

GW - 32

MONITORING REPORTS

DATE:

8/04 - NAVAJO

WW's



NAVAJO TRIBAL UTILITY AUTHORITY

AN ENTERPRISE OF THE NAVAJO NATION

August 11, 2004

Dave Cobrain, Staff Manager
Hazardous Waste Bureau
State of New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303



Ref: Requested Well Information

Dear Mr. Cobrain:

Please find enclosed available information concerning wells 16T-666 and 16T-668 at Iyanbito, NM. Because both wells are flowing and there are no mechanisms in place for monitoring potentiometric pressure, static water level data does not exist. Also, the NTUA does not have copies of requested drilling log information. The Navajo Nation Water Management Branch does have a copy of the electric logs. If desired, these can be obtained by contacting Amelia Edison, Librarian, at 928-729-4004. Provided, per your request, are complete water quality test results, aquifer test results and well construction drawings.

If you require additional assistance, please contact Bruce McVicker, Staff Engineer, or Rex Kontz, Deputy General Manager, at 928-729-5721.

Sincerely,

Rex Kontz, Deputy General Manager
Navajo Tribal Utility Authority

enclosures

xc: Jerry Silago, WWW Foreman, Crownpoint Sub-office, NTUA
Philemon Allison, District Manager, Crownpoint Sub-office, NTUA
Kenneth Begay, District Manager, Fort Defiance District, NTUA
Bruce McVicker, Staff Engineer, Headquarters, NTUA
Randall Medicine Bear, General Manager, Headquarters, NTUA
Paula Holyan, Administrative Coordinator, Headquarters, NTUA
Prestene Gamenez, Supervisor, Headquarters, NTUA



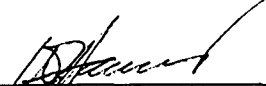
Client: USPHS-IHS Gallup
Project: SDWA
Sample ID: Well 16T-668
Lab ID: 0399W01128
Matrix: Water
Condition: Cool/Intact

Date Received: 02/24/99
Date Reported: 03/09/99
Date Sampled: 02/24/99
Time Sampled: 0900

Parameter	Analytical		Analysis						
	Result	Units	Units	PQL	Method	Date	Time	Init.	
GENERAL PARAMETERS									
PH	7.5	s.u.		0.1	EPA 150.1	02/24/99	0900	KH	
Electrical Conductivity	1,220	µmhos/cm		10	EPA 120.1	02/24/99	0900	KH	
Solids - Total Dissolved	990	mg/L		10	EPA 160.1	03/01/99	0854	GD	
Color	<1	C.U.		1	EPA 110.3	02/24/99	1450	KH	
Cyanide (Total) - RFA	<0.01	mg/L		0.01	EPA 335.3	03/01/99	0800	AP	
Odor	<1	T.O.N.		1	EPA 140.1	02/24/99	0800	KH	
Nitrogen - Nitrate	0.07	mg/L		0.05	EPA 353.2	03/02/99	1414	SH	
Nitrogen - Nitrite	<0.05	mg/L		0.05	EPA 353.2	02/26/99	0819	SH	
Surfactants	<0.05	mg/L		0.05	EPA 425.1	02/24/99	1450	KH	
Alkalinity (CaCO3)	184	mg/L		1	EPA 310.1	03/03/99	1417	GD	
Hardness (CaCO3)	680	mg/L		0.2	Calculation	03/08/99	1030	BJ	
MAJOR ANIONS									
Bicarbonate (HCO3)	225	mg/L	3.68	meq/L	1	EPA 310.1	03/03/99	1417	GD
Carbonate (CO3)	<1	mg/L	<0.01	meq/L	1	EPA 310.1	03/03/99	1417	GD
Hydroxide (OH)	<1	mg/L	<0.01	meq/L	1	EPA 310.1	03/03/99	1417	GD
Chloride	7	mg/L	0.19	meq/L	1	EPA 300.0	03/01/99	0900	BJ
Fluoride	0.19	mg/L	0.01	meq/L	0.05	EPA 340.2	03/02/99	0800	GD
Nitrogen - Nitrate/Nitrite	0.07	mg/L	<0.01	meq/L	0.05	EPA 353.2	03/02/99	1414	SH
Sulfate	507	mg/L	10.6	meq/L	5	EPA 300.0	03/01/99	0900	BJ
MAJOR CATIONS									
Calcium	198	mg/L	9.90	meq/L	0.2	EPA 200.7	03/03/99	1141	WL
Magnesium	44.9	mg/L	3.69	meq/L	0.2	EPA 200.7	03/03/99	1141	WL
Potassium	2.0	mg/L	0.05	meq/L	0.2	EPA 200.7	03/03/99	1141	WL
Sodium	16.1	mg/L	0.70	meq/L	0.2	EPA 200.7	03/03/99	1141	WL
CATION/ANION BALANCE QC INFORMATION									
Anion Sum			14.4	meq/L	0.1	Calculation	03/09/99	1235	BJ
Cation Sum			14.4	meq/L	0.1	Calculation	03/09/99	1235	BJ
Cation/Anion Balance			0.28	%	N/A	Calculation	03/09/99	1235	BJ

Reference: EPA - "Methods for Chemical Analysis of Water and Wastes (MCAWW)" - EPA/600/4-79-020 - March, 1983.
EPA - "Methods for the Determination of Metals in Environmental Samples" - Supplement I - 600/R-94-111 - May, 1994.

Reviewed By:


Wes Harvey, Laboratory Manager



Inter-Mountain Laboratories, Inc.

Phone (505) 326-4737 Fax (505) 325-4182

2506 West Main Street, Farmington, NM 87401

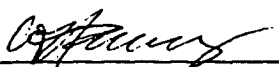
Client: USPHS-IHS Gallup
Project: SDWA
Sample ID: Well 16T-668
Lab ID: 0399W01128
Matrix: Water
Condition: Cool/Intact

Date Received: 02/24/99
Date Reported: 03/09/99
Date Sampled: 02/24/99
Time Sampled: 0900

Parameter	Analytical		Units	Units	PQL	Method	Analysis		
	Result						Date	Time	Init.
TOTAL METALS									
Aluminum	<0.05	mg/L			0.05	EPA 200.7	03/04/99	1637	WL
Antimony	0.005	mg/L			0.005	EPA 200.9	02/26/99	0920	SW
Arsenic	<0.005	mg/L			0.005	SM 3114B	03/09/99	1329	SH
Barium	<0.01	mg/L			0.01	EPA 200.7	03/04/99	1637	WL
Beryllium	<0.002	mg/L			0.002	EPA 200.7	03/04/99	1637	WL
Cadmium	<0.001	mg/L			0.001	EPA 200.9	03/01/99	1230	SW
Chromium	<0.01	mg/L			0.01	EPA 200.7	03/04/99	1637	WL
Copper	<0.001	mg/L			0.001	EPA 200.9	02/25/99	1300	SW
Iron	0.32	mg/L			0.02	EPA 200.7	03/04/99	1637	WL
Manganese	0.04	mg/L			0.01	EPA 200.7	03/04/99	1637	WL
Lead	<0.005	mg/L			0.005	EPA 200.9	03/04/99	0830	SW
Mercury	<0.001	mg/L			0.001	EPA 245.1	03/04/99	1133	SH
Nickel	<0.01	mg/L			0.01	EPA 200.7	03/04/99	1637	WL
Selenium	<0.005	mg/L			0.005	SM 3114B	02/26/99	1549	SH
Silver	<0.01	mg/L			0.01	EPA 200.7	03/04/99	1637	WL
Thallium	<0.002	mg/L			0.002	EPA 200.9	02/26/99	1035	SW
Zinc	0.141	mg/L			0.025	EPA 200.7	03/04/99	1637	WL

Reference: EPA - "Methods for the Determination of Metals in Environmental Samples" - Supplement I - 600/R-94-111 - May, 1994.
SM - "Standard Methods for the Examination of Water and Wastewater", APHA-AWWA-WEF, 19th Edition, 1995.

Reviewed By:


Wes Harvey, Laboratory Manager



Notes:

Comments:

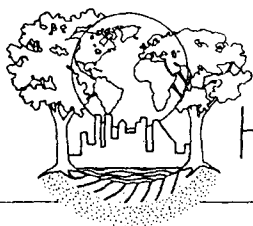
- 1.0) Soil and Sludge analysis are reported on a wet basis or an as received basis unless otherwise indicated.
- 2.0) The data in this report are within the limits of uncertainty specified in the reference method unless specified.
- 3.0) Modified analysis procedures are procedures that are modified to meet the certain specifications. An example may be the use of a water method to analyze a solid matrix due to the lack of an officially recognized procedure for the analysis of the solid matrix.
- 4.0) Derived Air Concentrations and Effluent Release Concentrations are obtained from 10 CFR 20 Appendix B
- 5.0) Total activity is actually total gamma activity and is determined utilizing the prominent gamma emitters from the naturally occurring radioactive decay chains and other prominent radioactive nuclides. Total activity may be lower than actual total activity due to the extent of secular equilibrium achieved in the various decay chains at the time of analysis. The total activity is not representative of nuclides that emit solely alpha or beta particles.
- 6.0) Ra-228 is determined via secular equilibrium with its daughter, Actinium 228. (Gamma Spectroscopy only)
- 7.0) U-238 is determined via secular equilibrium with its daughter, Thorium 234. (Gamma Spectroscopy only)
- 8.0) All Gamma spectroscopy was performed utilizing high purity germanium detectors (HPGE).

Method References:

- 1.0) EPA 600/4-80-032, Prescribed Procedures for the Measurement of Radioactivity in Drinking Water, August 1980.
- 2.0) Standard Methods for the Examination of Water and Waste Water, 18th, 1992
- 3.0) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, (9/86). (Updated through 1995)
- 4.0) EPA 600/4/79-020, Methods for Chemical Analysis of Water and Waste, March 1983.
- 5.0) HASL 300

Definitions:

- | | | |
|-------|-----------------|--|
| 1.0) | BDL | Analyte not detected because the value was below the detection limit. |
| 2.0) | ND | Not detected above the detection limit. |
| 3.0) | Detection Limit | The minimum amount of the analyte that ARS can detect utilizing the specific analysis. |
| 4.0) | B | Method Blank |
| 5.0) | D | Method Duplicate |
| 6.0) | MS | Matrix Spike |
| 7.0) | S | Spike |
| 8.0) | RS | Reference Spike |
| 9.0) | *SC | Subcontracted out to another qualified laboratory |
| 10.0) | NR | Not Referenced |



Environmental Health Laboratories

110 S. Hill Street
South Bend, IN 46617-2702
(219) 233-4777
(219) 233-3272
FAX (219) 233-8207

LABORATORY REPORT

Client: Inter-Mountain Laboratories
Attn: Kristi Hutchings
2506 West Main Street
Farmington, NM 87401

Report : 391004-09(07)
Priority: Standard Written
Status: Final

Sampling Point: 1128

Samples Submitted: One drinking water sample

Copies to: None

-----Collected-----

Date: 02/24/99 Time: 09:00

By: Client

-----Received-----

Date: 02/26/99 Time: 09:45

REPORT SUMMARY

None of the analytes included in the detailed parameter list were detected in the sample submitted for analysis.

Note: Sample containers were provided by the client.

Detailed quantitative results are presented on the following page.

Results of all associated quality control samples were within acceptance limits, except where noted. No project specific quality control was requested.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call us at (219) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from Environmental Health Laboratories (div. of MAS Technology Corporation).

Reviewed By:

Date: 3-16-99

Finalized By:

Date: 3/16/99

Sampling Point: 1128

PARAMETER	Report Limit ** (ug/L)	Result (ug/L)	MCL (ug/L)	PARAMETER	Report Limit ** (ug/L)	Result (ug/L)
Regulated Parameters				Unregulated Parameters		
Benzene	0.5	< 0.5	5	Bromobenzene	0.2	< 0.2
Bromodichloromethane	0.1	< 0.1	100 *	Bromochloromethane	0.2	< 0.2
Bromoform	0.1	< 0.1	100 *	Bromomethane	0.5	< 0.5
Carbon tetrachloride	0.1	< 0.1	5	n-Butylbenzene	0.2	< 0.2
Chlorobenzene	0.2	< 0.2	100	sec-Butylbenzene	0.2	< 0.2
Chloroform	0.1	< 0.1	100 *	tert-Butylbenzene	0.2	< 0.2
Dibromochloromethane	0.1	< 0.1	100 *	Chloroethane	0.5	< 0.5
1,2-Dibromo-3-Chloropropane	0.2	< 0.2	0.2 †	Chloromethane	0.5	< 0.5
1,2-Dibromoethane(EDB)	0.1	< 0.1	0.05 †	2-Chlorotoluene (o-)	0.2	< 0.2
1,2-Dichlorobenzene	0.1	< 0.1	600	4-Chlorotoluene (p-)	0.2	< 0.2
1,4-Dichlorobenzene	0.1	< 0.1	75	Dibromomethane	0.1	< 0.1
1,2-Dichloroethane	0.1	< 0.1	5	1,3-Dichlorobenzene	0.1	< 0.1
1,1-Dichloroethylene	0.2	< 0.2	7	Dichlorodifluoromethane	0.5	< 0.5
cis-1,2-Dichloroethylene	0.1	< 0.1	70	1,1-Dichloroethane	0.1	< 0.1
trans-1,2-Dichloroethylene	0.1	< 0.1	100	1,3-Dichloropropane	0.1	< 0.1
Dichloromethane	0.5	< 0.5	5	2,2-Dichloropropane	0.2	< 0.2
1,2-Dichloropropane	0.1	< 0.1	5	1,1-Dichloropropylene	0.1	< 0.1
1,4-Dimethylbenzene	0.1	< 0.1	700	cis-1,3-Dichloropropylene	0.1	< 0.1
Styrene	0.2	< 0.2	100	trans-1,3-Dichloropropylene	0.1	< 0.1
Tetrachloroethylene	0.2	< 0.2	5	Hexachlorobutadiene	0.2	< 0.2
Toluene	0.5	< 0.5	1000	Isopropylbenzene	0.1	< 0.1
1,2,4-Trichlorobenzene	0.2	< 0.2	70	4-Isopropyltoluene (p-)	0.1	< 0.1
1,1,1-Trichloroethane	0.1	< 0.1	200	Naphthalene	0.2	< 0.2
1,1,2-Trichloroethane	0.1	< 0.1	5	n-Propylbenzene	0.1	< 0.1
Trichloroethylene	0.1	< 0.1	5	1,1,1,2-Tetrachloroethane	0.1	< 0.1
Vinyl chloride	0.2	< 0.2	2	1,1,2,2-Tetrachloroethane	0.1	< 0.1
Total Xylenes	0.2	< 0.2	10,000	1,2,3-Trichlorobenzene	0.2	< 0.2
				Trichlorofluoromethane	0.5	< 0.5
				1,2,3-Trichloropropane	0.2	< 0.2
				1,2,4-Trimethylbenzene	0.1	< 0.1
				1,3,5-Trimethylbenzene	0.1	< 0.1

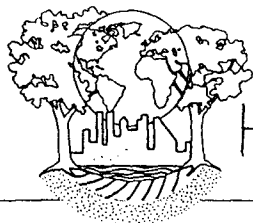
Method: 524.2

Analysis Date: 03/04/99

* The MCL of 100 ug/L is for total trihalomethanes and compliance samples must be collected from the distribution system.

** EHL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

† Compliance monitoring for these parameters must be done using EPA method 504.1



Environmental Health Laboratories

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LABORATORY REPORT

Client: Inter-Mountain Laboratories
Attn: Kristi Hutchings
2506 West Main Street
Farmington, NM 87401

Report : 391004-09(04-06+08-09)

Priority: Standard Written

Status: Final

Sampling Point: 1128

Samples Submitted: Five drinking water samples

Copies to: None

-----Collected-----
Date: 02/24/99 Time: 09:00 By: Client

-----Received-----
Date: 02/26/99 Time: 09:45

REPORT SUMMARY

Ji (2-ethylhexyl)phthalate was detected in the sample submitted for analysis at a concentration of 1.2 ug/L, which is less than the current MCL of 6 ug/L. Method 525.2 section 13.2.4 states that phthalates can "appear in variable quantities in laboratory and field reagent blanks, and generally cannot be accurately measured at levels below about 2 ug/L." Di(2-ethylhexyl)phthalate was not detected in the associated laboratory method blank. None of the other analytes included in the detailed parameter list were detected in the sample submitted for analysis.

Note: Sample containers were provided by the client.

Detailed quantitative results are presented on the following page.

Results of all associated quality control samples were within acceptance limits, except where noted. No project specific quality control was requested.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call us at (219) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from Environmental Health Laboratories (div. of MAS Technology Corporation).

Reviewed By:

Date: 3-16-99

Finalized By:

Date: 3/16/99

Sampling Point: 1128

PARAMETER	SDWA Method	MDL * (ug/L)	Results (ug/L)	MCL (ug/L)	Extraction Date	Analysis Date	Lab Number
Alachlor (Lasso)	525.2	0.1	< 0.1	2	03/01/99	03/03/99	391008
Aldicarb	531.1	0.5	< 0.5	3	03/02/99	03/03/99	391009
Aldicarb Sulfone	531.1	0.4	< 0.4	2	03/02/99	03/03/99	391009
Aldicarb Sulfoxide	531.1	0.5	< 0.5	4	03/02/99	03/03/99	391009
Aldrin	525.2	0.1	< 0.1	---	03/01/99	03/03/99	391008
Aroclor 1016	505	0.08	< 0.08	£	03/04/99	03/04/99	391005
Aroclor 1221	505	2.0	< 2.0	£	03/04/99	03/04/99	391005
Aroclor 1232	505	0.5	< 0.5	£	03/04/99	03/04/99	391005
Aroclor 1242	505	0.3	< 0.3	£	03/04/99	03/04/99	391005
Aroclor 1248	505	0.1	< 0.1	£	03/04/99	03/04/99	391005
Aroclor 1254	505	0.1	< 0.1	£	03/04/99	03/04/99	391005
Aroclor 1260	505	0.2	< 0.2	£	03/04/99	03/04/99	391005
Atrazine	525.2	0.1	< 0.1	3	03/01/99	03/03/99	391008
Benzo(a)pyrene	525.2	0.02	< 0.02	0.2	03/01/99	03/03/99	391008
Butachlor	525.2	0.1	< 0.1	---	03/01/99	03/03/99	391008
Carbaryl	531.1	1.0	< 1.0	---	03/02/99	03/03/99	391009
Carbofuran	531.1	0.9	< 0.9	40	03/02/99	03/03/99	391009
alpha-Chlordane	525.2	0.1	< 0.1	---	03/01/99	03/03/99	391008
gamma-Chlordane	525.2	0.1	< 0.1	---	03/01/99	03/03/99	391008
Chlordane	505	0.2	< 0.2	2	03/04/99	03/04/99	391005
2,4-D	515.1	0.1	< 0.1	70	03/01/99	03/02/99	391006
Dalapon	515.1	1.0	< 1.0	200	03/01/99	03/02/99	391006
1,2-Dibromo-3-chloropropane	504.1	0.02	< 0.02	0.2	03/02/99	03/03/99	391004
Dicamba	515.1	0.1	< 0.1	---	03/01/99	03/02/99	391006
Dieldrin	525.2	0.1	< 0.1	---	03/01/99	03/03/99	391008
Di (2-ethylhexyl) adipate	525.2	0.6	< 0.6	400	03/01/99	03/03/99	391008
Di (2-ethylhexyl) phthalate	525.2	0.6	1.2	6	03/01/99	03/03/99	391008
Dinoseb	515.1	0.1	< 0.1	7	03/01/99	03/02/99	391006
Diquat				20			
Endothall				100			
Endrin	525.2	0.01	< 0.01	2	03/01/99	03/03/99	391008
Ethylene dibromide (EDB)	504.1	0.01	< 0.01	0.05	03/02/99	03/03/99	391004
Glyphosate (Round-up)				700			
Heptachlor	525.2	0.04	< 0.04	0.4	03/01/99	03/03/99	391008
Heptachlor epoxide	525.2	0.02	< 0.02	0.2	03/01/99	03/03/99	391008
Hexachlorobenzene	525.2	0.1	< 0.1	1	03/01/99	03/03/99	391008
Hexachlorocyclopentadiene	525.2	0.1	< 0.1	50	03/01/99	03/03/99	391008
3-Hydroxycarbofuran	531.1	1.0	< 1.0	---	03/02/99	03/03/99	391009
Lindane (gamma-BHC)	525.2	0.02	< 0.02	0.2	03/01/99	03/03/99	391008
Methoxychlor	525.2	0.1	< 0.1	40	03/01/99	03/03/99	391008
Methomyl	531.1	0.5	< 0.5	---	03/02/99	03/03/99	391009
Metolachlor (Dual)	525.2	0.1	< 0.1	---	03/01/99	03/03/99	391008
Metribuzin (Sencor)	525.2	0.1	< 0.1	---	03/01/99	03/03/99	391008
Oxamyl (Vydate)	531.1	1.0	< 1.0	200	03/02/99	03/03/99	391009
Pentachlorophenol	515.1	0.04	< 0.04	1	03/01/99	03/02/99	391006
Picloram (Tordon)	515.1	0.1	< 0.1	500	03/01/99	03/02/99	391006
Propachlor	525.2	0.1	< 0.1	---	03/01/99	03/03/99	391008
2,4,5-TP (Silvex)	515.1	0.1	< 0.1	50	03/01/99	03/02/99	391006
Simazine	525.2	0.07	< 0.07	4	03/01/99	03/03/99	391008
2,3,7,8-TCDD (Dioxin)				0.00003			
Toxaphene	505	1.0	< 1.0	3	03/04/99	03/04/99	391005

* EHL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

£ Any positive Aroclor result would require analysis for total PCB as decachlorobiphenyl by method 508A (MCL = 0.5 ug/L).



2033 Heritage Park Drive
Oklahoma City, OK 73120
Ph. (405) 755-7272
Fax (405) 755-2058

Transmission Electron Microscopy
Asbestos Analysis Report
Non-Potable Water Sample

Quantem Sample ID: 9903T076001
Client Sample ID: 1128
Sample Location: 1ML Farmington

Client: Assaigai Analytical Laboratories, Inc.
Account Number: A076

Date/Time Prepared: March 1, 1999 14:00
Prepared By: Tony Lehring
Analyzed By: Phillip Dang
Methodology: EPA 600/4-84-043

Sample Aliquot (mL): 100 mL
Filter Type: 0.22 μ m 47mm MCE (1385mm²)
Filter Area Analyzed (mm²): 0.0708
Instrument: JEOL 100C / 10KX Magnification
Grid Archival: 2119 D1 D2 D3

Analysis Summary

Structure	Chrysotile Asbestos		Amphibole Asbestos	
	<5 μ m	$\geq$ 5 μ m	<5 μ m	$\geq$ 5 μ m
Free Fibers	0	0	0	0
Fiber Bundles	0	0	0	0

Analysis Results

Structures Counted

Total Asbestos <5 μ m 0

Total Asbestos $\geq$ 5 μ m 0

Analytical Sensitivity 0.196 MFL

Asbestos Concentration <5 μ m <0.196 MFL

Asbestos Concentration $\geq$ 5 μ m <0.196 MFL

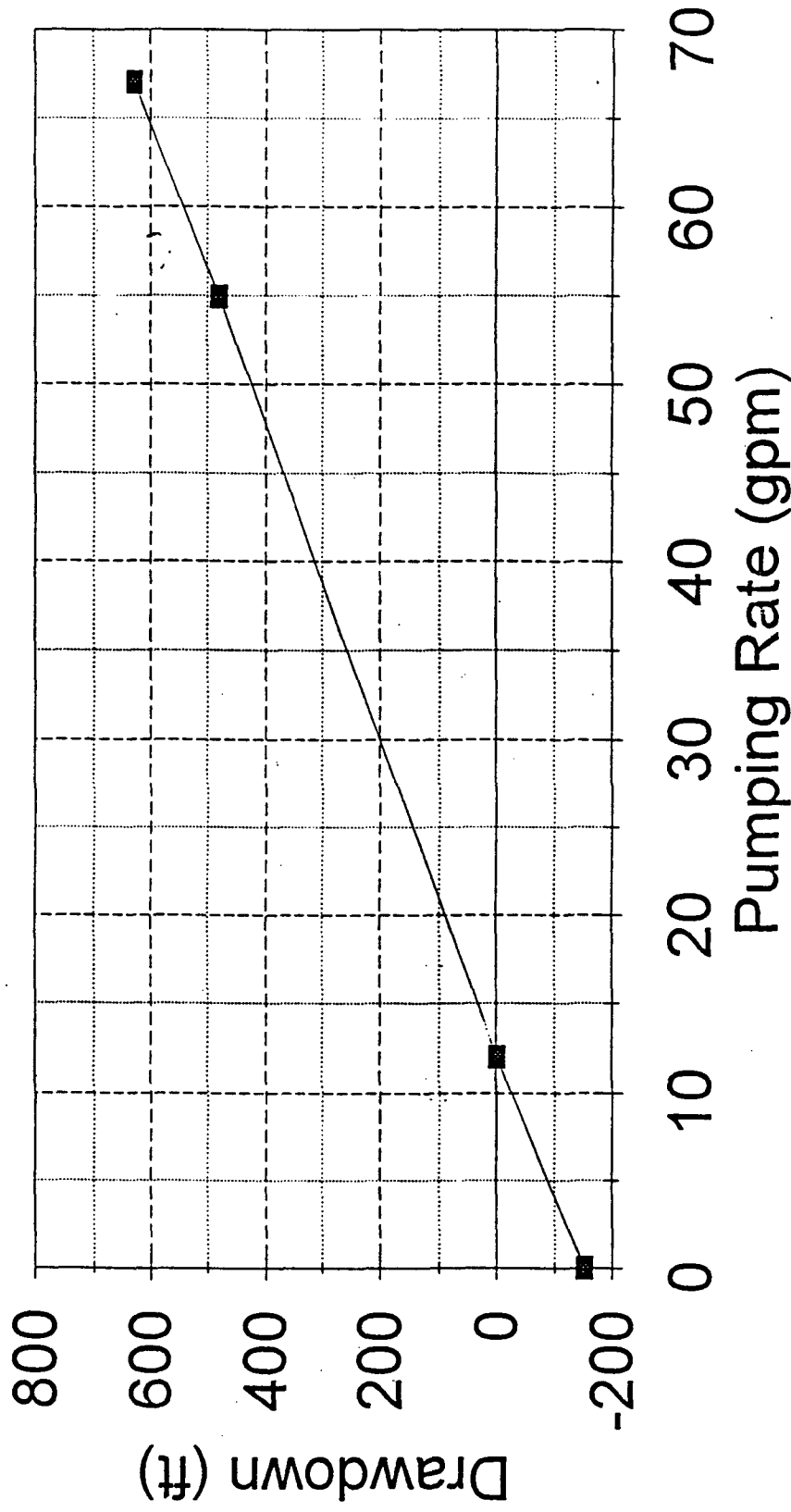
Total Concentration <0.196 MFL


(Reviewed and Approved)

March 2, 1999
(Date)

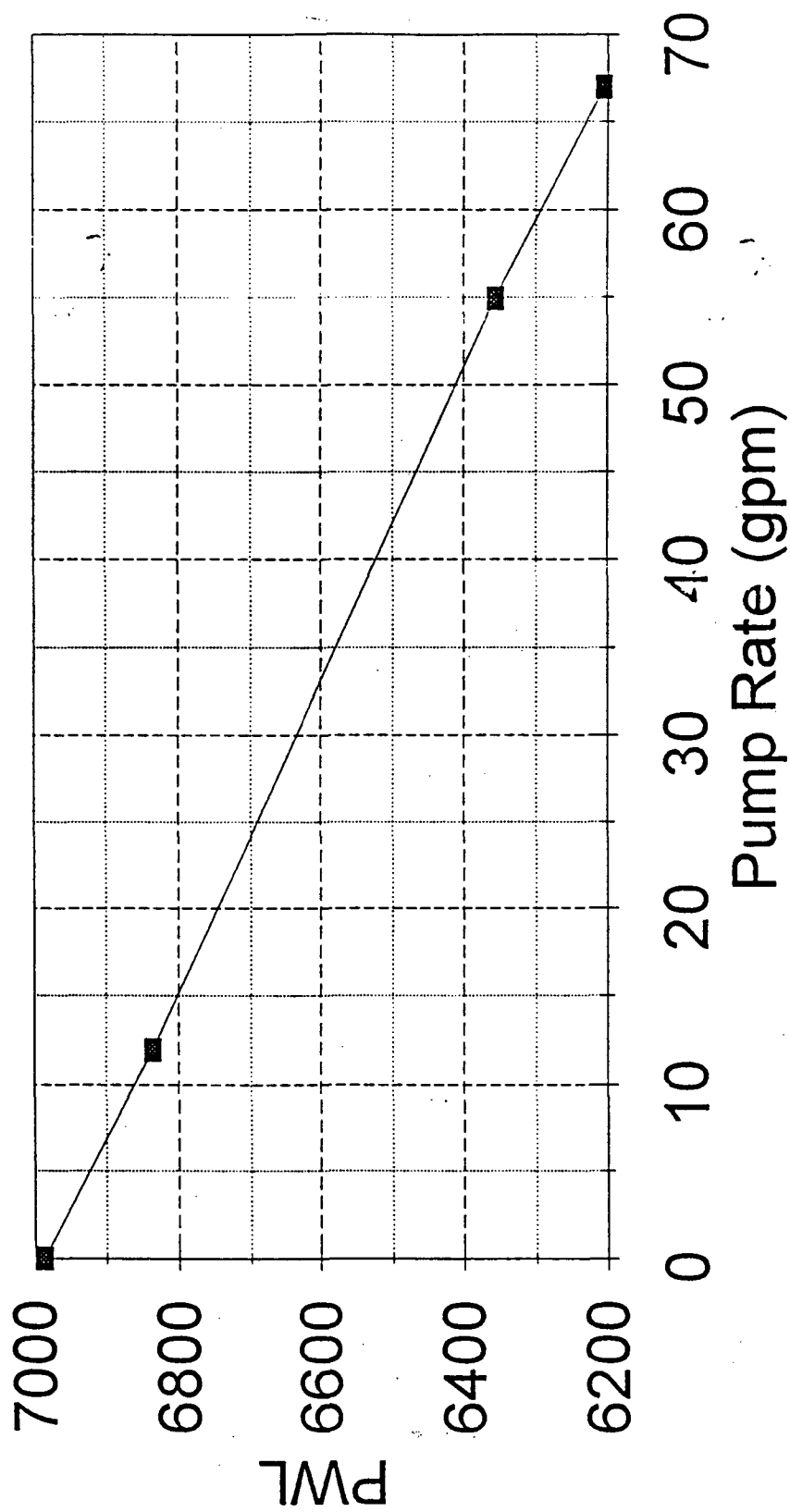
Well 16T-668

pump test 12/13/95



Well 16T-668

pump test 12/13/95



**MODEL
40S**

40 GPM

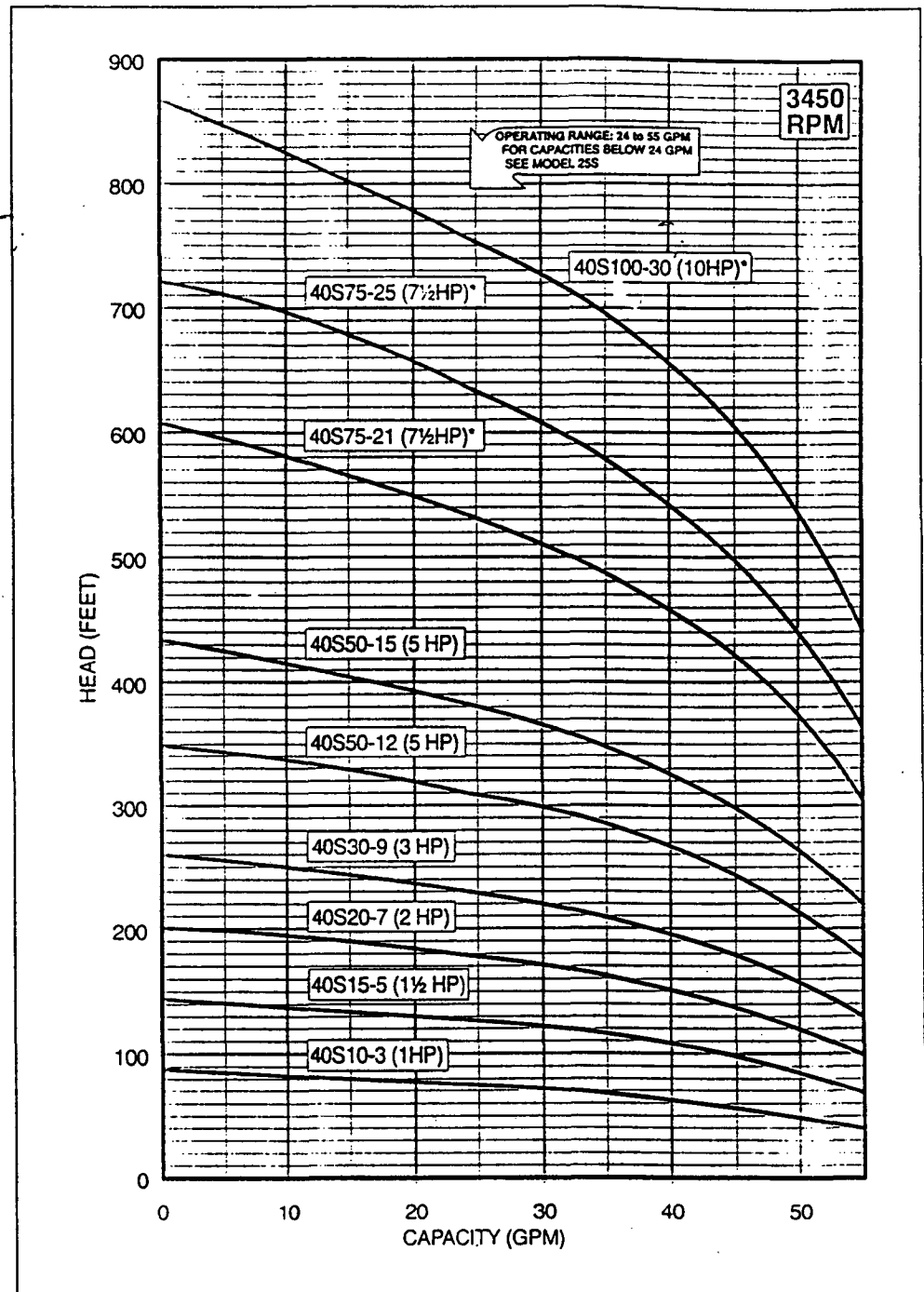
GRUNDFOS

FLOW RANGE
24 to 55 GPM

PUMP OUTLET
2" NPT



PERFORMANCE CURVES



DIMENSIONS AND WEIGHTS

MODEL NO.	HP	LENGTH (INCHES)	WIDTH (INCHES)	APPROX. UNIT SHIPPING WT. (LBS.)
40S10-3	1	24 7/8	3 15/16	32
40S15-5	1 ½	30 ½	3 15/16	37
40S20-7	2	33	3 15/16	41
40S30-9	3	43 3/8	3 15/16	65
40S50-12	5	51 1/8	3 15/16	78
40S50-15	5	56 1/8	3 15/16	84
40S75-21	7 ½*	74 ½	3 15/16	120
40S75-25	7 ½*	81 1/8	3 15/16	124
40S100-30	10*	103 ½	3 15/16	181

*-inch motor is provided as standard for these models.

Specifications are subject to change without notice.

See Deep Set models for higher head.

1	7455162	34.0	9.0	340
3	7455295	85.0	35.0	850.0
4	7455390	95.0	48.0	950.0
5	7455482	92.0	58.2	920.0
6	7455575	93.0	69.7	930.0
7	7455660	85.0	74.3	850.0
8	7455750	90.0	85.0	900.0
9	7455840	90.0	87.3	900.0
10	7455927	87.0	93.0	870.0
12	7456135	104.0	110.0	1040.0
14	7456380	122.5	123.5	1225.0
16	7456555	87.5	125.4	875.0
18	7456740	92.5	134.3	925.0
20	7456900	80.0	143.0	800.0
25	7457330	86.0	152.5	860.0
30	7457757	85.4	166.2	854.0
35	7458180	84.6	178.3	846.0
40	7458600	84.0	189.2	840.0
45	7459018	83.6	196.1	836.0
50	7459432	82.8	205.0	828.0
55	7459842	82.0	212.1	820.0
60	7460250	81.6	219.2	816.0
75	7461451	80.1	235.6	800.7
90	7462620	77.9	248.0	779.3
105	7463736	74.4	266.5	744.0
120	7464810	71.6	265.0	716.0
150	7467000	73.0	281.3	730.0
180	7469050	68.3	294.2	683.3
210	7471140	69.7	309.7	696.7
240	7473395	75.2	319.0	751.7
270	7475455	68.7	328.2	686.7
300	7477445	66.3	336.1	663.3
330	7479600	71.8	343.0	718.3
360	7481760	72.0	359.0	720.0
390	7483612	61.7	351.3	617.3
420	7485426	60.5	354.4	604.7
450	7487415	66.3	358.0	663.0
480	7489494	69.3	361.5	693.0
496	7491365	116.9	480.0	1169.4
498	7491640	137.5	485.0	1375.0
500	7491885	122.5	492.7	1225.0
505	7492510	125.0	510.8	1250.0
510	7493060	110.0	517.4	1100.0
515	7493723	132.6	524.0	1326.0
520	7494458	147.0	531.6	1470.0
525	7494985	105.4	539.3	1054.0
530	7495500	103.0	544.0	1030.0
535	7496207	141.4	550.8	1414.0
540	7496714	101.4	557.2	1014.0
555	7498500	119.1	570.7	1190.7
570	7500285	119.0	581.6	1190.0
585	7502200	127.7	593.7	1276.7
600	7504100	126.7	602.5	1266.7
630	7507087	99.6	616.2	995.7
690	7513400	105.2	635.7	1052.2
728	7517295	102.5	645.3	1025.0

750	7519620	105.7	649.1	1056.8
780	7522710	103.0	661.5	1030.0
810	7525983	109.1	667.3	1091.0
840	7528933	98.3	671.6	983.3
870	7532058	104.2	677.0	1041.7
900	7535060	100.1	681.5	1000.7
930	7538147	102.9	686.0	1029.0
960	7541120	99.1	689.6	991.0
961	7541222	102.0	689.6	1020.0
962	7541321	99.0	689.6	990.0
963	7541423	102.0	690.0	1020.0
964	7541525	102.0	690.6	1020.0
965	7541624	99.0	690.0	990.0
966	7541723	99.0	690.0	990.0
967	7541827	104.0	691.0	1040.0
968	7541935	108.0	693.0	1080.0
969	7542045	110.0	696.0	1100.0
970	7542157	112.0	698.0	1120.0
972	7542390	116.5	703.0	1165.0
974	7542623	116.5	707.0	1165.0
976	7542850	113.5	710.0	1135.0
978	7543085	117.5	713.0	1175.0
980	7543320	117.5	716.0	1175.0
985	7543918	119.6	724.6	1196.0
990	7544517	119.8	730.0	1198.0
995	7545136	123.8	737.0	1238.0
1000	7545711	115.0	740.0	1150.0
1005	7546304	118.6	744.0	1186.0
1010	7546893	117.8	747.0	1178.0
1015	7547483	118.0	750.0	1180.0
1020	7548069	117.2	753.5	1172.0
1035	7549824	117.0	760.0	1170.0
1050	7551559	115.7	765.7	1156.7
1065	7553282	114.9	770.0	1148.7
1080	7554991	113.9	774.0	1139.3
1110	7558380	113.0	780.0	1129.7
1140	7561739	112.0	785.3	1119.7
1170	7565075	111.2	789.6	1112.0
1200	7568391	110.5	794.0	1105.3
1230	7571760	112.3	797.0	1123.0
1260	7574965	106.8	800.0	1068.3
1290	7578285	110.7	802.8	1106.7
1320	7581530	108.2	805.6	1081.7
1350	7584750	107.3	807.4	1073.3
1380	7587948	106.6	810.0	1066.0
1410	7591141	106.4	812.3	1064.3
1440	7594323	106.1	814.0	1060.7
1470	7597495	105.7	816.2	1057.3
1500	7600655	105.3	817.8	1053.3
1530	7603805	105.0	820.0	1050.0
1560	7606948	104.8	821.3	1047.7
1590	7610075	104.2	822.6	1042.3
1620	7613199	104.1	823.9	1041.3
1650	7616306	103.6	825.4	1035.7
1680	7619405	103.3	829.5	1033.0
1710	7622454	101.6	830.6	1016.3

1740	7625546	103.1	831.8	1030.7
1770	7628709	105.4	833.3	1054.3
1801	7631908	103.2	830.0	1031.9
1802	7632011	103.0	829.0	1030.0
1803	7632097	86.0	823.0	860.0
1804	7632167	70.0	817.9	700.0
1805	7632238	71.0	812.3	710.0
1806	7632305	67.0	807.0	670.0
1807	7632371	66.0	802.6	660.0
1808	7632439	68.0	799.2	680.0
1809	7632504	65.0	796.6	650.0
1811	7632561	28.5	789.0	285.0
1813	7632671	41.8	779.0	417.5
1815	7632768	48.5	768.0	485.0
1817	7632861	46.5	769.6	465.0
1819	7632951	45.0	750.0	450.0
1821	7633039	44.0	741.0	440.0
1826	7633254	43.0	724.3	430.0
1831	7633476	44.4	709.0	444.0
1836	7633708	46.4	700.6	464.0
1841	7633940	46.4	691.0	464.0
1846	7634176	47.2	683.4	472.0
1851	7634604	85.6	670.0	856.0
1856	7634849	49.0	669.0	490.0
1861	7635091	48.4	659.3	484.0
1876	7635833	49.5	641.6	494.7
1891	7636584	50.1	629.0	500.7
1906	7637349	51.0	621.0	510.0
1921	7638121	51.5	612.0	514.7
1951	7639687	52.2	597.3	522.0
1981	7641268	52.7	585.5	527.0
2011	7642862	53.1	575.0	531.3
2041	7644473	53.7	567.3	537.0
2071	7646090	53.9	559.0	539.0
2101	7647720	54.3	553.0	543.3
2131	7649360	54.7	549.0	546.7
2706	7681000	55.0	496.3	550.3
2726	7682076	53.8	495.0	538.0
2756	7683689	53.8	492.3	537.7
2846	7688527	53.8	486.0	537.6
3035	7698768	54.2	484.0	541.9
3093	7701916	54.3	483.0	542.8
4155	7758900	53.7	469.0	536.6
4188	7760475	80.0	495.0	800.0
4191	7760712	79.0	509.0	790.0
4543	7786446	73.1	556.5	731.1
5516	7854080	69.5	615.0	695.1
6156	7897990	68.6	625.0	686.1
7056	7958848	67.6	627.0	676.2

Navajo Area IHS - Well Pump Test Data Collection Form

Date	12/12/15					Step No.	1
Well No.	165-268					Desired Flow	80
Well						Community	Ignabito
				Pumping	Drawdown	Water	
		Elapsed		Level/Depth	or	Meter	
		Time	Discharge	To Water	Recovery	Reading	
Time		(Minutes)	(GPM)	(ft)	(ft)	(gal)	Comments
12:30	0			0	0	7455128	
12:31	1		34	9.0		7455162	
	2		48			7455210	
	3		85	35.0		295	
12:34	4		95	48.0		390	
12:35	5		92	58.2		482	
12:36	6		93	69.7		575	
12:37	7	7	85	74.3		660	
12:38	8		90	85.0		750	
12:39	9		90	87.3		840	
12:40	10	10	87	93.0		5927	
12:42	12		104.0	110.0		7456135	208/12 = 10.4
12:44	14	14	72.5	123.5		7456380	72.5/12 = 6.04
12:46	16		87.5	125.4		7456555	175/16 = 10.94
12:48	18			134.3		7456740	
12:50	20			143.0		7456900	445/4 = 11.25
12:55	25		86.0	152.5		7457330	430/5 = 86
13:00	30		85.4	166.2		7457757	427/5 = 85.4
13:05	35		84.6	178.3		7458180	423/5 = 84.6
13:10	40		84.0	189.2		7458600	420/5 = 84.0
13:15	45		83.6	196.1		7459018	418/5 = 83.6
13:20	50		82.9	205.0		7459432	414/5 = 82.8
13:25	55		82.0	212.1		7459842	410/5 = 82.0
13:30	60		81.6	219.2		7460250	408/5 = 81.6
13:45	75		80.1	235.6		7461451	1204/15 = 80.1
14:00	90		77.9	249.0		7462620	1169/15 = 77.9
14:15	105		74.4	266.5		7463736	1116/15 = 74.4
14:30	120		71.6	265.0		7464810	1087/15 = 72.47
15:00	150		73.0	281.3		7467000	2190/30 = 73
15:30	180		68.3	294.2		7469050	2050/30 = 68.3
16:00	210		69.7	309.7		7471140	2098/30 = 69.93
16:30	240		75.2	319.0		7473395	2255/30 = 75.17
17:00	270		68.7	328.2		7475455	2060/30 = 68.67
17:30	300		66.3	336.1		7477445	1990/30 = 66.33
18:00	330		71.8	343.0		7479600	2155/30 = 71.83
18:30	360		72.0	359.3		7481760	2160/30 = 72
19:00	390		61.7	351.3		7483612	1852/30 = 61.73
19:30	420		60.5	354.4		7485426	1814/30 = 60.47
20:00	450		66.3	358.0		7487415	1989/30 = 66.3
20:30	480		69.0	361.5		7489484	2064/30 = 68.8

Navajo Area IHS - Well Pump Test Data Collection Form

Date:						Step No.	
Well No:						Desired Flow	
Well						Community	
		Elapsed		Pumping	Drawdown	Water	
		Time	Discharge	Level/Depth	or	Meter	
		(Minutes)	(GPM)	To Water	Recovery	Reading	
Time				(ft)	(ft)	(gal)	Comments
20:30	0					7491365	
20:31	1						
20:32	2						
20:33	3						
20:34	4						
20:35	5						
20:36	6						
	7						
	8						
	9						
	10						
	12						
	14						
20:46	16	496	148.7	480.0		7491365	297.5/2=148.7
20:48	18	492	172.5	485.0		7491690	545.0/2=172.5
20:50	20	500	172.5	492.7		7491985	575.0/2=172.5
20:55	25	505	105.0	510.8		7492510	525.0/5=105.0
21:00	30	510	110.0	517.4		7493060	550.0/5=110.0
21:05	35	515	132.6	524.0		7493723	663.0/5=132.6
21:10	40	520	147.0	531.6		7494458	735.0/5=147.0
21:15	45	525	105.4	539.3		7494985	527.0/5=105.4
21:20	50	530	103.0	544.0		7495500	515.0/5=103.0
21:25	55	535	141.4	550.8		7496207	707.0/5=141.4
21:30	60	540	101.4	557.2		7496714	507.0/5=101.4
21:45	75	545	119.0	570.7		7498500	582.1/5=116.4
22:00	90	570	119.0	581.6		7500285	178.5/15=11.9
22:15	105	585	127.7	593.7		7502200	191.5/15=12.8
22:30	120	600	126.7	602.5		7504100	190.0/15=12.7
22:45	150	630	99.6	616.2		7507037	298.7/3=99.6
22:50	180	660		628.2		7511961	110.4/3=36.8
22:55	210	690		635.1		7513400	130.5/3=43.5
23:00	240	728					changed watches
23:05	270	750					
23:10	300	780					
23:15	330	810					
23:20	360	840					
23:25	390	870					
23:30	420	900					
23:35	450	930					
23:40	480	960					

Navajo Area IHS - Well Pump Test Data Collection Form

Date	Well No.	Well	Step No.	Desired Flow	Community	Pumping Level/Depth To Water (ft)	Drawdown or Recovery (ft)	Water Meter Reading (gall)	Comments
Time	Elapsed Time (Minutes)	Discharge (GPM)							
	0	960	102.0	639.6		7541120			
	1	961	102.99.0	639.6		7541222			
	2	962	99.0	639.6		7541321			
	3	963	102.0	639.6		7541423			
	4	964	102.0	639.6		7541525			
	5	965	99.0	639.6		7541624			
	6	966	99.0	639.6		7541723			
	7	967	104.0	639.6		7541827			
	8	968	108.0	639.6		7541935			
	9	969	110.0	639.6		7542045			
	10	170	112.0	639.6		7542157			
	12	972	116.50	703.0		7542390			
	14	974	116.50	707.0		7542623			
	16	976	113.50	710.0		7542850			
	18	978	117.50	713.0		7543085			
	20	400	117.50	716.0		7543320			
	25	985	119.60	724.6		7543918			
	30	990	119.60	730.0		7544517			
	35	995	119.60	737.0		7545236			
	40	1000	119.60	740.0		7545711			
	45	1005	118.60	744.0		7546304			
	50	1010	118.60	747.0		7546893			
	55	1015	118.00	750.0		7547483			
	60	1020	117.20	753.5		7548069			
	75	1035	117.00	760.0		7548323			
	90	1050	115.67	765.7		7548557			
	105	1065	114.87	770.0		7548783			
	120	1080	113.92	775.0		7548997			
	150	1110	112.00	780.0		7549280			
	180	1140	110.00	785.0		7549510			
	210	1170	108.00	790.0		7549740			
	240	1200	106.00	795.0		7549970			
	270	1230	104.00	797.2		7550200			
	300	1260	102.00	800.0		7550430			
	330	1290	100.00	802.5		7550660			
	360	1320	108.11	805.0		7550890			
	390	1350	107.33	807.4		7551120			
	420	1380	106.60	810.0		7551350			
	450	1410	105.43	812.3		7551580			
	480	1440	106.07	814.0		7551810			

Navajo Area IHS - Well Pump Test Data Collection Form

Date						Step No	
Well No.						Desired Flow	
Well						Community	
		Elapsed		Pumping	Drawdown	Water	
		Time	Discharge	Level/Depth	or	Meter	
Time	(Minutes)	(GPM)	To Water	Recovery		Reading	Comments
		(ft)	(ft)		(gal)		
	0						
	1						
	2						
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10						
	12						
	14						
	16						
	18						
	20						
	25						
	30						
	35						
	40						
	45						
	50						
	55						
	60						
	75						
	90						
	105						
	120					7594323	
11:00	150	1470	105.77	216.2		7597495	11:22/30 105.77
11:30	180	1500	105.33	217.8		7601655	
12:00	210	1530	105.80	220.0		7613805	
12:30	240	1560	104.77	221.3		7616948	
13:00	270	1590	104.23	222.6		7610075	
13:30	300	1620	104.13	223.9		7613199	
14:00	330	1650	103.77	225.4		7616306	
14:30	360	1680	103.30	226.5		7619415	
15:00	390	1710	101.63	230.6		7622454	
15:30	420	1740	102.77	231.8		7625546	
16:00	450	1770	105.43	233.3		7628709	
16:30	480	1800		234.0		7631132	

722-11

Navajo Area IHS - Well Pump Test Data Collection Form

Date						Step No	
Well No						Desired Flow	
Well						Community	
		Elapsed		Pumping	Drawdown	Water	
		Time	Discharge	Level/Depth	or	Meter	
				To Water	Recovery	Reading	
Time		(Minutes)	(GPM)	(ft)	(ft)	(gall)	Comments
	0			827.4		762183	12/13
	1			827.4		762185	
	2			829		762187	
	3			828		762189	
	4			827.2		762191	
	5			826.3		762193	
	6			807		762195	
	7			802.6		762197	
	8			799.2		762199	
	9			796.6		762201	
10:41	10	1811	57	789.		762203	
	12	1813		779		762205	
42	14	1815	48.50	768		762207	
43	16	1817	46.50	769.6		762209	
46	18	1819	45.00	750		762211	
10:45	20	1821	44.00	741		762213	
	25	1826	43.00	724.3		762215	
	30	1831	44.4	719		762217	
	35	1836	42.40	715.6		762219	
	40	1841	46.40	691		762221	
	45	1846	47.20	677.4		762223	
	50	1851				762225	
730	55	1856	47.0			762227	
739	60	1851	47.0	677.4		762229	
	75	1876	44.47	621.6		762231	
	90	1891	50.07	629		762233	
760	105	1906	51.00	621		762235	
765	120	1921	51.47	612		762237	
	150	1931	52.20	597.3		762239	
	180	1931	52.70	585.5		762241	
	210	2011	53.12	575		762243	
	240	2011	53.77	567.2		762245	
	270	2071	53.77	559		762247	
	300	2121	53.77	553.3		762249	
	330	2131	54.61	549		762251	
10:40	360	2115	54.61	496.3		762253	12/15
10:00	390	2126	53.77	495		762255	
10:30	420	2136	53.77	497.3		762257	
12:00	450	2846	53.77	469		762259	
	480	2035	54.17	484.1		762261	

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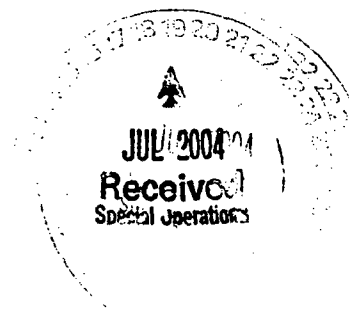
Date						Step No.	
Well No.						Desired Flow	
Well						Community	
		Elapsed		Pumping	Drawdown	Water	
		Time	Discharge	Level/Depth	or	Meter	
				To Water	Recovery	Reading	
Time		(Minutes)	(GPM)	(ft)	(ft)	(gal)	Comments
12:07	0	12/16		469		99.7921	000032
	1						
10:00	2	4185	70.5				
10:02	3	4186	80				
10:03	4	4188		495		99.7921	
10:04 AM	5	12/16	79	509	4191	99.7921	
4:17 PM	6	12/16	73.1	56.5	4943	0778446	
8:30 AM	7	12/17	69.5	615.0	5516	07854030	
7:10 PM	8	12/17	68.6	625	6156	07857990	
10:10 AM	9	12/18	67.62	627	7056	07858848	
	10						
	12						
	14						
	16						
	18						
	20						
	25						
	30						
	35						
	40						
	45						
	50						
	55						
	60						
	75						
	90						
	105						
	120						
	150				497.1		
	180						
	210						
	240						
	270						
	300						
	330						
	360						
	390						
	420						
	450						
	480						



NAVAJO TRIBAL UTILITY AUTHORITY

AN ENTERPRISE OF THE NAVAJO NATION

April 24, 2003



Philbert Morgan
NN Environmental Protection Agency
Public Water Systems Supervision Program
Surface & Ground Water Protection Department
P.O. Box #339
Window Rock, AZ 86515

RE: Iyanbito PWSID #NM0258

Dear Mr. Morgan:

We have received information on Iyanbito Tribal Well #16T-666, PWSID #0258, which was renovated to meet the radionuclide requirements. Offending geological formations were identified and sealed.

This well will be placed on-line and required testing will begin. Production rate is now at 30 GPM.

If you have any questions or concerns, please call me at (928) 729-6207. Thank you.

Respectfully,

NAVAJO TRIBAL UTILITY AUTHORITY

Richard LeMaster, Technical Assistant
Environmental Engineering Department

RLM/aaa

Enclosures

cy: Subject File - Environmental Engineering



DEPARTMENT OF HEALTH & HUMAN SERVICES

PUBLIC HEALTH SERVICE
HEALTH RESOURCES AND SERVICES ADMINISTRATION

May 14, 2002

Navajo Area Indian Health Service
Sanitation Facilities Construction
Gallup Service Unit
3412 E. Hwy 66
Gallup, NM 87301

Paula Holyun
Special Operations
Navajo Tribal Utility Authority
P O Box 170
Fort Defiance, AZ 86504

RE: Iyanbito Well 16T-666

Dear Paula:

Well 16T-666 was taken offline in 1998 due to elevated radionuclides. Offending geological formations were identified and sealed. Subsequent chemical analysis shows water from Well 16T-666 meets the SDWA. Test pumping indicates production from the well is now 30 gpm.

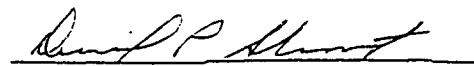
Please review the attached chemical analysis, test pumping records, hydraulic and pump motor sizing calculations, and the manufacturer's literature on the Grundfos 4-Inch Stainless Steel Submersible Pump 40S150-44DS (15 HP) and forward comments to Dave Shoultz, District Engineer, IHS.

The IHS would like to install this pump and make the well available for service as soon as practical. If you have any questions, please contact me at (505) 726-2530.

Sincerely,


Morris Muskett
Field Engineer

Concurrence By:


David Shoultz, P.E.
District Engineer
Gallup OEHE

Attachments

xc: Jeffrey J. Nolte, P.E., Director DSFC, Office of Environmental Health and Engineering
David Shoultz, P.E., District Engineer, Gallup OEHE

~~File NA 99-104-70~~





Phone (505) 326-4737 Fax (505) 325-4182

Inter-Mountain Laboratories, Inc.

2506 West Main Street, Farmington, NM 87401

Date: 10/16/01
Client: USPHS-IHS - Gallup
Lab ID: 0301W03830
Project: SDWA / Well 16T-666

Dear Client:

The sample was received for analysis at Inter-Mountain Laboratories (IML), Farmington, New Mexico. Enclosed are the results of the analyses.

Comment:

Analytical results were obtained by approved methods. Unless otherwise noted, sample analyses were obtained within the method specific holding times. Practical Quantitation Limits (PQL's) are based on method requirements, and any dilutions necessary to maintain proper method response without matrix interference.

If you have any questions, please call me at (505) 326-4737.

A handwritten signature in black ink, appearing to read 'William Lipps', is positioned above the printed name.

William Lipps
Laboratory Director/IML-Farmington, NM

Client: IML/Farmington
Project: USPHS-IHS-Gallup OEHE
Sample ID: Well-16T-666
Lab ID: 0101W17692/0301W03830
Matrix: Water
Condition: Cool/Intact

Date Received: 09/06/01
Date Reported: 09/21/01
Date Sampled: 09/05/01
Time Sampled: 1130

Parameter	Analytical Result	Units	Units
General Parameters			
Lab pH	7.3	s.u.	
Lab Conductivity @ 25°C	1,300	µmhos/cm	
Total Dissolved Solids @ 180°C	1,110	mg/L	
Total Alkalinity as CaCO ₃	177	mg/L	
Total Hardness as CaCO ₃	751	mg/L	
Color	25	C.U.	
Total Cyanide	<0.01	mg/L	
MBAS	<0.1	mg/L	
Nitrite as N	<0.01	mg/L	
Nitrate as N	<0.01	mg/L	
Odor	<1	T.O.N.	
Anions			
Bicarbonate as HCO ₃	215	mg/L	3.53 meq/L
Carbonate as CO ₃	0.00	mg/L	0.00 meq/L
Hydroxide as OH	0.00	mg/L	0.00 meq/L
Chloride	3.2	mg/L	0.09 meq/L
Fluoride	0.17	mg/L	
Nitrate + Nitrite as N	0.05	mg/L	<0.01 meq/L
Sulfate	589	mg/L	12.27 meq/L
Cations			
Calcium	141	mg/L	7.04 meq/L
Magnesium	96.8	mg/L	7.97 meq/L
Potassium	2.6	mg/L	0.07 meq/L
Sodium	33.1	mg/L	1.44 meq/L
Cations			16.52 meq/L
Anions			15.90 meq/L
Cation/Anion Balance			1.91 %

Reference: U.S.E.P.A 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.

"Standard Methods For The Examination of Water and Wastewater", 19th ed., 1995.

EPA 600/R93/100, "Methods for the Determination of Inorganic Substances in Environmental Samples", Aug. 1993.

EPA 600/R94/111, "Methods for the Determination of Metals in Environmental Samples-Supplement I", May 1994

Reviewed By: MJS

Mary Simmons, Lab Manager

Client: IML/Farmington
Project: USPHS-IHS-Gallup OEHE
Sample ID: Well-16T-666
Lab ID: 0101W17692/0301W03830
Matrix: Water
Condition: Cool/Intact

Date Received: 09/06/01
Date Reported: 09/21/01
Date Sampled: 09/05/01
Time Sampled: 1130

Parameter	Analytical Result	Units	Units
Total Recoverable Metals			
Aluminum	<0.1	mg/L	
Antimony	<0.005	mg/L	
Arsenic	<0.005	mg/L	
Barium	<0.5	mg/L	
Beryllium	<0.004	mg/L	
Cadmium	<0.002	mg/L	
Chromium	<0.01	mg/L	
Copper	<0.01	mg/L	
Iron	2.43	mg/L	
Lead	<0.003	mg/L	
Manganese	0.06	mg/L	
Mercury	<0.001	mg/L	
Nickel	<0.05	mg/L	
Selenium	<0.005	mg/L	
Silver	<0.01	mg/L	
Thallium	<0.002	mg/L	
Uranium	<0.01	mg/L	
Zinc	0.09	mg/L	

Reference: EPA 600/R94/111, "Methods for the Determination of Metals in Environmental Samples-Supplement I", May 1994
Annual Book of ASTM Standards, 1993.

Reviewed By: MS
Mary Simmons, Lab Manager



2033 Heritage Park Drive
Oklahoma City, OK 73120
Ph: (405) 755-7272
Fax (405) 755-2058

Transmission Electron Microscopy
Asbestos Analysis Report
Drinking Water Sample

Quantem Sample ID: 0109TB163108
Client Sample ID: Well 16T-666
Sample Location: N/A

Client: Intermountain Labs
Account Number: B163

Date/Time Prepared: September 7, 2001 1:00pm
Prepared By: Jeff Mlekush
Analyzed By: Jeff Mlekush
Methodology: EPA 600/4-84-043 (EPA 100.2)

Sample Aliquot (mL): 100 ml
Filter Type: 0.22µm 47mm MCE (1385mm²)
Filter Area Analyzed (mm²): 0.109
Instrument: JEOL 100C / 10KX Magnification
Grid Archival: 1279 B5 C1 C2

Analysis Summary

Structure	Chrysotile $\geq 10\mu$		Amphibole $\geq 10\mu$	
	Confirmed	Ambiguous	Confirmed	Ambiguous
Free Fibers	0	0	0	0
Fiber Bundles	0	0	0	0

Analysis Results

Structures Counted

Total Confirmed Chrysotile

None Detected

Total Confirmed Amphibole

None Detected

Analytical Sensitivity

0.129 MFL

Total Concentration
Asbestos Fibers $\geq 10 \mu\text{m}$

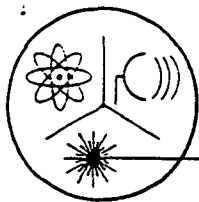
Less than 0.129 MFL

(Reviewed and Approved)

September 14, 2001

(Date)

Note: Structures denoted as being " $<5\mu$ " refer to the structures whose length is from 0.5µm to 4.9µm.
Quantem is a NVLAP-accredited TEM and PLM laboratory (Lab Code 101959). This report relates only to the specific items tested.
NVLAP accreditation applies only to AHERA analysis (40 CFR Ch. I (1-1-87 ed.) Part 763, Appendix A to Subparts E and F).
This report may not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

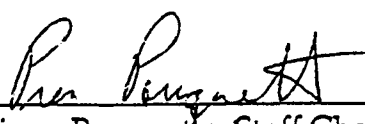
(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Inter-Mountain Laboratories
2506 W. Main Street
Farmington, NM 87401

Sample Received: September 6, 2001
Analysis Completed: September 27, 2001

Sample ID	Gross Alpha Activity method 600/00-02 (pCi/L)	Uranium Activity method 00-07 (pCi/L)	Adjusted Gross Alpha (pCi/L)	Radium 226 Activity method 903.1 (pCi/L)	Radium 228 Activity method 904 (pCi/L)	Total Radium (pCi/L)
W03830	6.8 ± 1.2	3.3 ± 0.5	3.5 ± 1.3	< 0.5	< 0.5	< 0.5


Pierre Pouquette, Staff Chemist

Sampling Point: Well 16T-666

PARAMETER	SDWA Method	MRL * (ug/L)	Results (ug/L)	MCL (ug/L)	Extraction Date	Analysis Date	Lab Number
Alachlor (Lasso)	525.2	0.1	< 0.1	2	09/14/01	09/20/01	652094
Aldicarb	531.1	0.5	< 0.5	3	09/20/01	09/26/01	652092
Aldicarb Sulfone	531.1	0.7	< 0.7	2	09/20/01	09/26/01	652092
Aldicarb Sulfoxide	531.1	0.5	< 0.5	4	09/20/01	09/26/01	652092
Aldrin	525.2	0.1	< 0.1	---	09/14/01	09/20/01	652094
Aroclor 1016	505	0.08	< 0.08	£	09/13/01	09/14/01	652100
Aroclor 1221	505	2.0	< 2.0	£	09/13/01	09/14/01	652100
Aroclor 1232	505	0.5	< 0.5	£	09/13/01	09/14/01	652100
Aroclor 1242	505	0.3	< 0.3	£	09/13/01	09/14/01	652100
Aroclor 1248	505	0.1	< 0.1	£	09/13/01	09/14/01	652100
Aroclor 1254	505	0.1	< 0.1	£	09/13/01	09/14/01	652100
Aroclor 1260	505	0.2	< 0.2	£	09/13/01	09/14/01	652100
Atrazine	525.2	0.1	< 0.1	3	09/14/01	09/20/01	652094
Benzo(a)pyrene	525.2	0.02	< 0.02	0.2	09/14/01	09/20/01	652094
Butachlor	525.2	0.1	< 0.1	---	09/14/01	09/20/01	652094
Carbaryl	531.1	0.5	< 0.5	---	09/20/01	09/26/01	652092
Carbofuran	531.1	0.9	< 0.9	40	09/20/01	09/26/01	652092
alpha-Chlordane	525.2	0.1	< 0.1	---	09/14/01	09/20/01	652094
gamma-Chlordane	525.2	0.1	< 0.1	---	09/14/01	09/20/01	652094
Chlordane	505	0.1	< 0.1	2	09/13/01	09/14/01	652100
2,4-D	515.3	0.1	< 0.1	70	09/13/01	09/20/01	652093
Dalapon	515.3	1.0	< 1.0	200	09/13/01	09/20/01	652093
1,2-Dibromo-3-chloropropane	504.1	0.01	< 0.01	0.2	09/15/01	09/15/01	652091
Dicamba	515.3	0.1	< 0.1	---	09/13/01	09/20/01	652093
Dieldrin	525.2	0.1	< 0.1	---	09/14/01	09/20/01	652094
Di(2-ethylhexyl)adipate	525.2	0.6	< 0.6	400	09/14/01	09/20/01	652094
Di(2-ethylhexyl)phthalate	525.2	0.6	< 0.6	6	09/14/01	09/20/01	652094
Dinoseb	515.3	0.1	< 0.1	7	09/13/01	09/20/01	652093
Diquat	549.2	0.4	< 0.4	20	09/07/01	09/10/01	652099
Endothall	548.1	9.0	< 9.0	100	09/11/01	09/17/01	652098
Endrin	525.2	0.01	< 0.01	2	09/14/01	09/20/01	652094
Ethylene dibromide (EDB)	504.1	0.01	< 0.01	0.05	09/15/01	09/15/01	652091
Glyphosate (Round-up)	547	6.0	< 6.0	700	09/10/01	09/11/01	652097
Heptachlor	525.2	0.04	< 0.04	0.4	09/14/01	09/20/01	652094
Heptachlor epoxide	525.2	0.02	< 0.02	0.2	09/14/01	09/20/01	652094
Hexachlorobenzene	525.2	0.1	< 0.1	1	09/14/01	09/20/01	652094
Hexachlorocyclopentadiene	525.2	0.1	< 0.1	50	09/14/01	09/20/01	652094
3-Hydroxycarbofuran	531.1	0.5	< 0.5	---	09/20/01	09/26/01	652092
Lincane (gamma-BHC)	525.2	0.02	< 0.02	0.2	09/14/01	09/20/01	652094
Methoxychlor	525.2	0.1	< 0.1	40	09/14/01	09/20/01	652094
Methomyl	531.1	0.5	< 0.5	---	09/20/01	09/26/01	652092
Metolachlor (Dual)	525.2	0.1	< 0.1	---	09/14/01	09/20/01	652094
Metribuzin (Sencor)	525.2	0.1	< 0.1	---	09/14/01	09/20/01	652094
Oxamyl (Vydate)	531.1	1.0	< 1.0	200	09/20/01	09/26/01	652092
Pentachlorophenol	515.3	0.04	< 0.04	1	09/13/01	09/20/01	652093
Picloram (Tordon)	515.3	0.1	< 0.1	500	09/13/01	09/20/01	652093
Propachlor	525.2	0.1	< 0.1	---	09/14/01	09/20/01	652094
2,4,5-TP (Silvex)	515.3	0.1	< 0.1	50	09/13/01	09/20/01	652093
Simazine	525.2	0.07	< 0.07	4	09/14/01	09/20/01	652094
2,3,7,8-TCDD (Dioxin)	1613E	2.7e-06	< 2.7e-06	0.00003	10/01/01	10/05/01	652096
Toxaphene	505	1.0	< 1.0	3	09/13/01	09/14/01	652100

* EHL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

£ Any positive Aroclor result would require analysis for total PCB as decachlorobiphenyl by method 508A (MCL = 0.5 ug/L).

Sampling Point: Well 16T-666

PARAMETER	Report Limit ** (ug/L)	Result (ug/L)	MCL (ug/L)	PARAMETER	Report Limit ** (ug/L)	Result (ug/L)
Regulated Parameters				Unregulated Parameters		
Benzene	0.5	< 0.5	5	Bromobenzene	0.5	< 0.5
Bromodichloromethane	0.5	< 0.5	100 *	Bromochloromethane	0.5	< 0.5
Bromoform	0.5	< 0.5	100 *	Bromomethane	0.5	< 0.5
Carbon tetrachloride	0.5	< 0.5	5	n-Butylbenzene	0.5	< 0.5
Chlorobenzene	0.5	< 0.5	100	sec-Butylbenzene	0.5	< 0.5
Chloroform	0.5	< 0.5	100 *	tert-Butylbenzene	0.5	< 0.5
Dibromochloromethane	0.5	< 0.5	100 *	Chloroethane	0.5	< 0.5
1,2-Dibromo-3-Chloropropane	0.2	< 0.2	0.2 †	Chloromethane	0.5	< 0.5
1,2-Dibromoethane(EDB)	0.2	< 0.2	0.05 †	2-Chlorotoluene (o-)	0.5	< 0.5
1,2-Dichlorobenzene	0.5	< 0.5	600	4-Chlorotoluene (p-)	0.5	< 0.5
1,4-Dichlorobenzene	0.5	< 0.5	75	Dibromomethane	0.5	< 0.5
1,2-Dichloroethane	0.5	< 0.5	5	1,3-Dichlorobenzene	0.5	< 0.5
1,1-Dichloroethylene	0.5	< 0.5	7	Dichlorodifluoromethane	0.5	< 0.5
cis-1,2-Dichloroethylene	0.5	< 0.5	70	1,1-Dichloroethane	0.5	< 0.5
trans-1,2-Dichloroethylene	0.5	< 0.5	100	1,3-Dichloropropane	0.5	< 0.5
Dichloromethane	0.5	< 0.5	5	2,2-Dichloropropane	0.5	< 0.5
1,2-Dichloropropane	0.5	< 0.5	5	1,1-Dichloropropylene	0.5	< 0.5
Ethylbenzene	0.5	< 0.5	700	cis-1,3-Dichloropropylene	0.5	< 0.5
Styrene	0.5	< 0.5	100	trans-1,3-Dichloropropylene	0.5	< 0.5
Tetrachloroethylene	0.5	< 0.5	5	Hexachlorobutadiene	0.5	< 0.5
Toluene	0.5	11	1000	Isopropylbenzene	0.5	< 0.5
1,2,4-Trichlorobenzene	0.5	< 0.5	70	4-Isopropyltoluene (p-)	0.5	< 0.5
1,1,1-Trichloroethane	0.5	< 0.5	200	Naphthalene	0.5	< 0.5
1,1,2-Trichloroethane	0.5	< 0.5	5	n-Propylbenzene	0.5	< 0.5
Trichloroethylene	0.5	< 0.5	5	1,1,1,2-Tetrachloroethane	0.5	< 0.5
Vinyl chloride	0.2	< 0.2	2	1,1,2,2-Tetrachloroethane	0.5	< 0.5
Total Xylenes	0.5	< 0.5	10,000	1,2,3-Trichlorobenzene	0.5	< 0.5
				Trichlorofluoromethane	0.5	< 0.5
				1,2,3-Trichloropropane	0.5	< 0.5
				1,2,4-Trimethylbenzene	0.5	< 0.5
				1,3,5-Trimethylbenzene	0.5	< 0.5
				Methyl-t-butyl ether (MTBE)	0.5	< 0.5

Method: 524.2

Analysis Date: 09/08/01

* The MCL of 100 ug/L is for total trihalomethanes and compliance samples must be collected from the distribution system.

** EHL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

† Compliance monitoring for these parameters must be done using EPA method 504.1

QUALITY CONTROL / QUALITY ASSURANCE

Quality Control / Quality Assurance

Blank Spike Analysis TOTAL METALS

Client: USPHS-IHS
Project: SDWA
Sample Matrix: Water

Date Reported: 10/16/01
Date Analyzed: 09/13/01
Date Received: 09/05/01

Blank Spike Analysis

Parameter	Spike Result (mg/L)	Sample Result (mg/L)	Spike Added (mg/L)	Percent Recovery
Aluminum	0.52	<0.1	0.50	104%
Antimony	0.049	<0.005	0.050	98%
Arsenic	0.047	<0.005	0.050	94%
Barium	0.05	<0.5	0.05	100%
Beryllium	0.530	<0.004	0.500	106%
Cadmium	0.050	<0.002	0.050	100%
Chromium	0.50	<0.01	0.50	100%
Copper	0.05	<0.01	0.05	92%
Iron	0.51	<0.05	0.50	102%
Lead	0.049	<0.005	0.050	98%
Manganese	0.51	<0.02	0.50	102%
Mercury	0.002	<0.001	0.002	93%
Nickel	0.54	<0.05	0.50	108%
Selenium	0.051	<0.005	0.050	102%
Silver	0.05	<0.01	0.05	96%
Thallium	0.048	<0.002	0.050	96%
Zinc	0.530	0.04	0.500	106%

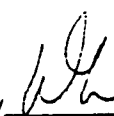
References: Method 200.2: Acid Digestion for Water and Waste Water,
SW-846, Rev. 1, July 1992.

Comments:

Reported by



Reviewed by



Quality Control / Quality Assurance

Known Analysis TOTAL METALS

Client: USPHS-IHS
Project: SDWA
Sample Matrix: Water

Date Reported: 10/16/01
Date Analyzed: 09/13/01
Date Received: 09/05/01

Known Analysis

Parameter	Found Result	Known Result	Percent Recovery	Units
Aluminum	0.99	1.00	99%	mg/L
Antimony	0.049	0.050	98%	mg/L
Arsenic	0.046	0.050	92%	mg/L
Barium	0.05	0.05	98%	mg/L
Beryllium	0.05	0.05	98%	mg/L
Cadmium	0.049	0.050	98%	mg/L
Chromium	1.01	1.00	101%	mg/L
Copper	0.05	0.05	96%	mg/L
Iron	1.01	1.00	101%	mg/L
Lead	0.049	0.050	98%	mg/L
Manganese	1.01	1.00	101%	mg/L
Mercury	0.002	0.002	98%	mg/L
Nickel	1.01	1.00	101%	mg/L
Selenium	0.049	0.050	98%	mg/L
Silver	0.05	0.05	96%	mg/L
Thallium	0.049	0.050	98%	mg/L
Zinc	1.03	1.00	103%	mg/L

References: Method 200.2: Acid Digestion for Water and Waste Water,
SW-846, Rev. 1, July 1992.

Comments:

Reported by JS

Reviewed by WJH

Quality Control / Quality Assurance

Blank Analysis TOTAL METALS

Client: USPHS-IHS
Project: SDWA
Sample Matrix: Water

Date Reported: 10/16/01
Date Analyzed: 09/13/01
Date Received: 09/05/01

Blank Analysis

Parameter	Result	Detection Limit	Units
Aluminum	ND	0.1	mg/L
Antimony	ND	0.005	mg/L
Arsenic	ND	0.005	mg/L
Barium	ND	0.5	mg/L
Beryllium	ND	0.004	mg/L
Cadmium	ND	0.002	mg/L
Chromium	ND	0.01	mg/L
Copper	ND	0.01	mg/L
Iron	ND	0.05	mg/L
Lead	ND	0.003	mg/L
Manganese	ND	0.02	mg/L
Mercury	ND	0.001	mg/L
Nickel	ND	0.05	mg/L
Selenium	ND	0.005	mg/L
Silver	ND	0.01	mg/L
Thallium	ND	0.002	mg/L
Zinc	ND	0.01	mg/L

References:

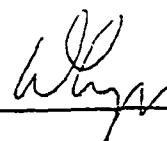
Method 200.2: Acid Digestion for Water and Waste Water,
SW-846, Rev. 1, July 1992.

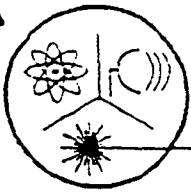
Comments:

Reported by



Reviewed by





Radiation Safety Engineering, Inc.

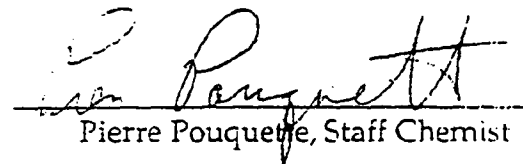
3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsefe.com

(480) 897-9459
FAX (480) 892-5446

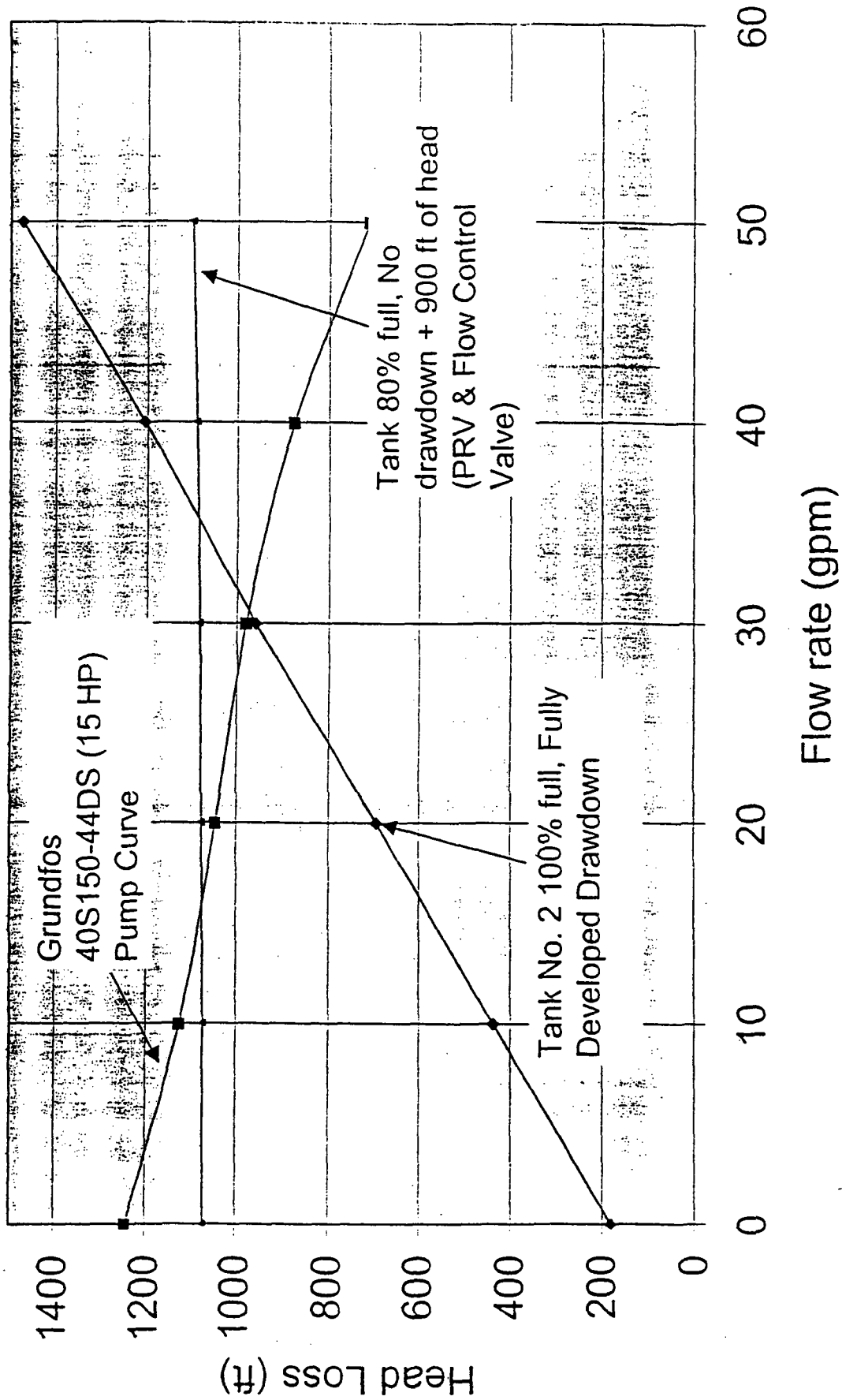
Isotopic Uranium Analysis

Inter-Mountain Laboratories
2506 W. Main Street
Farmington, NM 87401

Sample No.	^{236}U	^{235}U	^{234}U	Total	
W03830	1.2 ± 0.3	0.010 ± 0.002	2.1 ± 0.4	3.3 ± 0.5	Activity (pCi/L)
	3.7 ± 0.9	0.005 ± 0.001	0.0003 ± 0.00006	3.7 ± 0.9	Content (μg/L)
	Comments:				


Pierre Pouquette, Staff Chemist

System Operational Envelope Curve Iyanbito Well 16T-666

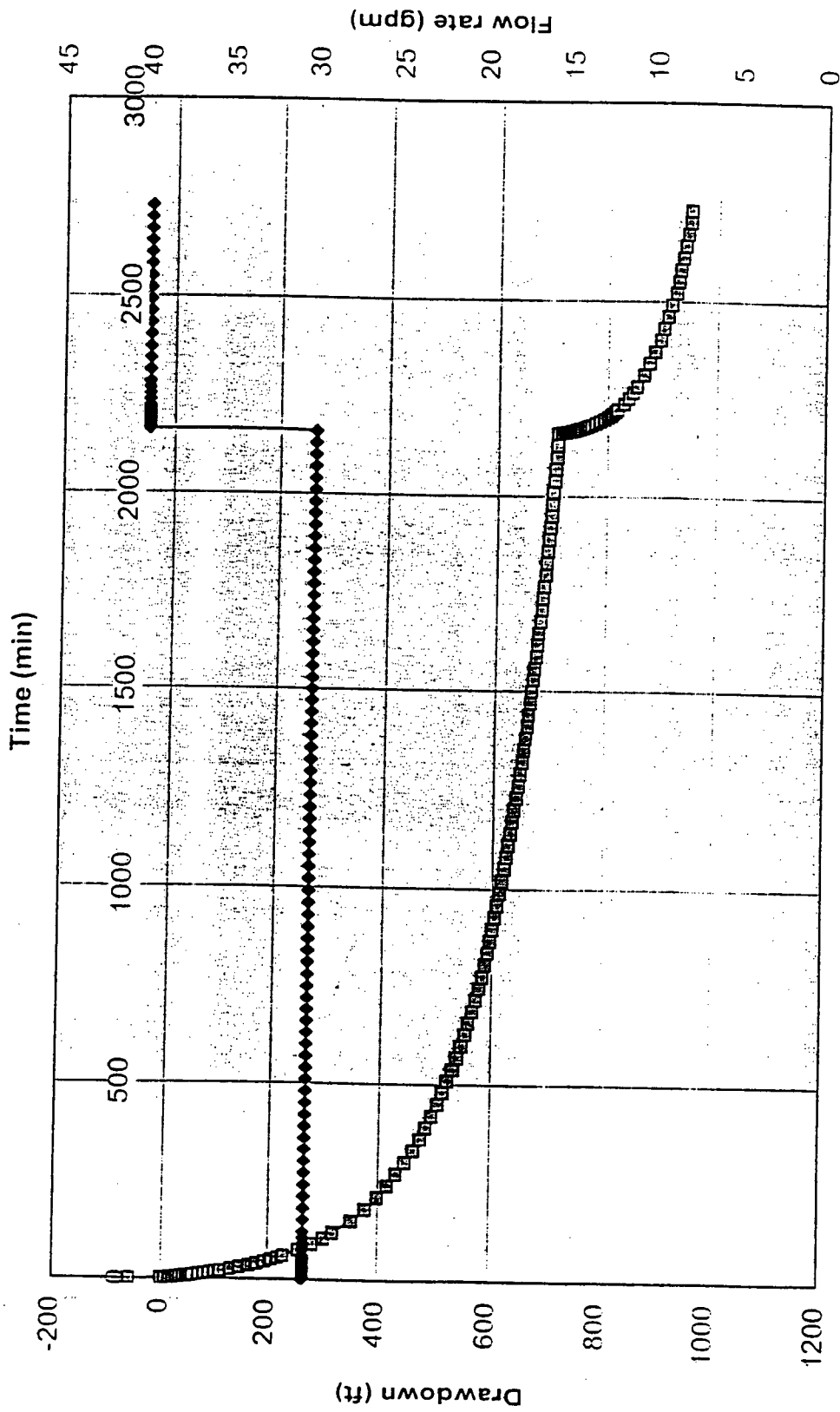


Headloss Calculations (Developed Drawdown & Tank 100% Full)

[illegible]

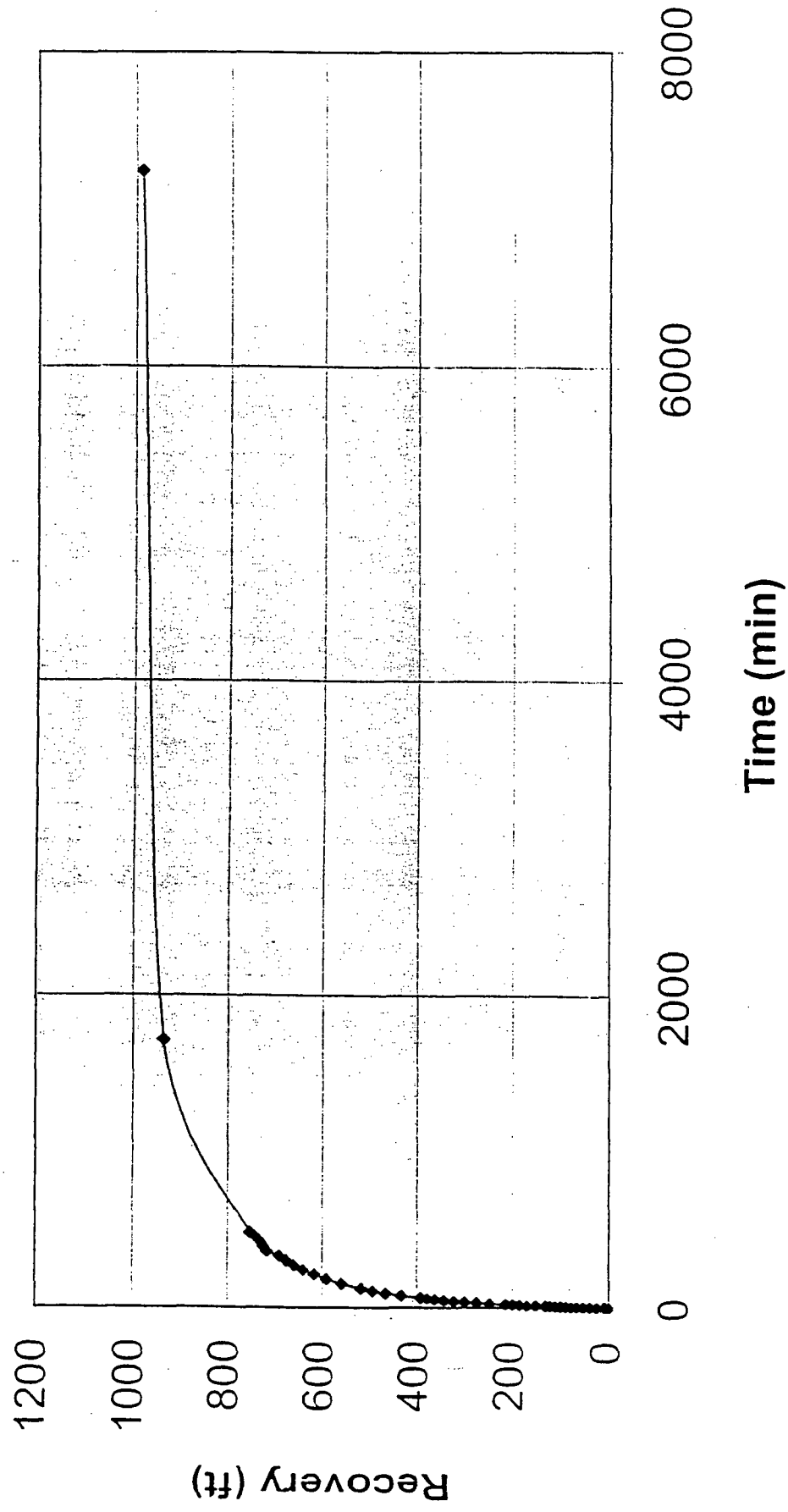
Iyanbito Well 16T-666 Test Pump

February 23, 2002



Recovery Data for Iyanbito Well 16T-666

February 23, 2002



Navajo Area IHS - Well Pump Test Data Collection Form

DATE: 2-21-02
COMMUNITY NAME: Iyankito, NM
WELL NO.: 16T-1666
STATIC WATER LEVEL: -74 ft
PUMP SETTING: _____
OBSERVERS: Morris Muskett/Terry Hood
PUMP ON: DATE: 2/21/02 TIME: _____
PUMP OFF: DATE: 2/22/02 TIME: _____

WELL NAME: Iyankito Well 16T-1666 Page 1 of 7
PUMP MODEL: _____
METER SIZE: _____
DROP PIPE SIZE: _____
METER READING (START): _____
WELL HEAD ELEVATION: _____
WATER LEVEL MEAS'T DEVICE: _____

DURATION OF AQUIFER TEST: PUMPING: _____ RECOVERY: _____

AP No	Well	Elapsed Time	Discharge (GPM)	Pumping Level/Depth To Water (ft)	Drawdown or Recovery (ft)	Water Meter Reading (gal)	Comments
	I						
		Elapsed Time	Discharge	Pumping Level/Depth To Water	Drawdown or Recovery	Water Meter Reading	Comments
		(minutes)	(GPM)	(ft)	(ft)	(gal)	
A		0	3.5	-5.4			Interior Well
		1		10			
		2		2			
		3		2			
		4		33			
		5		29			
		6		25			
		7		42			
		8		-7			
		9		54			
1/1		10		50			
		12		70			
		14		21			
		16		22			
		18		101			
		20		70			
		25		130			
		30		-7			
		35		166			
		40		171			
		45		145			
		50		200			
		55		219			
		60		230			
		75		255			
		90		282			
		105		302			
		120		320			
		150		353			
		180		350			
		210		399			
		240		417			
		270		433			
		300		449			
		330		450			
		360		460			
		390		460			
		420		496			
		450		507			
		480		517			

207

Date	Step No.	Desired Flow	Common	Water Meter Reading	Common
Time	Elapsed Time (minutes)	Discharge (GPM)	Pumping Level (Feet)	Drawdown or Recovery (Feet)	Common
2:00 PM	450		523		
2:05 PM	500		532		
2:10 PM	550		539		
2:15 PM	600		546		
2:20 PM	630		553		
2:25 PM	660		552		
2:30 PM	690		565		
2:35 PM	720		571		
2:40 PM	750		571		
2:45 PM	780		583		
2:50 PM	810		587		
2:55 PM	840		590		
3:00 PM	870		590		
3:05 PM	900		600		
3:10 PM	930		604		
3:15 PM	960		604		
3:20 PM	990		613		
3:25 PM	1020		617		
3:30 PM	1050		621		
3:35 PM	1080		624		
3:40 PM	1110		627		
3:45 PM	1140		631		
3:50 PM	1170		637		
3:55 PM	1200		637		
4:00 PM	1230		641		
4:05 PM	1260		645		
4:10 PM	1290		647		
4:15 PM	1320		647		
4:20 PM	1350		647		
4:25 PM	1380		647		
4:30 PM	1410		647		
4:35 PM	1440		647		
4:40 PM	1470		647		
4:45 PM	1500		647		
4:50 PM	1530		647		
4:55 PM	1560		647		
5:00 PM	1590		647		
5:05 PM	1620		647		
5:10 PM	1650		647		
5:15 PM	1680		647		
5:20 PM	1710		647		
5:25 PM	1740		647		
5:30 PM	1770		647		
5:35 PM	1800		647		
5:40 PM	1830		647		
5:45 PM	1860		647		
5:50 PM	1890		647		
5:55 PM	1920		647		
6:00 PM	1950		647		

Navajo Area IHS - Well Pump Test Data Collection Form

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Date: 2/22/03

Sheet: 2

Well No: 10T-666

Desired Flow:

40 GPM

Vis:

Comments:

Time	Elapsed Time	Discharge (GPM)	Pumping Level/Depth To Water	Drawdown or Recovery	Water Meter Reading	Comments
			ft	ft	ft	
11:32 AM	0		717			
11:33	1		732			
11:34	2		735			
11:35	3		729			
11:36	4		732			
11:37	5		734			
11:38	6		738			
	7		740			
	8		742			
	9		746			
11:42	10		748			
11:44	12		752			
11:46	14		757			
11:48	16		762			
11:50	18		765			
11:52	20		770			
11:55	25		778			
	30		786			
12:07	35		794			
12:11	40		800			
12:16	45		805			
12:21	50		809			
12:26	55		814			
12:31	60		818			
2:00	115 min		830			
1:00	130 min		839			
1:15	145 min		847			
1:30	160 min		854			
2:00	230 min		867			
3:30	300 min		877			
5:00	370 min		887			
6:30	440 min		897			
8:00	510 min		903			
9:30	580 min		910			
11:00	650 min		916			
12:30	720 min		925			
2:00	790 min		929			
3:30	860 min		931			
5:00	930 min		937			
6:30	1000 min		94			

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Date: 2/23/02
 Well No: 147-61-6
 Well: ~~3200~~
 Step No: 2
 Desired Flow: 40 GPM
 Comments:

Time	Elapsed Time	Discharge (GPM)	Pumping Level/Depth To Water (ft)	Drawdown or Recovery (ft)	Water Meter Reading (gal)	Comments
8:00	510-		945-			
8:34	540-		949			
8:40	550-		950			
	600-					
	630-					
	660-					
	690-					
	720-					
	750-					
	780-					
	810-					
	840-					
	870-					
	900-					
	930-					
	960-					
	990-					
	1020-					
	1050-					
	1080-					
	1110-					
	1140-					
	1170-					
	1200-					
	1230-					
	1260-					
	1290-					
	1320-					
	1350-					
	1380-					
	1410-					
	1440-					
	1470-					
	1500-					
	1530-					
	1560-					
	1590-					
	1620-					
	1650-					
	1680-					
	1710-					
	1740-					
	1770-					
	1800-					
	1830-					
	1860-					
	1890-					
	1920-					
	1950-					
	1980-					
	2010-					
	2040-					
	2070-					
	2100-					
	2130-					
	2160-					
	2190-					
	2220-					
	2250-					
	2280-					
	2310-					
	2340-					
	2370-					
	2400-					
	2430-					
	2460-					
	2490-					
	2520-					
	2550-					
	2580-					
	2610-					
	2640-					
	2670-					
	2700-					
	2730-					
	2760-					
	2790-					
	2820-					
	2850-					
	2880-					
	2910-					
	2940-					
	2970-					
	3000-					

Navajo Area IHS - Well Pump Test Data Collection Form

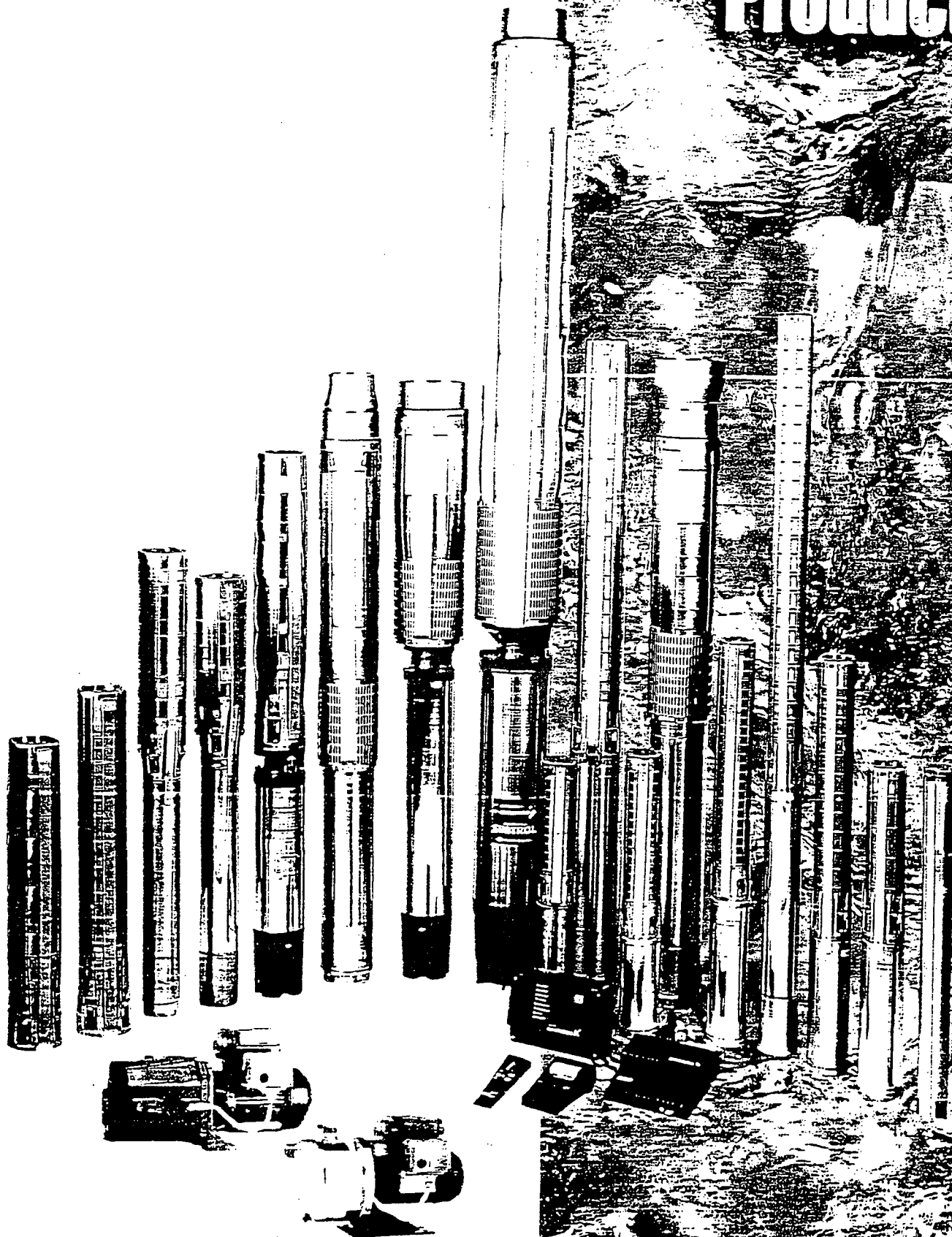
Page 2670

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Date	Well No.	Well Name	Section	Desired Flow	Comments
2/24/02	21	Water Level dropped	Recovery		
2/24/02	21	Elassee 941	Pumping Level Descr	Water Meter	
Time	Discharge (GPM)	To Water	Drawdown or Recover	Reading (ft)	Comments
0		932			
1		915			
2		901			
3		887			
4		874			
5		862			
6		851			
7		840			
8		829			
9		818			
10		807			
12		790			
14		772			
16		756			
18		741			
20		726			
25		694			
30		666			
35		641			
40		618			
45		598			
50		577			
55		563			
60		548			
75		512			
90		475			
105		447			
120		423			
150		372			
180		351			
210		325			
240		302			
270		282			
300		265			
330		250			
360		230			
390					
420		211			
450		200			
480		190			

* On 2/24/02 @ 9.20 pm static water level @ +6 ft

Groundwater Products



GRUNDFOS



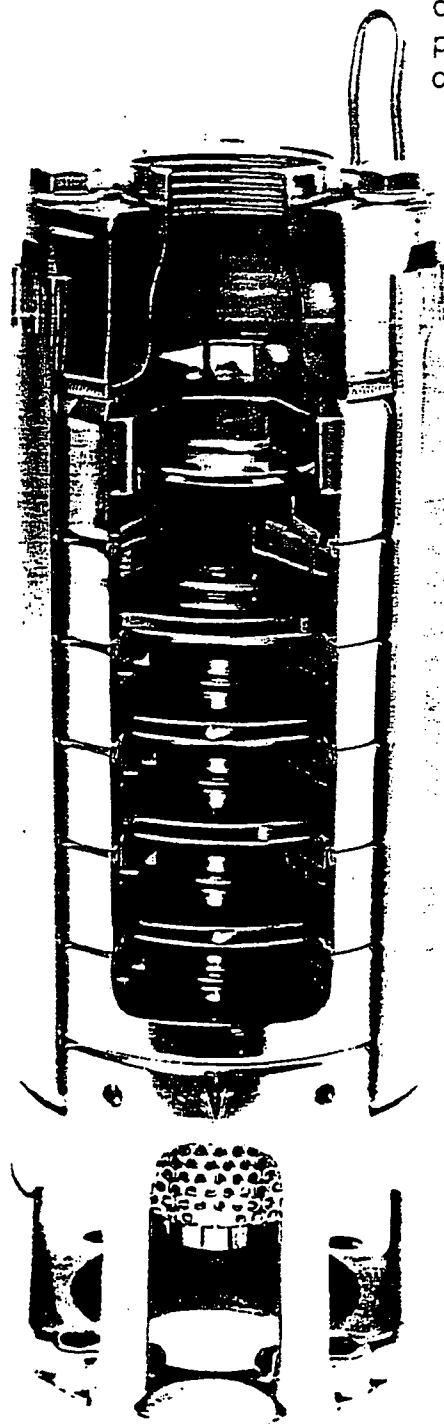
4-Inch Submersibles



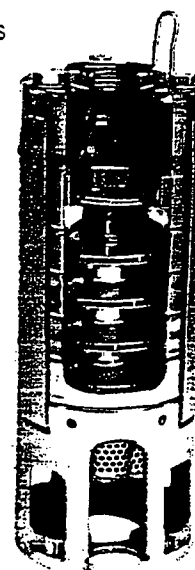
Grundfos 4" submersibles feature corrosion-resistant stainless steel construction and are designed to provide years of trouble free performance.

With built-in sand bearing protection, the 4" submersible can handle the sandy conditions often found in domestic wells. Built-in, jam-free check valves and special upthrust protection guarantee smooth running, fail-safe operation. A user friendly cable guard aids in ease of installation.

Grundfos 4" submersibles are available with a rugged Grundfos submersible motor manufactured of stainless steel. The two units together result in a quality pumping unit built to last.

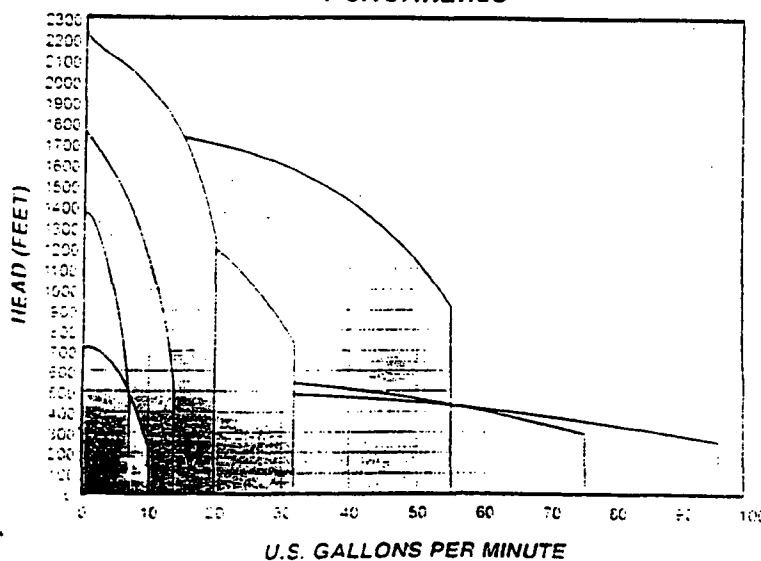


Radial Thrust Top Bearing handles sand and increases pump life.



The Redi-Flo4®, constructed of stainless steel and virgin Teflon® is designed for environmental monitoring and clean-up operations.

Performance



UL Classified
Listing Water Pump Components
ANSI/UL 1000

DIMENSIONS AND WEIGHTS

MODEL NO.	FIG.	HP	MOTOR SIZE	DISCH. SIZE	DIMENSIONS IN INCHES					APPROX. SHIP WT.
					A	B	C	D	E	
40S10-3	A	1	4"	2" NPT	24.6	11.8	12.8	3.8	3.9	32
40S15-5	A	1 1/2	4"	2" NPT	29.7	13.6	16.1	3.8	3.9	37
40S20-7	A	2	4"	2" NPT	34.5	15.1	19.4	3.8	3.9	41
40S30-9	A	3	4"	2" NPT	43.3	20.6	22.7	3.8	3.9	65
40S50-12	A	5	4"	2" NPT	51.3	23.6	27.7	3.8	3.9	78
40S50-15	A	5	4"	2" NPT	56.2	23.6	32.6	3.8	3.9	84
40S75-21*	A	7 1/2	4"	2" NPT	74.6	29.6	45.0	3.8	3.9	120
40S75-25*	A	7 1/2	4"	2" NPT	81.2	29.6	51.6	3.8	3.9	124
40S100-30*	A	10	4"	2" NPT	103.7	43.9	59.8	3.8	3.9	181
40S150-37DS	A	15	6"	2" NPT	99.5	28.0	71.5	5.4	5.4	244
40S150-44DS	A	15	6"	2" NPT	111.0	28.0	83.0	5.4	5.4	340
40S200-50DS**	B	20	6"	2" MPT	136.0	30.6	105.4	5.4	5.5	319
40S200-58DS**	B	20	6"	2" MPT	149.2	30.6	118.6	5.4	5.5	334
40S200-66DS**	B	20	6"	2" MPT	162.4	30.6	131.8	5.4	5.5	394

NOTES: All models suitable for use in 4" wells, unless otherwise noted.

Weights include pump end with motor in lbs.

* Also available with 6" motor.

** Built into sleeve 2" MPT discharge, 6" min. well dia.

MATERIALS OF CONSTRUCTION

COMPONENT	CYLINDRICAL SHAFT (3-44 Stgs.)	DEEP SET (50-66 Stgs.)
Check Valve Housing	304 Stainless Steel	304 Stainless Steel
Check Valve	304 Stainless Steel	304 Stainless Steel
Diffuser Chamber	304 Stainless Steel	304 Stainless Steel
Impeller	304 Stainless Steel	304 Stainless Steel
Suction Interconnector	304 Stainless Steel	304 Stainless Steel
Inlet Screen	304 Stainless Steel	304 Stainless Steel
Pump Shaft	431 Stainless Steel	431 Stainless Steel
Straps	304 Stainless Steel	304 Stainless Steel
Cable Guard	304 Stainless Steel	304 Stainless Steel
Priming Inducer	316 Stainless Steel	316 Stainless Steel
Coupling	329/420/431 Stainless Steel **	329/ 416 Stainless Steel
Check Valve Seat	NBR/316 Stainless Steel	NBR/316 Stainless Steel
Top Bearing	NBR/316 Stainless Steel	NBR/316 Stainless Steel
Impeller Seal Ring	NBR/316 Stainless Steel	NBR/316 Stainless Steel
Intermediate Bearings	NBR/316 Stainless Steel	NBR/316 Stainless Steel
Shaft Washer	LCP (Vectra®)	LCP (Vectra®)
Split Cone	304 Stainless Steel	304 Stainless Steel
Split Cone Nut	304 Stainless Steel	304 Stainless Steel
Sleeve	Not Required	316 Stainless Steel
Sleeve Flange	Not Required	Zincless Bronze*
Coupling Key	Not Required **	302/304 Stainless Steel

NOTES: Specifications are subject to change without notice.

Vectra® is a registered trademark of Hoechst Celanese Corporation.

*Stainless Steel option available.

** If using 6" non-standard motors, refer to 416 Stainless Steel for coupling and 302/304 for the coupling key.

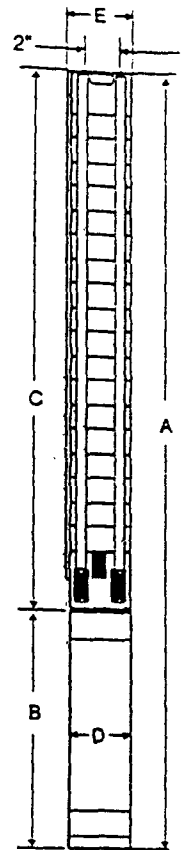


Fig. A

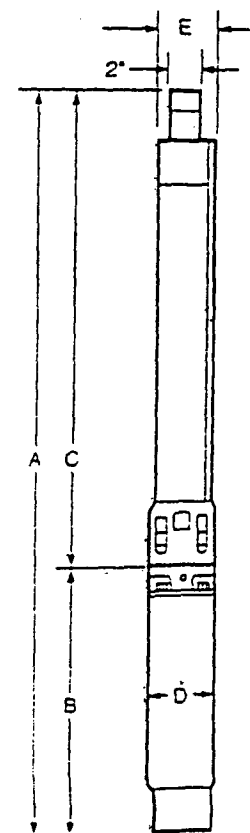


Fig. B

LAGOON DESIGN AND SITE PREPARATION

Without proper site preparation and lagoon design, effective containment of wastewater cannot be assured, regardless of the liner material selected. The following design and construction requirements must be adhered to:

- 1) The minimum thickness of a clay liner shall be 12 inches (compacted) installed in two 6 inch compacted lifts;
- 2) inside slopes shall be no greater than 3:1, i.e. 18° from horizontal;
- 3) lagoon volume (discharge + runoff + precipitation) shall be designed to allow for a minimum 24 inches of freeboard;
- 4) to a depth of not less than 6 inches below the liner, all unsuitable foundation material shall be removed including sharp rocks, vegetation and stubble. The surface shall be dry during liner installation;
- 5) sub-grade soils shall be compacted to a minimum of 90% of SPD;
- 6) any opening in the liner through which a pipe or other fixture protrudes shall be properly sealed;
- 7) any surface to be covered with a soil lift shall be scarified before placement of the covering lift;
- 8) all liner material shall be at optimal water content or slightly wet-of-optimal water content immediately prior to placement. The material shall be protected from desiccation or over-saturation. In particular, compacted soil liners may not be installed during rain events;
- 9) the sides of the lagoon shall be permanently protected from desiccation to below the low water line;
- 10) soil material shall not be place on frozen earth, nor shall frozen earth material be compacted;
- 11) all lifts shall be compacted to at least 95% SPD;
- 12) all holes introduced into the liner from testing shall be repaired with either soil liner material or bentonite;
- 13) clay-lined lagoons shall not be located within 100 feet of any drinking water supply well or any waters of the U.S.;

- 14) there shall be a minimum of four feet between the bottom of the clay liner and the average high ground water level;
- 15) the liner shall be installed by a contractor who is experienced with the installation of compacted soil liners;
- 16) NMED shall be notified in advance when construction of the lagoon is to begin in order to allow for inspection by NMED. NMED shall be notified upon completion of the liner installation and prior to any discharge to the lagoon to allow NMED the opportunity to inspect the liner installation;
- 17) as-built plans for all lagoons shall be submitted within 30 days of completion of construction. These plans shall be certified by a professional engineer who is familiar with the installation of liners and WQCC Regulations.

LINER FIELD TESTING

Each lift of a compacted soil liner must be field tested by an independent contractor as follows:

- 1) water content shall be tested at a frequency of 5 tests per acre;
- 2) density shall be tested at a frequency of 5 tests per acre.

Testing methods shall be ASTM approved and shall be pre-approved by NMED. A regular grid shall be established to determine the testing locations. Results of all field testing must be submitted to the NMED for review and approval prior to filling of the lagoon with waste water.

Any deviation from the above guidelines shall be pre-approved by the NMED.



Marcy Leavitt, Chief
Ground Water Protection &
Remediation Bureau

6/5/95
Date