PNNL-12114-ICN-2 February 28, 2002, Page 1 of 41

INTERIM CHANGE NOTICE

(ICN)

A. Document No.: PNNL-12114 Revision No.: September 1999	Effective Date of ICN: 2/28/02
Document Title: <u>RCRA Assessment Plan for Single-Shell Tank Waste Managemen</u> <u>S-SX at the Hanford Site</u> , September 1999	
Document's Original Author: V. G. Johnson and C. J. Chou	
	Change Requested By: Ronald M. Smith
B. Action: Make changes in the WMA S-SX groundwater quality assessment plan as a Attach this ICN to the front of the document, just before the title page	described in Section D below.
C. Effect of Change: This ICN updates the assessment plan to reflect the current wells i current constituent list for WMA S-SX. This ICN supplements all previous ICNs (PN	
D. Reason for Change/Description of Change:	
 Reason for Change: New wells have been constructed at WMA S-SX and some well water table and can no longer be sampled. The constituent list has been modified detected in the groundwater and to drop constituents that have not been detected information. Description of Change: See attached. 	I to reflect constituents actually
E. Document Management Decisions: See attached distribution list.	
	v.
F. Approval Signatures (Please Sign and Date)	pe of Change: (Check one):
(Please Sign and Date) Process Quality Department: Thomas H Walker 2/25/07	_ Minor Major
Approval Authority:	Date: 2/25/02
Other Approvals: <u>Ronald M. Snith</u> R. M. Smith	Date: 2/25/02
Mana a Har An.	Date: 25 76-02

Description of Changes

This ICN updates the groundwater monitoring network and schedule as they were described in the assessment plan (PNNL-12114) and ICN PNNL-12114-September 1999.1.

The groundwater monitoring network for single-shell tank Waste Management Area S-SX currently has 16 wells. Figure R2.A.2 shows the monitoring wells in the WMA S-SX monitoring network and replaces Figure A.2 (page 4) in ICN PNNL-12114-September 1999.1, which replaced Figure A.2 (page A.7) in the original assessment plan.

Changes to the groundwater monitoring network since ICN PNNL-12114-September 1999.1 became effective include the following:

- groundwater monitoring wells 299-W23-13, 299-W23-14, and 299-W22-39 are removed from the network because they are dry and can no longer be sampled
- monitoring wells 299-W23-20 and 299-W23-21 are added to the network as new upgradient monitoring wells
- monitoring wells 299-W22-80, 299-W22-81, 299-W22-82, 299-W22-83, 299-W22-84, and 299-W22-85 are added to the network as new downgradient monitoring wells.

Upgradient wells 299-W23-13 and 299-W23-14 can no longer be sampled because the water table has fallen below the well-screen interval. New monitoring wells 299-W23-20 and 299-W23-21 replace monitoring wells 299-W23-13 and 299-W23-14, respectively. Wells 299-W23-20 and 299-W23-21 have sample interval depths capable for monitoring the top of the unconfined aquifer. Downgradient well 299-W22-39 can no longer be sampled because the water table has fallen below the well-screen interval. The new downgradient monitoring wells were added to the network to enhance the spatial monitoring coverage.

As-built diagrams and well construction summary reports for new wells 299-W22-80, 299-W22-81, 299-W22-82, 299-W22-83, 299-W22-84, 299-W22-85, 299-W23-20, and 299-W23-21 are attached to this ICN.

The monitoring schedule is shown in Table R2.1. Changes to the monitoring schedule since ICN PNNL-12114-September 1999.1 became effective include:

- removal of gross alpha/beta, strontium-90, and iodine-129 from the quarterly monitoring schedule
- reducing the frequency of monitoring for gamma scan, which includes cesium-137, from quarterly to annual
- removal of total organic carbon (TOC) and laboratory-measured specific conductance from the quarterly monitoring schedule.

Gross alpha/beta are removed from the monitoring schedule because specific analyses for technetium-99 and uranium make routine gross alpha/beta monitoring unnecessary. The only exception to this removal is quarterly gross beta monitoring at well 299-W23-19. Given the groundwater flow rate conditions at WMA S-SX and retardation characteristics of cesium-137, annual monitoring of this constituent, by gamma scan, is adequate. Strontium-90 and iodine-129 are removed from the quarterly schedule because they have not been detected in groundwater. Specific conductance (laboratory method) and TOC analyses are removed from the monitoring schedule because they provide no additional beneficial information.

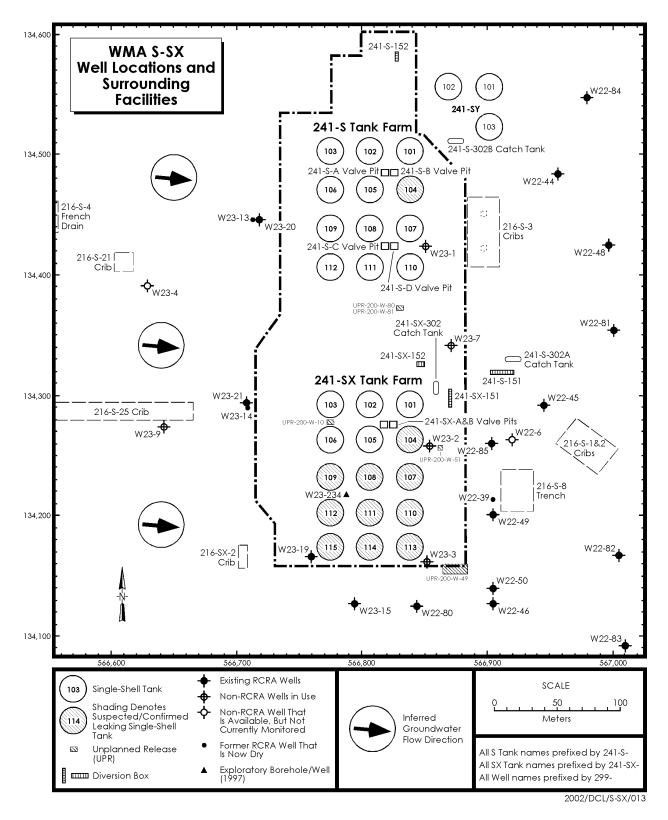


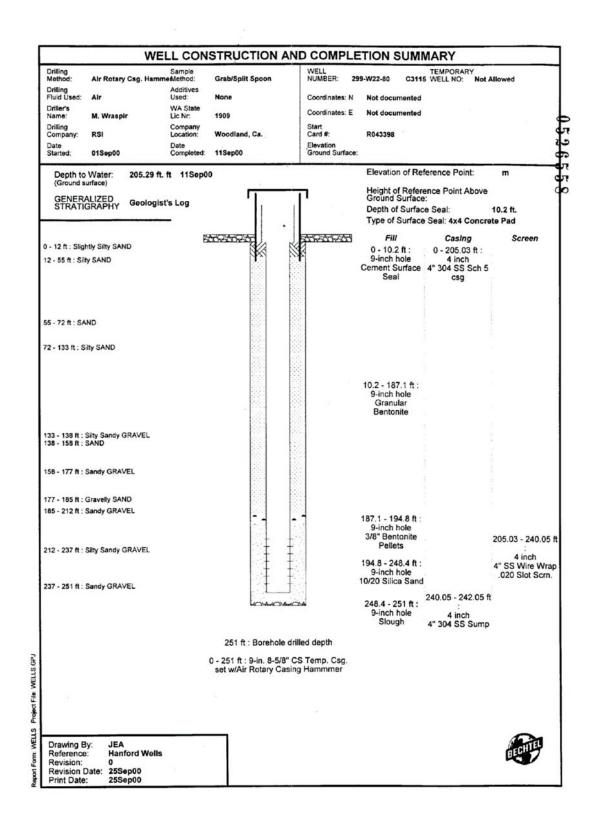
Figure R2.A.2. Location Map of Existing Wells Around Waste Management Area S-SX

Well	Alkalinity	Anions	Anions (w/Br ⁻)	Gross Beta	Metals	Gamma	Technetium-99	Tritium	Uranium	Strontium-90	Iodine-129	TOC
299-W22-44	Q	Q	-	-	Q	-	Q	Q	Q	_	-	-
299-W22-45	Q	-	Q	-	Q	-	Q	Q	Q	-	-	-
299-W22-46	Q	-	Q	-	Q	-	Q	Q	Q	_	-	-
299-W22-48	Q	Q	-	-	Q	-	Q	Q	Q	-	-	-
299-W22-49	Q	-	Q	-	Q	-	Q	Q	Q	-	-	-
299-W22-50	Q	-	Q	-	Q	-	Q	Q	Q	-	-	-
299-W22-80	Q	-	Q	-	Q	-	Q	Q	Q	_	-	-
299-W22-81	Q	Q	-	-	Q	-	Q	Q	Q	-	-	-
299-W22-82	Q	-	Q	-	Q	-	Q	Q	Q	-	-	-
299-W22-83	Q	-	Q	-	Q	-	Q	Q	Q	-	-	-
299-W22-84	Q	Q	-	Sep/02	Q	Sep/02	Q	Q	Q	Sep/02	Sep/02	Sep/02
299-W22-85	Q	-	Q	Sep/02	Q	Sep/02	Q	Q	Q	Sep/02	Sep/02	Sep/02
299-W23-15	Q	-	Q	-	Q	-	Q	Q	Q	-	-	-
299-W23-19	Q	-	Q	Q	Q	А	Q	Q	Q	-	-	-
299-W23-20	Q	-	Q	-	Q	-	Q	Q	Q	-	-	-
299-W23-21	Q	-	Q	-	Q	-	Q	Q	Q	-	-	-
Notes:												

Table R2.1. Assessment Monitoring Network, Constituent List, and Sampling Frequency for WMA S-SX

Q = Quarterly; A = Annual; Sep/02 = Analyzed for the last time in September 2002 after four quarters of samples have been collected.

- = Indicates that the analysis will not be conducted.

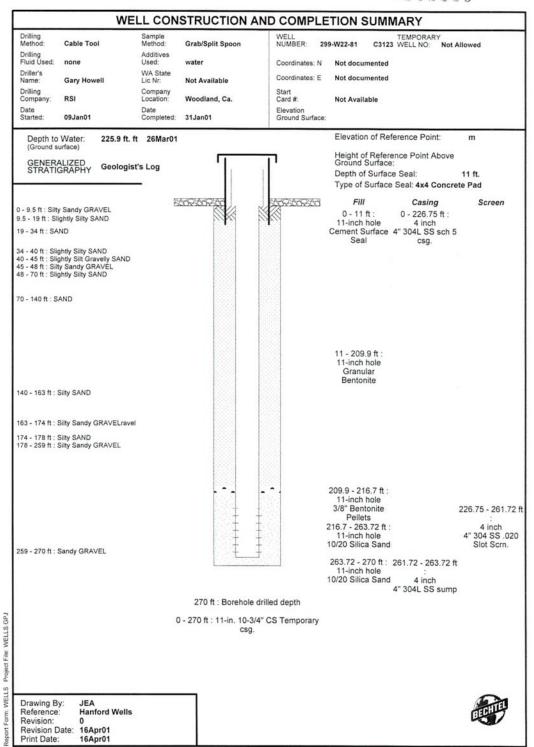


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	RCRA FACILITY	r -	
	DEPTH DRILLED (GS)	: 251.0 ft	
23	MEASURED DEPTH (GS)	: 242.05 11Sep00	
	AVAILABLE LOGS	: Geologist	
	DATE EVALUATED	: Data not available	3
	EVAL RECOMMENDATION	: Data not available	
	LISTED USE	: RCRA monitoring/sampling	
*			×
	CURRENT USER	: RCRA & Operations	
	PUMP TYPE	: Hydrostar	
	MAINTENANCE	: Data not available	
	COMMENTS	: Air Rortary Casing Hammer 8-5/8" CS csg to 251'	
Flø: NELLS GPJ	TV SCAN COMMENTS		
Report Form: WELLS Project File: WELLS GPJ	Drawing By: JEA Reference: Hanford Wells Revision: 0 Revision Date: 25Sep00 Print Date: 25Sep00		

$ \begin{array}{c c c c c c c c } \hline A.R. w/Sonic: Diameter From to D$						Start D	ate: 9-	1-00	>
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Date: Protective Casing Elevation: Washington State Plane Coordinates: Brass Cap Elevation: CCMMENTS/REMARKS Vol. Calcs: 10-20 Silica Sand-0.54 ft ³ /50-16 bag x 96 bags = 51.84 ft ³ ; Bentonik pellots - 0.62 ft ² /bucke	Washington State Plane Coordina Vol. Calcs: 10-20 Silica S	and - 0.54 ft%	CC 50-16 6 ag	× 96 6	Brass Cap Elevation: //REMARKS ags = 51.84 ft 3; Bentonit	e pello	+s - 0.6:	2 ft ³ /by	cke
Date: Protective Casing Elevation: Washington State Plane Coordinates: Brass Cap Elevation: COMMENTS/REMARKS Vol. Calcs: 10-20 Silica Sand-0.54 ft ³ /50-16 bag X 96 bags = 51.84 ft ³ ; Bentonike pellets - 0.62 ft ² /bucke 5 buckets = 3.1 ft ³ ; Granular bentonite - 0.73 ft ³ /50-16 bag X 76 bags = 55.48 ft ³	Washington State Plane Coordina Vol. Cales: $10-20$ Silica S 5 beckets = 3.1 ft ³ ;	and- 0.54 ft % Granular ben	CC 50-16 6 ag	× 96 6	Brass Cap Elevation: //REMARKS ags = 51.84 ft ³ ; Bentonif Ft ³ /50-11 bag X 76 bags =	е ре//с 55.48	4- 0.6: - f2 ³	2 Ft ³ /bu	cke
Date: Protective Casing Elevation: Washington State Plane Coordinates: Brass Cap Elevation: COMMENTS/REMARKS Vol. Calcs: 10-20 Silica Sand - 0.54 ft ³ /50-16 bag X 96 bags = 51.84 ft ³ ; Bentonite pellots - 0.62 ft ² /bucke 5 buckets = 3.1 ft ³ ; Granular bentonite - 0.73 ft ³ /50-16 bag X 76 bags = 55.48 ft ³ Reported By: 4.D. Walker	Washington State Plane Coordina Vol. Calcs: 10-20 Silica S 5 back cfs = 3.1 ft ³ ; Reported By: 4.2 . Wall	and- 0.54 ft % Granular ben	cc 50-16 bag ton ite	<u>x 96 k</u> - 0.73	Brass Cap Elevation: VREMARKS ags = 51.84 ft ³ ; Bentonit Ft ³ /50-16 bag X 76 bags = Reviewed By: \Auten	e pe//c 55.48	45 - 0.6: • f2 ³		
Date: Protective Casing Elevation: Washington State Plane Coordinates: Brass Cap Elevation: COMMENTS/REMARKS Vol. Calcs: 10-20 Silica Sand-0.54 ft ³ /so-16 bag x 96 bags = 51.84 ft ³ ; Bentonike pellots - 0.62 ft ² /bucke 5 buckets = 3.1 ft ³ ; Granular bentonite - 0.73 ft ³ /so-16 bag x 76 bags = 55.48 ft ³	Washington State Plane Coordina Vol. Calcs: 10-20 Silica S 5 buckets = 3.1 Ft^3 ; Reported By: 2. D. Wall	and- 0.54 ft % Granular ben	cc 50-16 bag ton ite	<u>x 96 k</u> - 0.73	Brass Cap Elevation: //REMARKS ags = 51.84 ft ³ ; Bentonit ft ³ /50-16 bag X 76 bags = Reviewed By: /AUTEN Title: X (0)	55.48	4- 0.6: ∙ € ³		

			004	20373
	L SUMMARY SI	JEET		Page 1 of
	L SUMMART SI	r	200	Date: 9-6-
Well ID: C 3/15	/	Well Name	~11	W22-80
	nk Farm / 200W	Project:	CY 200	
	Date: 9/11/00	Reviewed		
Signature: AD Walk		Signature:		ekes
CONSTRUCTION DATA	L	Depth in	GEO	DLOGIC/HYDROLOGIC DATA
Description	Diagram	Feet	Graphic Log	Lithologic Description
0' > 10.2': Portland Cement		0-	<u></u>	
		- 1	0	-12': Slightly Sil
6" Protective Casing		-	L	SAND
0'→ +3.2'		_		
, t	12 22	_	12	- 55': Silty SA
+2.2 -> 205.03 : 55 type 304	[A	25 -		
well casing, 4"ID/ 4.5" OD				
well casing, t the his be				11.11 (144)
10.2'-> 187.1': Granular				
		-		
Bentonite		-		
		50 -		
				CANA
				55' -> 72': SAND
	11 12	- 1		
Temporary Casing		75 -	7	2'- 133': Silty SA.
Temporary Casing 85/8" OD / 75/8" ID		-		
	1444			
	- 11	-		
	F1 71	100 -		
		100		
	1	-		
	1 11	-		
		-	- 22-	
		125-	- ~	
	12 14	-		
All depths in Feet below		-	0.24	33'- 138': Silty Sa
ground surface		-	00-50	GRAVEL
All temp. Casing removed.			- 14 A A A A A A A A A A A A A A A A A A	

						Page <u>2</u> of <u>2</u>
WEL	L SUMMARY SI	HEET				Date: 9-6-0
Well ID: C3/15		Well Name	: 299	- W22	1-80	
Location: South of 241-TX Tak	nk Farm/200W	Project:	CY	2000	RCRA	Drilling
Prepared By: L.D. Walker	Date: 9/11/00	Reviewed	By: DG	Week	es	Date: 9/11/00
Signature: TO Walk		Signature:	Dec	aleet	hes	, ,
CONSTRUCTION DATA	4	Depth in		SEOLOGIC	HYDRO	OGIC DATA
Description	Diagram	Feet	Graphic Log			Description
		150 -		138'-	158':	SAND
187.1'→ 194.8': 3'8" Bentonite Pellets 194.8'→ 248.4': Silica Sand, 10-20 mesh		- - - 175 -	01 • 05000000000000000000000000000000000	177'	85': 6	Sandy GRAN Travelly SAN Sandy GRAVI
205.03'→ 240.05': Wellscreen, type 30455, 0.020-in slot cont. wire- wrap, 4"ID/4.5" OD						Silty Sandy SRAVEL
240.05'-> 242.05': Sump type 304 ss , 4"/4.5"		- 225— -				Sandy GRAVI
248.4'→251.0': Sluff Total SS 4"/41/2" material		250-			251	
is 244.25' (+ 2.2-242.05')		-	-	W. L.	= <u>205</u> .	29' bgs 1-11-00)
All depths in Feet below ground surface		275	-			
All temp. casing removed From the ground		-	-			
From the ground			-			

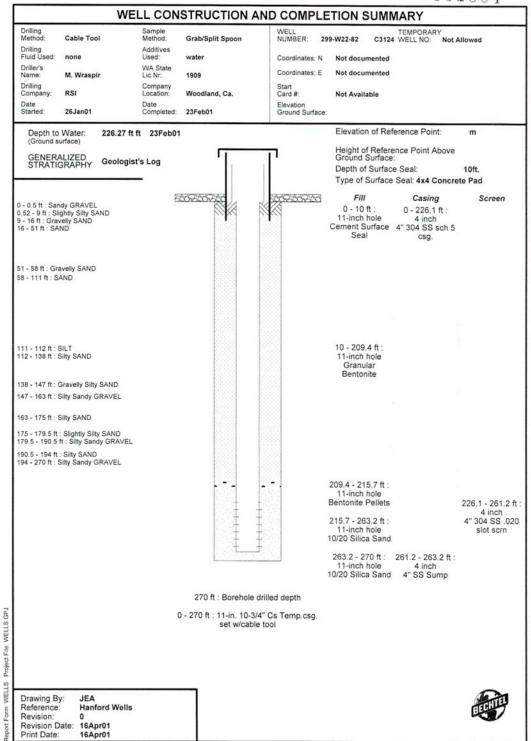


				0	534	114		
		ST 1570			Start Dat	e:]_ (9-01	
WELL CONS	STRUCTIO	N SU	MMA	RY REPORT	Finish Da	ate: Oil	3110)	
					1	Page 🔟	of _1_	
Specification No.: 02000-5P	Rev. No.: O			Well Name: 299 - W22 - 81	Iemp. W	ell No.:	C312	23
ECNS: NA				Approximate Location: E. of 24				
Project: RCRA Dri	Iling CY2	2001		011 - 0	CHI	uns re	in tal	00 00
Drilling Company: Resunce		-	ational	Geologist(s): L.D. Walk		. Vellin	nes 3m	, Fau
Driller: Gary How		SHIEFA	a mona.	S. Kiester, J.K. Murr	- 1 1	XWee	1	
11000	ING AND DRILL DE	PTH		DRILLING METH				ate A
*Size/Grade/Lbs. Per Ft.	Interval	Shoe C	D.D./I.D.	Auger:	Diameter		to	
Carbon Etanl	0 - 269'	11"	95/8"	Cable Tool: 10 5/8* /9 5/8"	Diameter		> to	269
Carbon Steel 10 5/3 " / 9 5/8"		111	178	Air Rotary:	Diameter			~0
10 18 / 4 18				A.R. w/Sonic:			to	
				A.N. W/SOIIC.	Diameter		to	
					Diameter		to	
Indicate Welded (W) - Flush Join					Diameter Diameter		to	
							-	
				Drilling Fluid:				
Total Drilled Depth: 270	Hole Dia @ TD:	9"		Total Amt. Of Water Added During	Drilling:			
Well Straightness Test Results:	Dassed			Static Water Level: 125.9 865	Date: 5	126/01		
	1	GEC	PHYSIC	AL LOGGING				
Sondes (type)	Interval	Da	ate	Sondes (type)	Inte	erval	Da	ate
SPECTRAL GAMMA	0 -268.75	1/22	101					
NEUTRON	0 - 235.77	1/22/0						
	-	-1						
	STREET, ST.	c	OMPLET	FED WELL		200	2.11	215
Size/Wt./Material	Depth	Thread	Slot Size	Туре	Type Interval Annual Seal/Filter		Volume	Mes
4"ID 55 End cap(sump)	261.72 263.72	F480	NA					
4"ID 55 WW Screen	226.75 - 261.72	F480	20	Portland cement	0	. 11'	4.	010
4"ID 30455 Casing	+2'-226.75			Granular bentonite.	117	209.9	9 6995	AIN
(schedule 5)		1 100	1011	Bentonite pellets (3/89)	209.9		161.5 bog	3011
c				S'A ALL	2167	1701	6 bogs	1.7
and the red :				DILION SANd	401	610	635 bgs	10/2
Aquifer Test:	Nataki ave avalt 249	Date:	THER A	CONTRACTOR OF THE CONTRACT OF THE CONTRACT. THE CONTRACT OF THE CONTRACT.				20182
Description:		Date.		Well Abandoned:	Yes:	No:	Date:	
Jescription:				Description:				
		w	ELL SUR				241	40
Date:				Protective Casing Elevation:		2.007.00	all a sea o	Palle
Vashington State Plane Coordinat	es:			Brass Cap Elevation:				
	Att and the second	0	MMENTS	S/REMARKS	Arr. All	Contraction of the	e anne talan a s	
fortland cement in 94 in 50# bags, silica		# 6995	benton		tomite,	pellet.	s	
in JUH (97), JUICA				Reviewed By: Drubeka	~			
A			-	DUWEEK	2			
A		Date:4	10/01	Title: Geologist	2		Date: 4	11/0

	0							
6	0	5	3	4	1	3	9	

GFINDI	SUMMARY S				Date: 2/5/0
Well ID: 299- C3123		Well Name	: 299-W2	2-81	
LOCATION: EAST SIDE 241-5 TANK FAI		Project:	RCRA CYS	2001	
Prepared By: MURILAY DCWeekes D	ate: 2/5/01	Reviewed	By: MFaur	ote	Date: 02/05/0
Signature: Whenty / SC Type her		Signature:	Maria	No	
CONSTRUCTION DATA		Depth in	GEOL	OGIC/HYDR	OLOGIC DATA
Description	Diagram	Feet	Graphic Log	Litholo	gic Description
6-in dia protective ss		0-	0-0	7.5' SIL	TY SANDY GRAN
Casing Set 1 gbove the			35,82	1 10/ 0	
4-in casing			Op 095	- 19 SI	JEHTLY SILTY SA
	1 11			A 111	C 2000
4-in ID 5ch5 55 304L	EI EI	-	- 19	- 34'	SAND
well casing:		25-			
+2"-> 226.75'	E E			1 1151	<u> </u>
			57	-40	SLIGHTLY SILTY S
Portland cement grout:					HGHTLY SILT
$0' \rightarrow 11$			0-0-0-0	RAVELLY .	SAND
		50-	2002 45	-48'SI	LTY SANDY GR
Granular bentonite:			0 0 - 48	- 70' SL	IGHTLY SILTY SI
11'→209.9'		-	°.0		
			70	- 140' :	SAND
Temporary Casing:		75-	-		
10 5/8"/9 56" set at TD (269')			-		
			- 33333		
	2 4	-	-		
		100-			
		-			
	1 3	-			
		-			
		-			
		125-			
All depths in feet below	63 63	-			
ground surface					
All temporary casing removed					
from the ground					
1011 The glound	I VALLEY I				

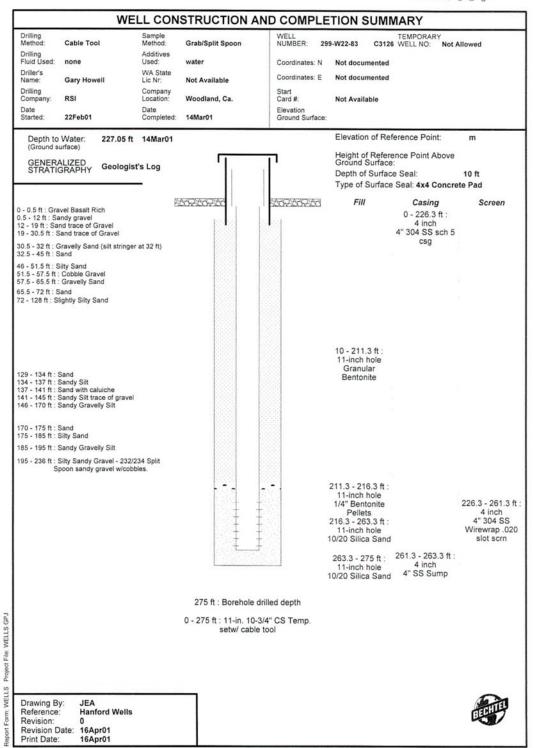
WELL	SUMMARY S	HEET			Page <u>2</u> of <u>2</u> Date: $2/5/01$		
Well ID: C3/23		Well Name	: 29	9- WZZ- 8	31		
Location: East Side 241-5 Tank F	arm / 200W	Project: RCRA CY 2001					
	Date: 2/5/01	Reviewed By: DCWeekes Date: 2/5/01					
Signature: AMalk	1.4	Signature:	0407	eeker			
CONSTRUCTION DATA			(GEOLOGIC/HYDR	OLOGIC DATA		
Description	Diagram	Depth in Feet	Graphic Log	Litholo	gic Description		
Bentonite pellets, 36" 209.9 → 216.7'		150			Silty SAND		
Silica sand, 10-20 mesh 216.7'→ 270'		- - 175	001 0000000000000000000000000000000000		: Silty Sandy GRAVEL Silty SAND		
Well Screen: 4-in ID, 0.020-in slot Cont. wire wrap, ss -type 304: 226.75 -> 261.72'		200-		178′→ 259	": Silly Sandy GRAVEL		
Sump: 4-in ID 55 304 261.72→263.72'	1//// /////	- - 225	0.000000000000000000000000000000000000	WL= 225.5	· 1/29/01		
Tota(4-in ID 55 material is26272 (+2'→ 263.72)		- - 250-			o': Sandy GRAVE		
All depths infect below ground surface All temp, casing removed from the ground.		- - 275 — -		TD = 27	0		
All temp, casing removed			-				
trom the ground.		-	-				



Weekes	Date: 4/	11/0
Weekes		
. / /		
8.45 ft Portland	Cemen	t;
nite pellets; 0.62	Buck *	96
	3	36.0
ion:		
	拉 斯拉拉	a final
Yes: No:	Date:	
	La serie	
oder <u>na</u>	~1 bag	10
at <u>a'-10.0'</u>	4	DIF
100.4-215 2 100.4-209.4	204 60	3/8
1 1	8 buck	14
and sist - Hezi	63649	10-
Interval Annual Seal/Filter Pack	Volume	Mes
中心中的情绪的自己的		沙结
·		
·		
Interval	Dat	e
	2.41	. 3
Date: סובבובט Date: רנ	1	
d During Drilling:		
Diameter From	to	_
Diameter From	to .	-
Diameter From	to	_
Diameter From	to _	
Diameter From	to _	
9 1/4" Diameter From	to _	סלב
Diameter From	to	_
G METHOD/HOLE DIAMETER	R	6En
rice		
Ker, G.S. Thomas, I	m Fauro	te
tI, CHI		
Om SE of 241-SX Tan	K Farm /	2000
-82 Temp. Well No .:	C3124	ţ
1 4 6		
1	Finish Date: 0212 16 Page 1 -82 Temp: Well No.: 0 M SE of 241-SX Tan FT. CHT	Finish Date: 02 (2310) Finish Date: 02 (2310) Page 1 of 1 -82 Temp: Well No.: C3124 Oun SE of 24/- SX Tank Farm/ FT. CHT

				053413	Page / of 2
WEL	L SUMMARY SI	HEET			Date: 2/23/01
Well ID: C 3124		Well Name	: 299.	· W22-82	422101
ocation: East of 241-SX Tank Farm	λ.	Project:		yos Drilling	
Prepared By: L.D. Walker /CTRICE	Date: 2/20/01	Reviewed		Weekes	Date: 2/28/0
Signature: JOHalk / C. Mu	e	Signature:	NCZ	Veelker	
CONSTRUCTION DAT	A			GEOLOGIC/HYDR	OLOGIC DATA
Description	Diagram	Depth in Feet	Graphic Log	Litholo	gic Description
6" dia frotective rusing 7.0' above the 4" casing 4.5' op/4' iD WELL CASING SS TYPE 304 +2.0' > 264.96CT 224.1' YOU POPILAND CEMENT GROUT 0'-10' Scanular Bentonite. 10' -> 209.4'		0 - 25 - 50 - - - - - - - - - - - - - - - - - - -	$\begin{bmatrix} 0 & 0 \\ 0 & 0 \\ 0 & 0 \\ 0 & 0 \\ 0 \end{bmatrix} \begin{bmatrix} 0 & 0 \\ 0 & 0 \\ 0 & 0 \end{bmatrix} \begin{bmatrix} 1 & 0 \\ 0 & 0 \\ 0 & 0 \end{bmatrix}$	$0.5' \rightarrow q' : s$ $q' \rightarrow 16' : G$ $16' \rightarrow 51' :$	Gravelly SAN
Temprary Casing or 18%1/91/4 set at -ci		100 -		 	SILT
All depths in Eest below ground surface. All temp casing removed from ground		- 25			': silty SAND ': Gravelly Silt SAND

					Page 2 of 2
	L SUMMARY SI	HEET			Date: 2/23/0)
Vell ID: C3124		Well Name	: 299	- W22-82	
ocation: SE of 241-SX Tai	K Farm/200W	Project:	RCRA	FYOI D	rilling
Prepared By: L.D. Walker / CTRICE	Date: 2/28/01	Reviewed	By: DCU	veckes	Date: 2/28/01
Signature: Alkalky Course		Signature:	NCZU	eeked	, ,
CONSTRUCTION DAT	A	-	(GEOLOGIC/HYDE	ROLOGIC DATA
Description	Diagram	Depth in Feet	Graphic Log	Lithold	ogic Description
Bentonite Aellets 209.4' → 215.7' Silicu Sand, 10-20 mesh, 215.7' → 263.1' Well Screen, 4'10, 0.020- -10 Slot continuous wire- wrap, SS type 304 At 225.9' → 263.1' Sump, 4'10 ss type 304, 261.1' → 263.1'		150 - - 175 - - - - - - - - - - - - - - - - - - -	0. 100490.00034 400034 41 - 1080000 90.00000000 - 50000 20.000000000 - 50000	$163' \rightarrow 175'$ $175' \rightarrow 179.$ $179.5' \rightarrow 19$ $190.5' \rightarrow 191$:': Silty Sandy GRAVEL ': Silty SAND .5': Slightly Silt SAND RO.5': Silty Sand GRAVEL t': Silty SAND O': Silty Sandy GRAVEL
Total SS 4 ⁴ 1D material (in se is ₹2.0 → 244-86 or (266.3 6) or +(267.16 TOTAL) ~ All depths in feet below ground surface All timp casing remained from ground.		250		T.D. = : Water level	270' 226.27' 2/23/0



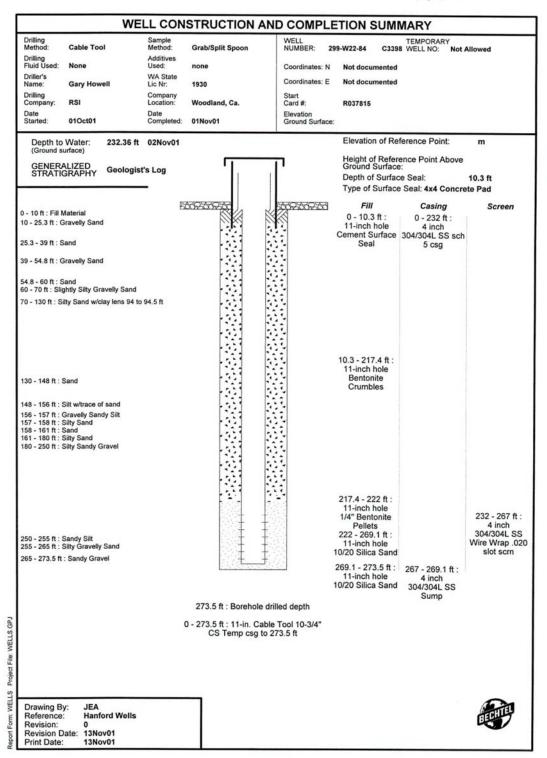
WELL CONS	TRUCTION	I SUM	ЛМА	RY REPOR	RT	Finish Dat	1-	2/01	
WELL CONS				053	4118			of	
0300W-5P	Rev. No.: O			Well Name: 299-		Temp. W		1312	.6
CNs: NA				Approximate Locati			SX Ta	1 -	
roject: CY OO RCRA Dril	line			Other Companies:	CHI	25 01	5/ 19	12141	101
rilling Company: RS1	<u></u>				weekes	. C.W	actinez.	C Trie	ce
				Declogist(d).		, 01	4.1.1.00	, 0	
	ING AND DRILL DE	тн	ALCA .	Material D	RILLING METH			R	A.L.
*Size/Grade/Lbs. Per Ft.	Interval	Shoe O	D/ID	Auger:		Diamete		to	1.000
	0-275'		to"ct	Cable Tool: ((111)	Diamete			275
arbon STEEL 103/4"/tot: 9 1/2"		10 7/0"	1 1 11	Air Rotary:		Diamete		to	210
10-14/1012 9/12		10 .0	14	A.R. w/Sonic:		Diamete		to	
				A.N. WISCHIG.		Diamete		to	
						Diamete		to	
Indicate Welded (W) - Flush Join		Throad	Docian			Diamete		to	-
noicale weided (w) - Plusii Join	n (F5) Coupled (C) C	s Thread L	Jesign			Diamete		10	
				Drilling Fluid:	20				
otal Drilled Depth: 2751	Hole Dia @ TD	du	_	Drilling Fluid: H Total Amt. Of Wate		Drilling	072 0	llan	
Well Straightness Test Results: "P	Hole Dia @ TD:			Static Water Level		-	223 99	along	
ven straightness rest Results. P	ASSED :	3/8/01	DUVSIC	AL LOGGING	. 221.00	Date. 2	5117/01	1 1 658	
Sondes (type)	Interval		ate	Sondes	(type)	In	terval	Da	to
Speatral Gamma	0-219		1	Solides	(type)		leivai	08	ite
		* 311	01				·		
Neutrone	D' . 236	21-	1.1						
Neutron	Conversion of the	317		I FED WELL	8086285500	0	Marina kwa	landdiadar	Katata
	POSICION DE LA DESERVI		Slot		an an Anna an Anna Anna Anna Anna Anna		NUMBER OF COLUMN	Classical Action	Mest
Size/Wt./Material	Depth	Thread	Size	Тур)e		terval eal/Filter Pack	Volume	Size
4" 10 endcap, 55304	261.3 - 263.3	F480	NA	Colorado Silica	a Sand	2163	. 263-3	58 ba	10-2
4" ID screen, SS3	224.3 - 261.3	F480	0.020"	Bentonite Pel	lets 1/4"	211.3	- 216.3	5 buc.	8/14
4" 10 CASING.	+2.0 - 226.3	F420	NA	Bentonite	aumbles	10'	- 211.3	149 600	3/3
				Portland	Concretel	_0'	- 10	Bbug	
					(Ciment)			1	
建筑建立的建筑	出来。 19月1日 - 19月1日 - 19月1日 19月1日 - 19月1日 - 19月1日		OTHER A	CTIVITIES	的复数能得高			的建立社	(Alian)
Aquifer Test:		Date:		Well Abandoned:		Yes:	No:	Date:	
Description:				Description:					
	后,这 同 百年这次争战的	State V	VELL SU	RVEY DATA	Station +			William	N. Harris
Date:				Protective Casing					
Washington State Plane Coordina	ites:	and in the		Brass Cap Elevat	lion:		and the second second second	P. I MARKED MARK	
	的影响的是此间的			S/REMARKS	Parts Product				1000
	ND: 0.535 AT		- 15 - 17 - 17 - 17 - 17 - 17 - 17 - 17	1,71 F13/ma	× 149 Kugs	TE PE	UETS 0 5.79 ft	. 62 A3	buck
Vol cales: 10-20 Silice Sa	7				1 449	- 101	1111		
× 5 backets = 3.14+	3. Bentonite			1.28 ft3					
× 5 bikets = 3.14+ Portion Cement: 1.	7			0.28 ft 3	Imca	da			
X 5 bxkets= 3.14+ Apriland Cement: 1. Reported By: (TRILE	3. Bentonite	× B bac	<u>qs = 11</u>	Reported By:	IMFau	rote		1. 7	1-1
× 5 bickets = 3.14+ Portion Cement: 1.	3. Bentonite		<u>qs = 11</u>	1	IMF au	rote		Date:4	110/0

APR 1 6 2001

WEL	L SUMMARY S	HEET			Page <u>1</u> of <u>3</u> Date: 02 28 101
Well ID: C 31210		Well Name		- W22 - 83	
	Farm	Project:	299	F401 Dri	
Case of SA Tank	Date: 02/28/01	Reviewed		Weekes	Date: 4/3/01
Signature: Charlen Marting	02120101	Signature:	- Maria	le e ban	4.4
CONSTRUCTION DATA	N		10000	GEOLOGIC/HYDRO	LOGIC DATA
Description	Diagram	Depth in Feet	Graphic Log	Lithologi	c Description
All depths & Feer below ground Surface. All temp LASI & Temped All temp LASI & Temped Demographic for the formation of th				4 - 30.5 Sand 12-19 Sunds(5 19-30.5 Sand trace grave 30.5-32 Grave 32.5-45 Sand 32.5-45 Sand m-F mod sort 46-51.5 Coars aund thin 1805 51.5-57.5 grave poenly sorted, 57.5-25.5 Grave 25.5-72.0 S	a (s), 95% -100% (s), 95% -100% (s), 25 y avel (0-10 (s), 100% sand (s), 100% sand (s) (s), 100% sand (s) (s), 100% sand (s), 100% sa
from ground.		NG.			/

					Page 2 of 3
WEL	L SUMMARY S	HEET			Date: 03/01/01
Vell ID: C3126		Well Name	- 996	w22-83	
ocation: East of SX Tank	Farm			. YOI Drilli	na
Prepared By: Charlene Martinez		Reviewed		leekes	Date: 4/3/01
Signature: Charlen Marting	wietrer_	Signature:	NON	lachos	4.7
CONSTRUCTION DAT	A		1000	EOLOGIC/HYDR	OLOGIC DATA
		Depth in	Graphic		
Description	Diagram	Feet	Log	Litholo	gic Description
all depth in fect below ground		120-		12.0'2128.0'	slightly silty souder
surface.		-			
All timp. asing removed from				129 very thi	a whyey silt
around.				1. 1	NUBI (mi LAGEDUS)
5		_		34 \$137 Sand	A SILE (Sm)
		140-	prois.		tr gravel
· · · · · · · · · · · · · · · · · · ·		140-	5-01	37 7141 Calci	tr caterere
		-	T. T. T.		y sitt (sm) to grave
		-	0-0	46 7 LOO sand	y gravelly silt (som
		-	-070		
SPANNLAR Bentonite		_	0-0-		
10.0'-> 211.3'		160-	0.		
10.0 -7 211.3			-0-		
		-			
		-	020-		
				170-7175 Sa	nd (s)
		_	عندحت		
		120		dust.	
1999		1,80	≻	75-185 5112	y sand (ms)
		-			
	(Carter D	-	20.01	85 -195 500	ay gravelly silt (se
		_			
		<u> </u>	-0.0 <u>.</u> 0	195- 236 AS	الاسمور الم
			0.000	113 7 236 436	may graves
		200-	0.000		
		-	0000		
		-	00000		
		10.7	00000		
Bentonite ReLETS 1/4"			0.000	WATER DEPTH	227.05' best 14
			0.000000	MULER DEPTH	221.05 0gs 1
211.3' -> 216.3'		220-			
			0.00.000		
Silica Sandy 10-20 mesh			00000	232-234 501	izspoonasandy
214.3' -> 275'			20000		bbles
			0.00	pravel w/ co	00105
			0.0.0		

WFL	L SUMMARY S	НЕЕТ			Page 3 of 3
Vell ID: CBIZG		Well Name			Date: 03/06/01
		Project:	RCRA	FYOI DA	illing
LASC OF PAIRAN		Reviewed I	1. 1.1	Weekps	Date: 4/3/01
	Date: 03/06/01		NAT	weekes	Date. 75/01
Signature: Charlens Marting CONSTRUCTION DATA		Signature:	(AC a	flener	
	A	Depth in		GEOLOGIC/HYDRO	LOGIC DATA
Description	Diagram	Feet	Graphic Log		c Description
Well Screen, 4 ⁴ 1D, D. D2D- in slot annovous vire-wrap, SStyre 304, 226.3' → 261.3' Sump, 4'1D SS Type 304 261.3' → 263.3' Total SS 4"ID moterial is 265.30' (+2.0' → 263.3')		240		4	
All depths in fect below ground surface.		_			
All temp rusing removed from		-			
ground.					A



	UMMARY OF CONSTRUCTION DATA AND FIELD OBSERVATIONS RESOURCE PROTECTION WELL - 299-W22-84	
WELL DESIGNATION	: 299-W22-84	
CERCLA UNIT	1	
RCRA FACILITY	1	
DEPTH DRILLED (GS)	: 273.5 ft	
MEASURED DEPTH (GS)	: 269.1 02Nov01	
AVAILABLE LOGS	: Geologist & Geophysical	
	: Data not available	
EVAL RECOMMENDATION	: Data not available	
LISTED USE	: RCRA Monitoring	
CURRENT USER	: RCRA & Operations	
PUMP TYPE	: Not Documented	
MAINTENANCE COMMENTS	: Data not available : Cable Tool 10-3/4" CS csg to 273.5 ft	
TV SCAN COMMENTS	:	
Drawing By: JEA Reference: Hanford Wells Revision: 0 Revision Date: 13Nov01 Print Date: 13Nov01		

Specification No. 200X-38- ECNS: NA Project: CYOI RCRA (Drilling Company: Resonant Drilling Cary Howey ("How in	Rev. No.: 2	d#1	RO3				of <u>l</u>	
ECNS: NA Project: C YOI RCRA (Drilling Company: Resonant Driller: Gary Hower ("Howin TEMPORARY CA	Drilling			Well Memory and and				
Project: C YOI RCRA I Drilling Company: Resordent Driller: Cary Hower (" How in TEMPORARY CA	Drilling					ell No.: C	the second s	_
Drilling Company: Resonant Driller: Gary Howeld ("Howin TEMPORARY CA	Drilling			Approximate Location: East or	F 241-	SY To	nk Far	m
Driller: Gary HOWRY ("HOW I TEMPORARY CA				Other Companies: CHT, BH				
TEMPORARY CA	Sonic Inc.	(RSI	:)	Geologist(s): C. TAice, J Ha	ocking,	C. Marti	nezy	
And and a latent doct on the second	(") Lic.# 193	0		G Thomas				
*Size/Grade/Lbs. Per Ft.	SING AND DRILL DE	ртн		DRILLING METH	OD/HOLE	DIAMETE	R	
	Interval	Shoe O	.D./I.D.	Auger:	Diameter	From	to	
Carbon Steel (FS)	0' - 273.5'	10 8"	19%	Cable Tool: X 10 4 0 D	Diameter	From	<u>></u> to :	273
, , ,	·			Air Rotary:	Diameter	From	to	
	·			A.R. w/Sonic:	Diameter	r From	to	
1	-				Diameter	From	to	_
	-			1	Diameter	From	to	
*Indicate Welded (W) - Flush Jo	pint (FJ) Coupled (C)	& Thread	Design	1	Diameter	From	to	_
				Drilling Fluid: A A		21		
Total Drilled Depth: 273.5	Hole Dia @ TD: \		long	Total Amt. Of Water Added During		~/A		
Well Straightness Test Results:	Passed Dialo		A COLUMN TWO IS NOT THE	Static Water Level: 232.36 655	Date:	11/2/0	1 Additional States of the	Para Tr
stat was used.	STATISTICS PARTY	And a straight	A BARADARA CAR	AL LOGGING	1992年1月	建設建立法	Alto Sela	
Sondes (type)	Interval	1 1	ate	Sondes (type)	Int	erval	Da	te
SpectralGamma	134.0'-274.0'	10/22				•		
Spectral Gamma	0' - 133.0'	10/23	3/01			·	-	
Neutron Moisture	0'-236,75	11-111	101			-	-	
			OMPLE	TED WELL	S. S. Salar	AUX DE	NATIONAL	1623
Size/Wt./Material	Depth	Thread	Slot Size	Туре		erval al/Filter Pack	Volume	S
4 " > 55 304/304L SUMP	269.1 - 267.0			Colorado Silica Sand	273.5	- 222.0	52.0 ft3	10 -
4"10 55 304/304L SUMT " 55 304/304L SCH 0.55" 4 16 CONT. WIRE WRAP SCREEN	267.0 - 232.0	-	0.020	" 1/4 " Bentonite Pellets	222.0	- 217.4	3.524	1%
4 10 55 304/304 L Riser	232.0 -+ 2.00	-		Granular Bentonite Crumbles	217.4	- 10.3	- 116.743	1
6 ID SS Menument	0.00 - 3.00	-		Portland Cement	10.3		3.824	~ ~
		-				·	_	
	小明月2月1日成月期	Alexies 1	OTHER /	ACTIVITIES	中间 行影		designed a	設定
Aquifer Test: Drawdown	Recovery	Date: (11/2/0	Well Abandoned:	Yes:	No:	Date:	
Description: Well de	velopment p	umpin	19,	Description:				_
drawdown monito	red with tr	ansilu	ier.					
Press Para Children and Press		MANDAGE -				200.7670 204	EG SETTLATI S	
<u>我们就能够</u> 有这些的。		ALCONT OF	NELL SU	JRVEY DATA	2013 - 10 2 - 10	大规制的公司的	经非通知证明	1.11
Date:				Protective Casing Elevation:				
Washington State Plane Coord	inates:	Stan Provincian	and the state of the	Brass Cap Elevation:	Cargod Honologia	ST ALL STREET, SA	1790 Collected	rijek -
	yield -	C	OMMEN	TS/REMARKS	La la tada da ta			181
vol. calc. => 0.5454 ft	H. (+585ft / bag)	$= .ft^{3}$	LEx	: 0.5454 f / (0.535 f+3/51	bags)	= 51.99	nff']	
Reported By: C.TRICE / J	ess Hocking			Reviewed By: DCWee	kes			
/ ·	cologist	Date: 10	19/01	Title: Geologist	,		Date: /	1/3
Signature: Chile / la	a Hocking	-		Signature: Sculete	Z		/	

WEL	L SUMMARY S	HEET	VULLITU -	age <u>'</u> o ate: 1011
Well ID: C3393		Well Name	= 299-w22-84	
Location: East of 241-5x Tank F	arml 200-W		CYOI RORA Drilling	
Prepared By: Jess Hocking	Date: 1/5 /01	Reviewed		ate: 11/6
Signature: Alaching		Signature:	ANTI	
CONSTRUCTION DAT	A		GEOLOGIC/HYDROLOG	SIC DATA
Description	Diagram	Depth in Feet	Graphic Log Lithologic De	
6"1D 55 304 Protective casing labove		- 0 _	0-1.0' F: 4 mate	cial
4"ID SS 304/304 L Riser [54 053]			- OY	
+2.00' -> 232'			0 1.0-253 gravelly	SHILD C
436	1112 - 5111		0 0	->
1 " 55 Bo4 304 L 0.020 " CONT.			25.3-390 SAND (5)
4"ID Wire wrap screen [strps]		-		
232' - 267'		40 -	0 390-548 gravell	4 SAND
10-21	1.11 1.11			
4"ID 55 304/304L SUMPERA	6111 1111		548 -600 SAND (s)
267' - 269.1'			0.0 - 70.0 slightly sill	aravelle
		- L		SAUD
(10=====) Colorado Silica Sand	6101 611	80 -	94.0 -94.5 Clay	
273.5' - 222.0'		80	440-445 Clay	lens
213.3 222.0			N	1000
U *				
4 Bentonite Pellets				
222.0' - 217.4'				
		120-		
Granular Bentonite Crumbles			130.0 - 148.0 SAD	0 (5)
217.4' - 10.3'	V14 1.11	_		
		_		
Portland Cement	1111		T-T-T- 148 0 - 164 0	. () .
10.3' - 0.00'	114 1111		148.0 - 156.0 SI LI	
10.3 - 0.00		100-	156.0-157.0 gravell	1 sandy 5
			157.0-158.0' silty 5	
			158.0 -161.0 SAND	
		-	000 141.0 - 180.0 silty	SAND (
			200 000 110.0 - 180.0 5.174	andy GRAU
		200-	0 07 07	4
All Temp. Casing removed		_		
from ground.			0.000 0.00	2 21 1
Depths below ground surface			AND AND GIN TAGGED @ 23	2.36 bgs
NOT TO SCALE		<u> </u>	15. ST 2 0	

	VELL SUMMARY S	-		W 22-84	Date: 1011
Vell ID: c 3393	a 1200 m)	-			
ocation: East of 241-5 x Fauls	rarmi coo m			CRA DRILLING	
Prepared By: c mart: noz	Date: 10118101	Reviewed	124	Weekes	Date: ///
Signature: c. marting		Signature:		apende .	
CONSTRUCTION	DATA	Depth in		GEOLOGIC/HYDROLO	
Description	Diagram	Feet	Graphic Log	Lithologic D	escription
Depths below Grand surface All Temp. Casing removed		240		250'-2550' san 2550'-2650 silt 2650'-2735sand TD@273 Static Water 232.36' (GRAVE

Defining Cable Tool Sample Bind Used: None Used: None Documented Differs K. Olson Used: 1217 Definition Without Set 1217 Definition Washed Used: 12177		WE	LL CON	STRUCTION	AND COMPLE	TION SUM	0540 MARY	
Fluid Use: Mone Use: None Documented WA State Luc Ar: 217 Concinates: N Mot documented Coordinates: E Mot documented Coordinat	Method:	Cable Tool	Method:	Grab/Split Spoon		\$99-W22-85 C33		Allowed
Name: K. Olson Lic Kr. 1217 Coordinate: Met documented Date Starta: 215ep01 Company Location: Woodland, Ca. Start Card a: Ro37s15 Depth Date Starta: 215ep01 Date Company Start Card a: Ro37s15 Depth Woodland, Ca. Elevation of Reference Point: m (Ground Surface) Generation of Reference Point: m (Ground Surface) Generation of Reference Point: m 0- 5 ft: Backfill material - 177 : 25 ft: Sand (sittlene (gift ft) - 77 : 25 ft: Sand (sittlene (gift ft) - 77 : 25 ft: Sand (sittlene (gift ft) - 77 : 5 sand (sittlene (gift ft) - 77 :	Fluid Used:	None	Used:	None Documented	Coordinates: N	Not documented		
Compare RSI Location Woodland, Ca. Card #: R037815 Buth Startist: 215ep01 Date Elevation Ground Surface: Depth to Water: 216.42 ft ft 260ct01 Elevation Ground Surface: Compare Strantance) Elevation Repare Fill Casing Screen 0-5 ft: Backfill material 0-10.1 ft: Screen 0-10.1 ft: 0-10.1 ft: 0-10.1 ft: 0-10.1 ft: 0-10.1 ft: 0-217.12 ft: 10.1 ft: 0-217.12 ft: 1	Name:	K. Olson	Lic Nr:	1217	1.	Not documented		
Started: 215ep01 Completed: 260011 Depth to Water: 218.42 ft ft 260ct01 (Ground Startace) GENERALIZED STRATIGRAPHY Geologist's Log 0-5 ft: Backfill material 5-17 ft: Sand (sill lens @16 ft) 17-25 ft: Sandy Sill 22-45 ft: Silly Sand wialt lens@ §5 ft 4-7 ft: Sandy Sill 24-5 ft: Silly Sand wialt lens@ §5 ft 4-7 ft: Sandy Sill 100-104 ft: Sill 101-100 ft: Silly Sand wialt lens@ §5 ft 4-7 ft: Sandy Sill 102-104 ft: Sill 103-140 ft: Sill 104-130 ft: Silly Sand wialt lens@ §5 and 86 105-125 ft: Silly Sand wialt lens@ §5 and 86 106-143 ft: Sandy Sill 101-1202 ft: Silly Sand wialt lens@ §5 and 86 102-158 ft: Silly Sand wialt lens@ §5 and 86 103-140 ft: Sill 104-130 ft: Silly Sand wialt lens@ §6 and 86 105-158 ft: Silly Sandy Gravel 2021-206 8 ft: Silly Sand Sill 104-130 ft: Silly Sandy Gravel 2021-206 8 ft: Silly Sandy Gravel 2021-206 8 ft: Silly Sandy Gravel 2021-206 8 ft: Silly Sandy Gravel 2022-1-206 8 ft: Silly Sandy Gravel 2022-1-206 8 ft: Sil		RSI		Woodland, Ca.		R037815		
(cround surface) Height of Reference Point Above Ground Surface: 0-5 ft: Backfill material 5 - 17 ft: Sand (lift lens (g) 6 ft) Fill Casing Screen 10 - 5 ft: Backfill material 5 - 17 ft: Sand (lift lens (g) 6 ft) Fill Casing Screen 12 - 45 ft: Sand (lift lens (g) 5 ft) Fill Casing Screen 22 - 45 ft: Silly Sand whill lens (g) 35 ft Fill Casing Screen 47 - 54 ft: Sand (lift lens (g) 60 ft Fill Casing Screen 57 - 67 ft: Sand whill lens (g) 60 ft Fill Casing Screen 67 - 10 ft: Silly Sand whill lens (g) 60 ft Fill Casing Screen 100 - 104 ft: Sand 10.1 - 202.1 ft: Screen Screen 101 - 130 ft: Silly Sand whill lens (g) 60 ft Fill Screen Screen 102 - 104 ft: Sand Screen Fill Screen Screen 103 - 140 ft: Sint Sand will lens (g) 60 ft Fill Screen Screen 104 - 130 ft: Sint Sand will lens (g) 60 ft Fill Screen Screen Screen 102 - 140 ft: Sint Sand vill lens (g) 50 ft Fill Screen Screen Screen		21Sep01		26Oct01				
GENERALLZED STRATIGRAPHY Geologist's Log 0-5 ft: Backfill material 5-77 ft: Sand (fill tens @ 16 ft) 17-25 ft: Sandy Silt 25-22 ft: Silty Sand whill tens @ 35 ft 10.1 ft 7-75 ft: Sandy Silt 25-24 ft: Sand 22-45 ft: Silty Sand whill tens @ 35 ft 6-217,12 ft: 0-10.1 ft: 12-10 ft hill 0-217,12 ft: 0-217,12 ft: 0-217	Depth to	Water: 218.42 ft f	t 26Oct01			Elevation of Re	ference Point:	m
0 - 5 ft : Back/fill material 0 - 10.1 ft : Sand (slit lens @16 ft) 0 - 10.1 ft : 12-inch hole 0 - 10.1 ft : 12-inch hole 25 - 25 t : Sand y Sit 25 - 25 t : Sity Sand wriait lens @ 35 ft 3 - 46 ft : Sity Sand y Gravel 0 - 10.1 ft : 12-inch hole 0 - 10.1 ft : 12-inch hole 100 - 104 ft : Sand y Sitt 10.1 - 202.1 ft : 12-inch hole 0 - 10.1 ft : 12-inch hole 0 - 10.1 ft : 12-inch hole 100 - 104 ft : Sitt 10.1 - 202.1 ft : 12-inch hole 12-inch hole 12-inch hole 100 - 104 ft : Sitty Sand 10.1 - 202.1 ft : 12-inch hole 12-inch hole 12-inch hole 110 - 130 ft : Sitty Sand 112-inch hole 12-inch hole 12-inch hole 110 - 143 ft : Sandy Sitt 112-inch hole 114 ft : 12-inch hole 114 ft : 12-inch hole 110 - 143 ft : Sandy Sitt 114 ft : 12-inch hole 114 ft : 12-inch hole 114 ft : 12-inch hole 110 - 143 ft : Sandy Sitt 114 ft : 12-inch hole 110 - 143 ft : Sandy Sitt 114 ft : 12-inch hole 114 inch 304 L SS Wing			's Log		T	Ground Surface Depth of Surface	e Seal:	
155 - 152 ft : Silty Sandy Gravel 162 - 163 ft : Silty Gravely Sand 163 - 174 ft : Sandy Gravel 180 - 235 ft : Silty Sandy Gravel 235 - 255 ft : Gravely Silty Sandy Gravel 235 - 255 ft : Gravely Silty Sandy Gravel 235 - 255 ft : Gravely Silty Sandy Gravel 235 - 255 ft : Gravely Silty Sandy Gravel 255 - 260.1 ft : Silty Sandy Gravel 260.1 ft : Borehole drilled depth 260.1 ft : Borehole drilled depth	5 - 17 ft : San 17 - 25 ft : San 25 - 32 ft : San 32 - 45 ft : Silt 45 - 47 ft : San 45 - 47 ft : San 54 - 57 ft : Salt 54 - 57 ft : Salt 55 - 70 ft : Salt 57 - 100 ft : Si 100 - 104 ft : S 100 - 104 ft : S 110 - 140 ft : S 130 - 140 ft : S 140 - 143 ft : S 143 - 149 ft : S 149 - 151 ft : S 151 - 153 ft : S	d (silt lens @16 ft) nd y Silt nd y Sand w/silt lens @ 35 ft ndy Gravel y Sandy Grvel nd y Sand w/silt lens @ 60 ft. ity Sand w/silt lenses @ 8 Sand Silty Sand Silt Sandy Silt Silt Silt Silt				Fill 0 - 10.1 ft : 12-inch hole Cement Surface Seal 10.1 - 202.1 ft : 12-inch hole Bentonite	Casing 0 - 217.12 ft : 4 inch 304L SS sch 5	7225-0-0-0
	155 - 162 ft : 5 162 - 168 ft : 5 168 - 174 ft : 5 174 - 180 ft : 5 180 - 235 ft : 5 235 - 255 ft : 0	Silty Sandy Gravel Sand Sandy Gravel Silty Sandy Gravel Silty Sandy Gravel		260.1 ft : Borehol	le drilled depth	12-inch hole 1/4" Bentonite Pellets 206.8 - 254.13 ft : 12-inch hole 10/20 Silica Sand 254.13 - 257.5 ft : 12-inch hole 10/20 Silica Sand 257.5 - 260.1 ft : 12-inch hole	252.03 - 254.13 ft : 4 inch	: 4 inch 304L SS Wire Wrap .020 slo scrn

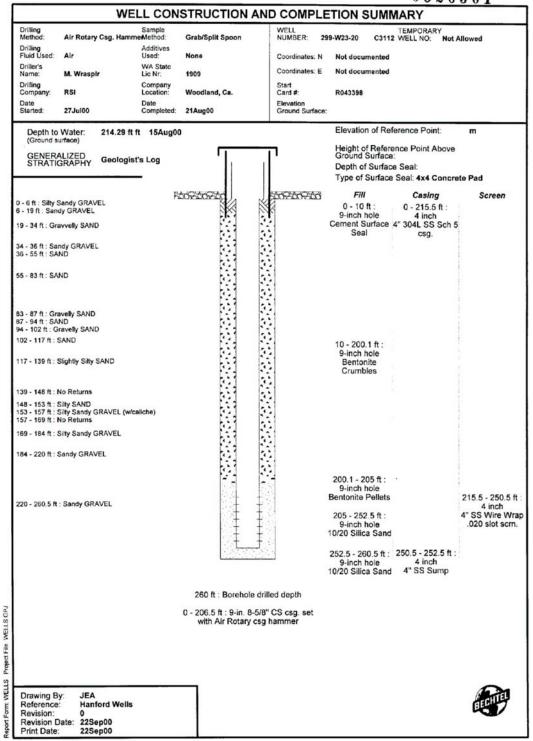
	SUMMARY OF CONSTRUCTION DATA AND FIELD OBSERVATIONS RESOURCE PROTECTION WELL - 2399-W22-85	
WELL DESIGNATION	: 2399-W22-85	
CERCLA UNIT	T C C C C C C C C C C C C C C C C C C C	
RCRA FACILITY	:	
DEPTH DRILLED (GS)	: 260.1 ft	
MEASURED DEPTH (GS)	: 254.13 26Oct01	
AVAILABLE LOGS	: Geologist & Geophysical	
DATE EVALUATED	: Data not available	
EVAL RECOMMENDATIO	DN : Data not available	
LISTED USE	: RCRA Monitoring	
CURRENT USER	: RCRA & Operations	
PUMP TYPE	: Not Documented	
MAINTENANCE	: Data not available	
COMMENTS	: Cable Tool 11-3/4" CS Temp csg to 260.1 ft.	
TV SCAN COMMENTS	1	
Drawing By: JEA	1.1.	E TEL
Reference: Hanford W Revision: 0	fells	
Revision Date: 08Nov01 Print Date: 08Nov01		000000

					Start Date: ogla	loi	_
WELL CONS	TRUCTION	I SUN	IMAF	RY REPORT	Finish Date: 10/2	6101	
				0540431	Page 1	of _/	_
pecification No.: 0 200 X-57-F	Rev. No.: O				Temp. Well No.: C	a the second	
CNS: NA R037815	Start C	ard		Approximate Location: SE side	of S-SX T	ank Fa	m
roject: CYOI RCRA	Drilling			Other Companies: BWE, CHI	RSI		
Drilling Company: Resonant)	Geologist(s): C. Mantinez, G. Thomas, C. Trice, D	D.S. Watson, J.	wimeth	,
Driller: Kelly Olson Gary)	6. momas, C. mae, D	C Weenes		_
TEMPORARY CAS	NG AND DRILL DEI	ртн		DRILLING METH	DD/HOLE DIAMETE	R	
*Size/Grade/Lbs. Per Ft.	Interval	Shoe O.	.D./I.D.	Auger:	Diameter From	to	
Serbon Steel FJ 113/4/1034	0 258.9	124	1 "	Cable Tool: 134" OLD	Diameter From	/ to	262
,,,			,	Air Rotary:	Diameter From	to	
				A.R. w/Sonic:	Diameter From	to	_
					Diameter From	to	
					Diameter From	to	
Indicate Welded (W) - Flush Join	nt (FJ) Coupled (C)	& Thread	Design		Diameter From	to	
				Bit = drive barnel w	944 010 .	2-174	b
				Hard tool 176 - 26			
				Drilling Fluid: nin			
Total Drilled Depth: 260.1	Hole Dia @ TD:	12"		Total Amt. Of Water Added During	Drilling:		_
Well Straightness Test Results: q_{q}			D	Static Water Level: 218.42	Date: 10/26/	01	
	119101	1	12 11 1 1 1 1 1	AL LOGGING		W. Lot	
		-		Sondes (type)	Interval	Dat	
Sondes (type)	Interval	Da	ate	Sondes (type)	Interval		e
	Interval 2 - 260'			Sondes (type)	-		e
Sondes (type) Spectral Gamma Aleutron Moisture		10/01	/01 1/01 :OMPLE	TED WELL			
Spectral Gamma	2'-260'	10/01	01 1/01		Interval	Volume	Me
Spectral Gamma Aleutron Moisture Size/Wt./Material	<u>2'-260'</u> <u>0'</u> -222.75	10/01 10/01	/01 1/01 :OMPLE Slot	TED WELL			Me
Spectral Gamma Akutron Moisture	<u>2</u> - <u>260'</u> <u>0'</u> 222.75 <u> </u>	10/01 10/0 Thread	/01 1/01 :OMPLE Slot Size	TED WELL Type	 Interval Annual Seal/Filter Pack	Volume	Me Si
Spectral Gamma Akutron Moisture SizeWt./Material 4"ID 552044 Sump 4"ID 552044 Screen	<u>2</u> - <u>260'</u> <u>0</u> - <u>222.75</u> <u> </u>	10/01 10/01 Thread	/01 I/01 SIOT SIOT SIZE	TED WELL Type Colored on Siller Sand (So Bentonice Perkets (So ³)		Volume	Me Si D V4
Spectral Gamma Akutron Moisture SizeWt./Material	<u>2</u> - <u>260'</u> <u>0</u> - <u>222.75</u> <u> </u>	10/01 10/01 Thread F480	/01 1/01 Slot Size	TED WELL Type Colorado Si lica Sand (Se Bentonite Perkts (SO) Bentonite Scientification		Volume FORS by	Me Si D X4
Spectral Gamma Akutron Moisture SizeWt./Material 4"ID 552044 Sump 4"ID 552044 Screen	<u>2</u> - <u>260'</u> <u>0</u> - <u>222.75</u> <u> </u>	10/01 10/01 Thread F480	/01 1/01 Slot Size	TED WELL Type Colored on Siller Sand (So Bentonice Perkets (So ³)		Volume ٢٥٦.5 همو 5 ٤ ٤ ٩ ٤ ٤ ٩ ٤	Me Si N2 V4
Spectral Gamma Akutron Moisture SizeWt./Material 4"ID 552044 Sump 4"ID 552044 Screen	<u>2</u> - <u>260'</u> <u>0</u> - <u>222.75</u> <u> </u>	10/01 10/0 Thread	COMPLE Slot Size alA alA	TED WELL Type Colorado Si lica Sand (Se Bentonite Perkts (SO) Bentonite Scientification		Volume ٢٥٦.5 همو 5 ٤ ٤ ٩ ٤ ٤ ٩ ٤	Me
Spectral Gamma Akutron Moisture SizeWt./Material 4"ID 553044 sump 4"ID 553044 sump 4"ID 553044 screen 4"ID 553044 screen	<u>2</u> - <u>260</u> - <u>222.75</u> <u>0</u> - <u>222.75</u> <u> </u>	10/01 10/0 Thread F480	COMPLE Slot Size alA a.aa alA alA	TED WELL Type Colorado Silica Sand(Se Bentonite fellets(So ^T) Bentonite fellets(So ^T) Bentonite Crumbles(So ^T) Rortland Cement (94 ^T)		Volume ٢٥٦.5 همو 5 ٤ ٤ ٩ ٤ ٤ ٩ ٤	Me Si D Xy
Spectral Gamma Akutron Moisture SizeWt./Material 4"ID 553044 Sump 4"ID 553044 Screen 4"ID 553044 Screen 4"ID 553044 Screen 4"ID 553044 Screen	<u>2</u> - <u>260</u> - <u>222.75</u> <u>0</u> - <u>222.75</u> <u>Depth</u> <u>252.03</u> - <u>254.13</u> <u>217.12</u> - <u>252.03</u> <u>+2.05</u> - <u>217.12</u> <u></u> - <u></u> <u></u> - <u></u> <u></u> - <u></u> <u></u> - <u></u> <u></u> - <u></u> <u></u> - <u></u>	10/01 10/01 Thread F480 U	01 00000000000000000000000000000000000	TED WELL Type Colorado Silica Sand(So Bentonice Perkets(So ^T) Bentonice Crumbles(So ^T) Portland Cement (94 ^T) ACTIVITIES	Interval Annual Seal/Filter Pack 200.8 - 2535 200.1 - 200.8 10.1 - 200.1 0 - 10.1	Volume YOR.5 bogs S buckas	Me Si D Xy
Spectral Gamma Aleutron Moisture Size/Wt/Material 4"ID 553044 Sump 4"ID 553044 Sump 4"ID 553044 Screen 4"ID 553044 Casing Aquifer Test: Well development Description: Used 3 Hp Sub	<u>2</u> - <u>260'</u> <u>0</u> - <u>222.75</u> <u>0</u> - <u>222.75</u> <u>217.62' - 254.13'</u> <u>217.62' - 254.13'</u> <u>+2.00' - 217.13'</u> <u>+2.00' - 217.13'</u> <u></u> <u></u> <u></u> <u>enT</u> mersible pung 1	10/01 10/01 Thread F 480 U U Date: 10	01 00000000000000000000000000000000000	TED WELL Type Colorado Silica Sand(So Bentonice Pallets (So ³) Bentonice Cumbles (So ³) Partland Coment (94 ³¹) ACTIVITIES Well Abandoned: Description:	Interval Annual Seal/Filter Pack 200.8 - 2535 200.1 - 200.8 10.1 - 200.1 0 - 10.1	Volume YOR.5 bogs S buckas	Me Si D Xy
Spectral Gemma Aleutron Moisture Size/Wt./Material 4"ID 553046 Sump 4"ID 553046 Sump 20.5360 Withdrew Hy 4000 of W.Sod, and test	<u>2</u> - <u>260'</u> <u>0</u> - <u>222.75</u> <u>0</u> - <u>222.75</u> <u>217.62</u> - <u>254.13'</u> <u>217.62</u> - <u>254.03'</u> <u>217.62</u> - <u>254.03'</u> <u>+2.00'</u> - <u>254.03'</u> <u>- <u></u></u>	10/01 10/01 Thread F 480 U Date: 10 Date: 10	01 00000000000000000000000000000000000	TED WELL Type Colored on Sillea Sand (So Bentonice Perkets (So ³) Bentonice Crumbles (So ³) Portland Cement (94 ³) ACTIVITIES Well Abandoned: Description: Description: Description:	Interval Annual Seal/Filter Pack 200.8 - 2535 200.1 - 200.8 10.1 - 200.1 0 - 10.1	Volume YOR.5 bogs S buckas	Me Si D X4
Spectral Gemma Aleutron Moisture Size/Wt./Material 4"ID 553046 Sump 4"ID 553046 Sump 20.5360 Withdrew Hy 4000 of W.Sod, and test	<u>2</u> - <u>260'</u> <u>0</u> - <u>222.75</u> <u>0</u> - <u>222.75</u> <u>217.62</u> - <u>254.13'</u> <u>217.62</u> - <u>254.03'</u> <u>217.62</u> - <u>254.03'</u> <u>+2.00'</u> - <u>254.03'</u> <u>- <u></u></u>	10/01 10/01 Thread F 480 U Date: 10 Date: 10	01 00000000000000000000000000000000000	TED WELL Type Colored on Sillea Sand (So Bentonice Perkets (So ³) Bentonice Crumbles (So ³) Portland Cement (94 ³) ACTIVITIES Well Abandoned: Description: Description: Description:	Interval Annual Seal/Filter Pack 200.8 - 2535 200.1 - 200.8 10.1 - 200.1 0 - 10.1	Volume 102.5 bog 5 buckes 195 bogs	Me Si D X4
Spectral Gemma Akutron Moisture Size/Wt./Material 4"ID 552044 Sump 9"ID 552044 Sump 9"ID 552044 Screen 9"ID 55204 Screen	<u>2</u> - <u>260'</u> <u>0</u> - <u>222.75</u> <u>0</u> - <u>222.75</u> <u>217.62</u> - <u>254.13'</u> <u>217.62</u> - <u>254.03'</u> <u>217.62</u> - <u>254.03'</u> <u>+2.00'</u> - <u>254.03'</u> <u>- <u></u></u>	10/01 10/01 Thread F 480 U Date: 10 Date: 10	01 00000000000000000000000000000000000	TED WELL Type Colored on Sillea Sand (So Bentonice Perkets (So ³) Bentonice Crumbles (So ³) Portland Cement (94 ³) ACTIVITIES Well Abandoned: Description: Description: Description:	Interval Annual Seal/Filter Pack 200.8 - 2535 200.1 - 200.8 10.1 - 200.1 0 - 10.1	Volume 102.5 bog 5 buckes 195 bogs	Me Si D X4
Spectral Gemma Aleutron Moisture SizeWt/Material 4"ID 552044 Sump 4"ID 552044 Screen 4"ID	2 - 260' 0 - 222.75 Depth 252.03 - 254.13 217.12 - 252.03 +2.00 - 217.12 	10/01 10/01 Thread F 480 U Date: 10 Date: 10	01 00000000000000000000000000000000000	TED WELL Type Colorado Si lica Sand(Se Bentonite Parties (So ³) Bentonite Parties (So ³) Portland Coment (44 ³¹) ACTIVITIES Well Abandoned: Description: 39 gen RVEY DATA	Interval Annual Seal/Filter Pack 200.8 - 2535 200.1 - 200.8 10.1 - 200.1 0 - 10.1	Volume 102.5 bog 5 buckes 195 bogs	Me Si N2 V4
Spectral Gemma Aleutron Moisture SizeWt./Material 4"ID 552044 Sump 4"ID 552044 Screen 1"ID 55204	2 - 260' 0 - 222.75 Depth 252.03 - 254.13 217.12 - 252.03 +2.00 - 217.12 	10/01 10/01 Thread F480 U U Date: 10 Date: 10 Da	Image: Contract of the second seco	TED WELL Type Colorodia Silica Sand (Se Bentanice Relets (Sa) Rentanice Relets (Sa) Re	Interval Annual Seal/Filter Pack 200.8 - 2535 200.1 - 200.8 10.1 - 200.1 0 - 10.1	Volume 102.5 bog 5 buckes 195 bogs	Me Si D X4
Spectral Gemma Aleutron Moisture SizeWt./Material 4"ID 552044 Sump 4"ID 552044 Screen 1"ID 55204	2 - 260' 0 - 222.75 Depth 252.03 - 254.13 217.12 - 252.03 +2.00 - 217.12 	10/01 10/01 Thread F480 U U Date: 10 Date: 10 Da	Image: Contract of the second seco	TED WELL Type Colored o Silica Sand (Se Bentonite Pellets (So ³) Bentonite Cumbles (So ³) Portland Cement (44 ³) ACTIVITIES Well Abandoned: Description: Description: Description: Description: Description: Description: Brass Cap Elevation: Brass Cap Elevation:		Volume ۲ نه، ۲ همچ ۲ همچ ۲ همچ ۹۲ همچ Date:	Me Si Ny A N
Spectral Gemma Aleutron Moisture SizeWt./Material 4"ID 552044 Sump 4"ID 552044 Screen 1"ID 55204	2 - 260' 0 - 222.75 Depth 252.03 - 254.13 217.12 - 252.03 +2.00 - 217.12 	10/01 10/01 Thread F 480 U Date: 10 Date: 10 Date: 10 Date: 10 C C C C	امار I/OI Sion Sion Size AIA 0.020 AIA 0.020 AIA 0.020 AIA 0.020 AIA 0.020 AIA 0.020 AIA AIA AIA State COMMENT SH.34	TED WELL Type Colorado Silica Sand(Se Bentonite Pellets (Se) Bentonite Pellets, S bucket Well Abandoned: Description: Solution: Brass Cap Elevation: Brass Cap Elevation: Brass Cap Elevation: TS/REMARKS Et. je bent. pellets, S bucket		Volume 102.5 bog 5 buckes 195 bogs	Me Si Ny A N
Spectral Gemma Akutron Moisture Size/WL/Material 4"ID 552044 Sump 4"ID 552044 Sump 4"ID 552044 Screen 1"ID 55204 Screen 1"ID 5520 1"ID 55204 Screen 1"ID 5520 1"ID 5520 1"ID 5520	2 - 260 0 - 222.75 Depth 252.03 - 254.13 217.(2 - 252.03 +2.00 - 217.12 +2.00 - 217.12 +2.00 - 217.12 	10/01 10/01 Thread F480 U U Date: 10 Date: 10 Da	امار I/OI Sion Sion Size AIA 0.020 AIA 0.020 AIA 0.020 AIA 0.020 AIA 0.020 AIA 0.020 AIA AIA AIA State COMMENT SH.34	TED WELL Type Colorado Silica Sand(Se Bentonite Relets(SD ³) Bentonite Relets(SD ³) Rentonite Relets(SD ³) Rentonite Relets(SD ³) Rentonite Relets, South Well Abandoned: Description: Description: Brass Cap Elevation: Brass Cap Elevation: TS/REMARKS Si portland cement 3 9.5		Volume ۲ نه، ۲ همچ ۲ همچ ۲ همچ ۹۲ همچ Date:	Mess छे-प्रेय देवे
Spectral Gemma Akutron Moisture Size/WL/Material 4"ID 553044 Sump 4"ID 553044 Screen 4"ID 553044 Scre	2 - 260 0 - 222.75 Depth 252.03 - 254.13 217.(2 - 252.03 +2.00 - 217.12 +2.00 - 217.12 +2.00 - 217.12 	Date: 10 Date: 10 Date: 10 Date: 10 Date: 10 Date: 10 dintake Date: 10 dintake Date: 10 dintake Date: 10 dintake Date: 10 dintake Date: 10 dintake	اما I/OI Sion Sion Size alA	TED WELL Type Colorado Silica Sand(Se Bentonice Relets(SO ^T) Bentonice Relets(SO ^T) Rentand Coment (44 ^T) Rentand Coment (44 ^T) ACTIVITIES Well Abandoned: Description: Description: Brass Cap Elevation: Brass Cap Elevation: Brass Cap Elevation: TS/REMARKS E: portland coment \$ 9.5 Reviewed By: Jess Hack		Volume + 02.5 bas 5 backes - 95 bas - 95 b	Me Si PA A A A A A A A A A A A A A A A A A A
Spectral Gemma Akutron Moisture Size/WL/Material 4"ID 552044 Sump 4"ID 552044 Sump 4"ID 552044 Screen 1"ID 55204 Screen 1"ID 5520 1"ID 55204 Screen 1"ID 5520 1"ID 5520 1"ID 5520	2 - 260 0 - 222.75 Depth 252.03 - 254.13 217.(2 - 252.03 +2.00 - 217.12 +2.00 - 217.12 +2.00 - 217.12 	Date: 10 Date: 10 Date: 10 Date: 10 Date: 10 Date: 10 dintake Date: 10 dintake Date: 10 dintake Date: 10 dintake Date: 10 dintake Date: 10 dintake	امار I/OI Sion Sion Size AIA 0.020 AIA 0.020 AIA 0.020 AIA 0.020 AIA 0.020 AIA 0.020 AIA AIA AIA State COMMENT SH.34	TED WELL Type Colorado Silica Sand(Se Bentonice Pallets(So ³) Bentonice Pallets(So ³) Bentonice Cumbles(So ³) Rentland Coment (44 ³¹) ACTIVITIES Well Abandoned: Description: Description: Description: Brass Cap Elevation: Brass Cap Elevation: Brass Cap Elevation: TS/REMARKS E: portland cement \$ 9.5 Reviewed By: Jess Hack		Volume ۲ نه، ۲ همچ ۲ همچ ۲ همچ ۹۲ همچ Date:	Me Si PA A A A A A A A A A A A A A A A A A A

			0	F 10 10 1	Page 1 of 2
WEL	L SUMMARY SI	HEET	U	540424	Date: 0912710
Well ID: C 3399		Well Name	- 299-	w22-85	
Location: SE Side of S-SX TO	ank Form 1200 W			RCRA Drilling	0
Prepared By: C. Martinez	Date: 09127101	Reviewed	-	s Hocking	Date: 11/5/01
Signature: c. martinez	10/22/01	Signature:		1/1/2	113101
CONSTRUCTION DAT		- g. e.e. o.	yna /	GEOLOGIC/HYDRO	
8.0 A.C.		Depth in	Graphic		LOGIC DATA
Description	Diagram	Feet	Log	Lithologi	c Description
6-ID dia protective casing set		0	00100	0-5 Back	fill material
1.00' above stainless casing		_		1	5) (silt lens@
ð		_		17-25 sandy	
4 ID SS 3046 Casing:	1034 III NA				
	143111103	-		25-32 3AND	
+2.00' >217.12'			•	32-45 SIL4 5A	nD(ms)(s: 12 lens
		40 -	, -	45-47 sandy	GRAVEL (SG)
Portland Cement grout :		-	0.0.0	47-54 5114 39	Inda GRAVEL Const
o´→ 10.1		-	0.07.0	54-57 SAND	(5)
Bentonite crumbles: 10.1->202.1		_		57-65 Sitty (5000) (c) (1000
14" Bentonite pellets:		_		14-20 5000 (5)(cut los Qu
202.1' -> 204.8'		80 -		45 - 70 SAND (3 100 - 10	Sand tenso
		00		Cm Silty SAME	(5) Silt Lensa
4"ID 553044 0.000-in. 5102	- M3++++P3)			100 - 104 SAN	
cont. wire-wrap wellscreen:		-	-1	104 - 130 Sile	(SADO(m5)
217.12 -> 252.03'		- 1	74 - <u>-</u>		•
		120 -			
10-20 mesh silica sand:		_		130-140 510	r ()
206.8 -> 257.5					
	- NYTTERN		H. H. / H. T.	140 -142 Sand	
		-		143-149 51	
4"ID 55304L tailpipe:				149-151 sandy	
252.03 254.13	- []+N	160-	0.0.0 2.0.0		
muddy backfill:				153-155 CAL	ICHE
257.5' -> 260.1	_ k`&b`)	- 1	0.0.2.0.0	155 -162 siltu	sandy GRAVEL (m
		-	70-00	11.2 -11.3 1:1+	ravelly SAND (mg
All temporary casing removed:			0.000 0.000		
The resultand casing remotes.			0.000	168-174 SAND	
		200 -	202	174-180 sandy	GRAVEL (3G)
All depths are in fect below		-	5430	180-235 3114	andy GRAVEL (ms
ground surface.			2000		
		-	80.8	5	
		-	00000		

Well ID: د ع ع م ۹	Well Name	HEET Date: ۱۹۵۵۱ ۵ Well Name: ۲۹۹۰ ۵۵۵۰ ۲۶۶			
		Project:	- <u>244-w</u>	A Drilling	
Location: <u>SE Side of S-SX Tank Fam</u> Prepared By: c. martine Z	Date: 10/08/01	Reviewed	BV: T	s Hocking	Date: 11/5
Signature:	5410. 1010310 1	Signature:		Hocking	-
Signature: _ Martiney	٨	oignature.	geaa	GEOLOGIC/HYDR	
		Depth in	Graphic		
Description	Diagram	Feet	Log	Litholog	ic Description
All temporary casing removed:		240	Q 3.	2355 - 255' qci 255' - 260(5) TD = 260 5taric water (10)2610	.) bgs
All depths are in feet below ground surface.			- - -		
		-			





	RESOURCE PROTECTION WELL - 299-W23-20	
WELL DESIGNATION	: 299-W23-20	
CERCLA UNIT		
RCRA FACILITY	:	
DEPTH DRILLED (GS)	: 260.0 ft	
MEASURED DEPTH (GS)	: 260.5 15Aug00	
AVAILABLE LOGS	: Geologist	
DATE EVALUATED	: Data not available	
EVAL RECOMMENDATION	: Data not available	
ISTED USE	: RCRA monitoring/sampling	
CURRENT USER	: RCRA & Operations	
PUMP TYPE	: Hydrostar	
MAINTENANCE	: Data not available	
TV SCAN COMMENTS	1	
		-
Drawing By: JEA Reference: Hanford Wells Revision: 0		BECHTEL

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WELL CON					-	27-00)		
WELL CON		Contraction of the second	1111 A	RY REPORT	Finish Date: 8/	21/00	_		
		1265	64		Page _1	_ of	_		
Specification No.:	Rev. No.:			Well Name: 299-W23-20	Temp. Well No .:	C 311			
ECNs:				Approximate Location: W. Fe	ice 241-5 Ta	nk Farm	,/		
Project: CY2000		illing		Other Companies: Reso w	BHI, CHI		<i>.</i>		
Drilling Company: Resonau Driller: Kelly Cou	+ Sonic In when. Mow		tional	Geologist(s): L.D. Walke	r, J.K.MURR	AY			
	ING AND DRILL DE			DRILLING METH	HOD/HOLE DIAMET	ER	X.		
*Size/Grade/Lbs. Per Ft.	Interval	Shoe C	D.D./I.D.	Auger:	Diameter From	to	4.00		
FJ 81/8 <s< td=""><td>0 - 260</td><td>85/8"</td><td>17 78"</td><td>Cable Tool:</td><td>Diameter From</td><td>to</td><td></td></s<>	0 - 260	85/8"	17 78"	Cable Tool:	Diameter From	to			
				Air Rotary: 8 5/8"	Diameter From	O' to	2		
				A.R. w/Sonic:	Diameter From	to	-		
	-				Diameter From	to	-		
	-				Diameter From	to	-		
*Indicate Welded (W) - Flush Jo	nt (FJ) Coupled (C)	& Thread	Desian		Diameter From	to	-		
		2017		Drilling Fluid:			_		
Total Drilled Depth: 260'	Hole Dia @ TD:	85/8"		Drilling Fluid: Total Amt. Of Water Added During Drilling;					
		8-18							
vven Straightness Test Results:	STRAIGHT	054	DUVOIC	Static Water Level: 214. 45	Date: 8/10/0	0			
Condec (trans)	1-11			AL LOGGING	1		_		
Sondes (type)	Interval	Da	ate	Sondes (type)	Interval	Da	te		
	<u> </u>					-			
						-			
		15			·	-	_		
·····································	the second		COMPLET	ED WELL	for which we the	The second	12		
Size/Wt./Material	Depth	Thread	Slot Size	Туре	Interval Annual Seal/Filter Paci		M		
SS304L CASING 4"10	+2' -215.5		NA	Colorado Silica SAND	205'-260.5	96 bags	10		
SS304L SCREEN	215.5 - 250.5		0.020	BENTONITE PELLETS	200.1' - 205'	- 3 buck	3/		
SS316L SUMP	250.5 - 252.5		NA	BENTONITE CRUMBLES	10' - 200.1'	900			
	·			PORTLAND CEMENT GROUT	0 - 10'	10 boos	N		
				R PREMIUM GEL	0 - 10'	1/5 605			
C. L. C. L. Marson	A. F. Artic	(OTHER AC	CTIVITIES		1.5.9	1		
Aquifer Test: WELL DEVE	LOPMENT	Date: 8/	-	Well Abandoned:	Yes: No:	Date:	100		
VILL DEVE			1			1			
Description: MONITOR PRA	WPOWN AND	RECORD	24	Description:			_		
ALC: NO. 10		W	ELL SUR	VEY DATA	l in the state	a Standard	34		
Date:				Protective Casing Elevation:					
Washington State Plane Coordina	tes:			Brass Cap Elevation:			_		
11.0				REMARKS					
Vol. Cales: 10-20 silica Se				6 bag = 51.84 A3; Benton	ite pellets - 0.67	Lft /bck	et		
3buckets = 1.86ft3; Gran		- 0.73-	T/by ×		10				
Reported By: JILL MURR	14			Reviewed By: Suten	AUTEN		_		
		Data: 0	1.11	Tala: 1 VIA A		Data 9/	21		
Title: GrenuchIST		Date: 9	1400	Title: Sz. DreyEn	n.	Date: %	-//		

Page _ (____ of ____ WELL SUMMARY SHEET Date: 8/15/00 Well ID: C3112 Well Name: 299- W23-20 Location: W. Fence of 241-5 Tank Farm/200 W Project: CY 2000 RCRA Drilling L.D. Walker JKMURDAY Date: 8/15/00 Date: 8/25/ Prepared By: Reviewed By: Acutekes 100 AB akle Chill Muney Signature: SC Tilee hes Signature: CONSTRUCTION DATA GEOLOGIC/HYDROLOGIC DATA Depth in Graphic Feet Description Diagram Lithologic Description Log 0 N KXX NAN AN 0'-> 6': Silly Sandy GRAVEL 0'-10' PORTLAND CEMENT TYPE I+ I Gran 6-> 19': Sandy GRAVEL ALL AND XII Y STAINLESS STEEL CASING 304L 19-34': Gravelly SAND 25 +2'->215.5' 4" ID. 4.5" OD 34->36: Sandy GRAVEL 10'- 200.1' BENTONITE 36' → 55': SAND CRUMBLES 50 PERMANENT OUTER CASING. EMPLACED WITH A 3' STICKUP 55' + 83': SAND TEMP. CASING 75 A LAND AND AND A 85/8" OD, 75/8" ID 83' 87': Gravelly SAND 87' + 94': SAND N. N. N. N. 94 -> 102': Gravelly SAND 100 grm 102' - 117': SAND The second second MALLAN COLUMN 117'> 139': Slightly Silty SAND 125 All depths below ground surface 139-+148: No Returns All temp. casing removed.

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	w	ELL SUMMARY S	HEET			Page <u>2</u> of <u>2</u> Date: <u>8/15/00</u>
Well ID:	C 3112		Well Name	: 2'	99 - W23 - :	20
Location: V	V. Fence of 241-S	Project:	CY 2		73 X	
	L.D. Walker JK.Mu		Reviewed	S. 6	Ukekes	Date: 8/25/00
Signature:	AD Walk (lefz Munaz	Signature:	215	kekes	
	CONSTRUCTION			0	GEOLOGIC/HYDRO	LOGIC DATA
	Description	Diagram	Depth in Feet	Graphic Log	Litholog	ic Description
277954- BEATTOA	200.1-205' INTE FELLETS		150 — - - 175 — - - - - - - - - - - - - - - - - - - -		153'→ 157': (\/caliche) 157'→ 169': 69'→ 184': G	
304L S	215.5'-250.5' 55 0.020 in slot Dire wrap, 4"10, 4.5"				214.29 DTW 220'→ 260.	1 8/15/00 5': Sandy GRAV
SILICA,	ACK: 205'-260. 10-20 MESH -252.5 SUMP - S5 4" ID, 4.5" OI		- 250- -		TD = 260	o.5 [′]
	· · · · · · · · · · · · · · · · · · ·		- 275—	-		
All te	depths betweened: mp. casing remove	ure J.	-	-		

Drilling Method: C:	able Tool	Sample Method:	Grab/Split Spoon	WELL NUMBER: 29	9-W23-21 C3113	TEMPORARY WELL NO: Not	Allowed
Drilling Fluid Used: no	one	Additives Used:	None	Coordinates: N			
Driller's		WA State		Coordinates: E	Not documented Not documented		
Name: M Drilling	. Wraspir	Lic Nr: Company	1909	Start			
Company: R: Date	51	Location: Date	Woodland, Ca.	Card #: Elevation	Not Available		
	iSep00	Completed:	07Nov00	Ground Surface.		-	
Depth to Wa (Ground surfa		03Nov00			Elevation of Ref	erence Point:	m
GENERALI	ZED		· · ·	T .	Height of Refere Ground Surface	nce Point Above	
STRATIGR	APHY Geologis	st's Log		1	Depth of Surface	e Seal:	10.1 ft.
		-				Seal: 4x4 Concre	ete Pad
0 - 0.5 ft : Gravel 0.5 - 8.5 ft : Sand 8.5 - 20 ft : Sand 20 - 36.8 ft : Sand	to Slightly Silty Sand ly GRAVEL		5025025	200-200-200 200-200-200	<i>Fill</i> 0 - 10.1 ft : 12-inch hole Cement Surface Seal	Casing 0 - 212.58 ft : 4 inch 4" 304L SS csg	Screen
36.8 - 38.5 ft : Silt 38.5 - 40 ft : Sligh 40 - 80 ft : SAND	y SAND tly Gravelly SAND				10.1 - 76.41 ft : 12-inch hole Granular Bentonite		
80 - 83 ft : Gravel 83 - 88 ft : Silty S. 88 - 99 ft : Gravel 99 - 120.5 ft : SAI	AND IY SAND						
120.5 - 130.5 ft : :	Silty SAND						
130.5 - 131.5 ft : 131.5 - 139 ft : Si 139 - 141.5 ft : Si 141.5 - 143.5 ft : 143.5 - 147 ft : Si 147 - 153 ft : San 153 - 158 ft : Shg 158 - 168 ft : SAN 168 - 189 ft : San	ty SAND ghtly Silty SAND Silty SAND ghtly Silty SAND dy Silt y Silty Gravelly SA ID	ND			76.41 - 193.7 ft : 9-inch hole Granular Bentonite		
193 - 197.5 ft : Gi 197.5 - 204 ft : Gi 204 - 214 ft : Silty		ND	- 1		193.7 - 202 ft : 9-inch hole Bentonite pellets		212.58 - 249.69
214 - 219 ft : Gra 219 - 240 ft : Silty							4 inch
240 - 255 ft : San	dy GRAVE!				202 - 251.87 ft : 9-inch hole 10/20 Silica Sand		4" 304 SS Wir Wrap .020 slo
240 - 255 ft : San 255 - 259 ft : Gra						249.69 - 251.87 f : 4 inch	scrn.
					Torzo Gille Galla	4" SS Sump	
			259 ft : Borehole d	rilled depth			
			0 - 76.41 ft : 12-in. 11- csg set w/Cab 76.41 - 2529 ft : 9-in. 8 csg set w/Cab	le Tool -5/8" CS Temp			
Drawing By:	JEA		-				
Reference: Revision:	Hanford Wells	i i					BECHLE
	0						

ON SUN	MAR	VDEDODT	Start Date	. 91	/	
ON SUN	MAR	VERDERORT		. //·	26/00	
		RY REPORT	Finish Dat	e: //	17/00	
					of _1_	
	N N	Well Name: 299- W23-21	Temp. We	II No.: C	23113	
INS: NA				2415	* TARK	FA
1			CHI			
Ing Internatio	mal	Geologist(s): J. M. Faur		/	Thom	nas
nanan	on eq	01111441	01- 7	4,		
DEPTH		DRILLING METH	DD/HOLE	DIAMETER	2	
	D/LD		and the second second		to	
					5 to	259
					to	_
					to	
		A.R. Woonic.				
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Thread	Slot Size	Туре			Volume	Me
58	NO	Cobrado Silver Sand	202.0	- 257.5	36.50	10-
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A CONTRACTOR				August and a second	manan	2.E.B.S.
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	AN ALL AND A REAL PROPERTY OF			1.	1.21	Che
++3/5016-6	49 X36	,5 bags = 1971 543, Bento		lets - D.6	zft3/by	
++3/5016-6	49 X36	,5 bags = 19.71 ft3. Bento /bag X (32 bags = 96.36 f		lets - D.6	zft3/bu	
++3/5016-6	ag X36			lets - D.6	Zft3/bu	
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	DEPTH Shoe O 11 5 9''/2 (C) & Thread (C) & Thread	DEPTH Shoe O.D./I.D. Shoe O.D./I.D. Shoe O.D./I.D. Shoe O.D./I.D.	DEPTH DRILLING METHO Shoe O.D.J.D. Auger:	DEPTH DRILLING METHOD/HOLE Shoe O.D.N.D. Auger: Diameter 1 Cable Tool: Diameter 2 9"/7%" Air Rotary: Diameter 4.R. w/Sonic: Diameter Diameter 6 9"/7%" Air Rotary: Diameter 9 A.R. w/Sonic: Diameter 9 0 Diameter 9 0 Diameter 0 Diameter Diameter 0 Total Amt. Of Water Added During Drilling: Max "0.0 Thread Date Sondes (type) Integration 10/31/co (4.5.)	DEPTH DRILLING METHOD/HOLE DIAMETER Shoe O.D.I.D. Auger: Diameter From	DEPTH DRILLING METHOD/HOLE DIAMETER Shoe O.D./I.D. Auger: Diameter From to // Cable Tool: Diameter From to // Cable Tool: Diameter From to // Air Rotary: Diameter From to // A.R. w/Sonic: Diameter From to Diameter From to Diameter From to // Diameter From to to Diameter From to // Drilling Fluid: //2 0 Total Amt. Of Water Added During Drilling: 500 ga//orts ga//orts // Total Amt. Of Water Added During Drilling: 500 ga//orts ga//orts ga//orts // Date Sondes (type) Interval Date ga//orts // Date Sondes (type) Interval Date ga//orts // Io/31/00 (Strin

WEI	ARY SH	EET			Date: 11/7/00	
Well ID: C 3/13			Well Name	: 2	99-W23-	- 21
	K Farm		Project:		FY 2000 D	
Prepared By: G.S. Thomas	Date: ///	17/00	Reviewed B		Weekes	Date: 12/20/00
Signature: Drug Thomas	-		Signature:	NEW	locked	
CONSTRUCTION DAT	ГА			(GEOLOGIC/HYDR	OLOGIC DATA
Description	Diagr	am	Depth in Feet	Graphic Log	Litholog	gic Description
6-in diameter protective 55	KY IT	T.	0	THE OWNER DOOR	0-0.5': 6	ravel
Cosing set 1.0' above The H-in			_		0.5'-8.5':	
CASING			_			Sand to Slightly Silt
		[-,1]	_		5Am	
4-in ID Schod. 5, 55 3046		1-1			2Am	a
		1.1	25 _	0	20.0'- 36.8' :	Sandy Gravel
Well CASING: 72.10'-> 212.58' bgs		1.1	25 -		a	and a most
12.10 - 212.58 695		1.1		00000000	36.8'-38.5':	Ch C I
RII I CICI		5-51				
Portland Coment Grout:	-11,4++	- 1	-		38.5 - 40.0 :5	lightly Gravelly SAI
0' -> 10.1'	-1,1	1.	-	÷		
	-111	1.1	50 -		40.0'- 80.0':	Sand
Granular Bentonite	611	121	-			
10.1' -> 193.7'		121	-			
			-			
		24	-			
	V/1	1-10	75 —			
Temporary Casing:	1		_		80.0' · B3.0' : G	revelly Srend
113/4"/103/4" set at 76.41"	T FIT	F.]	_	°.6.9.6.9	83.0'- 88.0': 5	Ity sand
11 34 "/ 10 34" set at 76.41' 8 56 "/ 7 518" to 253.5'		-		8-4-10-5	60.0.0	iny onna
		.1		000	88.0'-99.0':	Guntle Se 1
			_	e :+ 0	00.0 77.0 .	Gravely Sand
			100 -	-	a. (- 1
		-	-	7	99.0' - 120.5':	Siand
	- 11	1-	-			
		1	-			
	╡║╢┫╪╪	- F -	-	÷++=7;~;		
	- 11	1	125 -		120.5 - 130.5	: Silty SAnd
All depths in feet below		5	-		130.5'-131.5'	: Smandy Silt
ground Surface		2	_	-7-8	131.5'-139.0';	/
All temp. Casing removed		1	_	+: .+:		Slightly Silty SAND
from the ground.			_		141.5' - 143.5':	
, , , , , , , , , , , , , , , , , , ,						51, shtly 51/ty Shand

Well Name Project: / 2 Reviewed Signature: Depth in Feet / /50	RCRA By: DCU ACAU Graphic Log	GEOLOGIC/HYDROLOGIC DATA Lithologic Description 147'-153': SAndy Silt 153'-158': Sliptity Silty Gravelly Sand 158'-168': Sand 168'-189': Sandy Gravel
Reviewed Signature: Depth in Feet //////////////////////////////////	RCRA By: DCU ACAU Graphic Log	4 FY 2000 Dr; Iling Weckes Date: 12/20/0 ELGA GEOLOGIC/HYDROLOGIC DATA Lithologic Description 147'-153': SANdy SILA 158'- 168': SANd 158'- 168': SANd 168'-189': SANdy Gravel
Signature: Depth in Feet //////////////////////////////////	By: DO	Weckes Date: 12/20/2 ELGA GEOLOGIC/HYDROLOGIC DATA Lithologic Description 147'-153': Sandy Silt 153'-158': Slightly Silty Gravelly Sand 158'-168': Sand 168'-189': Sandy Gravel
Signature: Depth in Feet //////////////////////////////////	Graphic Log	Extraction SEOLOGIC/HYDROLOGIC DATA Lithologic Description 147'-153': Sandy Silt 153'-158': Slightly Silty Gravelly Sand 158'-168': Sand 168'-189': Sandy Gravel
m Feet	Graphic Log	Lithologic Description 147'-153': Sandy Silt 153'-158': Slightly Silty Gravelly Sand 158'-168': Sand 168'-189': Sandy Gravel
m Feet	Log	147-153': Sandy Silt 153'-158': Sliphty Silty Gravelly Sand 158'-168': Sand 168'-189': Sandy Gravel
		153'-158': Slightly Silty Gravelly Sand 158'-168': Sand 168'-189': Sandy Gravel
- - - - - - - - - - - - - - - - - - -		153'-158': Slightly Silty Gravelly Sand 158'-168': Sand 168'-189': Sandy Gravel
- - - - - - - - - - - - - - - - - - -		168'-189': Jandy Gravel
- 175 — 		
-		
× × –		189'-193': Slightly Silty Gravelly Sp 193'-197.5': Gravelly Sitty Sand
200		197.5'- 204': Gravelly Sandy Silt W.L. = 212.88' bgs (11/3/00)
		204'- 214': Sifty Sandy Gravel
		214'-219': Gravelly Sandy Sitt
-		214'- 240': Silty Sandy Gravel
- 20		246'-255': Sandy Gravel
		255' - 259': Gravelly Silty Stand
-	-	TD 259'
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