	1.5	1.0	y	WOI	12	9					13	shell fragments as (SM)	nd cemented	i particles		28	
╚	<b> </b>				ļ			<b> </b>	30		_						
									1								ľ
									1			Becomes gray/brown fragments and cer	, dense, wit mented part	th shell icles			
	<u></u>	<u> </u>		1					]				K-444				
22	L	1.0	46	12	17	29		115			14		<u>.</u> .				
			POON; ST ; P = PI					IŤĒ				Power Bloc	k			HOLE NO. B-1	08

			BOR	IN	G I	00	G-		PROJEC IND		то	WN COGENERATION	JOB NO. 20524		ET NO. OF 2	HOLE NO. B-108
SANP DIAME	SAMP. ADV. LEN CORE	SAMPLE REC.	SAMPLE BLOWS "N" % CORE RECOUERY	1st 6" T	TAN NET! TE!	DARI RATI STS "0	4th 8" 2"	ELEV.	DEPTH	GRAPHICS	SAMPLE NO.	DESCRIPTION AND CLAS	SIFICATIO		WATER	ON: LEVELS, RETURN, CTER OF ING, ETC
								-4.4	-			3 3 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7				
22	1.5	1.0	70	27	30	40		7.7_			15	Gray, very dense, medium SAND, and shell fragments (SM)	with silt	-		
									40-							
									- -			Less silt and shell with depth (SM/SP)				
22	1.5		50	29	50/5				45 –		16					
									-				•			
SS	1.3		78	29	40	38			50-		17					
									_							
33	1.5		63	19	31	32			55 –		18					
55	1.5		45	18	23	22			-		עו	More silt and shell, dense (SM)				
H		-	   <del>-</del>						60-		Н					
									1 1							
22	1.5	1.0	54	18	23	31			65 –		20					
55	1.5		26	9	8	18			-		21					
		ļ	ļ	<u> </u>	<u> </u>				70-	11.1	Ц	Becomes medium, with silt lenses				
								-38.4 _			H	Gray, hard, silly CLAY, with shell I	ragments	$\dashv$		
SS	1.3	-	22	4	10	12		41.4			22	End of boring @ 75 Grouted upon completion				
SS D =	= SPL DENN	IT S	POON; \$1 ; P = P1	T = S	HELBY R; O	TUB = OT	-,	-41.4   ITE				Power Block		ŀ	IOLE NO.	108

ļ			BOF	RIN	G I		G		PROJE IND		VTC	OWN COG	ENER	ATION	JOB NO 20524		SHEET NO.	HOLE NO. B-110
SII	Έ		Power 1	Rlaci	l <sub>r</sub>			COORDINA	ATES		N	6849; E 1	0070	_	•		FROM HORIZ	BEARING
BEC	UN		MPLETED		ILLER			_i		DRIL		IAKE AND MO		SIZE	OVERBURDEN		ROCK (FT.)	TOTAL DEPTI
	27-90		-27-90					Associate			-,-···	CME 45		4 in	74.4		0.0	74.4
COF	E REC	0.0/0	Y (FT./7 D	<b>()</b>	ORE B	OXES	SAMPI 22	LESEL. TO	P CAS	ING	GR	33.9	DEPIH ⊒ 3.	/EL. GROU 0/30.9 ws	ND WATER	DE	PTH/EL. TOP /	OF ROCK
SAF	PLE I		R WEIGHT	ſ/FAL	L	CASI	NG LE			[A./	LENG	GTH LOGGED	BY:					
Ш		٠.	1	T :	STAN	IDAR	D	nor	ie	Τ	Ţ .	<u> </u>			Scott Newl	nouse	e	<u> </u>
SAMP. TYPE		SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOUERY	PE	NET!	RATI STS			Į	BRAPHICS	욷						NOTES	ON:
٠			돌림당	9	- w	, m	ω.	ELEV.	DEPTH	ᄪ	SAMPLE	DESCRI	PTIO	4 AND C	_ASSIFIC	ATIO		LEVELS, RETURN,
E C	Ĕ.	FOO		#	gud Sud	3rd	4th			Š	Ä						CHARAC	TER OF
22	1.5	w.	5	7	1 2	3	1	33.9			1	Grav & gr	aÿ/brow trace re	n, loose, fin	e to medium		DRIELI	
33	1.5	1.5	15	4	5	10	ļ	32.4		<del>-</del>	1 2	(SP)			fine to mediu	m	_	
	Ĺ	<u> </u>		<u> </u>				ļ <sub>5</sub>	7	]		SAND (SM)				•••	İ	
22	1.5	1.5	44	16	20	24		29.4			3	Becomes o	range/bi	rown				
22	1.3	1.0	12	4-	7	3		29.4	5 -		4			dense, medic ne sand lense	m SAND wil	К	_	
SS	1.5	1.5	37	12	18	19			-		5	(SP-SM)		vn, no lense				
55		1	70	<u> </u>	<u> </u>				<u> </u>									
33	1.3	1.0	20	10	111	9		24.9			9	Grades to t	orown, l	ess silt (with	silt)			
22	1.5	1.0	7.3	7	11	12		24.2	••		7	Gray/brow (SP)	n mediu	m fine SAN	D, trace silt			
<b>5</b> 5	1.3	1.0	24	6	13	11			10-		8	, ,	ght brow	vn, medium			ĺ	
55	1.5	1.0	16	_	1,	9-				ं		•						
		1			′	_					]							
22	1.3	1.0	11	3	3	0					10	Becomes g	ray/brow	n to gray				
H			<del></del>		┢				-15-		H						ŀ	
									-									
									_									
SS	1.5	1.5	17	8	9	8					,,							
						L			20 –			Becomes lig	ght brow	n, medium t	o loose			
												•						1
									-									
22	1.5		11	4	4	7			25 –		12							ľ
П		<del>                                     </del>			-						Н							ļ
									-									
									-									
55	1.3	†	4	2	1	3			20		13							f
H	<b>-</b>	$\vdash$		<del> </del>	<del> </del>				30-		H							
								1.9_				Dark oray	very las	se, silty, fine	- CASIII			-
									7			(SM)	·•17 100	⊷, •uty, line	י פינויט			
22	2.3	2.0	1	2	wor	1					14						Sampler driv	ven extra
			POON; ST				-,	ITE		<u>u l</u>		D	T) !	.1.			HOLE NO.	
<u>P:</u>	DENI	I SON	, P = PI	TCHE	R; 0	= 011	IER					Power	<b>D100</b>	K			B-1	.10



PROJECT NUMBER	BORING NUMBER
SEF30619.A0	TB-3

TB-3

SHEET 2 OF 5

PROJEC	т			Cogeneration			Corner of Site, Indiantown, FL
ELEVAT			ft NG	0) 4E	DRILLING CONTRACTOR Ardaman and A 45 Rotary Rig with Split Spooning	ssociate	s, West Palm Beach, FL
	G METHO			W = 5,93 ft		90	LOGGER P. Kwiatkowski
		SAMPLE		STANDARD			
SE.		· · · · · · · · · · · · · · · · · · ·		PENETRATION TEST	SOIL DESCRIPTION	┥	COMMENTS
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	29-31	S-12	1.2	20-14-18-22 (32)	SAND, (SP), very fine-fine, moderate-well	- XXXX	
					sorted, light olive gray (5 Y 5/2) predominantly quartz, ~20% black phosphorite grains, 10-20% shell and limestone fragments		- - -
35-	34-36	S-13	1.0	20-30-50/5" (80)	As Above, trace shell		<del>-</del>
-							- -
40-	39-41	S-14	0.6	25-40-50/5 <b>"</b> (90)	As Above		
45-	44-46	S-15	1.4	(49)	SAND, (SW), very fine-medium grained, poor-moderate sorted, light olive gray (5 Y 5/2) predominantly quartz, ~20% black phosphorite, angular-subrounded, ~20% pelecypod shell fragments, trace greenish gray (5 G 6/1) clay lens at 46' bls		
50- - -	49-51	S-16	1.2	18-28-38-28 (66)	As Above		
55	54-56	S-17	2.0	15-12-16-9 (28)	SHELLY SAND, (SW), very fine-medium grained, poorly sorted, light olive gray (5 Y 5/2) quartz. Shell is 50% of sample, predominantly pelecypods, some gastropods, pale yellowish orange (10 YR 8/6) to white (N9)		

			]	BOR	IN	G I		<del>J</del>		PROJEC IND		ITO	JOB NO. WN COGENERATION 20524		ET NO. OF 2	HOLE NO. B-110
SAND DIAME	SAMP. ADV.	SAMPLE REC.	SAMPLE	BLOWS "N" X CORE RECOVERY	1st 6" d	TE:	DARI RATI STS O	4th 6" 20	ELEV.	DEPTH	GRAPHICS	SAMPLE NO.	DESCRIPTION AND CLASSIFICATI	ON	WATER	ON: LEVELS, RETURN, TER OF
										_			77.203	<del></del>	<del> </del>	<u> </u>
										-						
22	1.5	77.7	十	73	25	36	37			40-		15	Becomes gray, very dense to extremely dense, with silt			
										_					:	
22	1.3	1.1	1	78	24	34	44			45 –		16				
										-						
SS	1.5	1.1	7	98	24	48	50/5			50-		17				
										1					Driller not	es soft @
<b>S</b> S	1.5	1.	7	4	2	1	3			55 —		18	Becomes very loose		33	
				•					-24.1 _	-			Light gray, dense to very dense SAND, with shell fragments, trace silt			
22	1.3	1.	╅	32	13	17	15			60~		19	shell fragments, trace silt (SP)			
33				<del></del>	7.	7,	43			-						
33	1.3	T.	_		23	27	4.3			65 -		20				
<b>5</b> 5	1.5	1.	2	73	24	40	33		-34.1	-		21	Light gray, very dense, silly, medium SAND, trace shell fragments (SM)			
		-	+						-	70-		H				
SS	0.9			€N.		50/5*			-38.1_		1 1		Light gray, extremely dense, medium SAND, trace shell fragments (SP)			
	0.9	+	+	50	33	90/3	-		-40.1				End of Boring at 74.4 Grouted upon completion	$\forall$		
\$\$ D =	= SPI DENI	LIT	SPC N;	OON; ST P = PI	= S TCHE	HELBY R; O	TUBI = OT	-, :	ITE				Power Block	1	HOLE NO. B-1	10

			BOF		JC 1	$\Gamma \Delta$	$\overline{}$		PRÖJEC	CT				JOB NO	. SHI	EET NO.	HOLE NO.
			DOI	Ш	<b>1</b> G 1	LU	G		IND	IAN	ITC	OWN COGENER	ATION	20524		OF 4	B-115
SIT								COORDINA	TES				**		ANGLE F	ROM HORIZ	BEARING
			Power 1		-							6170; E 10249			Ver	tical	
BEG			MPLETER	) DI				• . 4		DRIL	L M	IAKE AND MODEL	SIZE	OVERBURDEN	ROC	K (FT.)	TOTAL DEPTH
	0-90		'-23-90					ssociates		' ' ' '	lon	CME 45	4 in	150.0		0.0	150.0
LUK		0.0/		ן יי	.UKE B	OXES	38		P CASI	NG	GR	OUND EL. DEPTH $\begin{array}{ccc} 34.2 & \stackrel{\square}{\downarrow} & \stackrel{3}{\downarrow} & \stackrel{3}{$	/EL. GROU 8/30.4 ws	ND WATER	DEPT	I/EL. TOP	OF ROCK
SAM			R WEIGH	T/FA	_	ICASI			E: DI	A./	FNO	GTH LOGGED BY:	<u> </u>			/	
			b/30in					non		,		120020 51.		Scott New	house		
ш.	_1	di.	<u> </u>	Τ	STAN	1DAR	D	1		Ι.		<u> </u>				T	
SAMP TYPE			֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	P	ENET	RAT] STS	CON		I	GRAPHICS	모					NOTES	ON.
5	100	w   <u> </u>	돌의양		T =	- w	ő	ELEV.	DEPTH	뭁	w	DESCRIPTION	AND C	LASSIFIC	ATION	NOTES WATER	LEVELS,
毁		直	89 %	ı L		1			8	Œ	SAMPLE						RETURN, TER OF
₽Œ	817	<u>ଫୁ</u>  ଫ	BLOWS "N" % CORE	1.	5nd	3rd	4th	34.2		9	S						NG, ETC.
22	1.5		4	1	2	2						Dark gray/brown, (SM)	very loose,	silty SAND			
<u>55</u>	1.3	<del>                                     </del>	10	4	5	-5	<u> </u>		-	1	2	Becomes black, loc	se to mediu	interior in the second		İ	
		İ											, so to media	••••			
SS	1.5	1	11	3	6	5		<del></del>	7		3						
55	1.5	1.5	ļ	4		<u> </u>		29.7									
33	1.5	17	′	•	4	3	ĺ		5-			Dark brown, loose (SP)	lo medium,	medium SAN	D	1	İ
SS	1.5	2.0	14	2	3	11					3						
		1							-			·				ĺ	
SS	1.5	1.3	22	13	10	12			-		6					]	
<b>S</b> S	1.5	1.5	26	<del>  ,</del>	111	13	ļ				$ \downarrow $	Grades to dark brow	um and block	المستقلسية			
		***	-~		"	"			10-			dense	wn and blac	k, medium to		ļ	
22	1.5	1.5	36	6	16	20					8						
SS		<u> </u>	<u> </u>	_	<u> </u>	<u> </u>					Ш						İ
33	1.3	1.2	30	•	13	17					y						1
22	1.5	1.0	16	6	8	8	-	20.2	-	$\vdash$	10	Grades to orange/bi					
		<u></u>	ļ					Т	15		П	Gray/brown, mediu (SM/ML)	m, fine SAI	AD & SILT.			-
									-13			,					
									1								
									1								
		-							†	] ]							
SS	1.5	1:3	9	3	4	5			-	Н	щ						
_			ļ		<b>-</b>		L		20-		$\sqcup$	Less silt, becomes	(SP)				1
				l					4								
						·			+						ĺ		1
									4								
22	1.5	2.0	- 6	3	3	3				$\parallel \parallel$	12						
									25-	$\  \cdot \ $					ŀ		
											$\exists$						
								ŀ	4	•	Ì						
SS	1.5	<u> </u>	3	7	<del>                                     </del>	3	<b></b>			$\  \ $	13	Man sile					
					'				30-		13	More silt		art :		(29-32) sem one drive	pled in
<u>55</u>	1.5	2.0	9	4	- 3	4		+		$ \cdot  $	ᅱ	Becomes light brows	and gray n	nottled			
					<u> </u>					Ш					1		
								1.2			$\rfloor$				-		
				L		$oldsymbol{f f eta}$		T			T	Dark gray, very loos SAND, trace silt	e, silty, fine	to medium	$\overline{}$		
22	1.5	1.8	8-	4	3	3					14	(SP-SM)			- 1		
			200N; ST				• •	TE				D D1	1.		<del> ,</del>	OLE NO.	4 -
) =	DENN	I SON	; P = PI	TCHE	R; 0	= OTH	IER[					Power Bloc	K		i	B-1	15

			BOR	IN	G I	LO	G		PROJEC		TC	OWN COGENERATION	JOB NO. 20524		ET NO. OF 4	HOLE NO. B-115
SAMP DIAM.	SAMP. ADV.	SAMPLE REC.	SAMPLE BLOWS "N" % CORE RECOUERY	1st 6" d	STAN TE: 19 pub	IDAR RATI STS	4th 6" 2"	ELEV.	ОЕРТН	GRAPHICS	SAMPLE NO.	DESCRIPTION AND CLAS	SIFICATIO	) DN	WATER CHARAC	ON: LEVELS, RETURN, TER OF
									-				·			
22	1.3	1.5	55	15	25	30			40-		15	Becomes light gray, very dense				
SS	1.3	1.2	58	21	26	42			45		16	More silt, becomes SAND & SILT (SM/ML)				
SS	1.5	2.0	38	16	26	32		-13.8 _	50-		17	Gray very dense medium SAND, tra (SP/SM)	ace silt			ļ
22	1.5	1.0	54	18	26	29					18					
55		1.5	14	3	6	8			55 -		19	Becomes medium, with sift (SM)			Driller note at 58	es softer
									60-			Becomes very dense, trace shell frag	ments			
55	1.5	1.5	51	18	21	30			65 –		20					
55	1.5	1.0	57	24	30	21			70-		21	Less silt (trace silt) (SP)				
55	L	1.0	100 POON; ST		50		. Isi	TE	-		22	More shell fragments	<b>4</b> -1		OLE NO	
D =	DENI	ISON	; P = PI	TCHE	R; 0	= OTH		· · ·				Power Block	<u></u> .		OLE NO. <b>B-1</b>	15

			BOR	IN	G I	LO	G		PROJEC		VTC	OWN COGENERATION	JOB NO. 20524	SHEET NO. HOLE NO. 3 OF 4 B-115
SAND DIAME	SAMP. ADV.	SAMPLE REC.	SAMPLE BLOWS "N" % CORE RECOUERY	1st 6" T	STAN TE: 19 pug	DAR RATI STS	4th 6" 2	ELEU.	DEPTH	GRAPHICS	SAMPLE NO.			NOTES ON:
SS	1.5	1.0	-17	9	7	10		-43.8 _	-		23	Gray/brown, medium, silty, fine to SAND, with shell fragments and gravel, slightly cemented (SM)	medium i round fine	
-								-47.8 _	80-			Gray dense, silty, fine to medium S shell fragments, trace clay (SM)	AND, with	
SS	1.3		31	13	15	16			85-		24			
SS	1.5		52	17	26	26			90-		25	Shell fragments larger with depth		
	1.5		43	18	19	24			95 –		26			
22	1.5		36	28	28	28			100	1	27			
SS	1.5		32	12	16	16			100-					
						••			105 —		28			
SS	1.5	1.5	15	7	7	8			110-		29	Becomes medium		
SS		2.0	14 POON; ST	5	6	8	.   61	TE			30	Light gray, less shell		
Ď =	DENN	I SON ;	P = P11	CHER	R; 0	= OTH		-				Power Block		HOLE NO. B-115

			BOR	IN	G I	200	G-	-	PROJEC		TO		ET NO. HOLE NO. B-115
SAMP DIAM.	SAMP. ADU. LEN CORE	SAMPLE REC.	SAMPLE BLOWS "N" % CORE RECOUERY	1st 8" "	STAN NET! TE: 9 pug	DARI RATI STS "0	4th 6" Z	ELEV.	DEPTH	GRAPHICS	SAMPLE NO.	DESCRIPTION AND CLASSIFICATION	NOTES ON: WATER LEVELS, WATER RETURN, CHARACTER OF DRILLING, ETC.
SS	1.5	2.0	20	6	8	12			120 -		31	Trace cemented particles, trace shell fragments	
SS	1.5	2:0	30	7	10	20			125 -		32	Becomes dense	
SS	1.5	1.5	19	6	8	п			130-		33	Becomes medium	
SS	1.5	1.3	60	24	24	36			135 -	11 L	34	Becomes very dense, trace clay	
SS	1.5	2.0	27	14	14	13			140 -		35	Becomes medium to very dense, fine to medium, mostly cemented	
28	1.5		54	8	22	32		-111.8	145 —		36	Light gray, hard, silty CLAY, with fine slightly cemented sand (CL)	
SS	1:5		33	7	10	23		-115.8	150		37	End of boring @ 150 Grouted upon completion	
SS :	SPL DENN	IT SI	POON; ST ; P = PI	= SI TCHE	HELBY R; O	TUBE = OTH		ÎTE				Power Block	HOLE NO. <b>B-115</b>

			BOR	IN	G I	$\Box$	G		PROJE				JOB NO	1	ET NO.	HOLE NO.
SIT								COORDINA		IAN	(TC	WN COGENERATION	20524		OF 2	B-116
2111	5	•	Power E	lloci	k			COOKDINA	4152		N	6497; E 10503		angle fi Vert	ROM HORIZI	BEARING
BEG	JN		MPLETED						1	DRIL		AKE AND MODEL SIZE	OVERBURDEN		K (FT.)	TOTAL DEPTH
	9-90		-19-90					ssociates				CME 45 4 in	75.0		0.0	75.0
CORI				) [0		OXES		ESEL. TO	P CAS	ING	GR	OUND EL. DEPTH/EL. GROU 34.8	IND WATER	DEPTH	/EL. TOP	OF ROCK
SAM		0.0/(	VEIGHT,	/FAL	<u></u>	CAST	22 NG 18	ET IN HO	F: DI	A /I	FNO	34.8   ₹ / 1.3/33.3 H				
			b/30in	, , , , ,	-		.,,	nor		n.,.		COURT BY:	Scott Newl	iouse		
Ä.	-:l	ပ် •	<b>=</b> . \	_ :	STAN	IDAR	D.			-	:					
Ě	58	REC		PE	NET!	RATI STS		]	Œ	GRAPHICS	ş				NOTES	ON:
٥٠	. 7	LE	돌의망	Ď		- CO	.9	ELEV.	DEPTH	Ĭ	֓֡֞֜֟֟֟	DESCRIPTION AND C	LASSIFICA	HOITE		LEVELS, RETURN,
器	E I	PMP SOR	SAMPLE BLOWS "N" % CORE RECOVERY	<b>1</b>	Snd	ard	4th			GR.	SAMPLE				CHARAC	TER OF
22. 01.	1.5	Š	<del>-</del>	1	3	4	4	34.8			S	Gray, looseto medium, fine S.	AND, trace roo	la	DRILLI	NG, ETC.
ret-					<u> </u>			7	7			(SP)				
SS	1.5	,	11	4	6	3			-		2					
SS	1.5		12	5	6	6	<del>                                     </del>				3					
33			20	4	<u> </u>	ļ.,.			-							
33	1.5		20	7	8	12		29.3_	5 –		4				]	1
SS	1.5		22	9	п	11					5	Dark brown to gray, medium t silty, fine SAND	o very dense,			
SS	1.5		86	3	36	50	<u> </u>		٠			(SM)			Driller not	es hardpan
33	1.5		80	,	30	30			-		6					
22	1.5		85	25	35	50					Н			İ		
SS	1.5		42	25	21	21			10-			Becomes dark orange/brown				
								22.8	-		$ $	pooling deta offingorotown				1
22	1.3		24	6	10	14					9	Light gray/brown, medium to SAND, little silt	dense, line			}
22	1.5		38	13	18	20					Ы	(SP)				}
									<u> 15</u>							
									.,							
									_							
SS	1.5		32	71	15	17										
	1.5			••		<b>'</b> '			20-		``					]
											$\dashv$					
			•						-							
									4		-					
SS	1.5		24	8	10	14					12			ļ		1
									25 –		┙			ŀ		
j								l	-							
									1					ļ		
									†		ı					
SS	1.5		16	4	9	7		5.3			13	Dark gray, medium, silty, fine	SAND, with			
H									30-	$\ \cdot\ $	$\dashv$	clay lenses (SM)	, WILL			
									]			. •				
									]							
22	1.3		16		8	8			]	Ш						1
				<u>'</u>			16	TE			14		<del></del>			
			POON; ST				., .	ITE				Power Block			OLE NO. B-1	16

			BOR	IN	G I	00	G-		PROJEC IND		то	WN COGENERATION	JOB NO. 20524		T NO. OF 2	HOLE NO. B-116
SAMP DIAM.	SAMP. ADV. LEN CORE	SAMPLE REC. CORE REC.	SAMPLE BLOWS "N" % CORE RECOUERY	1st 6" 3	NETI	DARI STS B B D D	4th 8" 20	ELEV.	DEPTH	GRAPHICS	SAMPLE NO.	DESCRIPTION AND CLAS	SSIFICATIO	DN	WATER CHARAC	ON: LEVELS, RETURN, CTER OF
	<u>.</u>							-3.2								
22	1.4		40	19	19	21	<u> </u>				15	Gray, medium, fine SAND, trace (SP)	siit.			
									40-							
<b>S</b> S	1.5		100	35	30	50/5	ļ	-9.2			16	Gray, medium to extremely dense,	silty, fine	$\dashv$		
SS			56	25		35			45 -			(SM)				
22	1.3		36	۵	21	33			50-		17					
55	1.5		20	8	10	10			-		18					
									55 -			Less silt (SP)				
22	1.3	-	26	10	13	13			60		19					
									60-			With shell fragments and black pep	pering			
22	1.3		51	20	21	30			65 –		20					
22	1.5		43	25	18	25			70-		<del>.</del> 21					
П								-37.2	-							
								-3/.2-				Gray, extremely dense, silty, fine S trace shell fragments, slightly ce	AND, mented			ļ
<b>SS</b>	1.4	1	106	45	36	50/5		-40.1	_		22	(SM) End of boring @ 74.9 Grouted upon completi	on			
SS D =	= SPI DENI	LIT S	POON; S'; P = P	T = S ITCHE	HELBY	TUB:	-, ,	ITE				Power Block		н	OLE NO. <b>B</b> -1	116



PROJECT	NUI	MBEF	t
	SEF	306	19.A

BORING NUMBER

TB-1

SHEET 1 OF 5

PROJECT Indiantown Cogeneration					n Facility LOCATION Nor	theast	Corner of Site, Indiantown, FL
ELEVATION	ON	~32	ft NG		DRILLING CONTRACTOR Ardaman and A	ssociat	es, West Palm Beach, FL
DRILLING	METHO	DD AND	EQUIPM	MENT CME	45 Rotary Rig with Split Spooning		
WATER	LEVEL A	ND DATE			START 14:30 8/13/90 FINISH	3/15/90	LOGGER P. Kwiatkowski
ĕ	:	SAMPLE		STANDARD PENETRATION	SOIL DESCRIPTION		COMMENTS
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	TEST RESULTS 666- (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
-	0- 1.5	S-1	ND	1-3-6 (9)	SAND, (SP), very fine-fine grained, moderately sorted light gray (N7), quartz, subangular-subrounded, ~20% roots, organics		
	1.5- 3.0	S-2	ND	5-7-7 (14)	SAND, (ŠP), fine-medium grained, moderate-well sorted, pinkish gray (5 YR 8/1) to white, quartz, organics		-
	3- 4.5	S-3	ND	7-8-9 (17)	SAND. (SW), very fine-medium grained, poor- moderately sorted, pale yellowish brown (10 YR 6/2), quartz, organics	-	-
5	4.5- 6	S-4	ND	8-23-45 (68)	HARDPAN & SAND, (SM), very fine grained, somewhat silty, dusky yellowish brown (10 YR 2/2),		_
_	6- 7.5	S-5	ND	8-8-6 (14)	quartz As Above, no hardpan		-
-	7.5- 9	S-6	ND	4-5-5 (10)	SAND, (SP), fine-medium grained, moderately sorted slightly silty, moderate brown (5 YR 4/4), quartz	_	-
10-	9- 10.5	S-7	ND	2-2-3 (5)	As Above	_	
-	10.5- 12	S-8	8.0	2-3-5 (8)	SAND, (SP), fine-grained, well sorted, moderate yellowish brown (10 YR 5/4), subrounded-rounded, predominantly quartz, trace black phosphorite grains		
_	12- 13.5	S-9	1.0	4-5-8 (13)	As Above, moderate brown (5 YR 3/4), fine-coarse grained, poor-moderately sorted		
-	13.5- 15	S-10	1.5	7-9-19 (28)	As Above, rounded-well rounded		_
15							-
20-	19- 20.5	S-11	1.2	5-7-12 (19)	SAND, (SP), fine-grained, well sorted, light brown (5 YR 5/4), subangular-rounded, quartz, trace black phosphorite grains		_ 
25-	24- 25.5	S-12	1.2	7-6-7 (13)	SAND, (SP), very fine-fine grained, moderately-well sorted, light olive gray (5 Y 5/2), quartz, trace silty stringers, subrounded-rounded		-
-	29-	6.10			CEMENTED SAND AND SHELL, medium light gray (N6), 30% coralline material, pelecypod shell	05/05/05/05/05 25/05/05/05/05 25/05/05/05/05 25/05/05/05/05 25/05/05/05/05/05/05/05/05/05/05/05/05/05	Harder drilling at 28.5'
<u></u>	30.5	S-13	1,0	(25)	fragments, poorly consolidated limestone fragments		



PROJECT NUMBER	BORING NUMBER				
SEF30619.A0	TB-1	SHEET	2	OF	5
	···/				

PROJECT Indiantown Cog			ntown (	Cogeneratio	n Facility LOCATION N	ortheast C	Corner of Site, Indiantown, FL
elevation ~32 ft NGVD			2 ft NG		DRILLING CONTRACTOR Ardaman and A	\ssociates	, West Palm Beach, FL
		OD AND		MENT CME	45 Rotary Rig with Split Spooning	0/15/00	B Kwiatkawaki
WATER		ND DAT		CTANDA DD	START 14:30 8/13/90 FINISH	8/15/90	LOGGER P. Kwiatkowski
ŞE		SAMPLE		STANDARD PENETRATION TEST	SOIL DESCRIPTION	-   -	COMMENTS
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	1EST RESULTS 6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
35-	34- 35.5	S-14	1.2	8-7-5 (12)	SHELLY SAND, (SW), very fine grained, somewhat silty, yellowish gray (5 Y 7/2), ~10% very fine black phosphorite. ~40-50% pelecypod shells and fragments. Trace limestone fragments. Trace various gastropods		
40- -	39- 40.5	S-15	1.0	7-34-7 (41)	As Above		-
45- -	44- 45.5	S-16	1.2	18-34-45 (79)	SHELLY SILTY SAND, (SM), very fine grained, light olive gray (5 Y 5/2), ~20% shell (pelecypods, trace gastropods) predominantly quartz, ~30% black phosphorite grains		
50- -	49- 50.5	S-17	0.8	31-50/5" (81)	SILTY SAND, (SM), very fine grained, medium light gray (N6). ~15% pelecypod shell fragments grading to none.  Predominantly quartz, ~30% black phosphorite grains		- - - -
55 <sup></sup>	54- 55.5	S-18	1.0	(31)	As Above  SHELLY SAND, (SP), very fine grained, moderate-well sorted, light olive gray (5 Y 5/2). Predominantly quartz. ~20% to		
•	59- 60.5	S-19	1.2	13-16-22	very fine black phosphorite. ~20% pelecypod shells and fragments (fine-coarse grained) subangular-subrounded		1



	PROJECT NUMBER	BORING NUMBER		
ĺ	SEF30619.A0	TB-1	SHEET 3 OF	5

PROJECT	Г			Jogeneration	ECOAHOR		t Corner of Site, Indiantown, FL
ELEVATIO	DN	~32	ft NG		DRILLING CONTRACTOR Ardaman and A	ssociat	es, West Palm Beach, FL
DRILLING	METHO	DD AND	EQUIPM	ENT CME	45 Rotary Rig with Split Spooning	0450	D. Kurinttaurald
WATER I	EVEL A	ND DAT	E		START 14:30 8/13/90 FINISH	8/15/9	O LOGGER P. Kwiatkowski
§c.	;	SAMPLE		STANDARD PENETRATION	SOIL DESCRIPTION	_	COMMENTS
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	TEST RESULTS 6*-6*-6* (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC	DEPTH OF CASING, DRILLING RATE. DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
65-	64- 65.5	S-20	0.5	17-19-22 (41)	As Above		
70 	69- 70.5	S-21	1.0	14-12-9 (21)	SANDY SHELL HASH, light olive gray (5 Y 6/1), predominantly pale yellowish orange (10 YR 8/6) pelecypod shells and fragments, poor-moderately sorted (finecoarse grained shell). 10% medium light gray shell fragments. ~20-30% very fine sand, predominantly quartz, ~10% black phosphorite.		-
75 -	74- 75.5	S-22	1.2	13-33-50/5 <b>"</b> (83)	SILTY SAND, (SM), very fine grained, light olive gray (5 Y 5/2), trace fine shell fragments, trace-medium quartz grains, ~10% black phosphorite grains		
80- -	79- 80.5	S-23	2.0	2-3-5 (8)	SANDY SHELLY CLAY, (SC), low plasticity, greenish gray (5 GY 6/1), ~15% pelecypod and indistinguishable shell fragments		Attempted Shelby tube Pushed 1.5'
85 - -	84- 85.5	S-24	ND	10-9-9 (18)	SHELLY SAND, (SW), very fine-medium grained, poor-moderately sorted, light olive gray (5 Y 6/1) to yellowish gray (5 Y 8/1) 40% carbonate shell fragments, 60% quartz sand. Trace poorly cemented sand.		No Recovery -
-	89- 90.5	S-25	1.4	11-10-13 (23)	As Above, slightly sitty		-



PROJECT NUMBER	
SEF30619.A0	)

BORING NUMBER

TB-1

SHEET 4 OF 5

PROJECT Indiantown Cogenerati				Cogeneration	n Facility LOCATION N	ortheast (	Corner of Site, Indiantown, FL
ELEVAT!	ON	~32	2 ft NG		DRILLING CONTRACTOR Ardaman and A	<u>\ssociate</u>	s, West Palm Beach, FL
DRILLING	3 METH	DD AND	EQUIPA	MENT CME	45 Rotary Rig with Split Spooning		
WATER	LEVEL A	ND DAT	E		START 14:30 8/13/90 FINISH	8/15/90	LOGGER P. Kwiatkowski
€		SAMPLE		STANDARD PENETRATION	SOIL DESCRIPTION	_] _	COMMENTS
DEPTH BELOW Surface (FT)	INTERVAL	INTERVAL TYPE AND NUMBER RECOVERY (FT)	TEST RESULTS 6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION	
95-	94- 95.5	S-26	1.4	16-14-11 (25)	SHELLY SILTY SAND, (SM), very fine grained, greenish gray (5 GY 6/1), 10-20% black phosphorite grains, ~25% coarse shell (pelecypod) fragments		-
100-	99- 100.5	S-27	1.4	20-26-26 (52)	As Above		-
105-	104- 105.5	S-28	1.4	28-26-23 (49)	SHELLY SAND, (SW), very fine-medium grained, poor-moderately sorted, light olive gray (5 Y 6/1) to yellowish gray (5 Y 8/1) for shell fraction, subangular-subrounded sand grains, predominantly quartz, ~20% shell fragments, ~10% black phosphorite grains		
- 110- -	109- 110.5	S-29	1.2	(35)	SHELLY SILTY SAND, (SM), very fine grained, light olive gray (5 Y 6/1) to yellowish gray (5 Y 8/1), subangular-subrounded sand grains. Predominantly quartz, ~20% pelecypod shell fragments, ~10% black phosphorite grains		- - - -
115	114- 115.5	S-30	1.4	7-9-10 (19)	SHELLY CLAYEY SAND, (SC), very fine grained, low plasticity, light olive gray (5 Y 6/1) to greenish gray (5 GY 6/1), ~20% pelecypod shell fragments, ~10% black phosphorite grains		
-	119- 120.5	S-31	1.6	6-11-12 (23)	As Above, less clay, more silt		, ]



PROJECT NUMBER	BORING NUMBER				
SEF30619.A0	TB-1	SHEET	5	OF	5

PROJEC	т			ogeneratio			st Corner of Site, Indiantown, FL
ELEVATI	ON	~32	2 ft NG		DRILLING CONTRACTOR Ardaman and A	\ssocia	ites, West Palm Beach, FL
DRILLING	G METH	DD AND	EQUIPM	RENTCME	45 Rotary Rig with Split Spooning	01454	D. Katadawali
WATER	LEVEL A	ND DAT	E	1	START 14:30 8/13/90 FINISH	8/15/9	00 LOGGER P. Kwiatkowski
€		SAMPLE	:	STANDARD PENETRATION	SOIL DESCRIPTION		COMMENTS
DEPTH BELOW SURFACE (FT)	بر	<b>2</b> ~	È	TEST RESULTS	SOIL NAME, COLOR, MOISTURE CONTENT,	ပ္	DEPTH OF CASING, DRILLING RATE,
PTH PFA	NTERVAL	TYPE AND NUMBER	RECOVERY (FT)	666-	RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP	SYMBOLIC	I DRILLING FLUID LOSS.
ns Ba	IN	Ϋ́	) [F]	(N)	SYMBOL	S   O	TESTS AND INSTRUMENTATION
-							
-						<i>\\\\\</i>	
-						1///	
					SILTY CLAY, (CL), low plasticity, greenish		
105	124-		4.0	8-16-24	gray (5 GY 6/1), ~10% shell fragments,		
125-	125.5	S-32	1.8	(40)	trace cemented silt and shell. Trace black		-
-					phosphorite, very fine grained	1///	·
-						<i>-{////</i>	
_						<i>\$////</i>	
_							
	129-		,	9-18-28	As Above	<i>\////</i>	i i
130-	130.5	S-33	1.8	(46)			<del>-</del>
-						<i>\\\\\</i>	-
-							-
_							
_					CLAYEY SHELLY SILT, (ML), low		
	134-	S-34	1.8	6-5-12	plasticity, light greenish gray (5 GY 8/1), ~30% medium-coarse shells and		1
135-	135.5	3-3-	1.5	(17)	fragments, ~10% very fine black	7	-
-					phosphorite	-	-
-						-	-
_						41111	!
	139-	S-35	1.4		As Above		]
140~	140.5	J-35	1.4	(31)	-	1	
-						<u> </u>	-
-						-	-
_						_	]
_		]					
	144-			6-13-11	As Above, some cemented sand	]	1
145	145.5	S-36	1.6	(24)	-	1/  /	1
-					•	<u> </u>	-
-					•	-	-
-			-			<b>』    </b>	Boring cemented with
_	7.71			42 45 45	A. Abarra		neat cement from bottom to land surface.
	149- 150.5	S-37	1.6	15-12-19 (31)	As Above END OF BORING		



PROJECT NUMBER	BORING
SEESOS10 AO	TD

NUMBER TB-2

SHEET 1 OF 5

PROJECT Indiantown Cogeneration Facility LOCATION Southwest Comer of Site, Indiantown,									
ELEVATION ~32 ft NGVD DRILLING CONTRACTOR Ardaman and Associates, West Palm Beach, FL							s, West Palm Beach, FL		
DRILLING	PRILLING METHOD AND EQUIPMENT CME 45 Rotary Rig with Split Spooning  VATER LEVEL AND DATE DTW = 5.15 ft 8/13/90 START 12:30 8/9/90 FINISH 8/10/90 LOGGER P. Kwiatkowski								
WATER	LEVEL A	ND DAT	<u> "TO"</u>		3/13/90 START 12:30 8/9/90 FINISH 8	3/10/90	LOGGER P. Kwiatkowski		
). 		SAMPLE		STANDARD PENETRATION	SOIL DESCRIPTION		COMMENTS		
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	TEST RESULTS 6'-6'-6' (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION		
-	0- 1.5	S-1	1.0	1-3-5 (8)	SAND, (SP), fine-medium grained, light brownish gray (5 YR 6/1), quartz, organics, roots, dry	-	-		
	1.5- 3.0	S-2	1.2	4-6-7 (13)	SAND, (SP), very fine-fine grained, some silt, moderate-well sorted, quartz, moist		_		
_	3- 4.5	S-3 S-4	1.2	7-8-8 (16)	SAND, (SP), fine-medium grained, light brownish gray (5 YR 6/1), quartz, wet	-	-		
5-	4.5- 6	S-5	1.0	5-10-9 (19)	SAND, (SP), very fine-fine grained, some sitt, moderately sorted, quartz, wet	_			
-	6- 7.5	S-6	1.0	2-3-4 (7)	SAND, (SP), fine-medium grained, light brownish gray (5 YR 6/1), quartz, moderate-well sorted		-		
-	7.5- 9	S-7	1.2	5-6-8 (14)	SAND, (SW), very fine-medium grained, moderately sorted, dusky brown (5 YR 2/2), quartz	-			
10-	9- 10.5	S-8	0.8	2-4-5 (9)	SAND, (SP), fine-medium, moderate-well sorted, moderate brown (5 YR 3/4), quartz	-	-		
-	10.5- 12	S-9	0.8	3-3-4 (7)	SAND, (SP), fine-medium grained, well sorted, pale yellowish brown (10 YR 6/2), quartz, subangular-subrounded	_	j		
-	12- 13.5	S-10	0.6	4-4-5 (9)	SAND, (SP), fine-medium grained, moderate-well sorted, grayish brown (5 YR 3/2), quartz, trace silt		-		
	13.5- 15	S-11	0.6	5-8-8 (16)	SAND, (SP), medium grained, well sorted, yellowish gray (5 Y 7/2), quartz, subangular-rounded		أ		
15							4		
-							1		
_					<del>-</del>		j		
20-	19- 20.5	S-12	1.0	4-5-5 (10)	SAND, (SP), fine-medium grained, well sorted, pale brown (5 YR 5/2), quartz		-		
							-		
					_				
25-	24- 25.5	S-13	2.0	3-2-2 (4)	SILTY SAND, (SM), very fine grained, brownish gray (5 YR 4/1), quartz —				
							· -		
	29- 30.5	S-14	2.0	3-1-1 (2)	SILTY SAND, (SM), very fine grained, medium dark gray (N4), quartz				



PROJECT NUMBER	BORING NUMBER				
SEF30619.A0	TB-2	SHEET	2	OF	5

PROJEC	т	Indiar	town (	Cogeneratio			Corner of Site, Indiantown, FL		
ELEVATION ~32 ft NGVD DRILLING CONTRACTOR Ardaman and Associates, West Palm Beach, FL									
	DRILLING METHOD AND EQUIPMENT CME 45 Rotary Rig with Split Spooning  WATER LEVEL AND DATE DTW = 5.15 ft 8/13/90 START 12:30 8/9/90 FINISH 8/10/90 LOGGER P. Kwiatkowski								
WATER	LEVEL A	ND DAT	E		8/13/90 START 12:30 8/9/90 FINISH	8/10/90	LOGGER P. Kwiatkowski		
§F.	SAMPLE			STANDARD PENETRATION	SOIL DESCRIPTION	_	COMMENTS		
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	TEST RESULTS 6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION		
35	34- 35.5	S-15	1.2	3-4-5 (9)	SAND, (SP), very fine-fine grained, moderate-well sorted, olive gray (5 Y 4/1), slightly silty, quartz		- - -		
40 -	39- 40.5	S-16	1.0	17-19-19 (38)	SAND, (SP), very fine grained, well sorted, medium light gray (N6). Predominantly quartz, ~25% black phoshorite (very fine)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- - -		
<b>4</b> 5-	44- 45.5	S-17	1.0	6-5-7 (12)	SAND, (SP), very fine-fine grained, moderate-well sorted, medium light gray (N6). Predominantly quartz, ~25% very fine black phosphorite		· -		
50 — -	49- 50.5	S-18	1.2	17-23-22 (45)	SHELLY SAND, (SP), very fine-fine grained, moderate-well sorted, medium light gray (N6). ~30% grayish orange pink (5 YR 7/2) pelecypod shell fragments, fine-coarse fragments. Predominantly quartz, 25% very fine black phosphorite		-		
55~	54- 55.5	S-19	1.2	19-18-18 (36)	As Above, with thin, low-plasticity clay lenses		-		
-	59- 60.5	S-20	2.0	24-27-29 (56)	SHELLY SAND, (SP), fine grained, well sorted, light brownish gray (5 YR 6/1) quartz, trace black phosphorite				



PROJECT NUMBER	BORING NUMBER				
SEF30619.A0	TB-2	SHEET	3	OF	5

PROJECT Indiantown Cogeneration Facility LOCATION Southwest Corner of Site, In						t Corner of Site, Indiantown, FL	
ELEVATION ~32 ft NGVD DRILLING CONTRACTOR Ardaman and Associates, West Palm Beach, FL							
DRILLING METHOD AND EQUIPMENT CME 45 Rotary Rig with Split Spooning							
WATER	LEVEL A	ND DAT	DT\	N = 5.15 ft 8	3/13/90 START 12:30 8/9/90 FINISH	3/10/90	D LOGGER P. Kwiatkowski
	SAMPLE STANDARD PENETRATION		STANDARD PENETRATION	SOIL DESCRIPTION		COMMENTS	
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	RESULTS  6°-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
65 —	64- 65.5	S-21	1.0	12-15-21 (36)	SHELLY SAND, (SW), fine-coarse grained, poorly sorted, light olive gray (5 Y 6/1) to light bluish gray (5 B 7/1). Subangular-rounded. ~30% pelecypod shell fragments (fine-medium). Trace-little fine-medium black phosphorite		
70-	69- 70.5	S-22	1.0	12-13-13 (26)	SANDY SHELL HASH, predominantly pelecypod shells and fragments, pinkish gray (5 YR 8/1) to light olive gray (5 Y 6/1). Sand fraction (20%) is fine-coarse grained quartz. Trace black phosphorite		
75-	74- 75.5	S-23	0.8	13-16-18 (34)	As Above		-
80-	79- 80.5	S-24	8.0	18-25-22 (47)	SHELLY SAND, (SW), fine-grained moderate-well sorted, light olive gray (5 Y 6/1) to pinkish gray (5 YR 8/1) for shelf-fragments. Predominantly pelecypod, trace gastropod fragments, fine grained		
85	84- 85.5	S-25	0.8	18-15-15 (30)	SHELLY SILTY SAND, (SM), very fine grained, light olive gray (5 Y 6/1) to pinkish gray (5 Y 8/1) for shells. 10-20% moderately cemented sandstone fragments. Trace clay. Trace-little black phoshorite		
	89- 90.5	S-26	0.6	19-26-27 (53)	As Above, less shell, no cemented sands		



PROJECT NUMBER	BORING NUMBER					•
SEF30619.A0	TB-2	QUEET	4	Œ	5	

PROJEC	τ	Indiar	itown (	Cogeneratio	n Facility LOCATION S	Southwest	Corner of Site, Indiantown, FL
ELEVATI	ON	~32	2 ft NG		DRILLING CONTRACTOR Ardaman and	Associate	s, West Palm Beach, FL
DRILLING	METH(	DD AND	EQUIPM		45 Rotary Rig with Split Spooning		
WATER	LEVEL A	ND DAT	E DTV	N = 5.15 ft (	8/13/90 START 12:30 8/9/90 FINISH	8/10/90	LOGGER P. Kwiatkowski
ĕ.		SAMPLE		STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION		COMMENTS
DEPTH BELOW SURFACE (FT)	ITYPE AND NUMBER (FT)  S. 9. 9. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6. 6.		6"-6"-6"	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION	
95 - 1	94- 95.5	S-27	1.4	20-23-20 (43)	As Above, cemented sands (~15%)		-
100-	99- 100.5	S-28	1.0	16-9-10 (19)	As Above, no cemented sands		- - - -
105-	104- 105.5	S-29	1.0	(32)	SILTY SAND, (SM), very fine grained, some clay (20%), low plasticity, greenish gray (5 GY 6/1), ~10-15% shell fragments	1 1 1	- -
110-	109- 110.5	S-30	1.8	6-13-14 (27)	As Above, <10% shell fragments		-
115	114- 115.5	S-31	2.0	7-8-15 (23)	SILTY CLAY, (CL), low plasticity, greenish gray (5 GY 6/1), 10-20% cemented sand, trace pelecypod shell fragments, trace black phosphorite		- - - -
]	119- 120.5	S-32	1.8	7-9-17 (26)	As Above, no cemented sand		



PROJECT NUMBER	BORING NUMBER				
SEF30619.A0	TB-2	SHEET	5	OF	5

PROJECT	Γ	Indian	town C	Cogeneration					
ELEVATIO	М	~32	ft NG		DRILLING CONTRACTOR Ardaman and A	ssociate	es, West Palm Beach, FL		
DRILLING	METHO	D AND	EQUIPM		45 Rotary Rig with Split Spooning	9/40/00	LOGGER P. Kwiatkowski		
WATER I	EVEL A	ID DATE		W = 5.15 ft	8/13/90 START 12:30 8/9/90 FINISH	8/10/90	LOGGER P. KWIZIKOWSKI		
§€	S	AMPLE		STANDARD PENETRATION	SOIL DESCRIPTION	_	COMMENTS		
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	FEST RESULTS 6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION		
125 -	124- 125.5	S-33	0.5	5-5-6 (11)	SANDSTONE, (SS), poorly cemented, some clay, light olive gray (5 Y 6/1),~10% shell fragments		Drill rod chatter at 126'		
-130 - - -	129- 130.5	S-34	1.2	20-26-13	As Above		-		
135-	134- 135.5	S-35	1.8	15-36-40 (76)	SILTY CLAY, (CL), low plasticity, light olive gray (5 Y 6/1), trace poorly cemented sand very dense	- - - -	- - -		
140~	139- 140.5	S-36	1.6	22-27-31 (58)	CLAYEY SANDSTONE (SS), poorly cemented, yellowish gray (5 Y 8/1), poorly cemented, dark gray (N3) phosphate-replaced shell fragments		Drill rod chatter at 141' to 143'		
145	144- 145.5	S-37	1.8	8-13-12 (25)	As Above, more clay, less cemented sand		Boring cemented with		
	149- 150.5	S-38	ND	ND	As Above END OF BORING		neat cement from bottom to land surface.		



1	PROJECT NUMBER	BORING NUMBER					
	SEF30619.A0	TB-3	SHEET	1	OF	5	

<b>≩</b> _	SAMPLE	STANDARD PENETRATION	SOIL DESCRIPTION		COMMENTS
		DTW = 5.93 ft 8/13/9	90 START 13:00 8/6/90 FIN	IISH <u>8/8/90</u>	LOGGER P. Kwiatkowski
DRILLING	METHOD AND EC	DUIPMENT CME 45 F	Rotary Rig with Split Spooning		
ELEVATION	<sub>ON</sub> ~32 ft	NGVD	DRILLING CONTRACTOR Ardams	an and Associate	es, West Palm Beach, FL
PROJEC	Indianto	wn Cogeneration Fa			Corner of Site, Indiantown, FL

	SAMPLE		STANDARD		1	•
	TEST TEST		ļ	COMMENTS		
INTERVAL TYPE AND NUMBER RECOVERY (FT)		TEST RESULTS 6"-6"-6" (N)			DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION	
0-2	S-1	ND	2-3-4-4 (7)	SAND, (SW), very fine-medium grained poor-moderately sorted, light olive gray (5 Y 6/1)-quartz, roots and organics		
2-4	S-2 S-3	ND	7-13-13-20 (26)	SAND, (SW), very fine grained, black, very organic rich, hard pan		
4-6	S-4	ND	10-11-10-10 (21)	As Above, dark reddish brown (10 YR 3/4). Not as well cemented.		_
6-8	S-5	ND				
8-10	S-6	ND	9-9-10-11 (19)	As Above		_
10-12	S-7	ND	(12)	moderate-well sorted, yellowish gray (5 Y 7/2),		-
12-14	S-8	ND	5-7-6-8 (13)	As Above		
14-16	S-9	1.0	3-5-2-1 (7)	SAND, (SP), very fine-fine grained, well sorted, light olive gray (5 Y 6/1), predominantly quartz, —trace black phosphorite, slightly silty		-
19-21	S-10	1.2	, 200/0	SILTY SAND, (SM), very fine-fine grained, moderately sorted, light gray (N7) to light olive —		- -
:				gray (5 Y 6/1), thin clay lens @ 20' bls. Cemented shell and sand at 20.5' bls		Drill rods chatter at 21'
24-26	S-11	1.8	(67)	moderately friable (especially shelly material), medium light gray (N6) to pinkish		As above -
				(predominantly pelecypods) trace		
	0-2 2-4 4-6 6-8 8-10 10-12 12-14 14-16	0-2 S-1  2-4 S-2 S-3  4-6 S-4  6-8 S-5  8-10 S-6  10-12 S-7  12-14 S-8  14-16 S-9	0-2 S-1 ND 2-4 S-2 ND 4-6 S-4 ND 6-8 S-5 ND 10-12 S-7 ND 12-14 S-8 ND 14-16 S-9 1.0	NAME   NAME   No.   10-11-10-10   No.   10-12   No.   10-11-10-10   No.   10-12   No.   No.   10-12   No.   No.   10-13-13-20   No.   No.   10-13-13-20   No.   No.   10-13-13-20   No.   No.   10-13-13-20	Section   Sect	RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP  STRUCTURE, MINERALOGY, USC GROUP  STRUCTURE, MINERALOGY, USC GROUP  STRUCTURE, MINERALOGY, USC GROUP  STRUCTURE, MINERALOGY, USC GROUP  STRUCTURE, MINERALOGY, USC GROUP  STRUCTURE, MINERALOGY, USC GROUP  STRUCTURE, MINERALOGY, USC GROUP  STRUCTURE, MINERALOGY, USC GROUP  STRUCTURE, MINERALOGY, USC GROUP  STRUCTURE, MINERALOGY, USC GROUP  STRUCTURE, MINERALOGY, USC GROUP  STRUCTURE, MINERALOGY, USC GROUP  STRUCTURE, MINERALOGY, USC GROUP  STRUCTURE, MINERALOGY, USC GROUP  STRUCTURE, MINERALOGY, USC GROUP  SAND, (SW), very fine grained, poorly  STRUCTURE, MINERALOGY, USC GROUP  STRUCTURE, MINERALOGY, USC GROUP  SAND, (SW), very fine grai



PROJECT NUMBER	BORING NUMBER			•	*****
SEF30619.A0	TB-3	SHEET	3	OF	5

PROJEC	Τ	Indiar	ntown (	Cogeneration			Corner of Site, Indiantown, FL
ELEVATION	ON	<u>~3</u> 2	2 ft NG		DRILLING CONTRACTOR Ardaman and A	\ssociat	es, West Palm Beach, FL
DRILLING					45 Rotary Rig with Split Spooning	·00	D (Cod-Alexand)
WATER	LEVEL A	ND DAT	E DIV	V = 5.93 ft 8	13:00 8/6/90 FINISH 8/8/	90	LOGGER P. Kwiatkowski
ŠF		SAMPLE		STANDARD PENETRATION	SOIL DESCRIPTION		COMMENTS
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	TEST RESULTS 6-6-6-6 (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	59-61	S-18	0.8	16-18-35- 50/5"	SAND, (SP), very fine-fine grained,		
- - - -				(53)	moderate-well sorted, yellowish gray (5 Y 7/2) predominantly quartz, 10-20% black phosphorite, ~10% shell fragments		
65- -	64-66	S-19	1.0	30-40-39-39 (79)	As Above	-	- -
- - 70-	69-71	S-20	1.0	5-4-6-8 (10)	SILTY SHELLY CLAY, (CL), low plasticity, greenish gray (5 GY 6/1), abundant		- - -
- -	71- 73.5	ST-1	2.5	NA	(30-40%) pelecypod shells (up to 1-inch dia) and fragments		Pushed Shelby tube 6" drove 2' -
75-	74-76	S-21	0.5	18-38-33-30 (71)	SAND, (SP), very fine-fine grained, moderate-well sorted, greenish gray (5 GY 6/1), predominantly quartz, ~10-20% black phosphorite, ~10% shell fragments	1 1 2	- - -
80 <del>-</del>	79-81	S-22	1.2	23-26-33-45 (59)	As Above, more shell (~20%)		- - - -
85 <sup></sup>	84-86	S-23	1.8	(28)	SANDY SHELL HASH, predominantly pelecypods, some gastropods, greenish gray (5 GY 6/1) very fine sand with trace-little (~10%) black phosphorite, shells predominantly pinkish gray (5 YR 8/1)		



PROJECT	NUMBER
;	SEF30619.A0

BORING NUMBER

TB-3

SHEET 4 OF

5

PROJEC	т			<u>Cogeneratio</u>		east Corner of Site, Indiantown, FL
ELEVATI	ON	~32	2 ft NG		DRILLING CONTRACTOR Ardaman and Asso	ociates, West Palm Beach, FL
		OD AND			45 Rotary Rig with Split Spooning	
WATER	LEVEL A	ND DAT	E DTV	V = 5.93 ft 8	3/13/90 START 13:00 8/6/90 FINISH 8/8/90	LOGGER P. Kwiatkowski
Ş₽		SAMPLE		STANDARD PENETRATION TEST	SOIL DESCRIPTION	COMMENTS
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	89-91	S-24	1.6	13-13-18-16	SHELLY SILTY SAND, (SM), very fine	MANA
				(31)	grained, light bluish gray (5 B 7/1), predominantly pinkish gray (5 YR 8/1) to white (N9) pelecypod shells and fragments, ~10% very fine black phosphorite	
95- - -	94-96	S-25	1.8	20-22-20-25 (42)	SHELLY SAND, (SW), very fine grained, quartz sand, greenish gray (5 GY 6/1), ~40% fine to coarse pelecypod, gastropod shell fragments, trace silt	
100-	99- 101	S-26	1.6	19-20-19-21 (39)	As Above	
105-	104- 106	S-27	1.2	10-10-10-19 (20)	As Above, more silt (10-20%)	
110-	109- 111	S-28	2.0	6-7-17-21 (24)	SILTY SAND, (SM), very fine grained, greenish gray (5 GY 6/1), quartz, CaCO <sub>3</sub> , and trace black phosphorite grains, angular-subrounded, trace-little (10%) pelecypod shells and fragments. Trace clay	
- 115 - - -	114- 116	S-29	2.0	(40)	CLAYEY SHELLY SAND, (SC), very fine grained, low plasticity, abundant (30-40%) white (N9) coarse pelecypod shells and fragments	



PROJECT NUMBER	BORING NUMBER			•	
SEF30619.A0	TB-3	SHEET	5	Œ	5

PROJEC	т			Cogeneration			Corner of Site, Indiantown, FL
ELEVATION	ON	~32	tt NG		DRILLING CONTRACTOR Ardaman and	<u>Associat</u>	es, West Palm Beach, FL
DRILLING				7EITI	45 Rotary Rig with Split Spooning  /13/90 START 13:00 8/6/90 FINISH 8/8		LOGGER P. Kwiatkowski
WATER		-		V = 5.93 ft 8	<del> </del>	1	
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION  SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC	COMMENTS  DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	119-	S-30	2.0	11-25-35-30 (60)	SILTY CLAY, (CL), low plasticity, greenish		
- - 125-	124-126	S-31	1.8		gray (5 GY 6/1), trace shell fragments  As Above, more pelecypod shells and fragments (~20%)		- - -
- 130 – - -	129- 131	S-32	1.6	18-19-30-39 (49)	CLAYEY SAND AND SANDSTONE, (SC-SS), low plasticity, moderately-highly friable, greenish gray (5 GY 6/1), ~10% shell fragments-partially cemented. Trace-little black phosphorite (very fine grained) in matrix		- - -
- 135 – -	134- 136	S-33	1.8	11-16-36-39 (52)	SILTY CLAYEY SAND, (SC), very fine grained, low plasticity, greenish gray (5 GY 6/1), ~10% shell fragments, trace cemented sand		- - -
140- -	139- 141	S-34	1.4	11-10-27-37 (37)	SILTY CLAY, (CL), low plasticity, very fine grained, pale olive (10 Y 6/2) ~10% shell fragments, trace cemented sand		-
145 <sup></sup>	144- 146	S-35	1.4	23-21-12-10 (33)	CLAYEY SAND & SANDSTONE, (SC-SS), low plasticity, moderately-highly friable, greenish gray (5 GY 6/1), ~10% shell fragments-partially cemented. Trace-little black phosphorite (very fine grained) in matrix		
_	149- 151	S-36	2.0	12-27-50/5" (77)	SILTY SAND, (SM), very fine grained, well sorted, low plasticity, light olive (10 Y 5/4) 10% black phosphorite, predominantly quartz, trace clay END OF BORING	-	Boring abandoned with neat cement from bottom to land surface.



PROJECT	NUMBER
	SEF30619.A0

Indiantown Cogeneration Facility

BORING NUMBER

TB-4

SHEET 1 OF 5

Proposed Power Block Area

PROJEC	т			Cogeneration			oosed Power Block Area
ELEVATI	ON	<u>~32</u>	ft NG		DRILLING CONTRACTOR Ardaman and	Associa	tes, West Palm Beach, FL
DRILLING				JP141	45 Rotary Rig with Split Spooning	00 0/0#	D Kristranski
WATER	LEVEL A	ND DATI	DT_	W = 6.65 8/	13/90 START 1300 7/23/90 FINISH 14	00 8/6/9	00 LOGGER P. Kwiatkowski
ĕc		SAMPLE		STANDARD PENETRATION	SOIL DESCRIPTION		COMMENTS
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	TEST RESULTS 6-6-6- (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
_	0-2	S-1	ND	2-2-3-4 (5)	SAND, (SP), very fine-fine grained, moderately sorted, light gray (N7), dry, organics and roots, quartz	_	-
	2-4	S-2	ND	3-3-4-5 (7)	SAND, (SP), very fine-medium, moderate sorted, light gray (N7) to light olive gray (5Y 6/1), moist, quartz, trace organics, trace black phosphorite	y] ]	-
5-	4-6	S-3	ND	4-4-6-8 (10)	SAND, (SP), very fine grained, moderate to well sorted, dusky brown (5 YR 2/2), heavy organics, some quartz, wet, slightly silty		
	6-8	S-4	ND	3-6-9-5 (15)	As Above, less organics		_
10-	8-10	S-5	ND	9-21-21-23 (15)	As Above, some hardpan, predominantly quartz		
10	10-12	S-6	ND	4-4-8-9 (12)	SAND, (SP-SM), very fine grained, moderate-well sorted, somewhat silty, quartz, moderate brown (5 YR 4/4)		
	12-14	S-7 S-8	ND	8-9-14-16 (23)	SAND, (SP), fine-medium grained, moderate-well sorted, moderate yellowisl brown, (10 YR 5/4), quartz, trace silt	h -	
15	14-16	S-9	1.6	8-8-8-9 (16)	As Above, yellowish gray (5 Y 7/2)  SAND, (SP), fine-medium grained,	_	]
				, , , , , , , , , , , , , , , , , , ,	moderately sorted, grayish orange (10 YR 7/4) quartz		_
						-	_
20-	19-21	S-10	1.6	6-7-8-8 (15)	As Above		- -
25-	24-26	S-11	1.6	7-8-8-9 (16)	SAND, (SP), very fine grained, well sorted, dusky yellow (5 Y 7/4) quartz		
							-
	<u> </u>		L			<b>1000000</b>	1



PROJECT NUMBER	BORING NUMBER				
SEF30619.A0	TB-4	SHEET	2	OF	5

PROJEC	т	Indian	itown (	Cogeneration			Power Block A		
ELEVATI	ои	<u>~32</u>	2 ft NG		DRILLING CONTRACTOR Ardaman and A	Associate	es, West Palm	Beach, FL	_
DRILLING	G METHO	DO AND	EQUIPM	11 <u></u>	45 Rotary Rig with Split Spooning	7/00		D. Kraintlanania	
WATER	LEVEL A	ND DATE	וט =	W = 6.65 ft		7/90	LOGGER	P. Kwiatkowsk	_
ME		SAMPLE		STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION			COMMENTS	
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC	DRILLIN DRILLIN TESTS	OF CASING, G RATE, G FLUID LOSS, AND MENTATION	
	29-31	S-12	2.0	3-2-2-2 (4)	SAND, (SP), very fine grained, well sorted,	,			
1 1				, ,	grayish olive (10 Y 4/2), quartz, slightly silty, subangular grains, very loose			lby tube from . No recovery.	
35- -	34-36	S-13	1.0	(7)	SILTY SAND, (SM), very fine-medium grained, poorly sorted, dark gray (N3) quartz, subangular grains, loose				
-	36- 38.6	ST-1		NA		-1411		by tube from et. Very hard	
40 <del>-</del>	39-41	S-14	1.2	50/5" (50)	SAND, (SP), very fine-fine grained, moderate-well sorted, light olive gray (5 Y 6/1) to light brownish gray (5 YR 6/1),				-
-				}	very clean, no silt. Quartz subangular grains. ~20% very fine black phosphorite, very dense.				-
45 <b>-</b>	44-46	S-15	1.0	35-42-50/5" (72)	As Above				-
-									1 1
50 <del>-</del>	49-51	S-16	0.5	36-50/5" (86)	As Above	-			-
-				1					1
55-	54-56	S-17	0.5	45-50/5" (95)	As Above				-
									1



PROJECT NUMBER	BORING NUMBER				
SEF30619.A0	TB-4	SHEET	3	OF	5

PROJEC'	т	India	ntown	Cogeneration			Power Block Area
ELEVATION		~32	ft NG		DRILLING CONTRACTOR Ardaman and	Associates	, West Palm Beach, FL
DRILLING	METHO	DD AND	EQUIPM	15111	45 Rotary Rig with Split Spooning	2/27/00	LOGGER P. Kwiatkowski
WATER		-			8/13/90 START 13:00 7/23/90 FINISH	121190	
Ş.F		SAMPLE		STANDARD PENETRATION TEST	SOIL DESCRIPTION		COMMENTS
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	67-6*-6* (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
_	59-61	S-18	0.75	45-25-14-11 (39)	As Above		
-							- - -
65-	64-66	S-19	1.5	20-26-34-34 (60)	As Above, little-some (15%) pelecypod shell fragments (very brittle) pinkish gray		
-				(00)	(5 YR 8/1)		· - -
70-	60.74	6 20	1.2	31-41-21-20	As Above		_
- - -	69-71	S-20	1.2	(62)			- -
75-	74-76	S-21	1.2	15-30-30-30 (60)	As Above		
-				(60)			- -
80-	79-81	S-22	1.6	47-50/5" (97)	As Above, less shell (~5%)		
85-	84-86	S-23	1.6	25-21-20-16 (41)	As Above, some silt, more shell (25%)		- - - - -
	_						



PROJECT	NUMBER		<del>-</del>
	SEF3061	9.	Α0

BORING NUMBER

TB-4

SHEET 4 OF 5

PROJEC	т	India	ntown	Cogeneratio	n Facility LOCATION Pro	posed	Power Block Area
ELEVATI			2 ft NG	iVD	DRILLING CONTRACTOR Ardaman and As		
DRILLING	G METHO	OD AND	EQUIPN	MEIAI -	45 Rotary Rig with Split Spooning		
WATER	LEVEL A	ND DAT	E DT	W = 6.65 ft	8/13/90 START 13:00 7/23/90 FINISH 7/27/	/90	LOGGERP. Kwiatkowski
ĕc		SAMPLE	, ,	STANDARD PENETRATION	SOIL DESCRIPTION		COMMENTS
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	FEST RESULTS 6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	89-91	S-24		15-17-17-20 (34)	SANDY SHELL HASH, fine grained (~50%		Gradual loss of drilling
-					shell fragments). Greenish gray (5 GY 6/1)-to pinkish gray (5 YR 8/1). Predominantly pelecypod with little gastropod shell fragments. Slightly silty quartz.	7-7	fluids (slight).
95-	94-96	S-25	1.6	11-10-13-17 (23)	SILTY SHELL HASH, very fine grained large worm-like shells (>50% shell) (1/4" dia. by 2" long). Greenish gray (5 GY 6/1)		<del>-</del>
-	96- 98.5	ST-2	2.5	NA	to pinkish gray (5 YR 8/1). Some pelecypod shell hash. Moderately plastic silty sand. Trace cemented sand quartz.	7) }	Shelby tube sample obtained at 96' bls.
- 100-	99- 101	S-26	2.0	9-20-30-40 (50)	SHELLY SAND, very fine-medium grained, poor-moderately sorted, light olive gray (5 Y 6/1). Slightly silty, ~20% pelecypod, gastropod shell and shell fragments.	7 1	- -
- -	-				Quartz.		- - -
105-	104- 106	S-27	1.8	25-27-30-32 (57)	As Above, slightly more shell (~30%)		
-		:			-		-
110-	109- 111	S-28	1.9	20-21-22-22 (43)	As Above, less shell (15%), light olive gray (5 Y 6/1) to light bluish gray (5 B 7/1) — slightly silty		
	-						-
115	114- 116	S-29	2.0		SILTY SHELLY SAND (marl?) very fine-fine grained, light olive gray (5Y 6/1), ~25% shell fragments, quartz		-
	- -						



PROJECT NUMBER	BORING NUMBER				
SEF30619.A0	TB-4	SHEET	5	OF	5

PROJECT	г	Indiar	ntown	<u>Cogeneratio</u>						
ELEVATIO	ON	~32	tt NG		DRILLING CONTRACTOR Ardaman and A	ssociate	es, West Palm Beach, FL			
DRILLING				15141	45 Rotary Rig with Split Spooning					
WATER I	EVEL A	ND DATE	<u> D</u> T	W = 6.65 ft	8/13/90 START 13:00 7/23/90 FINISH 7/23	7/90	LOGGER P. Kwiatkowski			
¥of-		SAMPLE		STANDARD PENETRATION TEST	SOIL DESCRIPTION	].	COMMENTS			
DEPTH BELOW Surface (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	6-6-6 (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION			
	119- 121	S-30	2.0	11-12-21-21 (33)	As Above, slightly clayey					
-	124-	S-31	2.0	8-20-33-41	CLAYEY SAND W/SHELL (SC), very fine		- -			
125-	126	3-31	2.0	(53)	grained, moderately plastic, light olive gray (5 Y6/1), ~15% shell fragments, quartz, very thin cemented sand layer at 126'		-			
-							- -			
130-	129- 131	S-32	2.0	7-9-21- 50/4" (30)	SANDY CLAY, (SC), very fine grained moderately plastic, light olive gray (5 Y 6/1) 5-10% shell fragments, quartz, very dense at 131' bls		<u> </u>			
-							- Drove Shelby tube from			
135-	134- 136	ST-3	2.5	NA			134 to 136.5 feet bis -			
-							- - -			
140-	139- 141	S-33	2.0	25-25-30-40 (55)	CLAYEY SANDSTONE, (SS), very fine grained, poor-moderately consolidated, light greenish gray (5 GY 8/1), little-some		-			
				:	shell fragments (~10%), very dense, clayey matrix low-moderate plasticity		-			
145	144- 146	S-34	2.0	9-17-27-40 (44)	SANDY CLAY, (SC), very fine grained moderately plastic, light olive gray (5 Y 6/1); 5-10% shell fragments		-			
							Boring abandoned with neat cement from bottom to land surface.			

END OF BORING



PROJECT NUMBER	BORING NUMBER				
SEF30619.A0	TB-5	SHEET	1	OF	5

					<u> </u>		
PROJEC	т	India	ntown	Cogeneration	on Facility LOCATION	Pro	duction Well Site, Indiantown, FL
ELEVATI	ON	~32	2 ft NG		DRILLING CONTRACTOR Ardaman and A	<u>Associa</u>	ates, West Palm Beach, FL
	G METHO				45 Rotary Rig with Split Spooning		
WATER	LEVEL A	ND DAT	E	W = 6.2  ft  8	/13/90 START 10:15 7/30/90 FINISH 8/7/	/90	LOGGER P. Kwiatkowski
WC.		SAMPLE		STANDARD PENETRATION TEST	SOIL DESCRIPTION	COMMENTS	
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
5-	4-6	S-1 S-2	1.2	5-5-7-8 (12)	SAND, (SP), fine-coarse grained, moderately sorted, very light gray (N8), subangular-rounded, quartz, thin organic layer at 6' bls, medium dense	<u> </u>	
10-	9-11 11-13	S-3	2.0	9-9-10-10 (19) 10-7-8-7 (15)	SAND, (SP), fine-medium grained, moderate-well sorted, moderate brown (5 YR 4/4), subangular-rounded quartz, medium dense As Above, yellowish gray (5 Y 7/2)		
15	13-15	S-5	1.2	7-10-9-9 (19)	As Above		
20-	19-21	S-6	1.0	8-9-12-11 (21)	As Above, dusky yeliow (5 Y 6/4)		
-	24-26 26-29		1.8	(7)	SAND, (SP), very fine grained, well sorted, olive gray (5 Y 4/1), subangular-subrounded, trace of silt, trace-little black phosphorite (very fine grained). Quartz, loose		Obtain Shelby tube from 26 to 29' bls
•					·		



PROJECT NUMBER B	SORING NUMBER				
SEF30619.A0	TB-5	SHEET	2	OF	5

PROJEC	т	India	entown	Cogeneration	ation Facility LOCATION Production Well Site, Indiantown,				
ELEVAT	ON	~32	tt NG		DRILLING CONTRACTOR Ardaman and As	sociate	es, West Palm Beach, FL		
	3 METHO			1511 <del></del>	45 Rotary Rig with Split Spooning				
WATER	LEVEL A	ND DAT	E <u>DT</u>	W = 6.2  ft  8	/13/90 START 10:15 7/30/90 FINISH 8/7/9	0	LOGGER P. Kwiatkowski		
₩ L		SAMPLE		STANDARD PENETRATION	SOIL DESCRIPTION		COMMENTS		
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	FEST RESULTS 6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION		
	29-31	S-8	1.2	WR-WR-	SAND, (SM), very fine grained, well sorted,				
-				10-11 (10)	light gray (N7) quartz, somewhat silty, some pinkish gray shell fragments (25%), trace-little cemented sand fragments, quartz, loose		-		
35-	34-36	S-9	1.8	16-21-29-28 (50)	SAND, (SP), very fine-medium grained, poor-moderately sorted, light olive gray		_		
ļ -					(5 Y 6/1), quartz, ~20% gray sandstone fragments, ~20% pelecypod shell		-		
-   					fragments, ~10% very fine grained black - phosphorite, unconsolidated, dense		<del>-</del>		
40 <i>-</i> -	39-41	S-10	1.2	25-38-50/5" (88)	SAND, (SP), very fine grained, well sorted, olive gray (5 Y 4/1) quartz, ~25% very fine grained black phosphorite, unconsolidated, trace shell fragments, angular-		Refusal. Rope breaks at end _ of hammer. Cut and tie new rope		
- -					subrounded grains, very dense		- -		
45-	44-46	S-11	1.0	25-40-50/5 <b>*</b> (90)	As Above		-		
- -					<u> </u>		-		
50-	49-51	S-12	1.2	27-36-36-33 (72)	As Above		-		
-					- -		-		
55-	54-56	S-13	ND	18-16-25- 50/5" (41)	As Above, dense				
					-				



5	NG NUMBER			
SEF30619.A0	TB-5 SHEET	3	OF	5

PROJECT Indiantown Cogenera					tion Facility LOCATION Production Well Site, Indiantown,				
ELEVATI	ON	~32	2 ft NG	VD	DRILLING CONTRACTOR Ardaman and As	sociat	es, West Palm Beach, FL		
DRILLIN	G METH	OD AND	EQUIPN	MENT CME	45 Rotary Rig with Split Spooning				
WATER	LEVEL A	ND DAT	E DT	W = 6.2  ft  8	1/13/90 START 10:15 7/30/90 FINISH 8/7/90	<u> </u>	LOGGER P. Kwiatkowski		
LOW FT)		SAMPLE		STANDARD PENETRATION TEST	SOIL DESCRIPTION		COMMENTS		
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	TEST RESULTS 6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION		
	59-61	S-14	ND	14-17-40-	SAND, (SP), very fine grained, well sorted,				
1				50/5* (57)	olive gray (5 Y 4/1) and SHELL fragments - (~30%) pelecypods pinkish gray (5 YR 8/1). Some (10-20%) cemented sand. Subangular-subrounded quartz, very fine black phosphorite sand grains, very dense				
65-	64-66	S-15	0.6	22-35-44-47 (79)	SAND, (SP), very fine grained, well sorted olive gray (5 Y 4/1), subangular-subrounded, ~25% black phosphorite		<u>-</u>		
_ 					grains (very fine), quartz, very dense - -				
70 -	69-71	S-16	2.0	5-3-5-6 (8)	SILTY CLAY, (CL), low-moderate plasticity, _ dark greenish gray (5 GY 4/1), firm		-		
-	71-74	ST-2	3.0	NA	-		Obtain Shelby tube sample at 71' bis		
75- -	74-76	S-17	1.8	4-4-3-4 (7)	CLAYEY, SHELLY SILT, (ML), low- moderate plasticity, light olive gray (5 Y 5/2) very fine grained, 30-40% shell fragments (predominantly pelecypods, trace		- -		
-					gastropods), firm		- -		
80-	79-81	S-18	1.8	(53)	SAND, (SP), fine-coarse grained, poorly sorted, angular-rounded, quartz predominant, ~25% black phosphorite		- -		
- -					grains, ~10% calcium carbonate and pelecypod shell fragments, trace silt, very dense	77.77	Drill rods chatter at 83' bls		
85 -	84-86	S-19	1.6	(26)	SILTY SAND, (SM), very fine grained, well sorted, angular-rounded, greenish gray – (5 GY 6/1), predominantly quartz, ~15-20% black phosphorite grains, ~5% calcium		-		
-			:		carbonate grains, ~5-10% large (1/2" dia)		- -		



Indiantown Cogeneration Facility

PROJECT NUMBER	BORING NUMBER				
SEF30619.A0	TB-5	SHEET	4	OF	5

### SOIL BORING LOG

Production Well Site, Indiantown, FL

PROJEC'	ROJECT Indiantown Cogeneration Facility LOCATION Production Well Site, Indiantown, FL									
ELEVATION	ис	~32	ft NG		DRILLING CONTRACTOR Ardaman and As	sociate	s, West Palm Beach, FL			
DRILLING	METHO	DO AND	EQUIPM	C141	45 Rotary Rig with Split Spooning					
WATER	LEVEL A	ND DATE	<u>DT\</u>	N = 6.2  ft  8/	13/90 START 10:15 7/30/90 FINISH 8/7/9	0	LOGGER P. Kwiatkowski			
<b>≩</b> _	;	SAMPLE		STANDARD PENETRATION	SOIL DESCRIPTION		COMMENTS			
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	FEST RESULTS 6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION			
	89-91	S-20	1.6	11-16-20 (36)	As Above, less shell					
- -					-		- - -			
95-	94-96	S-21	1.6	12-15-23-25	SHELLY SAND, (SW), fine-medium		_			
-	34 30			(38)	grained, poor-moderately sorted, subangular-subrounded, greenish gray (5 GY 6/1) quartz sand grains. Shell fragments (pelecypod, trace gastropod) constitute ~30% of sample. Trace black phosphorite, very fine grained. Medium dense.		- - -			
100-	99-	S-22	1.4	23-21-21-18 (42)	As Above, less shell		_			
105-	104-106	S-23	1.8	14-15-15-14 (30)	(5 GY 6/1) sand grains predominantly quartz composition with 10% very fine black phosphorite. Shell (~30% of sample) is predominantly fragments but large (1/2") pelecypod and gastropods also. Medium dense.		- - - - - - - - -			
110-	109-	S-24	1.8	12-12-12 (24)	SAND, (SP), very fine-fine grained, moderate-well sorted, angular-subrounded, light olive gray (5 Y 6/1), quartz grains predominant, ~10-20% fine shell fragments, medium dense, trace-little silt.					
115	114- 116	S-25	0.5	8-11-24-26 (35)	As Above					



PROJECT	NUMBER	Ţ	B
ļ	SEF30619.A0		

BORING NUMBER

TB-5

SHEET 5 OF 5

PROJEC	т	India	ntown	Cogeneratio	n Facility LOCATION	Prod	uction Well Site, Indiantown, FL
ELEVATI	ON	~3	2 ft NG		DRILLING CONTRACTOR Ardaman and As	sociate	es, West Palm Beach, FL
DRILLIN	G METH	OD AND	EQUIPM		45 Rotary Rig with Split Spooning		
WATER	LEVEL A	AND DAT	re Di	W = 6.2  ft  8	3/13/90 START 10:15 7/30/90 FINISH 8/7/9	0	LOGGER P. Kwiatkowski
ŞE		SAMPL		STANDARD PENETRATION TEST	SOIL DESCRIPTION		COMMENTS
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	TEST RESULTS 6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	119- 121	S-26	2.0		SANDY CLAY, (SC), low plasticity,		
-				(82)	greenish gray (5 GY 6/1) ~15% fine pelecypod shell fragments. Hard		
125-	124- 126	S-27	1.8	17-16-14-12 (30)	CLAYEY SAND, (SC), low plasticity, greenish gray (5 GY 6/1) ~20% fine-coarse		-
-	120		<u>                                     </u>		pelecypod white shells and fragments.		
-					Trace-little (15%) cemented sand and shell.  Very stiff  -		-
130-	129- 131	S-28	2.0	12-15-20-30 (35)	As Above -		_
1					_ -		- -
135-	134- 136	S-29	2.0	7-9-26- 50/5" (35)	As Above		
- -				·			
140-	139- 141	S-30	2.0	(67)	SANDY CLAY (SC), low plasticity, greenish gray (5 GY 6/1) ~15% fine pelecypod shell fragments, hard, some cemented sand		
-					layers (thin)		
145-	144- 146	S-31	2.0	32-15-12-21   (27)	CLAYEY SAND & SANDSTONE, (SC-SS), low plasticity, very light gray (N8) moderate-very friable sandstone ~10% shell fragments in matrix. Trace-little		
4				(	(~15%) black phosphorite. Very stiff		Boring cemented with
	149- 151	S-32	2.0	9-17-40-42 (57)	SANDY CLAY, (SC), low-mod. plasticity, very light gray (N8), ~10% shell fragments. END OF BORING	<i>999</i> ) 1	neat cement to ground surface.



Indiantown Cogeneration Facility

PROJECT NUMBER	BORING	NUMBER
CEESOCIO AO	TD	•

TB-6

SHEET 1 OF 2

Pumping Test Location, Indiantown, FL

## SOIL BORING LOG

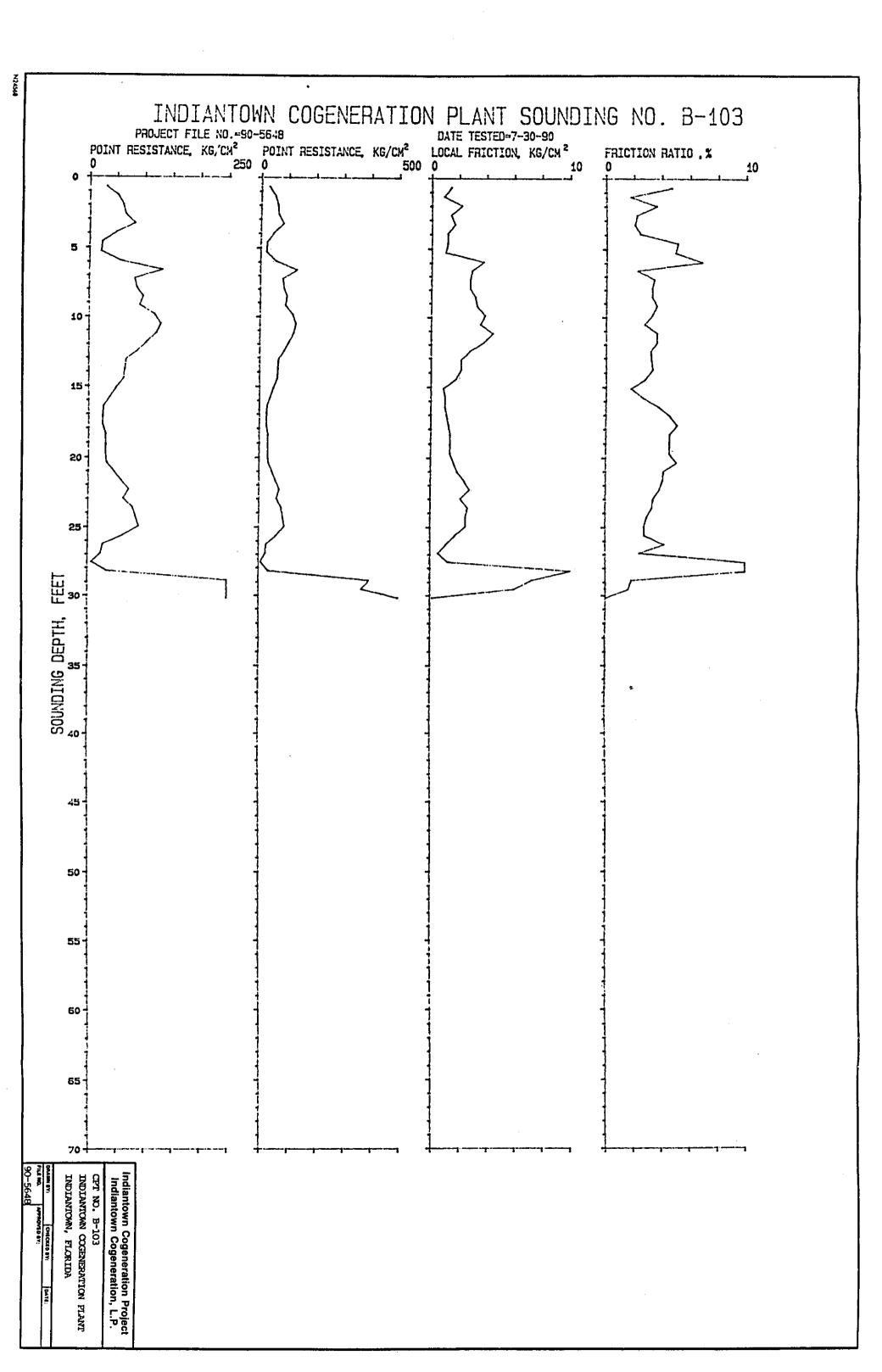
LOCATION \_

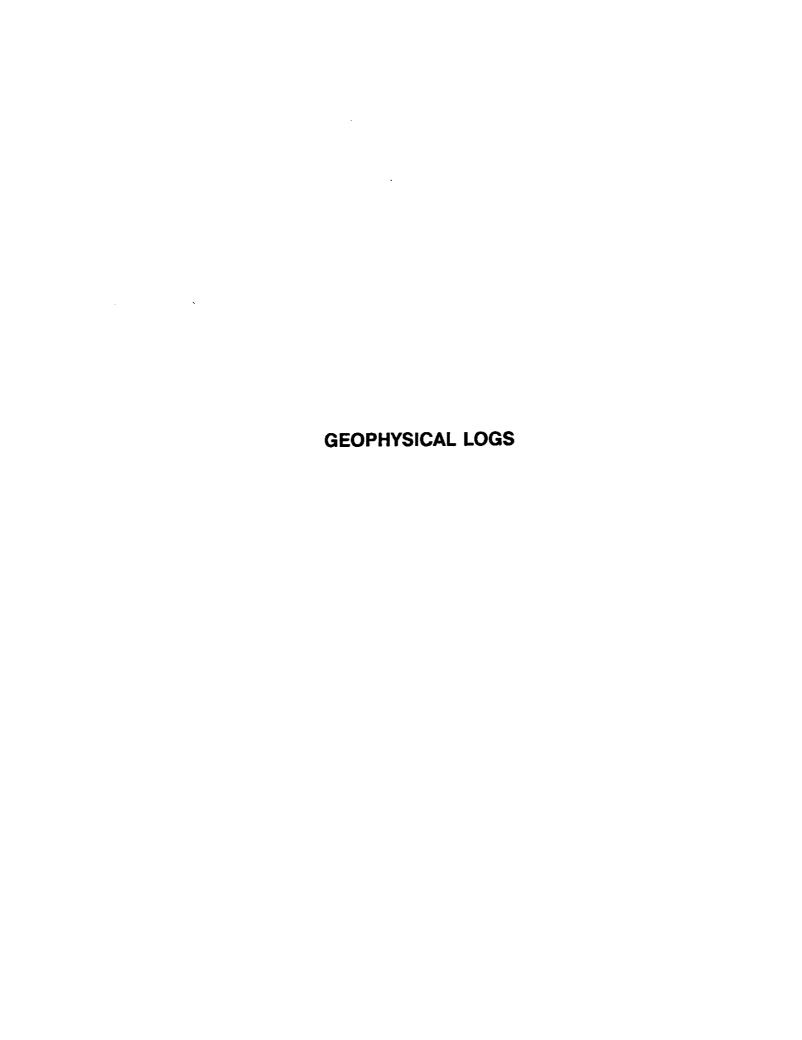
PROJEC	т			ogeneration		CATION _			Test Location			_
ELEVATION	DN	~32	ft NG		DRILLING CONTRACTOR Ardan		<u>d Assi</u>	ociate	s, West Pain	n Beach, FL	<del>-</del> .	_
DRILLING	METHO	DD AND	EQUIPM	V = 7.04  ft  8	45 Rotary Rig with Split Spooning /13/90 START 09:45 8/2/90 F	INISH _1	2:00	8/3/9	0 LOGGER	P. Kwiatko	owski	_
				STANDARD		-INISH	1	0.0.0	<del>, , ,</del>			=
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION  SOIL NAME, COLOR, MOISTURE CON RELATIVE DENSITY OR CONSISTENC STRUCTURE, MINERALOGY, USCS GR SYMBOL	NTENT, CY, SOIL ROUP		SYMBOLIC	DEPTH DRILLI DRILLI TESTS	COMMENTS  OF CASING, NG PATE, NG FLUID LOS AND JMENTATION	ss.	
-							-		Drill with 4-1 bit from 0 to Vari-Flo® bi mud.	49' bls usin	ng	
50 <del>-</del> -	49-51	S-1	ND	28-33-46-60 (79)	SAND, (SP), very fine grained, we light olive gray (5 Y 6/1), subangusubrounded, quartz and ~25% ve black phosphorite, very dense	ular-	ed, ]				-	
55- -	54-56	S-2	ND	19-26-26-33 (52)	As Above, trace-little pelecypod s fragments	shell					- -	-
60-	59-61	S-3 S-4	1.6	16-30-45- 50/4" (75)	SHELLY SAND, (SW), very fine-organized, poorly sorted, quartz w/2 fine black phosphorite, pelecypod some gastropod shells.  SAND, (SP), very fine grained, we light olive gray (5 Y 6/1), very fine	20% ver d and ell sorte	-				-	1 1 1 1
65-	64-66	S-5	1.0	19-20-33-45 (53)	phosphorite (~20%). Trace shell, very dense.		, 1 1 1 1				- - -	
70-	69-71	S-6	2.0	4-3-4-7 (7)	SILTY CLAY, (CL), low plasticity, of greenish gray (5 GY 4/1), firm, training fragments						- - - -	
											<u>-</u>	



PROJECT NUMBER	BORING NUMBER				
SEF30619.A0	TB-6	SHEET	2	OF	2

PROJECT		Indiantown Cogeneration			
ELEVATION ~32 ft NGVD DRILLING CONTRACTOR Ardaman and Associates, West Palm Beach, FL					
DRILLING METHOD AND EQUIPMENT CME 45 Rotary Rig with Split Spooning					
WATER LEVEL AND DATE DTW = 7.04 ft 8/13/90 START 09:45 8/2/90 FINISH 12:00 8/3/90 LOGGER P. Kwiatkowski					
ow T	;	SAMPLE		STANDARD PENETRATION	SOIL DESCRIPTION COMMENTS
DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	TEST RESULTS 67-67-67 (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL  DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	74-76	S-1	2.0	4-5-5-7 (10)	CLAYEY SHELLY SILT, (ML),
					low-moderate plasticity, very fine grained, greenish gray (5 GY 6/1). ~30% shell fragments (pelecypods, trace gastropods), firm
80-	79-81	S-8	ND	9-13-22-35 (35)	SAND, (SP), fine-medium grained, moderately sorted, light olive gray (5 Y 6/1), trace silt, trace shell fragments, dense
- - 86-	84-86	S-9	1.8	6-6-7-22 (13)	SILTY SAND, (SM), very fine grained, moderate-well sorted, greenish gray (5 GY 6/1), ~20% very fine grained black phosphorite, predominantly quartz, ~10%
90- - -	89-91	S-10	1.6	15-19-23-19 (42)	SHELLY SAND, (SW), very fine grained w/coarse shell fragments (25%), poorly-moderately sorted, greenish gray (5 GY 6/1) sand predominantly quartz with ~15-20% very fine grained black phosphorite
- 95- - -	94-96	S-11	ND	11-13-20-18 (33)	As Above, more shell (~40%)
- 100- - -	99- 101	S-12	1.6	20-22-20-20 (42)	As Above









## POW-1 0043-0031

COMPANY : BECHTEL SEF30619.A0

WELL : POW-1 0043-0031 OTHER SERVICES: GAMMA

LOCATION/FIELD : INDIANTOWN

LSN ELEC

COUNTY : MARTIN

CALIPER

STATE : FL

SECTION

: 34 TOWNSHIP : 398

: 1

: МЦЪ

: NA

RANGE : 38E

DATE : 07/31/90 PERMANENT DATUM : GL

ELEVATIONS

DEPTH DRILLER : 150 ELEV. PERM. DATUM: 32'

кв :

LOG BOTTOM

: 149.50 LOG MEASURED FROM: GL : 2.00 DRL MEASURED FROM: GL

DF :

LOG TOP

GL : 32'

CASING DRILLER : NA

REMARKS

LOGGING UNIT FIELD OFFICE : DFB

CASING TYPE : CASING THICKNESS: NA

RECORDED BY

: C. DIGIACOMO

BIT SIZE

: 4.5 MAGNETIC DECL. : NA

BOREHOLE FLUID

FILE : ORIGINAL

TYPE : 9040A

MATRIX DENSITY : NA FLUID DENSITY : NA RM TEMPERATURE : NA

LOG : 3

PLOT: REPORT ?

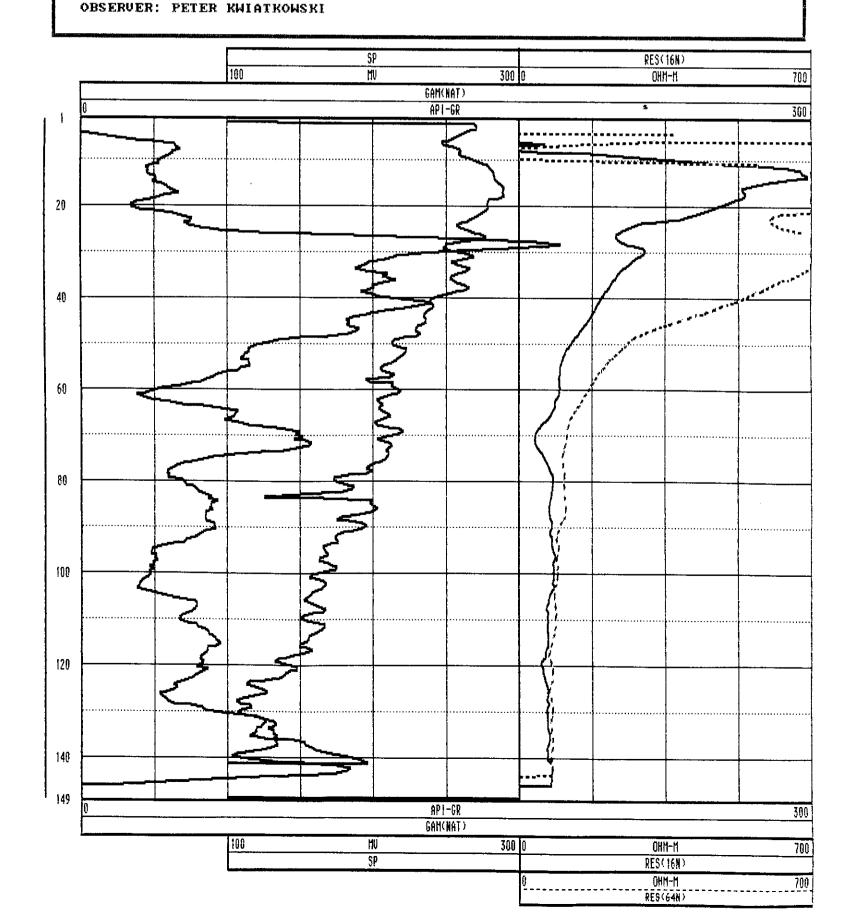
NEUTRON MATRIX : SANDSTONE FLUID DELTA T : NA

MATRIX DELTA T

: NA

THRESH: 30000

LOG PERFORMED ON A STATIC WELL



# **CALIPER**



## MW-1 0043-0034

: BECHTEL SEF30619.A0 COMPANY

OTHER SERVICES:

: MW-1 0043-0034

GAMMA

LOCATION/FIELD : INDIANTOWN

SING PT

COUNTY

: MARTIN

STATE

: FL

SECTION

: 34

TOWNSHIP : 39S

: 1

: NA

RANGE : 38E

DATE : 08/15/90 DEPTH DRILLER

: 150

PERMANENT DATUM : GL ELEV. PERM. DATUM: 32'

**ELEUATIONS** KB :

LOG BOTTOM

: 147.50

LOG MEASURED FROM: GL

 $\mathbf{DF}$ 

LOG TOP

1.50

DRL MEASURED FROM: GL

GL: 32'

CASING DRILLER : NA

LOGGING UNIT FIELD OFFICE : DFB

CASING TYPE : NA CASING THICKNESS: NA

RECORDED BY

: C. DIGIACOMO

BIT SIZE

: 3.87

BOREHOLE FLUID

: MUD : NA

FILE : ORIGINAL TYPE : CCAL3

MAGNETIC DECL. MATRIX DENSITY : NA

: NA

RM TEMPERATURE

LOG

: 4 PLOT: REPORT 6

FLUID DENSITY

: NA

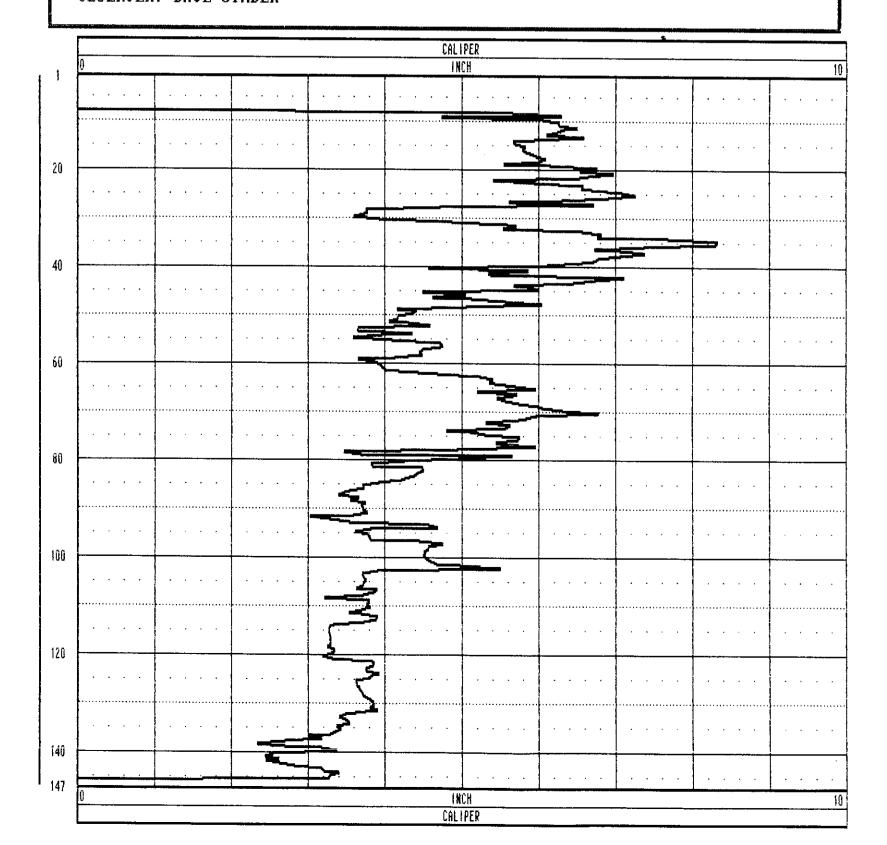
MATRIX DELTA T : NA MEUTRON MATRIX : SANDSTONE FLUID DELTA T : NA

THRESH: 30000

REMARKS

LOG PERFORMED ON A STATIC WELL

OBSERVER: DAVE SYNDER



# SINGLE POINT GAMMA



## MW-1 0043-0034

COMPANY : BECHTEL SEF30619.A0 WELL

OTHER SERVICES: CALIPER

: MW-1 0043-0034

LOCATION/FIELD : INDIANTOWN COUNTY : MARTIN

STATE : FL

SECTION : 34 TOWNSHIP : 398 RANGE : 38E

: 08/15/90 PERMANENT DATUM : GL DATE **ELEVATIONS** DEPTH DRILLER : 150 ELEV. PERM. DATUM: 32' KB : LOG BOTTOM : 150.00 LOG MEASURED FROM: GL  $\mathbf{DF}$ LOG TOP : 1.50 DRL MEASURED FROM: GL GL : 32'

CASING DRILLER : NA LOGGING UNIT : 1 CASING TYPE : NA

FIELD OFFICE : DFB
RECORDED BY : C. DIGIACOMO CASING THICKNESS: NA

BIT SIZE : 3.87 BOREHOLE FLUID : MUD FILE : PROCESSED MAGNETIC DECL. : NA RM

: NA TYPE : 9040A RM TEMPERATURE : NA MATRIX DENSITY : NA

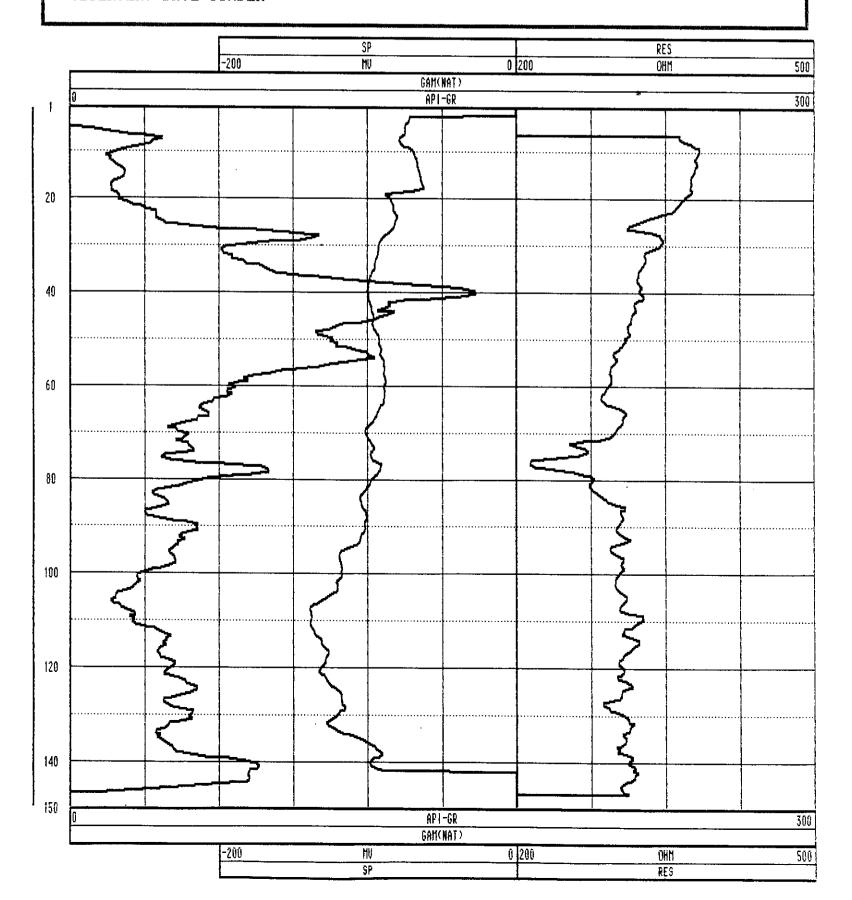
LOG : 7 FLUID DENSITY : NA MATRIX DELTA T : NA

PLOT : REPORT 8 NEUTRON MATRIX : SANDSTONE FLUID DELTA T : NA THRESH: 30000

REMARKS

LOG PERFORMED ON A STATIC WELL

OBSERVER: DAVE SYNDER



# **CALIPER**



# MW-2 0043-0033

COMPANY : BECHTEL SEF30619.A0 OTHER SERVICES:

WELL : MW-2 0043-0033 GAMMA LOCATION/FIELD : INDIANTOWN SING PT

COUNTY : MARTIN

STATE : FL

SECTION : 34 TOWNSHIP : 39S RANGE : 38E

DATE : 08/10/90 PERMANENT DATUM : GL ELEVATIONS
DEPTH DRILLER : 150 ELEV. PERM. DATUM: 32' KB :
LOG BOTTOM : 149.00 LOG MEASURED FROM: GL DF :
LOG TOP : 1.50 DRL MEASURED FROM: GL GL : 32'

CASING DRILLER : NA LOGGING UNIT : 1

CASING TYPE : MA FIELD OFFICE : DFB

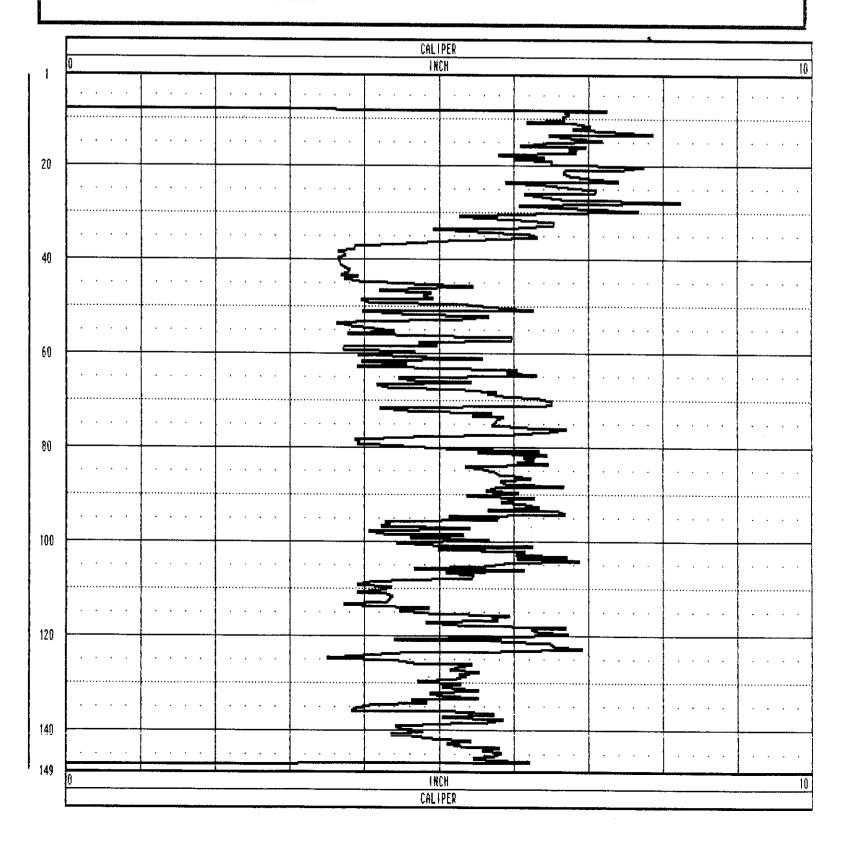
CASING THICKNESS: NA RECORDED BY : C. DIGIACOMO

BIT SIZE : 4.5 BOREHOLE FLUID : MUD FILE : ORIGINAL MAGNETIC DECL. : NA RM : NA TYPE : CCAL3

MATRIX DENSITY : NA RM TEMPERATURE : NA LOG : 0
FLUID DENSITY : NA MATRIX DELTA T : NA PLOT : REPORT

FLUID DENSITY: NA MATRIX DELTA T: NA PLOT: REPORT 6
NEUTRON MATRIX: SANDSTONE FLUID DELTA T: NA THRESH: 30000

REMARKS



# SINGLE POINT GAMMA

GL : 32'



MW-2 0043-0033

COMPANY : BECHTEL SEF30619.A0 OTHER SERVICES:

WELL : MW-2 0043-0033 CALIPER

LOCATION/FIELD : INDIANTOWN COUNTY : MARTIN

STATE : FL

TOWNSHIP : 398 SECTION : 34 RANGE : 38E

DATE : 08/10/90 PERMANENT DATUM : GL ELEVATIONS DEPTH DRILLER : 150 ELEV. PERM. DATUM: 32' KB LOG BOTTOM : 149.50 LOG MEASURED FROM: GL  $\mathbf{DF}$ LOG TOP : 1.50 DRL MEASURED FROM: GL

CASING DRILLER : NA LOGGING UNIT : 1 CASING TYPE : NA

FIELD OFFICE : DFB

CASING THICKNESS: NA RECORDED BY : C. DIGIACOMO

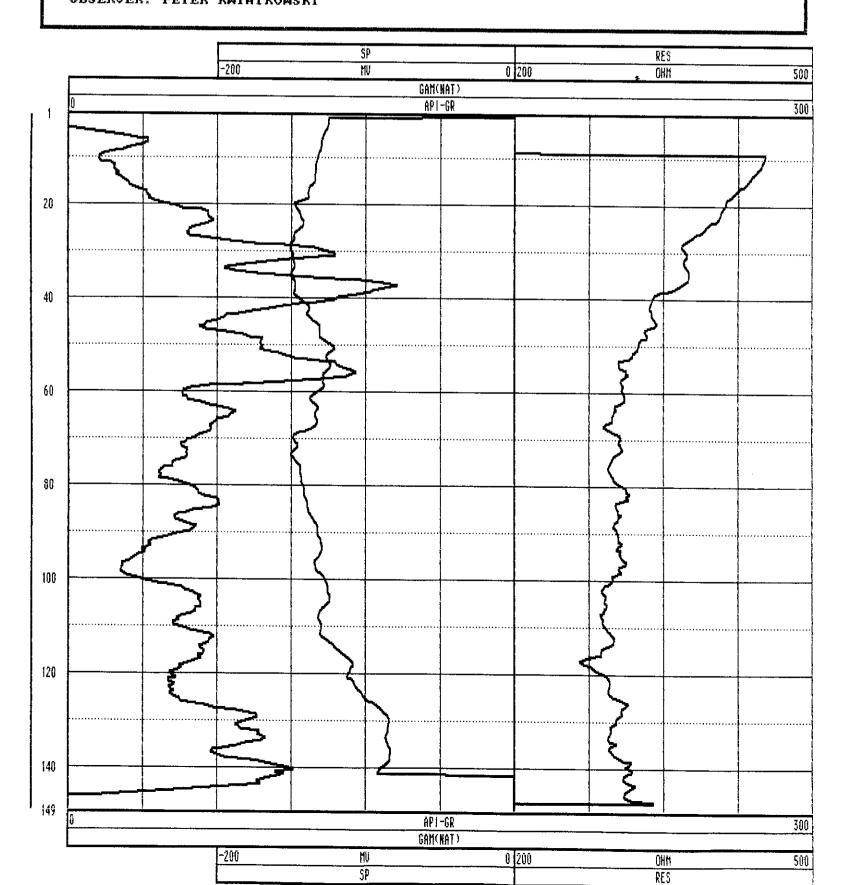
BIT SIZE : 4.5 BOREHOLE FLUID : MUD FILE : PROCESSED

MAGNETIC DECL. : NA TYPE : 9040A : NA

MATRIX DENSITY : NA RM TEMPERATURE LOG : 3 : NA FLUID DENSITY : NA

MATRIX DELTA T : NA PLOT: REPORT 8 NEUTRON MATRIX : SANDSTONE FLUID DELTA T : NA THRESH: 30000

REMARKS



# **CALIPER**



## MW-3 0043-0032

COMPANY

: BECHTEL SEF30619.A0

OTHER SERVICES:

WELL

: MW-3 0043-0032

GAMMA

LOCATION/FIELD : INDIANTOWN

SING PT

COUNTY

: MARTIN

STATE

: FL

SECTION

: 35

TOWNSHIP : 398

RANGE : 38E

DATE : 08/08/90 DEPTH DRILLER : 150

PERMANENT DATUM : GL ELEV. PERM. DATUM: 32'

ELEVATIONS КB ;

LOG BOTTOM

: 149.00 LOG MEASURED FROM: GL

 $\mathbf{DF}$ 

LOG TOP

: ~1.00

DRL MEASURED FROM: GL

GL : 32'

LOG : 4

THRESH: 30000

CASING DRILLER : NA

LOGGING UNIT FIELD OFFICE

CASING TYPE CASING THICKNESS: NA

: NA

RECORDED BY

: C. DIGIACOMO

BIT SIZE MAGNETIC DECL. : NA

: 4.5

BOREHOLE FLHID RM

: MUD : NA

FILE : ORIGINAL TYPE : CCAL3

MATRIX DENSITY : NA

FLUID DENSITY : 1

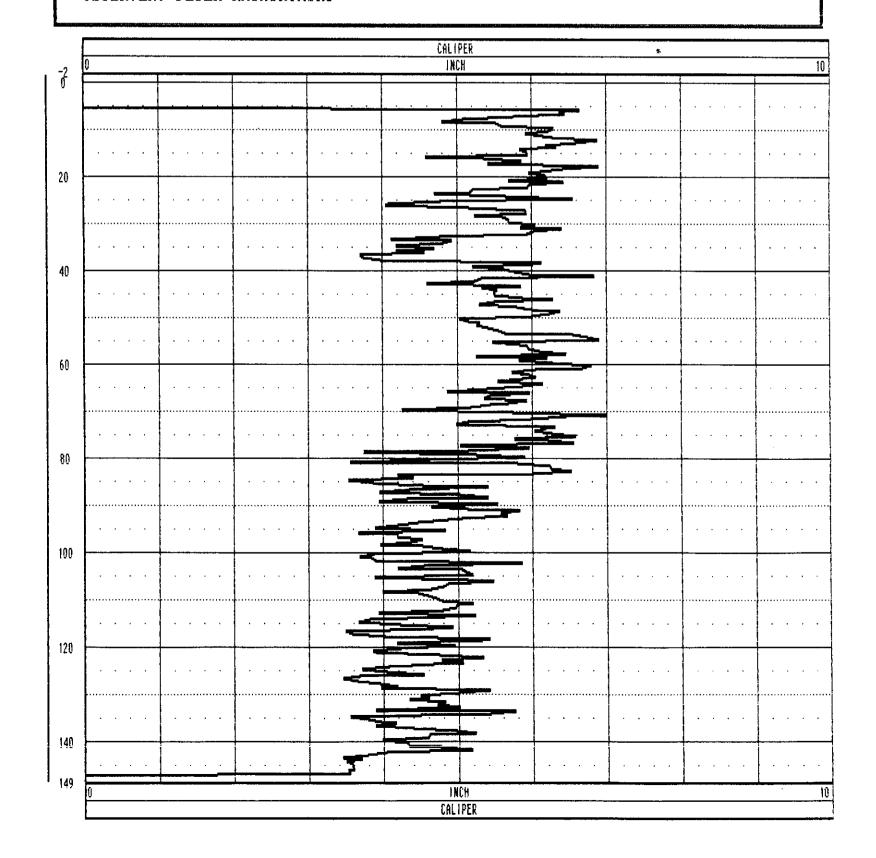
RM TEMPERATURE : NA MATRIX DELTA T : NA

: 1

: DFB

PLOT : REPORT 6

NEUTRON MATRIX : SANDSTONE FLUID DELTA T : NA REMARKS





# SINGLE POINT GAMMA

## MW-3 0043-0032

COMPANY

: BECHTEL SEF30619.A0

OTHER SERVICES:

WELL

: MW-3 0043-0032

CALIPER

LOCATION/FIELD : INDIANTOWN

COUNTY

: MARTIN

STATE

: FL

SECTION

: 35

DATE

: 08/08/90 PERMANENT DATUM : GL

TOWNSHIP : 398

: 1

: NA

RANGE : 38E

DEPTH DRILLER : 150

ELEU. PERM. DATUM: 32'

ELEVATIONS KB :

LOG BOTTOM

: 149.50

LOG MEASURED FROM: GL : 0.50 DRL MEASURED FROM: GL DF

LOG TOP

LOGGING UNIT

GL : 32'

CASING DRILLER : NA CASING TYPE : NA

CASING THICKNESS: NA

FIELD OFFICE RECORDED BY

: DFB : C. DIGIACOMO

BIT SIZE

: 4.5

BOREHOLE FLUID : MUD RM

TYPE : 9040A

FILE : PROCESSED

MAGNETIC DECL. : NA MATRIX DENSITY : NA

FLUID DENSITY : NA

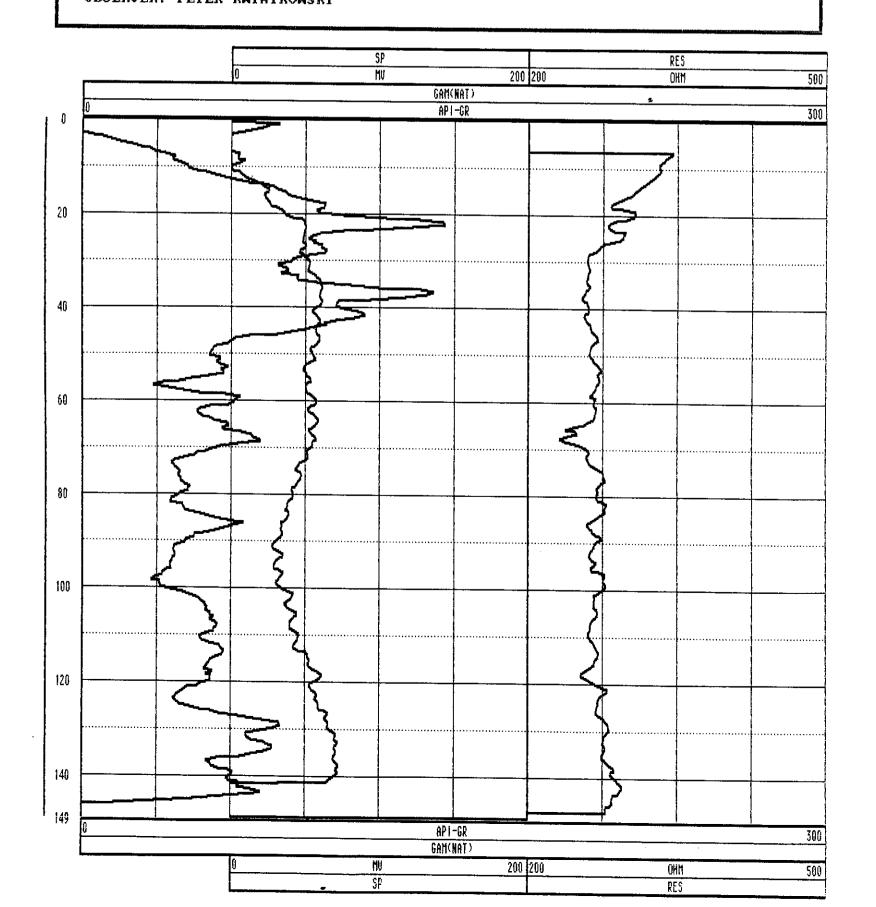
RM TEMPERATURE : NA MATRIX DELTA T : NA LOG : 7

PLOT : REPORT 8

REMARKS

NEUTRON MATRIX : SANDSTONE FLUID DELTA T : NA

THRESH: 30000



# **CALIPER**



# MW-4 0043-0030

COMPANY

: BECHTEL SEF30619.A0

OTHER SERVICES:

HELL

: MW-4 0043-0030

GAMMA

SECTION

LOCATION/FIELD : INDIANTOWN

LSN ELEC

COUNTY

: MARTIN

STATE

: FL

: 35

TOWNSHIP

: 398

RANGE: 38E

DATE

**ELEVATIONS** 

DEPTH DRILLER

: 07/27/90 PERMANENT DATUM : GL : 150

ELEV. PERM. DATUM: 32'

КB

LOG BOTTOM LOG TOP

: 149.50 LOG MEASURED FROM: GL 0.50 DRL MEASURED FROM: GL

 $\mathbf{DF}$ GL

: 32

CASING DRILLER : NA

LOGGING UNIT FIELD OFFICE

: DFB

CASING TYPE : CASING THICKNESS: NA

RECORDED BY

: C. DIGIACOMO

BIT SIZE

: 4.5

BOREHOLE FLUID

: MUD : NA

FILE : ORIGINAL

MATRIX DENSITY : NA

MAGNETIC DECL. : NA

RM RM TEMPERATURE

TYPE : CCAL3 LOG

: 1

FLUID DENSITY

: NA

MATRIX DELTA T NEUTRON MATRIX : SANDSTONE FLUID DELTA T : NA

: NA

: NA

FLOT: REPORT 6 THRESH: 30000

REMARKS

149

LOG PERFORMED ON A STATIC WELL **OBSERVER: PETER KWIATKOWSKI** 

CALIPER INCH 0 20 40 60 100 120 140

> INCH CALIPER



# LSN ELECTRIC GAMMA

## MW-4 0043-0030

COMPANY : BECHTEL SEF30619.A0 OTHER SERVICES:

: MW-4 0043-0030 CALIPER

LOCATION/FIELD : INDIANTOWN

COUNTY : MARTIN STATE

: FL

SECTION : 35 TOWNSHIP : 398 RANGE : 38E

PERMANENT DATUM : GL DATE : 07/27/90 ELEVATIONS DEPTH DRILLER : 150 N ELEU. PERM. DATUM: 32' кв : LOG BOTTOM : 149.50 LOG MEASURED FROM: GL DF : LOG TOP 1.50 DRL MEASURED FROM: GL GT : 35,

CASING DRILLER : NA LOGGING UNIT : 1

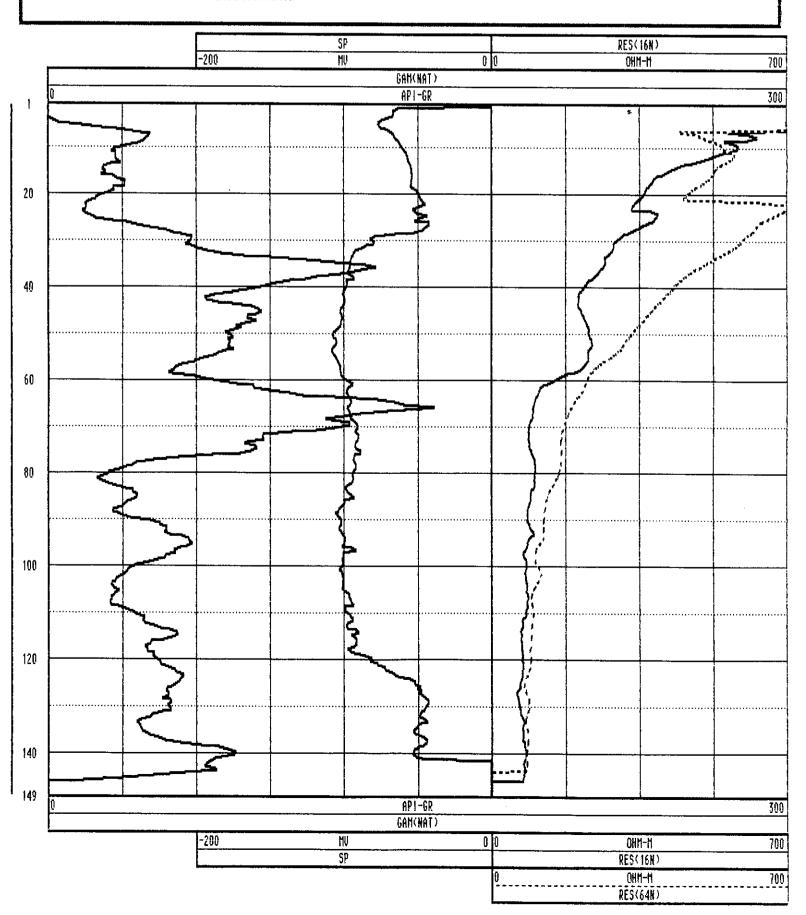
CASING TYPE FIELD OFFICE : DFB

CASING THICKNESS: NA RECORDED BY : C. DIGIACOMO

BIT SIZE : 4.5 BOREHOLE FLUID : MUD FILE : ORIGINAL MAGNETIC DECL. : NA RM : NA TYPE : 9040A MATRIX DENSITY : NA RM TEMPERATURE : NA LOG : Ø FLUID DENSITY : NA MATRIX DELTA T : NA PLOT : REPORT 7

NEUTRON MATRIX : SANDSTONE FLUID DELTA T : NA THRESH: 30000

REMARKS



## CALIPER



## POW-1 0043-0031

: BECHTEL SEF30619.A0 COMPANY

OTHER SERVICES:

WELL LOCATION/FIELD : INDIANTOWN

: POW-1 0043-0031

GAMMA LSM ELEC

COUNTY

: MARTIN

CALIPER

STATE SECTION

: 34

FL

TOWNSHIP : 39S

RANGE : 38E

DATE DEPTH DRILLER : 150

: 07/31/90 PERMANENT DATUM : GL ELEV. PERM. DATUM: 32'

**ELEVATIONS** кв :

LOG BOTTOM

: 149.00 LOG MEASURED FROM: GL

 $\mathbf{DF}$ 

LOG TOP

1.00 DRL MEASURED FROM: GL

GL : 32'

CASING DRILLER : NA

LOGGING UNIT FIELD OFFICE

: 1 : DFB

CASING TYPE : CASING THICKNESS: NA

RECORDED BY

: C. DIGIACOMO

BIT SIZE : 4.5

BOREHOLE FLUID

: MUD : NA

FILE : ORIGINAL

THRESH: 30000

MAGNETIC DECL. : NA

RM TEMPERATURE : NA

TYPE : CCAL3

MATRIX DENSITY : NA FLUID DENSITY : NA

MATRIX DELTA T : NA

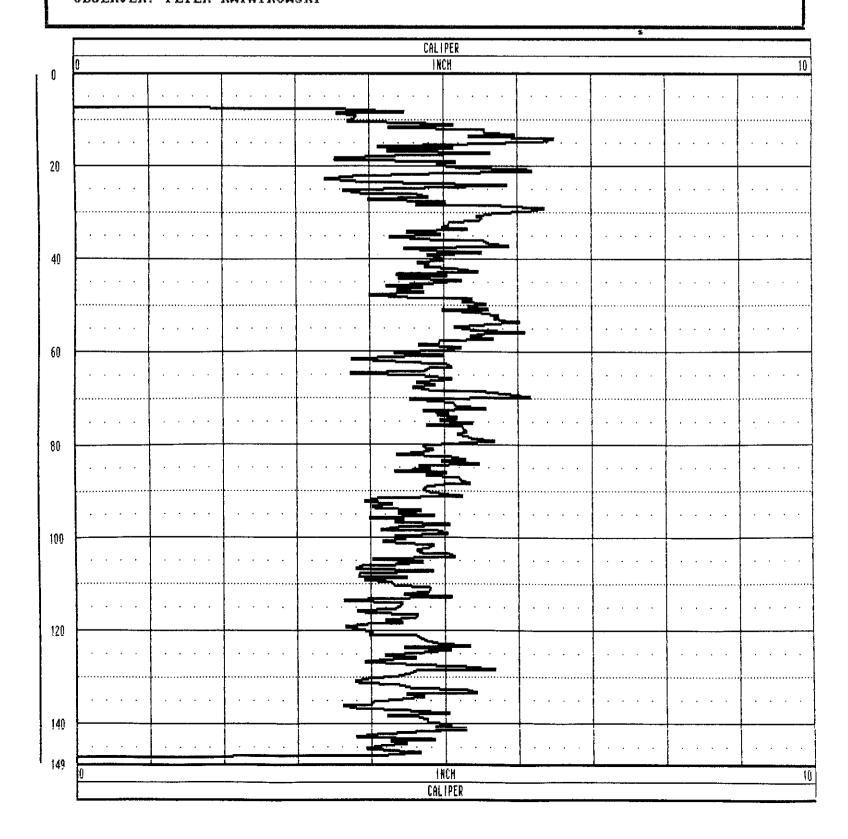
LOG : 2

PLOT : REPORT 6

NEUTRON MATRIX : SANDSTONE FLUID DELTA T : NA

REMARKS LOG ON A STATIC WELL

**OBSERUER: PETER KWIATKOWSKI** 

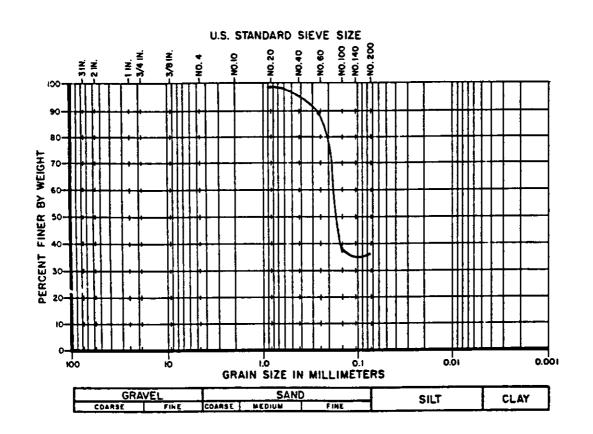




## SHELBY TUBE TEST RESULTS

Boring No.	Depth (ft)	Sample Description	-200 	M.C.	LL 	PL 	<u>PI</u>	D.D. (pcf)	k (cm/sec)
MW-2	26.0 - 28.0	Dark gray fine sand with silt	12.0	22.3	-	-	-	97.4	1.9x10 <sup>-6</sup>
MW-3	71.0 - 73.5	Gray fine sand with silt and shell	14.4	21.1	-	-	<b>-</b> .	101.8	4.5x10 <sup>-6</sup>
MW-4	36.0 - 38.5	Dark gray fine sand	3.0	21.1	-	-	-	105.5	1.0x10 <sup>-3</sup>
MW-4	96.0 - 98.5	Gray fine sand with silt and shell	10.6	23.2	-	-	-	105.9	8.0x10 <sup>-6</sup>
MW-4	134.0- 136.0	Greenish gray silty fine sand with shell and cemented sand	19.4	28.3	19.7	19.2	1 .	79.4	9.6×10 <sup>-5</sup>
POW-1	26.0 - 29.0	Dark gray fine sand with traces of clayey fine sand		24.2	-	- '	-	95.2	6.8x10 <sup>-4</sup>
POW-1	71.0 - 74.0	Gray clay with traces of shell	93.7	41.1	74.7	23.3	51	82.1	1.7×10 <sup>-8</sup>





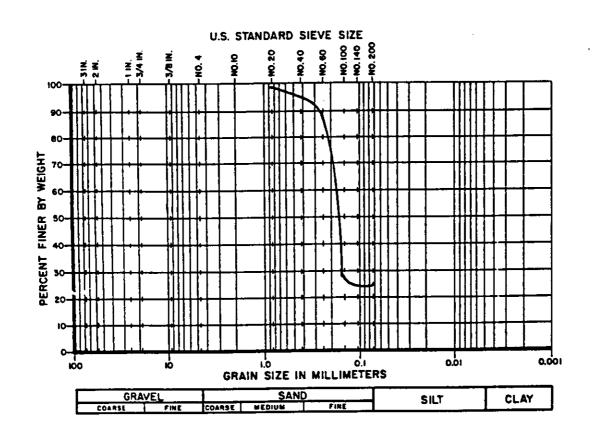
TEST HOLE NO	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-1	8	10.5-12.0 ft.		Brown fine sand	SP
	<u>'</u>				<del> </del> -



Ardaman & Associates, Inc.
Consulting Engineers in Soil Mechanics,
Foundations, and Material Testing

INDIANTOWN COGENERATION PLANT INDIANTOWN, FLORIDA

DRAWN BY: CHECKED BY: DATE:
FILE NO. APPROVED BY:
90-5648



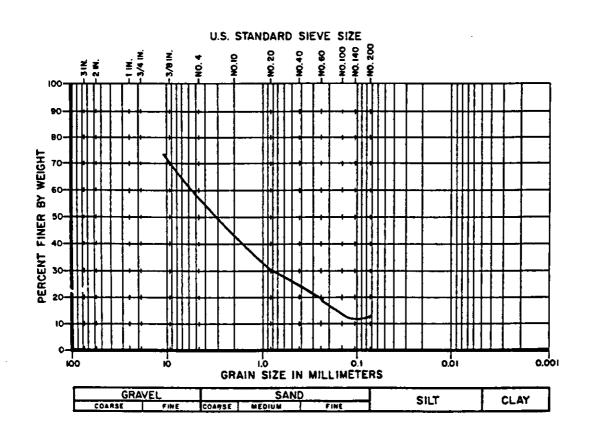
TEST HOLE NO	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION		UNIFIED CLASS.
MW-1	11	19.0-20.5 ft.		Brown silty fine sand		SM
	<del>                                     </del>				·	

## GRAIN SIZE DISTRIBUTION Ardaman & Associates, Inc.

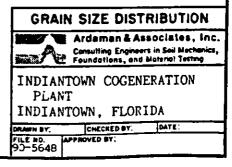


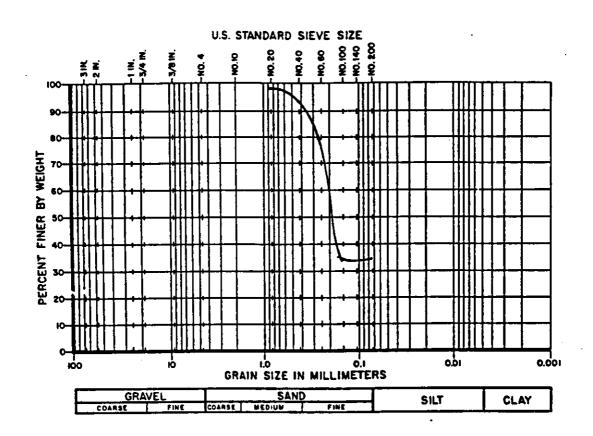
Consulting Engineers in Soil Mechanics, Foundations, and Material Testing

DRAWN BY.	CHECKED BY:	DATE:	
FILE NO.	APPROVED BY:		
90-5648			



TEST HOLE NO.	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-1	15	89.0-40.5 ft.		Gray fine sand with silt, shell, and	
	1		ļ	cemented sand and phosphate	SP-SM
	<del> </del>				
			<del> </del>		
			1		



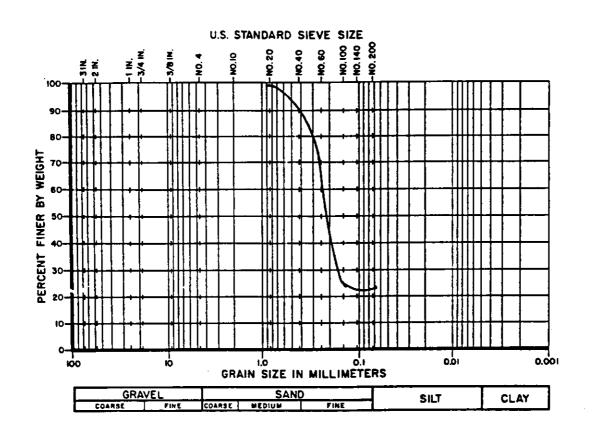


TEST HOLE NO	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
NW-1	17	49.0-50.5 ft.		Grayish brown silty fine sand with shell and	<u> </u>
				phosphate	SM
					<u> </u>
			<u> </u>	<u> </u>	<u> </u>



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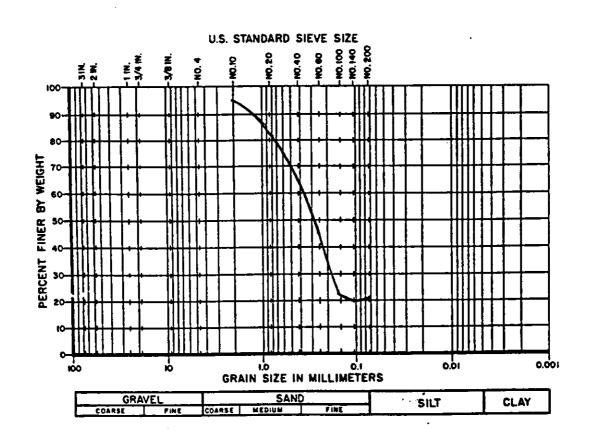
TEST HOLE NO.	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-1	22	74.0-75.5 ft.		Gray silty fine sand with shell	SM



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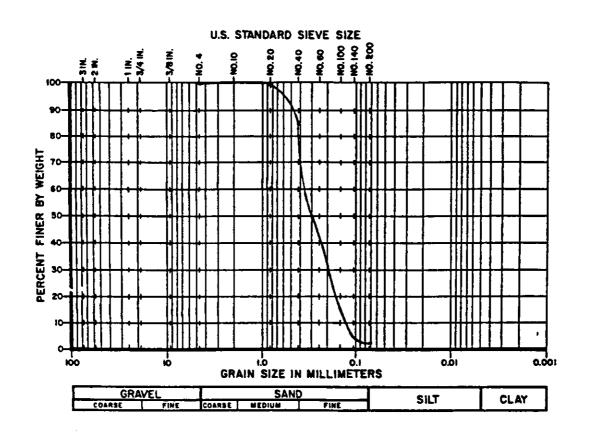


TEST HOLE NO	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-1		79.0-80.5 ft.		Greenish brown silty fine sand with shell	SM
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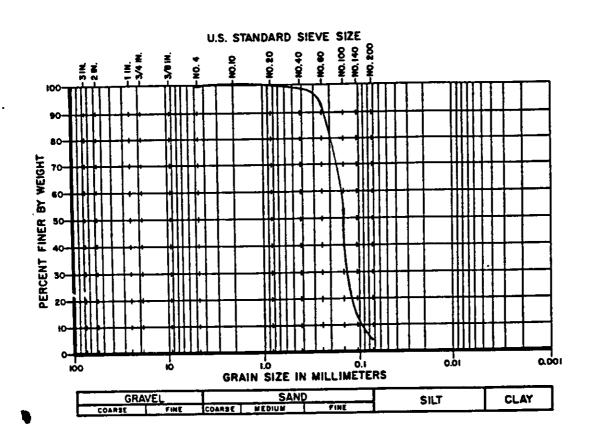


TEST HOLE NO	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-2	8	9.5-10.5 ft.		Dark orangish brown fine sand	SP
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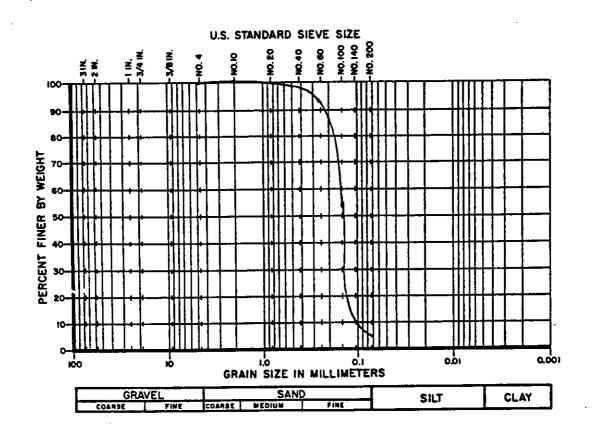


TEST	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-2	12	19.0-20.5 ft.		Brown fine sand	SP
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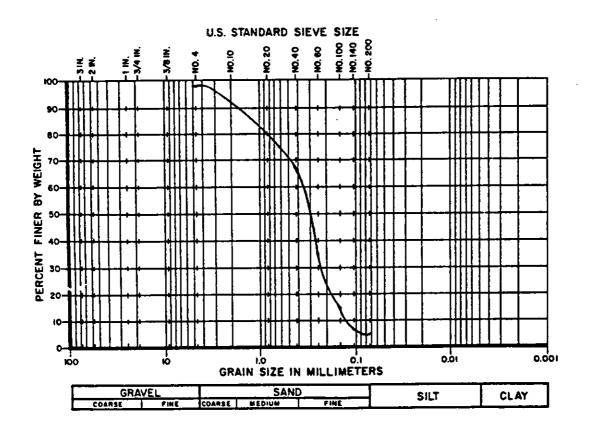
TEST HOLE NO	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-2	T	39.0-40.5 ft.		Gray fine sand with phosphate	SP
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TEST HOLE NO.	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-2	21	64.0-65.5 ft.		Gravish brown fine sand with silt, shell, and phosphate	SP-SM
	1				

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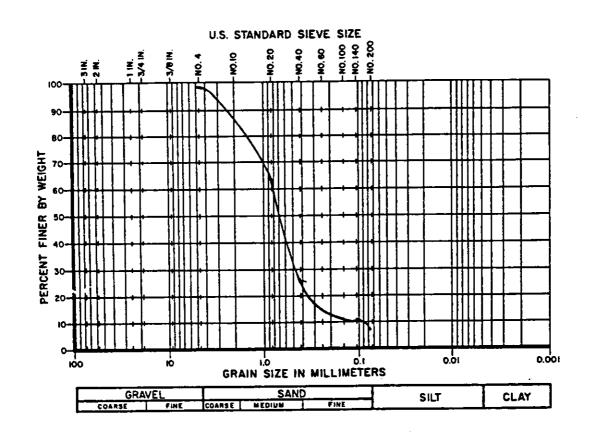
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TEST HOLE NO.	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-2		74.0-75.5		Grayish brown fine sand with silt, shell, and phosphate	SP-SM_
			<u> </u>		

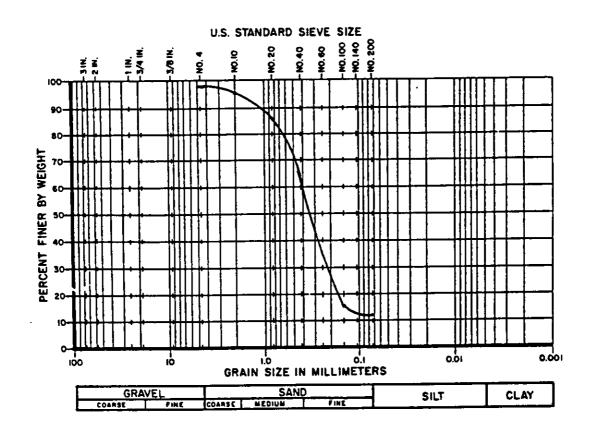
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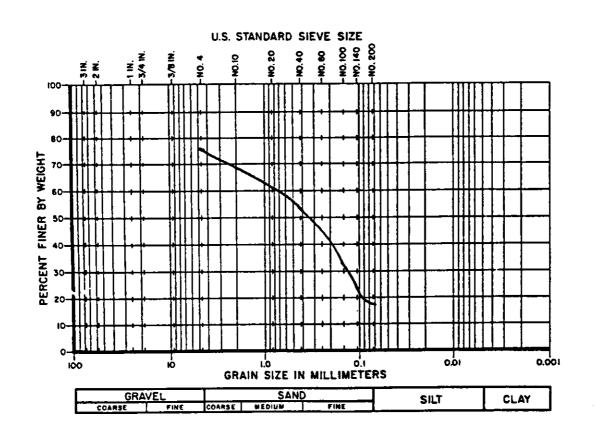
TEST HOLE NO.	SAMPLE	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-2	26	89.0-90.5 ft.		Gravish brown fine sand with silt, shell,	SP-SM
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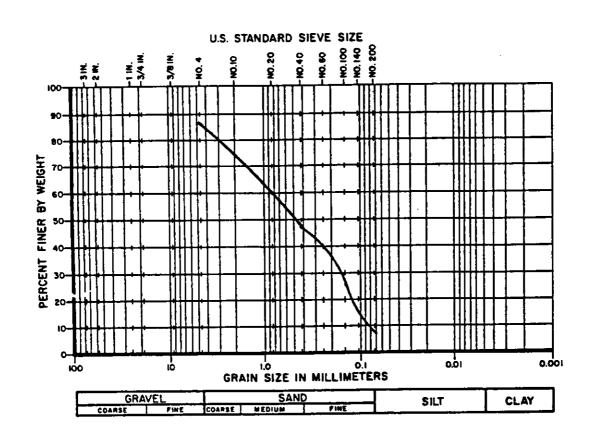
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TEST HOLE NO.	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-2	29	104.0-105.5ft		Gray silty fine sand with shell and phosphate	SP-SM
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TEST HOLE NO	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-2	31	114.0-115.5ft		Greenish gray fine sand with silt, shell, and phosphate	SP-SM

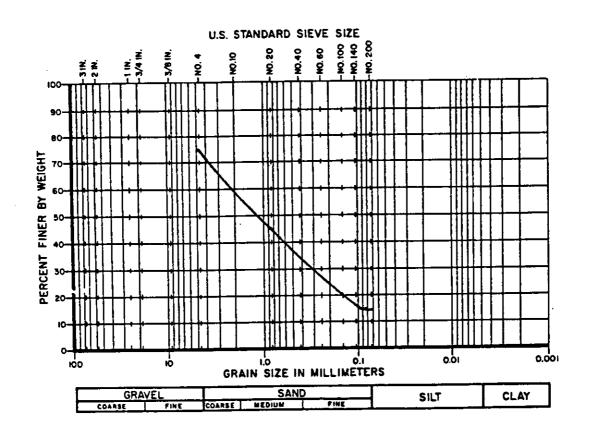


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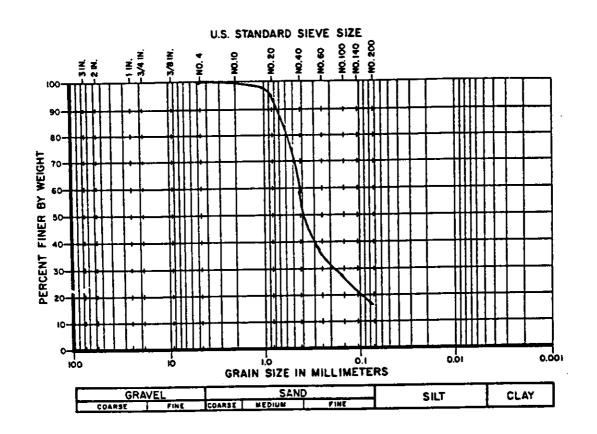
TEST HOLE NO	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-2	+	139.0-140.5		Grayish brown silty fine sand with cemented sand, shell and phosphate	SP-SM
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FILE NO. 90-5648		



TEST HOLE NO.	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-3	7	10.0-12.0 ft.		Brown silty fine sand	SM_
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			<u> </u>		

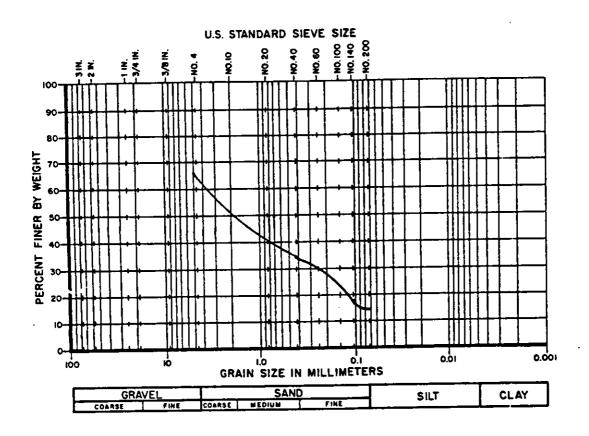


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INDIANTOWN, FLORIDA

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TEST	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-3		24.0-26.0 ft.		Gray silty broken shell with cemented sand and shell	SM
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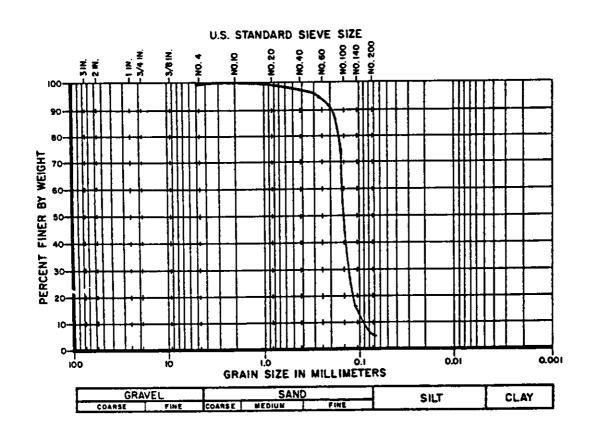


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TEST HOLE NO	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-3	13	34.0-36.0 ft.		Gray fine sand with silt	SP-SM
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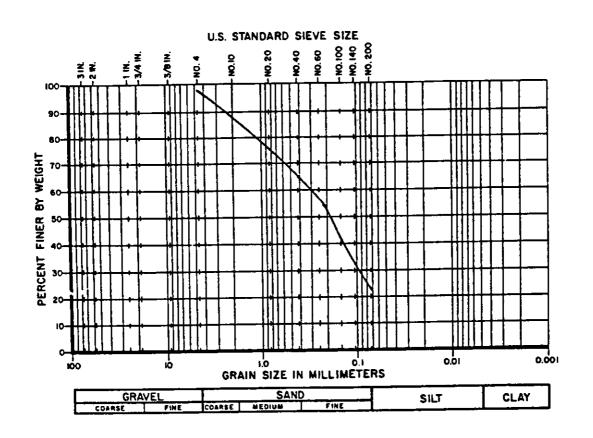


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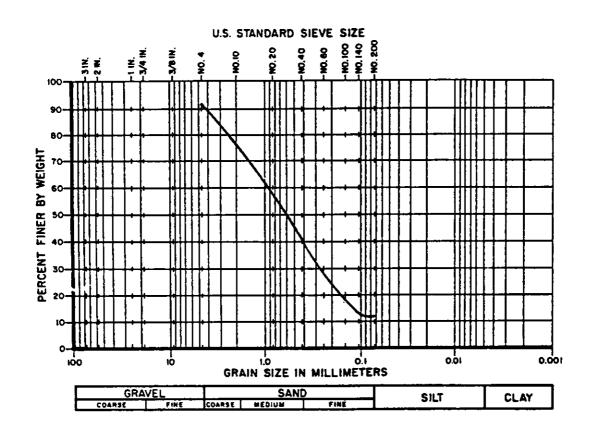
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TEST HOLE NO.	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-3		69.0-71.0		Gray silty fine sand withshell	SM
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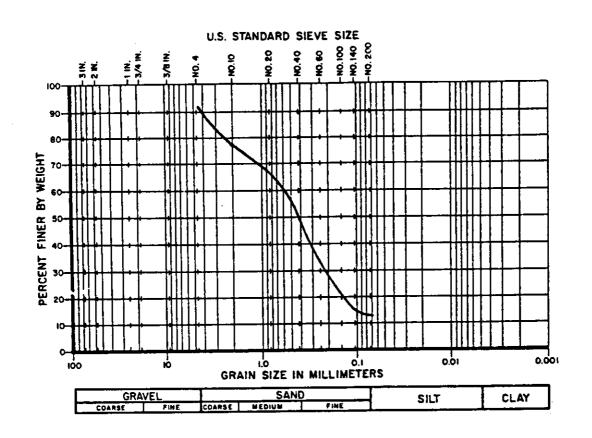
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TEST HOLE NO.	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-3	23	84.0-86.0 ft.		Gray fine sand with silt and shell	
				fragments	SP-SM
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TEST HOLE NO.	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-3		99.0-101.0 ft.		Gray fine sand with silt and shell	
				fragments	SP-SM
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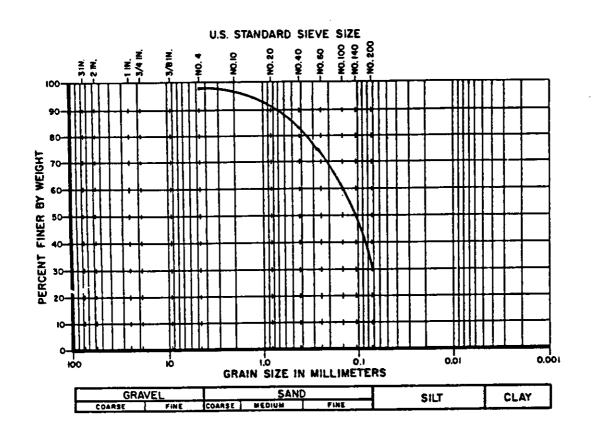


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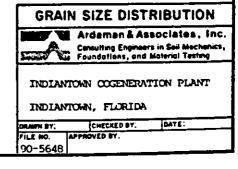
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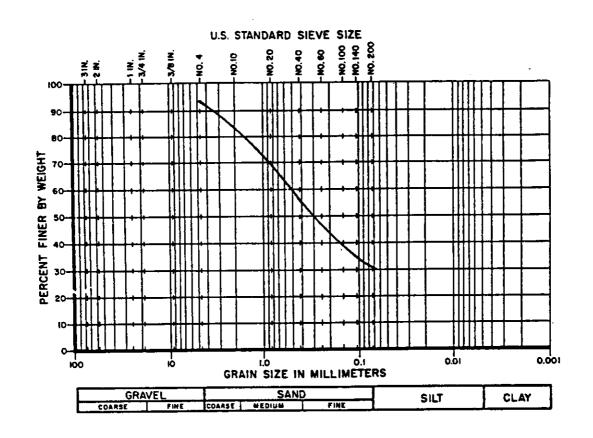
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TEST HOLE NO	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-3		109.0-111.0 ft.		Greenish gray silty fine sand with shell	SM
	<u>.                                    </u>		<del></del>		
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TEST HOLE NO	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-3	30	119.0-121.0 ft		Greenish gray silty fine sand with shell	
				fragments	SM
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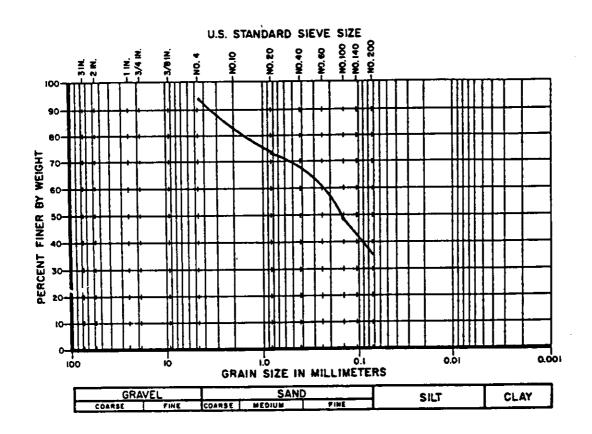


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TEST HOLE NO	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-3		134.0-136.0 ft.		Greenish gray silty fine sand with shell	
	ļ			and cemented sand	SM
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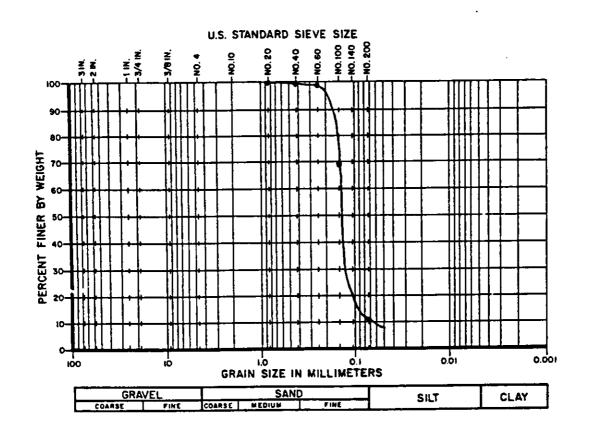


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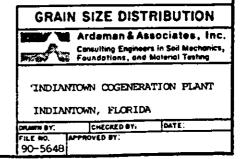
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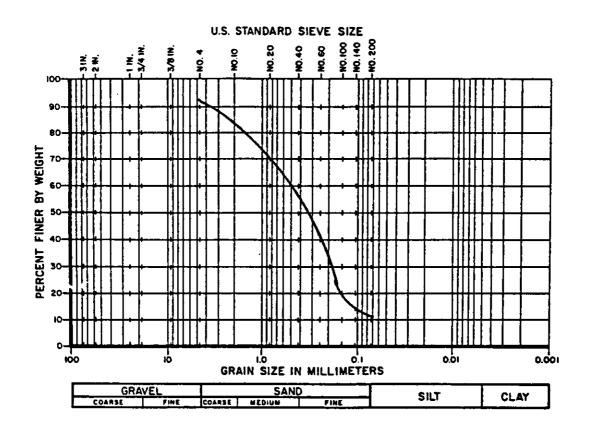
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AMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
12			Grayish brown fine sand with silt	SP-SM
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		NO.		





TEST HOLE NO	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-4	25	94.0-96.0 ft.		Gray fine sand with silt, shell, and	
				cemented sand	SP-SM
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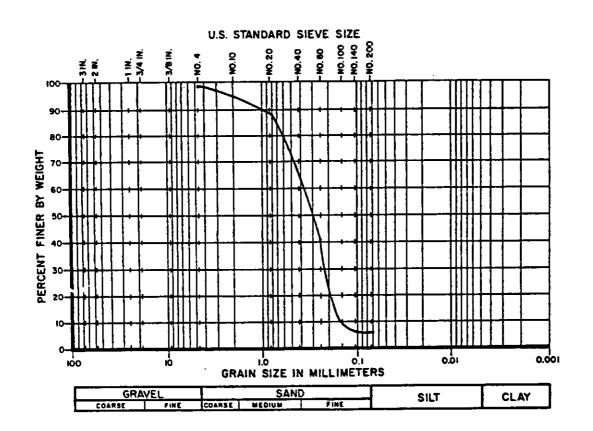


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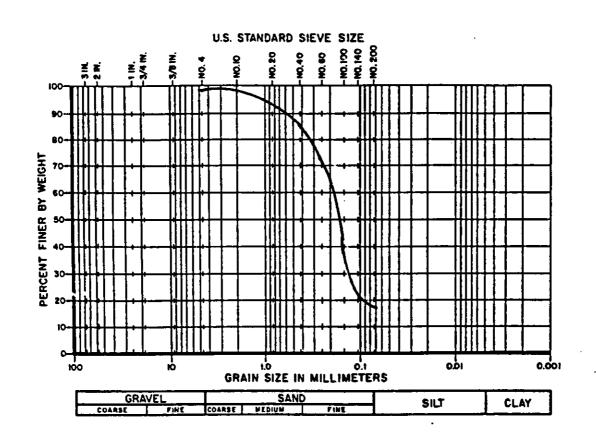
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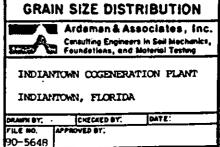
TEST HOLE NO	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-4	27	104.0-106.0 ft		Gray fine sand with silt, shell, and	
				cemented sand	SP-SM
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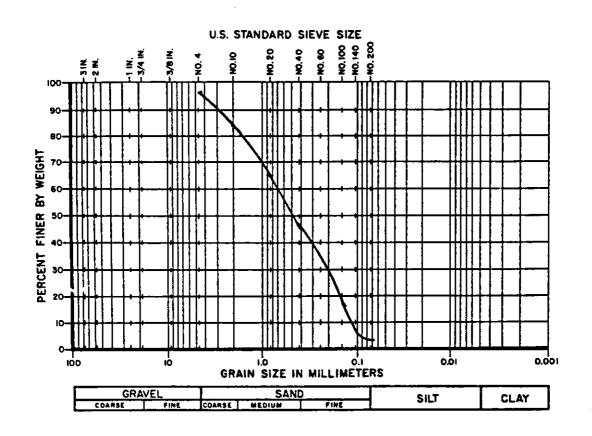
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TEST HOLE NO.	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW4	29	114.0-116.0		Gray silty fine sand with shell	SM_

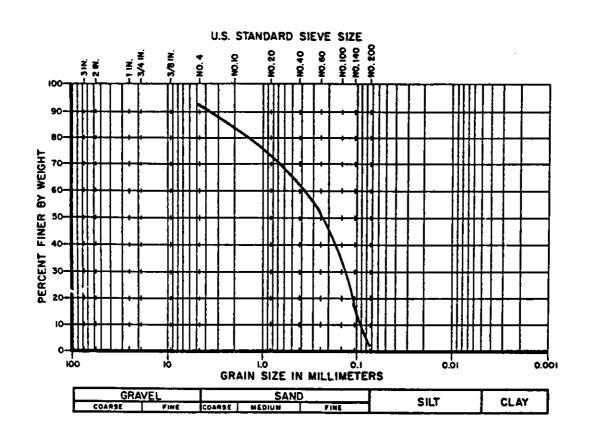




TEST HOLE NO.	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-4	32	129.0-131.0ft		Greenish gray silty fine sand with cemented	
				sand	SM
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HOLE NO.		DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
MW-4	34	144.0-146.0 ft		Greenish silty fine sand with cemented sand	SM
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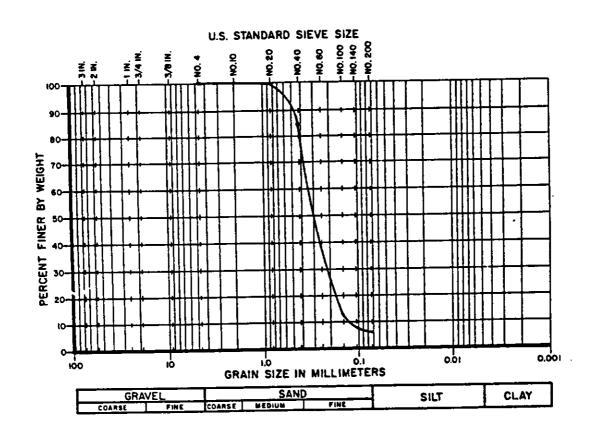


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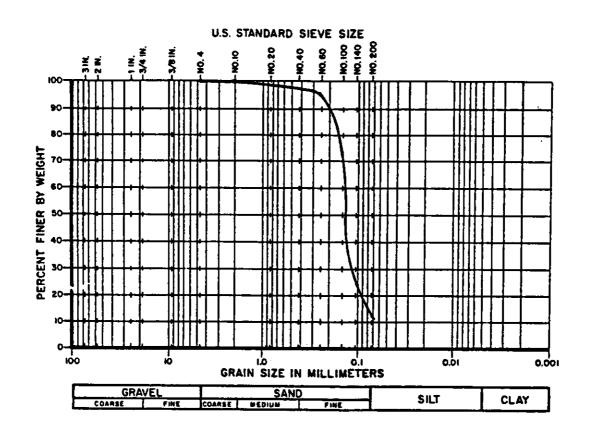
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TEST	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
POW-1	3	9.0-11.0 ft.		Dark reddish brown fine sand with silt	SP-SM
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NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
7	24.0-26.0 ft.		Dark gray fine sand with trace of clavey	
			sand	SP-SC
		<b> </b>		
		<u> </u>	<u> </u>	<del>_</del>
	NO.	NO.	NO. DEPTH STMBOL	NO. Dark gray fine sand with trace of clayey

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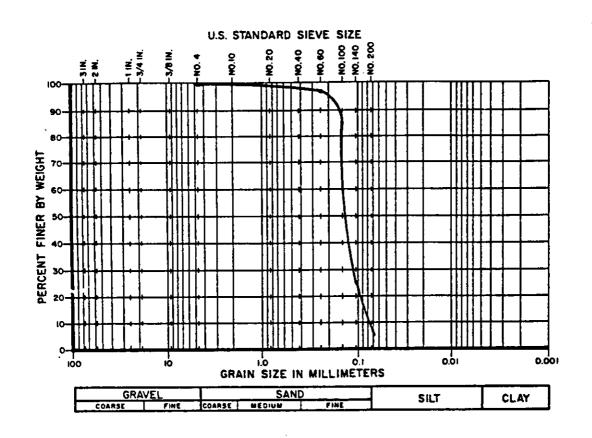
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TEST HOLE NO.	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
POW-1	10	39.0-41.0 ft.		Gray fine sand with silt	SP-SM
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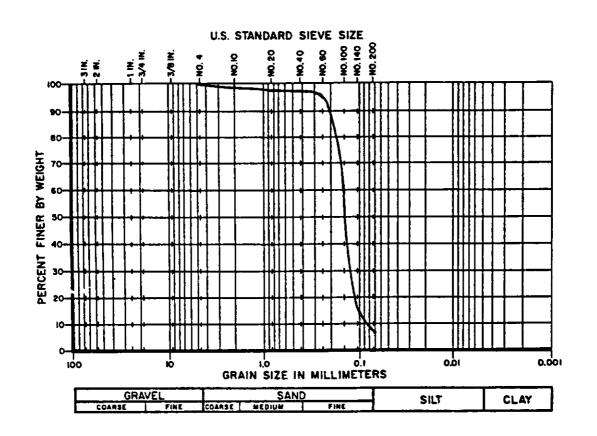


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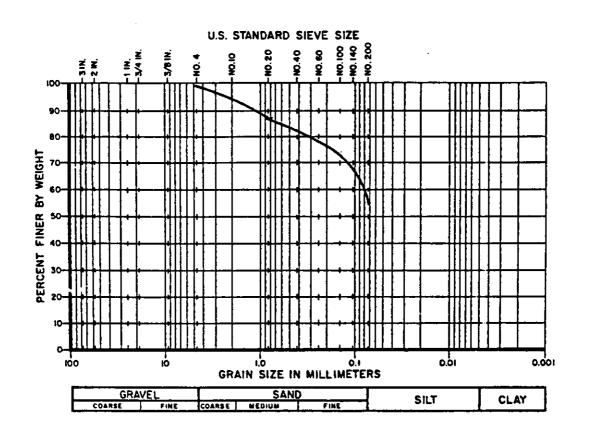
TEST HOLE NO.	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
POW-1		64.0-66.0 ft.		Gray sandy silt with shell fragment	ML
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TEST HOLE NO.	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
POW-1		69.0-71.0 ft.		Gray clay with traces of shell	СН
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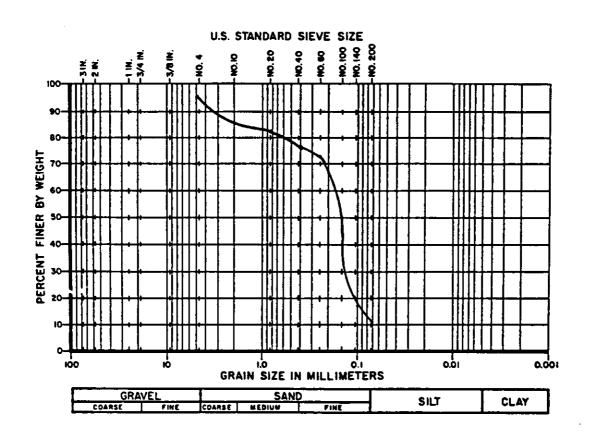
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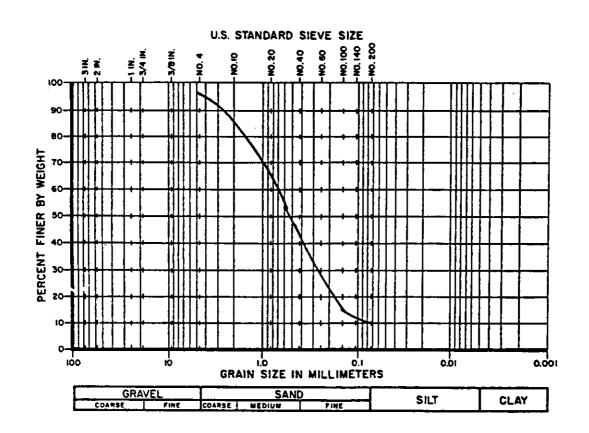
TEST HOLE NO.	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
POW-1	19	84.0-86.0 ft.		Greenish gray fine sand with silt and shell	
				fragments	SP-SM
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HOLE NO.	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
POW-1	21	94.0-96.0 ft.		Gray fine sand with silt and shell fragment	SP-SM
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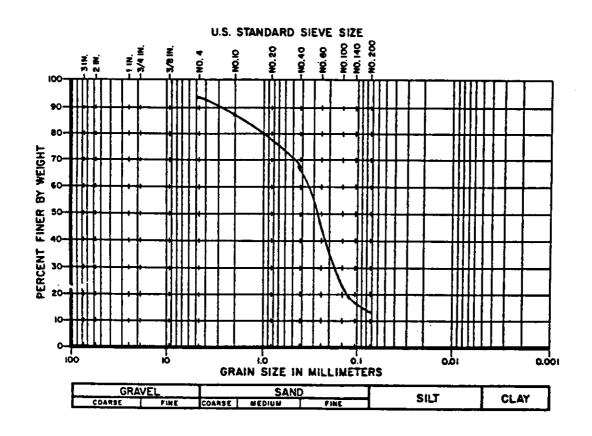
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TEST HOLE NO.	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
POW-1	23	104.0-106.0 ft		Gray fine sand with silt and shell fragments	SP-SM
		···			

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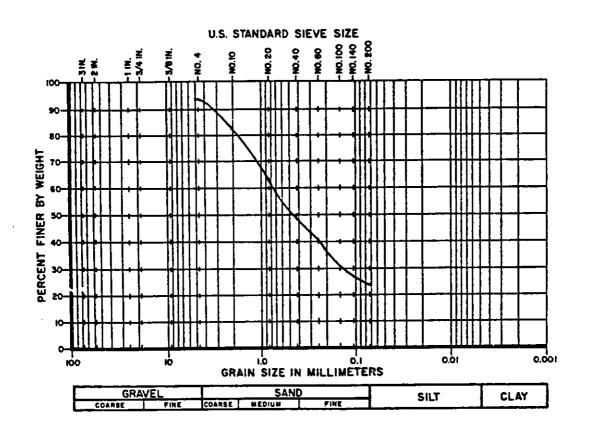
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INDIANTOWN COGENERATION **PLANT** INDIANTOWN, FLORIDA

CHECKED BY, FILE NO. 30-5648 APPROVED BY:



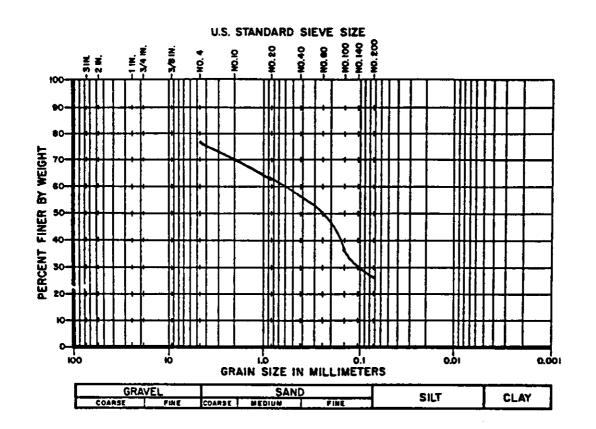
TEST HOLE NO.	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
POW-1	27	124.0-126.0 ft	-	Gray silty fine sand with shell and cemented	
				shell	SM
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Ardaman & Associates, Inc. Consulting Engineers in Soil Mechanics, Foundations, and Material Testing

INDIANTOWN COGENERATION PLANT INDIANTOWN, FLORIDA

DRAWTH BY.	CHECKED BY:	DATE:
FILE NO. 90-5648	APPROVED BY:	



	SAMPLE NO.	DEPTH	SYMBOL	SAMPLE DESCRIPTION	UNIFIED CLASS.
POW-1	32	149.0-151.0 ft		Gray silty sand with shell and cemented sand	SM
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	-		-		

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## **GRAIN SIZE DISTRIBUTION**



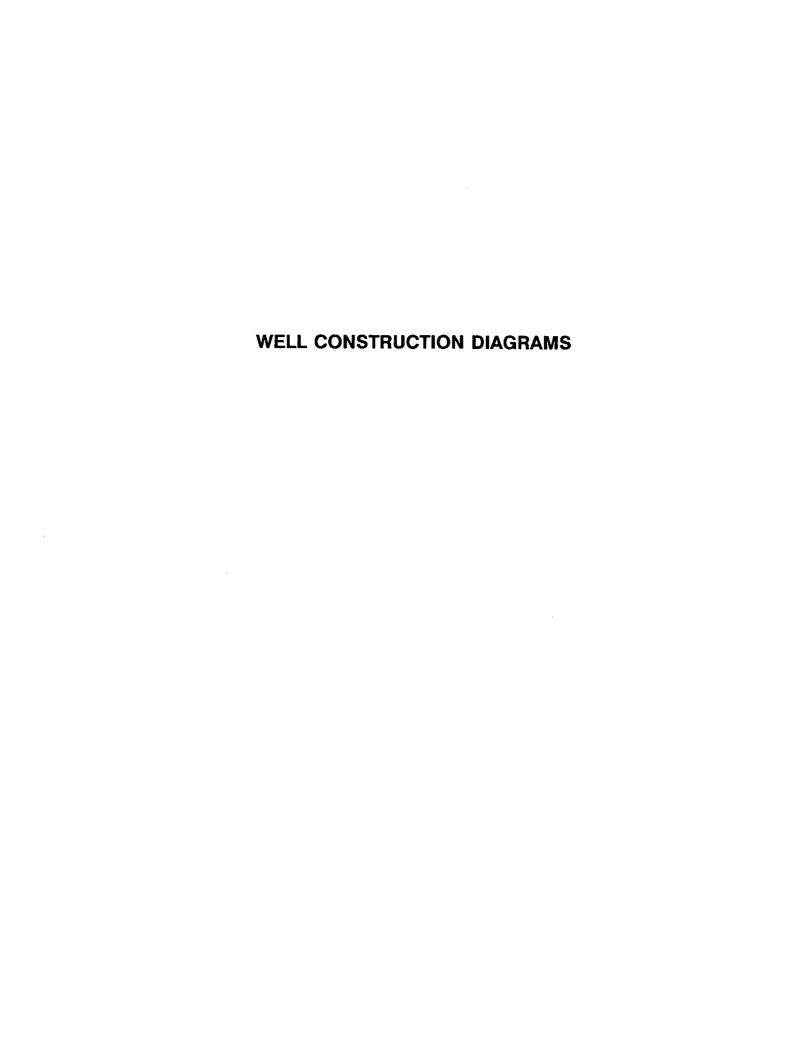
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Foundations, and Material Techno

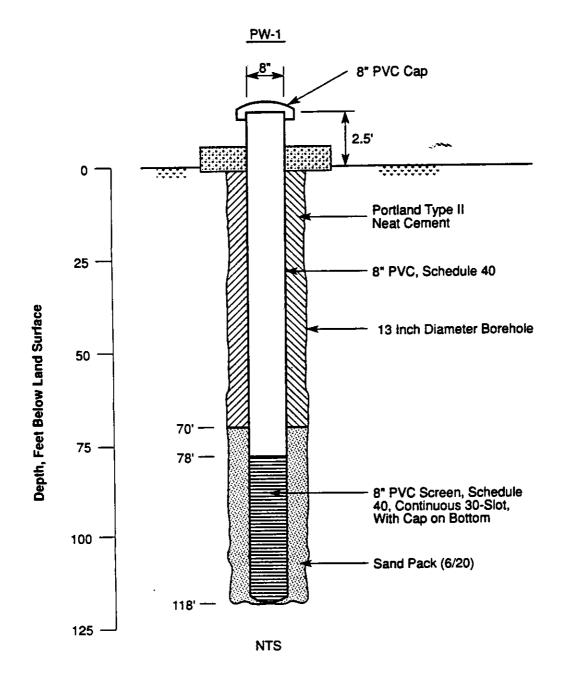
INDIANTOWN COGENERATION PLANT INDIANTOWN, FLORIDA

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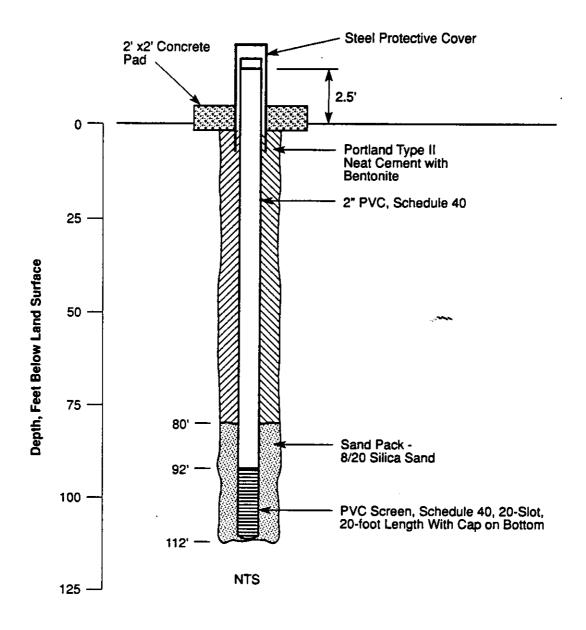
# 10.5.1.2 Subsurface Hydrologic Data for the Site (2.3.2.1)

- Well Construction Diagrams
- Pump Test Data
- Laboratory Results for Water Quality Sampling

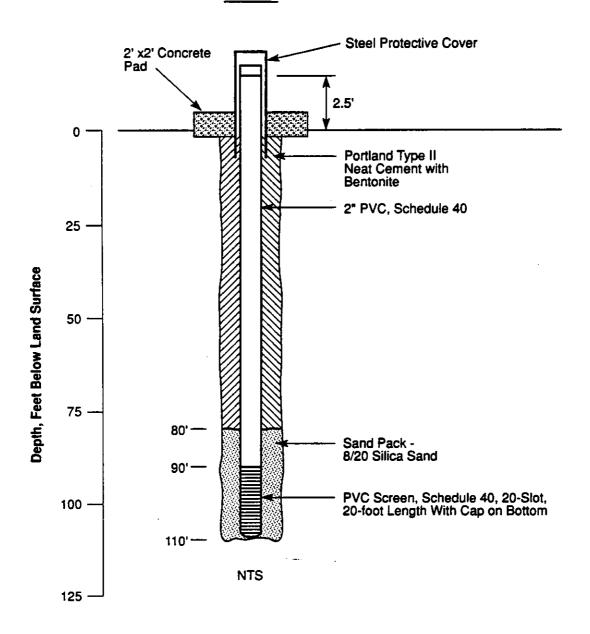




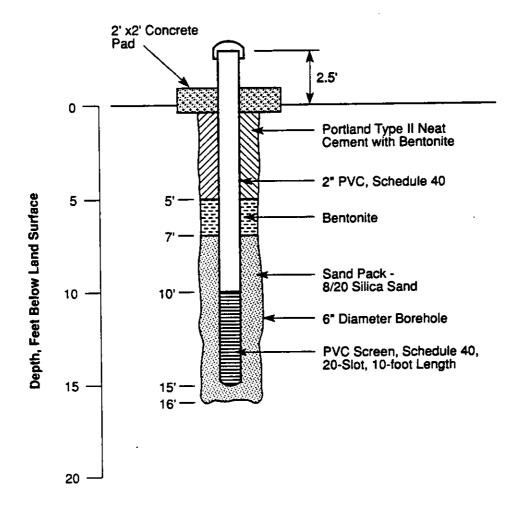


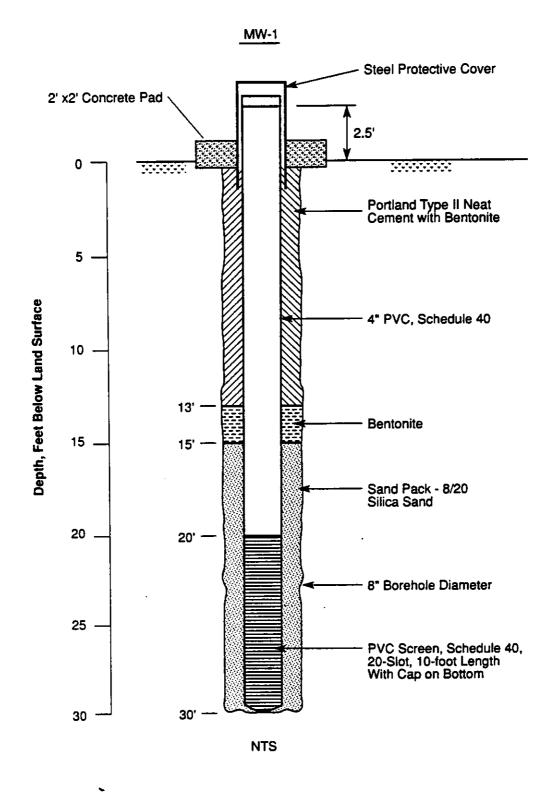


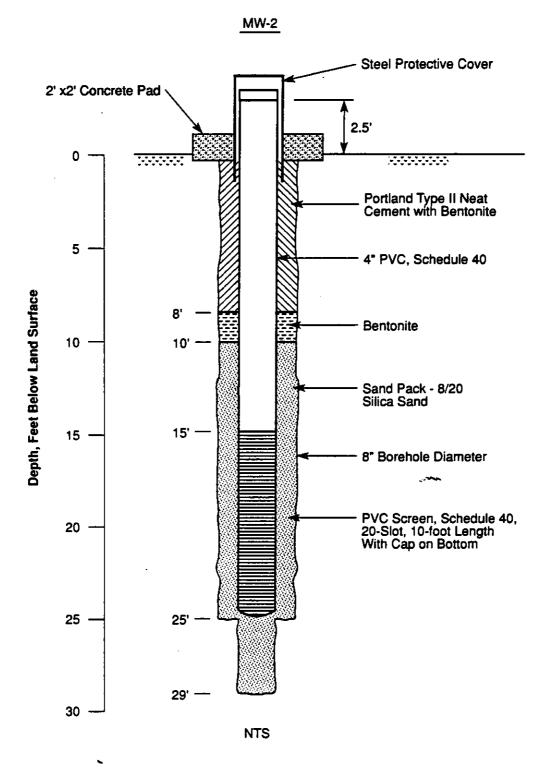




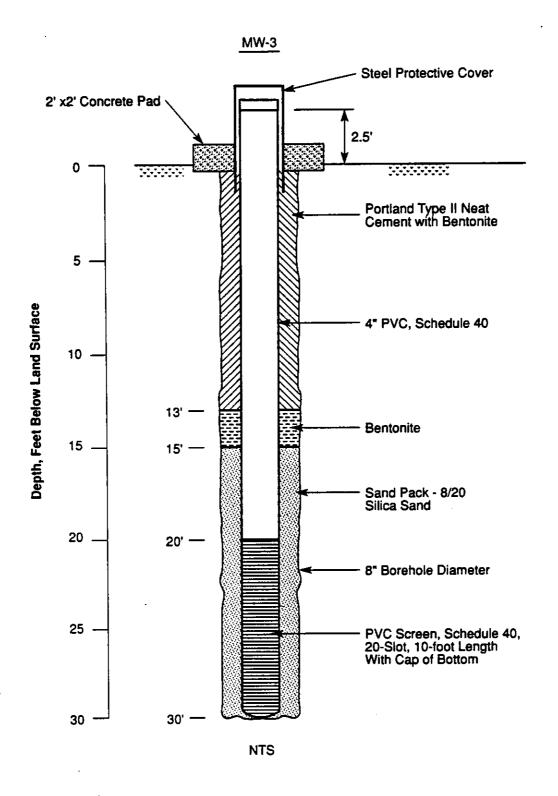
MW-5



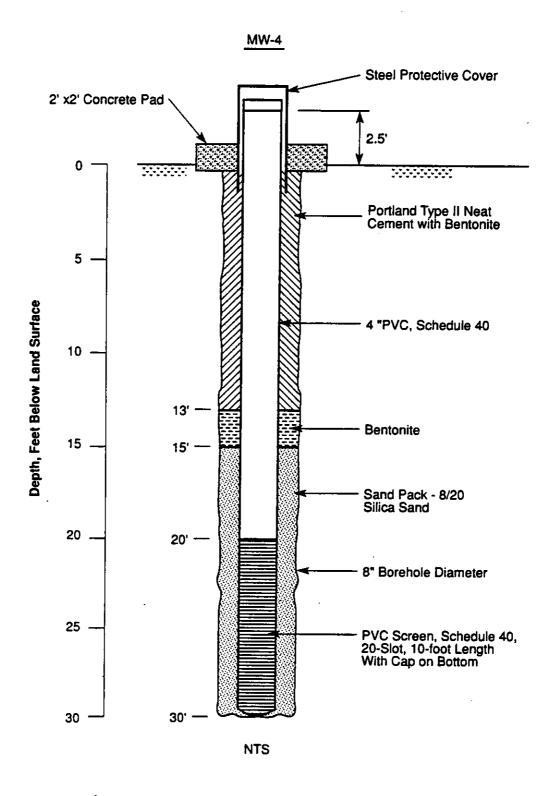


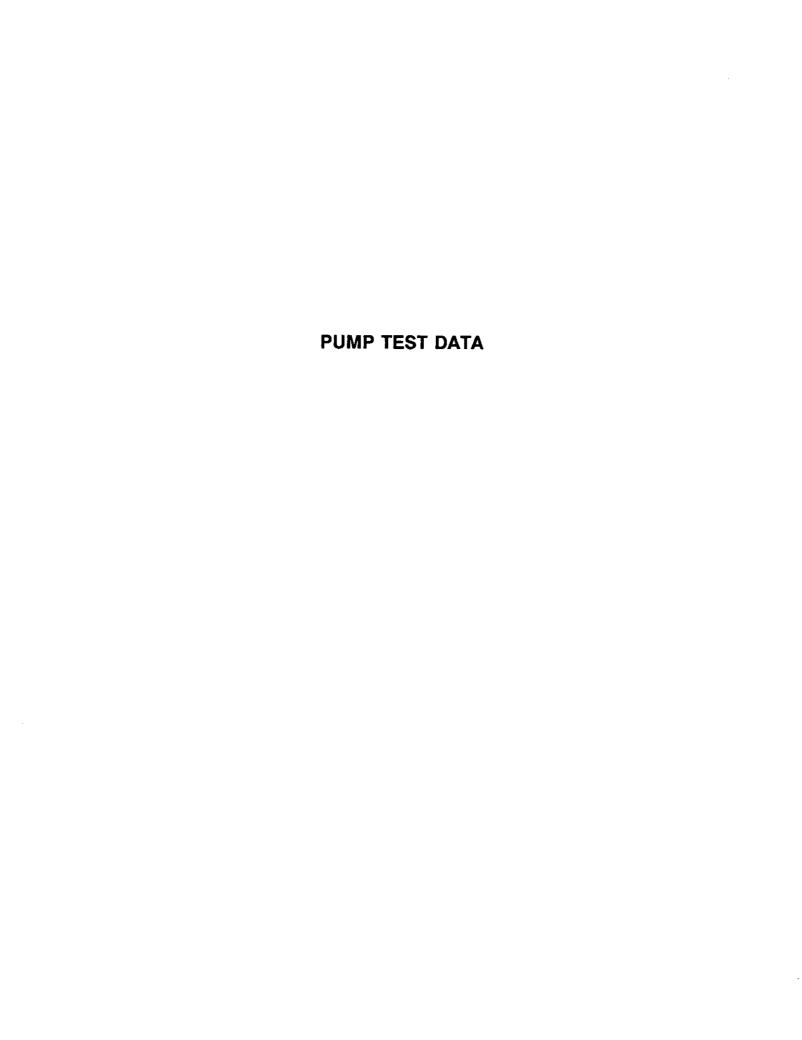














SUBJECT Aquifer Test Analysis

Bechtel- Indiantown Cogeneration

Project: POW-1

BY P. Kwiatkowski DATE 8/23/70 SHEET NO.\_\_\_\_OF\_\_\_\_\_ PROJECT NO. SEF 30619. AS

Walton (1962) Method for Leaky Aguifers

Type-Curve Match, Q = 150 gpm, r= 50 Feet

W(u, 5/3) = 1

s = 3.2 ft

t = 0.18 min

 $\frac{r}{s} = 0.025$ 

 $s = \frac{114.6 \, Q}{T} \, \omega(u, r/B)$ 

 $T = \frac{(114.6)(150 \text{ gpm})}{3.2 \text{ ft}}$ 

 $S = \frac{T+u}{2693 r^2} = \frac{(5372)(0.18)(1)}{2693 (50)^2} = \frac{1.4 \times 10^{-4}}{1.4 \times 10^{-4}}$ 

K/6= [T(r/3)2]/r2

 $k'/b' = (5372)(0.025)^2 = [1.3 \times 10^{-3}]$ 

Cooper-Jacob Method

DS = 18.02 - 11.02 = 7.0 ft

to = 0.28 minutes

 $T = \frac{264 \, Q}{\Lambda^2} = \frac{(264)(150)}{70} = \frac{5657 \, \text{qpd/Pt}}{1}$ 

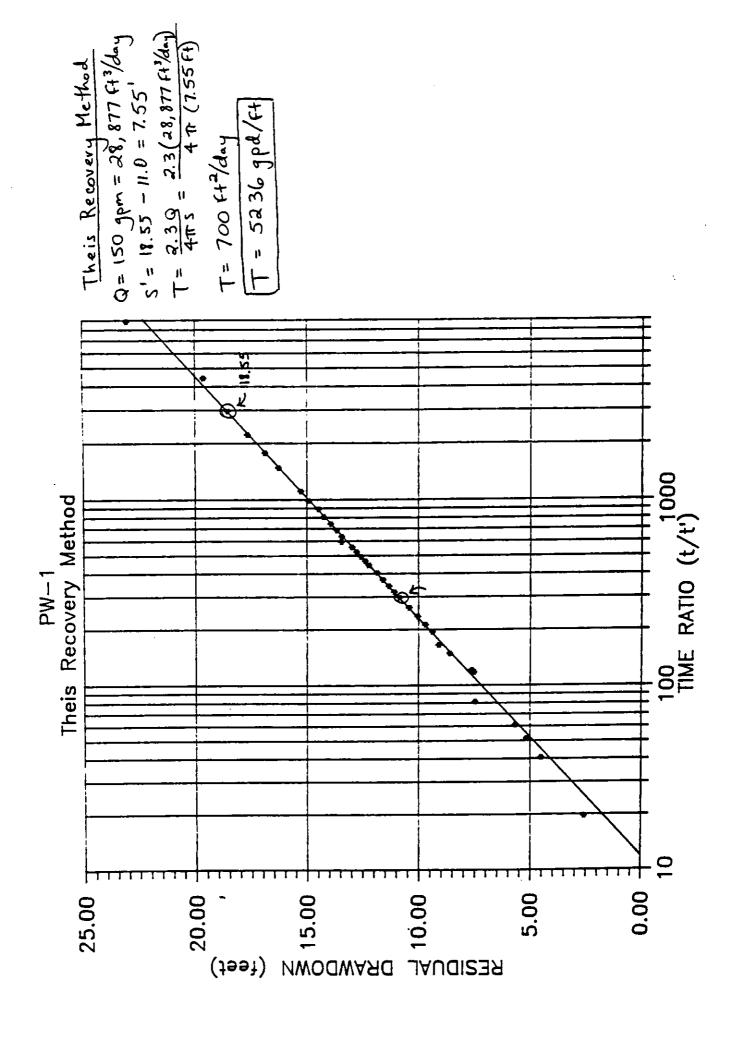
 $\frac{7 + \sigma}{4790 r^2} = \frac{(5657)(0.28)}{4790 (50)^2} = \frac{1.32 \times 10^{-4}}{1.32 \times 10^{-4}}$ 

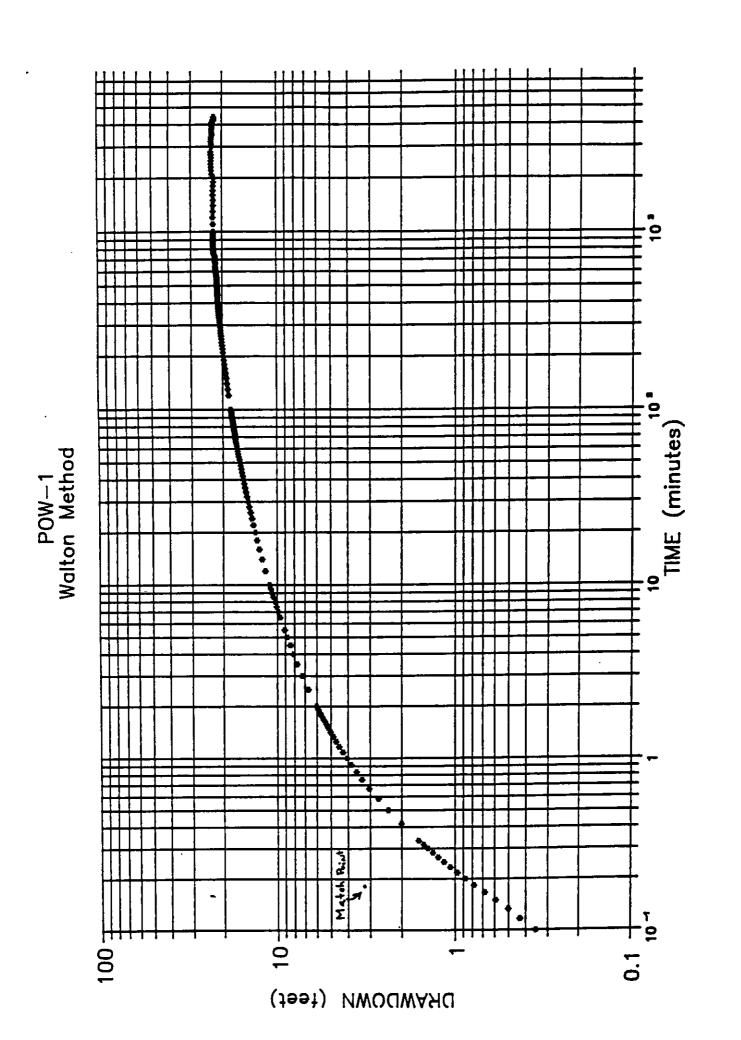


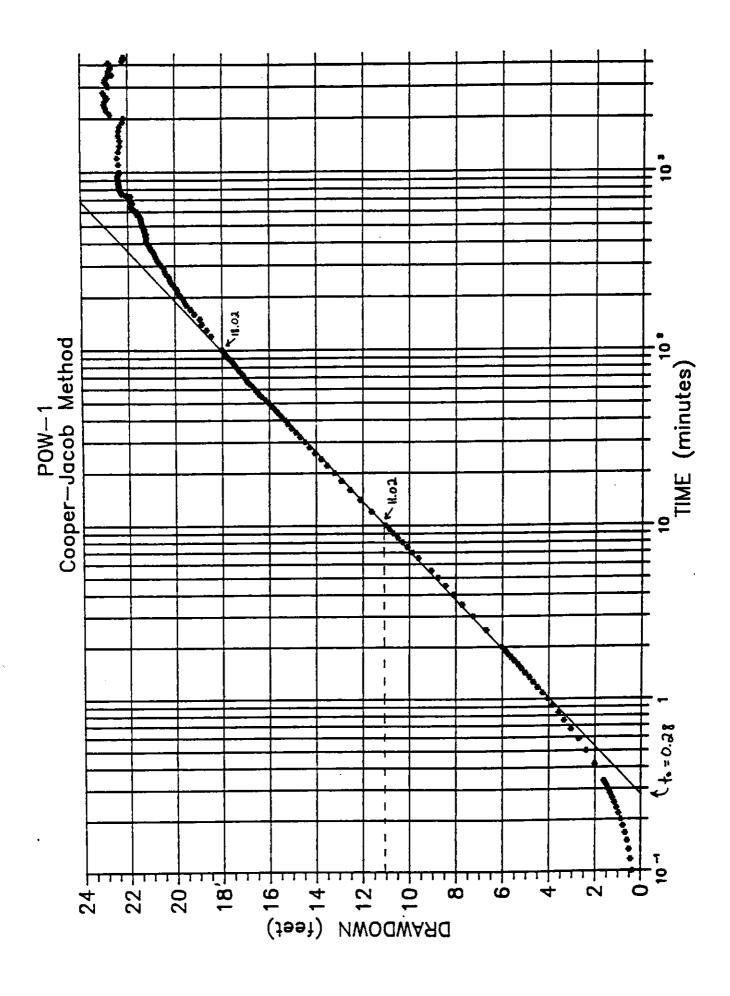
# SUBJECT Aquifer Test Analysis Bechtel- Indiantoun Cogeneration Project POW-2

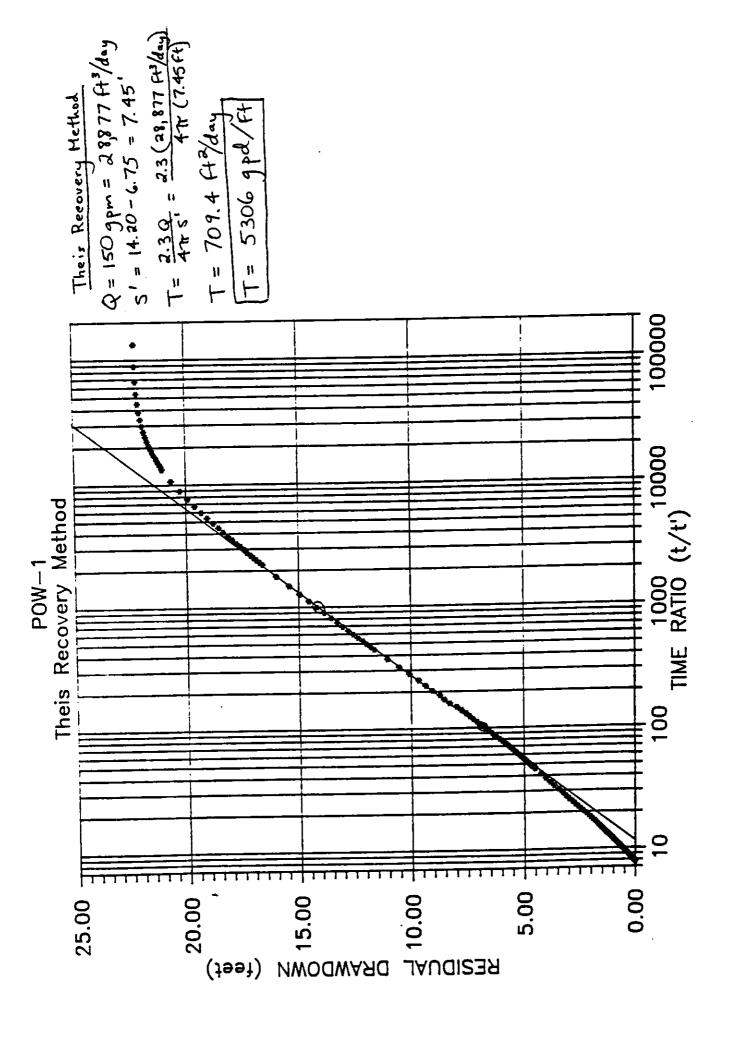
BY P. Kuistlowsk: DATE 8/23/90
SHEET NO. 2 OF 2
PROJECT NO. SEF30619.40

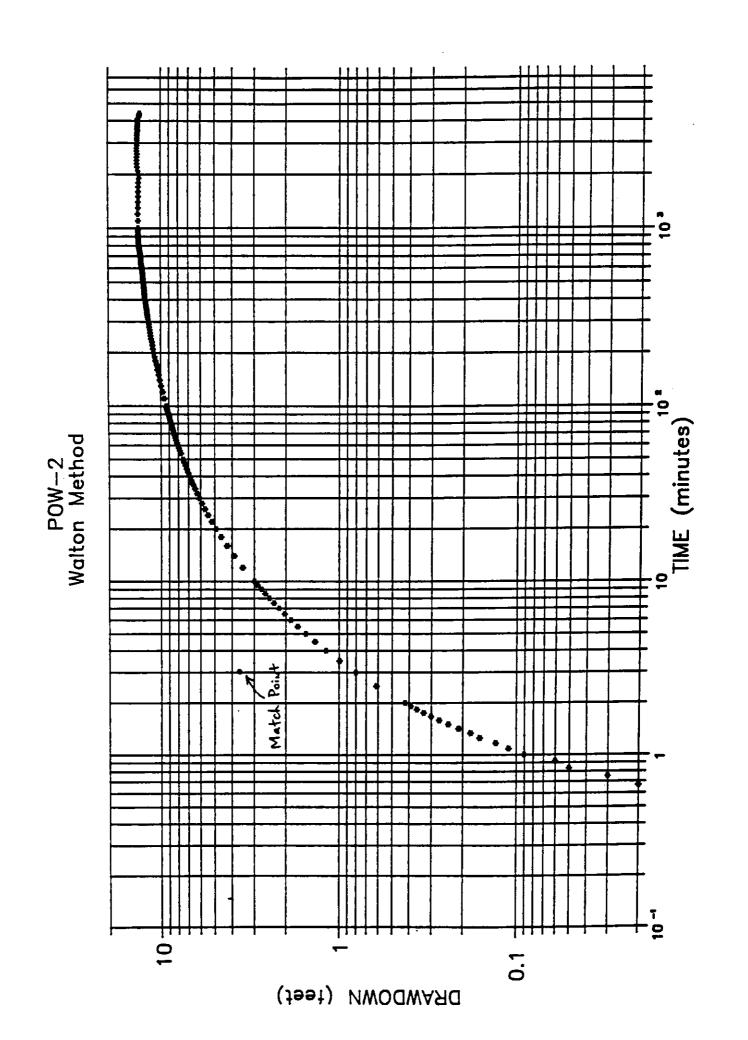
Walton (1962) Method for Leaky Aquifers
Q = 150 gpm r = 200 feet
$\omega(\alpha, r/B) = 1$ $1/\alpha = 1$
s = 3.6 Ft
$t = 3 \min$ $\frac{1}{8} = 0.15$
S = 114.6 Q W(u, 1/B)
S = 1
$T = \frac{114.6  \Omega  \omega(u, \frac{1}{8})}{5} = \frac{(14.6)(150)}{3.6} (1) = \frac{4775  \text{gpd/s}}{3.6}$
$S = \frac{T+u}{2693 r^2} = \frac{(4775)(3)(1)}{2693 (200)^2} = 1.33 \times 10^{-4}$
$K'/b' = \left[T\left(\frac{r}{B}\right)^{2}\right/r^{2} = \left[\frac{4775(0.15)^{2}}{2.69 \times 10^{-3}}\right] = \left[\frac{2.69 \times 10^{-3}}{2.69 \times 10^{-3}}\right]$
(200)2
Cooper-Jacob Method
$\Delta S = 9.29 - 2.99 = 6.3 \text{ ft}$
to = 3.4 min
$T = \frac{264  Q}{\Delta S} = \frac{(264)(150)}{6.3} = \frac{6286  \text{gpd/ft}}{6.3}$
$S = \frac{T+0}{4790r^2} = \frac{(6286)(3.4)}{4790(200)^2} = \frac{[1.11 \times 10^{-4}]}{[1.11 \times 10^{-4}]}$
$S = 4790 r^2 4790 (200)^2$

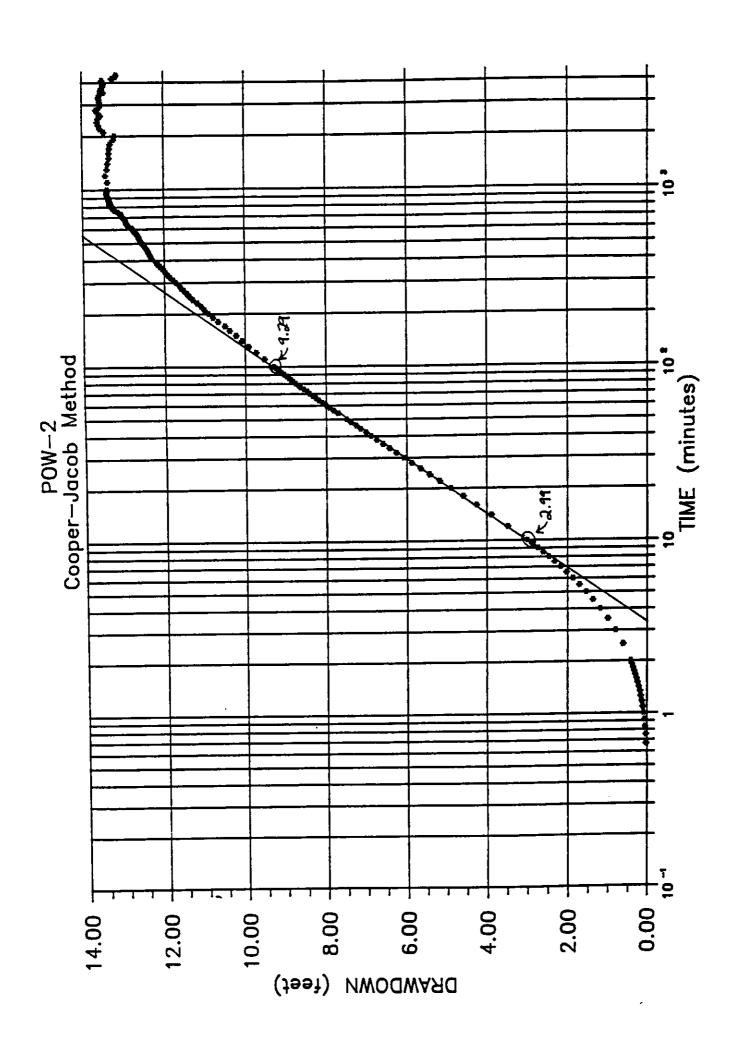


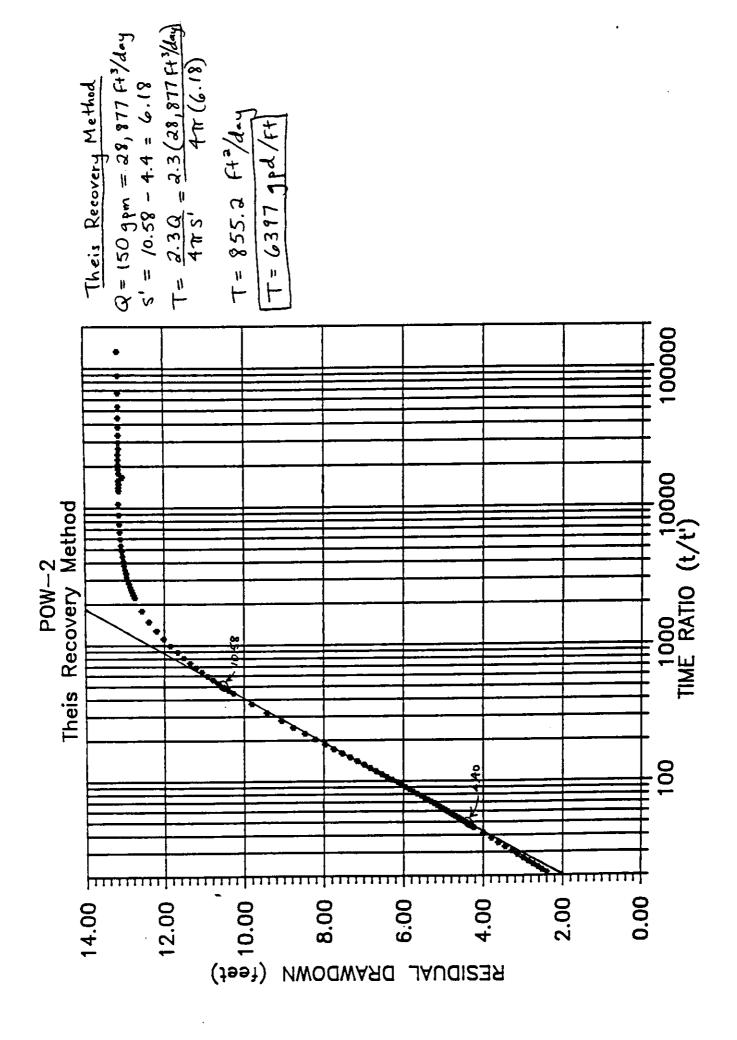












WELL: PW-1

THEIS RECOVERY METHOD

PUMP ON: DATE: 8/13/90 TIME: 1015 PUMP OFF: DATE: 8/16/90 TIME: 1152

PUMPING DURATION: 4417 MINUTES STATIC DEPTH TO WATER: 6.09 FEET

t'	t	t/t¹	DTW	s'
(minutes)	(minutes)		(feet)	(feet)
	:			
0.5	4417.5	8835.00	29.1	23.01
1	4418	4418.00	25.7	19.61
1.5	4418.5	2945.67	24.62	18.53
-2	4419	2209.50	23.74	17.65
2.5	4419.5	1767.80	22.96	16.87
3	4420	1473.33	22.35	16.26
4	4421	1105.25	21.35	15.26
4.5	4421.5	982.56	21	14.91
5	4422	884.40	20.55	14.46
5.5	4422.5	804.09	20.32	14.23
6	4423	737.17	20	13.91
6.5	4423.5	680.54	19.73	13.64
7	4424	632.00	19.51	13.42
7.5	4424.5	589.93	19.52	13.43
8	4425	553.13	19.04	12.95
8.5	4425.5	520.65	18.84	12.75
9.	4426	491.78	18.65	12.56
9.5	4426.5	465.95	18.45	12.36
10	4427	442.70	18.3	12.21
11	4428	402.55	17.91	11.82
12	4429	369.08	17.65	11.56
13	4430	340.77	17.38	11.29
14	4431	316.50	17.14	11.05
15	4432	295.47	16.91	10.82
17	4434	260.82	16.48	10.39
19	4436	233.47	16.1	10.01
21	4438	211.33	15.76	9.67
23	4440	193.04	15.45	9.36
27	4444	164.59	15.16	9.07
30	4447	148.23	14.68	8.59
37	4454	120.38	13.69	7.6
38	4455	117.24	13.6	7.51
55	4472	81.31	13.55	7.46
74	4491	60.69	11.75	5.66
88	4505	51.19	11.25	5.16
112	4529	40.44	10.6	4.51
238	4655	19.56	8.65	2.56

WELL: POW-2

THEIS RECOVERY METHOD

PUMP ON: DATE: 8/13/90 TIME: 1015 PUMP OFF: DATE: 8/16/90 TIME: 1152

PUMPING DURATION:

4417 MINUTES

STATIC DEPTH TO WATER: 7.04 FEET

t'	t	t/t'	s'
(minutes)	(minutes)	"	(feet)
			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
0.0333	4417.0333	132643.64	13.15
0.05	4417.05	88341.00	13.14
0.0666	4417.0666	66322.32	13.14
0.0833	4417.0833	53026.21	13.14
0.1	4417.1	44171.00	13.14
0.1166	4417.1166	37882.65	13.14
0.1333	4417.1333	33136.78	13.14
0.15	4417.15	29447.67	13.14
0.1666	4417.1666	26513.61	13.14
0.1833	4417.1833	24098.11	13.15
0.2	4417.2	22086.00	13.15
0.2166	4417.2166	20393.43	13.15
0.2333	4417.2333	18933.70	13.15
0.25	4417.25	17669.00	13.14
0.2666	4417.2666	16568.89	13.05
0.2833	4417.2833	15592.25	13.15
0.3	4417.3	14724.33	13.13
0.3166	4417.3166	13952.36	13.14
0.3333	4417.3333	13253.33	13.14
0.4167	4417.4167	10600.95	13.15
0.5	4417.5	8835.00	13.14
0.5833	4417.5833	7573.43	13.13
0.6667	4417.6667	6626.17	13.12
0.75	4417.75	5890.33	13.1
0.8333	4417.8333	5301.61	13.09
0.9167	4417.9167	4819.37	13.07
1	4418	4418.00	13.05
1.0833	4418.0833	4078.36	13.03
1.1667	4418.1667	3786.89	13.01
1.25	4418.25	3534.60	12.99
1.3333	4418.3333	3313.83	12.96
1.4166	4418.4166	3119.03	12.95
1.5	4418.5	2945.67	12.92
1.5833	4418.5833	2790.74	12.88
1.6667	4418.6667	2651.15	12.86
1.75	4418.75	2525.00	12.83
1.8333	4418.8333	2410.32	12.8
1.9167	<u>44</u> 18.9167	2305.48	12.77

WELL: POW-2

THEIS RECOVERY METHOD

PUMP ON: DATE: 8/13/90 TIME: 1015 PUMP OFF: DATE: 8/16/90 TIME: 1152

PUMPING DURATION:

4417 MINUTES

STATIC DEPTH TO WATER: 7.0

7.04 FEET

t'	t	t/t′	s'
(minutes)	(minutes)		(feet)
2	4419	2209.50	12.74
2.5	4419.5	1767.80	12.56
3	4420	1473.33	12.38
3.5	4420.5	1263.00	12.19
4	4421	1105.25	12.01
4.5	4421.5	982.56	11.84
5	4422.	884.40	11.66
5.5	4422.5	804.09	11.51
6	4423	737.17	11.35
6.5	4423.5	680.54	11.2
7	4424	632.00	11.05
7.5	4424.5	589.93	10.91
8	4425	553.13	10.77
8.5	4425.5	520.65	10.64
9	4426	491.78	10.51
9.5	4426.5	465.95	10.39
10	4427	442.70	10.26
12	4429	369.08	9.8
14	4431	316.50	9.42
16	4433	277.06	9.05
18	4435	246.39	8.75
20	4437	221.85	8.46
22	4439	201.77	8.2
24	4441	185.04	7.96
26	4443	170.88	7.74
28	4445	158.75	7.53
30	4447	148.23	7.33
32	4449	139.03	7.15
34	4451	130.91	6.98
36	4453	123.69	6.83
38	4455	117.24	6.68
40	4457	111.43	6.54
42	4459	106.17	6.41
44 [	4461	101.39	6.28
46	4463	97.02	6.14
48	4465	93.02	6.05
50	4467	89.34	5.94
52	4469	85. <del>9</del> 4	5.84
54	4471	82.80	5.75

WELL: POW-2

THEIS RECOVERY METHOD

PUMP ON: DATE: 8/13/90 TIME: 1015 PUMP OFF: DATE: 8/16/90 TIME: 1152

PUMPING DURATION: 4417 MINUTES

STATIC DEPTH TO WATER: 7.04 FEET

t'	ŧ	t/t'	s'
(minutes)	(minutes)		(feet)
56	4473	79.88	5.65
58	4475	77.16	5.55
60	4477	74.62	5.47
62	4479	72.24	5.38
64	4481	70.02	5.3
66	4483	67.92	5.22
68	4485	65.96	5.15
70	4487	64.10	5.08
72	4489	62.35	5.01
74	4491	60.69	4.94
76	4493	59.12	4.88
78	4495	57.63	4.81
80	4497	56.21	4.75
82	4499	54.87	4.69
84	4501	53.58	4.63
86	4503	52.36	4.58
88	4505	51.19	4.53
90	4507	50.08	4.47
92	4509	49.01	4.42
94	4511	47.99	4.36
96	4513	47.01	4.32
98	4515	46.07	4.27
100	4517	45.17	4.22
110	4527	41.15	3.98
120	4537	37.81	3.79
130	4547	34.98	3.61
140	4557	32.55	3.44
150	4567	30.45	3.27
160	4577	28.61	3.13
170	4587	26.98	2.99
180	4597	25.54	2.86
190	4607	24.25	2.74
200	4617	23.09	2.62
210	4627	22.03	2.52
220	4637	21.08	2.4

WELL: POW-1

THEIS RECOVERY METHOD

PUMP ON: DATE: 8/13/90 TIME: 1015 PUMP OFF: DATE: 8/16/90 TIME: 1152

PUMPING DURATION:

4417 MINUTES

STATIC DEPTH TO WATER:

6.2 FEET

ť	t	t/t'	s'
(minutes)	(minutes)		(feet)
0.0333	4417.0333	132643.64	22.22
0.05	4417.05	88341.00	22.2
0.0666	4417.0666	66322.32	22.17
0.0833	4417.0833	53026.21	22.13
0.1	4417.1	44171.00	22.08
0.1166	4417.1166	37882.65	22.03
0.1333	4417.1333	33136.78	21.96
0.15	4417.15	29447.67	21.9
0.1666	4417.1666	26513.61	21.83
0.1833	4417.1833	24098.11	21.75
0.2	4417.2	22086.00	21.68
0.2166	4417.2166	20393.43	21.59
0.2333	4417.2333	18933.70	21.51
0.25	4417.25	17669.00	21.44
0.2666	4417.2666	16568.89	21.33
0.2833	4417.2833	15592.25	21.26
0.3	4417.3	14724.33	21.18
0.3166	4417.3166	13952.36	21.09
0.3333	4417.3333	13253.33	21.04
0.4167	4417.4167	10600.95	20.64
0.5	4417.5	8835.00	20.25
0.5833	4417.5833	7573.43	19.91
0.6667	4417.6667	6626.17	19.59
0.75	4417.75	5890.33	19.3
0.8333	4417.8333	5301.61	19.04
0.9167	4417.9167	4819.37	18.77
1	4418	4418.00	18.54
1.0833	4418.0833	4078.36	18.34
1.1667	4418.1667	3786.89	18.13
1.25	4418.25	3534.60	17.94
1.3333	4418.3333	3313.83	17.76
1.4166	- 4418.4166	3119.03	17.58
1.5	4418.5	2945.67	17.41

WELL: POW-1

THEIS RECOVERY METHOD

PUMP ON: DATE: 8/13/90 TIME: 1015 PUMP OFF: DATE: 8/16/90 TIME: 1152

PUMPING DURATION:

4417 MINUTES

STATIC DEPTH TO WATER:

6.2 FEET

t'	ŧ	t/t'	s'
(minutes)	(minutes)		(feet)
1.5833	4418.5833	2790.74	17.29
1.6667	4418.6667	2651.15	17.12
1,75	4418.75	2525.00	16.99
1.8333	4418.8333	2410.32	16.86
1.9167	4418.9167	2305.48	16.72
2	4419	2209.50	16.59
2.5	4419.5	1767.80	15.98
3	4420	1473.33	15.4
3.5	4420.5	1263.00	14.94
4	4421	1105.25	14.53
4.5	4421.5	982.56	14.17
5	4422	884.40	13.85
5.5	4422.5	804.09	13.52
6	4423	737.17	13.25
6.5	4423.5	680.54	13.01
7	4424	632.00	12.76
7.5	4424.5	589.93	12.54
8	4425	553.13	12.33
8.5	4425.5	520.65	12.11
9	4426	491.78	11.96
9.5	4426.5	465.95	11.78
10	4427	442.70	11.61
12	4429	369.08	11.02
14	4431	316.50	10.51
16	4433	277.06	10.06
18	4435	246.39	9.64
20	4437	221.85	9.34
22	4439	201.77	9.04
24	4441	185.04	8.71
26	4443	170.88	8.52
28	4445	158.75	8.28
30	4447	148.23	7.97
32	- 4449	139.03	7.76
34	4451	130.91	7.56

WELL: POW-1

THEIS RECOVERY METHOD

PUMP ON: DATE: 8/13/90 TIME: 1015 PUMP OFF: DATE: 8/16/90 TIME: 1152

PUMPING DURATION: 4417 MINUTES STATIC DEPTH TO WATER: 6.2 FEET

t'	t	t/t'	s'
(minutes)	(minutes)		(feet)
36	4453	123.69	7.4
38	4455	117.24	7.24
40	4457	111.43	7.08
42	4459	106.17	6.93
44	4461	101.39	6.79
46	4463	97.02	6.66
48	4465	93.02	6.53
50	4467	89.34	6.41
52	4469	85.94	6.34
54	4471	82.80	6.21
56	4473	79.88	6.07
58	4475	77.16	5.96
60	4477	74.62	5.86
62	4479	72.24	5.77
64	4481	70.02	5.68
66	4483	67.92	5.6
68	4485	65.96	5.52
70	4487	64.10	5.44
72	4489	62.35	5.36
74	4491	60.69	5.29
76	4493	59.12	5.21
78	4495	57.63	5.14
80	4497	56.21	5.07
82	4499	54.87	5.01
84	4501	53.58	4.95
86	4503	52.36	4.88
88	4505	51.19	4.85
90	4507	50.08	4.76
92	4509	49.01	4.71
94	4511	47.99	4.65
96	4513	47.01	4.59
98 ]	4515	46.07	4.5
100	4517	45.17	4.49
110	4527	41,15	4.21

WELL: POW-1

THEIS RECOVERY METHOD

PUMP ON: DATE: 8/13/90 TIME: 1015 PUMP OFF: DATE: 8/16/90 TIME: 1152

**PUMPING DURATION:** 

4417 MINUTES

STATIC DEPTH TO WATER:

6.2 FEET

t'	t	t/t'	s'
(minutes)	(minutes)		(feet)
120	4537	37.81	4.01
130	4547	34.98	3.82
140	4557	32.55	3.64
150	4567	30.45	3.43
160	4577	28.61	3.27
170	4587	26.98	3.12
180	4597	25.54	2.98
190	4607	24.25	2.82
200	4617	23.09	2.7
210	4627	22.03	2.57
220	4637	21.08	2.45
230	4647	20.20	2.32
240	4657	19.40	2.2
250	4667	18.67	2.1
260	4677	17.99	2
270	4687	17.36	1.91
280	4697	16.78	1.82
290	4707	16.23	1.74
300	4717	15.72	1.67
310	4727	15.25	1.59
320	4737	14.80	1.52
330	4747	14.38	1.45
340	4757	13.99	1.39
350	4767	13.62	1.33
360	4777	13.27	1.26
370	4787	12.94	1.19
380	4797	12.62	1.14
390	4807	12.33	1.08
400	4817	12.04	1.02
410	4827	11.77	0.98
420	4837	11.52	0.92
430	4847	11.27	0.87
440 +	4857	11.04	0.82
450	4867	10.82	0.78

WELL: POW-1

THEIS RECOVERY METHOD

PUMP ON: DATE: 8/13/90 TIME: 1015 PUMP OFF: DATE: 8/16/90 TIME: 1152

PUMPING DURATION: 4417 MINUTES

STATIC DEPTH TO WATER:

6.2 FEET

t'	t	t/t'	s'
(minutes)	(minutes)		(feet)
460	4877	10.60	0.73
470	4887	10.40	0.68
480	4897	10.20	0.65
490	4907	10.01	0.6
500	4917	9.83	0.56
510	4927	9.66	0.51
520	4937	9.49	0.48
530	4947	9.33	0.44
540	4957	9.18	0.4
550	4967	9.03	0.36
560	4977	8.89	0.33
570	4987	8.75	0.3
580	4997	8.62	0.27
590	5007	8.49	0.23
600	5017	8.36	0.19
610	5027	8.24	0.16
620	5037	8.12	0.14
630	5047	8.01	0.11
640	5057	7.90	9.08
650	5067	7.80	0.05
660	5077	7.69	0.01

### PUMPING TEST REPORT

WELL PUMPINE/OBSERVATION WELL					
TYPE OF DATA DRAWDOWNRECOVERY	M.P. FOR WL's	TOC		EI	
PUMPED WELL NO. PW-1 RADIUS 4"  PUMPING RATES ~ 150 gpm	PUMP ON: DATE	8/13/90	TIME	1015am	_
HOW O MEASURED Manometer with 4"x3" orifice plate	PUMP OFF: DATE_	8/16/90	TIME	1152 am	_
HOW WL'S MEASURED	COMMENTS		<del></del>		_

TIME SINCE	AE SINCE					Residual ADJUSTED					
PUMPING START	UMPING START/ TOPPED REFERENCE MEASURE (ft)  ORAW- DOWN OTHER (ft)  ORAW- DOWN (ft)	READINGS	INGS	DEPTH TO	DRAW-	DRAW-	REMARKS				
CMILLUTES											
0				52.0			SHAT	Lown	P4 per	P 3	1152
0.5				29/							
_				25.7							
1.5				24.62							
2				23.74							
2.5				2271							· -
3	_			2235							
4				2135					-		
4.5				21.00							
5-				21.55				<u> </u>			
5.5				20.7,2							
6				20.00			<del>***</del>	<u>,,.</u>			-
6.5			<del></del>	14.73							
7	·		·	19.51							
7.5		-		18.52							
8				19.04				··			
8.5			_	18,84					-	·-·	<del></del>
91				18.65				<u> </u>	<u></u>		
7.5		*.		14.205							
10	<del></del>	1		18.30		-	<del></del>		_		
11				17.71		•	· · ·		<u> </u>	<del></del> '	
12		-		17.65					<u> </u>		
13				17.38							



WELL PW-1	PUMPING/OBSERVATION WELL		•		
TYPE OF DATA DRAWE		M.P. FOR WL's	TOC		.,
PUMPED WELL NO. P				TIME	1015am
HOW Q MEASURED Ma	wometer with 4"x3" orifice ple	PUMP OFF: DATE	8/16/90	_ TIME _	1152 am
HOW WL's MEASURED			· '		·
DISTANCE FROM PUMPE	D WELL	<u> </u>	<del>- ;</del>		
TIME SINCE	WATER LEVEL Decided	404			

IME SINCE	··-	,	WATER				
PUMPING		READ		DEPTH TO	DRAW-	ADJUSTED DRAW-	REMARKS
START/ STOPPED	t/t'	REFERENCE		WATER	DOWN (ft)	DOWN (ft)	
MINUTES		HEFERBACE	MEASURE	(ft)	(ft)	111,	
14		!		17,14			
15				16.91			
17				17 114			
				16.48		<del> </del>	
19				16.10			
- a .							
21				15.76			
23				15.45	•		
25							11111
27				15:16			
		† :	-		•	•	
30 M	11/4/2	<del>                                     </del>		1468			
2:29				13.69			
<del></del>	,						
2:30				13.60			
12:47				13.58		İ	
1:06				11.75		•	
1:20			·	11.25			
	· · · ·	<del>                                     </del>		·			
1:44				10.60			60 To Luner @ 2:00
3:50				8.65			60 TO Lyne @ 2:00
<del>-  </del>		<del> </del>		<u></u>			
			-				
		<del> </del>				<u>-</u> .	
						•	
	<u>-</u>	-					
1							



WELL DOW-   PUMPINGOBSERVATION WELL			
TYPE OF DATA DRAWDOWN RECOVERY	_		
PUMPED WELL NO. PW-1 RADIUS 4"	M.P. FOR WL's TOC		EL
	PUMP ON: DATE	TIME	<u></u>
HOW Q MEASURED Manameter with 4" x3" orifice plate	PUMP OFF: DATE	TIME .	
	COMMENTS JUL		
DISTANCE FROM PUMPED WELL 50'			

TIME SINCE		WATER LEVEL				ADJUSTED			
PUMPING START/	t/t*	REAL	DINGS	DEPTH TO	DRAW- DOWN	DRAW- DOWN	REMARKS		
STOPPED (MINUTES		REFERENCE	MEASURE		(ft)	(ft)			
11:43		30	1.30	28.70			PERMITING @ = 150 GPM		
11:45		30	1.37	28.63					
11 76	<del></del>	30	1.30	28.70					
11.47		30	1,24	28.76		ļ			
11:48		30	1.20	28.80					
0			-	-			STOP PLAND, TIME = 0		
,15			2.34	27.66					
1			4.94	2 5.06					
1.5			6.07	23.93					
2			6.97	23.03					
2.5		1	759	22.41		_			
3		25	3,27	21.73	<u> </u>	<u> </u>	· · · · · · · · · · · · · · · · · · ·		
4		25	3.93	21.07					
5		25	4.61	20.39					
6		25	5.25	19.75	<del></del>				
7		25	5.72	19.28			•		
8	<del></del>	20	1.16	18.84					
9	_	20	1.55	18.45					
10		20	1.90	18.10					
- 1/	· ·	20	226	17.74					
12		20	<del>                                     </del>	17.49		.			
13		25		17.28					
14		20	3.00	17.00					



WELL POW- 1 PUMPING OBSERVATION WELL	,
TYPE OF DATA DRAWDOWN RECOVERY	M.P. FOR WL's TOC
PUMPED WELL NO. PW-1 RADIUS 4"  PUMPING RATES ~ 150 Gpm	PUMP ON: DATE 8/13/90 TIME /0/5
HOW Q MEASURED Manameter with 4"x3" orifice plate	
HOW WL'S MEASURED Wetted Tape	COMMENTS VIL
PIOTANICE PROMEDIMENT MIELL 50 FRET	<u> </u>

TIME SINCE			WATER	WATER LEVEL				
PUMPING START/	t/ť	READ	INGS	DEPTH TO	DRAW- DOWN	DRAW- DOWN	REMARKS	
STOPPED (MINUTES		REFERENCE	MEASURE		(ft)	(ft)		
15	•	20	3.24	16.76				
16		20	3.45	1655				
17		20	3.66	16.34				
18		18	1.86	16.14				
19		18	2 0 5	15.95			·	
70		18	2.20	15.80				
22		18	2.50	15.50				
24		18	2.78	15.22				
26		18	3.05	14.95				
28		18	3.28	14.72				
30		18	3.51	14.49				
32		16	1.70	14.30				
34		16	1.92	14.08				
35		16	2,01	13.99				
40		16	2,46	13.54				
45		15	1.84	13.16	· · · · · · · · · · · · · · · · · · ·			
55		15	2.40	12.60			·	
75		15	3.32	11.68				
90		12	0.80	11.20				
115		12	1.1/2	10.58 8.65			113 - Se 24 E	
240			-	825				
327	<u> </u>	-	-	7.85	<u></u>			

FORM 36

WELL POW-2 PUMPING OBSERVATION WELL	•		
PUMPED WELL NO. PW-1 RADIUS 4"	M.P. FOR WL's	oc	EL
DIMBING BATES ~150 4Dm	PUMP ON: DATE8//3	90 TIME	1015am
HOW O MEASURED Manometer with 4"x 3" orifice plate		/90 TIME	1152am
HOW WE'S MEASURED WEHLE TO PE	COMMENTS		

TIME SINCE			WATER			ADJUSTED	
PUMPING START/	t/t'	REAL	DING\$	DEPTH TO	DRAW-	DRAW- DOWN	REMARKS
STOPPED (MINUTES		REFERENCE	MEASURE		(ft)	(ft)	
0		40	20.17	19.83			Static
3.5		40	19.82	20.18			
1.25_		40_	d .00	20.00			
2		40	20,30	19.70			•
3		40	20.65	19.35			•
4		40	21.00	19.00	,		
5		40	a1.35	18.65			
6		40	21,67	18.33			
7		40	21.90	17.90			
8		40	22.25	17.75			
9		40	22.51	17.49		<u> </u>	
10		<del>1</del> 0	22.73	17.27			
н		40	22,85	17.15			
12		40	23.17	16.83			
13		40	23.36	16.64			
14		40	23.64	16.36			
. 15		40	23. 78	16.22			
17		40_	i4.06	15.94			
19		40	24.37	15.43	-		•
31		40	24.84	15.16	:		· .
_33		40	24.88	15.12			
25	ļ	40	25.12	14.88			<u> </u>
27_		40	25,33	14.67			



YPE OF DATA DRAWDOWN RECOVERY	M.P. FOR WL's	TOC	FI	
PUMPED WELL NO. PW-1 RADIUS 4"  PUMPING RATES ~ 150 4Pm	M.P. FOR WL : PUMP ON: DATE		TIME	1015 am
HOW O MEASURED Manameter with 4"x3" exicice plate	PUMP OFF: DATE_	8/16/90	_ TIME	1152am
HOW WE'S MEASURED Wetted Tage	COMMENTS			
DISTANCE FROM PUMPED WELL				
TIME CINCE WATER LEVEL				

IME SINCE			WATER	LEVE		ADJUSTED	
PUMPING START/	t/t'	READ		DEPTH TO	DRAW- DOWN	DRAW- DOWN	REMARKS
STOPPED (MINUTES		REFERENCE	MEASURE	(ft)	(ft)	(ft)	
31		46	25.7	14.29			
33		40	25.88	14.12			
37		40	26.18	13.82			
41	-	40	26.49	13.51	-		
45		40	26.72	[			
59	- <u>-</u>	40	27.43				A** *** C\$
75	.,	40	28.05	1105			
90		40	28.50	11.50		1	
115		40	29.04	10.96			
240		_	_	9.31	•	1 40	-M-Scope (Heavy rain begins a 3:00,
300		_	_	8:71			
	· · ·						•
							•
			-				٠ و.
					·		
			-				
					·		
		<del>-</del>					
				<u> </u>			
		<del>-  </del>		<u> </u>		†	

## POW-1 RECOVERY SE1000B Environmental Logger 08/20 11:16

Unit# 00490 Test# 1

#### INPUT 1: Level (F)

Reference	0.00
Scale factor	29.92
Offset	0.00

### Step# 1 08/16 11:45

Elapsed Time	Value
0.0000	- 22.23
0.0033	- 22.23
0.0066	- 22.23
0.0099	- 22.23
0.0133	- 22.23
0.0166	- 22.23
0.0200	- 22.22
0.0233	- 22,22
0.0266	- 22.22
0.0300	- 22.22
0.0333	- 22.22
0.0500	- 22.20
0.0666	- 22.17
0.0833	- 22.13
0.1000	- 22.08
0.1166	- 22.03
0.1333	- 21.96
0.1500	- 21.90
0.1666	- 21.83
0.1833	- 21.75
0.2000	- 21.68
0.2166	- 21.59
0.2333	- 21.51
0.2500	- 21.44
0.2666	- 21.33
0.2833	- 21.26
0.3000	- 21.18 - 21.09
0.3166	
0.3333	
0.4167	- 20.64
0.5000	- 20.25
0.5833	- 19.91 - 10.50
0.6667	- 19.59 - 19.30
0.7500	- 19.30
0.8333 0.9167	- 19.04 - 18.77
1.0000	- 18.54
1.0000	- 10.54

```
1.0833
              -18.34
1.1667
              -18.13
1.2500
              -17.94
1.3333
              -17.76
 1.4166
              -17.58
1.5000
              - 17.41
1.5833
              - 17.29
1.6667
              -17.12
              - 16.99
 1.7500
1.8333
              - 16.86
              -16.72
 1.9167
              - 16.59
2.0000
2.5000
              -15.98
3.0000
              -15.40
3.5000
              -14.94
4.0000
              -14.53
4.5000
              - 14.17
5.0000
              -13.85
5.5000
              -13.52
 6.0000
              -13.25
 6.5000
              -13.01
 7.0000
              -12.76
 7.5000
              -12.54
 8.0000
              - 12.33
 8.5000
              - 12.11
              - 11.96
 9.0000
 9.5000
              -11.78
              - 11.61
10.0000
              - 11.02
12.0000
14.0000
              - 10.51
16.0000
                10.06
18.0000
                 9.64
                 9.34
20.0000
22.0000
                 9.04
24.0000
                 8.71
26.0000
                 8.52
                 8.28
28.0000
                 7.97
30.0000
32.0000
                 7.76
34.0000
                 7.56
36.0000
                 7.40
38.0000
                 7.24
40.0000
                 7.08
42.0000
                 6.93
44.0000
                 6.79
46.0000
                 6.66
48.0000
                 6.53
                 6.41
50.0000
52.0000
                 6.34
                 6.21
54.0000
                 6.07
56.0000
58.0000
                 5.96
60.0000
                 5.86
                 5.77
62.0000
```

64.0000	_	5.68
66.0000	_	5.60
68.0000	-	5.52
70.0000	_	5.44
72.0000	_	5.36
74.0000	_	5.29
76.0000	-	5.21
78.0000	-	5.14
80.0000	_	5.07
82.0000	_	5.01
84.0000	_	4.95
	_	
86.0000	_	4.88
88.0000	_	4.85
90.0000	-	4.76
92.0000	_	4.71
94.0000	_	4.65
96.0000	_	4.59
	_	
98.0000	-	4.50
100.000	_	4.49
110.000	_	4.21
120.000	_	4.01
130.000	_	3.82
140.000	_	3.64
150.000	-	3.43
160.000	-	3.27
170.000	_	3.12
180.000	_	2.98
190.000	-	2.82
	_	
200.000	-	2.70
210.000	-	2.57
220.000	_	2.45
230.000	_	2.32
240.000	_	2.20
	-	2.20
250.000	_	2.10
260.000	_	2.00
270.000	-	1.91
280.000	-	1.82
290.000	_	1.74
300.000	_	1.67
310.000	_	
	_	1.59
320.000	-	1.52
330.000	-	1.45
340.000	-	1.39
350.000	_	1.33
360.000	_	1.26
	_	
370.000	_	1.19
380.000	-	1.14
390.000	-	1.08
400.000	-	1.02
410.000	_	0.98
420.000	_	0.92
430.000	` _	0.87
	-	
440.000	-	0.82
450.000	-	0.78

470.000       -       0.68         480.000       -       0.65         490.000       -       0.56         510.000       -       0.51         520.000       -       0.48         530.000       -       0.44         540.000       -       0.36         560.000       -       0.33         570.000       -       0.33         570.000       -       0.27         590.000       -       0.23         600.000       -       0.14         630.000       -       0.14         630.000       -       0.14         630.000       -       0.14         630.000       -       0.01         660.000       -       0.01         670.000       -       0.01         700.000       0.05       0.00         700.000       0.14       0.14         730.000       0.20       0.05         760.000       0.22       0.20         760.000       0.22       0.20         760.000       0.22       0.20         760.000       0.32       80.000         80.000	460.000	-	0.73
500.000       - 0.56         510.000       - 0.48         530.000       - 0.44         540.000       - 0.36         560.000       - 0.36         560.000       - 0.33         570.000       - 0.30         580.000       - 0.27         590.000       - 0.19         610.000       - 0.16         620.000       - 0.14         630.000       - 0.11         640.000       - 0.05         660.000       - 0.05         660.000       - 0.05         600.000       - 0.05         600.000       - 0.05         600.000       - 0.05         600.000       - 0.05         600.000       - 0.05         600.000       - 0.05         600.000       - 0.05         600.000       - 0.05         600.000       - 0.01         670.000       - 0.05         700.000       - 0.14         730.000       - 0.14         730.000       - 0.23         770.000       - 0.23         790.000       - 0.23         80.000       - 0.24         80.000       - 0.25 <td></td> <td>-</td> <td></td>		-	
510.000       - 0.48         520.000       - 0.44         530.000       - 0.40         550.000       - 0.36         560.000       - 0.33         570.000       - 0.30         580.000       - 0.27         590.000       - 0.19         610.000       - 0.16         620.000       - 0.14         630.000       - 0.14         630.000       - 0.01         640.000       - 0.05         660.000       - 0.05         600.000       - 0.05         600.000       - 0.01         670.000       - 0.05         700.000       - 0.11         740.000       - 0.14         730.000       - 0.14         730.000       - 0.14         730.000       - 0.12         760.000       0.22         790.000       0.22         790.000       0.32         810.000       0.32         810.000       0.42         870.000       0.42         870.000       0.55         900.000       0.55         900.000       0.55         900.000       0.55 <t< td=""><td></td><td>-</td><td></td></t<>		-	
530.000       - 0.44         540.000       - 0.40         550.000       - 0.36         560.000       - 0.33         570.000       - 0.30         580.000       - 0.27         590.000       - 0.19         610.000       - 0.16         620.000       - 0.14         630.000       - 0.05         660.000       - 0.05         660.000       - 0.05         660.000       - 0.05         660.000       - 0.05         670.000       0.05         700.000       0.05         700.000       0.14         730.000       0.14         730.000       0.18         750.000       0.20         760.000       0.25         780.000       0.28         790.000       0.30         80.000       0.32         810.000       0.33         840.000       0.40         850.000       0.42         860.000       0.44         870.000       0.50         900.000       0.55         930.000       0.55         940.000       0.62         970.		_	0.51
540.000       - 0.40         550.000       - 0.36         560.000       - 0.30         580.000       - 0.27         590.000       - 0.23         600.000       - 0.19         610.000       - 0.16         620.000       - 0.14         630.000       - 0.01         640.000       - 0.05         660.000       - 0.01         670.000       0.02         690.000       0.05         700.000       0.14         730.000       0.14         730.000       0.16         740.000       0.18         750.000       0.20         760.000       0.23         770.000       0.28         790.000       0.30         80.000       0.32         810.000       0.33         820.000       0.36         830.000       0.42         860.000       0.44         870.000       0.50         900.000       0.51         910.000       0.52         920.000       0.55         930.000       0.55         950.000       0.62         970.000 <td></td> <td>-</td> <td></td>		-	
560.000       -       0.33         570.000       -       0.30         580.000       -       0.27         590.000       -       0.19         600.000       -       0.16         620.000       -       0.14         630.000       -       0.11         640.000       -       0.05         660.000       -       0.01         670.000       -       0.01         670.000       0.05       0.00         700.000       0.05       0.05         700.000       0.14       0.16         740.000       0.18       0.16         740.000       0.18       0.20         760.000       0.23       0.20         780.000       0.22       0.20         780.000       0.32       0.30         800.000       0.32       0.33         820.000       0.33       0.36         830.000       0.40       0.40         850.000       0.42       0.50         900.000       0.51       0.50         920.000       0.52       0.55         930.000       0.52       0.62	540.000	-	0.40
570.000       - 0.30         580.000       - 0.27         590.000       - 0.19         600.000       - 0.16         620.000       - 0.14         630.000       - 0.11         640.000       - 0.05         660.000       - 0.05         660.000       - 0.01         670.000       - 0.05         660.000       - 0.01         670.000       - 0.01         700.000       - 0.01         720.000       - 0.14         730.000       - 0.05         760.000       - 0.12         770.000       - 0.12         770.000       - 0.12         770.000       - 0.12         770.000       - 0.12         770.000       - 0.23         790.000       - 0.23         790.000       - 0.32         810.000       - 0.33         820.000       - 0.33         840.000       - 0.42         860.000       - 0.42         870.000       - 0.53         920.000       - 0.53         920.000       - 0.53         920.000       - 0.53         920.000       - 0.52 </td <td></td> <td>-</td> <td></td>		-	
590.000       - 0.23         600.000       - 0.19         610.000       - 0.16         620.000       - 0.14         630.000       - 0.01         640.000       - 0.05         660.000       - 0.01         670.000       - 0.05         660.000       - 0.05         670.000       - 0.05         700.000       - 0.05         700.000       - 0.05         700.000       - 0.05         740.000       - 0.11         750.000       - 0.01         750.000       - 0.01         750.000       - 0.02         760.000       - 0.23         770.000       - 0.25         780.000       - 0.28         790.000       - 0.33         800.000       - 0.32         800.000       - 0.33         840.000       - 0.33         840.000       - 0.42         860.000       - 0.42         860.000       - 0.42         880.000       - 0.53         900.000       - 0.53         920.000       - 0.53         920.000       - 0.53         950.000       - 0.62 </td <td>570.000</td> <td>-</td> <td>0.30</td>	570.000	-	0.30
600.000       -       0.19         610.000       -       0.16         620.000       -       0.14         630.000       -       0.08         650.000       -       0.05         660.000       -       0.01         670.000       0.00       0.00         680.000       0.02       0.00         690.000       0.05       0.00         700.000       0.11       0.00         730.000       0.16       0.14         730.000       0.16       0.18         750.000       0.20       0.20         760.000       0.22       0.20         780.000       0.32       0.30         800.000       0.32       0.36         830.000       0.33       0.36         840.000       0.38       0.36         840.000       0.40       0.40         850.000       0.44       0.50         900.000       0.51       0.50         900.000       0.55       0.55         930.000       0.55       0.60         950.000       0.62       0.63         980.000       0.65		_	
620.000       - 0.14         630.000       - 0.08         650.000       - 0.05         660.000       - 0.01         670.000       0.00         680.000       0.02         690.000       0.05         700.000       0.14         730.000       0.16         740.000       0.18         750.000       0.20         760.000       0.23         770.000       0.30         800.000       0.32         810.000       0.33         820.000       0.36         830.000       0.40         850.000       0.42         860.000       0.44         870.000       0.50         900.000       0.51         910.000       0.55         930.000       0.55         930.000       0.55         930.000       0.60         960.000       0.62         970.000       0.63         980.000       0.65	600.000		0.19
630.000 - 0.11 640.000 - 0.08 650.000 - 0.05 660.000 - 0.01 670.000 0.00 680.000 0.02 690.000 0.05 700.000 0.11 720.000 0.14 730.000 0.16 740.000 0.18 750.000 0.20 760.000 0.23 770.000 0.25 780.000 0.32 810.000 0.32 810.000 0.32 810.000 0.33 820.000 0.33 820.000 0.33 840.000 0.33 840.000 0.33 840.000 0.40 850.000 0.42 860.000 0.44 870.000 0.44 870.000 0.44 870.000 0.55 930.000 0.55 930.000 0.55 930.000 0.55 930.000 0.55 930.000 0.60 960.000 0.62		-	
650.000       -       0.05         660.000       -       0.01         670.000       0.02       0.02         690.000       0.05       0.05         700.000       0.11       0.14         730.000       0.16       0.18         750.000       0.20       0.20         760.000       0.23       0.25         780.000       0.30       0.30         800.000       0.32       0.30         800.000       0.33       0.33         840.000       0.36       0.36         830.000       0.40       0.40         850.000       0.42       0.40         870.000       0.44       0.40         890.000       0.50       0.50         900.000       0.55       0.50         900.000       0.55       0.57         940.000       0.58       0.60         950.000       0.60       0.62         970.000       0.65       0.65		-	0.11
670.000 0.00 680.000 0.02 690.000 0.05 700.000 0.08 710.000 0.11 720.000 0.14 730.000 0.16 740.000 0.20 760.000 0.23 770.000 0.25 780.000 0.25 780.000 0.32 810.000 0.32 810.000 0.32 810.000 0.33 820.000 0.36 830.000 0.36 830.000 0.36 840.000 0.40 850.000 0.42 860.000 0.44 870.000 0.44 870.000 0.46 880.000 0.46 890.000 0.55 910.000 0.55 930.000 0.55 930.000 0.55 930.000 0.55 930.000 0.55 930.000 0.55 930.000 0.55 930.000 0.56 950.000 0.66		_	
680.000 0.02 690.000 0.05 700.000 0.08 710.000 0.11 720.000 0.14 730.000 0.16 740.000 0.20 760.000 0.23 770.000 0.25 780.000 0.28 790.000 0.30 800.000 0.32 810.000 0.32 810.000 0.33 820.000 0.36 830.000 0.36 830.000 0.40 850.000 0.44 870.000 0.44 870.000 0.44 870.000 0.44 880.000 0.44 890.000 0.50 900.000 0.51 910.000 0.55 930.000 0.55 930.000 0.55 930.000 0.55 930.000 0.55 930.000 0.55 930.000 0.55 930.000 0.55 930.000 0.55		-	
700.000       0.08         710.000       0.11         720.000       0.14         730.000       0.16         740.000       0.20         760.000       0.23         770.000       0.25         780.000       0.30         800.000       0.32         810.000       0.33         820.000       0.36         830.000       0.40         850.000       0.42         860.000       0.44         870.000       0.46         880.000       0.50         900.000       0.51         910.000       0.55         930.000       0.55         940.000       0.58         950.000       0.60         960.000       0.62         970.000       0.65	680.000		0.02
710.000			
730.000       0.16         740.000       0.18         750.000       0.20         760.000       0.23         770.000       0.25         780.000       0.30         800.000       0.32         810.000       0.33         820.000       0.36         830.000       0.40         850.000       0.42         860.000       0.44         870.000       0.46         880.000       0.50         900.000       0.51         910.000       0.55         930.000       0.55         930.000       0.58         950.000       0.60         960.000       0.62         970.000       0.65	710.000		0.11
750.000 0.20 760.000 0.23 770.000 0.25 780.000 0.28 790.000 0.30 800.000 0.32 810.000 0.36 830.000 0.36 830.000 0.40 850.000 0.42 860.000 0.42 860.000 0.44 870.000 0.46 880.000 0.46 890.000 0.50 900.000 0.51 910.000 0.53 920.000 0.55 930.000 0.55 930.000 0.55 930.000 0.58 950.000 0.60 960.000 0.65			
760.000 0.23 770.000 0.25 780.000 0.28 790.000 0.30 800.000 0.32 810.000 0.36 830.000 0.36 830.000 0.40 850.000 0.42 860.000 0.44 870.000 0.46 880.000 0.46 890.000 0.50 900.000 0.51 910.000 0.53 920.000 0.55 930.000 0.55 930.000 0.55 930.000 0.58 950.000 0.62 970.000 0.65			
780.000       0.28         790.000       0.30         800.000       0.32         810.000       0.36         830.000       0.38         840.000       0.40         850.000       0.42         860.000       0.44         870.000       0.46         880.000       0.50         900.000       0.51         910.000       0.53         920.000       0.55         930.000       0.57         940.000       0.58         950.000       0.60         960.000       0.62         970.000       0.63         980.000       0.65	760.000		0.23
790.000       0.30         800.000       0.32         810.000       0.36         820.000       0.36         830.000       0.38         840.000       0.40         850.000       0.42         860.000       0.44         870.000       0.46         880.000       0.50         900.000       0.51         910.000       0.53         920.000       0.55         930.000       0.57         940.000       0.60         960.000       0.62         970.000       0.63         980.000       0.65			
810.000       0.33         820.000       0.36         830.000       0.38         840.000       0.40         850.000       0.42         860.000       0.46         880.000       0.48         890.000       0.50         900.000       0.51         910.000       0.55         930.000       0.57         940.000       0.58         950.000       0.60         960.000       0.62         970.000       0.65	790.000		0.30
820.000       0.36         830.000       0.38         840.000       0.40         850.000       0.42         860.000       0.46         870.000       0.48         890.000       0.50         900.000       0.51         910.000       0.53         920.000       0.55         930.000       0.57         940.000       0.58         950.000       0.60         960.000       0.62         970.000       0.65			
840.000       0.40         850.000       0.42         860.000       0.44         870.000       0.46         880.000       0.48         890.000       0.50         900.000       0.51         910.000       0.53         920.000       0.55         930.000       0.57         940.000       0.58         950.000       0.60         960.000       0.62         970.000       0.65	820.000		0.36
860.000       0.44         870.000       0.46         880.000       0.48         890.000       0.50         900.000       0.51         910.000       0.53         920.000       0.55         930.000       0.57         940.000       0.58         950.000       0.60         960.000       0.62         970.000       0.65	840.000		0.40
870.000       0.46         880.000       0.48         890.000       0.50         900.000       0.51         910.000       0.55         930.000       0.57         940.000       0.58         950.000       0.60         960.000       0.62         970.000       0.65			
890.000       0.50         900.000       0.51         910.000       0.53         920.000       0.55         930.000       0.57         940.000       0.58         950.000       0.60         960.000       0.62         970.000       0.63         980.000       0.65	870.000		0.46
900.000       0.51         910.000       0.53         920.000       0.55         930.000       0.57         940.000       0.58         950.000       0.60         960.000       0.62         970.000       0.65			
920.000       0.55         930.000       0.57         940.000       0.58         950.000       0.60         960.000       0.62         970.000       0.65	900.000		
940.000 0.58 950.000 0.60 960.000 0.62 970.000 0.63 980.000 0.65	920.000		0.55
950.000       0.60         960.000       0.62         970.000       0.63         980.000       0.65			
970.000	950.000		0.60

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# POW-2 RECOVERY SE1000B Environmental Logger 08/20 11:20

Unit# 00490 Test# 1

### INPUT 2: Level (F)

Reference	0.00
Scale factor	10.01
Offset	0.01

### Step# 1 08/16 11:45

Elapsed Time	Value
0.0000	- 13.14
0.0033	- 13.14
0.0066	- 13.14
0.0099	- 13.14
0.0133	- 13.14
0.0166	- 13.15
0.0200	- 13.15
0.0233	- 13.15
0.0266	- 13.15
0.0300	- 13.15
0.0333	- 13.15
0.0500	- 13.14
0.0666	- 13.14
0.0833	- 13.14
0.1000	- 13.14
0.1166	- 13.14
0.1333	- 13.14
0.1500	- 13.14
0.1666	- 13.14
0.1833	- 13.15
0.2000	- 13.15
0.2166	- 13.15
0.2333	- 13.15
0.2500	- 13.14
0.2666	- 13.05
0.2833	- 13.15
0.3000	- 13.13
0.3166	- 13.14
.0.3333	- 13.14
0.4167	- 13.15
0.5000	- 13.14
0.5833	- 13.13
0.6667	- 13.12
0.7500	- 13.10
0.8333	- 13.09
0.9167	- 13.07
1.0000	- 13.05

1.0833	- 13.03
1.1667	- 13.01
	_
1.2500	- 12.99
1.3333	- 12.96
1.4166	- 12.95
1.5000	- 12.92
1.5833	- 12.88
1.6667	- 12.86
1.7500	- 12.83
1.8333	- 12.80
1.9167	- 12.77
2.0000	- 12.74
2.5000	- 12.56
3.0000	- 12.38
3.5000	- 12.19
4.0000	- 12.01
4.5000	- 11.84
5.0000	- 11.66
5.5000	- 11.51
6.0000	- 11.35
6.5000	- 11.20
7.0000	- 11.05
7.5000	- 10.91
8.0000	- 10.77
8.5000	- 10.64
9.0000	- 10.51
9.5000	- 10.39
10.0000	- 10.26
12.0000	- 9.80
14.0000	
16.0000	- 9.05
18.0000	- 8.75
20.0000	- 8.46
22.0000	- 8.20
24.0000	- 7.96
26.0000	- 7.74
28.0000	- 7.53
30.0000	- 7.33
32.0000	- 7.15
34.0000	- 6.98
36.0000	- 6.83
38.0000	- 6.68
40.0000	- 6.54
42.0000	- 6.41
44.0000	- 6.28
46.0000	- 6.14
48.0000	- 6.05
50.0000	- 5.94
52.0000	- 5.84
54.0000	- 5.75
	- 5.65
56.0000	
58.0000	- 5.55
60.0000	- 5.47
62.0000	- 5.38
32.0000	- 2.36

64.0	2000 -	5.30
66.0		5.22
68.0		5.15
70.0	- 0000	5.08
72.0		5.01
74.0		4.94
76.0		4.88
78.0	0000 -	4.81
80.0		4.75
		4.69
82.0		
84.0		4.63
86.0	0000 -	4.58
88.0		4.53
90.0		4.47
92.0		4.42
94.0	0000 -	4.36
96.0		4.32
98.0		4.27
100.	.000 ~	4.22
110.	- 000	3.98
120.		3.79
130.		3.61
140.		3.44
150.	.000 -	3.27
160.		3.13
170.		2.99
180.		2.86
190.	.000 -	2.74
200.		2.62
210.		2.52
220.		2.40
230.	.000 -	7.86
240.		7.87
250.		
		7.91
260.	.000 -	7.87
270.	.000 -	7.91
280.		7.91
290.		7.90
300.	.000 -	7.89
310.		7.91
320.		7.90
330.		7.90
340.	.000 -	7.90
350.		7.89
360.		7.91
370.		7.90
380.	.000 -	7.92
390.		7.90
400.		7.90
410.		7.91
420.	.000 -	7.92
430.		7.91
440.		7.93
	000 -	
450.	. 500	7.91

### PUMPING TEST REPORT

WELL MW-5 PUMPING DESERVATION WELL				
TYPE OF DATA DRAWDOWN RECOVERY		TOC		
FUNITED WELL NO	M.P. FOR WL's PUMP ON: DATE	8/13/90	TIME	1015am
HOW Q MEASURED Manometer with 4"x 3" orifice plate	PUMP OFF: DATE_		TIME	1152 am
HOW WE'S MEASURED Wetted To pe	COMMENTS	<u>,                                     </u>	<u> </u>	
DISTANCE FROM PUMPED WELL 200 F4	<del></del>			

TIME SINCE PUMPING WATER LEVEL ADJUSTED ORAW-DOWN (ft) REMARKS DRAW-DOWN (ft) READINGS DEPTH TO START/ STOPPED (MINUTES t/t' WATER REFERENCE MEASURE 4.84 0 **484** 16 6 22 34 16,81 5.20 39 23 17.80 14.80 25 5.20 42 M-Scope (Heavy rain begins 3:00pm 240 5.11 4 94 300 :

11:52.



WELL PUMPING OBSERVATION WELL		
TYPE OF DATA ORAWDOWNARECOVERY	<b>T</b> 00	
PUMPED WELL NO. PW - RADIUS 4	M.P. FOR WL's	EL
PUMPING RATES 2 = 150 57m	PUMP UN: DATE	TIME
HOW a MEASURED Manameter with 4" X 3" crifice plate	PUMP OFF: DATE _ \$ / 16/90	TIME
HOW WE'S MEASURED M- Scope, Wetted Tape.	COMMENTS	
DISTANCE FROM PUMPED WELL		<u></u>

IME SINCE		WATER			ADJUSTED	
PUMPING STARD/ STOPPED MINUTES	t/t'	READINGS REFERENCE MEASURE	DEPTH TO WATER (ft)	DRAW- DOWN (ft)	DRAW- DOWN (ft)	REMARKS
0			6-09	0		Static
_/			31.2	25.11		•
1.500			33.5	27.4(		16" maronety
2:13:			34.8	28,71		
2: 45			35.9	29.81		
3:10000	-		36.9	30.81		
4: 10 sic			37.62	31.53		
5 min			38.05	31.96		
6			34.75	32-66		14.5" monometer
7			39.35	33.36		<u></u>
8	<del>,</del>		39.83	33.7 <del>4</del>		
9			40.40	34.31		
1\$			40,91	34.82		
(a			41.25	35.16		<u></u>
וח			42.25	36.16		14.5" manometer
18			42.50	36.4(		
20			42.80	36.71	!	
32			44.20	38.11		14.5" manometer
36			44.60	38.51		<u></u>
40			44.65	38.56		
ý O			46.21	40.12		
70			46.58	40.49		
104		[ [	47.69	41.60		*

FORM 362

WELL PW - PUMPINGYOBSERVATION WELL		
TYPE OF DATA ORAWDOWNYRECOVERY	Tod	
PUMPED WELL NO. PW-1 RADIUS 4"	M.P. FOR WL's	EL
PUMPING RATES ~ 150 4pm	FURN UN. UNIX	10:15 am
HOW O MEASURED Memorater with 4"x3" orifice plate	SPUMP OFF: DATE 8/16/90 TIME	1152 am
14 6	COMMENTS	••
DISTANCE FROM PUMPED WELL		

[	TIME SINCE			WATER			ADJUSTED DRAW-	REMARKS
	START) STOPPED (MINUTES	1/1	READ REFERENCE		DEPTH TO WATER (ft)	DRAW- DOWN (ft)	DOWN (ft)	nemanno
	113				47.85	41.76		
	160	-			49.03	42.94		
	202				49.3	43.21		
	232				49.7	43.61		
	262	······································			49.83	43.74		
	322				50.2	44.11		
·	382				50.60	44.51		
!	442				50 <u>5</u> 3	44.44	! !	
	539				50.47	44.2-		
8:45pm	630				51.15	45.06		
9.49pm	j.				51.17	45,08		Maumeter = 14"
11:43 pm	808.				52.03	45.94		
'- 00 Am	885	_		-	51.98			MANOMETER = 14.5"
2:00 AM	945		_		52.00			
3:00 Am	1005		<u> </u>		51.68			14.5"
MA DET	1065				51.74	45.65		
7:00 Am	1125	<u>.</u>			51.73	45.64		monomater 14.0"
7:00 PM	1185				52.00	45.91		monameter 14.5"
3:00 An	1245				52.03			
7 '36 AM	1305		70.00	1800	51.79	45.70	- 1	mananeta 14.0"
`	1401	-			51.98			14'0"
12:45	1470	·	70.00	18.40	51.60	45.51	3	KAN From Int M
12:57	1602		<u> </u>	L	51.75	43.66		12:15-12:33



WELL PW- : QUMPING/OBSERVATION WELL		
TYPE OF DATA ORAWDOWN RECOVERY	ToO	
PUMPED WELL NO. PW-I RADIUS 4"	M.P. FOR WL's TOC	. EL
DIMARING BATES ~ 150 4 DM	PUMP ON: DATE	AE 1015 am
HOW O MEASURED Manameter with 4" x 3" orifice plate	9/1//80 TI	1152 am
HOW O MEASURED WAND METER WITH T A D OFFICE PIETE	PUMP OFF: DATE	
HOW WE'S MEASURED M-Scope, Wetted Tape	COMMENTS	
DISTANCE FROM PUMPED WELL		<del></del>

2:00pm 2:00pm 3:59pm 4:59pm 7:22pm	umping stopped ainutes 1665 1725	t/t*	REFERENCE			DRAW- DOWN (ft)	DRAW- DOWN (ft)	REMARKS
2:00pm 2:00pm 3:59pm 4:59pm 7:22pm	1665 1725		REFERENCE	MEASURE		(ft)	(Pt)	
2:00pm 3:59pm 4:59pm 7:22pm	1725				أممساما	ę i		
3:59 pm 4:59 pm 7:22 pm			1		51.78	45.69		Gerring Roady to Rosen
4:59 pm 7:22 pm	1784			:	57.75	45.66		
7:22 pm		<del></del>			51.76	45.67		14"
	1844				51.62	45.53		
9:20	1987				51.50	45.41		13 juches (DSI adjusts).
	2124				53.06	46.97		14.5"
11:30 pm	2235				53,17	47.08		e de la companio del companio de la companio del companio de la companio del companio de la companio de la companio de la companio del companio de la companio della companio della companio della companio della companio della companio della companio della companio della companio della companio della companio della companio della companio della compan
7:00am	2685				53.58	47.49		1514' Rate up
9:58am	2843				53.21	47.12		15"
12:57pm	3042				53.13	47.04		Hard sain 3
14:36 pm	3141				-			1436 - 1458
1555	3220				53.17	47.08		
1901	3406				52.92	46.13		15"
2203	3588 .				52,79	46.70		
0100-4			,					No reading
1408	3953		,		53.4	47.05		15*
0654	4119				53.20	47.11		15 "
0952	4297	<u></u>	<u> </u>		51.64	45.55		14" (Orifice changed)
_	4407				5(.80			
<u> </u> _	4409				51.90			
ļ	4410				51.99			
<u> </u>	4411				52.00			

## POW-1 DRAWDOWN SE1000B Environmental Logger 08/20 10:50

Unit# 00490 Test# 1

### INPUT 1: Level (F)

Reference	0.00
Scale factor	29.92
Offset	0.00

#### Step# 0 08/13 10:07

Elapsed Time	V	alue
0.0000		0.00
0.0033	_	0.00
0.0066	-	0.01
0.0099	_	0.02
0.0133	-	0.03
0.0166	-	0.03
0.0200	_	0.04
0.0233	-	0.06
0.0266	_	0.07
0.0300	_	0.09
0.0333	-	0.10
0.0500	-	0.16
0.0666	-	0.22
0.0833	-	0.29
0.1000	_	0.35
0.1166	-	0.43
0.1333	-	0.50
0.1500	-	0.59
0.1666	-	0.68
0.1833	-	0.78
0.2000	-	0.87
0.2166	_	0.97
0.2333	-	1.06
0.2500	-	1.15
0.2666	-	1.24
0.2833	_	1.33
0.3000	_	1.42
0.3166		1.50
0.3333	-	1.60
0.4167	-	2.00
0.5000	-	2.37
0.5833	_	2.69
0.6667 0.7500	_	3.03 3.33
0.8333	_	3.33 3.57
0.8333	_	3.83
1.0000	_	4.04
1.0000	_	4.04

```
1.0833
                  4.26
 1.1667
                  4.48
 1.2500
                  4.66
 1.3333
                  4.83
 1.4166
                  5.01
 1.5000
                  5.17
 1.5833
                  5.31
 1.6667
                  5.47
 1.7500
                 5.62
 1.8333
                  5.76
 1.9167
                 5.88
 2.0000
                  6.02
 2.5000
                 6.68
 3.0000
                 7.24
 3.5000
                 7.72
 4.0000
                 8.10
 4.5000
                 8.44
 5.0000
                 8.76
 5.5000
                 9.05
 6.0000
                 9.35
 6.5000
                 9.60
 7.0000
                9.85
              - 10.07
 7.5000
 8.0000
              -10.28
 8.5000
              -10.49
 9.0000
              -10.68
 9.5000
              -10.85
10.0000
              - 11.02
12.0000
              -11.62
14.0000
              -12.11
16.0000
              -12.54
18.0000
              -12.91
20.0000
              - 13.21
22.0000
              -13.53
24.0000
              -13.78
26.0000
              -14.04
28.0000
              - 14.28
              - 14.47
30.0000
32.0000
              - 14.68
34.0000
              -14.85
              - 15.04
36.0000
38.0000
              - 15.20
40.0000
              -15.32
42.0000
              -15.48
44.0000
              - 15.62
              - 15.75
46.0000
              - 15.87
48.0000
50.0000
              - 16.00
52.0000
              -16.15
54.0000
              -16.30
56.0000
             -16.42
58.0000
              -16.52
60.0000
             - 16.61
             - 16.70
62.0000
```

```
- 16.81
64.0000
              - 16.92
66.0000
68.0000
               16.96
70.0000
               17.04
72.0000
              -17.09
               17.18
74.0000
              - 17.27
76.0000
                17.32
78.0000
              -17.38
80.0000
               17.45
82.0000
                17.50
84.0000
86.0000
               17.57
              -17.63
88.0000
90.0000
                17.72
92.0000
                17.78
94.0000
                17.84
96.0000
              -17.88
              -17.94
98.0000
100.000
               17.99
              -18.24
110.000
120.000
               18.46
              -18.65
130.000
              -18.85
140.000
               18.93
150.000
              - 19.16
160.000
170.000
                19.32
              -19.50
180.000
190.000
              - 19.61
              -19.72
200.000
              - 19.84
210.000
220.000
                19.90
230.000
              -20.02
              -20.15
240.000
250.000
              - 20.21
260.000
                20.26
270.000
                20.38
280.000
              -20.42
290.000
              -20.47
300.000
              -20.57
310.000
              - 20.66
320.000
              -20.74
330.000
              -20.79
              -20.83
340.000
              - 20.87
350.000
              - 20.92
360.000
              - 21.01
370.000
              - 21.05
380.000
                21.11
390.000
              - 21.17
400.000
              - 21.21
410.000
              - 21.21
420.000
              - 21.20
430.000
              -21.24
440.000
450.000
              - 21.20
```

460.000	- 21.27	
470.000	- 21.28	
480.000	- 21.26	
490.000	- 21.35	
500.000	- 21.37	
510.000	- 21.39	
520.000	- 21.41	
530.000	- 21.42	
540.000	- 21.43	
550.000	- 21.43	
560.000	- 21.46	
570.000	- 21.51	
580.000	- 21.60	
590.000	- 21.59	
600.000	- 21.60	
610.000	- 21.69	
620.000	- 21.80	
630.000	- 21.81	
640.000	- 21.84	
650.000	- 21.81	
660.000	- 21.80	
670.000	- 21.78	
680.000	- 21.85	
690.000	- 21.90	
700.000	- 21.93	
710.000	- 21.94	
720.000	- 21.92	
730.000	- 21.86	
740.000		
750.000		
760.000 770.000		
780.000		
790.000		
800.000	- 22.31 - 22.35	
810.000		
820.000	- 22.37 - 22.36	
830.000	- 22.36	
840.000		
850.000	- 22.37 - 22.39	
860.000	- 22.39 - 22.37	
870.000		
880.000	- 22.38	
890.000	- 22.38	
900.000	- 22.36	
910.000	- 22.38 - 22.42	•
920.000		
930.000	- 22.42	
940.000	- 22.42 - 22.42	
950.000		
960.000	- 22.38 - 33.38	
970.000	- 22.38 - 32.35	
980.000	- 22.35 - 33.37	•
990.000	- 22.37	

ı

1000.00	- 22.32
1100.00	- 22.38
1200.00	- 22.44
1300.00	- 22.38
1400.00	- 22.33
1500.00	- 22.32
1600.00	- 22.39
1700.00	- 22.37
1800.00	- 22.34
1900.00	- 22.22
2000.00	- 22.18
2100.00	- 22.75
2200.00	- 22.88
2300.00	- 22.93
2400.00	- 23.00
2500.00	- 22.95
2600.00	- 22.86
2700.00	- 22.97
2800.00	- 23.04
2900.00	- 22.87
3000.00	- 22.82
3100.00	- 22.87
3200.00	- 22.96
3300.00	- 22.94
3400.00	- 22.87
3500.00	- 22.67
3600.00	- 22.81
3700.00	- 22.80
3800.00	- 22.73
3900.00	- 22.73
4000.00	- 22.74
4100.00	- 22.82
4200.00	- 22.22
4300.00	- 22.18
4400.00	- 22.17
NID	

END

## POW-2 DRAWDOWN SE1000B Environmental Logger 08/20 10:59

Unit# 00490 Test# 1

### INPUT 2: Level (F)

Reference	0.00
Scale factor	10.01
Offset	0.01

Step# 0 08/13 10:07

Elapsed T.	ime Value
0.0000	0.00
0.0033	0.00
0.0066	0.00
0.0099	0.00
0.0133	0.00
0.0166	0.00
0.0200	0.00
0.0233	0.00
0.0266	0.00
0.0300	0.00
0.0333	0.00
0.0500	0.00
0.0666	0.00
0.0833	0.00
0.1000	0.00
0.1166	0.00
0.1333	0.00
0.1500	0.00
0.1666	0.00
0.1833	0.00
0.2000	0.00
0.2166	0.00
0.2333	0.00
0.2500	0.00
0.2666	0.00 0.00
0.2833 0.3000	0.00
0.3166	0.00
0.3333	0.00
0.4167	0.00
0.5000	- 0.00
0.5833	- 0.01
0.6667	- 0.02
0.7500	- Q.03
0.8333	- 0.05
0.9167	- 0.06
1.0000	- 0.09

1.0833	_	0.11
1.1667	_	0.13
1.2500	-	0.16
1.3333	-	0.18
1.4166	_	0.21
1.5000 1.5833		0.24
1.6667	_	0.30
1.7500	_	0.33
1.8333	_	0.36
1.9167		0.39
2.0000	-	0.42
2.5000	-	0.61
3.0000 3.5000	_	0.80
4.0000	-	1.18
4.5000	-	1.36
5.0000	_	1.53
5.5000	-	1.70
6.0000	-	1.86
6.5000	_	2.02
7.0000 7.5000	_	2.17
8.0000		2.46
8.5000	_	2.60
9.0000	-	2.73
9.5000	-	2.87
10.0000		2.99
14.0000	_	3.88
16.0000	_	4.25
18.0000	-	4.58
20.0000	_	4.89
22.0000	_	5.17 5.42
26.0000	_	5.65
28.0000	_	5.87
30.0000	_	6.07
32.0000	-	6,25
34.0000	-	6.42
36.0000 38.0000	_	6.58 6.74
40.0000	_	6.88
42.0000	-	7.01
44.0000	-	7.14
46.0000	-	7.25
48.0000	-	7.38
50.0000 52.0000	_	7.49 7.60
54.0000	-	7.70
56.0000	-	7.81
58.0000	-	7.91
60.0000	-	8.00
62.0000	_	8.09

```
64.0000
                 8.18
66.0000
                 8.25
68.0000
                 8.33
70.0000
                 8.41
72.0000
                 8.47
74.0000
                 8.55
76.0000
                 8.63
78.0000
                 8.68
80.0000
                 8.75
82.0000
                 8.81
84.0000
                 8.86
86.0000
                 8.92
88.0000
                 8.97
90.0000
                 9.03
92.0000
                 9.09
94.0000
                 9.14
96.0000
                 9.20
98.0000
                 9.24
100.000
                 9.29
110.000
                 9.52
120.000
                 9.72
130.000
                 9.91
140.000
              -10.08
150.000
              -10.22
160.000
              -10.38
170.000
              -10.50
180.000
              -10.67
190.000
                10.80
200.000
              -10.91
210.000
              - 11.01
220.000
              - 11.09
230.000
               11.19
240.000
              - 11.29
250.000
               11.37
260.000
              -11.43
270.000
              - 11.51
280.000
              - 11.58
              - 11.63
290.000
300.000
                11.71
              - 11.78
310.000
320.000
              -11.85
330.000
              - 11.91
340.000
              - 11.96
350.000
                12.00
360.000
              -12.05
370.000
              - 12.11
380.000
              - 12.16
390.000
              -12.20
400.000
              -12.26
410.000
                12.31
420.000
              -12.34
              -12.36
430.000
440.000
              -12.39
450.000
```

-12.40

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460.000
              -12.43
470.000
              -12.46
480.000
              -12.49
490.000
              -12.51
500.000
               12.56
510.000
              -12.58
520.000
              -12.60
530.000
              -12.62
540.000
              -12.63
550.000
              - 12.65
560.000
               12.67
570.000
               12.70
580.000
               12.74
590.000
                12.76
600.000
              -12.78
610.000
              - 12.81
620.000
              - 12.87
630.000
              - 12.90
640.000
               12.93
650.000
                12.94
660.000
              - 12.95
670.000
              -12.95
680.000
                12.97
690.000
               13.00
                13.03
700.000
710.000
               13.05
720.000
              -13.07
730.000
              -13.06
740.000
               13.12
750.000
               13.15
760.000
               13.21
770.000
               13.23
780.000
                13.25
790.000
               13.28
                13.28
800.000
                13.29
810.000
820.000
               13.34
830.000
             -13.32
840.000
             -13.33
850.000
               13.33
860.000
                13.35
870.000
             - 13.35
880.000
             -13.36
890.000
             -13.36
900.000
             - 13.36
910.000
             -13.37
920.000
               13.39
930.000
             -13.40
             -13.40
940.000
950.000
             -13.41
960.000
             -13.40
970.000
             -13.40
980.000
               13.39
990.000
             -13.39
```

1000.00	- 13.39
1100.00	- 13.38
1200.00	- 13.43
1300.00	- 13.39
1400.00	- 13.37
1500.00	- 13.34
1600.00	- 13.34
1700.00	- 13.33
1800.00	- 13.31
1900.00	- 13.24
2000.00	- 13.21
2100.00	- 13.46
2200.00	- 13.55
2300.00	- 13.59
2400.00	- 13.62
2500.00	- 13.62 - 13.60
2600.00	- 13.54
2700.00	
2800.00	20.00
	20.05
2900.00	
3000.00	20.00
3100.00	
3200.00	
3300.00	
3400.00	
3500.00	- 13.47
3600.00	- 13.53
3700.00	- 13.51
3800.00	- 13.48
3900.00	- 13.47 - 13.48
4000.00	
4100.00	
4200.00	#7.57
4300.00	
4400.00	- 13.16
ND	

END

## PUMPING TEST REPORT

WELL POW-2 PUMPING OBSERVATION WELL						
TYPE OF DATA GRAWDOWN/RECOVERY	M.P. FOR WL's	TO			EL	_
PUMPED WELL NO. 10-1 RADIUS 41	PUMP ON: DATE	8/13	90	TIME	10:15	15
HOW O MEASURED Manameter with 4"x3" orifice plate			90	TIME	11520	<u>m</u>
HOW WL'S MEASURED M- Scope, Wetted Tape	COMMENTS					
200 Feet						

ME SINCE	-	WATER LEVE		VEL			
PUMPING START/ STOPPED	سببند		DEPTH TO	DRAW- DOWN	DRAW- DOWN	· .	REMARKS
MINUTES	min	REFERENCE MEASURE	(ft)	(ft)	(ft)		
0	0		7.04	0		statie	
14:00	14		10.95	3.91			
16	16		11.25	4,21			
<i>3</i> 2	22		·2.17	5.13			-
<i>2</i> 4	24		12.43	5.39			
25	25		₽.54	5.50		<u> </u>	
25	26		12.63	5.59			
<u>27</u>	27		12.77	5.73			
28	28		12.87	5.83			
29	29		12.98	5.94			
30	30		13.07	6.03			
46	46		14.30	7.26			
47	47		14.34	7.30			
50	50		14.51	7.47			
53	53		14.67	7.63			
55	55		14.77	7.73			
57	57		14.87	7.83			
1:13	73		15.54	8.50			
1:16	76		15.65	8.61			
[:4]	101		16.35	9.31			
2 '34	154		17.6	10.56			<u>-</u>
3:29	207		18.2	11.16			
3:57	237		18:47	11.43			

WELL POW - 2 PUMPING LOBSERVATION WELL			
TYPE OF DATA ORAWDOWN RECOVERY	TAC		
	M.P. FOR WL's	=	L
PUMPING RATES _ ~ 150 4 pm	PUMP ON: DATE	TIME _	1015am
HOW O MEASURED Manameter with 4"x3" orifice plate	PUMP OFF: DATE 8/16/90	TIME _	1152am
	COMMENTS		_
	COMMENT TO		
DISTANCE FROM PUMPED WELL 200 feet			·

[	TIME SINCE		WATER LEVEL				ADJUSTED	REMARKS		
	START/ STOPPED	244	READ		DEPTH TO WATER (ft)	DRAW- DOWN (ft)	DRAW- DOWN (ft)	NEMANNO		
,	H'S MIN		REFERENCE	MEASURE	(11)	i	111/			
ļ	4:27	267			18.66	11.62				
	4:57	a97			18.89	11.85				
	5:27	327			19.05	12.01				
	5:57	357			19.20	12.16	<u> </u>			
	6:27	387			19.37	r⊋, 37				
	6:57	417			19.53	12.49				
	7:30	450			19.60	12.56				
	9:04	544			19.72	(a.68				
1:02pm	10:47	647_			19.98.	12.94		•		
7:58pm	11:43	703			20.08	13.04				
1:02pm 7:58pm 11:54pm		819			20.36	13.32				
•u ∐I4 Am		899			a0.43	13.39				
Z:08 AH		953		,	20,46	13.42				
3:02 =~		1010			20.42	B 38				
4:05 AM		1070			26,43	13.39				
5: 05 An		1130			20,44	13.40				
6:07 AM	- · · · · · · · · · · · · · · · · · · ·	1192			20.49	13.45				
7:04 AM		1249			20.41	13.44				
8:04 44		1309	1 -1-1-		20.43	13.39				
9.4		1410	40.00	19.12	2038	13.34				
। छः। उप	_	1479	40.00	19.61	20.39	13.35		Rain		
(:05	574	1610			20.40	13.36		12:15-12:35		
1:05		1670			20,37	13.33		STATES Raining very Little		



F	PUMPED WEL PUMPING RA	TES	DOWD/RECOVERY W-1 RADIUS 150 9 pm Noneter with 4"	'x 3" acif	ice plate	_ PUMP ON: _ PUMP OFF	DATE 8/15/40 TIME	1152am
•	HOW WL's ME	ASURED	M-Scope, Wett DWELL 200 F	ed lape		_ COMMENT	TS	
_		TOM POMPE	<u> </u>			·		
ľ	TIME SINCE PUMPING STARD STOPPED	ste (min)	READINGS REFERENCE MEASURE	DEPTH TO	DRAW- DOWN (ft)	ADJUSTED DRAW- DOWN (ft)	REMARK	s 
,	(MINUTES	1735		20.37	(3.33			
~ [		1788		20.33	13.31			
•	· <del></del>	1849		2032	13.28			
~		1999		20.25	13.21	ļ		
>m		2131		20.56	13.52	ļ	Slight increase in	, flow rate
m		2240		20.62	13.58			<del></del>
-		2689		20.69	13.45			<del></del>
-		2867		20.65	13.61			
~		3046		20.63	13.59	<u> </u>		
m		3225		20.64	13.60			
~		3411	<u> </u>	20.52	13.48			····
<b>&gt;</b>		3594		20.59	13.55			
<b>-</b>		3765		<del>-</del>			No reading	<del></del>
•		3958	<u> </u>	20.52	13.48	.		<del></del>
~		4125		20.56	13.52			
4.		4301		20.25	13.21			
		-		<del>                                     </del>				<del>,</del>
		<del> </del>		<u> </u>				
		-	-					
		-						<del></del>
				<del> </del>	<del> </del>	1		

WELL MW-2 PUMPING OBSERVATION WELL	
TYPE OF DATA ORAWDOWN RECOVERY	M.P. FOR WL's TOC EL
PUMPED WELL NO. PW-I RADIUS 4"  PUMPING RATES ~150 9pm	PUMP ON: DATE 8/13/90 TIME 10/5am
HOW O MEASURED Manameter with 4"x3" orifice plate	FUMPUN: DATE
HOW WE'S MEASURED M-Scope, Wetted Tape	COMMENTS
1 ,	_ COMMENTS
DISTANCE FROM PUMPED WELL	

1:20 an

ME SINCE			WATER			ADJUSTED	REMARKS			
UMPING TARE/ TOPPED UNUTES	t/ť	READI	NGS	DEPTH TO WATER	DRAW- DOWN (ft)	DRAW- DOWN	REMARKS			
UNUTES		REFERENCE	MEASURE	(ft)	(ft)	(ft)	AW- INN IT  Static	. <del></del>		
0				5.15	0		Statie	<del></del>		
150				5.18	0.03					
506	•			5.19	0.04					
								•		
								•••		
		-								
	·		<u> </u>			-				
							·			
							*.			
	···		-				• 			
			······	·				·•		
			-							
		1						<del></del>		
		1								
			_			<del> </del>		<u></u>		
		<del>  </del>				<del>  -</del>	<u> </u>			
		<del> </del>								

WELL MW-3 PUMPING DESERVATION WELL					
TYPE OF DATA ORAWDOWN/RECOVERY	M.P. FOR WL's	Toc	EI		
PUMPED WELL NO. PW-I RADIUS 4"  PUMPING RATES ~ 150 4 pm	M.P. FOR WL'S PUMP ON: DATE _	8/13/90	TIME	1015am	
HOW O MEASURED Manometer with 4"x3" orifice plat	RPUMP OFF: DATE	8/16/90	_ TIME	1152am	
4	COMMENTS	7	·		
DISTANCE FROM PUMPED WELL				·	

ſ	TIME SINCE PUMPING START/	set.	WATER LEVEL				ADJUSTED	
			READINGS DEPTH TO WATER		DRAW- DOWN	DRAW- DOWN	REMARKS	
	STOPPED (MINUTES	(miu)	REFERENCE		(ft)	(ft)	(ft)	
	0		HULD	Wet	5.93	0		Static
	1:57	118			6.00	0.07		
	3:38	218		_	6.03	0.10		
	4:35	275			6.04	0.11		·
	5:34	334			6.04	0.11		
	6:04	364			6.05	0.12		
	<u> </u>	424			6.09	0.16		
	9.25	503			6.07	0.14		
riap.	10:57	657			6,13	0.20		
0:05,~	11:50	710			6.14	0.21		Drizzle begins
2:04cm		829			6.08	0.15		Hexvy Rain
23 AM		908			5.99	0.06		Rain Subsides
MA PI".		959			5.96	0.03		
e: II ap		1016			5,89	-0.04		•
1:10 AM		1075			5.84	-0.09		
5.09 AM		1134			5.80	-0.13		
:11 44		1196			5.78	-0.15		
NA 80:		1253			5.76	-0.17		
ma po:		1314		<u> </u>	5.74	-0.19		
9:5	5	1420	24.00	18.26	5.74	-0.19		
(:15	<u> </u>	1620			5.48	-0.25		RAIM 12:10-11:35
3:17		1742			5.71	-0.32		
5:09		1854			5.90	-0.03		



	METT V			_	SERVATIO	WELL					
	TYPE OF DATA				4"		M P. FOR	WL's	Toc	E	L
			- 150 an	~			PUMP ON	· DATE	8/13/90	TIME	1015 am
	HOW Q MEASL	JRED _M	anometer	with a	4"x3 <u>" •</u> •	ifice plat	PUMP OF	F: DATE.	8/16/90	TIME	
	HOW WL's ME		•	e, we	tted Ta	pe	_ COMMEN	тѕ	<del></del>		
	DISTANCE FR	OM PUMPI	ED WELL								
	TIME SINCE PUMPING			WATER		555111	ADJUSTED	DRAW. REMARKS			
	STARTV STOPPED (MINUTES	t/t'	READIN		DEPTH TO WATER (ft)	DRAW- DOWN (ft)	DOWN (ft)				
7:39pm	2004				5.60	-0.33			·	<del></del>	<del></del>
7:52 pm	2137				5.58	-0.35		_			
11:41 pm	2246				5.58	-0.35			<u></u> .		<del></del>
7:10am	5695	<del></del>			5.54	-0.39					
10:10am	2875				5.54	-0.39				<del></del> -	
1:09 pm					5.56	- 0.37			<del></del>		
4:07pm	3232			· · ·	5.54	-0.39					
10 pm	i .			<del>.</del>	5.54	-0.39					
10:14 pm	3599		1		5.56	-0.37					
1:00am	_				-						
4:08am	3953				5.59	-0.34					<del>.</del> .
7:04am	4129	<del></del>			5.44	-0.49					
/0:03am	4308		<u> </u>		<i>5</i> .45	-0.48					· ·
				<u> </u>				<del></del> -			· · · · · · · · · · · · · · · · · · ·
	<u> </u>									<u> </u>	<del></del>
			+								
											· · · · · · · · · · · · · · · · · · ·
		-									
				*							
			1								



10:00 am

3:21 m 5:14

|:29

7:13 pm 2008

1425

1625

1746

1859

29.00 1756

Ä	CHEMIHILL		1								
	WELL	1W - 4	PUMPING OF	SERVATIO	MELL						
	TYPE OF DATA	ORAN	DOWN HECOVERY  W-1 RADIUS  150 gpm	4"		M P EOR 1	Mt 'a	Toc	E	. ·	
	PUMPED WELL	. NO` =c ^	150 apm			PUMP ON:	DATE	8/13/90	TIME	1015em	
									_ TIME _	1152am	
	HOW WL's MEA	SURED_	M-Scope, We	etted T	a pe	COMMENT	<b>s</b>				
	DISTANCE FR	OM PUMP	ED WELL			<del></del>	<del></del>				
1	TIME SINCE		WATER	LEVEL		ADJUSTED	BEALA BUE				
I	PUMPING	t/t*	READINGS	DEPTH TO DRAW-		DRAW- DOWN		R	EMARKS		
	STOPPED (MINUTES		REFERENCE MEASURE		(ft)	(ft)	<del> •</del>				
7:31 am	6			6.65	0		Stat	ic			
	125			6.70	0.05				_		
	186			6.70	0.05					<u> </u>	<del></del> -
	281			6.76	0.11						
	371	<u> </u>		6.80	0.15						
	431			6.84	0.19			<u></u>			
	511			6.82	0.17						
9:20pm	665			6.82	0.17			<u> </u>			
10:15 pm : 1:193	720			6.87	8.22						
12:11 cm				6.72	0.07		Rais	V (Hea	<u>vy)</u>		
::35 em	920			6.59	-0.06						
1:20 000	965		ļ	6:54	-0.11						477
::16 am	1021			6.49	-0.16		•	<u>.</u>		<del></del>	>
4:15 <b>~</b> ~	1080			6.45	-0.20		. <u> </u>				
5:14 AM	1139			6.43	-0.22			<u></u>			
5:16 AM	1201			6.41	-0.24		<del></del>				
7:12 Am	1257		· ·	6.39	-0.26						
8.13 AW	1318			6.38	- 0,27						

-0.21

-0.27

-0.28

-0.28

-0.27

6.38

6.37

6.38

12: 12 - 12:35



	WELL	,,, , <b>,</b> ,	Pi II	MPING MÃ	SERVATIO	NWELL .					
	TYPE OF DATA	MRAW	DOWN BECO	_	<u>o</u> Em (A)	٠٠٠٠٠			_ 4		
	PUMPED WELL	NO. P	₩-(RA	DIUS	4"		M.P. FOR	WL's	TOC	EL	1015
		~	150 000	-			PUMP ON	DATE_	8/13/90	_ TIME	1015 am
	PUMPING RAT HOW Q MEASI	IRED M	anometer	with 4	"x3" or	fice plate	PUMP OF	F: DATE	8/16/90	_ TIME	(152am
	HOW WL's ME			<u>e, ω</u>	etted T	ape	COMMEN	TS			
	DISTANCE FR	OM PUMPE	ED WELL	<u></u>	<del></del>						
. 1	TIME SINCE		1	WATER	LEVEL		ADJUSTED				
	PUMPING START	t/t'	READI	NGS	DEPTH TO	DRAW- DOWN	DRAW- DOWN		R	EMARKS	
	STOPPED (MINUTES		REFERENCE	MEASURE	WATER (ft)	(ft)	(ft)				
2.50					625	-0.50					
9:58 pm			-		6.35				<del></del>		
11:47 pm	2252				6.37	-0.28					
7:17am	2702			·	6.38	-0.27					
u:18am	2883				6.39	-0.26					
1:22pm	3067				6.40	- 0.25					<u> </u>
4:19pm	3244				6.32	-0.33					<u>.</u>
7:13 pm	3418				6.39	-0.26					
:17 pm	3602				6,37	-0.28					
1:000	-					-		2	o reading		
4:16em	3961				6.32	-0.33					
7:12 cm	4137				6.26	-0.39					
/0:12 am	4323				6.28	-0.37	:				
		<u> </u>		<u> </u>					·		
									- <del></del>		
		<u> </u>									
		-			<del>                                     </del>			_			
		<del> </del>								-	
			<del> </del>								
		╁			-		-			<u> </u>	
	-	+			<del> </del>	-					
		<del>  -</del>									
	<u> </u>		+	<del> </del>	<del> </del>		ļ				<del></del> ,
		Ī	1	1	1	1	1	1			

WELL MW-5 PUMPINGATESERVATION WELL				
PUMPED WELL NO. PW-I RADIUS 4"	M.P. FOR WL's	TOC	EL	<u>.</u>
PIMPING RATES ~ 150 4 pm	PUMP ON: DATE	8/13/90	TIME	1015em
HOW O MEASURED Manometer with 4"x3" orifice plate	PUMP OFF: DATE	8/16/90	TIME	1152am
1011 115 1115	COMMENTS	<del></del>		
DISTANCE FROM PUMPED WELL 200 Fort			<del></del>	

ſ	TIME SINCE		WAT	ER LEVEL		ADJUSTED	
	PUMPING STARD	سسببي	READINGS	DEPTH TO	DRAW- DOWN	DRAW- DOWN	REMARKS
ĺ	STOPPED (MINUTES	(min)	REFERENCE MEASL		(ft)	(ft)	
3am	0	0_		5.76	0		Slatic
	15 mir	15		5.71	-0.05		
	33	23		5.72	-0.04		
	48	48		5.71	-0.05		
	58	58		5.71	-0.05		
	1: (4	74		5.71	-0.05		
	1:42	102		5.71	-0.05		
	2·35	155		5.76	0		
	3,94	209		5.76	0		
	3:59	239		5.78	0.02		
	4:29	≟69		5.78	0.00		
	4:59	299		<u> 5.74</u>	-0.02		
	5:29	329		5.75	-0.01		
	5:59	359		5.75	-0.01		
	6:39	389		5.77	0.01		
	6:59	419		5.80	0.04		
	7:31	451		5.80.	0.04		<u> </u>
	9:03 how min	543	1 "	5.79	0.03		
pm	10:49	649		5.81	0.05		
γm	11:45	705	-	5.83	0.07		Heavy Rain begins
<b>P</b> **		821		5,66	-0.10	•	
14	<del></del>	900	1 1	5.54	-0.2a		LIGHT DRIZZLE
Am	· [	954		5.48	-0.28		

FORM 362

FORM 36



•	WELL M	w-5	Pi	IMPING#6E	SERVATIO	NWELL .		
	TYPE OF DAT							<b></b> .
	PUMPED WEL	L NO. P	<u>ω-(</u> κ	ADIUS	4"		M.P. FOR	
	PUMPING RAT	TES~	150 gp	m			_ PUMP ON	1: DATE 8/13/90 TIME 1015 am
	HOW Q MEAS	URED M	wometer	- with	4"x 3"0	i fice polat		F: DATE
	HOW WL's ME			200 f	ted lap	<u>e</u> _	_ COMMEN	ITS
	DISTANCE FF	ROM PUMPE	D WELL	<u> </u>	· Y			
1	TIME SINCE			WATER			ADJUSTED	REMARKS
3/14/93	STARD STOPPED	سهد	READ		DEPTH TO	DRAW- DOWN	DRAW- DOWN	nemanto
	MINUTES	(miu)	REFERENCE	MEASURE	(ft)	(ft)	(ft)	
3107AM		1012		,	5.42	-0.34		
4:06 AM		1071			5.37	-0.39		
5:06 AM		1131			5.34	-0.42		
6:08 Ar		1193			5.32	-0.44		
7:05 AM		1250			5.30	-0.46		
3:05 AM		13/0	<u> </u>		5.29	-0.47		
9-46		1411	21.00	15.82	5.18	-0.58		
7:56		1481	21.00	15.67	<u>5-33</u>	-0.43	:	RH·~
1:10		1615	-		5.25	-0.51		12:15-1233
2:07		1672			5.27	-0.49		RAINING VERY LITTLE.
3:12		1737			<u>£,23</u>	-0.53		
4:04		1789	<u> </u>	ļ	5.20	-0.54		
5:05		1850			5.19	-0.57		
735pm	<b>\</b>	2000	,		5.17	-0.59		
7:35pm 9:47pm 11:36pm	\	2132	,		5.17	-0.59		
11:36pm		2241	<u> </u>	<u> </u>	5.17	-0.59		
		-	<u> </u>				-	
			<u> </u>	<del> </del>				
					ļ <u>-</u>			`
			ļ	-	_		_	
		<del> </del>	-	<u> </u>		ļ <u>.</u>		
		-	ļ. <u> </u>					
		1	-					



WELLN										
TYPE OF DAT	NO P	UUVIBIRES	ADIUS	<b>4</b> "		M.P. FOR	WL's	TOC	EI	
DIMPING RA	reg ~	150 91	~			PUMP ON	: DATE_	8/13/90	TIME	1015am 1152am
HOW O MEAS	URED Ma	Nometer	with 4	"x3" or	fice plate	- E PUMP OF	F: DATE.	8/16/90	_ TIME	1152 am
HOW WL's ME	ASURED_	M-Scor	pe, we	tted Ta	De_	_ COMMEN	ITS	, ·		·
HOW WE'S ME DISTANCE FR	OM PUMPE	D WELL	<u>, 500</u>	Feet	1					
TIME SINCE			WATER			T	Ι		<del></del> -	
PUMPING		READ		DEPTH TO	DRAW-	DRAW-		R	EMARKS	
START/ STOPPED	سعلا	REFERENCE	MEASURE	WATER (ft)	DOWN (ft)	DOWN (ft)				
MINUTES										<del></del>
07061	2691			5.18						<u></u>
003	2868			5.19					<del> </del>	
1303	30 <u>48</u>			5,26				<u> </u>		<del></del>
1601	3226			5.17			 			
1907	3412			5.14						
14 20	3594		İ	5.11.						
1909 1/16/10 100	<u> </u>			<b></b>			NO	12 = 46. ~	4	
19414	3959			5.29						
0704	4129			3.14				<u> </u>		
0958	4303			5.10						<u> </u>
			·							
				 						<del>,</del>
								·		
			-							
									<u> </u>	
									·	

WELL DW-10   PUMPING OBSERVATION WELL			
TYPE OF DATA ORAWDOWN RECOVERY	M.P. FOR WL's TOC	-	
	M.P. FOR WL's	TIME	1015am
PUMPING RATES ~ 150 a pm	PUMP ON: DATE		
HOW Q MEASURED Manometer with 4"x 3" or : Fice plate	PUMP OFF: DATE X/14/90	TIME -	
HOW WL'S MEASURED M-Scope, Wetted Tape	COMMENTS		
DISTANCE FROM PUMPED WELL			

S S1 (M	UMPING START/	h	WATER LEVEL READINGS DEPTH TO DRAW-					<u>.</u> .
_(M		244	READ	INGS	DEPTH TO	DRAW- DOWN	DRAW- DOWN	REMARKS
	TOPPED MINUTES	(mi~)	REFERENCE	MEASURE		(ft)	(ft)	
9:13am	D	0			5.65	0.00		Static
2	2:22	142			5.71	0.06		
5:09	5:09	309			5.73	0.08		
4	6:09	369			5.75	0.10		have minites
	8:44	524			5.73	0.08		Rain begins @ 8:43 into test (brie
9:41pm 1	11:26	686			5.77	0.12		
10:27 pm 1	12:22	74a			5.78	0.13		Steady Rain (Herry)
7:37cm		१५२			4,93	-0.72		Steady Rain (Heavy) RAIN SUBSIDED TO DRIZZLE
1:46 am		931			4.80	- 0.85		
3:29 am		174			4.77	-0.88		
372 aw		:030			4,76	-0.89		
22 00		1088			4.76	-0.89		
5:22 AM		1147		<del> </del>	4.78	-0.87		
5:24 Am		1209			4.78	-0.87		
-: 21 AM		1266			4.79	-0.86		
2:20 Am	_	132 <u>5</u>			4.82	-0.83		
10:14		1439	24.00	19.11	4.89	-0.76		
17.48		1593	24.00	19.29	4.71	-0.94		RA: 12 12:35
3:34		1759			4.76	-0.89		
5731		1876		-	4.65	-1.00		
7:52pm		2017			4.67	-0.98		·
_								Road inaccessible to car

WELL <u>0</u>	ک ا ـ د <b>ر</b>	/ 91	IMPING/OF	SERVATIO	NWELL					
TYPE OF DAT	A /DRAW	OOMIN REC	OVERY	SEUAUTO	DALLET -					
PUMPED WEL	L NO	) <u>いー</u> R	ADIUS	4"		M.P. FOR	WL's	Toc	EL	1015 am 1152 am
PUMPING RA	res <u>~ 1</u>	50 gpm	<del></del>		<del> </del>	_ PUMP ON	: DATE	8/13/90	_ TIME	1015 am
HOW Q MEAS	URED MA	No meter	with 4"	<u>'x3"                                    </u>	fice plate	PUMP OF	F: DATE_	8/16/90	_ TIME	115dam
HOW WL's ME	ASURED	M- 200	ope, Wi	<u>etted 1</u>	a pe	COMMEN	TS		<del></del>	<del>,</del>
DISTANCE FF	IOM PUMPE	D WELL				·				
TIME SINCE			WATER			ADJUSTED				
PUMPING START/	سنبلا	READ		DEPTH TO	DRAW- DOWN	DRAW- DOWN		H	EMARKS	
STOPPED (MINUTES	(min)	REFERENCE	MEASURE	(ft)	(ft)	(ft)	<u> </u>			<del></del>
0726	2711			4.76	-0.89					<del> </del>
10 25 -	2890			4.79	-0.86	· · ·				
1331	3076		<u> </u>	4.87	-0.78					
1627	3252			4.72			R4.	1436-14	158	
1921	3436			4.74	-0.91	:	-			
2289	3624			4.78	-0.87				<u></u>	
0100	_		ļ		_		AI •	Read	· ~ 4	
0425	3980	<u> </u>		4.82	-0.83					
0722	4157	<del> </del>	<u> </u>	4.85	-0.80				<u> </u>	<u> </u>
1019	4344		<del> </del>	4.89	-0.76					
	<u> </u>	<u> </u>	ļ	<u> </u>						
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			<u> </u>							
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7:27 AM

FIZE AM

1018

12:39p.

3:46

7:58 pm

7: 47 pm 11:55 pm

5:41,0

į	СНЯНИ	1011 1110	TEST IIE	0111	-			
_	WELL C	W-10	)2_ PL	JMPING (QE	SERVATIO	NWELL		·
								WL'S TOC EL
	PUMPED WELL	. NO	10-1 RA	ADIUS	4"		M.P. FOR	WL'S 100 TIME 10/5 am
	PUMPING RAT	ES~	150 gpm	<u> </u>	11 311 oci	Eira alak	_ PUMP ON	: DATE 8/13/90 TIME /0/5 am F: DATE 8/16/90 TIME /152am
	HOW & MEASU	JRED 1914	M-Sci	0 500 (1)	etted 7	a pe	COMMEN	TS
	DISTANCE FR					1		
i			1				<del></del>	
	TIME SINCE PUMPING		READ	WATER	LEVEL	DRAW-	DRAW-	REMARKS
	STARD STOPPED (MINUTES	t/t'	REFERENCE		WATER	DOWN (ft)	DOWN (ft)	
8:59aa	, 0				6.85			Static
	9:13				6.90			·
	5:41				6.95			
	`\b:33			= =	7.0			:
	8:53				7.01			
9:31pm 10:26pm	11:16				7.07			
10:26pm	12:11				7.08			Steady rain
17:38 am		· 			6.84			
,:54 am					6.71			Rain stopped
::36 am					6.66			·
1:32 am					6.59			
4:30 am			ļ <u></u>		6.55			
5130 Am					6.53			
5:30 Am					6.50		,	

RAIN (2:35

FORM 362

6.49

6.51

6,40

6.38

6.38

6.39

17.48

17.51



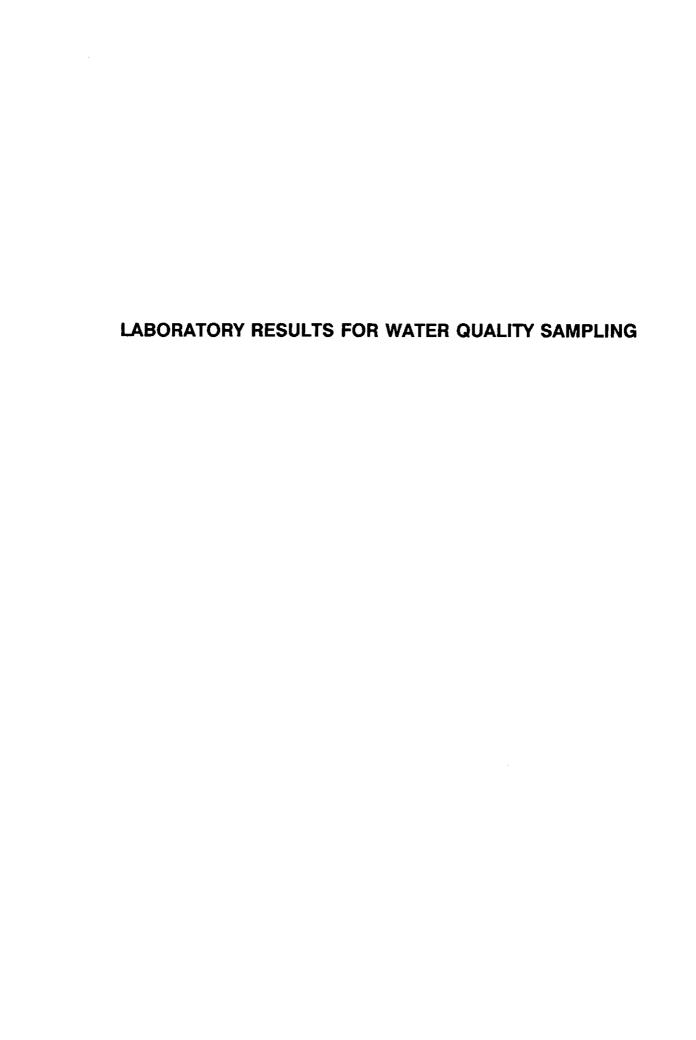
WELL OW-102 PUMPING OBSERVATION WELL			
TYPE OF DATA ORAWDOWN/RECOVERY	M.P. FOR WL'S	E	L
* ONL CO	PUMP ON: DATE	IME	1015 am
PUMPING RATES ~ 150 gpm HOW Q MEASURED Manameter with 4" x 3" orifice plate	PUMPON: DATE 8/16/90	IME _	1152 am
HOW O MEASURED MINNETER WITH TEN	COMMENTS		
HOM ALT SWENZOVED	COMMENTS		
DISTANCE FROM PUMPED WELL			<del></del>

		WATER LEVEL		1	ME SINCE
TH TO DRAW- DRAW- REMARKS	DRAW-	DEPTH TO	READINGS	t/t' REA	PUMPING START/
71 BIT   FEB. 1		WATER (ft)	ERENCE MEASURE		STOPPED
		<del></del>	ENGIOCINE ASSIS	REFERENCE	MINUTES
40		1.40			0732
. 42		6.12			10 35
us'		,/	·		1
12		1 45	_ <del></del>		341
.40		6.40		ļ	636
					10 - 1 - 1
4/		6.41			1923
42		6.42	ļ		1
		6.74			72.3.3
NO READING					0100
					0100
.41		6.41			0437
20		6.38			1
.5 6		6.38			0733
40		1.40	ļ		1039
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	WELL D	W - 11;	<u>5                                    </u>	MPINGÆÐE	SERVATIO	<i>โ</i> ปพยน					
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August 31, 1990

SEF30619.A0 | AAD241

RE: PG&E/Bechtel laboratory samples

Dear Jeff Lehnen/GNV:

On August 17, 1990 the CHZM Hill Gainesville Laboratory received 7 water, grab samples with a request for analysis of selected parameters.

The analytical results are enclosed. No unusual difficulties were encountered in the analyses. If you should have any questions concerning the results, please call Don Hash or Tom Emenhiser.

Sincerely,

Don Hash Client Services

Enclosure(s):

cc: Pete Kwiatkowski/DF



AAD241 08/31/90

Page 1 of 6

Sample Nos: 83679 - 83685

Florida Certification: 82112; E82124

PG&E/Bechtel

Attention: Jeff Lehnen Prof

Address: GNV Copies to: Pete Kwiatkowski/DFB Project No: SEF30619.A0 Received: 08/17/90 Reported: 08/31/90

CH2M Hill

Collected: 08/16/90 by Pete Kwiatkowski

Type: water, grab

Location: Indiantown Cogeneration Proj.

	83679	83680	83681	83682	83683
SAMPLE DESCRIPTIONS	MW-3 08/17/90 9:50	Mi-4 08/17/90 10:50	MM-1 08/17/90 11:00	MN-2 08/17/90 13:30	PH-1 08/16/90 11:00
GENERAL		<del></del>	<del></del>		<del></del>
pH (Units)	6.95 08/20/90	5.45 08/20/90	6.40	4.85	7.15
Alkalinity, Total (as CaCO3)	280 08/27/90	08/27/90 08/27/90	08/20/90 88.0	08/20/90 ⊲.0	08/20/90 280
Color (APHA)	50 08/20/90	50	08/27/90 60	08/27/90 90	08/27/90 10
Conductivity (umhos/cm)	783 08/28/90	08/20/90 141	08/20/90 370	08/20/90 125	08/20/90 567
Hardness, Total (as CaCO3)	336 08/30/90	08/28/90 30	08/28/90 122	08/28/90 38	08/28/90 340
Turbidity (NTU)	12.6 08/20/90	08/30/90 5.7	08/30/90 6.1	08/30/90 16.3	08/30/90 <0.2
SOLIOS	1 00/20/90	08/20/90	08/20/90	08/20/90	08/20/90
Total Dissolved Solids	562 08/23/90	186 08/23/90	334 08/23/90	168 08/23/90	392 08/23/90
METALS Antimony - FL	<b>◆0.2</b>	€0.2	<b>◆0.2</b>	<b>⋖</b> 0.2	<b>⊲</b> 0.2
Arsenic - FU	08/23/90 <0.005	08/23/90 <0.005	08/23/90 <0.005	08/23/90 <0.005	08/23/90 <b>&lt;</b> 0.005

NOTE: Values are mg/l as substance unless otherwise stated.

Respectfully submitted

Thomas C. Emenhiser Laboratory Hanager

n/r = not requested

NOTE: This report contains test data and no interpretation is intended or implied.



AAD241 08/31/90

Page 2 of 6

Sample Nos: 83679 - 83685

Florida Certification: 82112; E82124

SAMPLE NUMBER	83679	83680	83681	83682	83683
	HH-3	HN-4	M-1	HW-2	PW-1
SAMPLE DESCRIPTIONS	08/17/90	08/17/90	08/17/90	08/17/90	08/16/90
	9:50	10:50	11:00	13:30	11:00
	08/23/90	08/23/90	08/23/90	08/23/90	08/23/90
Barium - FL	<b>⋖</b> 0.2	<b>⋖</b> 0.2	<b>⋖</b> 0.2	<b>40.2</b>	<b>40.</b> 2
	08/22/90	08/22/90	08/22/90	08/22/90	08/22/90
Cadmium - FU	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	08/21/90	08/21/90	08/21/90	08/21/90	08/21/90
Calcium - FL	124	1.9	35.0	2.3	85.0
	08/27/90	08/27/90	08/27/90	08/27/90	08/27/90
Chromium, Tot - FU	<b>⋖</b> 0.002	<0.002	<0.002	<0.002	<0.002
	08/22/90	08/22/90	08/22/90	08/22/90	08/22/90
Copper - FL	0.02	0.03	40.02	<0.02	40.02
	08/27/90	08/27/90	08/27/90	08/27/90	08/27/90
Iron, Total - FL	2.7	1.6	0.96	2.0	<0.02
	08/21/90	08/21/90	08/21/90	08/21/90	08/21/90
Lead - FV	<0.002	0.003	<0.002	<0.002	₹0.002
	08/27/90	08/27/90	08/27/90	08/27/90	08/27/90
Magnesium – FL	2.9	2.4	3.7	2.3	3.0
	08/27/90	08/27/90	08/27/90	08/27/90	08/27/90
Manganese - FL	0.02	<0.01	40.01	₹0.01	40.01
	08/22/90	08/22/90	08/22/90	08/22/90	08/22/90
Hercury - CV	<0.0002	0.0004	<0.0002	<0.0002	<0.0002
	08/21/90	08/21/90	08/21/90	08/21/90	1
Molybdenum - FL	40.2	40.2	40.2	40.2	08/21/90 <b>⊲</b> 0.2
	08/29/90	08/21/90	08/21/90	08/21/90	1
Potassium	0.79	0.31	1.30	0.49	08/21/90 1.66
	08/29/90	08/29/90	08/29/90	08/29/90	08/29/90
Selenium	<0.005	40.005	<0.005	<0.005	
	08/29/90	08/29/90	08/29/90	08/29/90	40.005
Silica, React	10.6	8.2	8.9	9.1	08/29/90
	08/27/90	08/27/90	08/27/90	08/27/90	17.2
Silver - FU	0.0012	0.0008	0.0006	<0.0005	08/27/90
	08/30/90	08/30/90	08/30/90	08/30/90	0.0014
				40, 30, 30	W 30/30

MOTE: Values are mg/l as substance unless otherwise stated.

Respectfulfly submitted

Thomas C. Emenhiser, Jaboratory Manager

n/r = not requested

NOTE: This report contains test data and no interpretation is intended or implied.



AAD241 08/31/90

Page 3 of 6 Sample Nos: 83679 - 83685

Florida Certification: 82112; E82124

AMPLE NUMBER	83679	83680	83681	83682	83683
AMPLE DESCRIPTIONS	MH-3 08/17/90 9:50	MH-4 08/17/90 10:50	MH-1 08/17/90 11:00	MM-2 08/17/90 13:30	PW-1 08/16/90 11:00
Sodium - FL	28.7 08/28/90	16.9	23.4	15.8	11.9
Strontium - FL	0.46	08/28/90	08/28/90 0.47	08/28/90 0.14	08/28/90 0.55
Vanadium - FL	08/30/90 <0.5	08/30/90 <0.5	08/30/90 <0.5	08/30/90 ⊲0.5	08/30/90 <0.5
Zinc - FL	08/30/90 <0.01	08/30/90 <0.01	08/30/90 ⊲0.01	08/30/90 <0.01	08/30/90 0.01
IIONS	08/27/90	08/27/90	08/27/90	08/27/90	08/27/90
Boron	0.039 08/24/90	0-028 08/24/90	0.025 08/24/90	0.029	0.025
Chloride	72.0 08/29/90	32.I 08/29/90	47.1	08/24/90 29.1	08/24/90 18.3
Fluoride	0.34	0.03	08/29/90 0.04	08/29/90 0.05	08/29/90 0.12
Sulfate	08/23/90	08/23/90 4.4	08/23/90 3.9	08/23/90 5.3	08/23/90 <1.0
TTRIENTS	08/29/90	08/29/90	08/29/90	08/29/90	08/29/90
Ammonia (as N)	1.89 08/22/90	0.19	0.86	0.32	0.52
Nitrate & Nitrite (as N)	<0.02 08/23/90	<0.02	08/22/90 <0.02	08/22/90 <0.02	08/22/90 <0.02
Total Phosphorus (as P)	1.18	08/23/90 0.10 08/27/90	08/23/90 0.09 08/27/90	08/23/90 0.18 08/27/90	08/23/90 0.35
					08/27/90

MOTE: Values are mg/1 as substance unless otherwise stated.

Respectfully submitted,

Thomas C. Emenhism, Laboratory Manager

n/r = not requested

CH2M HILL

MOTE: This report contains test data and no interpretation is intended or implied.



AAD241 08/31/90

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Sample Nos: 83679 - 83685

Florida Certification: 82112; E82124

PG&E/Bechtel	CH2M Hill
Attention: Jeff Lehnen Address: GNV Copies to: Pete Kwiatkowski/DFB	Project No: SEF30619.A0 Received: 08/17/90 Reported: 08/31/90
Collected: 08/16/90 by Pete Kwiatkowski Type: water, grab	1

Location: Indiantown Cogeneration Proj.

	83684	83685
SAMPLE DESCRIPTIONS	Travel Blank 08/17/90	Laboratory Hethod Blank
GENERAL	<del></del>	<del> </del>
pH (Units)	n/r	Not Applicable
	n/r	08/20/90
Alkalinity, Total (as CaCO3)	n/r	₫.0
	n/r	08/27/90
Color (APHA)	n/r	0
	n/r	08/20/90
Conductivity (umhos/cm)	n/r	₹.0
	n/r	08/28/90
Hardness, Total (as CaCO3)	n/r	4.0
	n/r	08/30/90
Turbidity (NTV)	n/r	40.2
	n/r	08/20/90
SOLIDS	•	1
Total Dissolved Solids	n/r	<b>4.</b> 0
	n/r	08/23/90
HETALS	•	,,
Antimony - FL	<b>■0.2</b>	1 40.2
	08/23/90	08/23/90
Arsenic - FU	<0.005	<0.005
	•	
		]

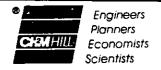
MOTE: Values are mg/1 as substance unless otherwise stated.

Respectfully submitte

Thomas C. Emenhiser, Jaboratory Manager

n/r = not requested

NOTE: This report contains test data and no interpretation is intended or implied.



Florida Certification: 82112; E82124

AAD241 08/31/90

Page 5 of 6

Sample Nos: 83679 - 83685

SAMPLE NUMBER	83684	83685
SAMPLE DESCRIPTIONS	Travel Blank 08/17/90	Laboratory Method Blank
Barium - FL	08/23/90 <0.2	08/23/90 <0.2
Cadmium - FU	08/22/90 ⊲0.0002	08/22/90 <0.0002
Calcium - FL	08/21/90 <1.0	08/21/90 ⊲.0
Chromium, Tot - FU	08/27/90 <0.002	08/27/90 <0.002
Copper - FL	08/22/90 <0.02 08/27/90	08/22/90 <0.02
Iron, Total - FL	<0.02	08/27/90 <0.02
Lead - FU	08/21/90 0.011	08/21/90 <0.002
Magnesium ~ FL	08/27/90 <0.25	08/27/90 <b>◆0.</b> 25
Manganese - FL	08/27/90 <0.01	08/27/90 <b>&lt;</b> 0.01
Hercury - CV	08/22/90 <0.0002 08/21/90	08/22/90 <0.0002
Molybdenum - FL	<0.2 08/29/90	08/21/90 <b>&lt;</b> 0.2 08/29/90
Potassium	<0.15	<0.15
Selenium	08/29/90 <0.005 08/29/90	08/29/90 <0.005
Silica, React	n/r n/r	08/29/90 <0.01
Silver - FU	0.0011 08/30/90	08/27/90 <0.0005 08/30/90
	11.50,50	504 50/ 50

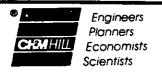
NOTE: Values are mg/l as substance unless otherwise stated.

Respectfully submitted.

Thomas C. Emenhiser, Laboratory Manager

n/r = not requested

MOTE: This report contains test data and no interpretation is intended or implied.



AAD241 08/31/90

Page 6 of 6 Sample Nos: 83679 - 83685

Florida Certification: 82112; E82124

SAMPLE DESCRIPTIONS	Travel 81ank 08/17/90 <0.5 08/28/90	Laboratory Method Blank
		<0.5
Sodium - FL	08/28/90	
Strontium - FL	<0.05	08/28/90 <0.05
Vanadium - FL	08/30/90 <b>&lt;0.</b> 5	08/30/90 <b>&lt;</b> 0.5
Zinc - FL	08/30/90 <0.01	08/30/90 <0.01
ANIONS	08/27/90	08/27/90
Boron	<0.015 08/24/90	<0.015 08/24/90
Chloride	n/r n/r	⊲.0
Fluoride	n/r	08/29/90 <0.01
Sulfate	n/r n/r	08/23/90 <1.0
NUTRIENTS 1	n/r	08/29/90
Ammonia (as N)	n/r n/r	Not Applicable 08/22/90
Nitrate & Nitrite (as H)	n/r n/r	<0.02 08/23/90
Total Phosphorus (as P)	n/r n/r	<0.01 08/27/90
		33,27730

NOTE: Values are mg/l as substance unless otherwise stated.

Respectfully submitted

Thomas C. Emeriniser, Laboratory Manager

n/r = not requested

NOTE: This report contains test data and no interpretation is intended or implied.



August 30, 1990

SEF30619.A0

Mr. Don Hash CH2M HILL/LGN 7201 N.W. 11th Place Gainesville, FL 32605

RE: Analytical Data for PG & E/Bechtel, Laboratory No. 16619

Dear Mr. Hash:

On August 21, 1990, the CH2M Hill Montgomery Laboratory received five samples with a request for analysis of selected organic parameters.

The analytical results and associated quality control data are enclosed. No unusual difficulties were encountered during the analysis of these samples.

If you should have any questions concerning the data, please inquire.

Sincerely,

Ward Dickens Organics Division Manager

Enclosures

cc: Mr. Craig Vinson



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	MW-4	(LMG #16619002)	)	. 2
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	Quality Control	Data	•	
			210B1)	12
Copy	of Chain-of-custo	odv		13



#### ANALYTICAL METHODOLOGY

#### Organic Analysis

- Priority Pollutants: Water, soil and waste samples are analyzed in accordance with procedures described in Methods 608, 624, and 625, EPA-600/4-82-057 (1982); Methods 8080, 8240, and 8270, Test Methods for Evaluating Solid Waste, 1986, SW-846, Third Edition; and methods outlined in the USEPA Contract Laboratory Program Statement of Work for Organics Analysis, February, 1988.
- Volatile Analysis (Safe Drinking Water Act): Water samples are analyzed in accordance with procedures described in Method 524.2, Federal Register (50 FR 46902), November 13, 1985.
- Chlorinated Phenoxyacid Herbicides: Samples are analyzed with procedures described in Method 8150, Test Methods for Evaluating Solid Waste, 1986, SW-846, Third Edition.
- Organophosphate Pesticides: Samples are analyzed in accordance with procedures described in Methods 614 and 622, EPA-600/4-79-019 (1979) and in Method 8140, Test Methods for Evaluating Solid Waste, 1986, SW-846, Third Edition.
- Phenol Analysis by GC: Samples are analyzed in accordance with procedures outlined in Method 604, Federal Register, 40 CFR, Part 136 (July 1, 1987) and in Method 8040, Test Methods for Evaluating Solid Waste, 1986, SW-846, Third Edition.
- Polynuclear Aromatic Hydrocarbons (GC analysis): Samples are analyzed with procedures described in Method 610, Federal Register, 40 CFR, Part 136 (July 1, 1987) and in Method 8100, Test Methods for Evaluating Solid Waste, 1986, SW-846, Third Edition.
- Ethylene Dibromide: Water samples are analyzed in accordance with procedures outlined in Method 504, Federal Register (50 FR 46902), November 13, 1985.
- Trihalomethanes: Water samples are analyzed with procedures described in Method 501.2, Pederal Register, Vol. 44, No. 231, Part II, November 29, 1979.



#### KPA - DEFINED QUALIFIERS

#### **ORGANICS**

### Definitions for the EPA-defined qualifiers:

- U -- Indicates the compound was analyzed for but not detected. The number adjacent to the "U" qualifier indicates the quantitation limit for that compound. The detection limit can vary from sample to sample depending on dilution factors or percent moisture adjustment when indicated.
- J -- Indicates an estimated value. This flag is used when the mass spectral data indicates the presence of a compound below the stated quantitation limit. The "J" qualifier is not used with pesticide results.
- C -- This flag applies to pesticide results only. The "C" flag indicates the presence of this compound has been confirmed by GC/MS analysis.
- B -- This flag is used when the analyte is found in the associated blank as well as the sample. This notation indicates possible blank contamination and suggests the data user evaluate these compounds and their amounts carefully.
- E -- This flag applies to GC/MS only. The "E" qualifier indicates a compound may be above or below the linear range of the instrument. If the particular compound level is deemed above the linear calibration range, then the sample should be reanalyzed at an appropriate dilution. Therefore, the "E" qualified amount is an estimated concentration. The results for the dilution will be reported on a separate Form I and will be flagged with a "D" if the dilution brings the concentration within proper calibration.
- D -- This flag identifies compounds which have been run at a dilution to bring the concentration of that compound within the linear range of the instrument. "D" qualifiers are only used for samples that have been run initially with results above acceptable ranges. For secondary dilutions the "DL" suffix is appended to the sample number on the Form I.
- A -- Indicates the Tentatively Identified Compound (TIC) is a suspected aldol-condensation product.
- X -- Indicates the compound concentration has been manually modified or the EPA qualifier has been manually modified or added.

2567 Fairlane Drive, P.O. Box 230548.

Montgomery, Alabama 36116

JX -- The compound was detected and quantitated below the Contract Required Quantitation Limit.



#### CLIENT SAMPLE ID QUALIFIERS

#### LEVEL 1

The qualifiers that GC/MS uses with the client sample ID are defined below:

- DL -- Dilution Run
- R -- Rerun (may be followed by a digit to indicate multiple reruns)
- RD -- Diluted Rerun
- RX -- Re-extraction Analysis
- MS -- Matrix Spike (may be followed by a digit to indicate multiple matrix spikes within a sample set)
- QC\_BLANK -- Method Blank (may be followed by an S for soils run at a low level, W for waters, or SM for soils run at a medium level) (letters may be followed by a digit to indicate multiple blanks of that type; if there are no letters the digit indicates multiple blanks).

These qualifiers allow GC/MS to have unique client sample ID's so that the client can get more accurate information from the data reported.



## TABLE 1

# SAMPLE CROSS-REFERENCE SUMMARY

# CH2M HILL Laboratory No. 16619

LMG Sample No.	LGN Sample No.	Sample Description		···	
16619001	83679	SAMPLE MW-3	08/17/90	0950	GRAB
16619002	83680	SAMPLE MW-4	08/17/90	1050	GRAB
16619003	83681	SAMPLE MW-1	08/17/90	1100	GRAB
16619004	83682	SAMPLE MW-2	08/17/90	1330	GRAB
16619005	83683	SAMPLE PW-1	08/16/90	1100	GRAB



Laboratory Name: CH2M HILL/MGM Concentration: LOW Date Extracted: 08/21/90

Lab Sample ID: 16619001 Sample Matrix: WATER Date Analyzed: 08/28/90

Client Sample ID: MW-3 Percent Moisture: Dilution Factor: 1.0

#### SDWA PESTICIDE COMPOUNDS

CAS Number		ug/L	CAS Number	ug/L .
58-89-9	gamma-BHC (Lindane) C	ט 20.0		
72-20-8	Endrin	).02 U		
72-43-5	Methoxychlor	).04 U		
8001-35-2	Toxaphene	0.5 ΰ		
	Dibutylchlorendate - SS	106		

U - Analyzed for but not detected.

B - Detected in QC blank.

JX - Detected, concentration estimated.

SS - Surrogate Standard reported as percent recovery.

Form I

Jus.



aboratory Name: CH2M HILL/MGM Concentration: LOW Date Extracted: 08/21/90 08/28/90 Lab Sample ID: 16619002 Sample Matrix: WATER Date Analyzed: Client Sample ID: MW-4 Percent Moisture: Dilution Factor: \_\_\_

## SDWA PESTICIDE COMPOUNDS

CAS Number		ug/L	CAS Number	uq/L .
58-89-9	gamma-BHC (Lindane)	0.01 0		
72-20-8	Endrin	0.02 U		
72-43-5	Methoxychlor	0.04 U		
8001-35-2	Toxaphene	0.5 U		
	Dibutylchlorendate - SS	105		

U - Analyzed for but not detected.

B - Detected in QC blank.

CH2M HILL

JX - Detected, concentration estimated.

SS - Surrogate Standard reported as percent recovery.

Form I

Montgomery, Alabama 36116



Laboratory Name: CH2M HILL/MGM Concentration: LOW Date Extracted: 08/21/90
Lab Sample ID: 16619003 Sample Matrix: WATER Date Analyzed: 08/28/90
Client Sample ID: MW-1 Percent Moisture: Dilution Factor: 1.0

#### SDWA PESTICIDE COMPOUNDS

CAS Number		ug/L	CAS Number	ug/L .
58-89-9	gamma-BHC (Lindane)	0.01 U		
72-20-8	Endrin	0.02 U		
72-43-5	Methoxychlor	0.04 U		
8001-35-2	Toxaphene	0.5 T		
	Dibutylchlorendate - SS	110		

- U Analyzed for but not detected.
- B Detected in QC blank.
- JX Detected, concentration estimated.
- SS Surrogate Standard reported as percent recovery.

Form I

Jus



aboratory Name: CH2M HILL/MGM Concentration: LOW Date Extracted: 08/21/90
Lab Sample ID: 16619004 Sample Matrix: WATER Date Analyzed: 08/28/90
Client Sample ID: MW-2 Percent Moisture: Dilution Factor: 1.0

#### SDWA PESTICIDE COMPOUNDS

CAS Number		ug/L	CAS Number	uq/L
58-89-9	gamma-BHC (Lindane)	0.01 0		
72-20-8	Endrin	0.02 U		
72-43-5	Methoxychlor	0.04 U		
8001-35-2	Toxaphene	0.5 σ		
	Dibutylchlorendate - SS	82		

- U Analyzed for but not detected.
- B Detected in QC blank.
- JX Detected, concentration estimated.
- SS Surrogate Standard reported as percent recovery.

Form I

Jus



Laboratory Name: CH2M HILL/MGM Concentration: LOW Date Extracted: 08/21/90
Lab Sample ID: 16619005 Sample Matrix: WATER Date Analyzed: 08/28/90
Client Sample ID: PW-1 Percent Moisture: Dilution Factor: 1.0

#### SDWA PESTICIDE COMPOUNDS

CAS Number		ug/L	CAS Number	ug/L .
58-89-9	gamma-BHC (Lindane) C	).01 U		
72-20-8	Endrin	).02 U		
72-43-5	Methoxychlor	).04 U		
8001-35-2	Toxaphene	0.5 U		
	Dibutylchlorendate - SS	94		

U - Analyzed for but not detected.

B - Detected in QC blank.

JX - Detected, concentration estimated.

SS - Surrogate Standard reported as percent recovery.

Form I

Am



Aboratory Name: CH2M HILL/MGM Concentration: LOW Date Extracted: 08/21/90
Lab Sample ID: W08210B1 Sample Matrix: WATER Date Analyzed: 08/28/90
Client Sample ID: QC BLANK Percent Moisture: Dilution Factor: 1.0

#### SDWA PESTICIDE COMPOUNDS

CAS Number	ug/L	CAS Number	ug/L .
58-89-9	gamma-BHC (Lindane) 0.01 U	ı ·	
72-20-8	Endrin 0.02 U	I	
72-43-5	Methoxychlor 0.04 U	Ţ	
8001-35-2	Toxaphene 0.5 U	J	
	Dibutylchlorendate - SS 114		

- U Analyzed for but not detected.
- B Detected in QC blank.
- JX Detected, concentration estimated.
- SS Surrogate Standard reported as percent recovery.

Form I

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Laboratory Name: CH2M HILL/MGM Concentration: LOW Date Extracted: 08/21/90

Lab Sample ID: 16619001 Sample Matrix: WATER Date Analyzed: 08/29/90

Client Sample ID: MW-3 Percent Moisture: Dilution Factor: 1.0

#### SDWA HERBICIDE COMPOUNDS

CAS Numbe	er	ug/L	CAS Number ug/L
94-75-7	2,4-D	2.5 T	
93-72-1	Silvex	0.5 U	
	3,5-Dichlorobenzoic acid - SS	93	

U - Analyzed for but not detected.

B - Detected in QC blank.

JX - Detected, concentration estimated.

SS - Surrogate Standard reported as percent recovery.

Form I

mis



Aboratory Name: CH2M HILL/MGM Concentration: LOW Date Extracted: 08/21/90
Lab Sample ID: 16619002 Sample Matrix: WATER Date Analyzed: 08/29/90
Client Sample ID: MW-4 Percent Moisture: Dilution Factor: 1.0

#### SDWA HERBICIDE COMPOUNDS

CAS Number	er	ug/L	CAS Number	uq/L .
94-75-7	2,4-D	2.5 t	J	
93-72-1	Silvex	0.5 t	J	
	3,5-Dichlorobenzoic acid - SS	96		

- U Analyzed for but not detected.
- B Detected in QC blank.
- JX Detected, concentration estimated.
- SS Surrogate Standard reported as percent recovery.

Form I

Jus



•	CH2M HILL/MGM 16619003	Concentration: Sample Matrix:			08/21/90 08/29/90
Lab Sample ID: Client Sample ID:		Percent Moisture:		Dilution Factor:	
CITABLE Sembre in.	MH-7		<del></del>		

## SDWA HERBICIDE COMPOUNDS

CAS Numb	er	ug/L	CAS Number	uq/L
94-75-7	2,4-D	2.5 T		
93-72-1	Silvex	0.5 T		
	3,5-Dichlorobenzoic acid - SS	86		

U - Analyzed for but not detected.

B - Detected in QC blank.

JX - Detected, concentration estimated.

SS - Surrogate Standard reported as percent recovery.

Form I

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205.271.1444



Iboratory Name:CH2M HILL/MGMConcentration:LOWDate Extracted:08/21/90Lab Sample ID:16619004Sample Matrix:WATERDate Analyzed:08/29/90Client Sample ID:MW-2Percent Moisture:Dilution Factor:1.0

## SDWA HERBICIDE COMPOUNDS

CAS Number	er	uq/L	CAS Number	uq/L .
94-75-7	2,4-D	2.5 U	•	
93-72-1	Silvex	0.5 ΰ		
	3,5-Dichlorobenzoic acid - SS	93		

- U Analyzed for but not detected.
- B Detected in QC blank.
- JX Detected, concentration estimated.
- SS Surrogate Standard reported as percent recovery.

Form I

Jins



#### ORGANICS ANALYSIS DATA SHEET

Laboratory Name:	CH2M HILL/MGM	Concentration:	LOW	Date Extracted:	
Lab Sample ID:	16619005	Sample Matrix:	<u>WATER</u>		08/29/90
Client Sample ID:	PW-1	Percent Moisture:		Dilution Factor:	1.0

#### SDWA HERBICIDE COMPOUNDS

CAS Numbe	Σ	uq/L	CAS Number ug/L
94-75-7	2,4-D	2.5	
93-72-1	Silvex	0.5 t	ı
	3,5-Dichlorobenzoic acid - SS		

U - Analyzed for but not detected.

B - Detected in QC blank.

JX - Detected, concentration estimated.

SS - Surrogate Standard reported as percent recovery.

Form I

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#### ORGANICS ANALYSIS DATA SHEET

Lab Sample ID: W08210B1 Sample Matrix: WATER Date Extracted: 08/21/90 Client Sample ID: QC BLANK Percent Moisture: Dilution Factor: 1.0

#### SDWA HERBICIDE COMPOUNDS

CAS Number	er	uq/L	CAS Number uq/L
94-75-7	2,4-D	2.5 U	
93-72-1	Silvex	0.5 ΰ	
		-	
	3.5-Dichlorobenzoic acid - SS	92	

U - Analyzed for but not detected.

B - Detected in QC blank.

JX - Detected, concentration estimated.

SS - Surrogate Standard reported as percent recovery.

Form I

Jus



Client:

PG & E/BECHTEL/INDIANTOWN COGENERATION PROJ

Attention:

JEFF LEHNEN

Address:

CH2M HILL GAINESVILLE OFFICE

Sample Number:

83679-84

Date Received: 08/17/90

#### Dear Client:

The Gainesville Organics Laboratory received your samples with a request for analysis of selected parameters.

The analytical results are enclosed. No unusual difficulties were encountered in the analyses.

If you should have any questions concerning the results please contact us. Thank you.

Sincerely,

Don Hash

Client Services



# CH2M Hill Organics Laboratory Analytical Report

#### Report Contents

Sample Information

Definitions of Reporting Qualifiers

Description of Analytical Methods

Sample Quantitation Reports including Surrogate Recoveries

QA/QC Package Including:

Initial Calibration (\*)

Continuing Calibration (Daily Standard) (\*)

Quantitation Reports for Organic-Free Water Blanks

Matrix Spike/Matrix Spike Duplicate (\*)

Surrogate Control Charts (\*)

Chromatograms (\*)

Copy of Chain-of-Custody

(\*) Information provided where appliciable or when requested.



#### SAMPLE INFORMATION

Client:

PG & E/BECHTEL/INDIANTOWN COGENERATION PROJ

Attention:

JEFF LEHNEN

Address:

CH2M HILL GAINESVILLE OFFICE

Description:

WATER SAMPLES

INDIANTOWN COGENERATION PROJ

601/602 ANALYSIS

Sample Number:

83679-84

Quantity:

Date Received:

08/17/90

Date Completed: 08/23/90 Date Reported:

08/31/90

Project Number: SEF 30619.A0

Number of Pages: 15

The information shown in this report is test data only and no interpretation of this data is intended or implied.

State of Alabama Certification No.: 40080

State of Florida Certification No.: 82112, E82124

Respectfully submitted,

Laboratory Manager



#### Definitions of Reporting Qualifiers

- (U) Indicates the compound was analyzed for but not detected.

  The number adjacent to the "U" qualifier indicates the

  Detection Limit for that compound. The detection limit can
  vary from sample to sample depending on dilution factors
  or percent moisture adjustment when indicated.
- (M) Matrix interference precludes achieving lower detection limit. The detection limit is determined by the largest peak in the sample, and the dilution is adjusted so that neither chemical nor electronic overload of the gas chromatography system takes place. Either condition could affect the reliability of peak identification and quantitation.
- (F) Presence indicated but less than stated detection limit. In a diluted sample, a clearly defined peak was present at less than the stated detection limit.
- (N) Sample contains non-target compounds. Many samples, especially "fuel" samples, often contain non-target compounds. This qualifier is used to alert the client to the presence of non-target compounds in samples that may not contain any of the listed "target" compounds.

Detection Limit = 1.0 ug/l for water samples and 1.0 ug/kg for soil and sediment samples unless noted otherwise.

Note: the minimum detection limit for methanol extracts of high-level soil and sediment samples is 50 ug/kg due to the effect of methanol on "purging efficiency."



#### Analytical Methods

- Purgeable Halocarbons in Water: EPA Method 601 as described in the Title 40 Code of Federal Regulations, Part 136, Appendix A, July, 1988, and CH2M Hill GC Volatiles SOP, October, 1988.
- Purgeable Aromatics in Water: EPA Method 602 as described in the Title 40 Code of Federal Regulations, Part 136, Appendix A, July, 1988, and CH2M Hill GC Volatiles SOP, October, 1988.
- Purgeable Halocarbons in Soil and Sediment: EPA Method 8010 as described in Test Methods for Evaluating Solid Waste (SW-846) and CH2H Hill GC Volatiles SOP, October, 1988.
- Purgeable Aromatics in Soil: EPA Method 8020 as described in Test Methods for Evaluating Solid Waste (SW-846) and CH2M Hill GC Volatiles SOP, October, 1988.
- Trihalomethanes in Water: EPA Method 501.1 as described in the Federal Register, Vol. 44, No. 231, Appendix C, and CH2M Hill Volatiles SOP, October, 1988.
- Ethylene Dibromide in Water: EPA Method 504 (1,2-dibromomethane and 1,2-dibromo-3-chloropropane in water by microextraction and gas chromatography).
- Fuel Screening: Procedure for estimation of concentration and identification of "fuel" samples; used to assist in determination of required EPA methods for subsequent analysis. This methodology is not an established EPA procedure.

State of Alabama Certification Number: 40080

State of Florida Certification Numbers: 82112 and E82124



Client: PG&E / BECHTEL GAINESVILLE Date Sampled: Laboratory: 8/17/90 Project: INDIANTOWN COGENERATION PROJECT Lab Sample Id: 83679 Date Received: 8/17/90 Proj No: SEF 30619.A0 % Moisture 0.0 Date Extracted: N/A 1.0 Method: 601/602 Dilution Factor: Date Analyzed: 8/22/90 GC#2 Matrix: WATER Instrument ID: Analyst: SS J & W DB-1 Sampler: PK Column: Date Reported: 8/24/90

Client Sample ID/Description: MW-3

CAS Number	Compound	Reporting	Sample	Reporting
		Limit	Result	Units
74-87-3	Chloromethane	1.0	U	ug/L
75-01-4	Vinyl Chloride	1.0	U	ug/L
74-83-9	Bromomethane	1.0	U	ug/L
75-00-3	Chloroethane	1.0	U	ug/L
75-69-4	Trichlorofluoromethane	1.0	U	ug/L
75-35-4	1,1-Dichloroethene	1.0	U	ug/L
75-09-2	Dichloromethane	1.0	U	ug/L
156-60-5	trans-1,2-Dichloroethene	1.0	U	ug/L
75-34-3	1,1-Dichloroethane	1.0	U	ug/L
67-66-3	Chloroform	1.0	U	ug/L
107-06-2	1,2-Dichloroethane	1.0	U	ug/L
71-55-6	1,1,1-Trichioroethane	1.0	U	ug/L
56-23-5	Carbon Tetrachloride	1.0	U	ug/L
78-87-5	1,2-Dichloropropane	1.0	U	ug/L
79-01-6	Trichloroethene			
75-27-4	and Bromodichloromethane	1.0	U	ug/L
10061-01-5	cis-1,3-Dichloropropene	1.0	U	ug/L
10061-02-6	trans-1,3-Dichloropropene	1.0	U	∪g/L
79-00-5	1,1,2-Trichloroethane	1.0	U	ug/L
124-48-1	Dibromochloromethane	1.0	U	ug/L
127-18-4	Tetrachloroethene	1.0	U	ug/L
108-90-7	Chlorobenzene	1.0	U	ug/L
75-25-2	Bromoform	1.0	U	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	ug/L
541-73-1	1,3-Dichlorobenzene	1.0	U	ug/L
106-46-7	1,4-Dichlorobenzene	1.0	U	ug/L
95-50-1	1,2-Dichlorobenzene	1.0	U	ug/L
1634-04-4	tert-Butyl methyl ether	1.0	ម	ug/L
71-43-2	Benzene	1.0	υ	ug/L
108-88-3	Toluene	1.0	ប	ug/L
100-41-4	Ethylbenzene	1.0	U	ug/L
N/A	Xylenes (Total)	1.0	U	ug/L

 74-97-5
 Bromochloromethane-SS
 104
 %rec

 98-08-8
 a,a,a-Trifluorotoluene-SS
 96
 %rec

U = Compound analyzed for but not detected

SS = Surrogate Standard reported as percent recovery

Reviewed by: Charlie

<u> 8/3//9</u>0



GAINESVILLE 8/17/90 Client: PG&E / BECHTEL Laboratory: Date Sampled: 83680 Project: INDIANTOWN COGENERATION PROJECT Lab Sample Id: Date Received: 8/17/90 Proj No: SEF 30619.A0 % Moisture 0.0 Date Extracted: N/A Method: 601/602 Dilution Factor: 1.0 Date Analyzed: 8/22/90 Instrument ID: GC#2 Analyst: Matrix: WATER SS J & W DB-1 Column: Date Reported: 8/24/90 Sampler: PK

Client Sample ID/Description: MW-4

CAS Number	Compound	Reporting Limit	Sample Result	Reporting Units
			**********	***
74-87-3	Chloromethane	1.0	U	ug/L
75-01-4	Vinyl Chloride	1.0	U	ug/L
74-83-9	Bromomethane	1.0	U	ug/L
75-00-3	Chloroethane	1.0	IJ	ug/L
75-69-4	Trichlorofluoromethane	1.0	U	ug/L
75-35-4	1,1-Dichloroethene	1.0	U	ug/L
75-09-2	Dichloromethane	1.0	U	ug/L
156-60-5	trans-1,2-Dichloroethene	1.0	U	ug/L
75-34-3	1,1-Dichloroethane	1.0	U	ug/L
67-66-3	Chloroform	1.0	U	ug/L
107-06-2	1,2-Dichloroethane	1.0	U	ug/L
71-55-6	1,1,1-Trichloroethane	1.0	U	ug/L
56-23-5	Carbon Tetrachloride	1.0	U	ug/L
78-87-5	1,2-Dichloropropane	1.0	U	ug/L
79-01-6	Trichloroethene			-
75-27-4	and Bromodichloromethane	1.0	บ	ug/L
10061-01-5	cis-1,3-Dichloropropene	1.0	U	ug/L
10061-02-6	trans-1,3-Dichloropropene	1.0	U	ug/L
79-00-5	1,1,2-Trichloroethane	1.0	U	ug/L
124-48-1	Dibromochloromethane	1.0	U	ug/L
127-18-4	Tetrachloroethene	1.0	U	ug/L
108-90-7	Chlorobenzene	1.0	U	ug/L
75-25-2	Bromoform	1.0	U	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	ug/L
541-73-1	1,3-Dichlorobenzene	1.0	U	ug/L
106-46-7	1,4-Dichlorobenzene	1.0	U	ug/L
95-50-1	1,2-Dichlorobenzene	1.0	U	ug/L
1634-04-4	tert-Butyl methyl ether	1.0	U	ug/L
71-43-2	Benzene	1.0	U	ug/L
108-88-3	Toluene	1.0	U	ug/L
100-41-4	Ethylbenzene	1.0	U	ug/L
N/A	Xylenes (Total)	1.0	U	ug/L

74-97-5Bromochloromethane-SS90Xrec98-08-8a,a,a-Trifluorotoluene-SS100Xrec

U = Compound analyzed for but not detected

SS = Surrogate Standard reported as percent recovery

Reviewed by: Charlie Jarman 8/31/90



GAINESVILLE Date Sampled: 8/17/90 Client: PG&E / BECHTEL Laboratory: 83681 Project: INDIANTOWN COGENERATION PROJECT Lab Sample Id: 8/17/90 Date Received: Proj No: SEF 30619.A0 % Moisture 0.0 Date Extracted: N/A 1.0 Dilution Factor: 8/22/90 Method: 601/602 Date Analyzed: GC#2 Instrument ID: Analyst: \$5 Matrix: WATER Column: J & W D8-1 8/24/90 Date Reported: Sampler: PK

Client Sample ID/Description: MW-1 (N)

CAS Number	Compound	Reporting Limit	Sample Result	Reporting Units
74-87-3	Chloromethane	1.0	IJ	ug/L
75-01-4	Vinvi Chloride	1.0	Ü	ug/L
74-83-9	Bromomethane	1.0	ŭ	ug/L
75-00-3	Chloroethane	1.0	Ü	ug/L
75-69-4	Trichlorofluoromethane	1.0	Ū	ug/L
75-35-4	1,1-Dichloroethene	1.0	Ū	ug/L
75-09-2	Dichloromethane	1.0	Ü	ug/L
156-60-5	trans-1,2-Dichloroethene	1.0	Ü	ug/L
75-34-3	1,1-Dichloroethane	1.0	ū	ug/L
67-66-3	Chioroform	1.0	Ü	ug/L
107-06-2	1,2-Dichloroethane	1.0	ŭ	ug/L
71-55-6	1,1,1-Trichloroethane	1.0	ŭ	ug/L
56-23-5	Carbon Tetrachloride	1.0	Ū	ug/L
78-87-5	1,2-Dichloropropene	1.0	Ü	ug/L
79-01-6	Trichloroethene		•	
75-27-4	and Bromodichloromethane	1.0	U	ug/L
10061-01-5	cis-1,3-Dichloropropene	1.0	Ū	ug/L
10061-02-6	trans-1,3-Dichloropropene	1.0	Ü	ug/L
79-00-5	1,1,2-Trichloroethane	1.0	U	ug/L
124-48-1	Dibromochloromethane	1.0	U	ug/L
127-18-4	Tetrachloroethene	1.0	U	ug/L
108-90-7	Chlorobenzene	1.0	U	ug/L
75-25-2	Bromoform	1.0	U	Ug/L
79-34-5	1,1,2,2-Tetrachioroethane	1.0	U	ug/L
541-73-1	1,3-Dichlorobenzene	1.0	U	ug/L
106-46-7	1,4-Dichlorobenzene	1.0	U	ug/L
95-50-1	1,2-Dichlorobenzene	1.0	U	ug/L
1634-04-4	tert-Butyl methyl ether	1.0	U	ug/L
71-43-2	Benzene	1.0	U	ug/L
108-88-3	Toluene	1.0	U	ug/L
100-41-4	Ethylbenzene	1.0	U	ug/L
N/A	Xylenes (Total)	1.0	U	ug/L

 74-97-5
 Bromochloromethane-SS
 108
 %rec

 98-08-8
 a,a,a-Trifluorotoluene-SS
 90
 %rec

U = Compound analyzed for but not detected

SS = Surrogate Standard reported as percent recovery

Reviewed by: Charlie Jarman 8/31/9



Zrec

#### Report of Analytical Data - Purgeable Halocarbons/Aromatics

Client: PG&E / BECHTEL Laboratory: GAINESVILLE Date Sampled: 8/17/90 Project: INDIANTOWN COGENERATION PROJECT Lab Sample Id: 83682 Date Received: 8/17/90 % Moisture 0.0 Proj No: SEF 30619.A0 Date Extracted: N/A Dilution Factor: 8/22/90 Method: 601/602 1.0 Date Analyzed: Instrument ID: GC#2 Matrix: WATER Analyst: Sampler: PK Column: J & W DB-1 Date Reported: 8/24/90

Client Sample ID/Description: MW-2

CAS Number	Compound	Reporting Limit	Sample Result	Reporting Units
	•• ••••			
74-87-3	Chloromethane	1.0	U	ug/L
75-01-4	Vinyl Chloride	1.0	u	ug/L
74-83-9	Bromomethane	1.0	U	ug/L
75-00-3	Chloroethane	1.0	U	ug/L
75-69-4	Trichlorofluoromethane	1.0	U	ug/L
75-35-4	1,1-Dichloroethene	1.0	U	ug/L
75-09-2	Dichloromethane	1.0	U	ug/L
156-60-5	trans-1,2-Dichloroethene	1.0	U	ug/L
75-34 <i>-</i> 3	1,1-Dichloroethane	1.0	U	ug/L
67-66-3	Chloroform	1.0	U	ug/L
107-06-2	1,2-Dichloroethane	1.0	U	ug/L
71-55-6	1,1,1-Trichloroethane	1.0	U	ug/L
56-23-5	Carbon Tetrachloride	1.0	U	ug/L
78-87-5	1,2-Dichloropropane	1.0	U	ug/L
79-01-6	Trichloroethene			<del>-</del> -
75-27-4	and Bromodichloromethane	1.0	U	ug/L
10061-01-5	cis-1,3-Dichloropropene	1.0	U	ug/L
10061-02-6	trans-1,3-Dichloropropene	1.0	IJ	ug/L
79-00-5	1,1,2-Trichloroethane	1.0	U	ug/L
124-48-1	Dibromochloromethane	1.0	U	ug/L
127-18-4	Tetrachloroethene	1.0	U	ug/L
108-90-7	Chlorobenzene	1.0	U	ug/L
75-25-2	Bromoform	1.0	U	Ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	ug/L
541-73-1	1,3-Dichlorobenzene	1.0	U	ug/L
106-46-7	1.4-Dichlorobenzene	1.0	U	ug/L
95-50-1	1,2-Dichlorobenzene	1.0	Ü	ug/L
1634-04-4	tert-Butyl methyl ether	1.0	Ü	ug/L
71-43-2	Benzene	1.0	Ū	ug/L
108-88-3	Toluene	1.0	Ü	ug/L
100-41-4	Ethylbenzene	1.0	Ü	ug/L
N/A	Xylenes (Total)	1.0	Ü	ug/L
		*****		
74-97-5	Bromochloromethane-SS			98 %rec

98-08-8 a,a,a-Trifluorotoluene-SS

U = Compound analyzed for but not detected

SS = Surrogate Standard reported as percent recovery

Reviewed by: Charlie Farman 5/31/9



GAINESVILLE Client: PG&E / BECHTEL Laboratory: Date Sampled: 8/16/90 Project: INDIANTOWN COGENERATION PROJECT Lab Sample Id: 83683 Date Received: 8/17/90 0.0 Proj No: SEF 30619.A0 % Moisture Date Extracted: N/A Method: 601/602 Dilution Factor: 1.0 Date Analyzed: 8/22/90 Matrix: WATER Instrument ID: GC#1 Analyst: SS Column: J & W DB-624 Date Reported: 8/24/90 Sampler: PK

Client Sample ID/Description: PW-1

CAS Number	Compound	Reporting Limit	Sample Result	Reporting Units
74-87-3	Chloromethane	1.0	Ü	ug/L
75-01-4	Vinyl Chloride	1.0	Ü	ug/L
74-83-9	Bromomethane	1.0	Ü	ug/L
75-00-3	Chloroethane	1.0	Ū	ug/L
75-69-4	Trichlorofluoromethane	1.0	Ü	ug/L
75-35-4	1,1-Dichloroethene	1.0	Ü	ug/L
75-09-2	Dichloromethane	1.0	Ü	ug/L
156-60-5	trans-1,2-Dichloroethene	1,0	Ū	ug/L
75-34-3	1,1-Dichloroethane	1.0	Ū	ug/L
67-66-3	Chloroform	1.0	Ū	ug/L
71-55-6	1.1.1-Trichloroethane	1.0	Ŭ	ug/L
56-23-5	Carbon Tetrachloride	1.0	U	ug/L
107-06-2	1,2-Dichloroethane	1.0	U	ug/L
79-01-6	Trichloroethene	1.0	υ	ug/L
78-87-5	1,2-Dichloropropane	1.0	U	ug/L
75-27-4	Bromodichloromethane	1.0	U	ug/L
10061-01-5	cis-1.3-Dichloropropene	1.0	U	ug/L
10061-02-6	trans-1,3-Dichloropropene	1.0	U	Ug/L
79-00-5	1,1,2-Trichloroethane	1.0	U	ug/L
127-18-4	Tetrachloroethene	1.0	Ų	ug/L
124-48-1	Dibromochloromethane	1.0	U	ug/L
108-90-7	Chlorobenzene	1.0	U	ug/L
75-25-2	Bromoform	1.0	U	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	ug/L
541-73-1	1,3-Dichlorobenzene	1.0	U	jug/L
106-46-7	1,4-Dichlorobenzene	1.0	U	ug/L
95-50-1	1,2-Dichlorobenzene	1.0	U	ug/L
1634-04-4	tert-Butyl methyl ether	1.0	U	ug/L
71-43-2	Benzene	1.0	υ	ug/L
108-88-3	Toluene	1.0	υ	ug/L
100-41-4	Ethylbenzene	1.0	U	ug/L
N/A	Xylenes (Total)	1.0	U	ug/L

74-97-5 Bromochloromethane-SS 98-08-8 a,a,a-Trifluorotoluene-SS

100 %rec 94 %rec

U = Compound analyzed for but not detected

SS \* Surrogate Standard reported as percent recovery

Reviewed by: Charlie Jarman 5/31/90



GAINESVILLE Client: PG & E/BECHTEL Laboratory: Date Sampled: 8/17/90 Project: INDIANTOWN COGENERATION PROJ Lab Sample Id: 83684 Date Received: 8/17/90 Proj No: SEF 30619.A0 % Moisture 0.0 Date Extracted: N/A Dilution Factor: 1.0 Method: 601/602 Date Analyzed: 8/23/90 Instrument ID: GC#2 Matrix: WATER Analyst: CJ Column: J & W DB-1 Sampler: P₩ Date Reported: 8/31/90

Client Sample ID/Description: TRAVEL BLANK

CAS Number	Compound	Reporting Limit	Sample Result	Reporting Units
			*************	
74-87-3	Chloromethane	1.0	U	ug/L
75-01-4	Vinyl Chloride	1.0	ປ	ug/L
74-83-9	Bromomethane	1.0	U	ug/L
75-00-3	Chloroethane	1.0	U	ug/L
75-69-4	Trichlorofluoromethane	1.0	ย	ug/L
75-35-4	1,1-Dichloroethene	1.0	U	ug/L
75-09-2	Dichloromethane	1.0	U	ug/L
156-60-5	trans-1,2-Dichloroethene	1.0	บ	ug/L
75-34-3	1,1-Dichloroethane	1.0	U	ug/L
67-66-3	Chloroform	1.0	U	ug/L
107-06-2	1,2-Dichloroethane	1.0	U	ug/L
71-55-6	1,1,1-Trichloroethane	1.0	บ	ug/L
56-23-5	Carbon Tetrachloride	1.0	Ū	ug/L
78-87-5	1,2-Dichloropropene	1.0	U	ug/L
79-01-6	Trichloroethene		_	
75-27-4	and Bromodichloromethane	1.0	U	ug/L
10061-01-5	cis-1,3-Dichloropropene	1.0	U	ug/L
10061-02-6	trans-1,3-Dichloropropene	1.0	U	ug/L
79-00-5	1,1,2-Trichloroethane	1.0	IJ	ug/L
124-48-1	Dibromochloromethane	1.0	U	ug/L
127-18-4	Tetrachloroethene	1.0	U	ug/L
108-90-7	Chlorobenzene	1.0	Ú	ug/L
75-25-2	Bramoform	1.0	Ü	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1.0	Ü	ug/L
541-73-1	1,3-Dichlorobenzene	1.0	Ū	Ug/L
106-46-7	1,4-Dichlorobenzene	1.0	U	ug/L
95-50-1	1,2-Dichlorobenzene	1.0	U	ug/L
1634-04-4	tert-Butyl methyl ether	1.0	U	ug/L
71-43-2	Benzene	1.0	Ü	ug/L
108-88-3	Toluene	1.0	Ü	ug/L
100-41-4	Ethylbenzene	1.0	ט	ug/L
N/A	Xylenes (Total)	1.0	บ	ug/L
	** ************************************			
74-97-5	Bromochloromethane-SS		1	108 %rec

U = Compound enalyzed for but not detected

SS = Surrogate Standard reported as percent recovery

a,a,a-Trifluorotoluene-SS

Daviaued bu.

98-08-8

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93



Client: PG & E/BECHTEL Laboratory: GAINESVILLE 8/21/90 Date Sampled: Date Received: Project: INDIANTOWN COGENERATION PROJ Lab Sample Id: 2VB0821BH N/A Proj No: SEF 30619.A0 % Moisture 0.0 Date Extracted: N/A Method: 601/602 Dilution Factor: 1.0 Date Analyzed: 8/21/90 Matrix: WATER Instrument ID: GC#2 Analyst: CJ Column: J & W DB-1 Sampler: N/A Date Reported: 8/31/90

Client Sample ID/Description: OFW BLANK

CAS Number	Compound	Reporting Limit	Sample Result	Reporting Units
74-87-3	Chloromethane	1.0	U	ug/L
75-01-4	Vinyl Chloride	1.0	U	ug/L
74-83-9	Bromomethane	1.0	U	ug/L
75-00-3	Chloroethane	1.0	U	ug/L
75-69-4	Trichlorofluoromethane	1.0	U	ug/L
75-35-4	1,1-Dichloroethene	1.0	U	ug/L
75-09-2	Dichloromethane	1.0	U	ug/L
156-60-5	trans-1,2-Dichloroethene	1.0	IJ	Ug/L
75-34-3	1,1-Dichloroethane	1.0	U	ug/L
67-66-3	Chloroform	1.0	U	ug/L
107-06-2	1,2-Dichloroethane	1.0	U	ug/L
71-55-6	1,1,1-Trichloroethane	1.0	U	ug/L
56-23-5	Carbon Tetrachloride	1.0	U	ug/L
78-87-5	1,2-Dichloropropane	1.0	· U	ug/L
79-01-6	Trichloroethene			<b>G</b> , -
75-27-4	and Bromodichloromethane	1.0	IJ	ug/L
10061-01-5	cis-1,3-Dichloropropene	1.0	IJ	ug/L
10061-02-6	trans-1,3-Dichloropropene	1.0	U	Ug/L
79-00-5	1,1,2-Trichloroethane	1.0	U	Ug/L
124-48-1	Dibromochloromethane	1.0	U	ug/L
127-18-4	Tetrachloroethene	1.0	U	ug/L
108-90-7	Chlorobenzene	1.0	U	ug/L
75-25-2	Bromoform	1.0	Ū	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1.0	Ū	ug/L
541-73-1	1,3-Dichlorobenzene	1.0	Ū	ug/L
106-46-7	1,4-Dichlorobenzene	1.0	Ü	ug/L
95-50-1	1,2-Dichlorobenzene	1.0	บ	ug/L
1634-04-4	tert-Butyl methyl ether	1.0	Ū	ug/L
71-43-2	Benzene	1.0	Ū	ug/L
108-88-3	Toluene	1.0	Ū	ug/L
100-41-4	Ethylbenzene	1.0	Ū	ug/L
N/A	Xylenes (Total)	1.0	Ů	ug/L

74-97-5 Bromochloromethane-SS 110 %rec 98-08-8 a,a,a-Trifluorotoluene-SS 96 %rec

U = Compound analyzed for but not detected

SS = Surrogate Standard reported as percent recovery

Reviewed by: Charle Jaman \$131/90



GAINESVILLE Date Sampled: 8/22/90 Client: PG&E / BECHTEL Laboratory: 1V80822A Date Received: Project: INDIANTOWN COGENERATION PROJECT Lab Sample Id: N/A % Moisture 0.0 Date Extracted: N/A Proj No: SEF 30619.A0 1.0 Date Analyzed: 8/22/90 Method: 601/602 Dilution Factor: GC#1 55 Analyst: Matrix: WATER Instrument ID: J & W DB-624 Date Reported: 8/24/90 Column: Sampler: N/A

Client Sample ID/Description: OFW BLANK

CAS Number	Compound	Reporting Limit	Sample Result	Reporting Units
74-87-3	Chloromethane	1.0	U	ug/L
75-01-4	Vinyl Chloride	1.0	U	ug/L
74-83-9	Bromomethane	1.0	U	ug/L
75-00-3	Chloroethane	1.0	U	ug/L
75-69-4	Trichlorofluoromethane	1.0	IJ	ug/L
75-35-4	1,1-Dichloroethene	1.0	U	ug/L
75-09-2	Dichloromethane	1.0	U	ug/L
156-60-5	trans-1,2-Dichloroethene	1.0	U	ug/L
75-34-3	1,1-Dichloroethane	1.0	บ	ug/L
67-66-3	Chloroform	1.0	U	ug/L
71-55-6	1,1,1-Trichloroethane	1.0	U	ug/L
56-23-5	Carbon Tetrachloride	1.0	U	ug/L
107-06-2	1,2-Dichloroethane	1.0	U	ug/L
79-01-6	Trichloroethene	1.0	U	ug/L
78-87-5	1,2-Dichloropropane	1.0	U	ug/L
75-27-4	Bromodichloromethane	1.0	Ų	ug/L
10061-01-5	cis-1,3-Dichloropropene	1.0	U	ug/L
10061-02-6	trans-1,3-Dichloropropene	1.0	U	ug/L
79-00-5	1,1,2-Trichloroethane	1.0	υ	ug/L
127-18-4	Tetrachloroethene	1.0	U	ug/L
124-48-1	Dibromochloromethane	1.0	U	ug/L
108-90-7	Chlorobenzene	1.0	U	ug/L
75-25-2	9romoform .	1.0	U	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	ug/L
541-73-1	1,3-Dichlorobenzene	1.0	U	ug/L
106-46-7	1,4-Dichlorobenzene	1.0	U	ug/L
95-50-1	1,2-Dichlorobenzene	1.0	U	ug/L
1634-04-4	tert-Butyl methyl ether	1.0	U	ug/L
71-43-2	Benzene	1.0	U	ug/L
108-88-3	Toluene	1.0	U	ug/L
100-41-4	Ethylbenzene	1.0	U	ug/L
N/A	Xylenes (Total)	1.0	U	ug/L

74-97-5 Bromochloromethane-SS 103 %rec 98-08-8 a,a,a-Trifluorotoluene-SS 99 %rec

U = Compound analyzed for but not detected

SS = Surrogate Standard reported as percent recovery

Reviewed by: Charlie Jarman 5/31/9



GAINESVILLE Date Sampled: 8/22/90 Client: PG&E / BECHTEL Laboratory: Lab Sample Id: 2VB0822AH Date Received: N/A Project: INDIANTOWN COGENERATION PROJECT 0.0 Date Extracted: N/A % Moisture Proj No: SEF 30619.A0 Dilution factor: 1.0 Date Analyzed: 8/22/90 Method: 601/602 Instrument ID: GC#2 Analyst: SS Matrix: WATER J & W DB-1 Date Reported: 8/24/90 Column: Sampler: N/A

Client Sample ID/Description: OFW BLANK

CAS Number	Compound	Reporting . Limit	Sample Result	Reporting Units
			************	
74-87-3	Chloromethane	1.0	U	ug/L
75-01-4	Vinyl Chloride	1.0	U	ug/L
74-83-9	Bromomethane	1.0	U	ug/L
75-00-3	Chloroethane	1.0	U	ug/L
75-69-4	Trichlorofluoromethane	1.0	U	ug/L
75-35-4	1,1-Dichloroethene	1.0	U	ug/L
75-09-2	Dichloromethane	1.0	U	ug/L
156-60-5	trans-1,2-Dichloroethene	1.0	U	ug/L
75-34-3	1,1-Dichloroethane	1.0	U	ug/L
67-66-3	Chloroform	1.0	U	ug/L
107-06-2	1,2-Dichloroethane	1.0	U	ug/L
71-55-6	1,1,1-Trichloroethane	1.0	บ	ug/L
56-23-5	Carbon Tetrachloride	1.0	U	ug/L
78-87-5	1,2-Dichloropropane	1.0	IJ	ug/L
79-01-6	Trichloroethene			
75-27-4	and Bromodichloromethane	1.0	U	ug/L
10061-01-5	cis-1,3-Dichloropropene	1.0	U	ug/L
10061-02-6	trans-1,3-Dichloropropene	1.0	U	ug/L
79-00-5	1,1,2-Trichloroethane	1.0	U	ug/L
124-48-1	Dibromochloromethane	1.0	U	ug/L
127-18-4	Tetrachloroethene	1.0	U	ug/L
108-90-7	Chlorobenzene	1.0	U	ug/L
75-25-2	Bromoform	1.0	ย	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1.0	ย	ug/L
541-73-1	1,3-Dichlorobenzene	1.0	U	ug/L
106-46-7	1,4-Dichlorobenzene	1.0	U	ug/L
95-50-1	1,2-Dichlorobenzene	1.0	U	ug/L
1634-04-4	tert-Butyl methyl ether	1.0	U	ug/L
71-43-2	Benzene	1.0	U	ug/L
108-88-3	Toluene	1.0	U	ug/L
100-41-4	Ethylbenzene	1.0	ย	ug/L
N/A	Xylenes (Total)	1.0	U	ug/L

74-97-5 Bromochloromethane-SS 92 %rec 98-08-8 a,a,a-Trifluorotoluene-SS 94 %rec

U = Compound analyzed for but not detected

SS = Surrogate Standard reported as percent recovery

Reviewed by: Charlie Jarman 8/31/97



Client:

PG & E/BECHTEL/INDIANTOWN COGENERATION PROJ

Attention:

JEFF LEHNEN

Address:

CH2M HILL GAINESVILLE OFFICE

Sample Number: Date Received: 83679-84

para vecetiad:

08/17/90

#### Dear Client:

The Gainesville Organics Laboratory received your samples with a request for analysis of selected parameters.

The analytical results are enclosed. No unusual difficulties were encountered in the analyses.

If you should have any questions concerning the results please contact us. Thank you.

Sincerely,

Don Hash

Client Services



### CH2M Hill Organics Laboratory Analytical Report

#### Report Contents

Sample Information Definitions of Reporting Qualifiers Description of Analytical Methods Sample Quantitation Reports including Surrogate Recoveries

QA/QC Package Including:

Initial Calibration (\*) Continuing Calibration (Daily Standard) (\*) Quantitation Reports for Organic-Free Water Blanks Matrix Spike/Matrix Spike Duplicate (\*) Surrogate Control Charts (\*) Chromatograms (\*) Copy of Chain-of-Custody

(\*) Information provided where appliciable or when requested.



#### SAMPLE INFORMATION

Client:

PG & E/BECHTEL/INDIANTOWN COGENERATION PROJ

Attention:

JEFF LEHNEN

Address:

CH2M HILL GAINESVILLE OFFICE

Description:

WATER SAMPLES

INDIANTOWN COGENERATION PROJ.

504 (EDB) ANALYSIS

Sample Number:

83679-84

Quantity:

Date Received:

08/17/90

Date Completed: 08/21/90

Date Reported:

09/07/90

Project Number: SEF 30619.A0

Number of Pages: 12

The information shown in this report is test data only and no interpretation of this data is intended or implied.

State of Alabama Certification No.: 40080

State of Florida Certification No.: 82112, E82124

Respectfully submitted,

Tom Emenhiser

Laboratory Manager



#### Definitions of Reporting Qualifiers

- (U) Indicates the compound was analyzed for but not detected.

  The number adjacent to the "U" qualifier indicates the

  Detection Limit for that compound. The detection limit can

  vary from sample to sample depending on dilution factors

  or percent moisture adjustment when indicated.
- (M) Matrix interference precludes achieving lower detection limit. The detection limit is determined by the largest peak in the sample, and the dilution is adjusted so that neither chemical nor electronic overload of the gas chromatography system takes place. Either condition could affect the reliability of peak identification and quantitation.
- (F) Presence indicated but less than stated detection limit. In a diluted sample, a clearly defined peak was present at less than the stated detection limit.
- (N) Sample contains non-target compounds. Many samples, especially "fuel" samples, often contain non-target compounds. This qualifier is used to alert the client to the presence of non-target compounds in samples that may not contain any of the listed "target" compounds.

Detection Limit = 1.0 ug/l for water samples and 1.0 ug/kg for soil and sediment samples unless noted otherwise.

Note: the minimum detection limit for methanol extracts of high-level soil and sediment samples is 50 ug/kg due to the effect of methanol on "purging efficiency."



#### Analytical Methods

- Purgeable Halocarbons in Water: EPA Method 601 as described in the Title 40 Code of Federal Regulations, Part 136, Appendix A, July, 1988, and CH2M Hill GC Volatiles SOP, October, 1988.
- Purgeable Aromatics in Water: EPA Method 602 as described in the Title 40 Code of Federal Regulations, Part 136, Appendix A, July, 1988, and CH2M Hill GC Volatiles SOP, October, 1988.
- Purgeable Halocarbons in Soil and Sediment: EPA Method 8010 as described in Test Methods for Evaluating Solid Waste (SW-846) and CH2H Hill GC Volatiles SOP, October, 1988.
- Purgeable Aromatics in Soil: EPA Method 8020 as described in Test Methods for Evaluating Solid Waste (SW-846) and CH2M Hill GC Volatiles SOP, October, 1988.
- Trihalomethanes in Water: EPA Method 501.1 as described in the Federal Register, Vol. 44, No. 231, Appendix C, and CH2M Hill Volatiles SOP, October, 1988.
- Ethylene Dibromide in Water: EPA Method 504 (1,2-dibromomethane and 1,2-dibromo-3-chloropropane in water by microextraction and gas chromatography).
- Fuel Screening: Procedure for estimation of concentration and identification of "fuel" samples; used to assist in determination of required EPA methods for subsequent analysis. This methodology is not an established EPA procedure.

State of Alabama Certification Number: 40080

State of Florida Certification Numbers: 82112 and E82124



Client: PG & E/BECHTEL Laboratory: GAINESVILLE Date Sampled: 8/17/90 Project: INDIANTOWN COGENERATION PROJECT Lab Sample Id: 83679E Date Received: 8/17/90 Proj No: SEF 30619.A0 % Moisture 0.00 Date Extracted: 8/20/90 Method: 504 Dilution Factor: 1.00 Date Analyzed: 8/21/90 Matrix: WATER Instrument ID: GC#3 Analyst: JEH Sampler: N/A Column: J & W DB-624 Date Reported: 8/28/90

Client Sample ID/Description: MW-3

CAS Number	Compound	Reporting Limit	Sample Result	Reporting Units
106-93-4	1,2-Dibromoethane	0.02	U	ug/L
96-12-8	1,2-Dibromo-3-chloropropane	0.02	Ü	ug/L

79-34-5 1,1,2,2-Tetrachloroethane-SS

112 %rec

U = Compound analyzed for but not detected

SS = Surrogate Standard reported as percent recovery

Reviewed by: Charlie Jarman 9/7/9



Date Reported: 8/28/90

#### Report of Analytical Data - EDB and DBCP

J & W DB-624

GAINESVILLE Client: PG & E/BECHTEL Laboratory: Date Sampled: 8/17/90 83680E Project: INDIANTOWN COGENERATION PROJECT Lab Sample Id: Date Received: 8/17/90 Proj No: SEF 30619.A0 % Noisture 0.00 Date Extracted: 8/20/90 1.00 Method: 504 Dilution Factor: Date Analyzed: 8/21/90 Matrix: WATER Instrument ID: GC#3 Analyst:

Column:

Client Sample ID/Description: MW-4

Sampler: N/A

CAS Number	Compound	Reporting Limit	Sample Result	Reporting Units
106-93-4	1,2-Dibromoethene	0.02	U	ug/L
96-12-8	1,2-Dibromo-3-chloropropane	0.02	U	ug/L

79-34-5

1,1,2,2-Tetrachloroethane-SS

109 %rec

U = Compound analyzed for but not detected

SS = Surrogate Standard reported as percent recovery

Reviewed by: Charles Harman



8/28/90

Date Reported:

#### Report of Analytical Data - EDB and DBCP

J & W DB-624

Client: PG & E/BECHTEL Laboratory: GAINESVILLE Date Sampled: 8/17/90 Project: INDIANTOWN COGENERATION PROJECT Lab Sample Id: 83681E Date Received: 8/17/90 Proj No: SEF 30619.A0 % Moisture 0.00 Date Extracted: 8/20/90 Method: 504 Dilution Factor: 1.00 Date Analyzed: 8/21/90 Matrix: WATER Instrument ID: GC#3 Analyst: JEH Sampler: N/A

Column:

Client Sample ID/Description: HW-1

CAS Number	Compound	Reporting Limit	Sample Result	Reporting Units
106-93-4	1,2-Dibromoethane	0.02	U	ug/L
96-12-8	1,2-Dibromo-3-chloropropane	0.02	Ü	ug/L

79-34-5

1,1,2,2-Tetrachloroethane-SS

110 %rec

U = Compound analyzed for but not detected

SS = Surrogate Standard reported as percent recovery



GAINESVILLE Client: PG & E/BECHTEL Laboratory: Date Sampled: 8/17/90 Project: INDIANTOWN COGENERATION PROJECT 83682E Lab Sample Id: Date Received: 8/17/90 % Moisture 0.00 Proj No: SEF 30619.A0 Date Extracted: 8/20/90 Dilution Factor: 1.00 Method: 504 Date Analyzed: 8/21/90 GC#3 Instrument ID: JEH Matrix: WATER Analyst: Column: J & W DB-624 Sampler: N/A Date Reported: 8/28/90

Client Sample ID/Description: MW-2

CAS Number	Compound	Reporting Limit	Sample Result	Reporting Units
106-93-4	1,2-Dibromoethane	0.02	U	ug/L
96-12-8	1,2-Dibromo-3-chloropropane	0.02	U	ug/L

79-34-5

1,1,2,2-Tetrachloroethane-SS

113 %rec

U = Compound analyzed for but not detected

SS = Surrogate Standard reported as percent recovery

Paviauad bu

Jaman 9/7/90



Laboratory: GAINESVILLE Client: PG & E/BECHTEL Date Sampled: 8/16/90 Project: INDIANTOWN COGENERATION PROJECT Lab Sample Id: 83683E Date Received: 8/17/90 Proj No: SEF 30619.A0 % Moisture 0.00 Date Extracted: 8/20/90 Dilution Factor: Method: 504 1.00 Date Analyzed: 8/21/90 Matrix: WATER Instrument ID: GC#3 Analyst: JEH J & W D8-624 Sampler: N/A Column: Date Reported: 8/28/90

Client Sample ID/Description: PW-1

CAS Number	Compound	Reporting Limit	Sample Result	Reporting Units
106-93-4	1,2-Dibromoethane	0.02	U	ug/L
96-12-8	1,2-Dibromo-3-chloropropane	0.02	U	ug/L

79-34-5

1,1,2,2-Tetrachloroethane-SS

103 %rec

U = Compound analyzed for but not detected

SS = Surrogate Standard reported as percent recovery

Reviewed by:

9/7/90



Client: PG & E/BECHTEL

Project: INDIANTOWN COGENERATION PROJECT

Proj No: SEF 30619.A0

Method: 504 Matrix: WATER Sampler: N/A

Laboratory: GAINESVILLE Lab Sample Id: 3VB0821E 0.00 % Moisture 1.00 Dilution Factor: GC#3 Instrument ID: J & W DB-624 Date Sampled: N/A Date Received: N/A Date Extracted: 8/21/90 Date Analyzed: 8/21/90 Analyst: JEH Date Reported: 8/28/90

Client Sample ID/Description: OFW BLANK

CAS Number	Compound	Reporting Limit	Sample Result	Reporting Units
106-93-4	1,2-Dibromoethane	0.02	U	ug/L
96-12-8	1,2-Dibromo-3-chloropropane	0.02	n	ug/L

Column:

79-34-5

1,1,2,2-Tetrachloroethane-SS

114 %rec

U = Compound analyzed for but not detected

SS = Surrogate Standard reported as percent recovery

**CHM**HILL QUALITY ANALYTICS 10 LMG CHAIN OF CUSTODY RECORD FOR LAB USE ONLY CLIENT ADDRESS AND PHONE HUMBER PROJECT NUMBER PROJECT NAME LAB# 16619 SEF 30619. AN Indiantous Cogeneration Po CLIENT NAME LAB# ANALYSES REQUESTED PG+ E/Bechtel
PROJECT MANAGER PROJECT NO. 1 COPY TO: Jeff Lehnen/GNV Pete Kwiathowki/DFR ACK VERIFIED 35 SAMPLING REQUIREMENTS REQUESTED COMP. DATE D BS QUOTE SDWA NPDES RCRA OTHER 8/27/40 NO OF SAMP PG OF C G S O R O M A I SAMPLE DESCRIPTIONS STA REMARKS (12 CHARACTERS) TIME В DATE NO. 83679 See attached list for amula 001 Mw-3 8/17/40 Hw-3 0950 80 ひひ NW-4 9 1050 Hw:4 d03 Mw-I 9 HW-1 1120 9 13:30 MW-2 MW-2 PW-1 Burrel St W. 17 16 PW-1 8-16-40 11:00 FOR LAS USE ONLY -16619 TABI HAZWRAP,NEGGA Y CC LEVELOR 2 CUST SEAL WO LEH MA FELX RUBET TO DU HASI DATE/TIME | 8//1/90 RELINQUISHED BY DATE/TIME HAZWRAP/NEESA Y JEFF LEHNEN / PIN. 8-17-90 / 8:45 PM QC LEVEY 1 2 3 RECEIVED BY: DATE/TIME RELINQUISHED BY: DATE/TIME COC **ICE** 0000 RELINQUISHED BY: 8-20-90 1440 ANA REQUITE IFMP DAJE/TIME B/2490 RECEIVED BY: DATE/TIME CUST SEAL 0 /7() 0900 SAMPLE COND. OUTICITY CO RECEIVED BY LAB: SAMPLE SHIPPED VIA
UPS (BUS) FED-EX (HAND) OTHER. DATE/TIME AIR BILL# Krose REMARKS INTO LIME COC 10-Day TAT per Toin Enenhuer 033 413 236 0 501 REVIEWED 1

48132242 REV 6/84 FORM 34:

## **CHM**HILL QUALITY ANALYTICS

**CHAIN OF CUSTODY RECORD** 

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eff Lehnen/GNV Pete Kuiathawki/D				L	T					T		L	STO FOT NO		
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LED BY AND TITLE Hydrologin B/17/90	RELIN	QUIS	HED BY		 -	 / p.			DATE	/TIME	<del>, L</del>	·	HAZWDAD/NEESA	Y N	
NEO BY: DATE/TIME	RELIN	<b>IQUIS</b>	HED BY	E#N ':	<u>EN</u> /	P:	N.	-		7-90 /11846	/8145	PM	OC LEVEY 1) 2 3		
NED BY: DATE/TIME								ANA REQUIL	ICE TEMP	<del></del>					
									DATE,	/TIME			CUST SEAL 0/10	Ph.	
DED BY LAB: DATE/TIME  REVIEW 5-17-80 8:47	SAMI UPS		IPPED		CHA		OTHE				MR BILL#		SAMPLE COND.	odfice	<u> </u>